Bronte Creek Meadows Phase 1 City of Burlington Transportation Impact Study

Paradigm Transportation Solutions Limited

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Project Summary

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Bronte Creek Meadows Phase 1, City of Burlington, Transportation Impact Study (2nd Submission)



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Executive Summary

Content

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct this Transportation Impact Study (TIS) for the proposed Bronke Creek Meadows subdivision. The site is generally located at the northwest corner of the Mainway and Burloak Drive intersection in the City of Burlington.

The study aims to assess current traffic and the additional traffic generated by the proposed Phase 1 of the development, analyze the traffic impact on the adjacent roadway network and provide the municipality and owner with any improvements required to mitigate the identified effects of the site-generated traffic.

The property owner proposes to develop the lands as a mixed-use subdivision with employment, institutional, retail, and a variety of low, medium, and high-density residential along with park and open space.

The Phase 1 development plan includes approximately 697 residential units (comprised of single detached, townhomes, and apartment units), approximately 743 m^2 (8,000 sq. ft) of retail space, and 71,164 m^2 (766,000 sq. ft) of institutional space. These development statistics are approximate and assume a conservative estimate for the land use densities.

Vehicle access to Phase 1 is proposed via new municipal roads to Upper Middle Road and Mainway. Build-out of Phase 1 is anticipated to occur by Year 2035; timing subject to market conditions.

The assumed internal network is subject to change, but development density targets and access points are likely to remain unchanged. This study focuses on Phase 1 of the subject site and examines long-term transportation network impacts and potential mitigation measures to support future background and site generated traffic.

The full build-out is anticipated to be completed in a horizon beyond Year 2045 (10 years after Phase 1 Build-Out), at an unknown time.

Although the development application is for the Phase 1 lands only, to provide a high-level long-range assessment of the potential road improvements required to accommodate the possible development, a Full Build-Out scenario is also assessed.

The Full Build-Out stats are based on high-level assumptions of development densities, community needs, and are subject to change.

The Full Build-Out envisions residential (single detached, townhomes, and apartment units), commercial/retail/office, community space, and an elementary school.

As the development application progresses, updates to the TIS may be required to reflect changes and phasing of the concept plan.

Conclusions

The proposed Phase 1 development will generate approximately 934 new vehicle trips during the weekday AM peak hour, 960 new vehicle trips during the weekday PM peak hour, and 631 new vehicle trips during the Saturday peak hour

Detailed traffic analysis was conducted for each of the study area intersections under Base (2024), 2035, 2040, and 2045 traffic conditions. The capacity analysis showed that deficiencies currently exist and are projected to occur at certain locations within the study area with anticipated growth in traffic, including the proposed development.

Increasing the intersection capacity through additional through lanes or dedicated turn lanes may not be feasible or desirable for an active transportation-friendly roadway cross-section. If capacity of the intersection cannot be increased, then the demand (traffic volume) will need to be decreased through TDM and alternative modes of transportation.

The following capacity constraints at the study area intersections are identified.

Appleby Line at Dundas Street

Horizon Year	Operations
2024 Base Year	Approaching Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

During the Base Year, several movements are approaching capacity during the peak hours. Under the future Background horizon, several movements are forecast to experience critical movements including the westbound left-turn lane as well as the northbound through.

With the addition to site generated traffic, the projected critical movements are expected to worsen under the future Total horizons and near-capacity movements such as the northbound left and southbound through, are forecast to have v/c ratios above the critical thresholds.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Despite applying these mitigation measures, several movements are still projected to exceed capacity with a v/c ratio exceeding 1.00 and operate with LOS F, primarily due to high traffic volumes along Appleby Line and Dundas Street.

Appleby Line at Upper Middle Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are present in the Base Year operations for several movements including the eastbound left, eastbound through-right, westbound through, westbound right, southbound through-right, and southbound left-turn lanes throughout the weekday and Saturday peak hours, operating at LOS C-E and queues exceeding storage at the left-turn lanes. It is forecast that these movements will further deteriorate under the future Background and Total conditions, ultimately operating at LOS E-F with v/c ratios greater than 1.00 during the weekday and Saturday peak hours.

To accommodate projected traffic volumes, double westbound left and southbound left-turn lanes were added with protected phasing and the existing traffic signal cycle times were adjusted.

With the implementation of these mitigation measures, delays are expected to be reduced by over 280 seconds for the eastbound approach, westbound approach, northbound approach, and the southbound left-turn lane during the weekday and Saturday peak hours. Despite these reductions, several of the movements are still projected to exceed capacity with a v/c ratio exceeding 1.00, as well as queues exceeding the available storage at exclusive turn lanes

primarily due to high traffic volumes along Appleby Line and Upper Middle Road.

Upper Middle Road at West School Driveway/Private Driveway

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Within Capacity
2035 Total	Within Capacity
2040 Background	Within Capacity
2040 Total	Within Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

It is anticipated that under the Background conditions, critical movement is noted in the 2045 Background horizon in the northbound through-left lane operating at LOS E with a v/c ratio of 0.85 during the weekday AM peak hour.

Under the 2045 Total horizon, the eastbound through-right lane is forecast to worsen, operating at LOS D with a v/c ratio greater than 0.85 during the weekday AM peak hour.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted, in addition to the widening of Upper Middle Road.

With these mitigation measures, under the 2045 future Total horizon, the northbound through-left lane can see a reduction in delays by 51 seconds, with a v/c ratio less than 0.70 during the weekday AM peak hour. However, the eastbound through-right lane is still projected to be a critical movement as the v/c ratio exceeds 0.85, primarily due to high traffic volumes along Upper Middle Road.

Upper Middle Road at East School Driveway

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Currently, the northbound left-turn lane operates at LOS F and LOS D during the weekday AM and PM peak hours respectively. All other lanes operate at acceptable conditions at LOS B or better.

Under Background conditions, the westbound left-turn lane 95th percentile queues are forecast to exceed the available storage.

The addition of site-generated traffic is forecast to significantly increase delays for the northbound left-turn movement due to the lack of capacity from background traffic growth.

Upper Middle Road at Quinte Street

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under existing conditions, critical movement is observed in the southbound left-turn lane, operating at LOS F with a v/c ratio greater than 1.00 during the weekday AM peak hour.

Under the Background conditions, the operations of the southbound left-turn lane are forecast to worsen during the weekday PM and Saturday peak hours, operating at LOS D-E.

Under future Total conditions, during the weekday AM peak hours, the northbound approach is forecast to degrade to LOS F with critical delays and v/c ratios significantly exceeding 1.00.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Signalize the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations);
- Separate eastbound left-turn lane; and
- Separate left-turn lanes for the northbound and southbound approaches with protected-permissive left-turn phases.

With these mitigation measures, a significant reduction in delays in the northbound and southbound movements are noted during the weekday and Saturday peak hours, improving to LOS C or better, with v/c ratios less than 0.30. Critical movement is note in the westbound approach with delays in the LOS D-E range during the weekday and Saturday peak hours with a v/c ratio over 0.95 due to high traffic volumes along Upper Middle Road.

Upper Middle Road at Sutton Drive

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movement is noted in the westbound through-right lane during the weekday PM peak operating at LOS C with a v/c ratio of 0.85.

By the 2035 Background horizon, the intersection is projected to experience critical movements including the eastbound left-turn lane (LOS F, v/c > 1.00) with queues exceeding storage by up to 35 m, and the southbound approach (LOS E, v/c > 1.00) during weekday peak hours.

It is anticipated that during the future Total horizon, the westbound approach will degrade to LOS F with a v/c ratio over 1.00 during the weekday AM and Saturday peak hours, as well as in the southbound approach during the weekday PM and Saturday peak hours.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Double southbound left-turn lanes;
- Northbound left-turn lane and protected-permissive phase;
- Westbound left-turn lane and protected-permissive phase; and
- Optimizing the timing of traffic signals.

Despite this, the eastbound and southbound left-turn lanes are expected to continue to experience queues greater than the available storage. The westbound through-right lane is still expected to operate

with a v/c ratio exceeding 0.85 during the weekday PM peak hour, due to high traffic volumes along Upper Middle Road.

Upper Middle Road at Baker Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Within Capacity
2035 Total	Within Capacity
2040 Background	Within Capacity
2040 Total	Within Capacity
2045 Background	Within Capacity
2045 Total	Within Capacity

Individual movements at the intersection of Upper Middle Road at Baker Drive presently operate at LOS C or better during the weekday peak hours. Similar levels of operation are expected under future Background and Total conditions with only a minor increase in delay resulting from background traffic growth

Upper Middle Road at Deer Place

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At Upper Middle Road at Deer Place, movements during the weekday peak hour currently operate at acceptable conditions, with the exception being the southbound approach, operating at LOS D during the weekday PM peak hour.

Under the 2045 Background horizon, the southbound approach is forecast to degrade to LOS D during the weekday AM peak hour with a minor increase in delays from background traffic growth.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Upper Middle Road at Blue Spruce Avenue

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under existing conditions, the southbound approach operates at LOS D-F range during the weekday AM/PM and Saturday peak hours. Operations are projected to further degrade with Background traffic growth. Under Background conditions, the eastbound left-turn lane is expected to degrade to LOS D during the weekday PM peak hour. The southbound approach is also forecast to further degrade to LOS F during the weekday and Saturday peak hours with v/c ratios exceeding 1.00 due to increased delays from eastbound/westbound traffic growth along Upper Middle Road.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Adjustments to the roadway geometry should be considered to accommodate projected background traffic volumes. Some possible upgrades include implementing the following:

- Signalize the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations).

These adjustments are forecast to improve the operation of the southbound movement during the weekday and Saturday peak hours, operating at LOS B or better with Delays projected to be less than 20 seconds. In addition to delay reduction, signalization of this intersection provides a controlled crossing for pedestrians and cyclists.

Burloak Drive at Bronte Creek Park Access

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under existing conditions, the westbound approach currently operates at LOS F during the weekday PM peak hour, with delays of less than 70 seconds.

Performance expected to further deteriorate under future Background scenarios due to background growth. Under Background conditions, this movement is also projected to degrade to LOS F during the Saturday peak hour. Additionally, during the weekday PM peak hour, the southbound left-turn movement is forecast to decline to LOS D.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Adjustments to the roadway geometry should be considered to accommodate projected background traffic volumes. Some possible upgrades include implementing the following:

- Signalize the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations).

These adjustments are forecast to improve the operation of this intersection, with all movements operating at LOS C or better, with delays less than 30 seconds during the weekday and Saturday peak hours. The westbound approach during the weekday PM peak hour will see the largest reduction in delays, with delays at 28 seconds and v/c ratio of less than 0.45.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

Burloak Drive at Mainway

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under Background conditions, the northbound left-turn lane degrades to a LOS F with a v/c ratio exceeding 1.00 during the weekday AM and PM peak hours, with queue lengths exceeding the available storage by less than 80 m and 140 m respectively. The eastbound right-turn lane is also projected to experience critical delays at LOS F and v/c ratio grater than 0.95 during the weekday AM peak hour.

Under the future Total horizon, the eastbound right-turn lane is also anticipated to operate in the LOS F range with a v/c ratio exceeding 1.00 and significant delays resulting from site-generated traffic, during the weekday PM peak hour.

Adjustments to the roadway geometry are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Optimize signal cycle times of the existing traffic signals; and
- Double northbound-left turn lanes with protected phase.

Traffic signal adjustments and implementing double northbound left-turn lanes is forecast to improve operations of the eastbound and northbound approaches during the weekday and Saturday peak hours. However, the northbound left-turn lane will still exceed the available storage by approximately 40 m due to the high traffic volumes along Burloak Drive and Mainway.

It is noted that double northbound left-turn lanes may not be feasible as the intersection may already be at the ultimate cross-section width with the widening of Burloak Drive. In addition, adding lanes may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments.

To avoid such area intense mitigation measures, the reduction of future growth and single occupant vehicles is required. An increased modal split will need to be considered to decrease the number of single

person vehicle trips, which the site will also support through TDM measures to improve active transportation and accessibility.

Mainway at Sutton Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under Background conditions, the northbound approach will likely operate in the LOS E range and degrade under future horizons with background traffic.

Under future Total conditions, critical movements are forecast in the northbound and southbound approaches during the weekday and Saturday peak hours and, operating at LOS F with a v/c ratio greater than 1.00.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Signalizing the intersection (OTM Warrants Satisfied); and
- Eastbound left-turn lane with a protected-permissive phase.

Reconfiguring the lane layout and signalizing the intersection is projected to improve the operations of the intersection. During the weekday and Saturday peak hours, all movements are expected to operate with LOS B or better with v/c ratios less than 0.85, with the exception being the southbound approach during the weekday PM peak hour operating at LOS D with a v/c ratio over 0.85. However, this mitigation measure is still expected to provide a substantial improvement, as the southbound approach improves from excessive delays and a v/c ratio exceeding 3.00 to tolerable conditions. Delays can be attributed to the high traffic volumes along Mainway and site traffic along Sutton Drive.

Mainway at Norjohn Court/Lampman Avenue

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the northbound and southbound approaches during the weekday peak hours, operating at LOS D-E. Under future Background and Total horizons, these movements are projected to degrade to LOS F with significant delays and v/c ratios exceeding 1.00.

To accommodate projected traffic volumes, traffic signals can be implemented to the existing stop-controlled intersection.

- Signalizing the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations).

The signal warrant analysis indicates traffic control signals are not warranted under the 2045 horizon. Even though the signal criteria have not been met, installing unwarranted traffic control signals would improve operations.

With signalization, northbound and southbound approaches are forecast to have delays reduced by up to 449 seconds during the weekday peak hours.

Additional turn lanes with unsignalized intersection were tested but were not found to reduce the delays. As the delays stem from the high volume of eastbound/westbound traffic, northbound and southbound movements require controlled gaps to complete manoeuvres

Appleby Line at Mainway

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the westbound through-right and northbound left-turn lanes, operating at LOS F with v/c ratios greater than 1.00 during the weekday PM peak hour.

Under Background conditions, the eastbound left is forecast to operate with v/c ratios exceeding 0.95, as well as queues exceeding the available storage for the left-turn lane.

Several movements are forecast to worsen under Total conditions, including the eastbound left, eastbound through-right, westbound left, northbound through-right, southbound left, and southbound through-right lanes throughout the weekday and Saturday peak hours.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Adjusting the signal timings are anticipated to significantly improve operations for all movements by reducing delays during the weekday AM peak hour. Although, critical movements are still expected in the eastbound left, westbound through-right, northbound left, northbound through-right, and southbound through-right movements due to high traffic volumes, the proposed measures are anticipated to reduce delays by up to 299 seconds during the weekday PM peak hour as well.

Additional measures have been tested, including increasing queue storage. Increasing road capacity by adding travel lanes may not be feasible as the intersection may already be at the ultimate cross-section width with the widening of Appleby Line. In addition, adding lanes may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments. The reduction of future growth and single occupant vehicles is required.

Appleby Line at Corporate Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Approaching Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under the Background conditions, critical movement is projected for the westbound approach, operating at LOS E with a v/c ratio of 0.85 during the weekday PM peak hour, and is expected to worsen under future Total conditions.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Adjusting the signal timings is anticipated to slightly improve operations for the westbound approach by improving the v/c ratio to less than 0.85 during the weekday PM peak hour. Despite these reductions, critical movements are still noted in the westbound and northbound through-right movements during the weekday PM peak hour due to high traffic volumes along Appleby Line.

Burloak Drive at North Service Road

Horizon Year	Operations
2024 Base Year	Approaching Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under Background conditions, critical movements are forecast in the northbound left-turn lanes during the weekday AM peak hour, operating at LOS F with v/c ratios exceeding 1.00.

With increased traffic volumes in the future Total horizon, the eastbound right-turn lane is forecast to degrade to LOS F with a v/c ratio greater than 1.00 during the weekday PM peak hour and the northbound through lane is anticipated to operate with a v/c ratio of 0.85 during the weekday PM peak hour.

To accommodate projected traffic volumes, double northbound left-turn lanes can be implemented along Burloak Drive.

Adjusting the lane configuration and signal timings are anticipated to improve operations for the northbound left-turn lane during the weekday AM peak hour by reducing delays by up to 164 seconds. During the weekday PM peak hour, delays in the eastbound right-turn lane are expected to improve by up to 153 seconds. However, critical movements are still projected at the intersection due to high traffic volumes along Burloak Drive.

Burloak Drive at QEW Westbound Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the westbound approach during the weekday and Saturday peak hours, operating at LOS D-F with v/c ratios exceeding 1.00. Delays are projected to worsen with Background traffic growth and site-generated traffic, and the queues are forecast to extend beyond the available storage. The southbound approach is also forecast to operate with a v/c ratio exceeding 1.00 during the weekday PM peak hour.

Under the 2045 Background horizon, the westbound ramp left and right-turn 95th percentile queue lengths are forecast to extend between 325 and 865 m back during the peak hours and are forecast to spill back to the mainline. However, SimTraffic queuing analysis estimates 95th percentile queue lengths are forecast to extend up to 350 m back during the weekday PM peak hour and is not expected to reach the bullnose, located approximately 500 m from the stop bar.

Under Total conditions, the northbound approach will operate with a v/c ratio exceeding 0.85 during the weekday peak hours. The southbound approach is expected to operate with a v/c ratio greater than 0.85 during the weekday peak hours, under the 2045 Total horizon.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Separating the existing westbound left-right turn lane to double left and right turn lanes; and
- Optimizing the timing of traffic signals.

Implementing these measures are forecast to significantly reduce delays during the weekday and Saturday peak hours. Despite the significant delay reductions, capacity issues are still expected. The movements still exceeding capacity includes the westbound approach, northbound, and southbound approaches due to the high traffic volumes along Burloak Drive during the future horizon.

Burloak Drive at QEW Eastbound Off-Ramp/Red Oak Boulevard

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at the intersection of Burloak Drive at the QEW Eastbound Off-Ramp presently operate at acceptable conditions, with a LOS D or better for all movements.

Under the Background horizon, the southbound approach is projected to experience with a v/c ratio greater than 0.90 during the weekday PM peak hour.

Under future Total conditions, critical movements are forecast in the eastbound left-turn lane, operating at LOS D range with a v/c ratio over 0.75 during the weekday AM peak hour and Saturday peak hours.

The eastbound left-turn 95th percentile queue length is forecast to extend over up to 105 m back during the weekday AM peak hour. Ramp queues are not expected to reach the bullnose, located approximately 450 m from the stop bar, and are not forecast to spill back to the mainline.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Converting the eastbound through lane to a through-left lane; and

- Optimize the timing of traffic signals.

The adjustments to the lane configuration and signal timings are projected to improve operations during the weekday and Saturday peak hours. The southbound approach is expected to operate with delays reduced by up to 37 seconds. Despite these reductions, critical movements are still anticipated due to high traffic volumes along Burloak Drive.

Appleby Line at North Service Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

In the Base Year, a critical movement is observed in the westbound left-turn lane, operating at LOS F with a v/c ratio greater than 0.95 and queues exceeding the available storage during the weekday PM peak hour.

Under Background conditions, critical movements are forecast in the eastbound left, westbound through-right, and northbound approach during the weekday PM peak hours, operating with v/c ratios greater 0.95 and queues exceeding storage for the left-turn lanes.

With increased traffic volumes in the future Total horizon, the northbound and southbound through-right lanes are projected to operate with v/c ratios exceeding 0.85 during the weekday peak hours.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Adjusting the signal timings are anticipated to improve operations for the northbound left-turn and southbound through-right lane by reducing delays by up to 34 seconds. However, critical movements are still projected at the intersection due to high traffic volumes at the intersection.

Appleby Line at QEW Westbound Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the westbound right-turn lane during the weekday PM peak hour, operating at LOS F with v/c ratios exceeding 1.00.

Under Background conditions, the northbound approach is also projected to operate with v/c ratios above 0.85 during both weekday peak periods. In the weekday AM peak hour, the westbound right-turn lane is expected to worsen to LOS F with a v/c ratio greater than 1.00. Additionally, during the weekday PM peak hour, the westbound left-turn lane is forecast to degrade to LOS F, with a v/c ratio exceeding 1.00. The westbound left and right-turn 95th percentile queue lengths are forecast to extend between 315 and 865 m back during the weekday PM peak hour and are forecast to spill back to the mainline.

However, SimTraffic queuing analysis estimates 95th percentile queue lengths are forecast to extend up to 350 m back during the peak hours and is not expected to reach the bullnose, located approximately 500 m from the stop bar.

The southbound approach is expected to operate with v/c ratios above 0.90 during the weekday PM peak hour, and above 0.85 during the AM peak hour. Overall, delays are anticipated to worsen under Total conditions with the addition of site-generated traffic.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Double westbound right-turn lanes; and
- Optimize the timing of traffic signals.

Implementing these measures are forecast to significantly reduce delays in the westbound approach and the northbound approach. During the weekday PM peak hour, despite delay reductions of up to 850 seconds in the westbound approach, capacity issues are still

expected. The movements still exceeding capacity includes the westbound left-turn, westbound right-turn, northbound, and southbound approaches due to the high traffic volumes at Appleby Line at QEW Westbound Off-ramp. With the mitigation measures, queuing on the QEW westbound off-ramp is not expected to impact the mainline operations.

Appleby Line at QEW Eastbound Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Base year scenario show critical operations for the eastbound left-turn off-ramp movement which operates with a v/c of 0.75 during the weekday AM peak hour.

Under Background conditions, the eastbound right-turn lane is forecast to operate with queues exceeding the available storage during the peak hours. The 95th percentile queue is forecast to extend beyond the available storage by less than 55 m and is not expected to reach the bullnose located approximately 415 m away.

Under future Total conditions, the eastbound left-turn lane is forecast to degrade to LOS E with a v/c ratio over 0.95 during the weekday AM peak hour. The eastbound left-turn lane is forecast to have queues exceeding the available storage by less than 15 m during the weekday AM peak hour but is not expected to reach the bullnose located approximately 415 m away.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Implementing these measures are forecast to reduce delays by up to 18 seconds in the eastbound approach during the weekday and Saturday peak hours. During the PM peak hour, delays are reduced by up to 44 seconds in the southbound approach. However, these movements are still projected to operate as critical movements due to high traffic volumes at the intersection.

Although queuing is forecast to extend beyond the available storage, queues are not expected to impact QEW mainline highway operations.

Appleby Line at Harvester Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the eastbound left-turn and westbound through-right lane, operating at LOS F with v/c ratios greater than 0.95. The westbound left-turn lane operates at LOS E-F during the weekday PM and Saturday peak hours with a v/c ratio greater than 0.90. The southbound left-turn lane also exhibits queues exceeding the available storage during the weekday AM peak hour. These movements are anticipated to degrade with future traffic growth.

With background traffic growth, critical operations are forecast for the eastbound through-right lane under the 2040 horizon during the weekday PM peak hours, operating at LOS E with a v/c ratio greater than 0.85.

Under the Total conditions, the eastbound left-turn lane will degrade to LOS F with v/c ratios greater than 0.95 during the weekday AM and Saturday peak hours. The northbound and southbound through lanes are also expected to operate with v/c ratios exceeding 0.85 during the weekday AM and PM peak hours respectively.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Double southbound left-turn lanes with a protected phase; and
- Optimize the timing of traffic signals.

Implementing these measures are forecast to significantly reduce delays in the eastbound and in the westbound approach during the weekday and Saturday peak hours. However, the eastbound left, westbound approach, northbound through, northbound right, southbound left and southbound through lanes are still projected to operate as critical movements due to high traffic volumes at the intersection.

Double northbound left-turn lanes may not be feasible and may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments.

Appleby Line at Fairview Street

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are present at the eastbound and southbound right-turn lanes, operating at LOS D and B with 95th percentile queue lengths exceeding the available storage by less than 70 m.

Under future Background conditions, the eastbound left-turn, northbound left-turn and southbound through lanes are forecast to operate as critical movements, at LOS D-F with 95th percentile queues exceeding the storage for left-turning movements, during the weekday peak hours. The southbound left-turn lane will also operate with queues exceeding the storage during the weekday AM peak hour. The northbound through movement is forecast to operate with delays in the LOS D range or worse and a v/c ratio greater than 0.90 during the AM peak hour.

These movements are projected to worsen with the addition of site-generated traffic under Total conditions, deteriorating to LOS D-F.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Despite applying these mitigation measures, several movements are still projected to exceed capacity with a v/c ratio exceeding 1.00, as well as queues exceeding the available storage at exclusive turn lanes primarily due to high traffic volumes along Appleby Line and Fairview Street.

Mainway at Site Access A

Horizon Year	Operations
2035 Total	Within Capacity
2040 Total	Within Capacity
2045 Total	Within Capacity

A new site connection at Mainway and Site Access A is provided to accommodate for additional site generated traffic for the healthcare and institutional development located along Mainway. Individual movements at the intersection of Site Access A at Mainway is expected to operate at acceptable conditions under the future Total conditions, with a LOS C or better for all movements.

Sutton Drive at Corporate Drive

Horizon Year	Operations
All Total Horizons	Within Capacity

At the all-way stop-controlled internal site intersection of Sutton Drive at Corporate Drive, all approaches are forecast to operate within capacity with a LOS A or better during the weekday and Saturday peak hours.

As per comments from the City, alternative traffic control is considered including signalization and roundabout configurations. All three intersection controls are expected to accommodate vehicle traffic without issue. However, considering the land requirements and pedestrian crossings, an all-way stop controlled intersection control is recommended.

Full Build-Out Assessment

The full build-out is anticipated to be completed in a horizon beyond Year 2045 (10 years after Phase 1 Build-Out), at an unknown time.

The concept shows Phases 2 to 4 located between Sutton Road and Burloak Drive. The development application is for the Phase 1 lands only. However, to provide a high-level long-range assessment of the potential road improvements required to accommodate the possible development, a Full Build-Out scenario has been assessed.

The Full Build-Out stats are based on high-level assumptions of development densities, community needs, and are subject to change.

Under the 2045 horizon year, many study area intersections are forecast to operate at or near their functional capacity. Since the Full Build-Out site traffic assignment adheres to the same methodology utilized in Phase 1, the majority of impacted movements have already been identified, with appropriate mitigation measures previously proposed to address these constraints.

Overall, the study area intersections are forecast to operate at similar levels to the Phase 1 2045 Total Scenario; the exceptions being the new site access intersections for the future phases. The following capacity constraints at the new site access intersections are identified.

Upper Middle Road at Blue Spruce Avenue

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

Under Full Build-Out of the site, Blue Spruce Avenue is proposed to extend south of Upper Middle Road to provide access to the development. With Phase 1 mitigation measures, the intersection has been assumed to be signalized by Full Build-Out. With site-generated traffic volumes, the westbound approach is forecast to operate at LOS C and v/c ratios exceeding 0.95 during the weekday PM peak hour.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM Warrants satisfied); and
- Left-turn Lane and protected-permissive phase for westbound traffic.

Overall, signalization is recommended to reduce delays for northbound and southbound approaches and support walkability in the study area.

Burloak Drive at Corporate Drive/ Bronte Creek Park Access

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

With future phases of the development, Corporate Drive is proposed to be extended east through the development lands, providing a new access to site from the existing Burloak Drive at Bronte Creek Park intersection. The intersection has been assumed to be signalized under the Phase 1 mitigation measures.

The addition of site-generated traffic degrades the northbound approach to operate with delays in the LOS A-E range and a v/c ratio greater than 0.90 during the peak hours.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM warrants satisfied); and
- Implement a left-turn lane and phase for northbound traffic.

In the Phase 1 mitigation measures, signalization was identified as potential improvement although the signal was unwarranted. With the Full Build-Out of the site, the signal is warranted. Overall, with the mitigation measures, the intersection is forecast to operate with delays in the LOS D range or better with v/c ratios less than 0.85 during the peak hours.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

Burloak Drive at Site Access C

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

A future connection at Burloak Drive at Site Access C is planned to provide additional access to the development, located south of the Burloak Drive at Bronte Creek Park/Corporate Drive intersection. Under the assumed two-way stop-control, the eastbound approach is forecast to operate with delays in the LOS F range.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM warrants not satisfied);
- Northbound left-turn lane as per left-turn warrant;
- Northbound left-turn protected-permissive phase; and
- Separate eastbound left-turn and right-turn lanes.

Overall, with the mitigation measures, the intersection is forecast to operate with delays in the LOS C range or better with v/c ratios less than 0.85 during the peak hours.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

Mainway at Sutton Drive

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

The Full Build-Out scenario is forecast to operate similarly to the Phase 1 2045 horizon. Even with Phase 1 mitigation measures, several movements are still projected to experience critical movements including the eastbound left, westbound through-left, northbound approach, and southbound approach.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Separate southbound left-turn and through-right lanes; and
- Separate westbound-right turn lane.

Reconfiguring the lane layout and signalizing the intersection is projected to improve the operations of the intersection. However, several movements are still projected to experience critical movements particularly during the weekday PM peak hour.

Delays can be attributed to the high traffic volumes along Mainway and Sutton Drive.

Mainway at Site Access B

Horizon Year	Operations
2045 Total (Full Build-Out)	Within Capacity

A new site connection at Mainway and Site Access B is provided to accommodate for additional site generated traffic for the Office Park development located along Mainway, east of Sutton Drive. The following mitigation measures were implemented in the analysis:

- Implement an eastbound left-turn lane as per left-turn warrant.

Overall, operations are expected to be at acceptable levels with delays in the LOS C range or better during the peak hours.

Neighbourhood Impact Assessment

To support the development, the Applicant will be responsible for the costs related to new roadway connections to Upper Middle Road, Burloak Drive, and Mainway, which includes left turn lanes and traffic control signals. Moreover, the Applicant will bear the cost of potentially unwarranted traffic control signals due to the deterioration of operations at the intersection of Upper Middle Road at Blue Spruce Avenue, Burloak Drive at Site Access A, Burloak Drive at Corporate Drive, and Mainway at Sutton Drive, caused by the build-out of the development. This is reflected based on the assessment of the intersections projected to operate over capacity due to site generated traffic.

Based on the road classification and network connectivity, most site traffic is expected to use Upper Middle Road, Burloak Drive, and Mainway to access the site.

It is not expected that Sutton Drive (north of Upper Middle Road) or the potential Corporate Drive connection will used significantly by development traffic due to the distance, stop-controlled intersections, and local road designs.

Transportation Demand Management

A key TDM strategy will be the provision of public transit to this area. The use of transit places less reliance on personal automobiles for trips that can be completed with convenient and desirable transit options. The subject site is currently served by four Burlington Transit routes that operate primarily on Upper Middle Road, Mainway, and Appleby Line and provide connections to Appleby GO, Burlington GO, and GO Bus 407 Carpool Stations; however, additional routes and capacity should be provided to serve the future community.

The development lands also lend themselves to TDM benefits associated with mixed or multi-use development. This form of development supports sustainability initiatives by promoting complementary land uses in close proximity.

The future traffic operations with the development cannot be fully mitigated by auto infrastructure improvements alone. This is recognized in the City of Burlington’s Official Plan, which identifies an integrated and multi-modal transportation system that will be achieved by prioritizing decision-making to shift more trips away from the private car and to more sustainable transportation options, such as walking, biking, transit and car sharing.



Future plans include High Occupancy Vehicle (HOV)/Bus Lanes along Upper Middle Road and Burloak Drive. The provision of high-density mixed-use developments in the proposed development is essential to achieving the goals of the City.

As individual development blocks are build-out, TDM measures will be included in the site plan design and reviewed through the SPA process.

Recommendations

Based on the findings of this study, it is recommended that:

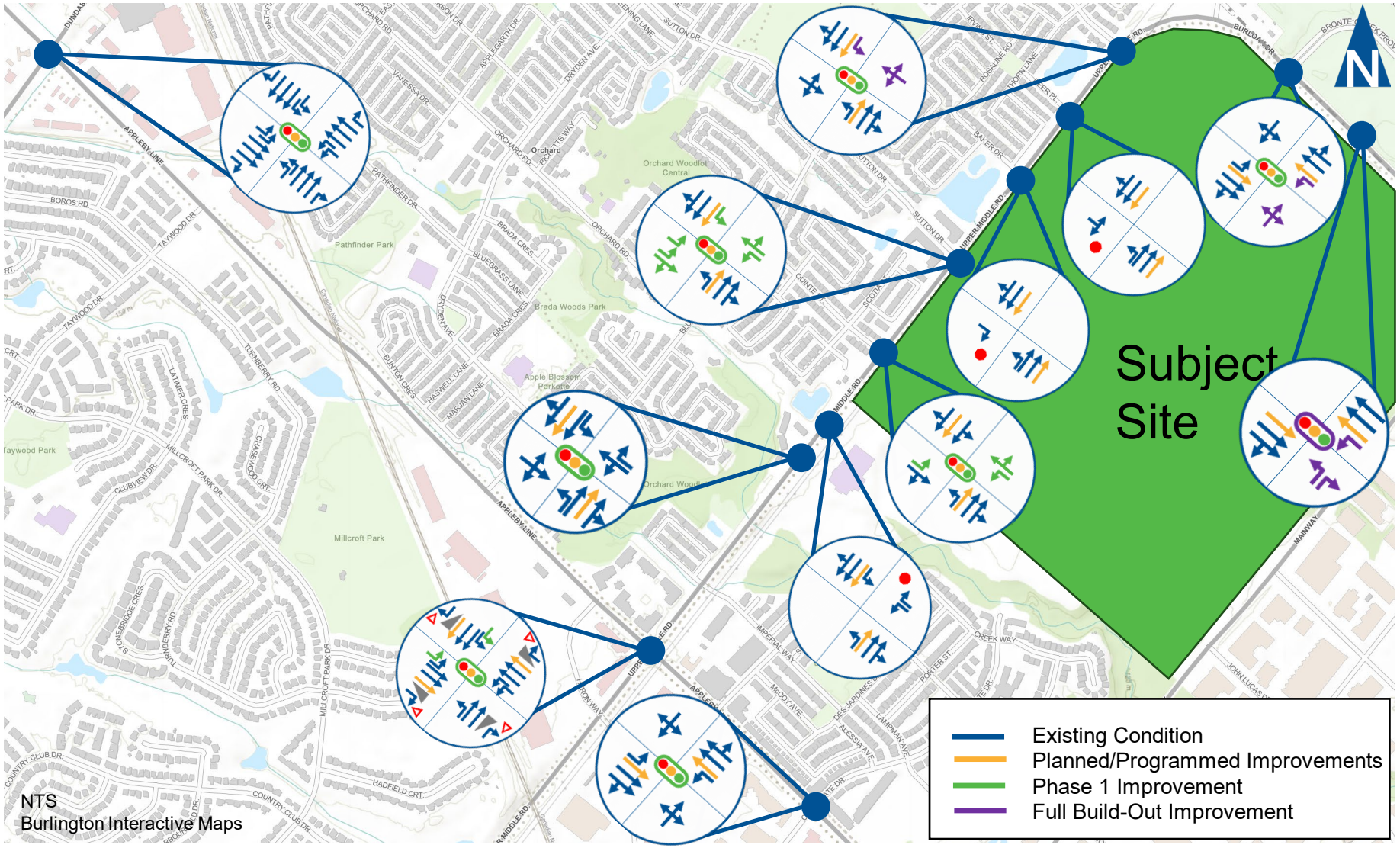
- The road authority plan for the future implementation of the remedial measures summarized in **Table E.1**. **Figure E.1** illustrates the proposed remedial measures.
- The Applicant will work with the road authorities to determine appropriate cost sharing contributions for the planned roadway improvements outlined in **Table E.1**.
- The City should plan to meet its mode share targets by continuing to promote TDM measures and supporting shifts to alternative modes of travel to reduce single-occupant vehicle trips
- Burlington Transit consider adding new transit routes and infrastructure to serve the proposed development.

TABLE E.1: PROPOSED MITIGATION MEASURES

Intersection	Improvement	Horizon Year	Applicant Responsibility
Appleby Line & Dundas Street	Signal timing adjustments	2035 Background	No
Appleby Line & Upper Middle Road	Double westbound left-turn lanes	Base Year; All Horizons	No
	Double southbound left-turn lanes		
	Signal timing adjustments		
West School Driveway/Private Driveway & Upper Middle Road	Signal timing adjustments	2045 Background	No
Quinte Street & Upper Middle Road	Signalization (OTM Warrants satisfied)	2035 Total	**Yes**
	Northbound left-turn lane (30 m storage)		
	Southbound left-turn lane (45 storage)		
Sutton Drive & Upper Middle Road	Double southbound left-turn lanes	2035 Total	**Yes**
	Northbound left-turn lane (30 m storage)		
	Westbound left-turn lane (60 m storage)		
	Adjusted signal timings		
Blue Spruce Avenue & Upper Middle Road	Signalization (Unwarranted)	Base Year; All Horizons	No
	Westbound left-turn lane	Full Build-Out	**Yes**
Burloak Drive & Corporate Drive/ Park Access	Signalization (Unwarranted)	Base Year; All Horizons	No
	Northbound left-turn lane	Full Build-Out	**Yes**
Burloak Drive & Site Access C	Signalization (OTM Warrants not satisfied)	Full Build-Out	**Yes**
	Northbound left-turn lane		
	Eastbound left-turn lane		
Burloak Drive & Mainway	Double northbound left-turn lanes	2035 Background	No
	Adjusted signal timings		
Mainway & Sutton Drive	Signalization (OTM Warrants satisfied)	2035 Total	**Yes**
	Eastbound left-turn lane (25 m storage)		
	Westbound right-turn lane	Full Build-Out	**Yes**
	Southbound left-turn lane		
Corporate Drive & Sutton Drive	Signalization (Unwarranted)	Full Build-Out	**Yes**
Site Access A & Mainway	Eastbound left-turn lane (15 m storage)	2035 Total	**Yes**
Site Access B & Mainway	Eastbound left-turn lane	Full Build-Out	**Yes**
Norjohn Court/Lampman Avenue & Mainway	Signalization (OTM Warrants satisfied)	Base Year; All Horizons	No
Appleby Line & Mainway	Signal timing adjustments	Base Year; All Horizons	No

TABLE E.1: PROPOSED MITIGATION MEASURES (CONTINUED)

Intersection	Improvement	Horizon Year	Applicant Responsibility
Appleby Line & Corporate Drive	Signal timing adjustments	2035 Total	No
Burloak Drive & N Service Road	Double northbound left-turn lanes	2035 Background	No
	Adjusted signal timings		
Burloak Drive & QEW WB Off-Ramp	Separating the existing left-right turn lane to double left and right turn lanes	Base Year; All Horizons	No
	Signal timing adjustments		
Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	Signal timing adjustments	2035 Background	No
	Convert the existing eastbound through-lane to a shared eastbound through-left lane		
Appleby Line & North Service Road	Signal timing adjustments	Base Year; All Horizons	No
Appleby Line & QEW WB Off-Ramp	Signal timing adjustments	Base Year; All Horizons	No
	Double westbound right-turn lanes		
Appleby Line & QEW EB Off-Ramp	Signal timing adjustments	Base Year; All Horizons	No
Appleby Line & Harvester Road	Signal timing adjustments	Base Year; All Horizons	No
	Double southbound left-turn lane		
Appleby Line & Fairview Street	Signal timing adjustments	Base Year; All Horizons	No

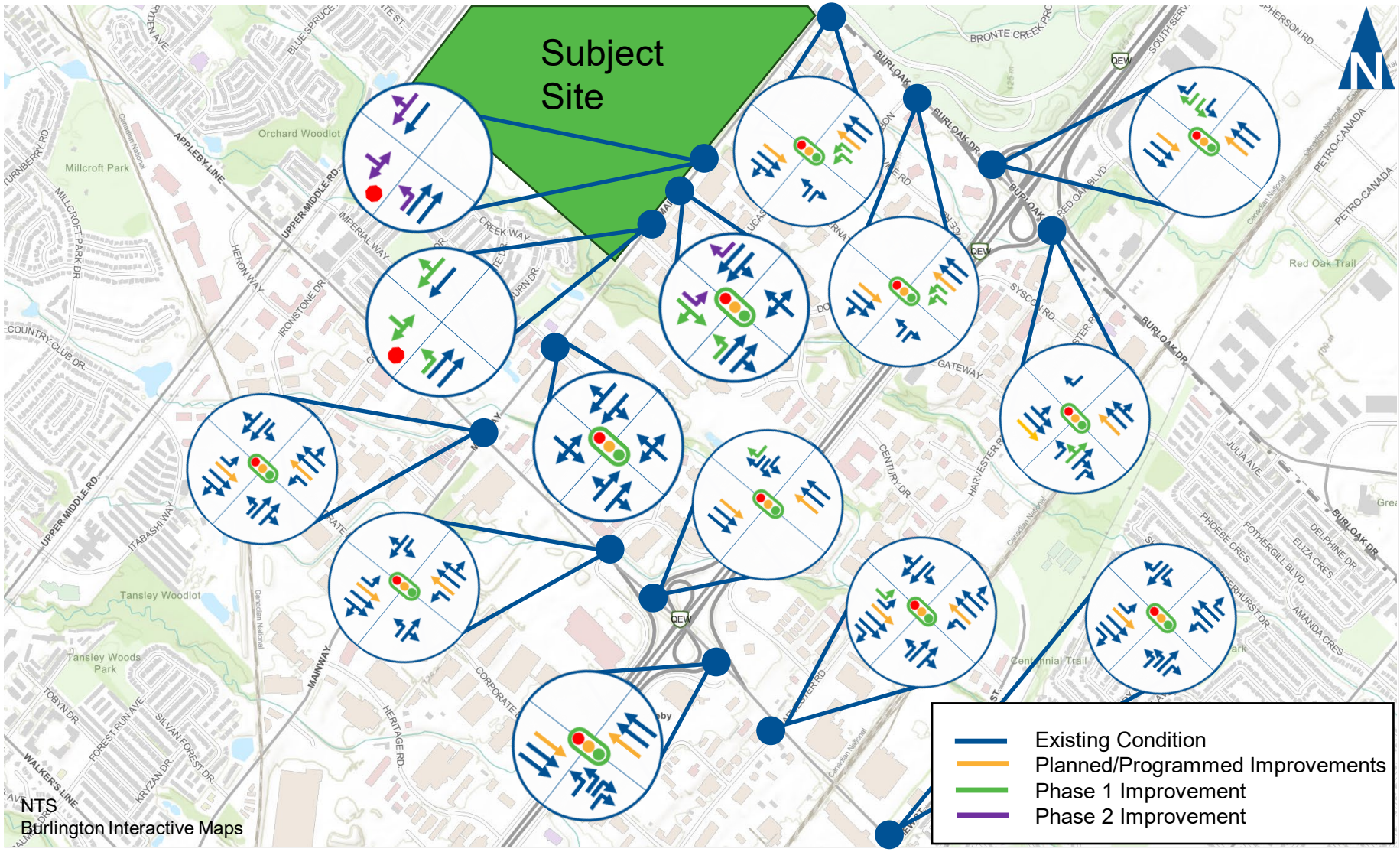


paradigm TRANSPORTATION SOLUTIONS LIMITED

Proposed Future Lane Configuration and Traffic Control -North of Corporate Drive

Bronte Creek Meadows, Burlington
230533

Figure E.1A



Proposed Future Lane Configuration and Traffic Control -South of Corporate Drive

Bronte Creek Meadows, Burlington
230533

Figure E.1B

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1 Introduction

1.1 Overview

Paradigm Transportation Solutions Limited (Paradigm) was retained to conduct this Transportation Impact Study (TIS) for the proposed Phase 1 development of the Bronke Creek subdivision. The site is generally located at the northwest corner of the Mainway and Burloak Drive intersection in the City of Burlington. **Figure 1.1** illustrates the site location and study area intersections assessed in the study.

The scope of the study includes:

- Assessment of the current traffic conditions within the study area for the weekday AM and PM peak hours and Saturday mid-day peak hour.
- Estimates of background traffic growth;
- Estimates of additional traffic generated by the subject site;
- Analyses of the impact of the future traffic on the surrounding road network;
- Recommendations necessary to mitigate this future traffic satisfactorily;
- A Multi-modal Level of Service (MMLOS) assessment;
- A corridor study to examine the traffic volumes along Appleby Line between Highway 407 and Dundas Street; and
- A transit assessment to identify potential transit routes within the subdivision.

Pre-study consultation was conducted with the City of Burlington, Halton Region, and the Ministry of Transportation Ontario (MTO). **Appendix A** contains the pre-study consultation material.

The study aims to assess current traffic and the additional traffic generated by the proposed Phase 1 of the development, analyze the traffic impact on the adjacent roadway network and provide the municipality and owner with any improvements required to mitigate the identified effects of the site-generated traffic.

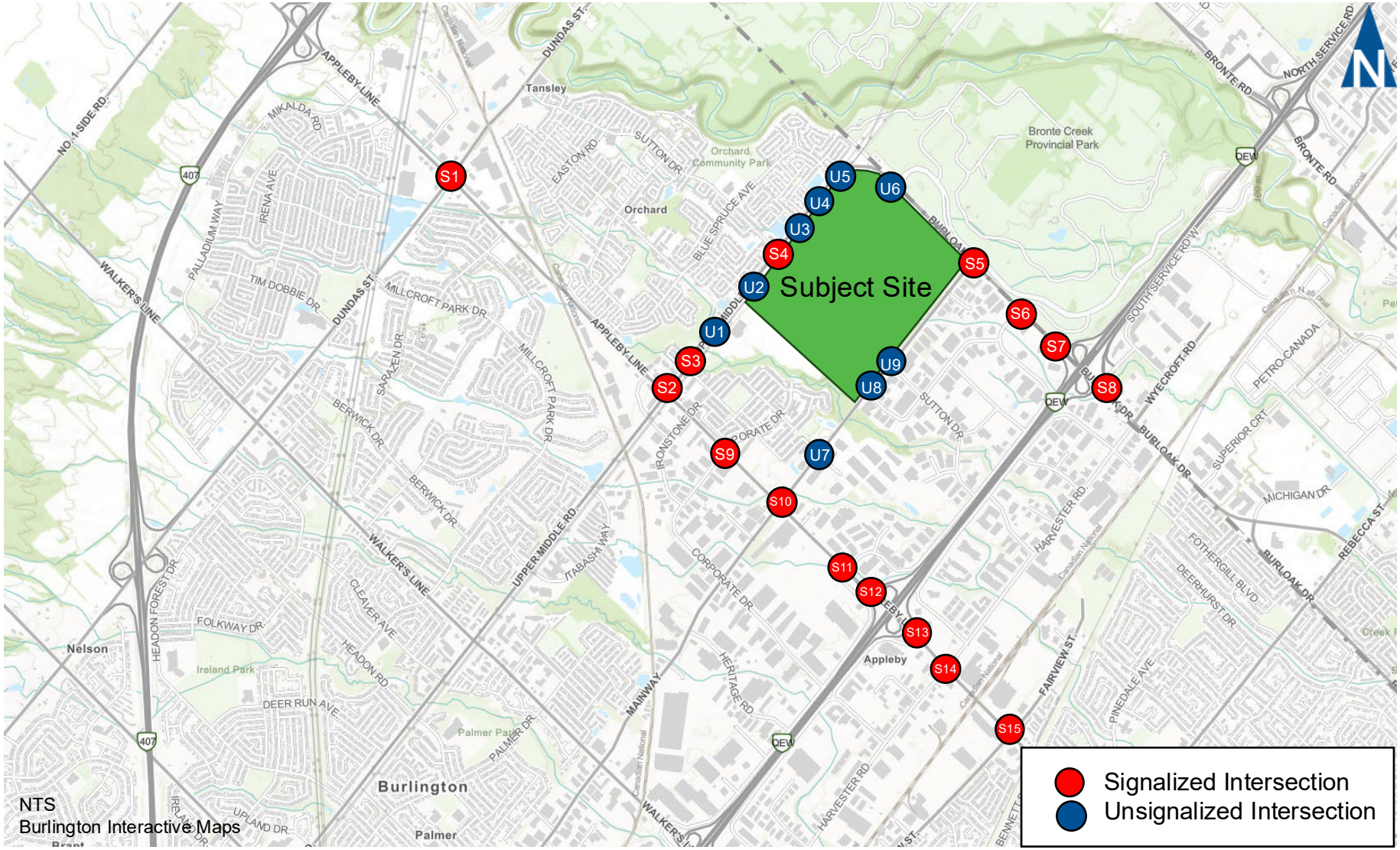
As the development application progresses, updates to the TIS may be required to reflect changes in the concept plan.

1.2 Study Area

This study examines the weekday AM, PM, and Saturday peak hours for the following study area intersections:

- Appleby Line Corridor
  - Appleby Line at Dundas Street (signalized)
  - Appleby Line at Upper Middle Road (signalized)
  - Appleby Line at Corporate Drive (signalized)
  - Appleby Line at Mainway (signalized)
  - Appleby Line at QEW WB Off-Ramp (signalized)
  - Appleby Line at QEW EB Off-Ramp (signalized)
  - Appleby Line at Fairview Street (signalized)
  - Appleby Line at Harvester Road (signalized)
- Upper Middle Road Corridor
  - Upper Middle Road at Corpus Christi Catholic Secondary School West Driveway (West School Driveway) (signalized)
  - Upper Middle Road at Corpus Christi Catholic Secondary School East Driveway (East School Driveway) (unsignalized)
  - Upper Middle Road at Quinte Street (unsignalized)
  - Upper Middle Road at Sutton Drive (signalized)
  - Upper Middle Road at Baker Drive (unsignalized)
  - Upper Middle Road at Deer Place (unsignalized)
  - Upper Middle Road at Blue Spruce Avenue (unsignalized)
- Burloak Drive Corridor
  - Burloak Drive at Bronte Creek Provincial Park (unsignalized)
  - Burloak Drive at Mainway (signalized)
  - Burloak Drive at North Service Road (signalized)
  - Burloak Drive at QEW WB Off-Ramp (signalized)
  - Burloak Drive at QEW EB Off-Ramp (signalized)
- Mainway Corridor
  - Mainway at Lampman Avenue/Norjohn Court at (unsignalized)

- New Subdivision Access Intersections
  - Mainway at Site Access A (unsignalized)
  - Mainway at Sutton Drive (unsignalized)
- Internal Subdivision Intersections
  - Blue Spruce Avenue at Corporate Drive (unsignalized)



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Site Location & Study Area

Bronte Creek Meadows, Burlington
230533

Figure 1.1

2 Existing Conditions

2.1 Road Network

The roadways of interest within the study area are generally described as follows:

Highway/Arterial Roads

- **Queen Elizabeth Way (QEW)** is an east-west provincial highway with a six-lane divided cross-section. The posted speed limit along this roadway is 100 km/h. The eastbound and westbound ramps to Appleby Road and Burloak Drive operate with traffic control signals.
- **Appleby Line** is a north-south major arterial roadway with a six-lane cross section north of Taywood Drive, a four-lane cross-section at the Upper Middle Road intersection, a five-lane cross-section south of Corporate Drive. It has a posted speed limit of 60 km/h. There are sidewalks on both sides of the road. On-street cycle lanes are on both sides of the road, north of Mainway.
- **Dundas Street** is an east-west major arterial[1] roadway with a four-lane cross-section and a posted speed limit of 60 km/h. Active transportation facilities include sidewalks on both sides of the road.
- **Fairview Street** is an east-west multi-purpose arterial roadway with a five-lane cross-section west of Appleby Line, and a four-lane cross-section to the east. The roadway has a posted speed limit of 60 km/h. Active transportation facility include sidewalks and on-street cycling lanes along both sides of the roadway.
- **Upper Middle Road** is an east-west major arterial roadway with a four-lane cross-section and a posted speed limit of 60 km/h. The school zone for Corpus Christi Catholic Secondary School West Driveway operates as a flashing 40 km/h zone during school bell times. Active transportation facilities include sidewalks and on-street cycling lanes on both sides of the road. East of Blue Spruce Avenue, Upper Middle Road curves north-south and becomes Burloak Drive.
- **Burloak Drive** is a north-south major arterial roadway with a four-lane cross-section. The road has a posted speed limit of 60 km/h. Active transportation facilities include sidewalks on the

[1] The City of Burlington Official Plan, Schedule O-1: Classification of Transportation Facilities Urban Area, November 2020

west side of the road. On-street cycling lanes are provided on both sides of the road.

Industrial Connectors

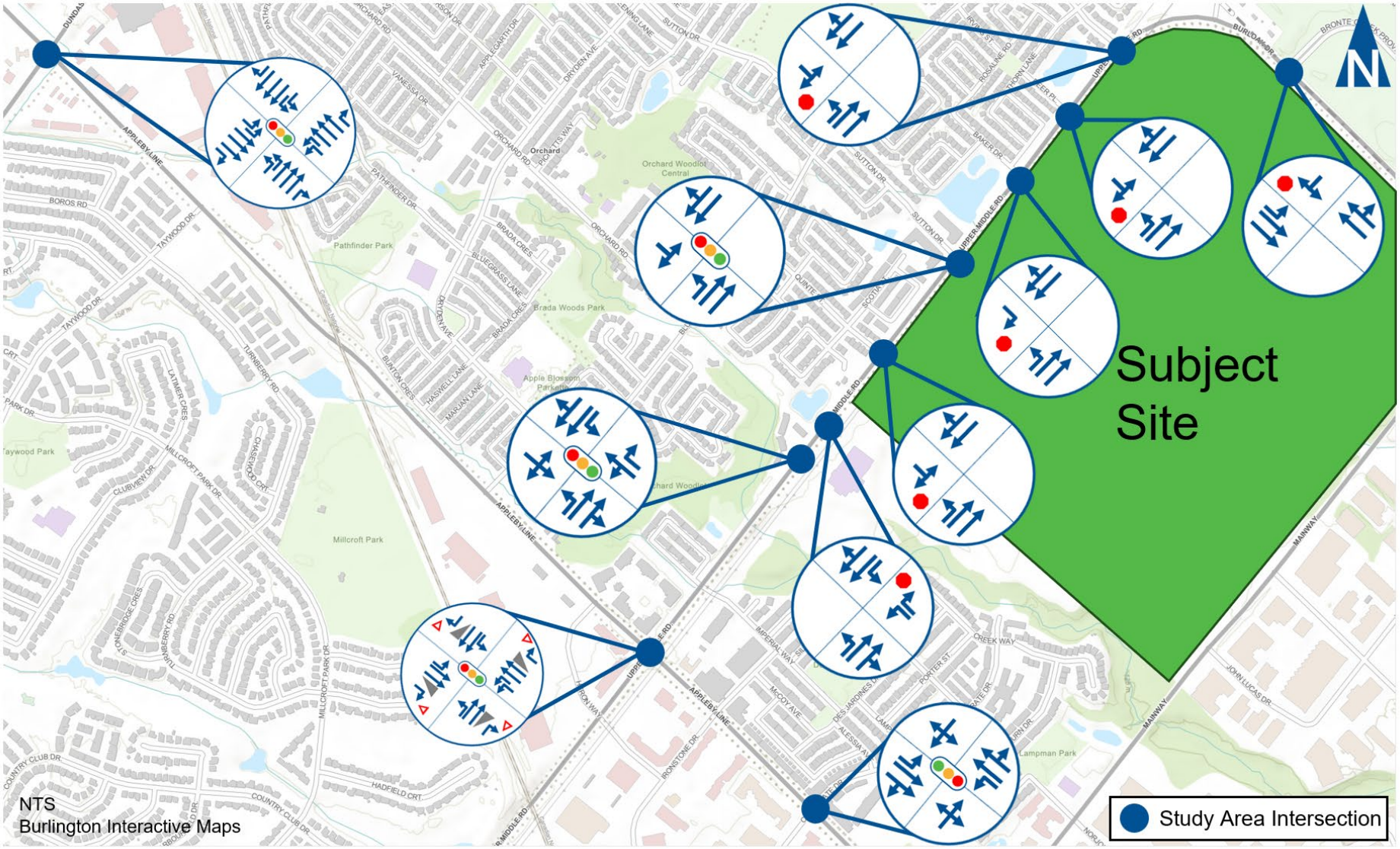
- **Harvester Road** is classified as an industrial connector roadway west of Appleby Line and a multi-purpose arterial to the east. The roadway has a four-lane cross-section with a posted speed limit of 60 km/h. Active transportation facilities include sidewalks on both sides of the road.
- **Mainway** is an east-west industrial connector roadway with a four-lane cross-section and a posted speed limit of 60 km/h. Active transportation facilities include sidewalks on the south side of the road between Lampman Avenue and Burloak Drive and on the both the north and south sides between Lampman Avenue and Appleby Line.
- **North Service Road** is an east-west industrial connector roadway with a two-lane cross-section and a posted speed limit of 60 km/h. Active transportation facilities include a sidewalk on the north side of the road.

Local/Neighbourhood Connectors

- **Corporate Drive** is a neighbourhood connector with a two-lane cross-section and regulatory speed limit of 40 km/h. Active transportation facilities include sidewalks on both sides of the road, east of Appleby Line. On-street cycling lanes are provided on both sides of the road, east of Appleby Line.
- **Baker Drive, Deer Place,** and **Blue Spruce Avenue are** north-south neighbourhood connector roadways with two-lane cross-sections and posted speed limits of 40 km/h. Active transportation facilities include a sidewalk on the west side of the road.
- **Lampman Avenue/Norjohn Court** is a north-south local roadway with a two-lane cross-section and a regulatory speed limit of 50 km/h south of Mainway, and a posted speed limit of 40 km/h to the north. Active transportation facilities include sidewalks on both sides of the road, north of Mainway.
- **Quinte Street** is a north-south neighbourhood connector roadway with a two-lane cross-section and a posted speed limit of 40 km/h. Active transportation facilities include sidewalks on both sides of the road.
- **Sutton Drive** is a north-south neighbourhood connector roadway with a two-lane cross-section and a posted speed limit

of 40 km/h. Active transportation facilities include sidewalks on the road's east and west sides. On-street cycling lanes are provided on both sides of the road.

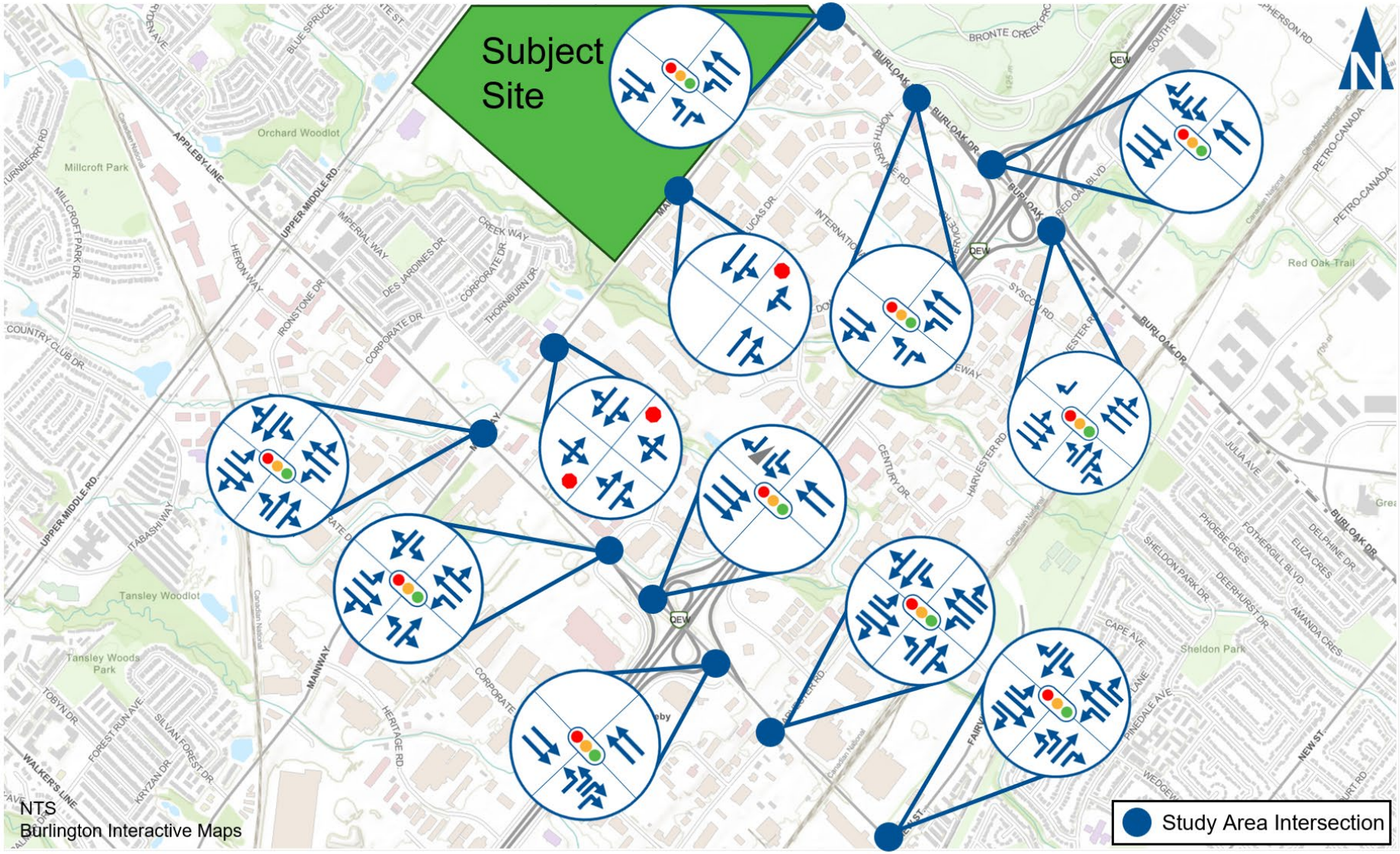
Figure 2.1 illustrates the existing lane configuration and traffic control at the study area intersections.



Existing Lane Configuration and Traffic Control -North of Corporate Drive

Bronte Creek Meadows, Burlington
230553

Figure 2.1A



Existing Lane Configuration and Traffic Control -South of Corporate Drive

Bronte Creek Meadows, Burlington
230553

Figure 2.1B

2.2 Pedestrian and Cycling Network

Pedestrian infrastructure within the study area includes sidewalks or multi-use paths parallel to the roadway. **Figure 2.2** illustrates the existing pedestrian infrastructure.

Cycling infrastructure within the study area typically consists of on-street and off-street facilities. On-street facilities include cycling lanes, signed cycling routes, and paved shoulders. Off-street facilities are in the form of multi-use or informal trails.

The study area's active transportation facilities include sidewalks on at least one side of the road along Appleby Line, Upper Middle Road, Quinte Street, Sutton Drive, Baker Drive, Deer Place, Blue Spruce Avenue, Burloak Drive, Corporate Drive, Mainway, Lampman Avenue/ Norjohn Court, and North Service Road.

On-street bike lanes are provided on both sides of the road along Appleby Line, Upper Middle Road, Burloak Drive, Corporate Drive, and Sutton Drive.

The City of Burlington Cycling Plan[2] indicates future improvements to the city cycling network. These improvements include protected bikeways along Mainway and North Service Road through the study area.

Figures 2.3 and **2.4** illustrate the existing and future cycling network within the study area.

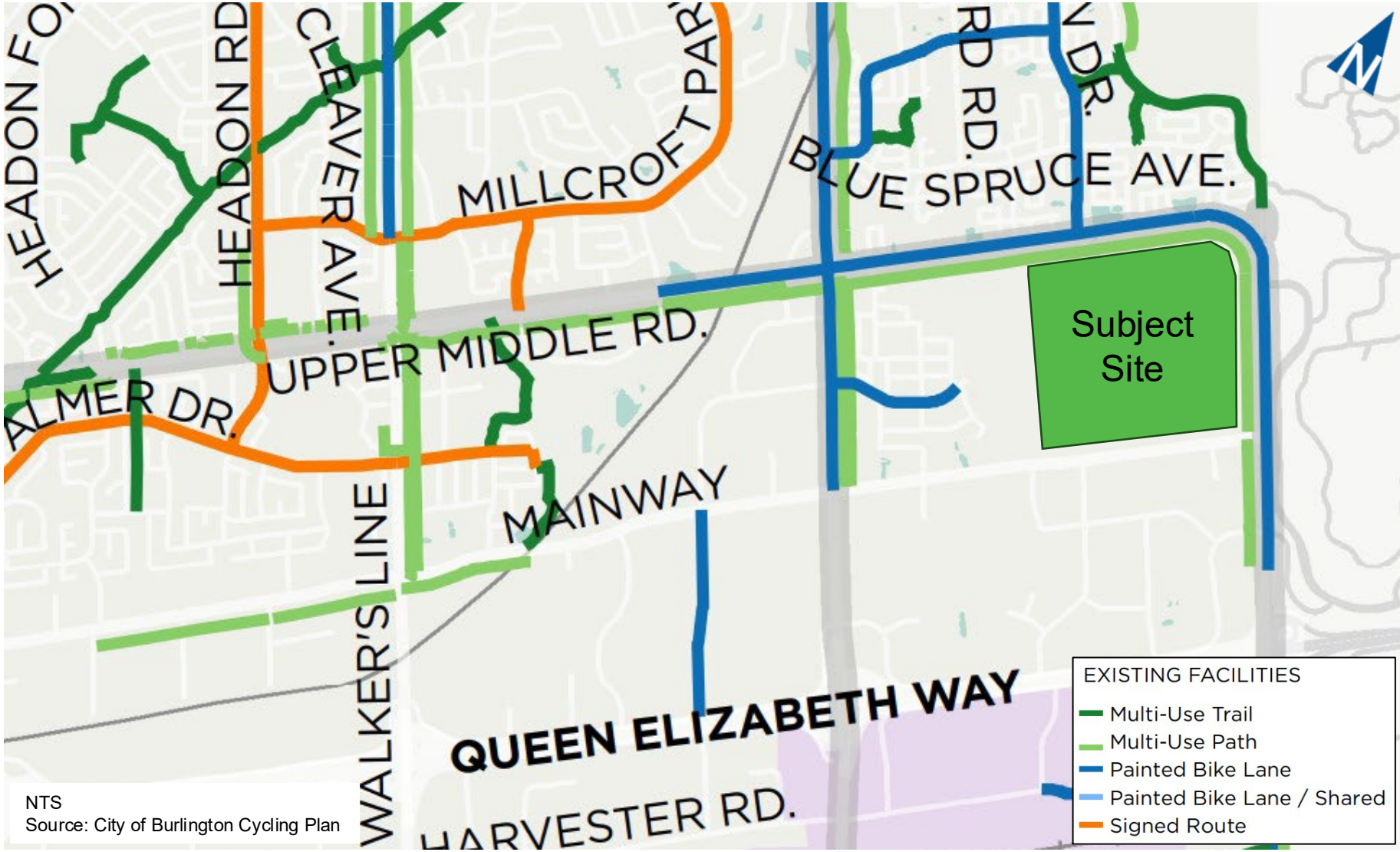
2 City of Burlington, Cycling Plan, (Burlington: City of Burlington).



Existing Pedestrian Infrastructure

Bronte Creek Meadows, Burlington
230553

Figure 2.2

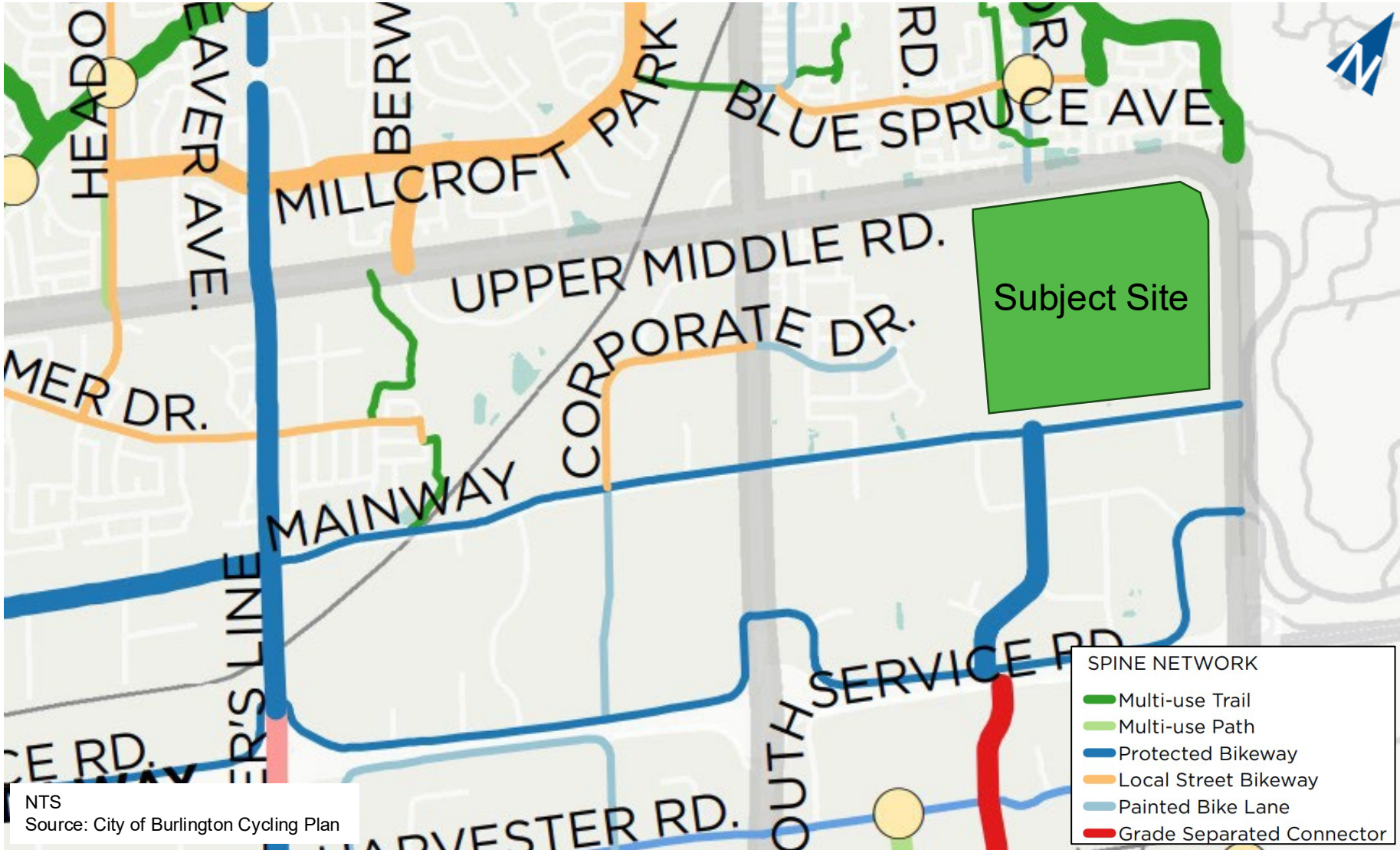


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Existing Trails and Bikeways

Bronte Creek Meadows, Burlington
230553

Figure 2.3



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Proposed Trails and Bikeways

Bronte Creek Meadows, Burlington
230553

Figure 2.4

2.3 Transit Service

2.3.1 Burlington Transit

Burlington Transit[3] is the public transit operator in the City of Burlington. **Figure 2.5** illustrates the existing transit network relative to the subject site's location. The following routes provides direct connections to the site:

- **Route 11 (Sutton-Alton)** provides service between the Appleby GO station and the GO 407 Carpool Station. Weekday service is provided from 5:05 AM to 10:45 PM with 15 to 30-minute headways. On Saturdays. service is provided from 7:05 AM to 10:10 PM, with 30-minute headways. On Sundays, service is provided from 8:05 AM to 8:10 PM with headways of 30 minutes.
- **Route 48 (Millcroft)** provides service between the Corpus Christi Secondary School and Haber Community Centre from Monday to Friday. A single bus is provided for the route during the AM and PM, with the AM service operating from 7:35 AM to 8:25 AM and the PM service from 2:30 PM to 3:15 PM.
- **Route 51 (Burlington Northeast – Night Service)** operates in a loop from the Burlington GO Station to the Dundas Street at Sutton Drive and back. Service is provided from Monday to Saturday from 10:55 PM to 1:30 AM with headways of 60 minutes.
- **Route 81 (Harvester/ North Service)** provides service between the Burlington GO Station and Appleby GO Station from Monday to Friday. Service begins at 5:30 AM to 7:10 PM with headways of 30 minutes.

The bus stops serving these routes are conveniently located near the site access intersections, making it easily accessible for development residents. Stops for routes 11 and 51 can be found along Sutton Drive, less than 135 m north of the Upper Middle Road, measured centreline to centreline. Stops serving this route are also provided at the intersection of Upper Middle Road and Quinte Street.

Route 48 is served at the intersection of the East Driveway of Corpus Christi Secondary School and Upper Middle Road, less than 165 m west of Quinte Street.

Route 81 is located approximately 70 m south of the intersection of Sutton Drive and Mainway, along Sutton Drive. Stops for this route are

[3] Burlington Transit Ride Guide | City of Burlington, Ontario, Canada

also provided at the intersection of Norjohn Court and Lampman Avenue.

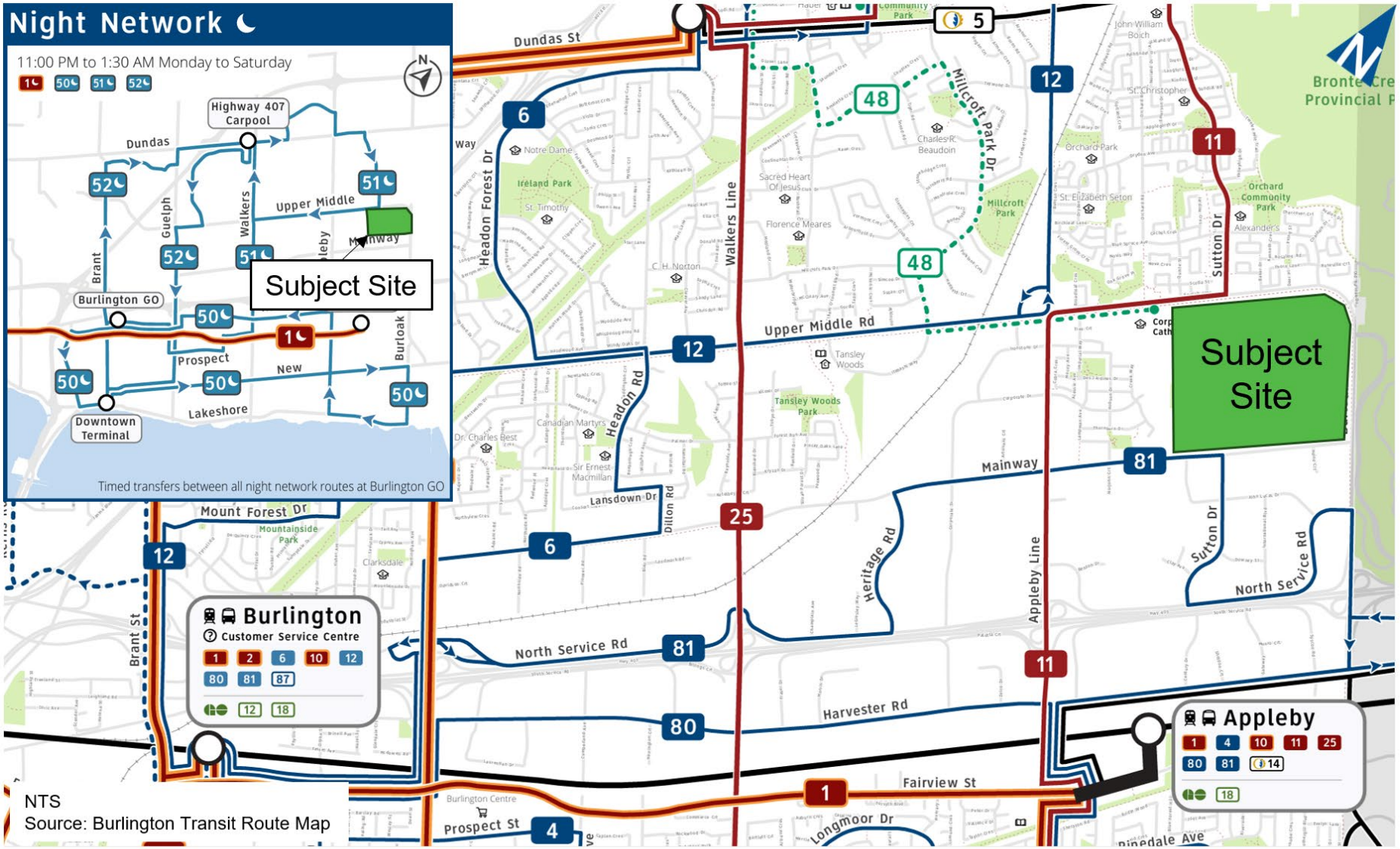
The City of Burlington aims to provide Frequent Transit Corridors, which are defined as "a priority component of the city-wide public transit network. The long-term frequent transit corridors consist of the following two components"[4]:

- "Frequent Transit Corridors have existing and/or planned land uses, and street design conditions to enable a frequent service;" and
- "Candidate Frequent Transit Corridors have some of the existing and/or planned land uses and street design conditions which may enable a frequent service in the future."

Appleby Line is identified as a Frequent Transit Corridor[5] within the study area.

The City of Burlington Integrated Mobility Plan[6] (IMP) and Halton Region TMP[7] identify that Burloak Drive and Upper Middle Road are to be widened between QEW and Appleby Line from four to six lanes and convert the curb lanes to high occupancy vehicle (HOV) or bus rapid transit (BRT) lanes after completion of the road widening.

[4] City of Burlington, Official Plan: Chapter 13 – Definitions, (Burlington: City of Burlington, 2020).
[5] City of Burlington, Official Plan: Schedule B-2 Growth Framework and Long Term Frequent Transit Corridors, (Burlington: City of Burlington, 2020).
[6] City of Burlington, *Integrated Mobility Plan*, September 2023
[7] Halton Region, *Appendix E - Transportation Master Plan to 2031,* October 2011



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Existing Transit Network

Bronte Creek Meadows, Burlington
230553

Figure 2.5

2.3.2 GO Transit

The subject site has convenient access to the Appleby, and the 407 Carpool GO stations.

Appleby GO station is located approximately 4 km southwest of the site, translating to a 5-minute drive or 25-minute bus ride using route 11 or 81.

The 407 Carpool GO station is located approximately 7 km northwest of the site, and it is an 11-minute drive or 30-minute bus ride using route 11. As this GO line provides bus and/or train service to major cities including Downtown Toronto, it is a significant transportation link for residents and commuters in the region.

2.4 Traffic Volumes

Pyramid Traffic collected Turning Movement Counts (TMC) data at the study area intersections in October 2023, September 2024, and November 2024. A growth rate of 1% has been applied to the 2023 count data to estimate a Year 2024 base year. **Appendix B** contains the existing count data.

Traffic volumes at the QEW Appleby and Burloak Drive free-flow on-ramps are shown on the volume diagrams for illustrative purposes only. These ramps are located between intersections, operate as free-flow lanes, and generally have minimal impact on the intersections. As such, these operation analysis for the on-ramps were not conducted. Volumes for these on-ramps were not explicitly counted and are estimated based on the difference in upstream and downstream traffic flows.

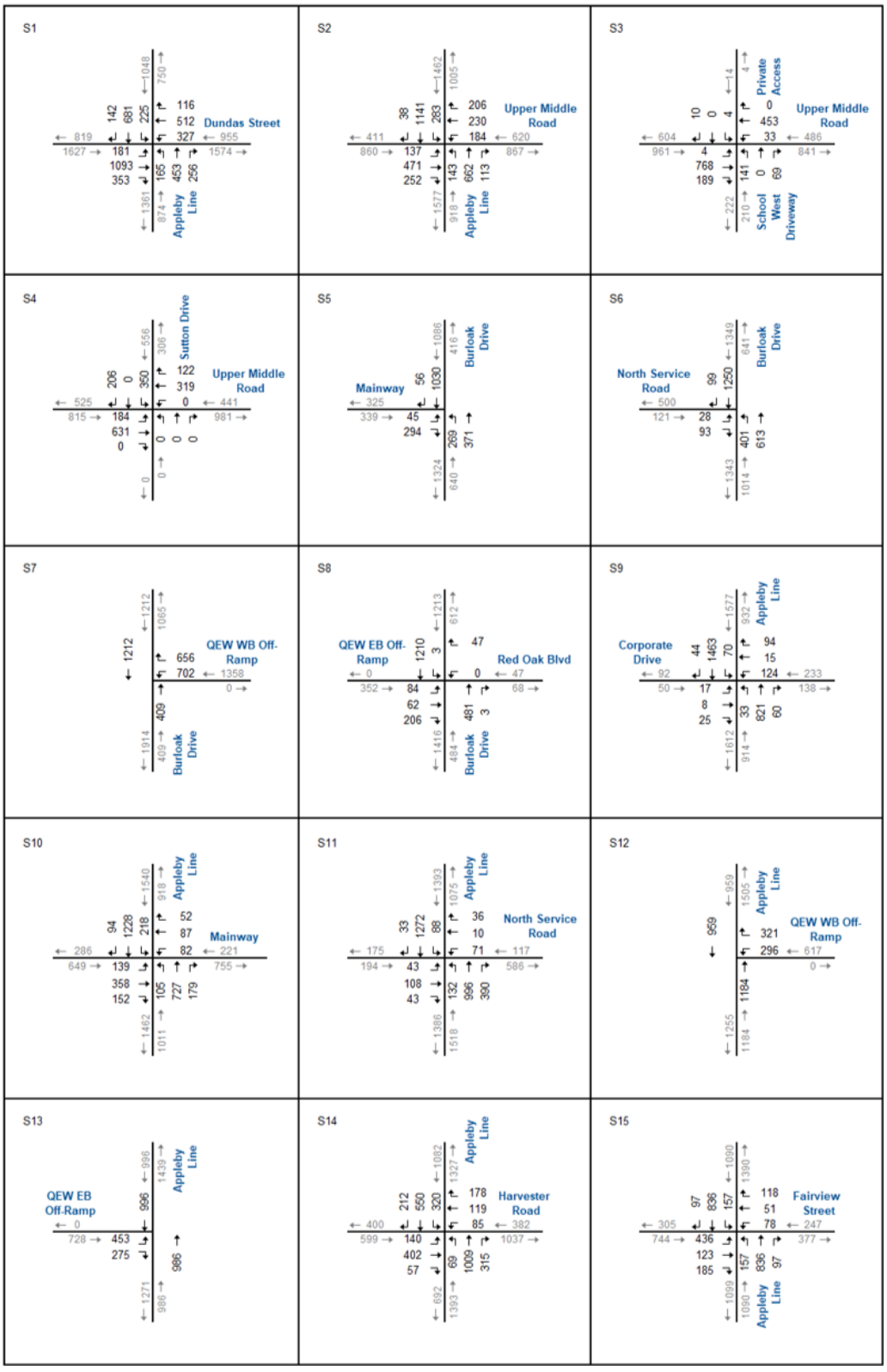
Volume balancing has not been implemented. It is noted that there may be volume differences between intersections due to existing driveways between intersections, MTO on-ramps, and slight variation in peak hours.

Figure 2.6 – 2.8 illustrates the existing peak-hour traffic volumes.

Appendix C contains a full network diagram showing the existing traffic volumes.

Section 5 summaries the traffic operations for the base year condition and future horizon years.

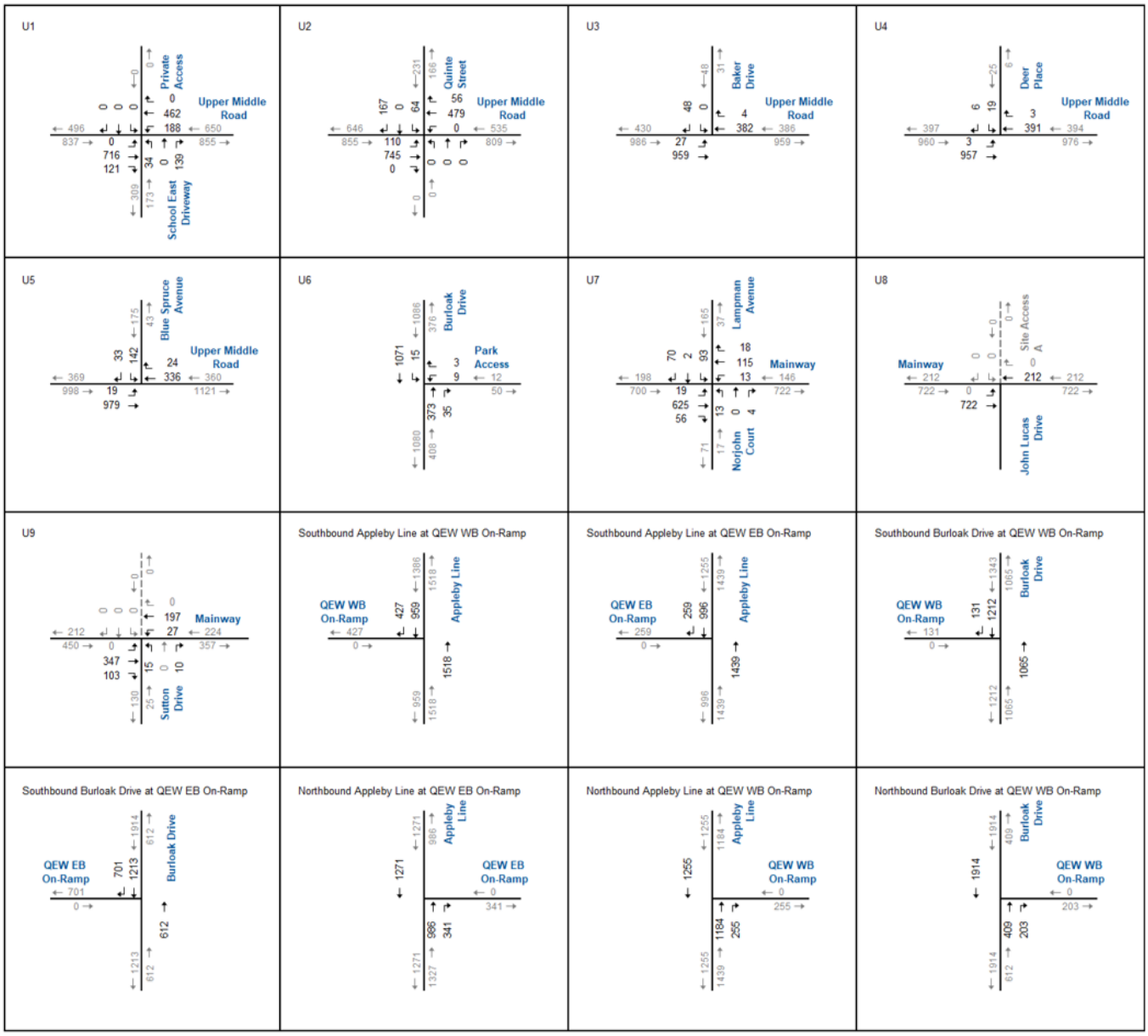




Existing Year Traffic Volumes Weekday AM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

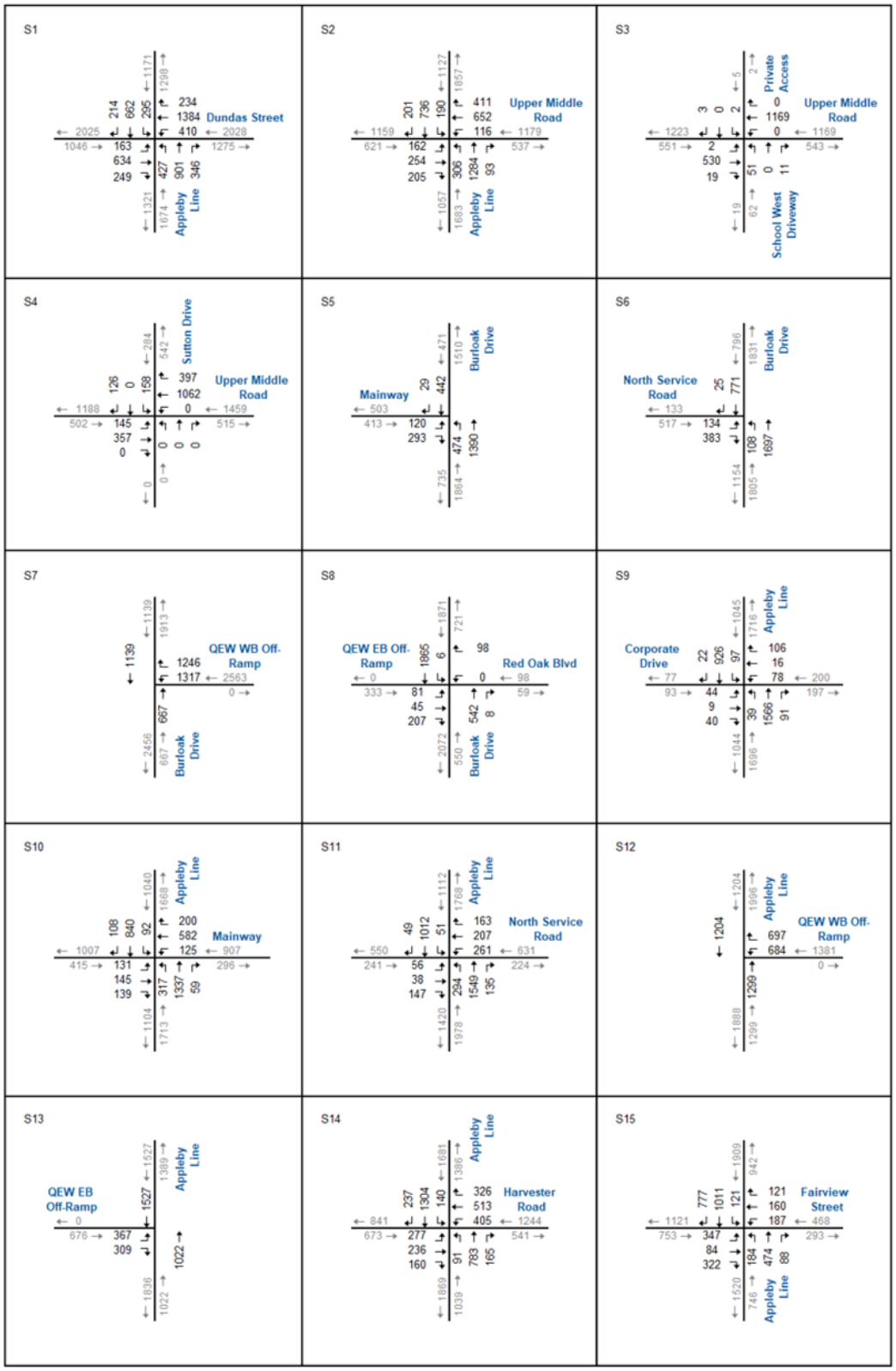
Figure 2.6A



Existing Year Traffic Volumes Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

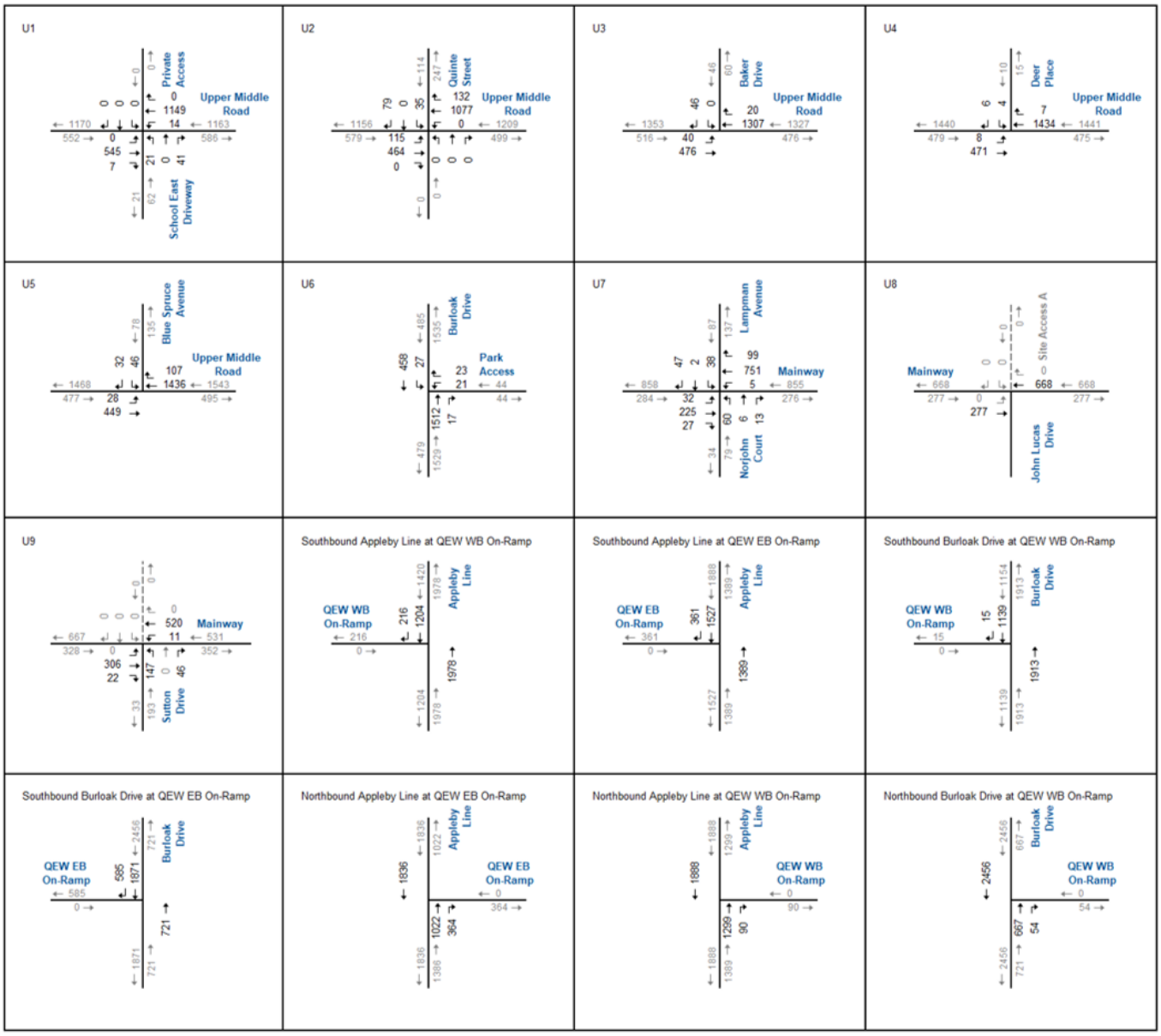
Figure 2.6B



Existing Year Traffic Volumes Weekday PM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

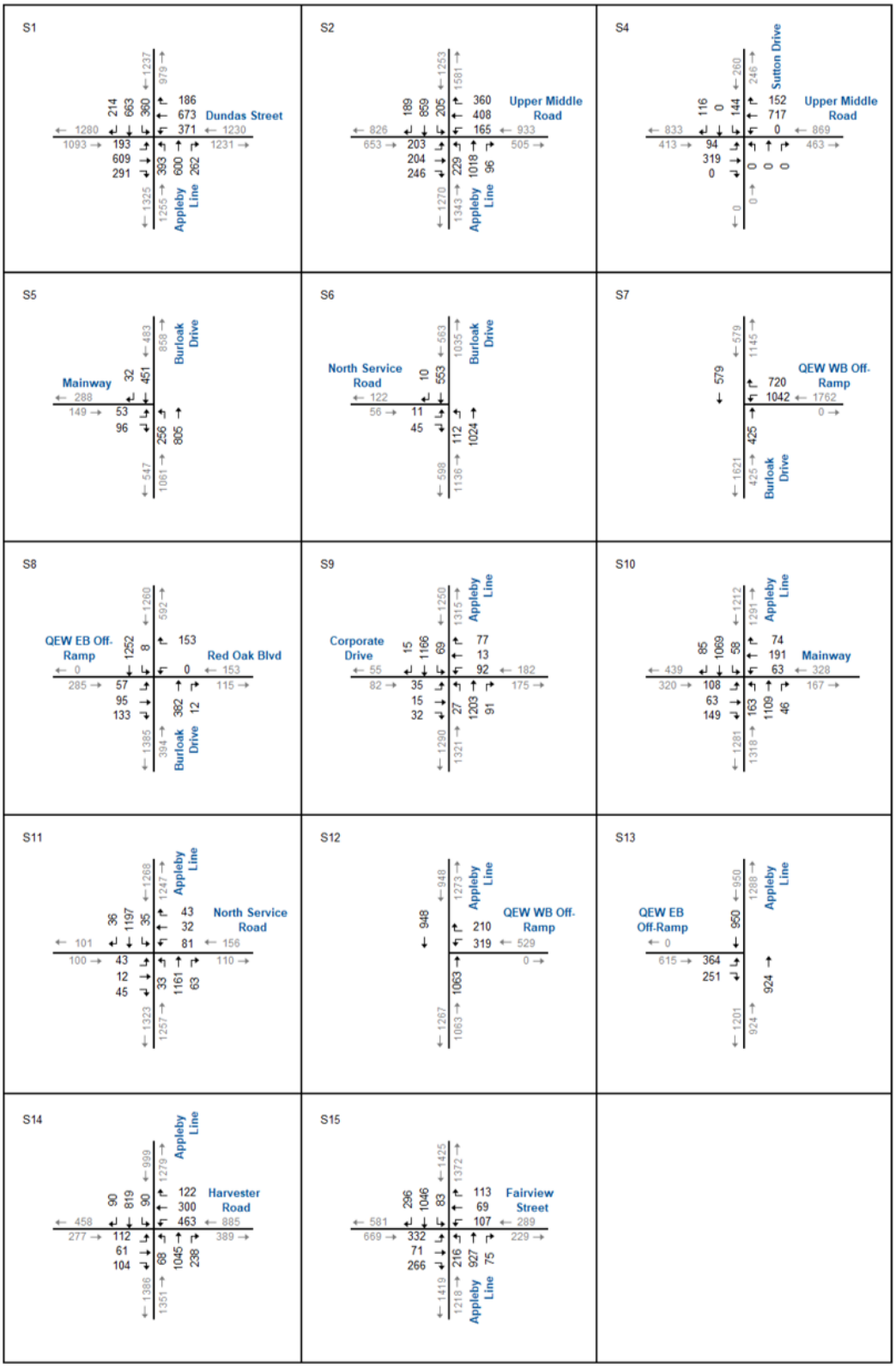
Figure 2.7A



Existing Year Traffic Volumes Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

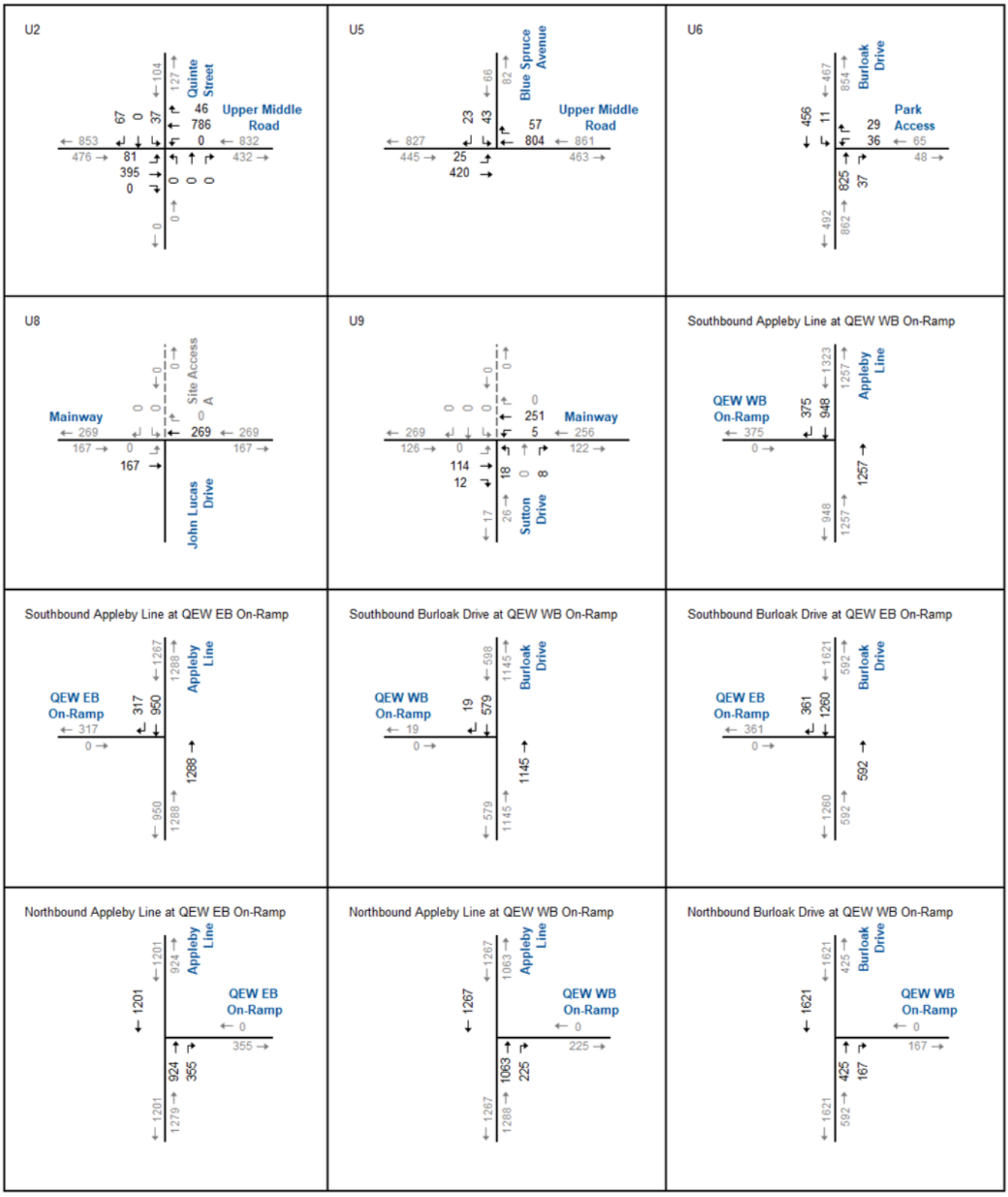
Figure 2.7B



Existing Year Traffic Volumes Saturday Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 2.8A



Existing Year Traffic Volumes Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 2.8B

3 Development Concept

3.1 Development Description

Bronte Creek Meadows is a mixed-use subdivision with employment, institutional, retail, and a variety of low, medium, and high-density residential along with parkland and open space. **Figure 3.1** illustrates the site concept plan.

The Phase 1 development plan includes approximately 697 residential units (comprised of single detached, townhomes, and apartment units), approximately 743 m^2 (8,000 sq. ft) of retail space, and 71,164 m^2 (766,000 sq. ft) of institutional space.

It is noted that the following analysis was completed with a previous site plan concept which included 788 residential units. As this previous site concept has a higher unit count, the trip generation can be considered as a conservative assessment.

The preliminary concept for the institutional space envisions a mix employment space comprised of healthcare services, institutional uses, and office uses.

These development statistics are approximate and assume a conservative estimate for the land use densities. Specific tenants are not known at this stage of the application. It should be noted that the plans are evolving, and more detailed statistics and analysis will be conducted at site plan/detailed design. Details for the full development plan is outlined in **Section 7** of the report.

Under the Phase 1 development, vehicle access is proposed via new municipal roads to Upper Middle Road, Appleby Line, and Mainway. The main new roadways through the site are described as follows:

- Sutton Drive is proposed as a north-south roadway through the site. The roadway will connect Sutton Drive at Upper Middle Road in the north with Sutton Drive at Mainway in the south.
- Corporate Drive is proposed as an east-west roadway through the site to Sutton Drive. The road will potentially connect to the existing Corporate Drive leading to Appleby Line. The crossing over Sheldon Creek is noted to be environmentally sensitive and the timing of its completion may be subject to environmental assessment. The City has requested that the analysis assume the connection will be in place.

In addition to the proposed municipal road network, a new road connection is proposed opposite to Quinte Street at Upper Middle Road and a private driveway to Mainway for the institution block located north of the Sutton Drive are proposed. The institutional private driveway (Site Access A) is assumed to be aligned with the John Lucas Drive across Mainway.

Other internal local roads have been consolidated for the purpose of this study. At this stage of the development, the internal local road network may change as the application progresses and detailed plans for each block are developed.

Build-out of the site is anticipated to occur in multiple phases with Phase 1 estimated to be completed by Year 2035; timing subject to market conditions.

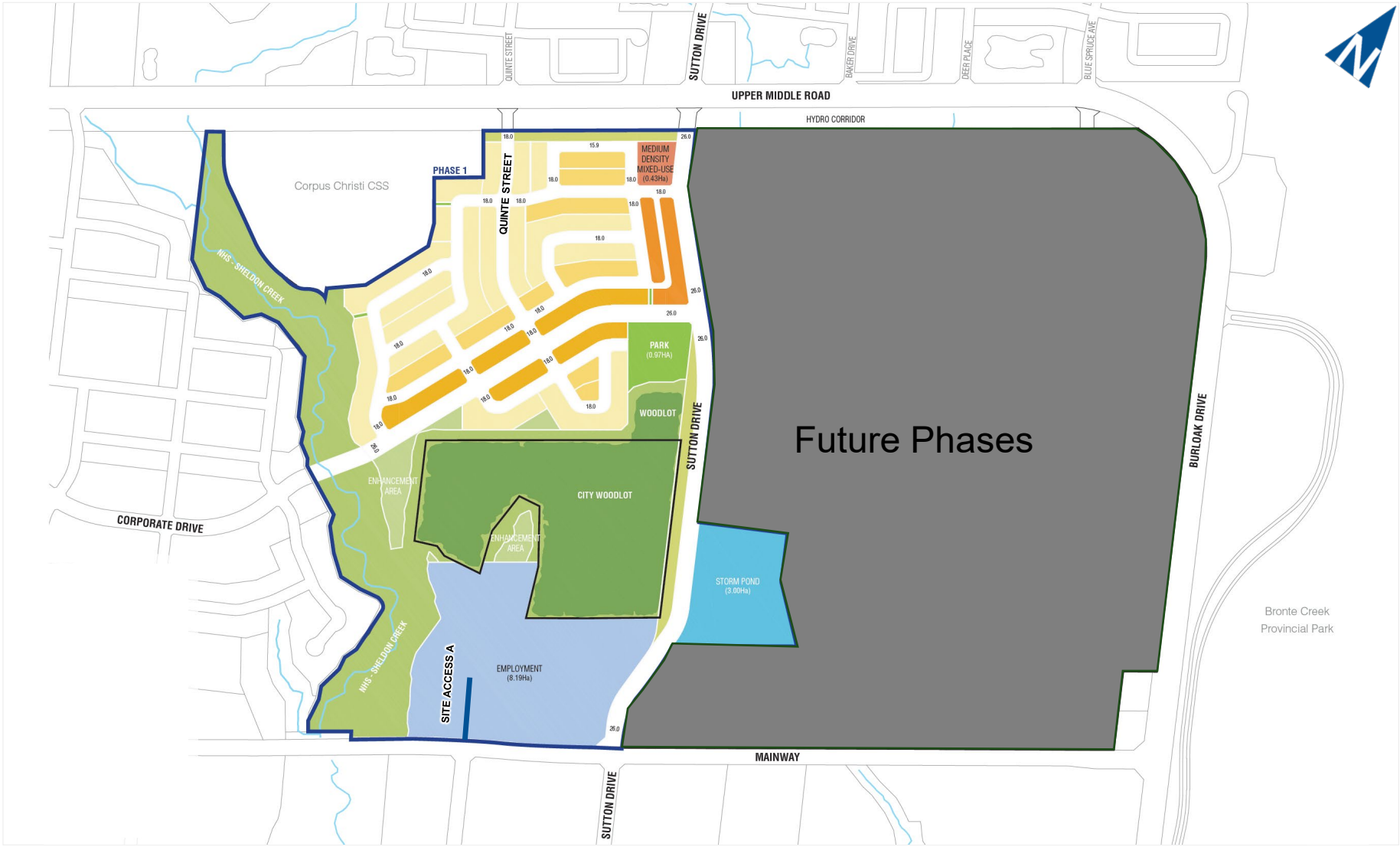
The full build-out of the lands is considered a longer-term condition. A scenario evaluating this is provided in Section 7.

Pedestrian facilities will be included on the internal roadways with sidewalks along at least one side of the road for the majority of the streets, excluding laneways. Dedicated cycling facilities will be considered along the neighbourhood collector streets such as Sutton Drive and Corporate Drive through consultation with the City.

On-street parking may be permitted on the internal streets, excluding smaller private streets and laneways subject to the City's on-street parking by-laws.

Traffic calming measures, such as speed humps, on-street parking, or flexible bollards may be considered along Sutton Drive and Corporate Drive as the primary through-roads in the subject site through consultation with the City.

The assumed internal network is subject to change, but development density targets and access points are likely to remain unchanged. This study focuses on Phase 1 of the subject site and examines long-term transportation network impacts and potential mitigation measures to support future background and site generated traffic. As the development application progresses, updates to the TIS may be required to reflect changes and phasing of the concept plan.



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Site Concept Plan

Bronte Creek Meadows, Burlington
230533

Figure 3.1

3.2 Trip Generation

The Institute of Transportation Engineers (ITE) Trip Generation manual[8] methods forecast site-generated trips. The following land use codes (LUCs) were referenced:

- LUC 210 (Single Family Detached Housing);
- LUC 220 (Multifamily Housing (Low-Rise));
- LUC 221 (Multifamily Housing (Mid-Rise)); and
- LUC 822 (Strip Retail Plaza).

The institutional space envisions a mix of healthcare services, institutional uses, and office uses. No tenant is known but preliminary concepts suggest a healthcare park akin to the McMaster Innovation Park, which is a prestige centre than incorporates research, business, and institutional space to combine academia and industry.

As the land use is a specialized mix of land uses, ITE does not have an LUC which encompasses the vision of the use. The site's trip generation for the institutional development is estimated using a first principles approach developed from trip data collected at the McMaster Innovation Park (MIP)[9] used to assess the long-term build-out of the Park, which consists of three buildings containing institutional, office, and commercial uses and a daily population of approximately 830 persons. Since the preliminary concepts for the institutional space draws inspiration from MIP, utilizing proxy site data from MIP provides a comparable estimate for trip generation.

It is noted that generally, additional local proxy sites would be surveyed to determine a trip rate. However, given the specialized land use and the unknown tenants, it is unlikely to find comparable sites that offer the same blend of healthcare, institutional, and office space.

Table 3.1 summarizes the estimated first principles average institutional trip generation rate per employee. Detailed institutional trip generation data can be found in **Appendix D.**

[8] Institute of Transportation Engineers, Trip Generation Manual, 11th ed., (Washington DC: ITE, 2021).
[9] McMaster Innovation Park – Trip and Parking Generation Estimate, Paradigm, November 2019.

TABLE 3.1: FIRST PRINCIPLES INSTITUTIONALTRIP GENERATION RATE

Peak Hour	Metric	Calculation
AM Peak Hour	Directional Distribution - Inbound	83%
	Directional Distribution - Outbound	17%
	Rate / Employee	**0.28**
PM Peak Hour	Directional Distribution - Inbound	21%
	Directional Distribution - Outbound	79%
	Rate / Employee	**0.25**
Saturday Peak Hour	Directional Distribution - Inbound	54%
	Directional Distribution - Outbound	46%
	Rate / Employee	**0.08**

To remain conservative, no modal split adjustments have been applied to the trip generation estimate to account for active transportation or transit-oriented trips.

3.2.1 Internal Site Capture

The ITE Trip Generation Handbook describes a multi-use development as a single project that consists of two or more ITE land use classifications in which trips can be made between land uses without using the off-site roadway system. Sharing trips between compatible land uses is an internal capture without travelling off-site.

Given the mix of land uses in the subject site, trips from compatible land uses will stay within the internal network and will not impact the existing external network. As the focus of this study is the impacts to the external network, trips between internal land uses are not assigned to the network and are treated as “internal trips”.

The ITE Trip Generation Handbook has been utilized to account for the development's internal trips. By way of example, some portion of the traffic destined to and from the retail uses located within the site will likely originate from the surrounding residential developments, requiring only an internal network vehicle trip or an active transportation trip (for example, walking or cycling). The detailed calculations are provided in **Appendix E**.

ITE data suggests an internal capture rate of between 4% and 22% for the Weekday AM/PM and Saturday peak hours.

3.2.2 Net Trip Generation Estimates

Table 3.2 summarizes the forecast site-generated trips. As noted earlier, these estimates include the standardized ITE rates with internal credits. The site's Phase 1 trip generation is estimated to be approximately 934 new vehicle trips during the weekday AM peak hour, 960 new vehicle trips during the weekday PM peak hour, and 631 new vehicle trips during the Saturday peak hour.

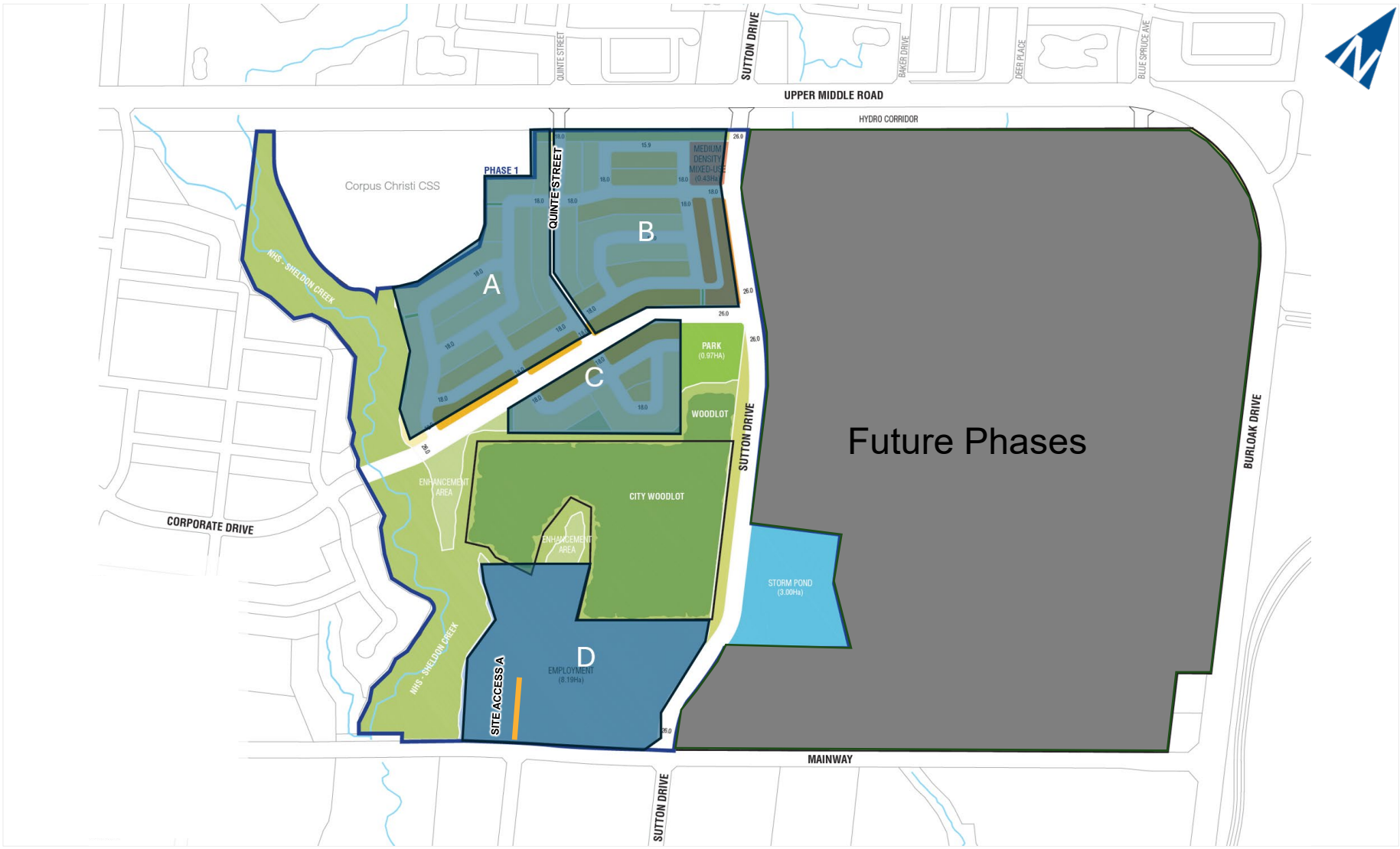
Figure 3.2 illustrates the Phase 1 site concept plan with each development block into a Traffic Analysis Zone (TAZ). **Table 3.3** summarizes the forecast site-generated trips generated by the TAZ into the total volumes per each land use code.

TABLE 3.2: ESTIMATED TRIP GENERATION

ITE Land Use Code / Number of Units	Trips	AM Peak Hour				PM Peak Hour				Sat Peak Hour			
		Rate	In	Out	Sum	Rate	In	Out	Sum	Rate	In	Out	Sum
210 - Single Family Detached Housing - 191 Units	Total	--	36	98	**134**	--	108	67	**175**	--	97	86	**183**
	Internal	12%	3	13	**16**	9%	12	3	**15**	4%	4	3	**7**
	New	**88%**	**33**	**85**	**118**	**91%**	**96**	**64**	**160**	**96%**	**93**	**83**	**176**
220 - Multifamily Housing (Low-Rise) - 337 Units	Total	--	31	100	**131**	--	105	64	**169**	--	63	102	**165**
	Internal	21%	5	23	**28**	16%	21	6	**27**	7%	6	5	**11**
	New	**79%**	**26**	**77**	**103**	**84%**	**84**	**58**	**142**	**93%**	**57**	**97**	**154**
221 - Multifamily Housing (Mid-Rise) - 260 Units	Total	--	23	78	**101**	--	62	35	**97**	--	48	46	**94**
	Internal	21%	4	17	**21**	22%	16	5	**21**	10%	5	4	**9**
	New	**79%**	**19**	**61**	**80**	**78%**	**46**	**30**	**76**	**90%**	**43**	**42**	**85**
Institutional - 2,382 Employees	Total	--	554	113	**667**	--	125	471	**596**	--	103	87	**190**
	Internal	9%	50	10	**60**	9%	11	42	**54**	9%	9	8	**17**
	New	**91%**	**504**	**103**	**607**	**91%**	**114**	**429**	**542**	**91%**	**94**	**79**	**173**
822 - Strip Retail Plaza (<40k) - 8,000 sq.ft	Total	--	17	14	**31**	--	25	25	**50**	--	27	26	**53**
	Internal	16%	3	2	**5**	20%	3	7	**10**	19%	3	7	**10**
	New	**84%**	**14**	**12**	**26**	**80%**	**22**	**18**	**40**	**81%**	**24**	**19**	**43**
Total	**Total**	--	**661**	**403**	**1064**	--	**425**	**662**	**1087**	--	**338**	**347**	**685**
	Internal	12%	**65**	**65**	**130**	12%	**63**	**63**	**127**	8%	**27**	**27**	**54**
	New	**88%**	**596**	**338**	**934**	**88%**	**362**	**599**	**960**	**92%**	**311**	**320**	**631**

Equations

LUC 210 AM T = 0.67(X) + 5.59 | PM Ln(T) = 0.92 Ln(X) + 0.33 | SAT T = 0.90(X) + 10.97
LUC 220 AM T = 0.35(X) + 12.93 | PM T = 0.48(X) + 7.35 | SAT Avg Rate 0.49
LUC 221 AM T = 0.42(X) - 7.77 | PM T = 0.36(X) + 3.07 | SAT Avg Rate 0.36
Institutional Avg Rate AM = 0.28 | PM = 0.25
LUC 822 AM Avg Rate 3.93 | PM Avg Rate 6.29 | Avg Rate SAT = 6.63



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Site Development Traffic Analysis Zones

Bronte Creek Meadows, Burlington
230533

Figure 3.2

TABLE 3.3:ESTIMATED TRIP GENERATION BY TAZ

TAZ	LUC	Units/GFA/ Employees		AM Peak Hour			PM Peak Hour			Sat Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
A	210 - Single Family Detached Housing	107	units	19	48	**67**	54	36	**90**	52	46	**98**
	220 - Multifamily Housing (Low-Rise)	83	units	6	19	**25**	21	14	**35**	14	24	**38**
B	210 - Single Family Detached Housing	54	units	9	24	**33**	27	18	**45**	26	24	**50**
	220 - Multifamily Housing (Low-Rise)	201	units	16	46	**62**	50	35	**85**	34	58	**92**
	221 - Multifamily Housing (Mid-Rise)	160	units	12	38	**50**	28	18	**46**	26	26	**52**
	822 - Strip Retail Plaza (<40k)	8000	sq.ft.	14	12	**26**	22	18	**40**	24	19	**43**
C	210 - Single Family Detached Housing	30	units	5	13	**18**	15	10	**25**	15	13	**28**
	220 - Multifamily Housing (Low-Rise)	53	units	4	12	**16**	13	9	**22**	9	15	**24**
D	221 - Multifamily Housing (Mid-Rise)	100	units	7	23	**30**	18	12	**30**	17	16	**33**
	Institutional	2382	employees	504	103	**607**	114	429	**542**	94	79	**173**
Total New Generation				**596**	**338**	**934**	**362**	**599**	**960**	**311**	**320**	**631**

3.2.3 Appleby Major Transit Station Areas (MTSA)

The City of Burlington conducted a Transportation Assessment[10] to identify the existing and planned multi-modal transportation conditions in and around Burlington's three Major Transit Station Areas (MTSA). The study includes forecasts for population, number of jobs, person trips and planned modal splits for the Burlington MTSAs.

Appleby MTSA is forecast to have approximately 18,000 jobs and 7,000 residential units. Located within 5 km of the subject site, the Appleby MTSA is expected to have a significant draw of trips to and from the subject site.

The Appleby MTSA is centralized around the Appleby Line intersections with Fairview Street and Harvester Road and contains the Appleby GO Station. The Appleby MTSA traffic zones from the City's study are illustrated in **Appendix F**.

Based on the City's study, the Appleby MTSA is forecast to generate approximately 10,240 weekday AM peak hour auto trips and approximately 14,090 weekday PM peak hour auto trips. No Saturday peak hour forecasts were provided.

It should be noted that the trip generation estimates for the Appleby MTSA do not account for trips staying within the Appleby MTSA.

Note the MTSA study assumes a 55% auto split while the site-generated trips do not apply modal split adjustments. As such, the site-generated auto trips may be considered conservative (err on the high side) of trips generated.

Considering the MTSA total trip generation, totals trips generated by the subject site, and trips spread across the network, a reasonable amount of trips between the MTSA and subject site has been estimated based on professional judgment.

By assessing the distance from the site to the MTSA and the forecasted amount of auto trips generated by each location, engineering judgement was used to estimate an amount of trips that may travel between the two locations. Consideration was given based on the site's distribution to the Highway and other gateways into the network to not overly weight trips to the MTSA but to give some estimate on how the Appleby MTSA may influence traffic patterns within the study area.

[10] Dillon Consulting, Major Transit Station Areas – Transportation Assessment, September 2023

Approximately 12% or 500 vehicles of the site's total Full Build-Out auto trip generation (outlined in Section 7.2) is estimated to be attracted to the Appleby MTSA. The 500 site trips are estimated to be about 2-8% of total auto trips generated by the Appleby MTSA.

Based on the distribution of population around the Appleby MTSA and the potential for transit to serve the subject site, it is expected that the majority of Appleby MTSA trips will be coming from residential subdivisions located further away from the MTSA or areas with less convenient transit connections.

The estimated 12% of the subject site trips going to/from the MTSA is a reasonable proportion comparable to the number of site-generated trips estimated to be staying within the subject site.

Table 3.4 outlines the estimated auto trips for the Appleby MTSA. Auto trips from the site to the Appleby MTSA are assumed to primarily use Appleby Line. Site trips from TAZs along Burloak Drive going to Appleby MTSA traffic zones along Harvester Road will likely travel south on Burloak Drive and across Harvester Road to avoid additional left-turns. A detailed breakdown of the site-generated auto trip distribution can be found in **Appendix F.**

TABLE 3.4 APPLEBY MTSA AUTO TRIP GENERATION

Auto Trips	Weekday AM Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
	In	Out	In	Out	In	Out
Total Appleby MTSA Trips	7,437	2,802	4,955	9,129	4,955	9,129
Site Trips to/from Appleby MTSA	310	220	220	250	250	200
Site Trips % of Appleby MTSA Trips	4%	8%	4%	3%	5%	2%

* No Saturday peak hour MTSA forecasts were provided. Saturday MTSA trips based on PM peak hour trips

A Trip Distribution Letter[11] was circulated to the City prior to this TIS for review of the trip distribution and MTSA assignment. The Trip Distribution Letter is provided in **Appendix F**.

[11] Paradigm Transportation Solutions Limited, Bronte Creek Meadows Transportation Impact Study Trip Distribution and Assignment Memo, September 2024.

3.2.4 Trip Distribution

The estimated distribution was developed using the Transportation Tomorrow Survey[12] (TTS) data for the zones containing and surrounding the subject site (4078, 4079, 4080, 4081, 4190). **Appendix G** contains the TTS data. **Table 3.5** summarizes the estimated trip distribution. Due to the absence of weekend TTS data for the distribution estimation, the weekday PM peak hour trip distribution is assumed for the Saturday peak hour.

Figures 3.3 – 3.6 illustrate the net site-generated traffic estimates for the external and internal road networks. The internal local street network has been simplified for this analysis, and multiple parcel accesses have been consolidated. This provides a conservative estimate of delay at the internal local streets as traffic in the full internal network will be spread across multiple local roads.

Appendix H contains a full network diagram showing the site generated traffic volumes.

Vehicle trips generated by the subject site are distributed across the existing road and proposed road network. Vehicle trips are expected to be attracted to Provincial Highway Network (that is, QEW), areas within the city (for example, the Appleby Line MTSA) and to areas outside the Region via the existing Regional Road network (for example, Town of Milton or the north Oakville or Waterdown areas).

A significant portion of trips to/from the west are assumed to use Mainway and Upper Middle Road based on the roadway design and classification. Local trips are assumed to utilize Mainway as a large portion of the site's institutional and employment land use are centralized along Mainway, a four-lane industrial connector road. The remaining east/west local trips are expected to utilize Upper Middle Road or Dundas Street. Dundas Street is expected to be used less than Upper Middle Road and Mainway as traffic volumes disburse further away from the subject site.

The arterial road network of Appleby Line and Burloak Drive will distribute northbound and southbound trips, and all trips attracted to the provincial highway network. Most trips using the provincial highway network are assumed to use the Burloak Drive interchange as it provides the most direct connection to the site. Local delays on the provincial highway network may push drivers towards other interchanges and the wider arterial network in an effort to avoid actual

[12] Transportation Tomorrow Survey 2016, University of Toronto Data Management Group.

or perceived delays based on day-to-day operations along the highway.

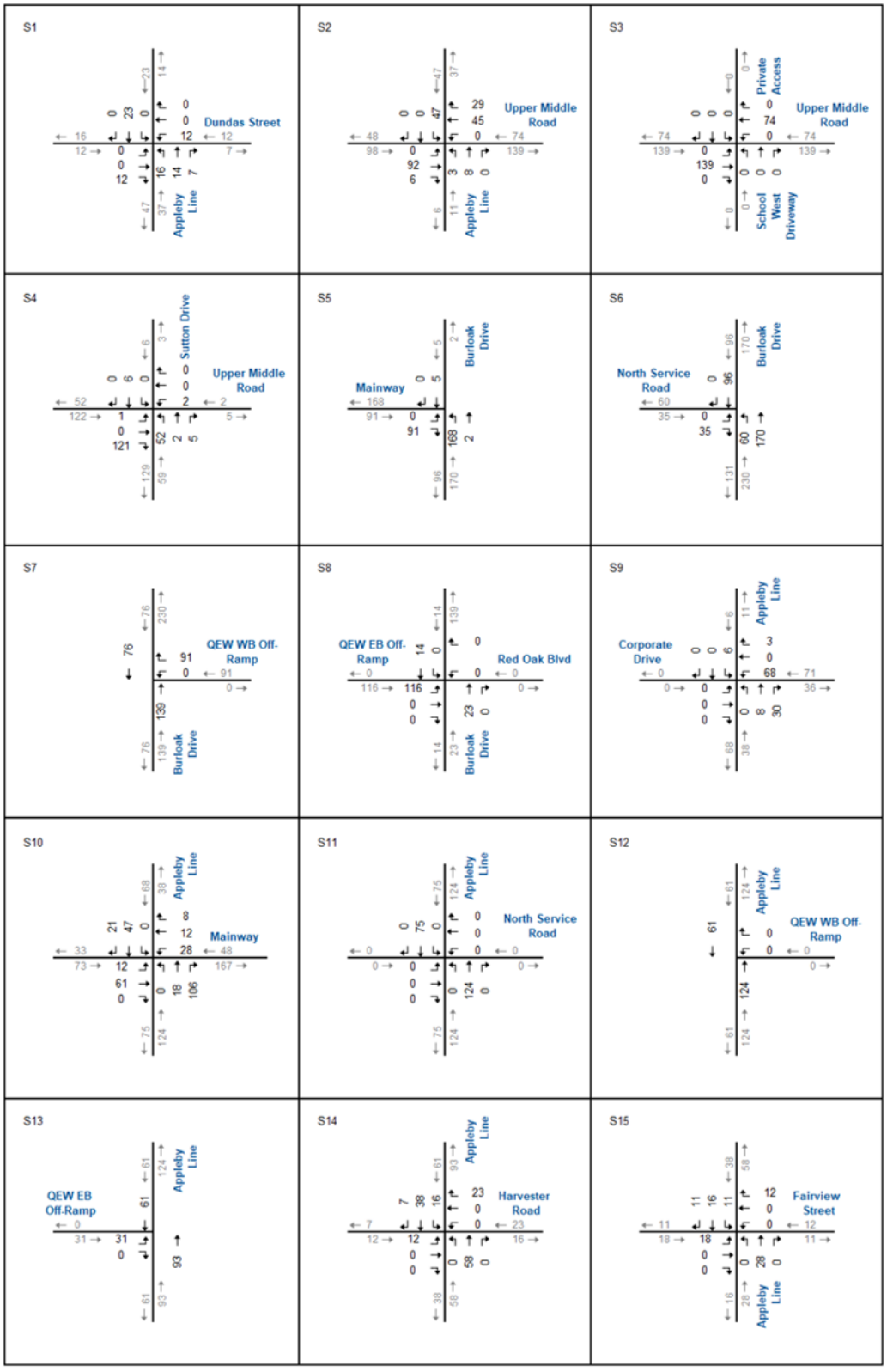
Site generated trips are assigned to the network based on the considerations noted above.

Trip assignment starts with an “all or nothing” methodology meaning that all trips from an origin/destination will follow the fastest route (under uncongested conditions). This provides a conservative assessment of the road network operations. Based on input from the City and Region, alternative routing to avoid congestion has been considered. As the network becomes more congested, alternate routes may become faster and vehicles may divert to save time. While the majority of vehicles are assumed to take the “all or nothing” route, it is assumed that a portion of trips will divert to alternative routes to save time.

The new connection to Corporate Drive over Sheldon Creek is not expected to be used by a large amount of site traffic. With the proposed layout of the site, the majority of the parcels have more convenient access to higher-order roads (Upper Middle Road, Burloak Drive, and Mainway). Within the site, there are approximately 100-150 residential units along Corporate Drive, west of Sutton Road, where travelling across the new connection may be a shorter distance than using Mainway or Upper Middle Road. However, Corporate Drive is classified as a Neighbourhood Connector with a slower speed limit and multiple all-way stop controlled intersections. The Corporate Drive connection may serve as an alternative route to congested intersections for a subset of site trips but is not expected to serve a primary route for the large amount of site traffic.

TABLE 3.5: ESTIMATED TRIP DISTRIBUTION

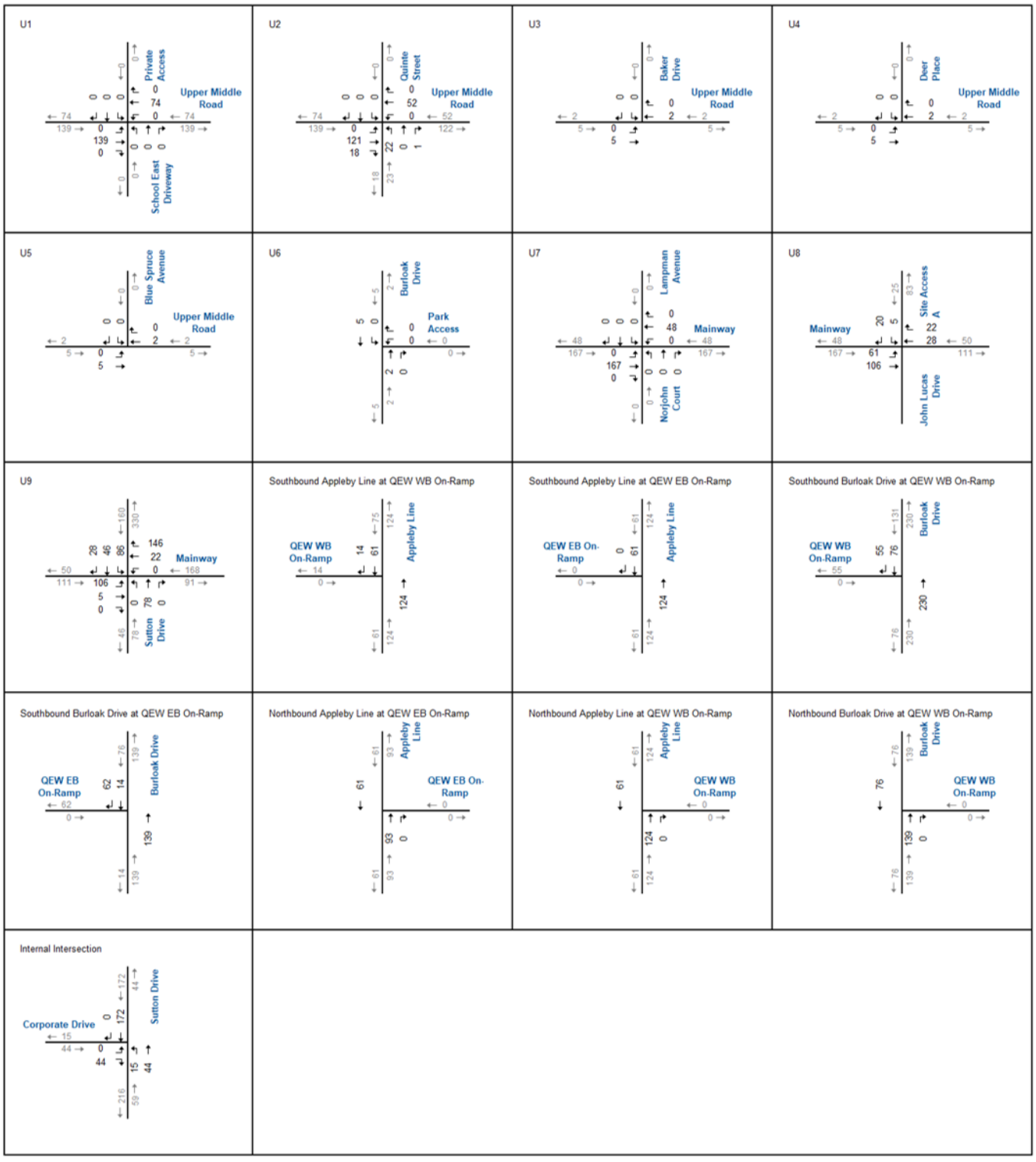
From/To	AM Peak Hour		PM Peak Hour		Sat Peak Hour	
	IN	OUT	IN	OUT	IN	OUT
East via Dundas Street	2%	2%	2%	2%	2%	2%
East via Fairview Street (Appleby MTSA)	2%	3%	2%	2%	2%	2%
East via Harvester Road (Appleby MTSA)	4%	5%	5%	4%	5%	4%
East via QEW WB Off-Ramp (Burloak)	15%	18%	15%	15%	15%	15%
North via Appleby Road	4%	4%	9%	9%	9%	9%
North via Sutton Drive (Orchard Subdivision)	1%	1%	1%	1%	1%	1%
South via Appleby Road	5%	5%	2%	2%	2%	2%
South via Burloak Drive	4%	4%	6%	6%	6%	6%
South via Sutton Drive (Industrial Lands)	3%	3%	3%	3%	3%	3%
West via Dundas Street	2%	5%	4%	2%	4%	2%
West via Fairview Street (Appleby MTSA)	3%	3%	3%	3%	3%	3%
West via Harvester Road (Appleby MTSA)	2%	2%	2%	2%	2%	2%
West via Mainway	13%	10%	13%	13%	13%	13%
West via QEW EB Off-Ramp (Appleby)	5%	4%	2%	4%	2%	4%
West via QEW EB Off-Ramp (Burloak)	20%	16%	13%	22%	13%	22%
West via Upper Middle Road	15%	15%	18%	10%	18%	10%
Grand Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
Sub-Total Attracted to Appleby MTSA	11%	13%	12%	11%	12%	11%



Site Traffic Volumes
Weekday AM Peak Hour
(Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

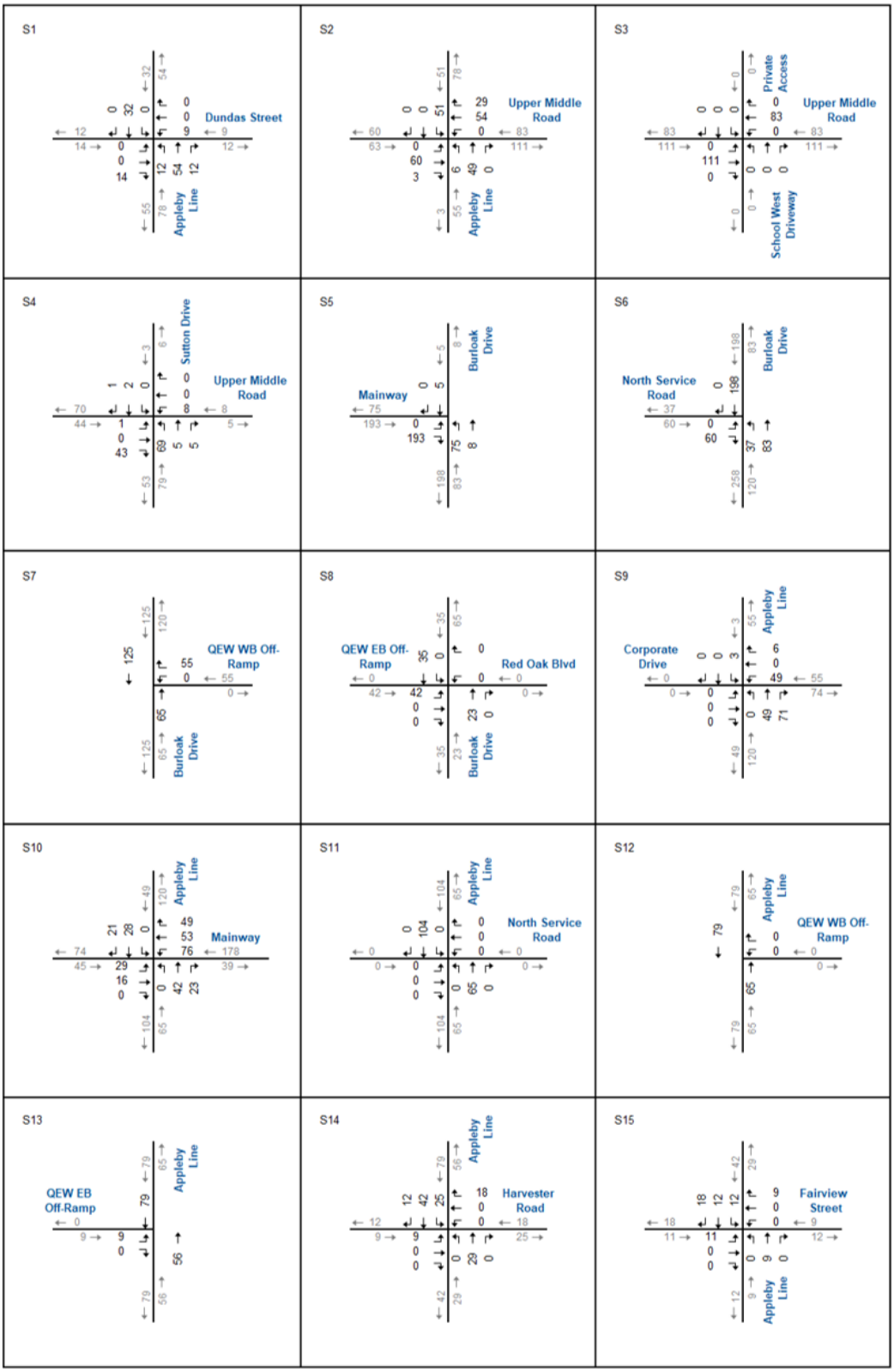
Figure 3.3A



Site Traffic Volumes
Weekday AM Peak Hour
(Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

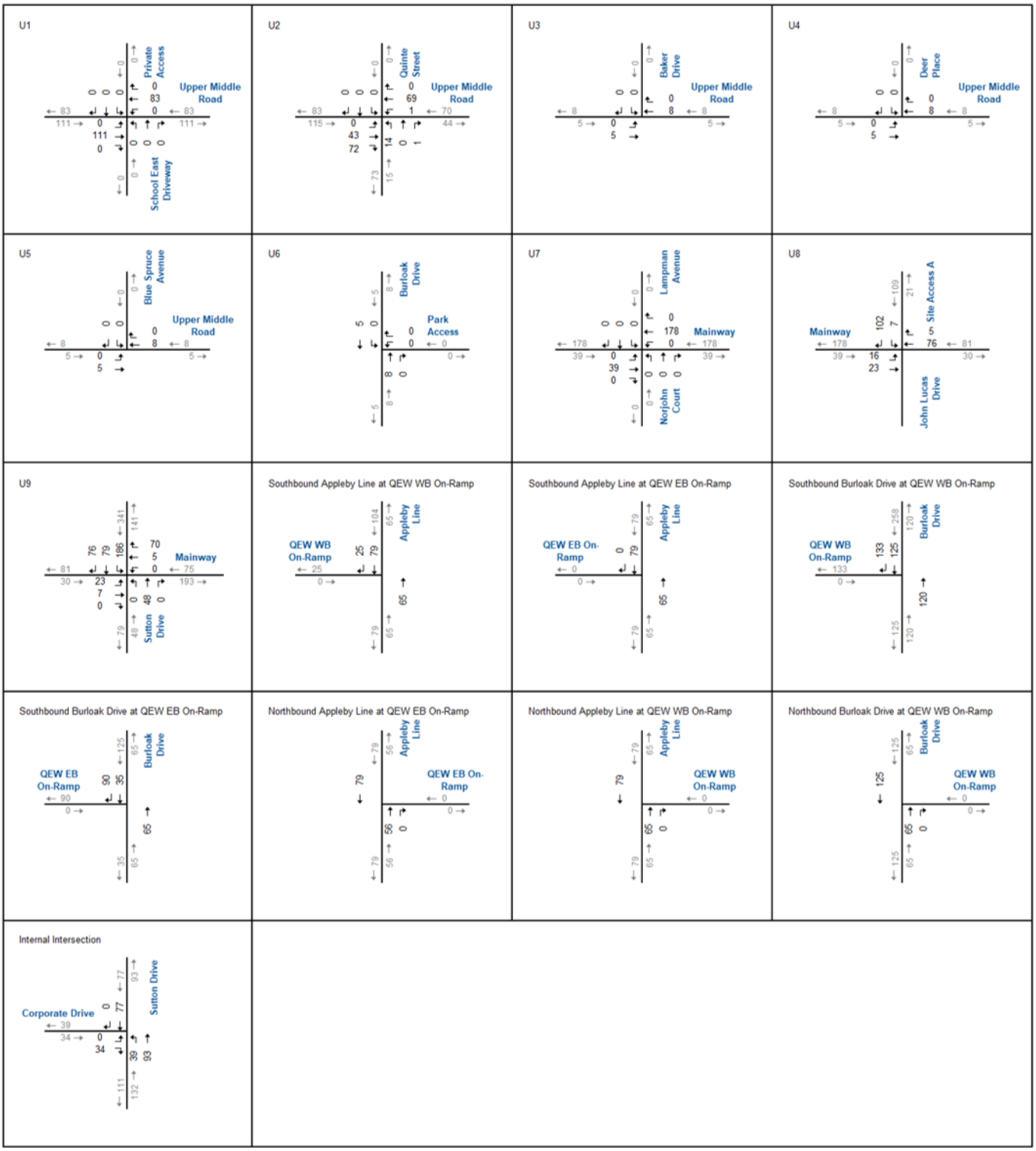
Figure 3.3B



Site Traffic Volumes
Weekday PM Peak Hour
(Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

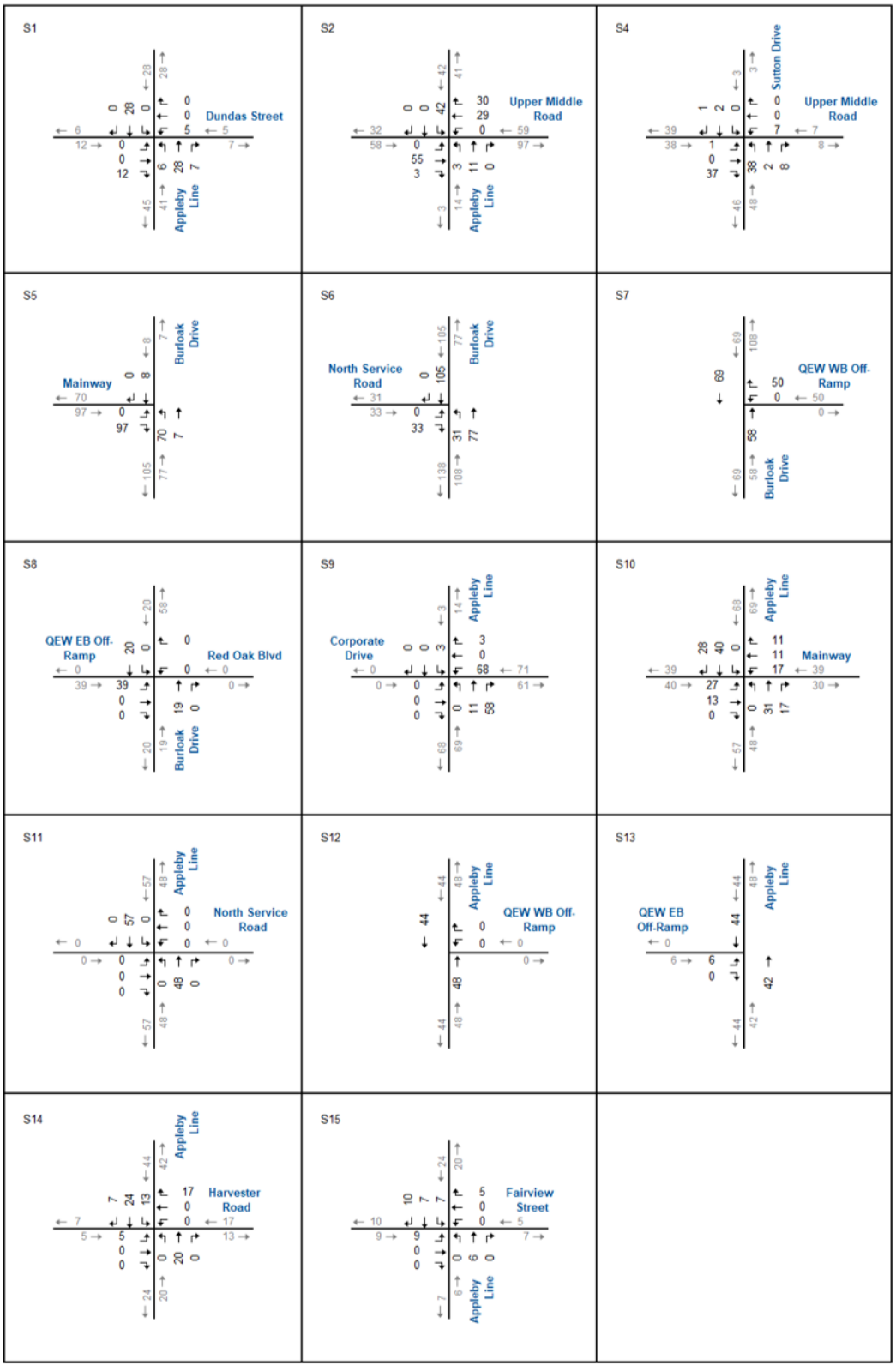
Figure 3.4A



Site Traffic Volumes
Weekday PM Peak Hour
(Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

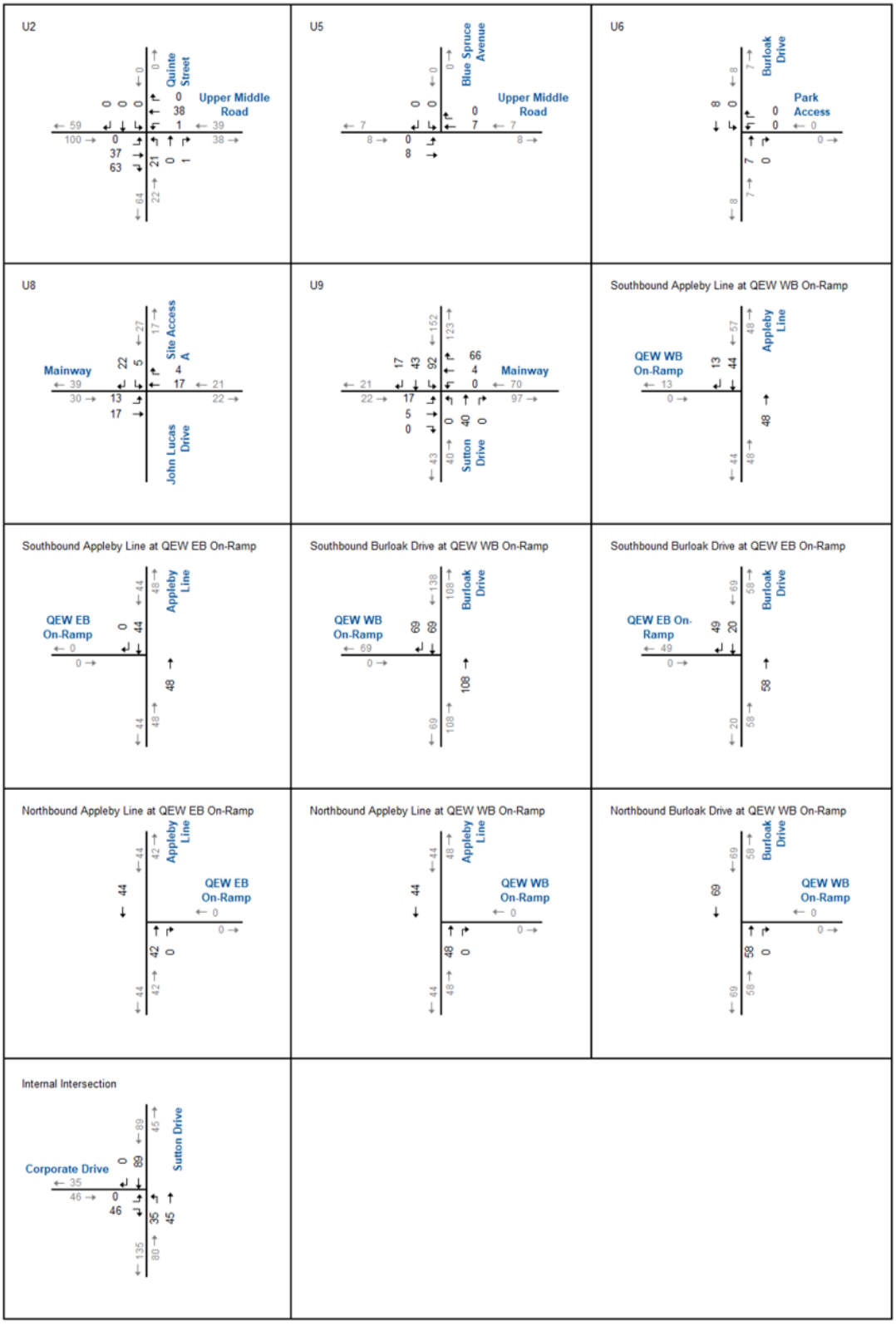
Figure 3.4B



Site Traffic Volumes Saturday Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 3.5A



Site Traffic Volumes
Saturday Peak Hour
(Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 3.5B

4 Future Conditions

The assessment of future conditions in this section includes the following components:

- Background traffic forecast;
- Total traffic forecast;
- Level of service analysis for background traffic (pre-development); and
- Level of service analysis for total traffic (post-development).

Three horizon years have been assessed in this study: Proposed Opening year of the Phase 1 development (Year 2035), Five-years from the assumed opening date of the development (Year 2040), and Ten-years from the assumed opening date of the development (Year 2045). A longer-term analysis for the Full Build-Out is provided in **Section 7**.

4.1 Future Road Network

The City of Burlington Integrated Mobility Plan[13] (IMP) and Halton Region TMP[14] identify that Burloak Drive and Upper Middle Road are to be widened between QEW and Appleby Line from four to six lanes and convert the curb lanes to high occupancy vehicle (HOV) or bus rapid transit (BRT) lanes after completion of the road widening. These modifications are also expected to be applied to Appleby Line between Fairview Street and Taywood Drive.

Based on Halton Region's budget and business plan[15], the widenings are expected to be complete by 2031 and have been included in the background and total traffic analysis.

4.2 Forecast Traffic Volumes

Future traffic volumes near the subject site are estimated to consist of:

- Generalized compound annual traffic growth, as identified during pre-study consultation;
  - Burloak Drive north of Mainway: 4% per annum to 2031 and then 1% per annum from 2031 to 2045

[13] City of Burlington, Integrated Mobility Plan, September 2023
[14] Halton Region, Appendix E - Transportation Master Plan to 2031, October 2011
[15] Halton Region, Budget and Business Plan 2024-2033

  - Upper Middle Road west of Burloak Drive: 4% per annum to 2031 and then 1% per annum from 2031 to 2045
  - Appleby Line at Upper Middle Road: 2% per annum to 2031 and then 1% per annum from 2031 to 2045
  - Fairview Street: 2% per annum
  - All other City of Burlington roadways: 1% per annum
  - QEW at Burloak Ramp: 3.5% per annum;
  - QEW at Appleby Line: 3.3% per annum; and
- Site-traffic contributions generated by the following other area background developments:
  - **2273 Turnberry Road** – 67 townhouse units.
  - **1989 Appleby Line** – two 20-storey residential buildings with a shared six-storey podium and ground floor retail. Approximately 475 residential units and 871 m^2 of ground floor retail are proposed.
  - **5030-5045 Tico Creek** – 108-unit hotel, a 558 m^2 mixed use building with restaurant and retail uses, and a 293 m^2 building with retail and fast-food restaurant
  - **Millcroft Greens** – 90 single detached units and a six-storey condominium building with 130 units.
  - **5219 Upper Middle Road** – two single detached units, four semi-detached units, and 14 townhouse units.
  - **1860-1900 Appleby Line**- an 18-storey building and two 16-storey buildings with a total of 560 residential units, 1,581 m^2 of retail space, and 1,820 m^2 of office space.
- Traffic generated by the subject site.

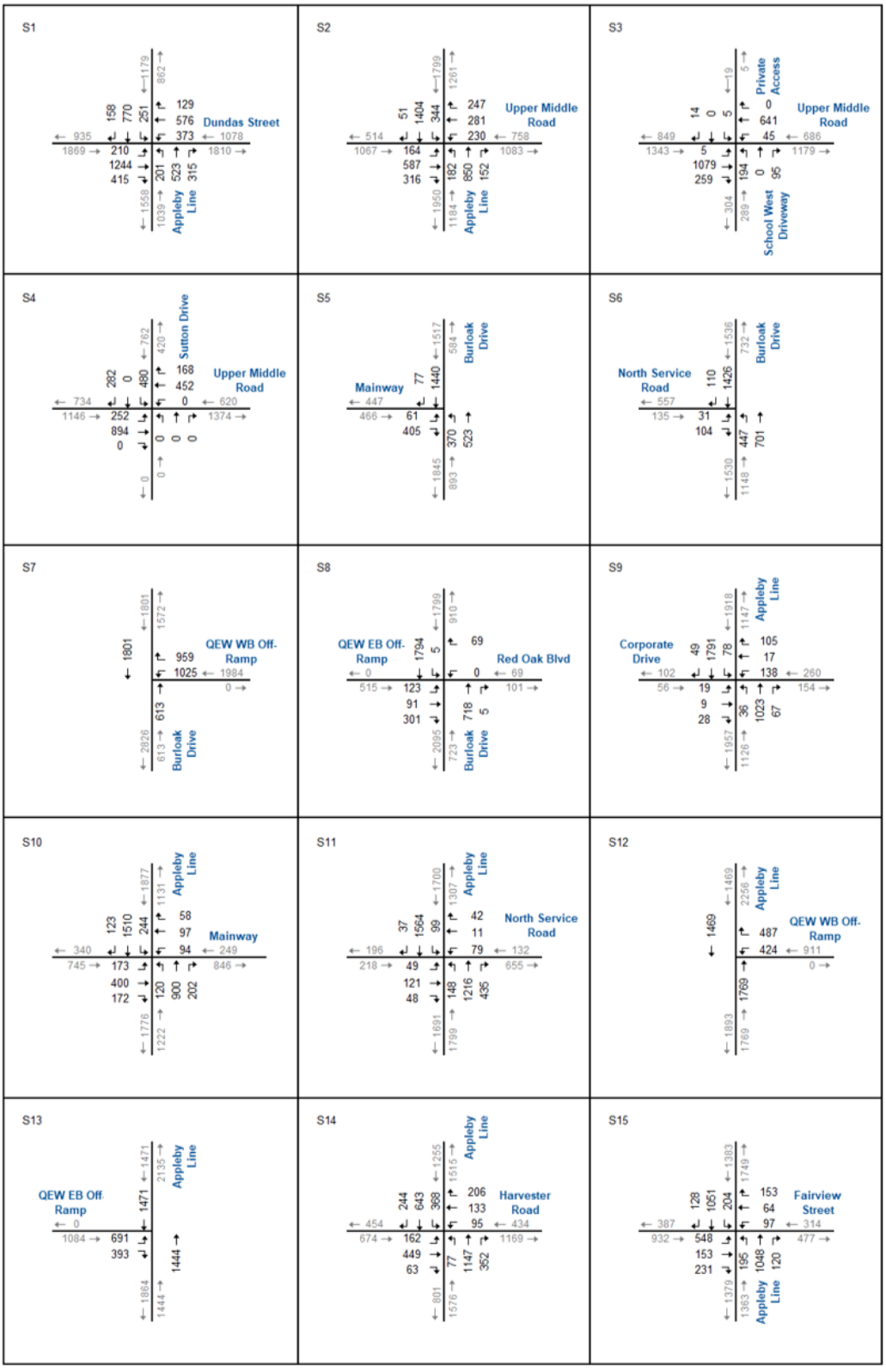
The future traffic volumes are illustrated in the following figures:

- **Figure 4.1A-F** illustrates the 2035 background traffic volumes.
- **Figure 4.2A-F** illustrates the 2035 total traffic volumes.
- **Figure 4.3A-F** illustrates the 2040 background traffic volumes.
- **Figure 4.4A-F** illustrates the 2040 background traffic volumes.
- **Figure 4.5A-F** illustrates the 2045 background traffic volumes.
- **Figure 4.6A-F** illustrates the 2045 total traffic volumes.

Appendix I contains a full network diagram showing the future traffic volumes. It is noted that as varying growth rates have been identified



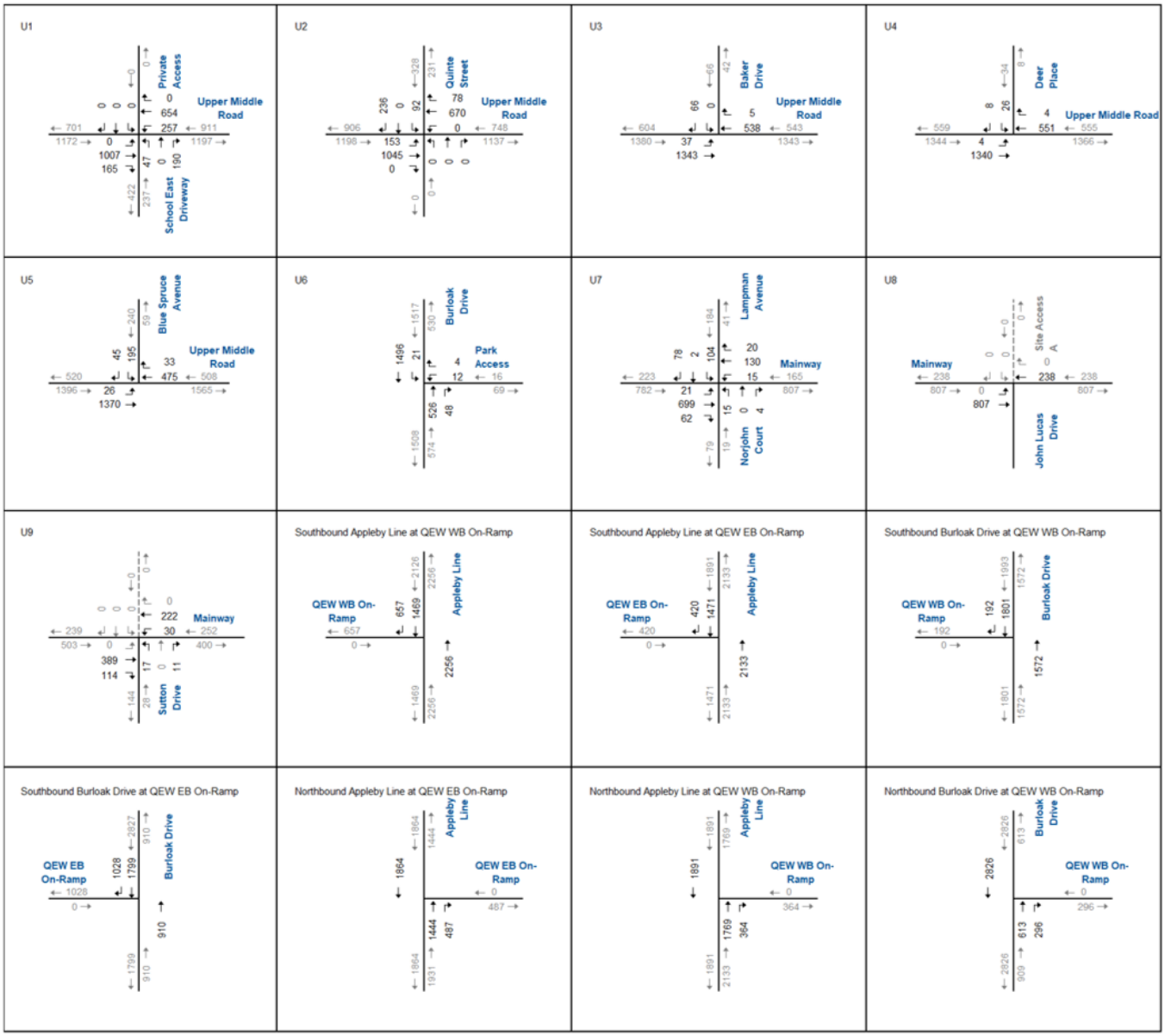
by the City, Region, and MTO, some discrepancies in volumes may occur between intersections.



Background Traffic Volumes 2035 Weekday AM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

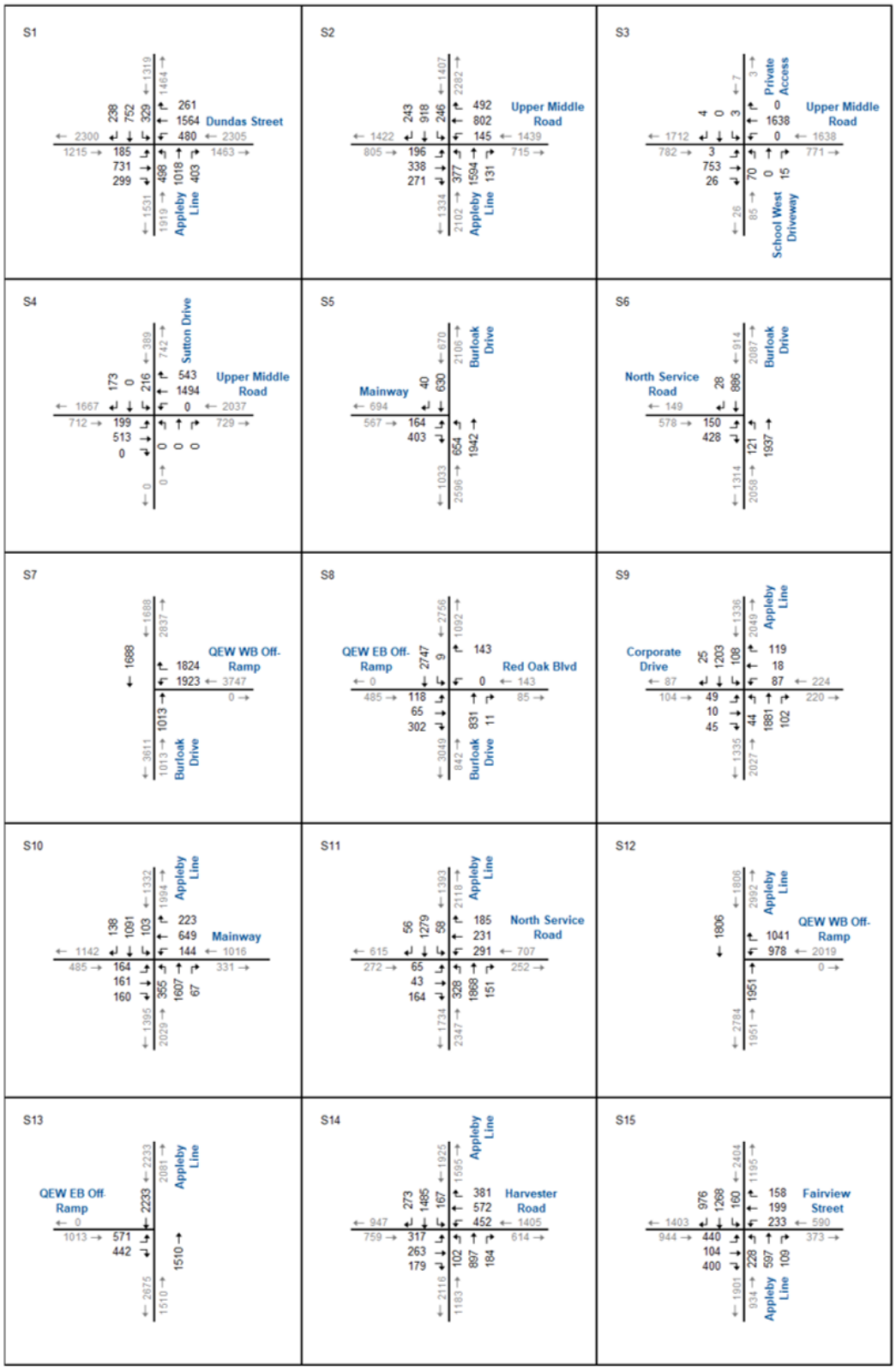
Figure 4.1A



Background Traffic Volumes 2035 Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

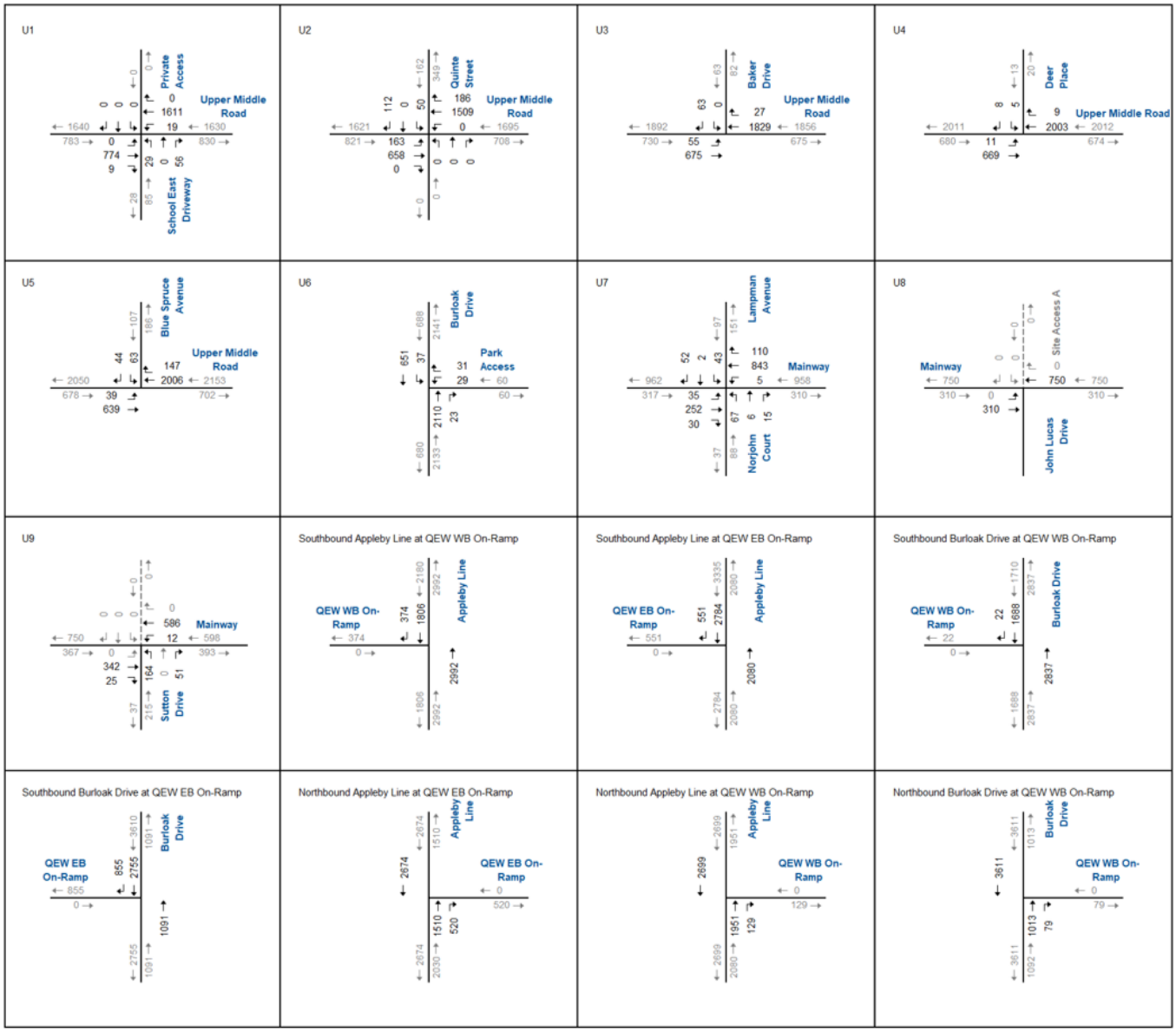
Figure 4.1B



Background Traffic Volumes 2035 Weekday PM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

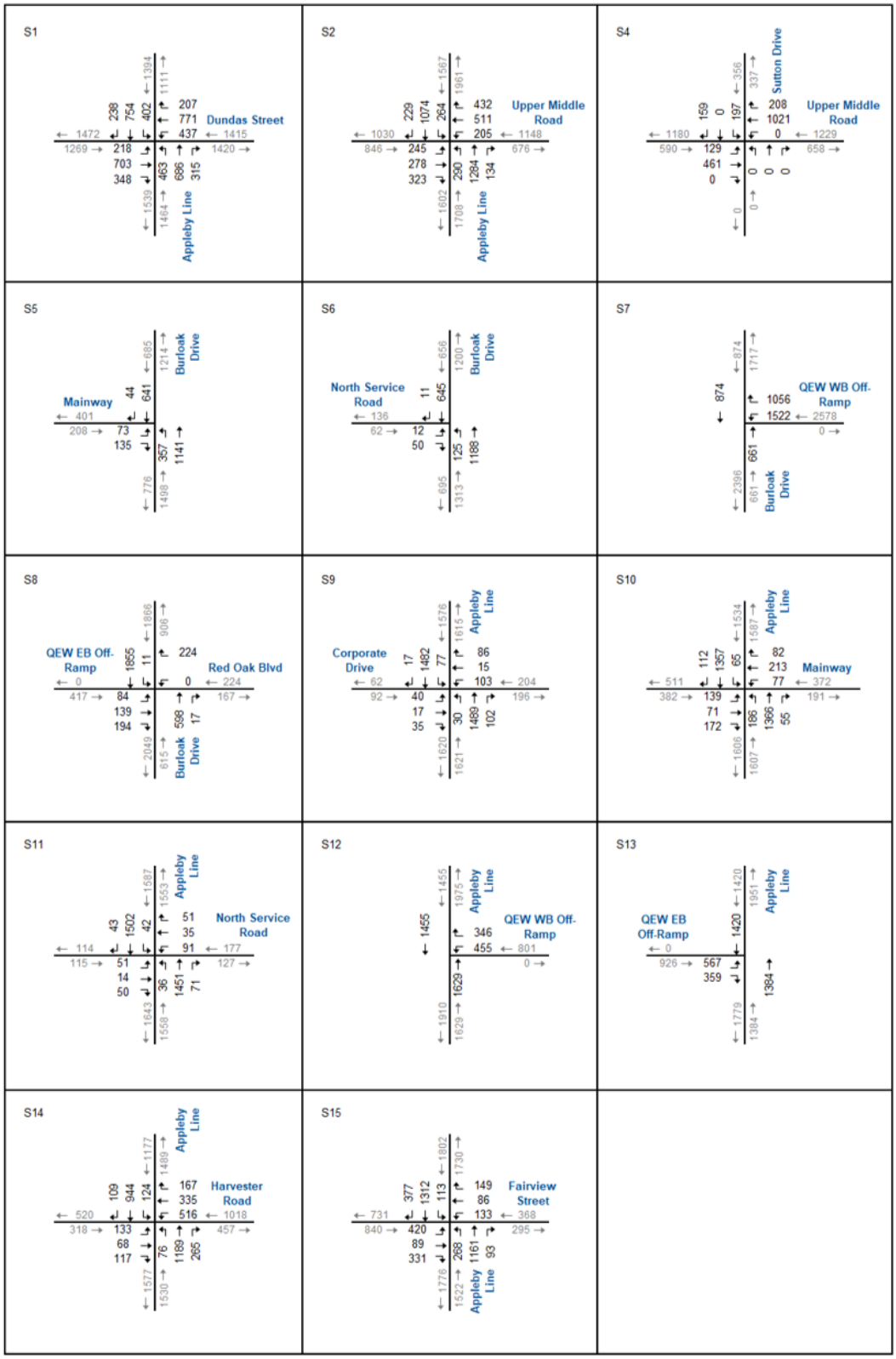
Figure 4.1C



Background Traffic Volumes 2035 Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

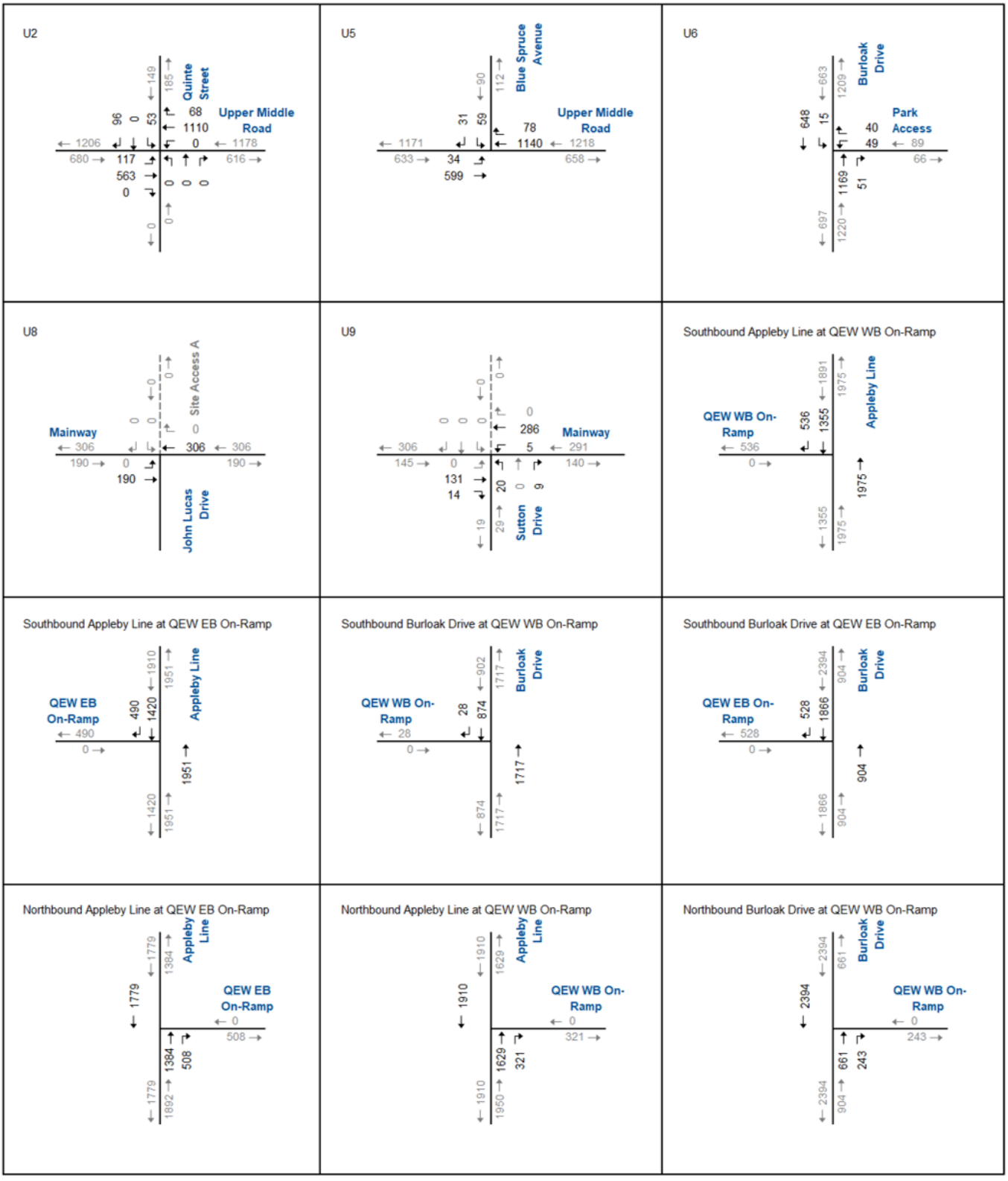
Figure 4.1D



Background Traffic Volumes 2035 Saturday Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

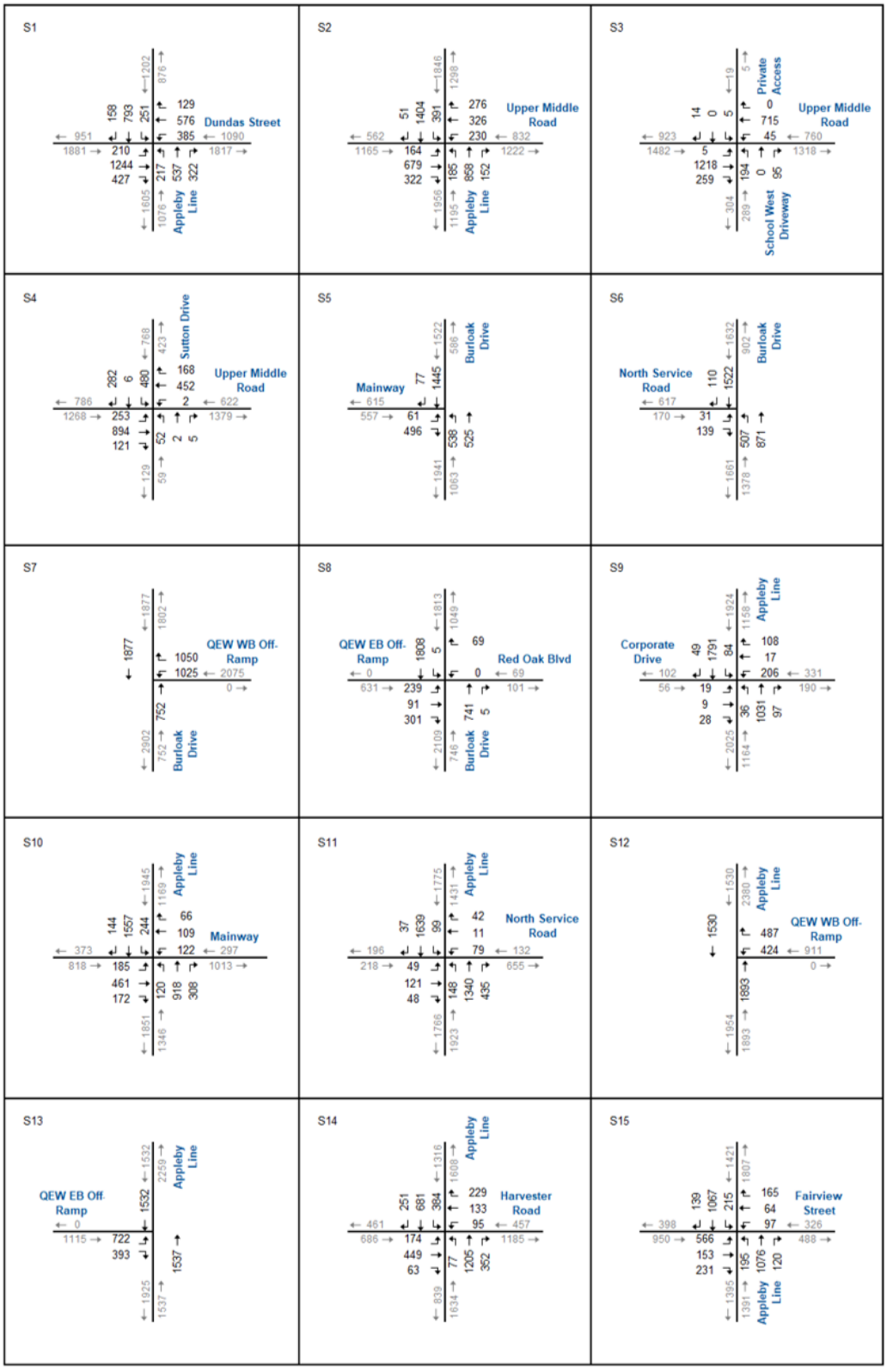
Figure 4.1E



Background Traffic Volumes 2035 Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

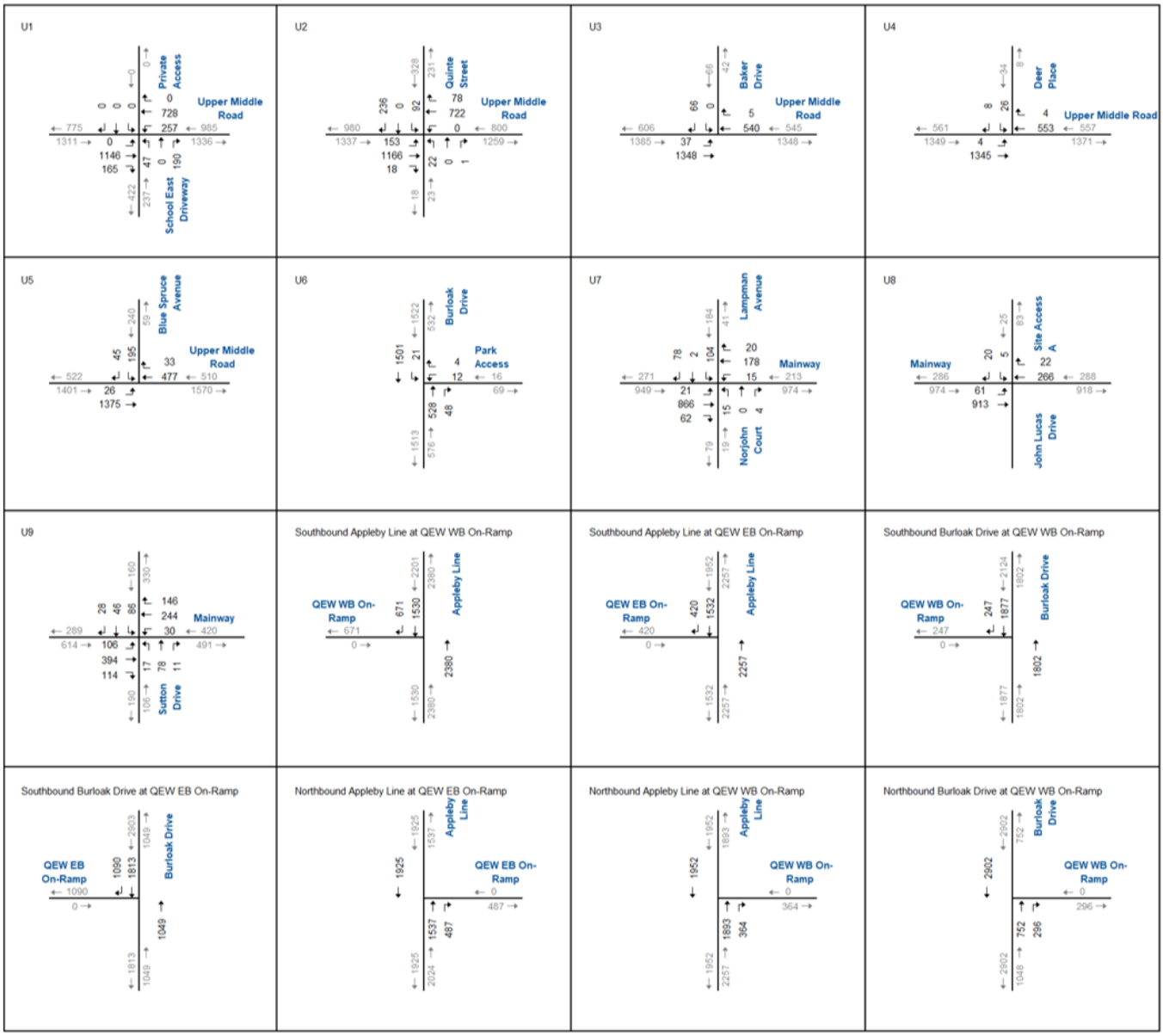
Figure 4.1F



Total Traffic Volumes 2035 Weekday AM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

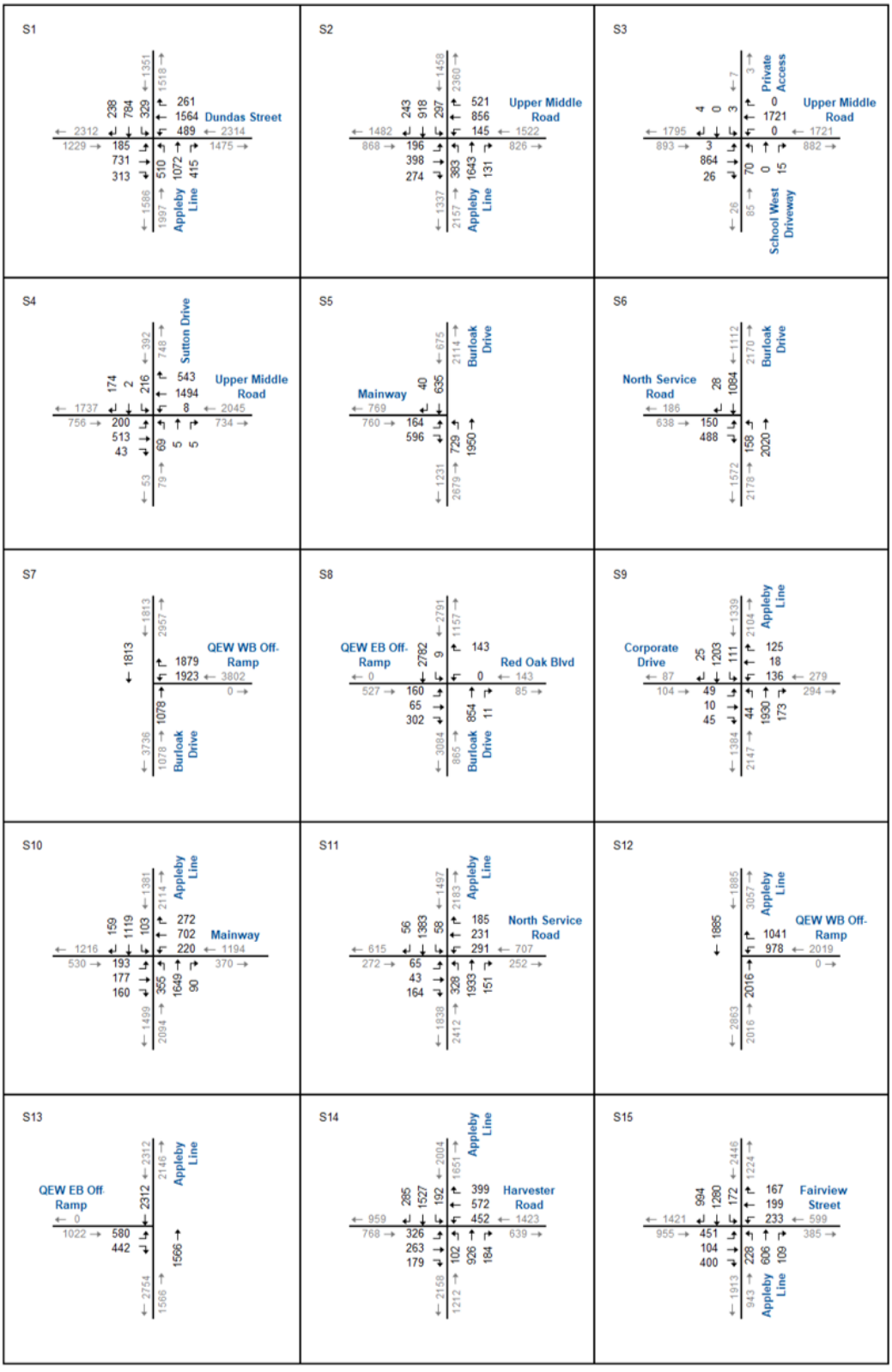
Figure 4.2A



Total Traffic Volumes 2035 Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

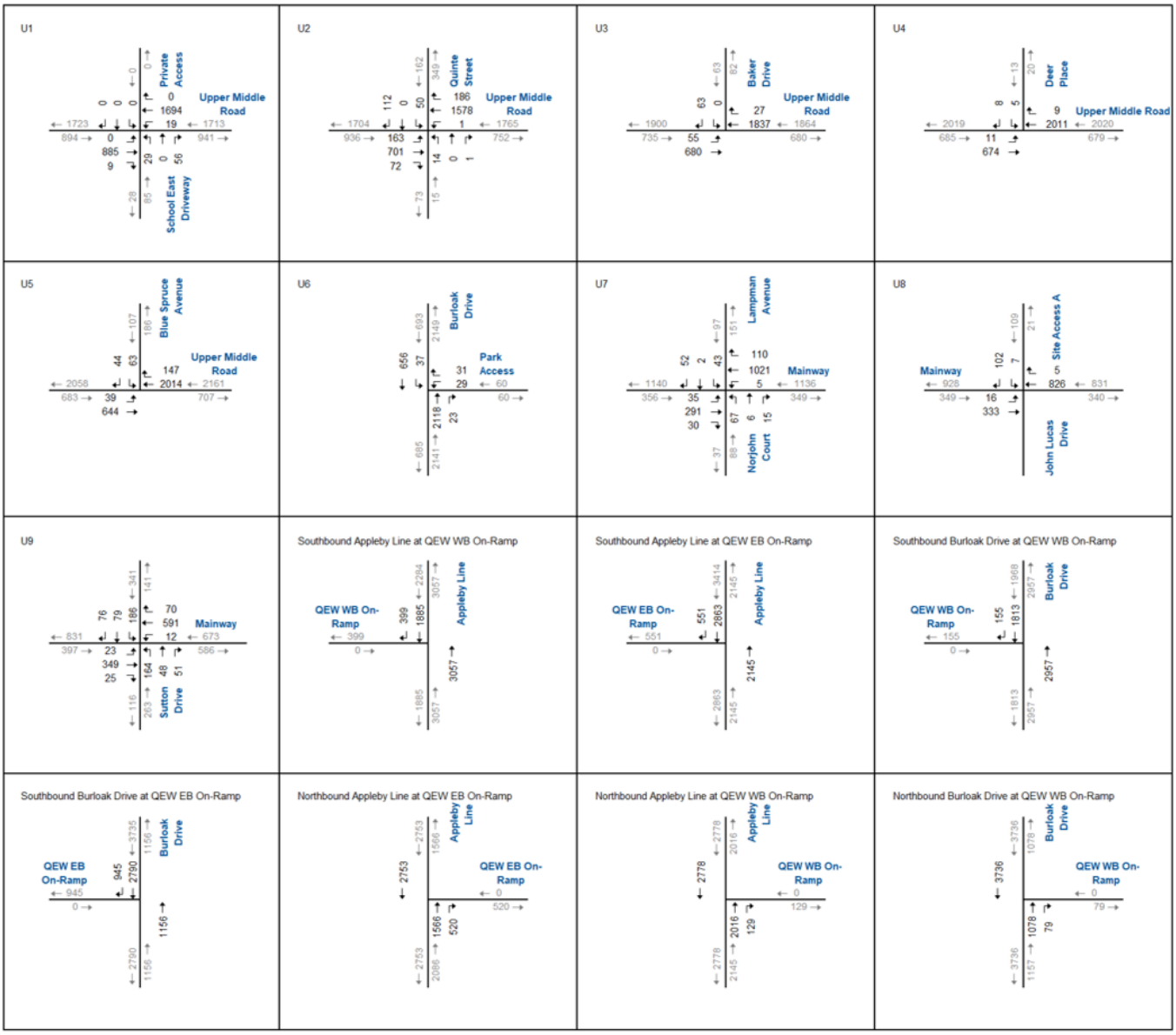
Figure 4.2B



Total Traffic Volumes 2035 Weekday PM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

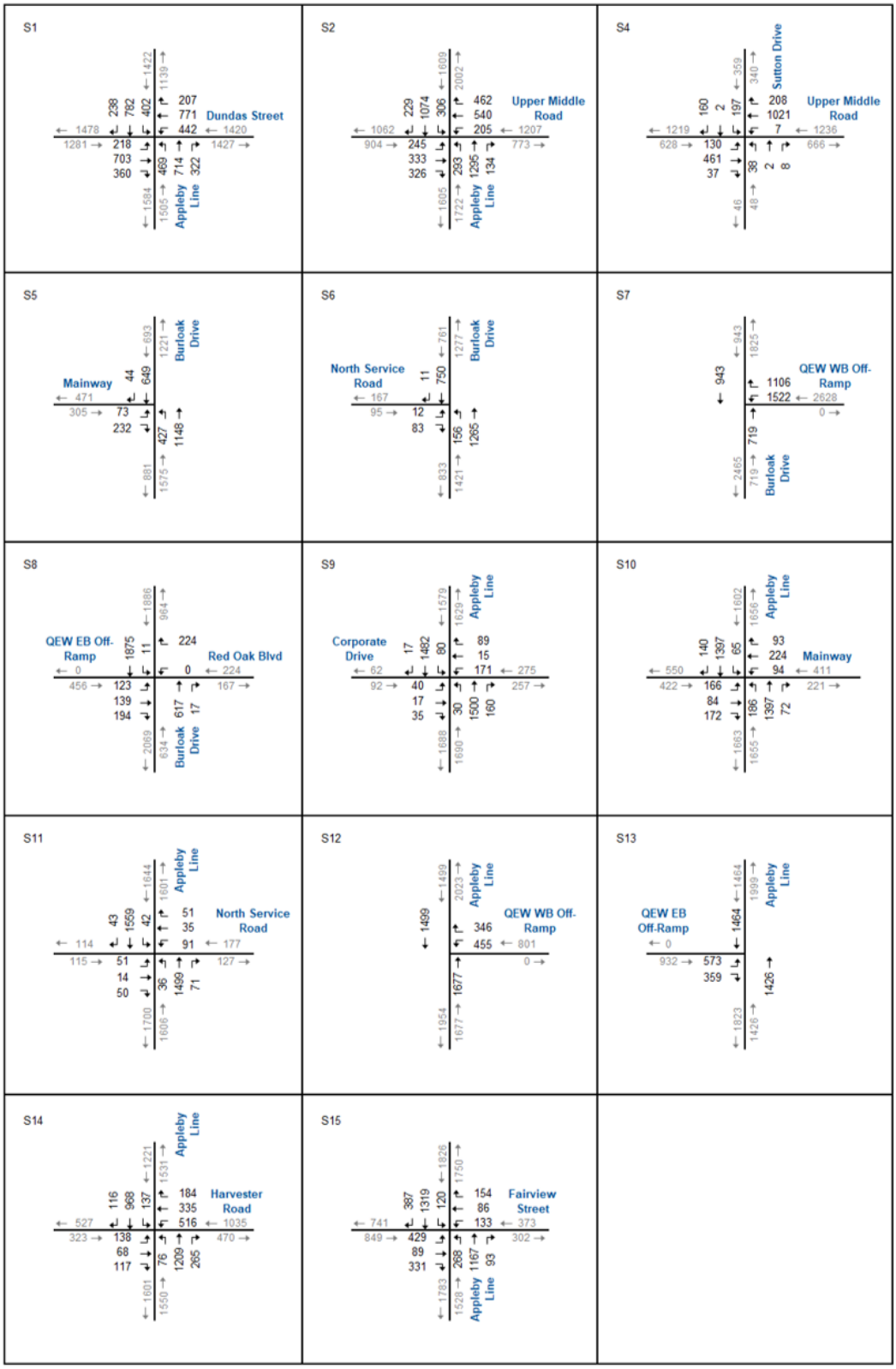
Figure 4.2C



Total Traffic Volumes 2035 Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

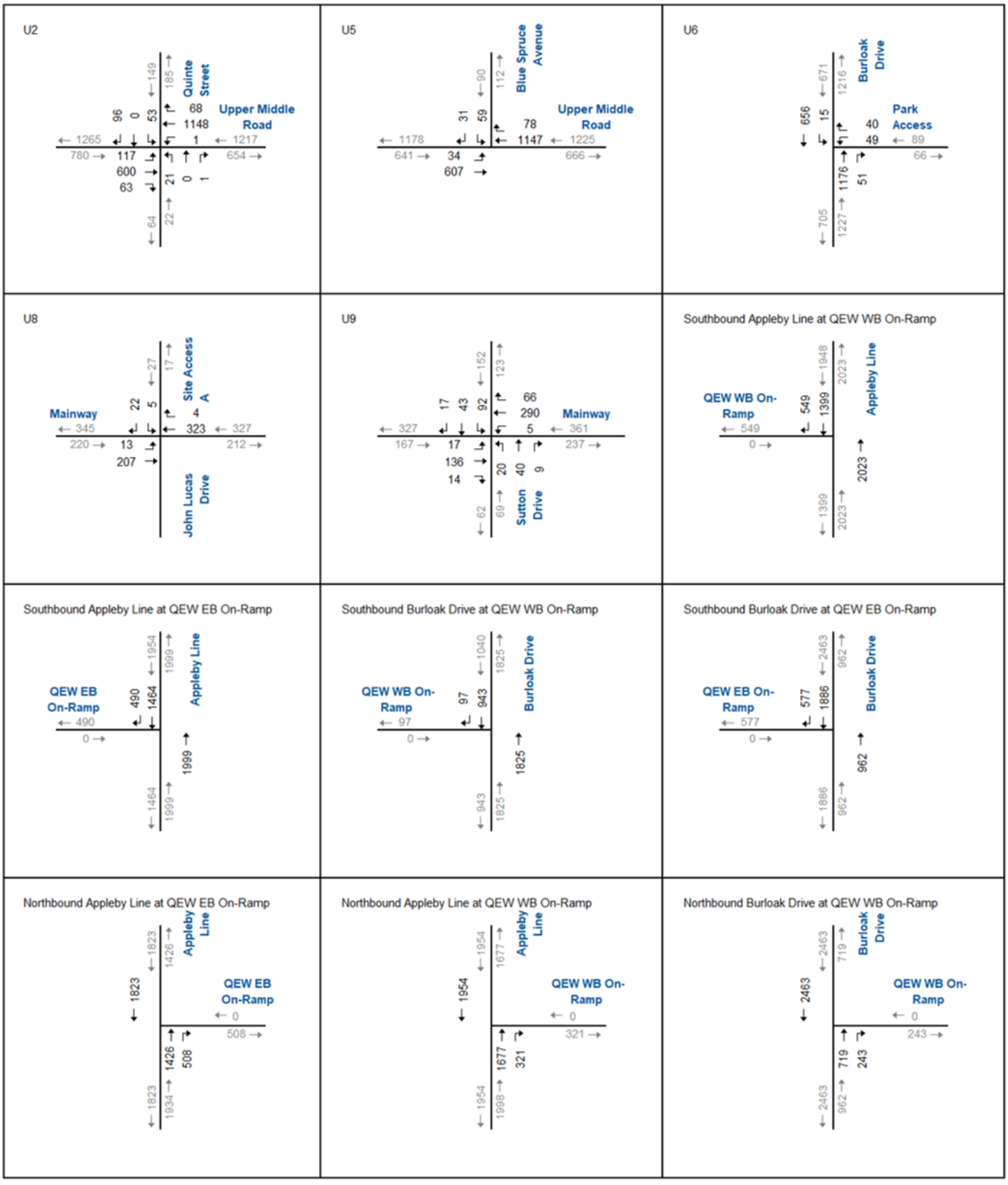
Figure 4.2D



Total Traffic Volumes 2035 Saturday Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

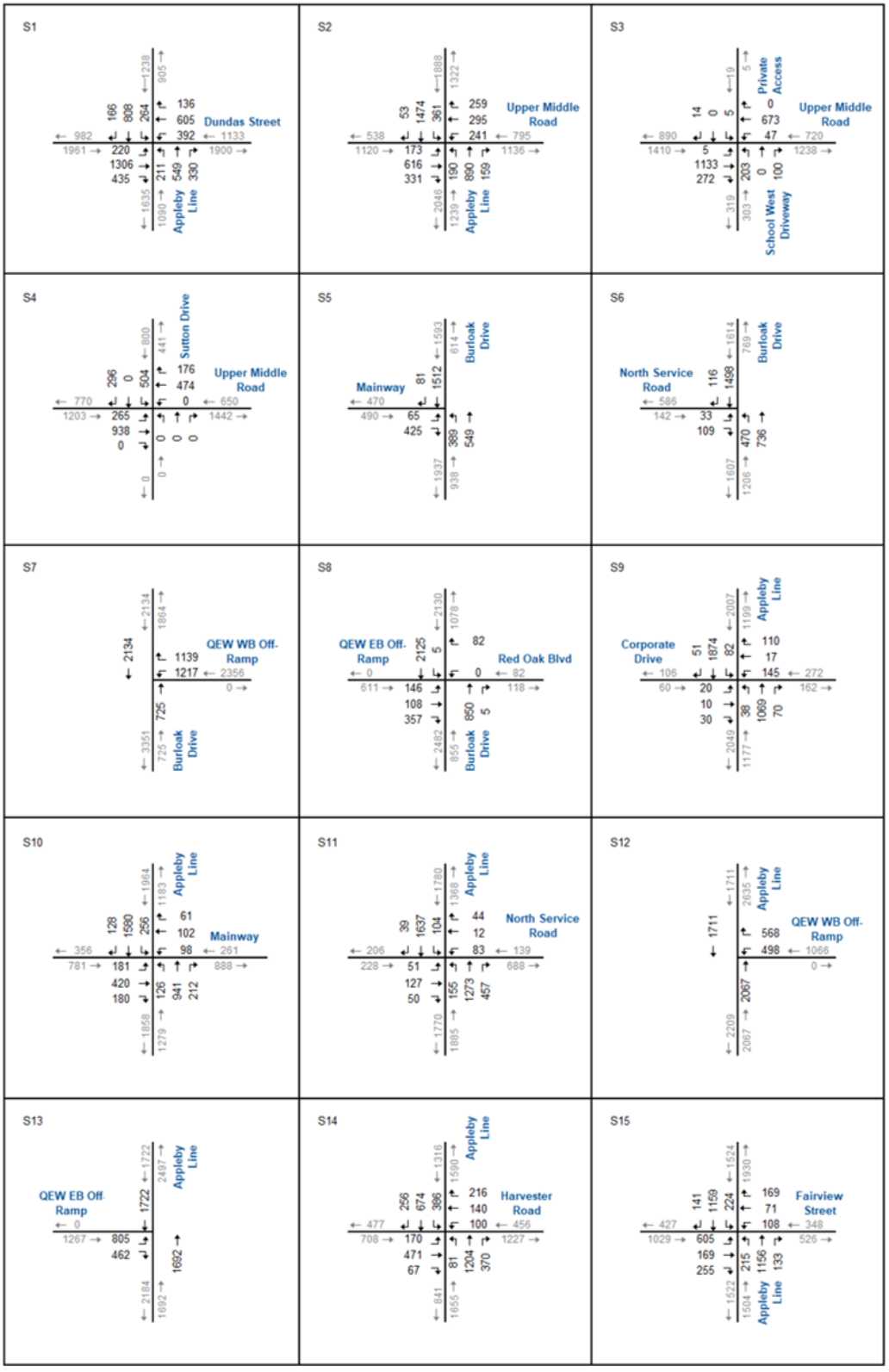
Figure 4.2E



Total Traffic Volumes 2035 Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

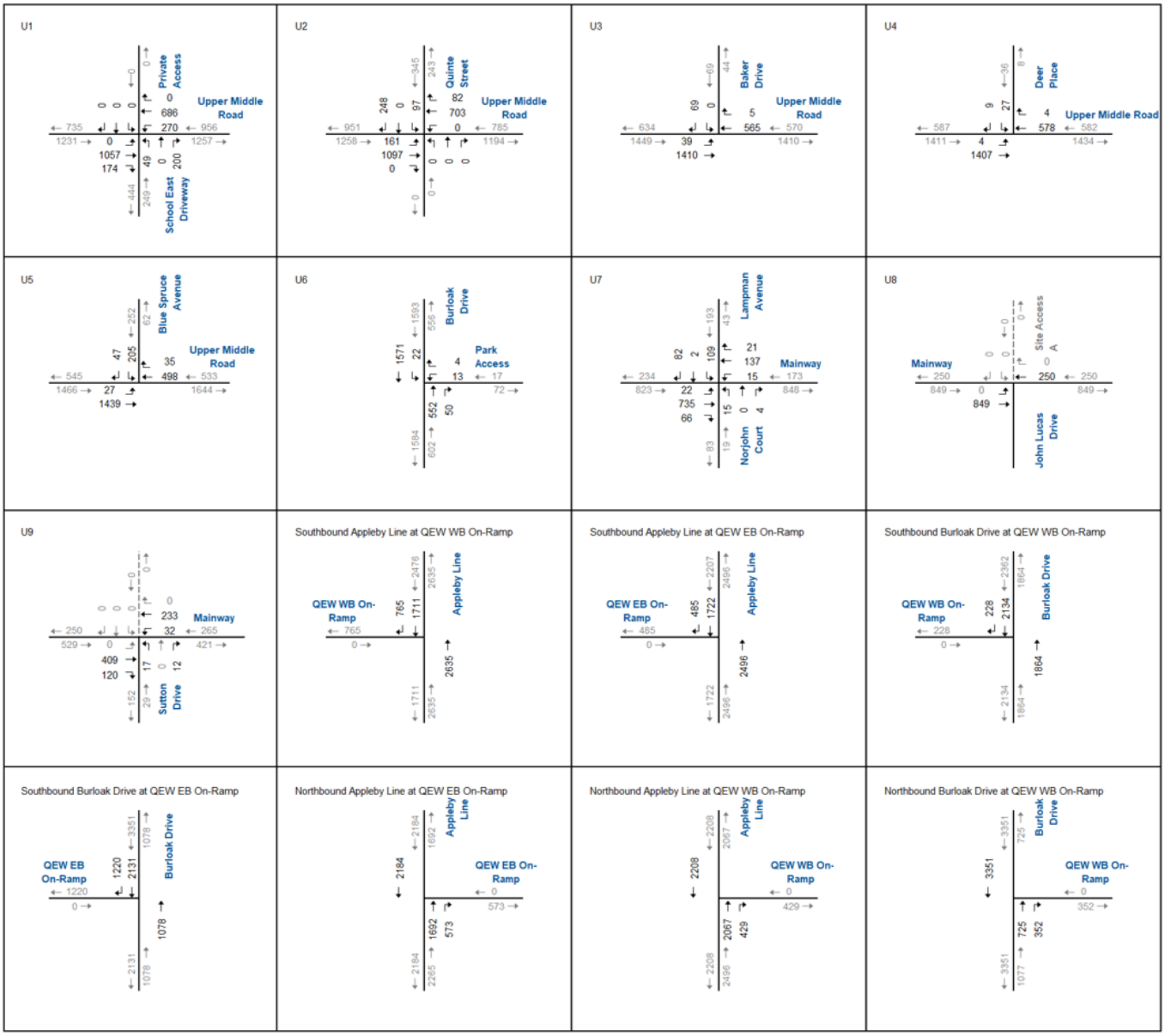
Figure 4.2F



Background Traffic Volumes 2040 Weekday AM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

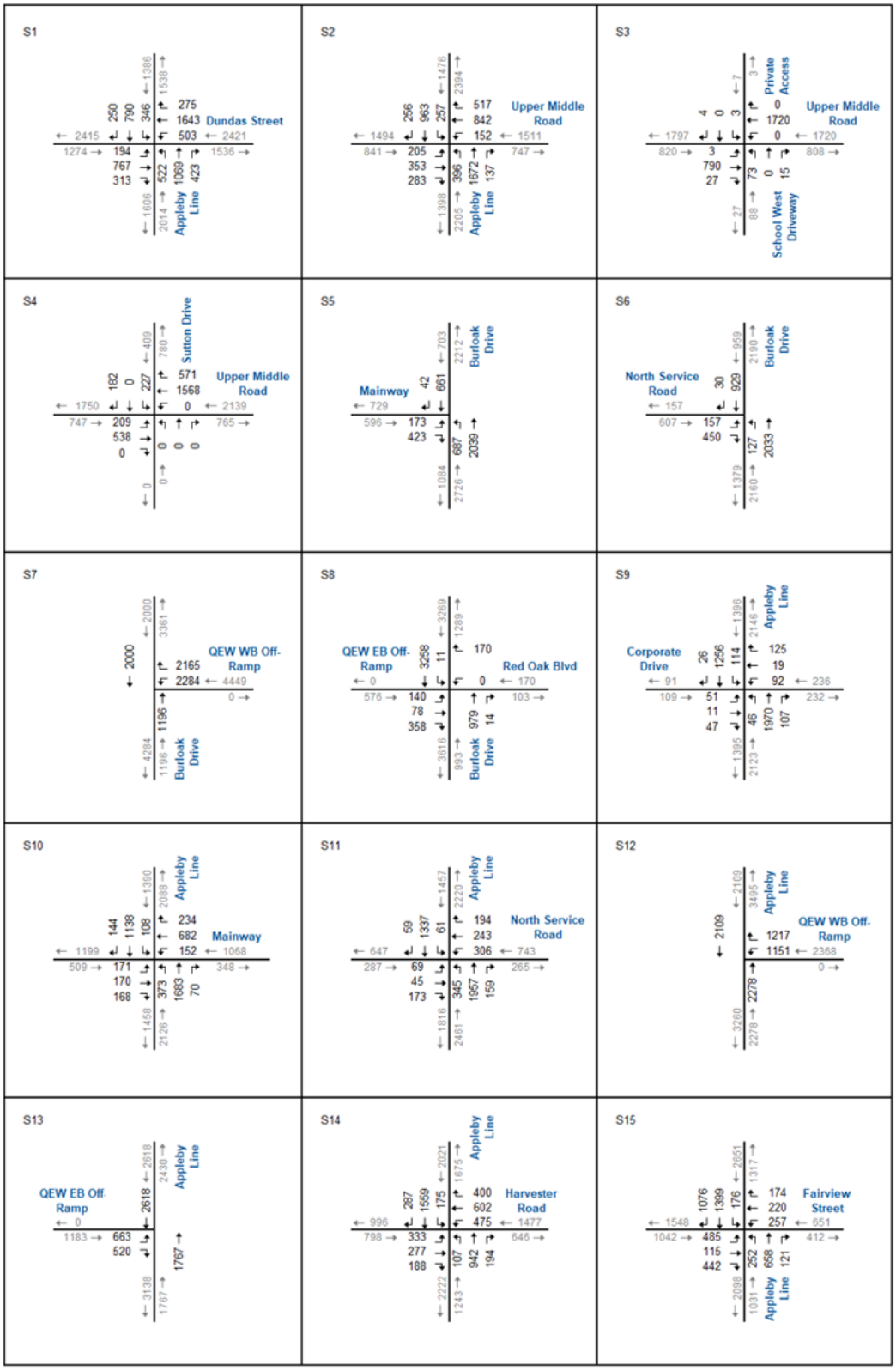
Figure 4.3A



Background Traffic Volumes 2040 Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

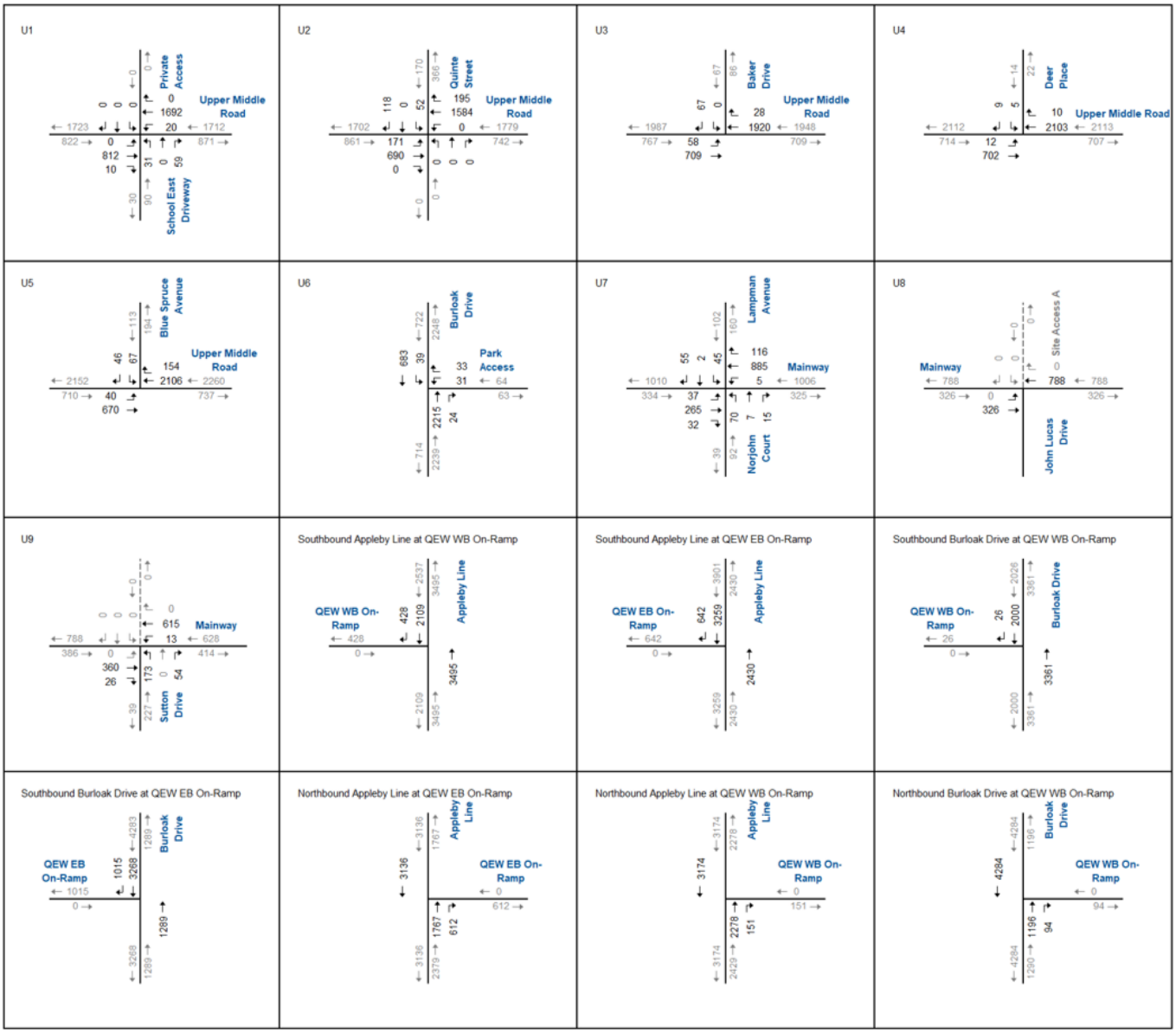
Figure 4.3B



Background Traffic Volumes 2040 Weekday PM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

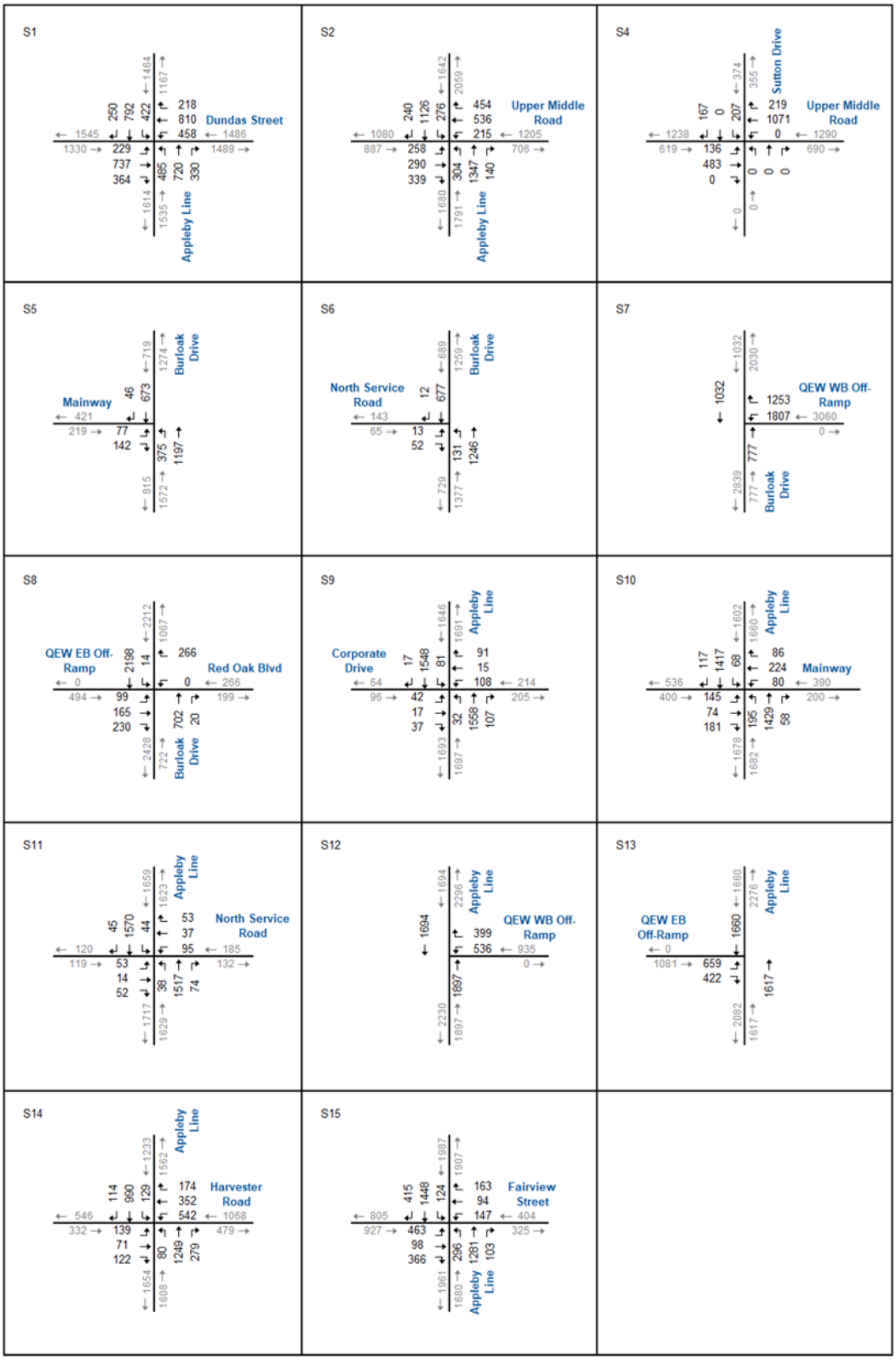
Figure 4.3C



Background Traffic Volumes 2040 Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

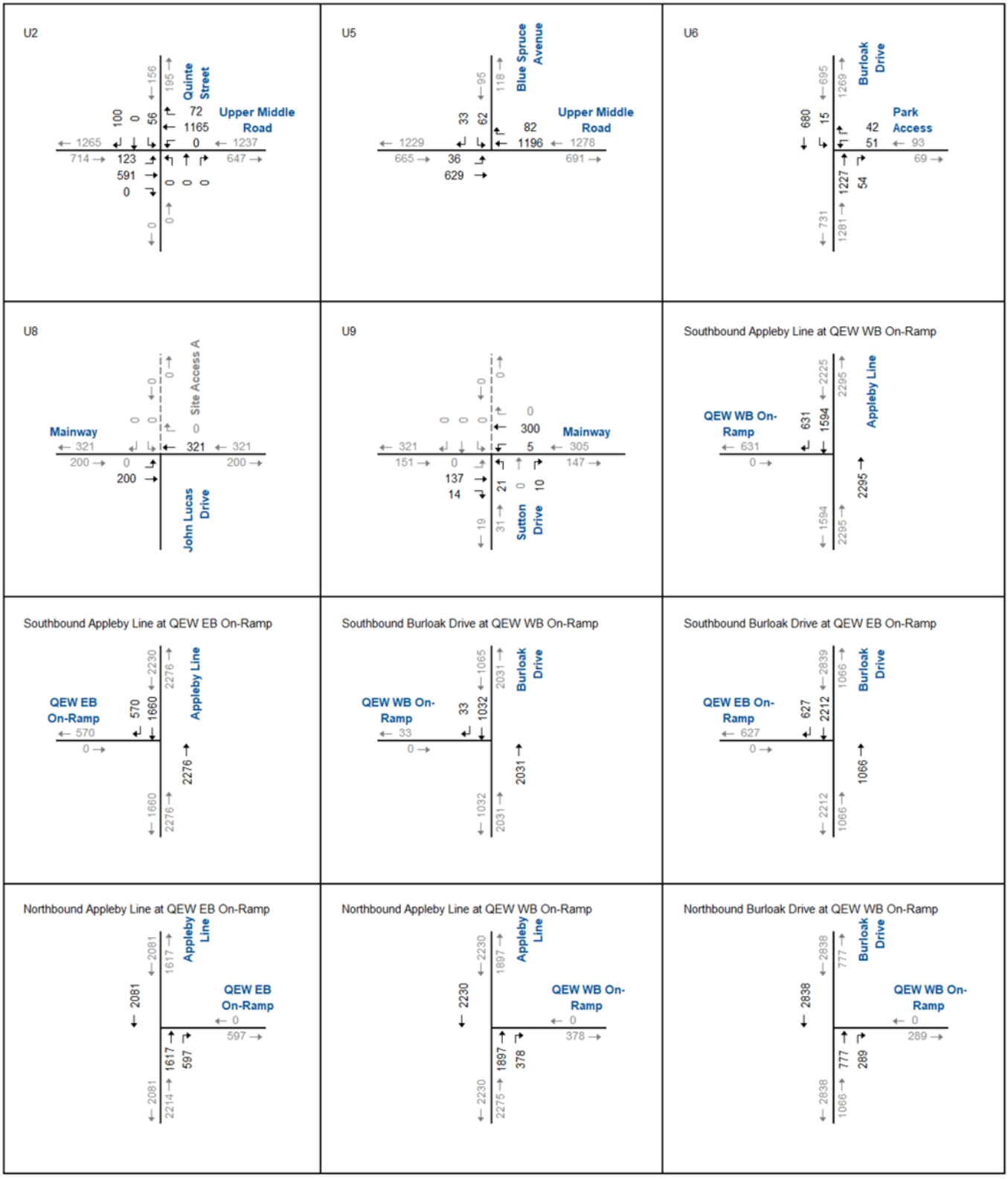
Figure 4.3D



Background Traffic Volumes 2040 Saturday Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

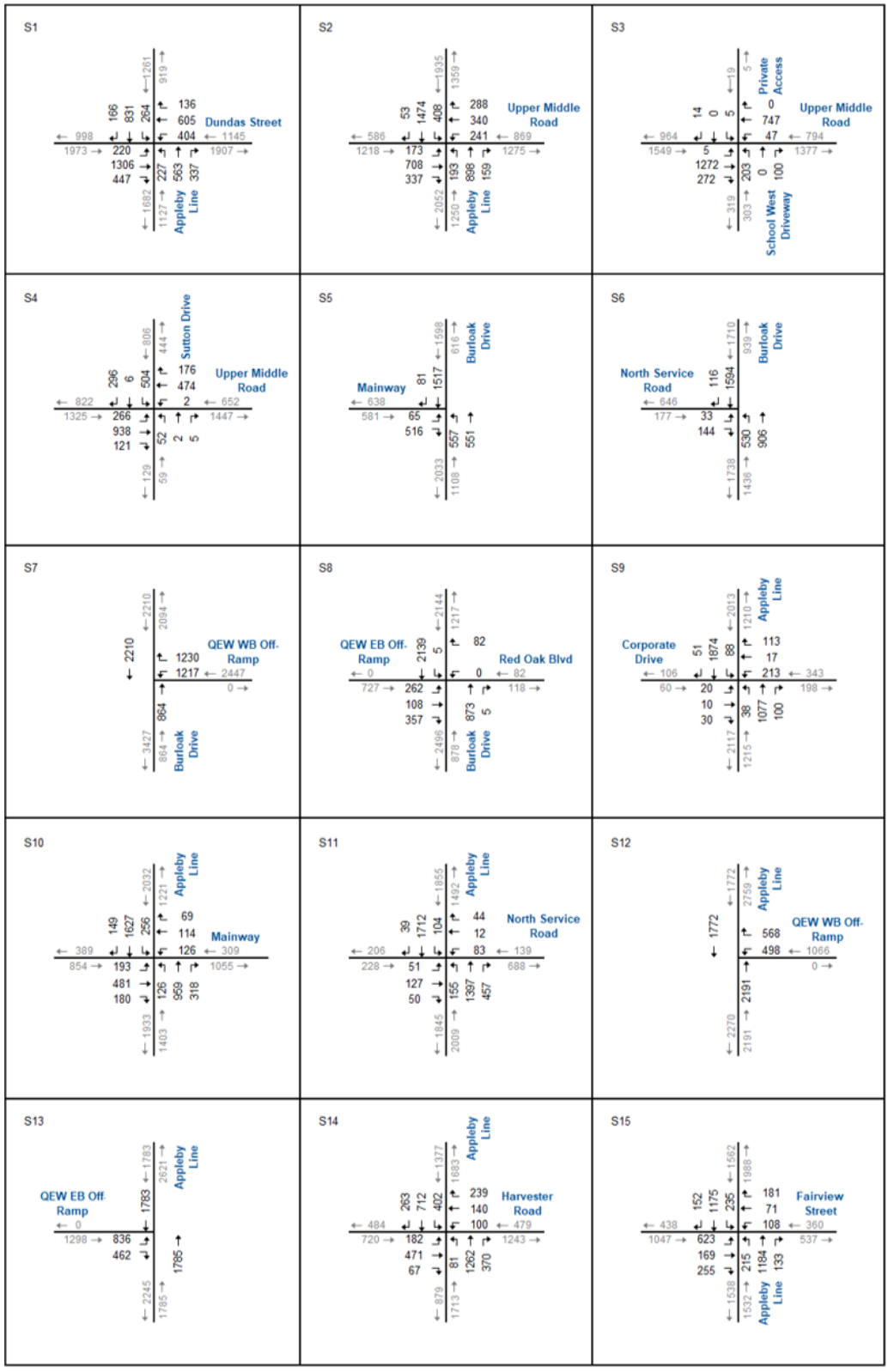
Figure 4.3E



Background Traffic Volumes 2040 Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

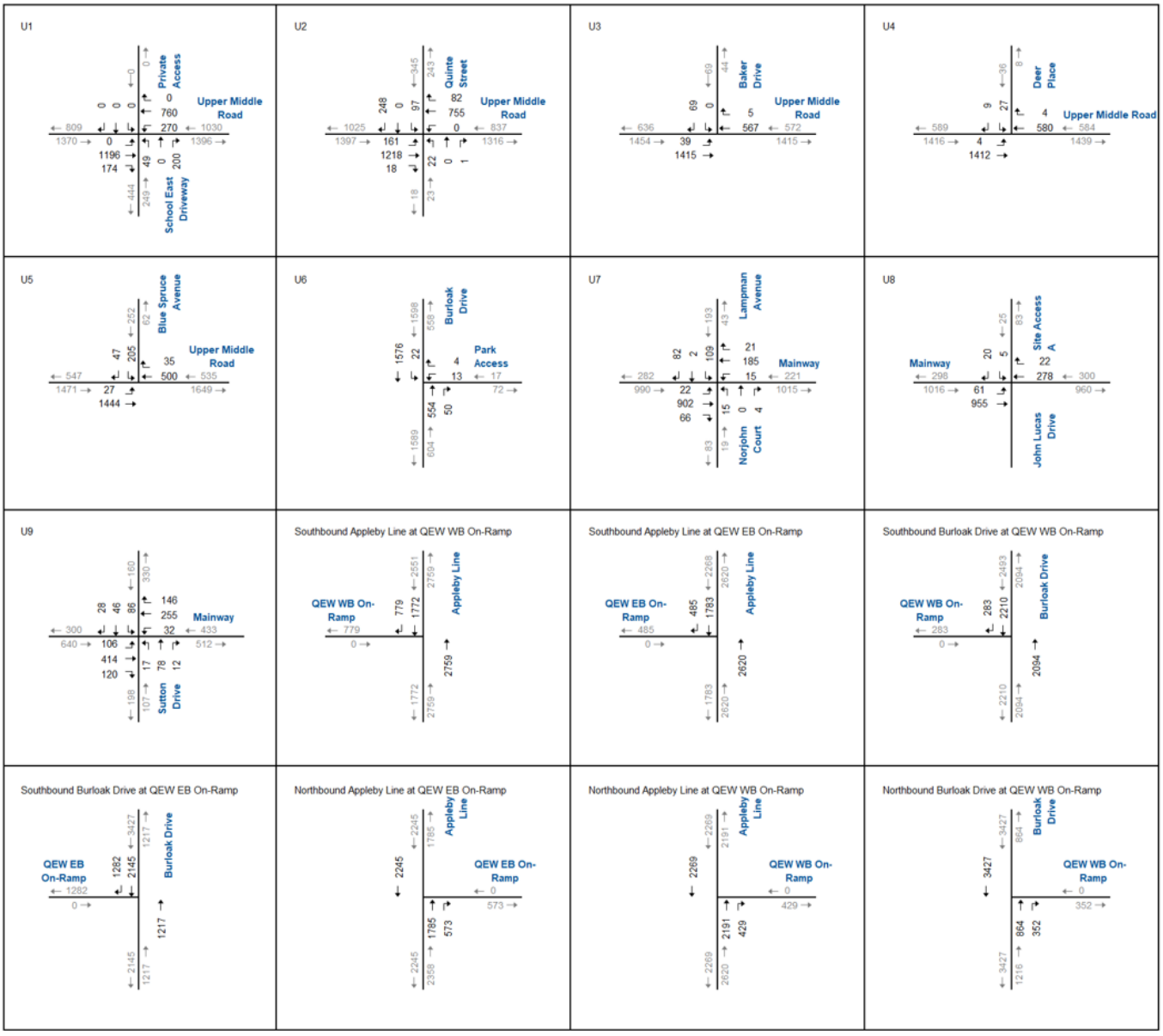
Figure 4.3F



Total Traffic Volumes 2040 Weekday AM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

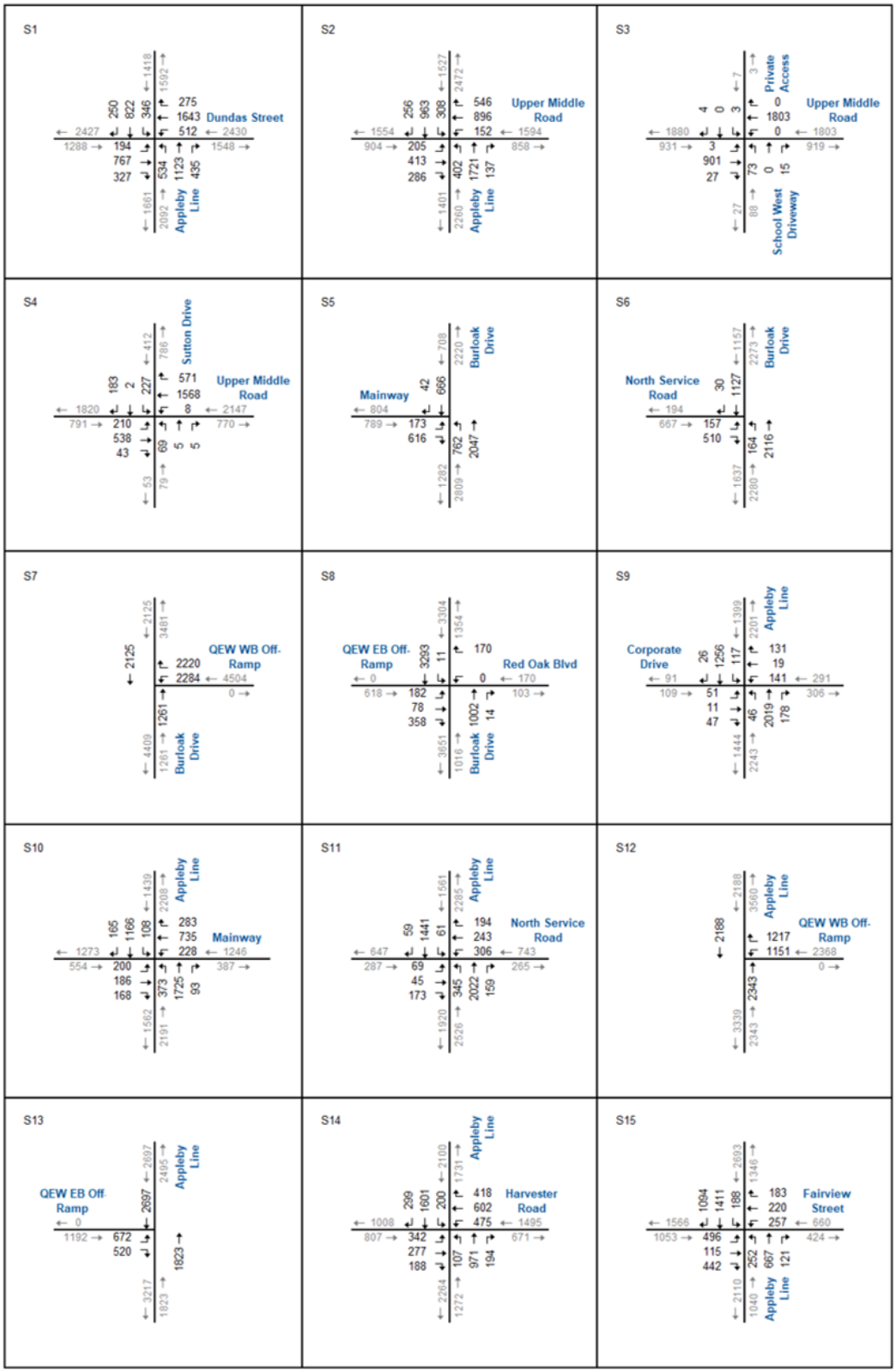
Figure 4.4A



Total Traffic Volumes 2040 Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

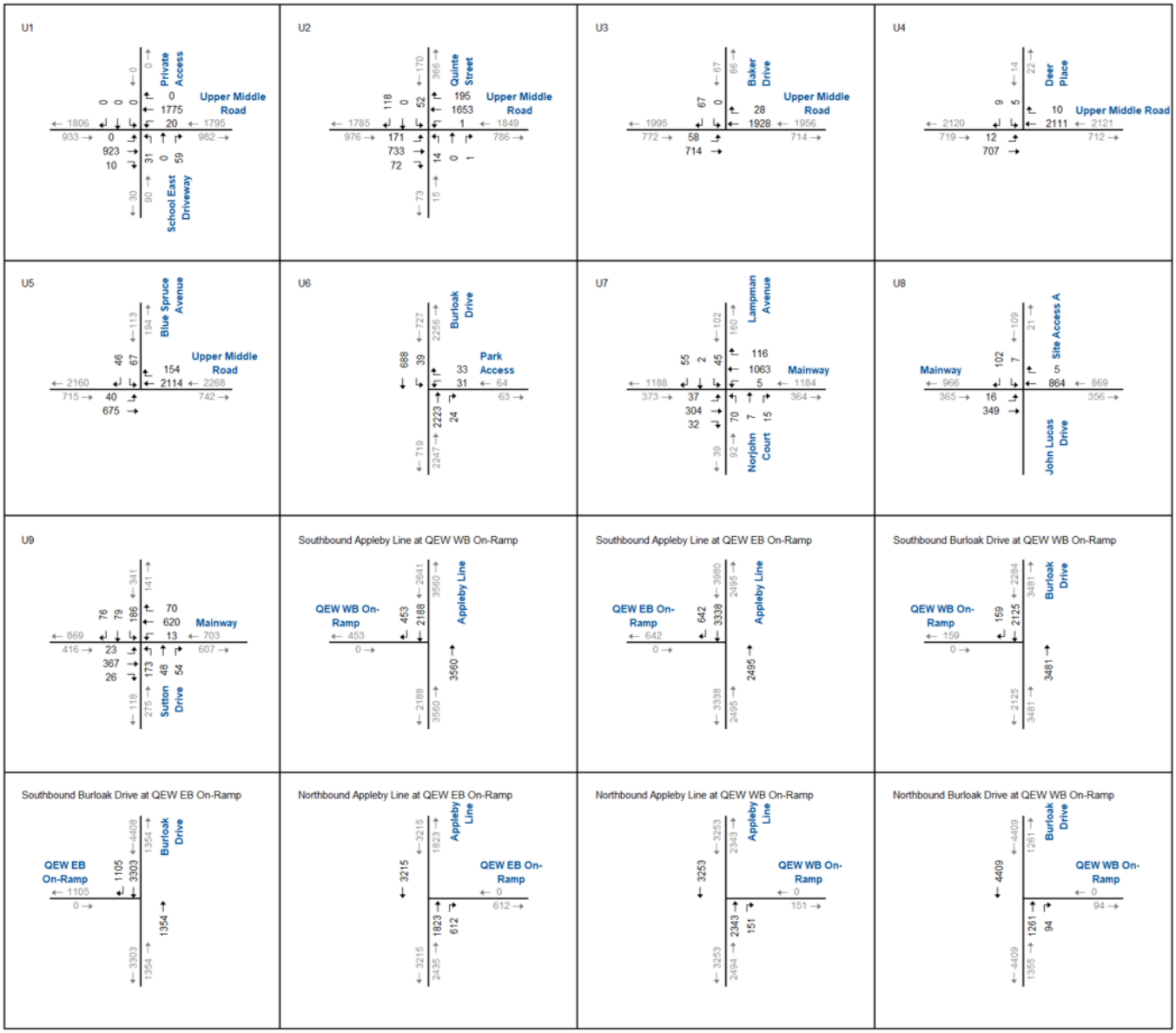
Figure 4.4B



Total Traffic Volumes 2040 Weekday PM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

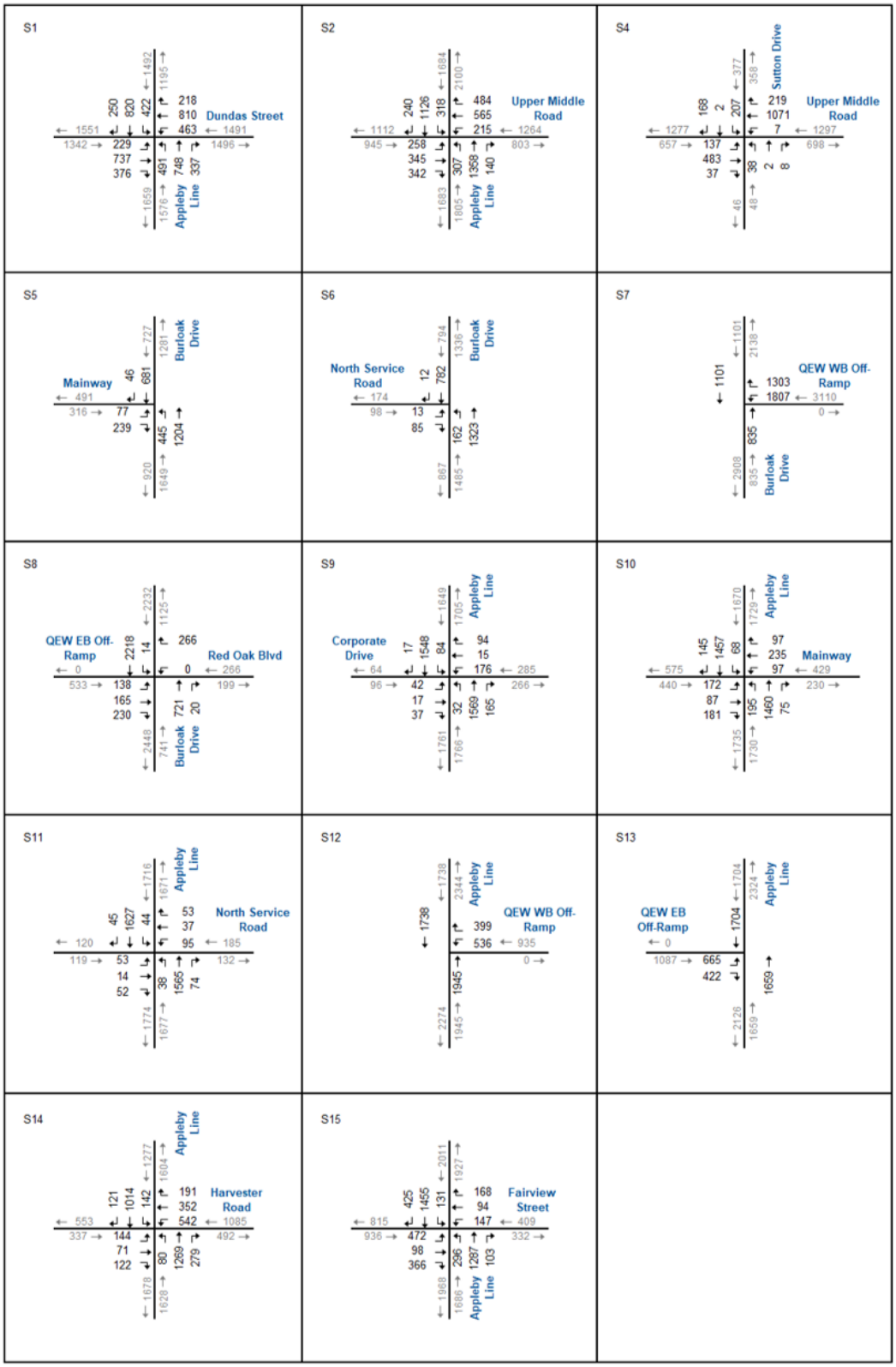
Figure 4.4C



Total Traffic Volumes 2040 Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

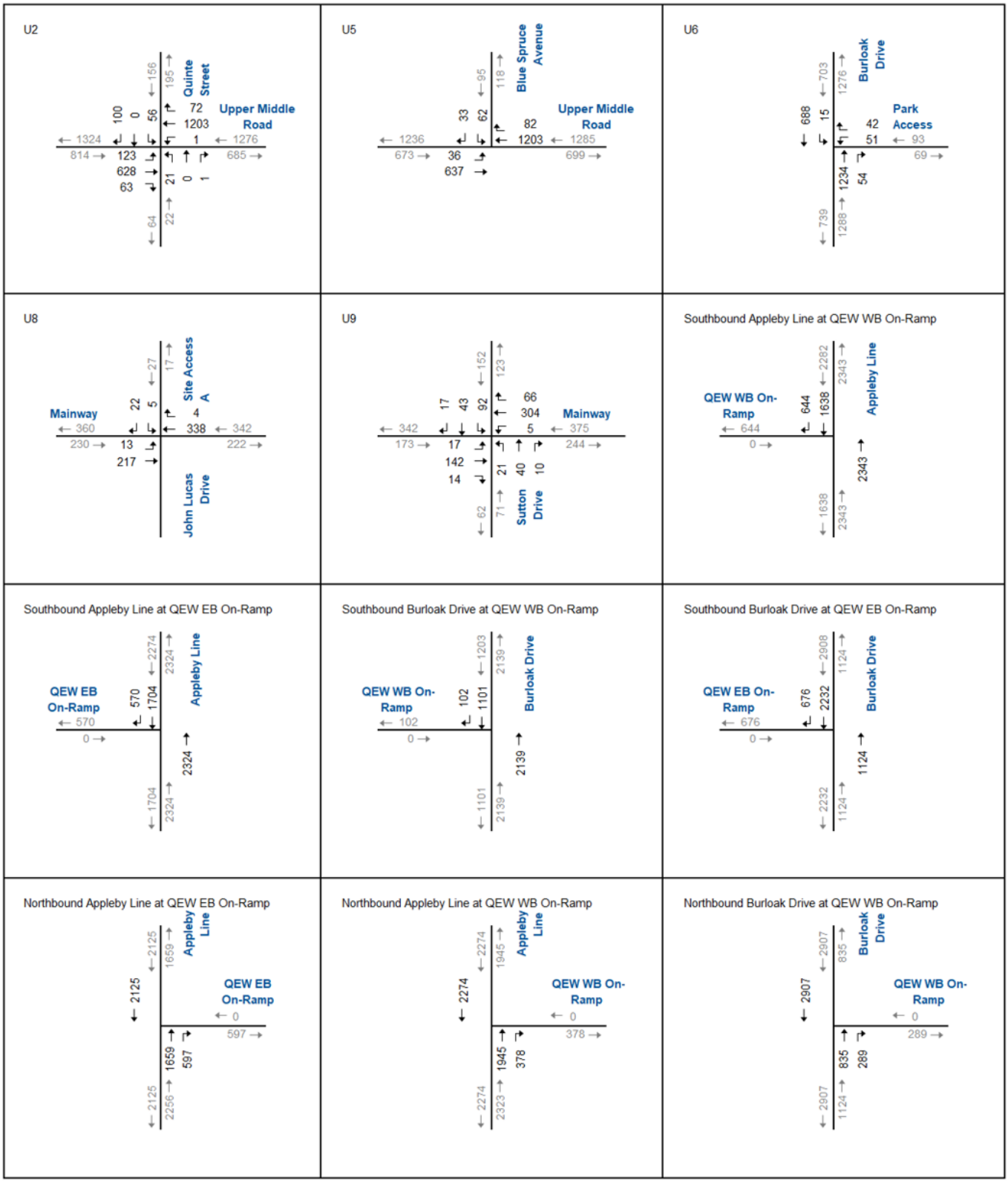
Figure 4.4D



Total Traffic Volumes 2040 Saturday Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

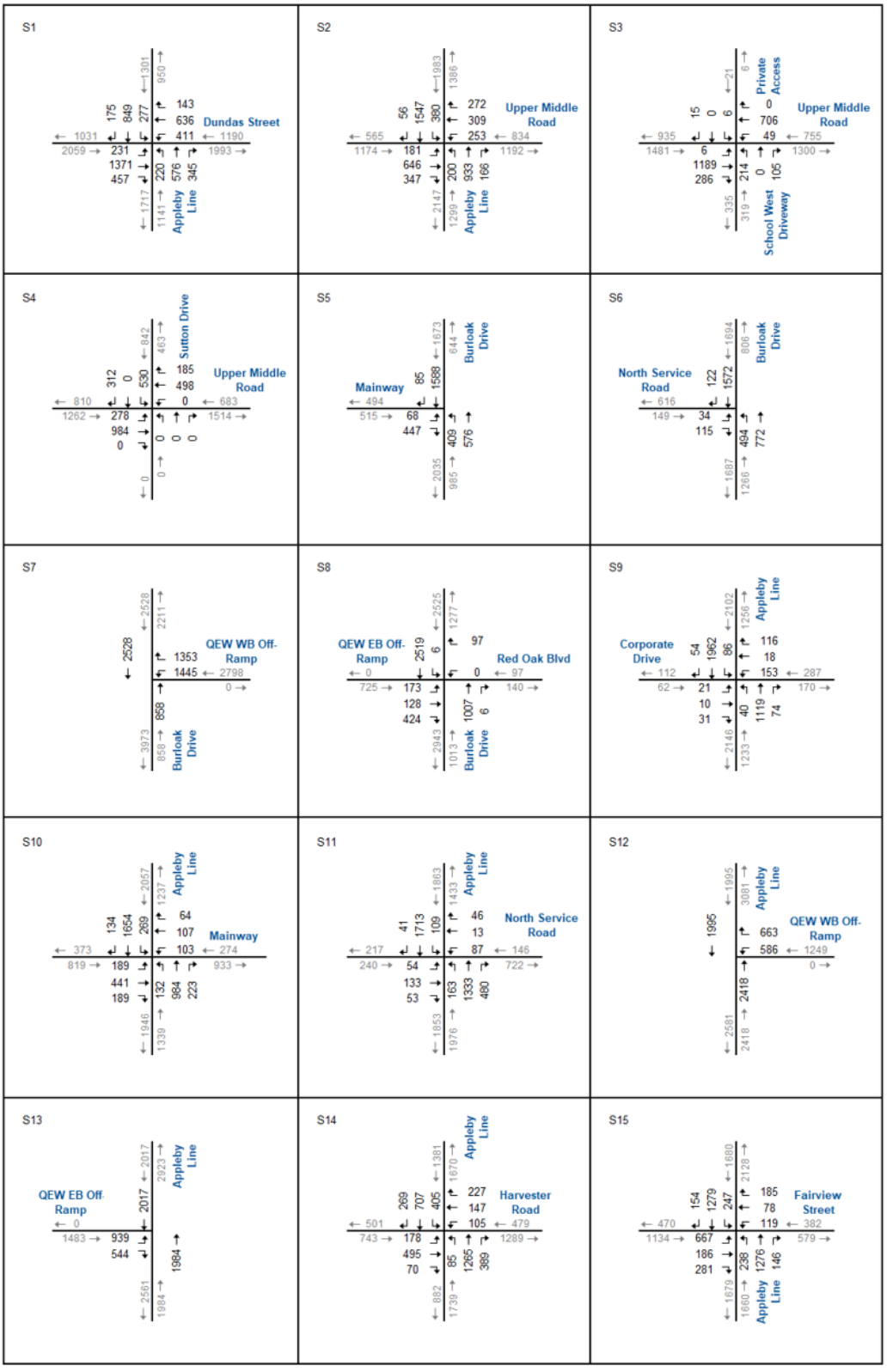
Figure 4.4E



Total Traffic Volumes 2040 Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

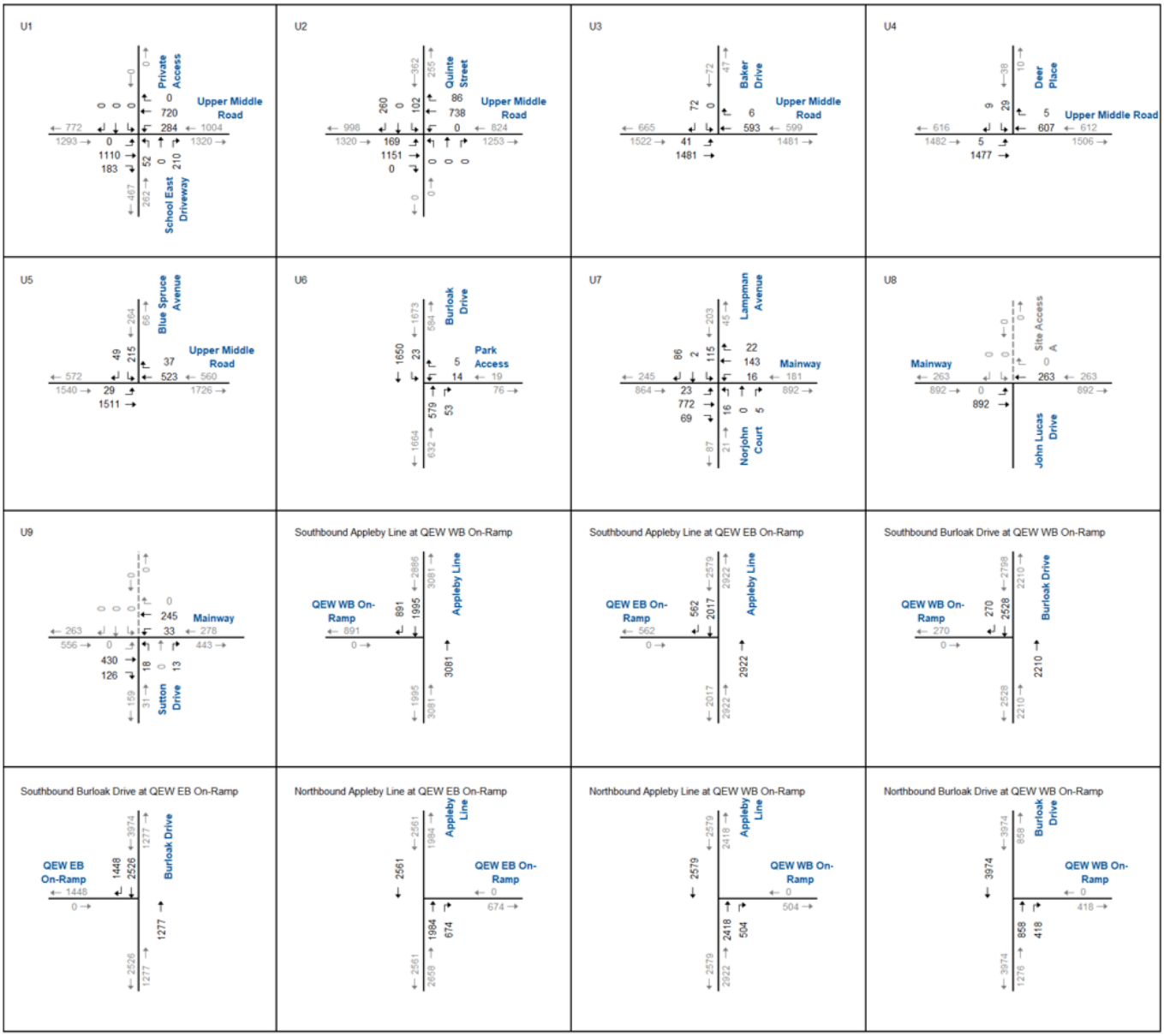
Figure 4.4F



Background Traffic Volumes 2045 Weekday AM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

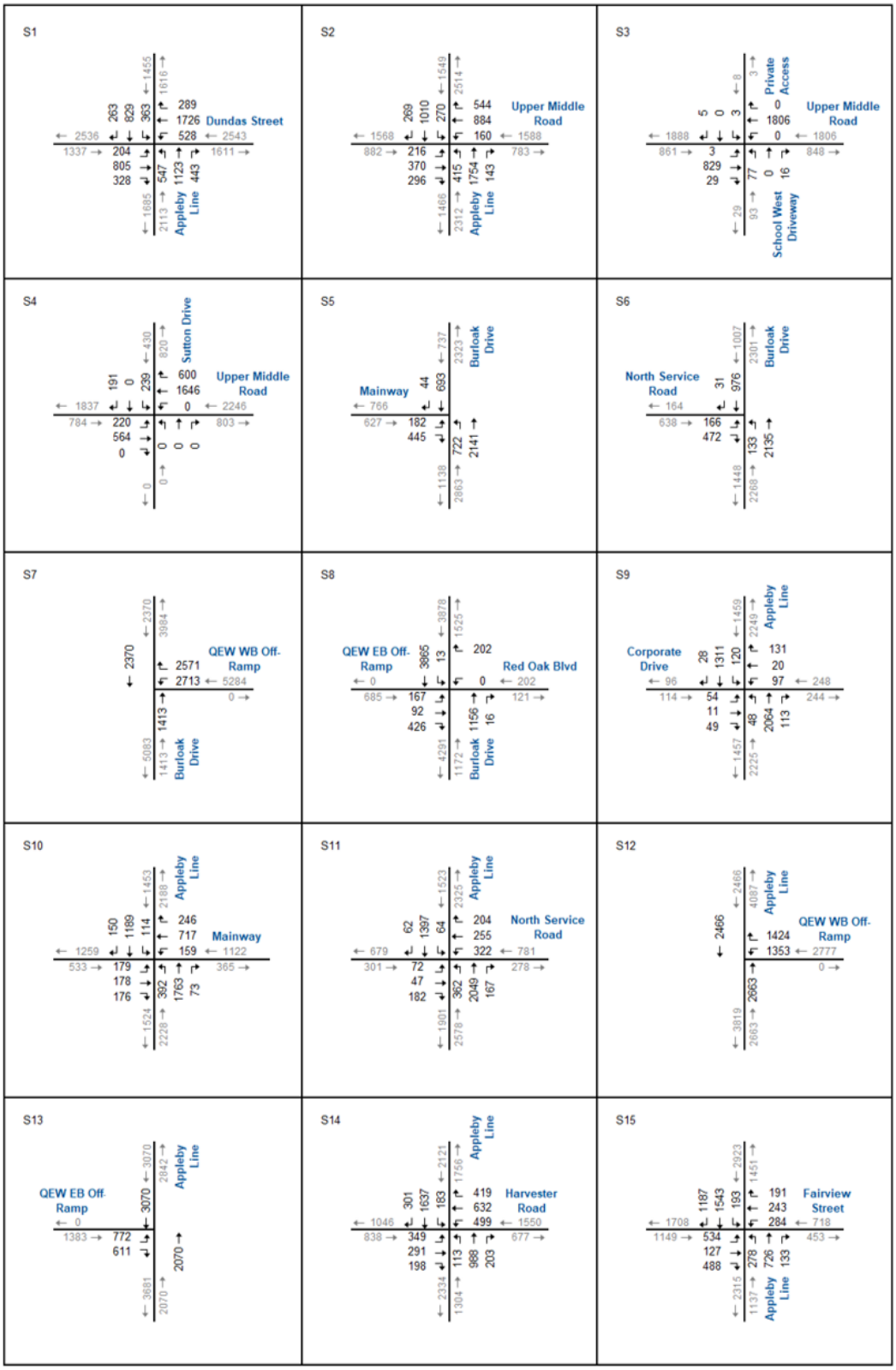
Figure 4.5A



Background Traffic Volumes 2045 Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

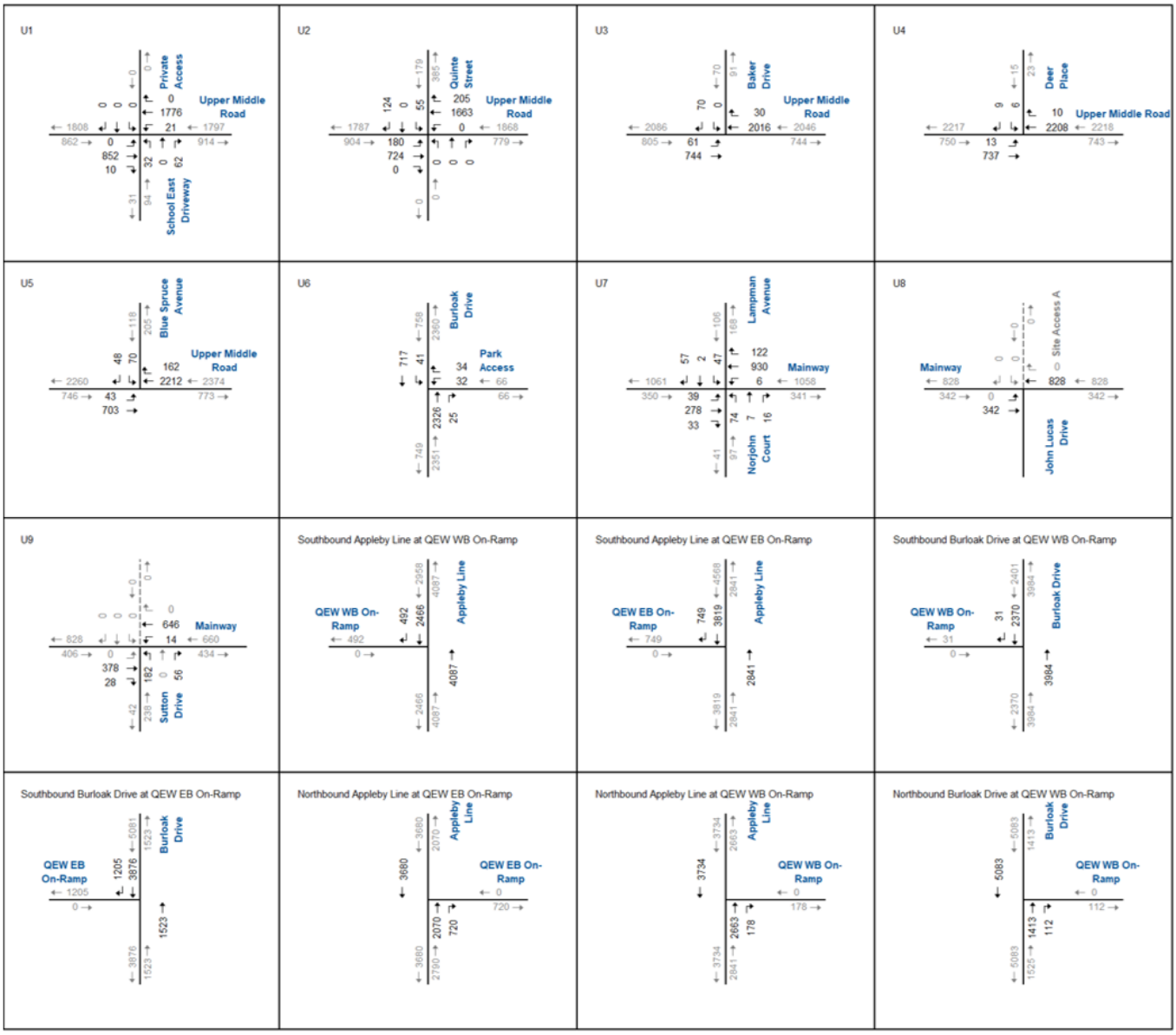
Figure 4.5B



Background Traffic Volumes 2045 Weekday PM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

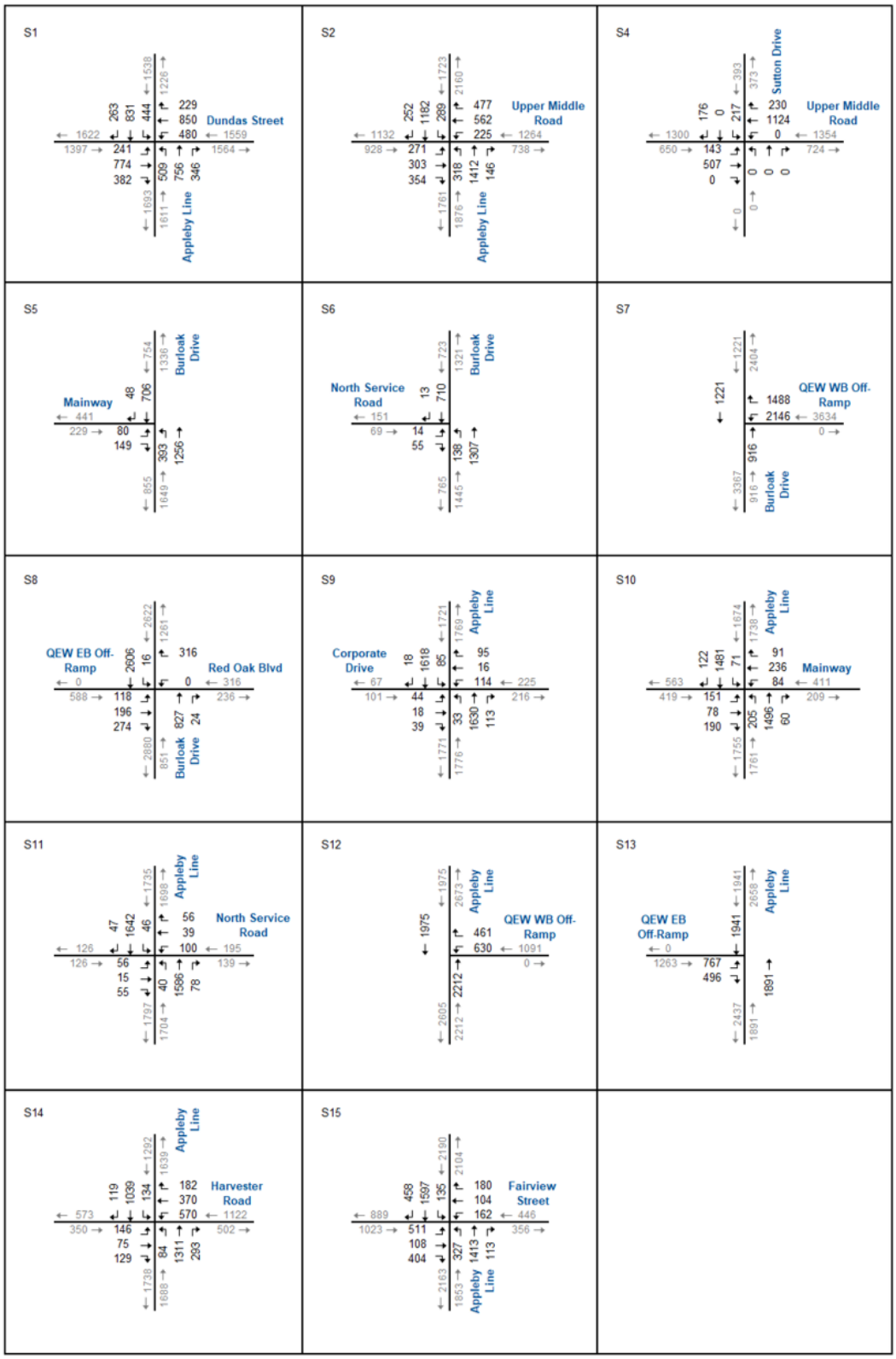
Figure 4.5C



Background Traffic Volumes 2045 Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 4.5D

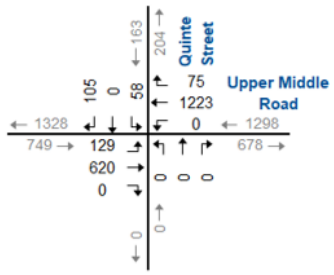


Background Traffic Volumes 2045 Saturday Peak Hour (Signalized Intersections)

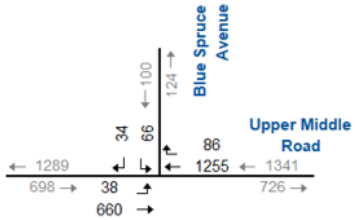
Bronte Creek Meadows, Burlington
230553

Figure 4.5E

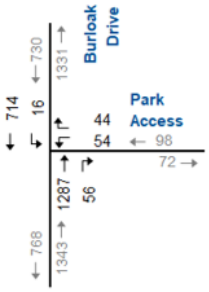
U2



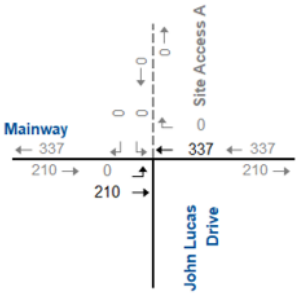
U5



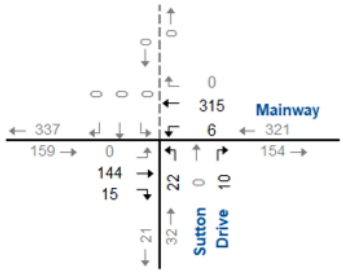
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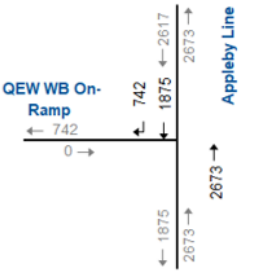
U8



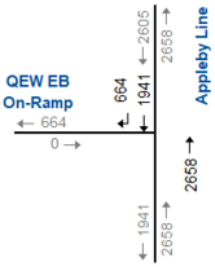
U9



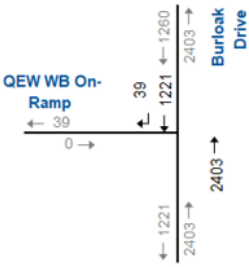
Southbound Appleby Line at QEW WB On-Ramp



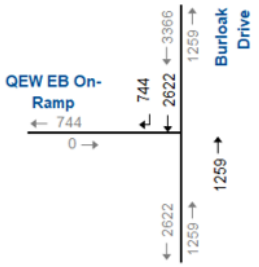
Southbound Appleby Line at QEW EB On-Ramp



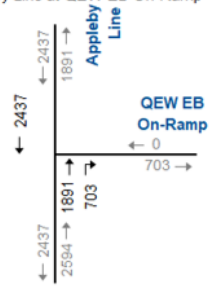
Southbound Burloak Drive at QEW WB On-Ramp



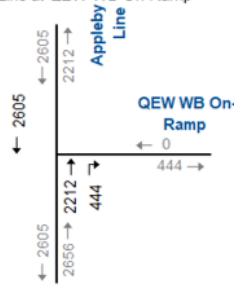
Southbound Burloak Drive at QEW EB On-Ramp



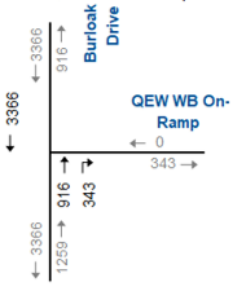
Northbound Appleby Line at QEW EB On-Ramp



Northbound Appleby Line at QEW WB On-Ramp



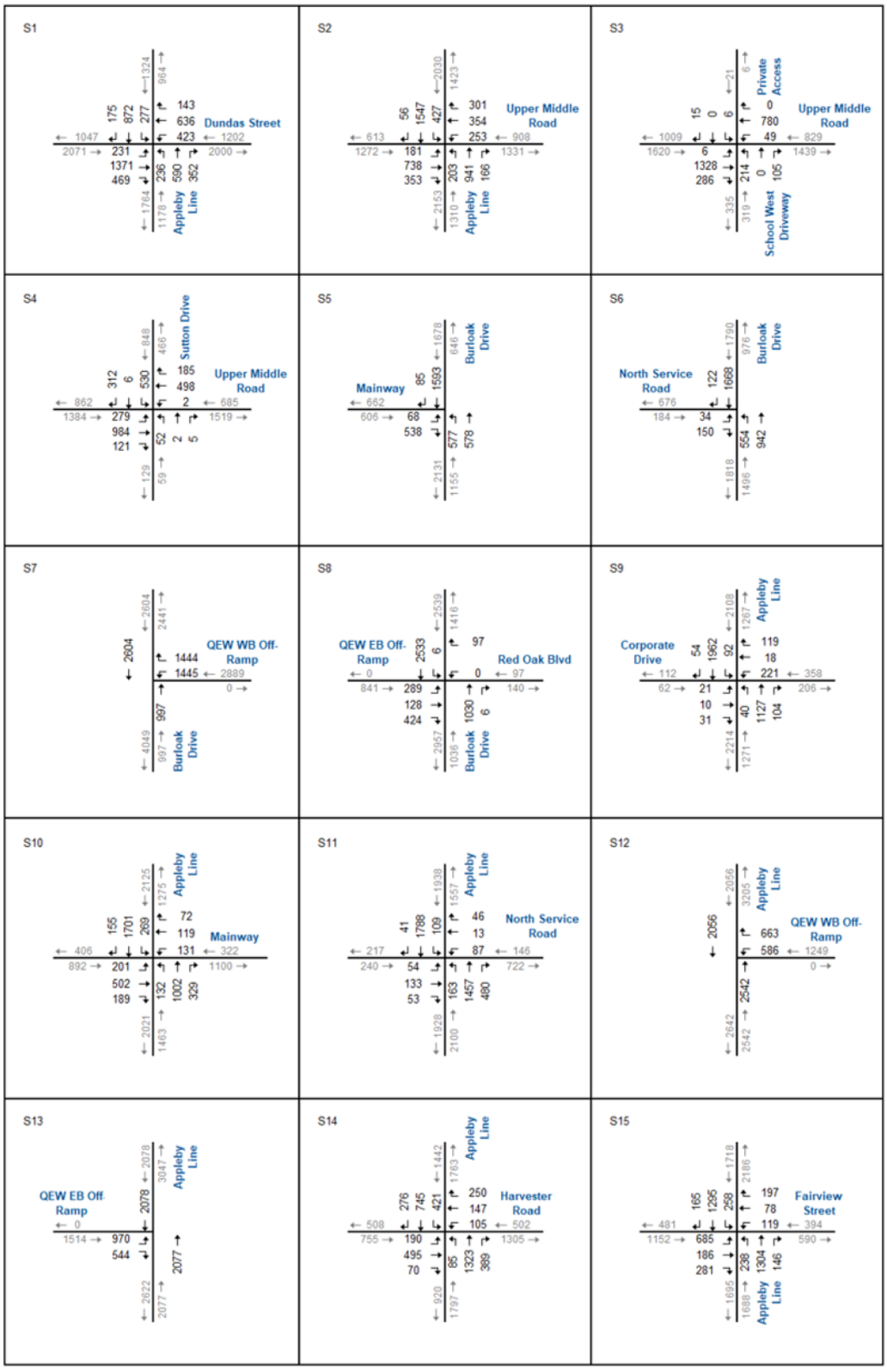
Northbound Burloak Drive at QEW WB On-Ramp



Background Traffic Volumes 2045 Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

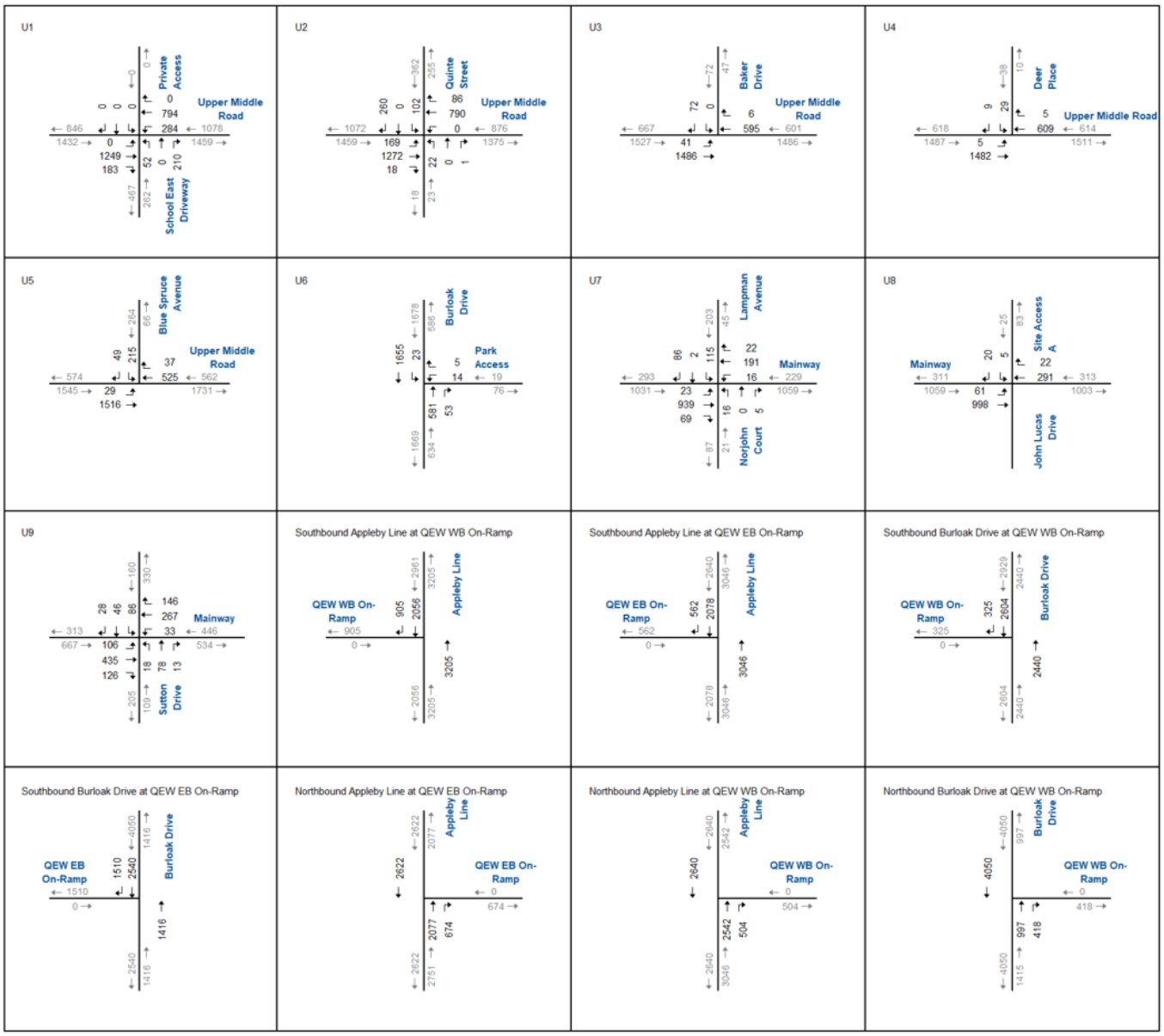
Figure 4.5F



Total Traffic Volumes 2045 Weekday AM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

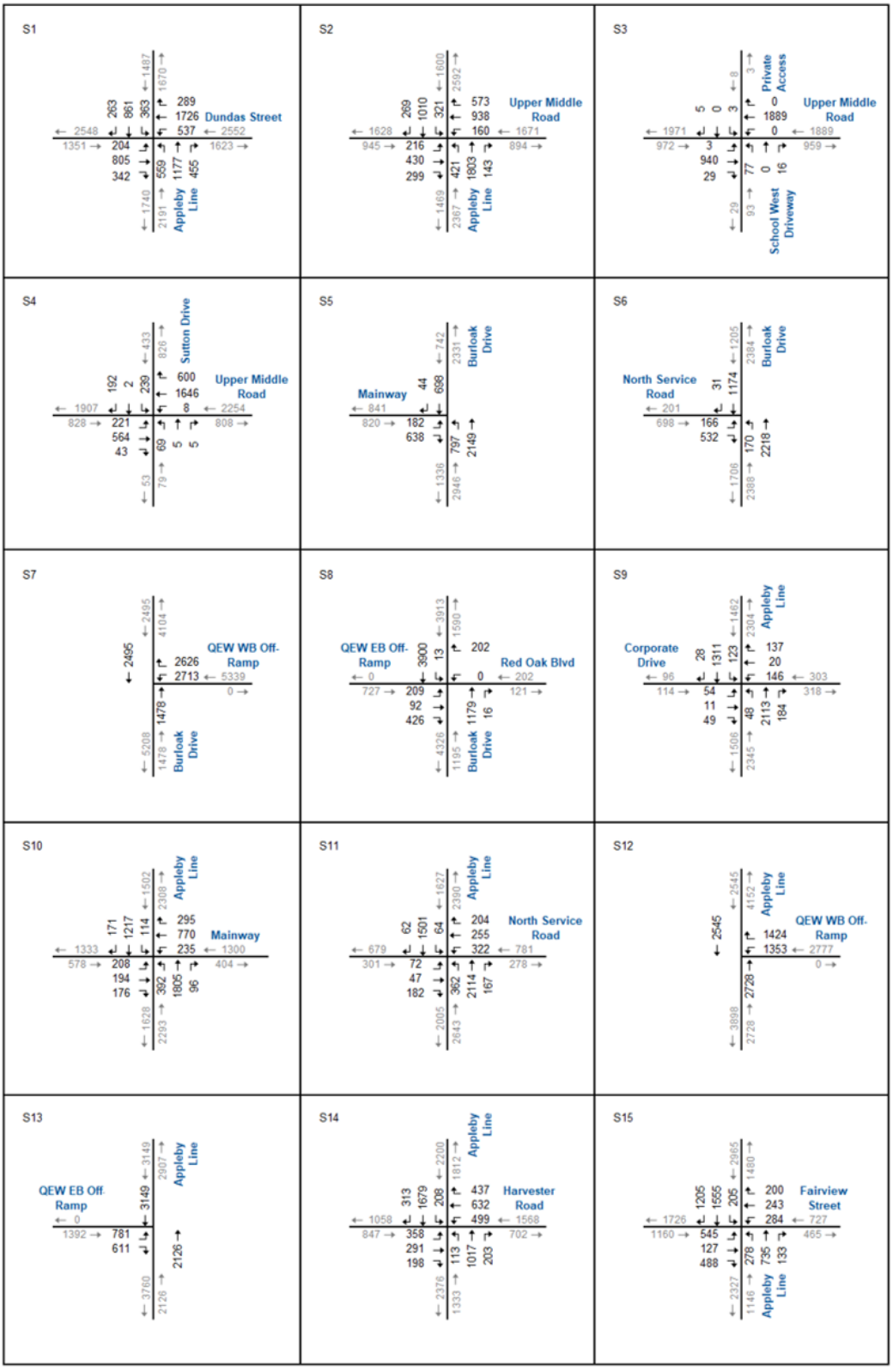
Figure 4.6A



Total Traffic Volumes 2045 Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

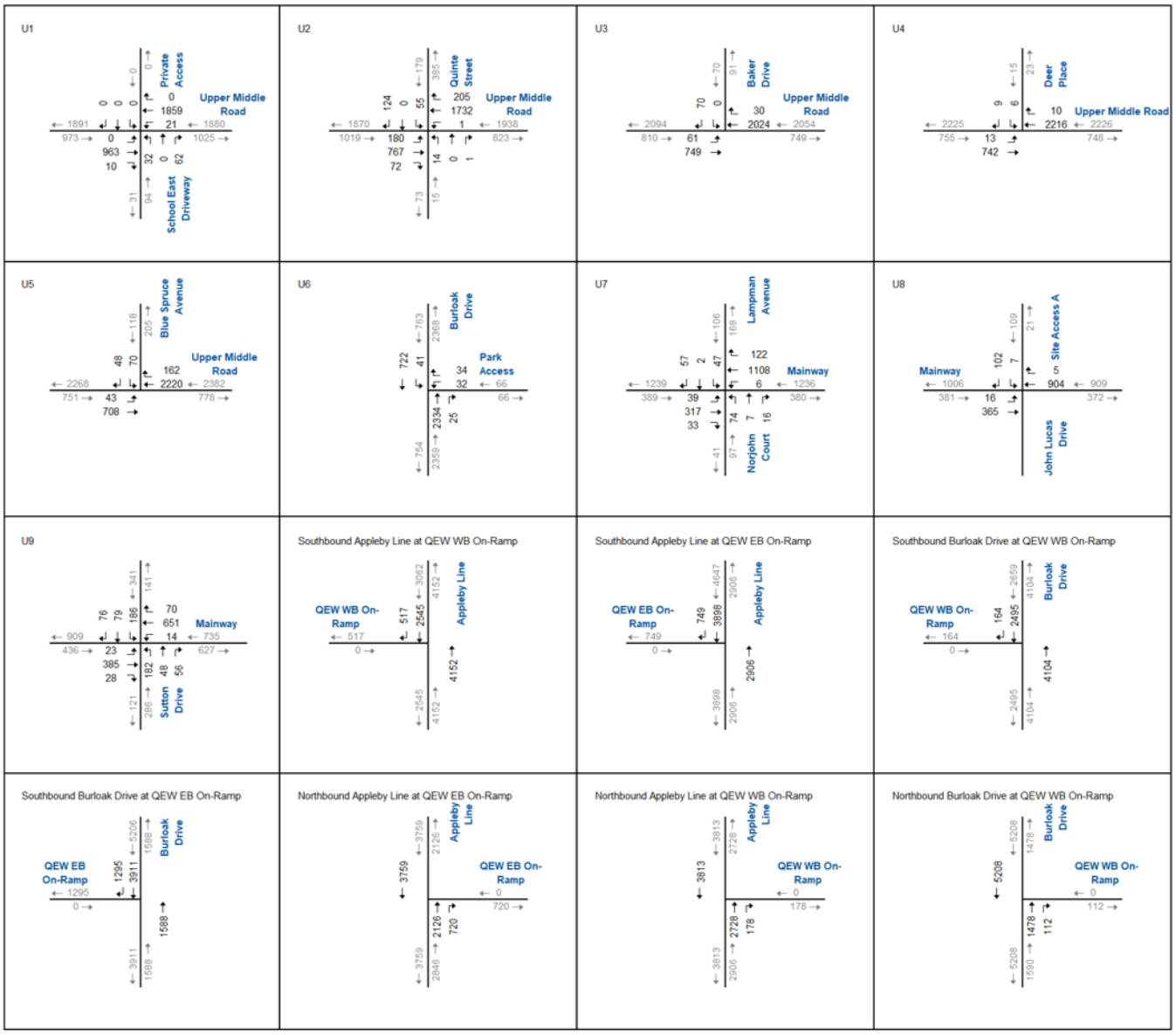
Figure 4.6B



Total Traffic Volumes 2045 Weekday PM Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

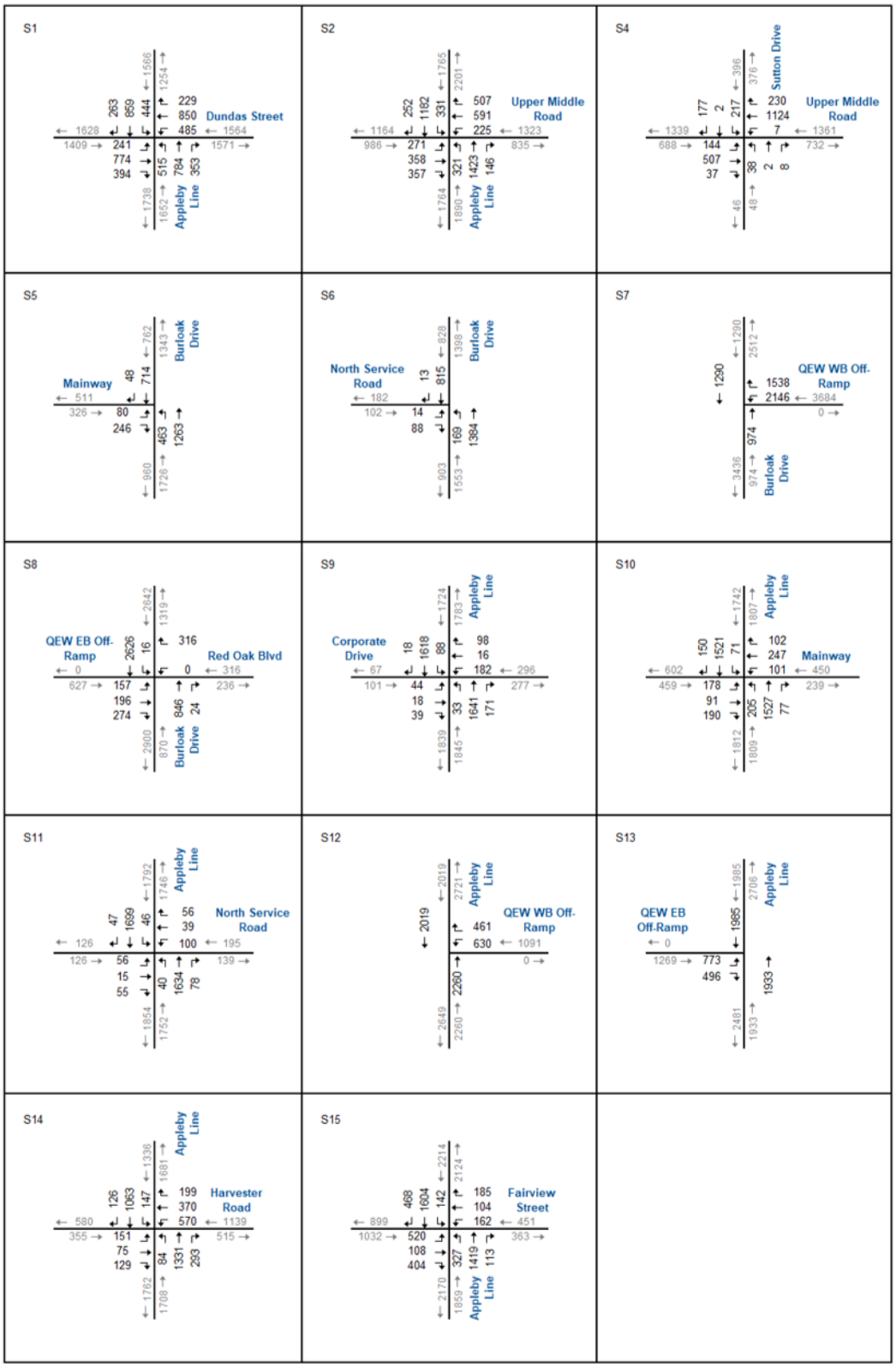
Figure 4.6C



Total Traffic Volumes 2045 Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

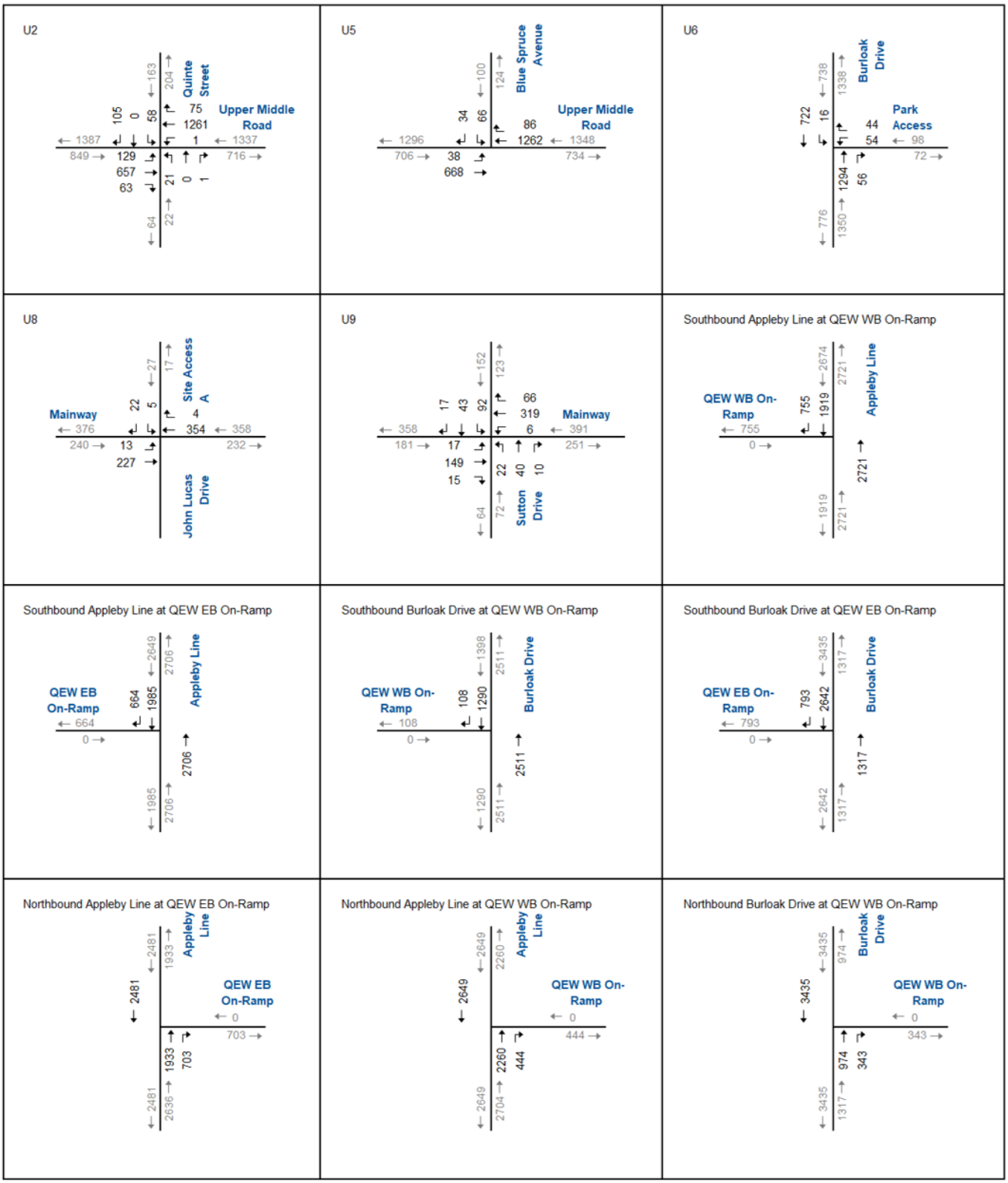
Figure 4.6D



Total Traffic Volumes 2045 Saturday Peak Hour (Signalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 4.6E



Total Traffic Volumes 2045 Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 4.6F

5 Operational Assessment

5.1 Level of Service Criteria

Intersection level of service (LOS) is a recognized method of quantifying the efficiency of traffic flow at intersections. It is based on the delay experienced by individual vehicles executing the various movements. The delay is related to the number of vehicles desiring to make a movement, compared to the estimated capacity for that movement. The capacity is based on several criteria related to the opposing traffic flows. The highest possible rating is LOS A, under which the average total delay is equal or less than 10.0 seconds per vehicle. When the average delay exceeds 80 seconds at signalized intersections (50 seconds at unsignalized), the movement is considered to have a LOS F and remedial measures are usually implemented if they are feasible.

The operations of the study area intersections were evaluated under existing traffic volumes using Synchro 12 and HCM 2000 procedures. The intersection analysis considered the following measures of performance:

- The LOS for each turning movement. LOS is based on the average control delay per vehicle;
- The volume to capacity ratio (v/c) for each intersection; and
- 95th percentile queue length (metres) using Synchro.

Under The Halton Region's TIS Guidelines[16], the following criteria indicate critical conditions and signify that mitigation measures may need to be considered:

- At signalized intersections,
  - Movements increased to v/c 0.85 or above; and
  - Movements increased to v/c 0.95 or above for exclusive turning movements.
- At unsignalized intersections,
  - LOS, based on average delay per vehicle, on individual movements is expected to operate at a LOS "D" or worse.
- At all intersections,

[16] Halton Region, Transportation Impact Study Guidelines, January 2015

- An exclusive turning movement in which the 95th percentile queue will exceed the available storage space.

The MTO's Traffic Impact Study Guidelines[17] identifies the following thresholds for critical movements:

- Movements with a volume to a capacity ratio greater than 0.85 at signalized intersections; and
- A volume to a capacity ratio greater than 0.75 for all ramp terminals approaches.

5.2 Intersection Capacity Analysis

Intersection capacity analyses were conducted at all intersections in the study area. Analyses were conducted for the Base Conditions (2024), Opening-Year (2035 Background and Total Conditions), Five Year after Opening (2040 Background and Total Conditions), and the Ten Year after Opening (2045 Background and Total Conditions).

Tables 5.1 – 5.26 summarize the capacity analyses for the study area intersections for all horizon years. The capacity analysis results are included in **Appendix J**. The following sub-sections outline the operations of the study area intersections.

5.2.1 Appleby Line at Dundas Street

Horizon Year	Operations
2024 Base Year	Approaching Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Appleby Line and Dundas Street, all movements experience delays approaching critical conditions, with some movements operating at LOS F but v/c ratios below 0.80.

With Background traffic growth, the northbound through and left movement is forecast to operate at LOS E with a v/c ratio over 0.95 under the 2035 Background horizon during the weekday PM peak hour. During the Saturday peak hour, the westbound left-turn lane is forecast to operate in the LOS F range with a v/c ratio exceeding 1.00.

[17] Ministry of Transportation Ontario, General Guidelines for the Preparation of Traffic Impact Studies, March 2023

The northbound left-turn lane is also expected to degrade to LOS E with a v/c ratio of 0.95 by the 2040 horizon. Under the 2045 Background horizon, the westbound left-turn lane is projected to operate at LOS F with a v/c ratio exceeding 0.95 during the weekday AM peak hour. The southbound through lane is also anticipated to experience a LOS E with v/c ratios of 0.85 or greater during the weekday peak hours.

Under the 2040 Total horizon, delays are forecast in the westbound left-turn lane during the weekday AM peak hour, operating at LOS F with a v/c ratio of 0.95, as well as the southbound through lane during the weekday PM peak hour, operating at LOS E with a v/c ratio greater than 0.85. All other movements that experience critical movements under the Background horizons are expected to continue in the Total horizons.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Northbound through (v/c > 0.85) (2035 Background);
- Westbound left (v/c > 0.95) (2035 Background)
- Northbound left (v/c > 0.95) (2035 Total); and
- Southbound through (v/c > 0.85) (2040 Total).

TABLE 5.1A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT DUNDAS STREET

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Dundas Street	TCS	Existing	LOS	E	D	D	D	E	D	C	D	E	D	D	D	E	D	D	D	D
				Delay	65	48	38	48	70	36	32	47	63	43	43	46	62	43	37	47	47
				V/C	0.58	0.77	0.26		0.79	0.34	0.08		0.51	0.37	0.28		0.59	0.50	0.10		0.67
				Q	43	125	27		75	54	14		39	64	46		50	91	20		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	62	-	153		115	-	201		96	-	74		85	-	160		
			Background 2035	LOS	E	D	D	D	E	C	C	D	E	D	D	D	E	D	D	D	D
				Delay	67	46	37	46	78	32	29	48	63	49	53	53	64	52	43	53	50
				V/C	0.65	0.79	0.40		0.88	0.35	0.09		0.56	0.50	0.51		0.64	0.68	0.11		0.76
				Q	49	140	50		94	58	14		46	75	86		56	120	22		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	56	-	130		96	-	201		89	-	34		79	-	158		
			Total 2035	LOS	E	D	D	D	F	C	C	D	E	D	D	D	E	D	D	D	D
				Delay	67	46	38	46	83	32	29	50	63	49	54	54	64	53	43	54	50
				V/C	0.65	0.79	0.42		0.91	0.35	0.09		0.59	0.51	0.53		0.64	0.71	0.11		0.77
				Q	49	140	54		99	58	14		49	77	92		56	126	22		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	56	-	126		91	-	201		86	-	28		79	-	158		
			Background 2040	LOS	E	D	D	D	F	C	C	D	E	D	E	E	E	E	D	E	D
				Delay	68	45	37	46	86	32	28	50	63	52	58	56	64	56	44	56	51
				V/C	0.68	0.80	0.43		0.92	0.35	0.10		0.58	0.56	0.59		0.66	0.76	0.12		0.80
				Q	51	148	58		101	61	15		48	79	100		59	130	22		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	54	-	122		89	-	200		87	-	20		76	-	158		
			Total 2040	LOS	E	D	D	D	F	C	C	D	E	D	E	E	E	E	D	E	D
				Delay	68	45	37	46	91	32	28	52	63	52	59	56	64	58	45	57	52
				V/C	0.68	0.80	0.46		0.95	0.35	0.10		0.61	0.57	0.62		0.66	0.79	0.12		0.81
				Q	51	148	64		106	61	15		51	81	106		59	135	22		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	54	-	116		84	-	200		84	-	14		76	-	158		
			Background 2045	LOS	E	D	D	D	F	C	C	D	E	D	E	E	E	E	D	E	D
				Delay	70	44	36	46	95	31	28	52	63	54	64	59	65	62	46	60	53
				V/C	0.71	0.81	0.47		0.97	0.36	0.10		0.60	0.62	0.68		0.69	0.85	0.12		0.84
				Q	54	159	68		109	64	15		50	83	113		61	140	23		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	51	-	112		81	-	200		85	-	7		74	-	157		
			Total 2045	LOS	E	D	D	D	F	C	C	E	E	D	E	E	E	E	D	E	D
				Delay	70	44	37	46	102	31	28	56	64	55	65	60	65	65	46	62	54
				V/C	0.71	0.81	0.50		1.00	0.36	0.10		0.62	0.63	0.70		0.69	0.88	0.12		0.85
				Q	54	159	73		113	64	15		53	85	118		61	146	23		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	51	-	107		77	-	200		82	-	2		74	-	157		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
* - V/C ratio less than 0.01

TABLE 5.1B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT DUNDAS STREET

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Dundas Street	TCS	Existing	LOS	E	D	D	D	E	D	C	D	D	D	F	E	E	E	D	E	E
				Delay	66	44	40	46	60	43	31	45	48	54	152	73	63	55	50	56	55
				V/C	0.58	0.49	0.17		0.72	0.79	0.16		0.69	0.73	0.23		0.67	0.67	0.29		0.78
				Q	38	72	22		78	143	17		90	133	48		61	85	41		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	67	-	158		112	-	198		45	-	72		74	-	139		
			Background 2035	LOS	E	D	D	D	E	D	C	D	E	E	F	E	E	E	D	E	E
				Delay	69	43	39	46	60	41	28	43	64	67	114	76	67	62	54	61	57
				V/C	0.66	0.53	0.25		0.76	0.81	0.18		0.93	0.96	0.44		0.75	0.81	0.39		0.90
				Q	42	82	32		92	162	17		118	148	63		78	98	52		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	63	-	148		98	-	198		17	-	57		57	-	128		
			Total 2035	LOS	E	D	D	D	E	D	C	D	E	E	F	E	E	E	D	E	E
				Delay	69	43	40	46	60	41	28	43	66	75	106	79	67	64	54	62	58
				V/C	0.66	0.53	0.29		0.77	0.81	0.18		0.95	1.01	0.48		0.75	0.84	0.39		0.92
				Q	42	82	38		93	162	17		117	158	62		78	102	52		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	63	-	142		97	-	198		18	-	58		57	-	128		
			Background 2040	LOS	E	D	D	D	E	D	C	D	F	F	F	F	E	E	D	E	E
				Delay	71	42	39	46	60	40	27	43	99	92	107	97	71	64	55	64	63
				V/C	0.69	0.54	0.29		0.79	0.82	0.19		1.07	1.06	0.53		0.81	0.84	0.44		0.95
				Q	44	86	38		96	174	18		118	156	63		85	103	57		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	61	-	142		94	-	197		17	-	57		50	-	123		
			Total 2040	LOS	E	D	D	D	E	D	C	D	F	F	F	F	E	E	D	E	E
				Delay	71	42	39	46	61	40	27	43	106	110	102	107	71	66	55	65	66
				V/C	0.69	0.54	0.32		0.79	0.83	0.19		1.10	1.11	0.57		0.81	0.87	0.44		0.97
				Q	44	86	44		98	174	18		116	161	63		85	112	57		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	61	-	136		92	-	197		19	-	57		50	-	123		
			Background 2045	LOS	E	D	D	D	E	D	C	D	F	F	F	F	E	E	E	E	E
				Delay	72	42	38	45	62	40	26	43	152	131	102	131	77	67	56	68	73
				V/C	0.71	0.55	0.32		0.81	0.84	0.20		1.21	1.16	0.62		0.86	0.89	0.49		1.00
				Q	47	90	44		101	187	18		117	156	63		90	114	63		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	58	-	136		89	-	197		18	-	57		45	-	117		
			Total 2045	LOS	E	D	D	D	E	D	C	D	F	F	F	F	E	E	E	E	E
				Delay	72	42	39	46	62	40	26	43	164	155	99	146	77	71	56	70	78
				V/C	0.71	0.55	0.36		0.81	0.84	0.20		1.24	1.22	0.66		0.86	0.92	0.49		1.02
				Q	47	90	50		103	187	18		116	161	63		90	121	63		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	58	-	130		87	-	197		19	-	57		45	-	117		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
* - V/C ratio less than 0.01

TABLE 5.1C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT DUNDAS STREET

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Dundas Street	TCS	Existing	LOS	E	E	D	**E**	F	E	D	**E**	E	C	C	**D**	E	C	C	**D**	**D**
				Delay	62	57	51	**56**	84	56	48	**63**	58	32	30	**40**	59	34	31	**41**	**50**
				V/C	0.54	0.71	0.25		0.90	0.71	0.12		0.67	0.32	0.17		0.66	0.37	0.14		**0.59**
				Q	41	74	32		87	82	21		73	66	21		68	73	20		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	64	-	148		103	-	194		62	-	99		67	-	160		
			Background 2035	LOS	E	D	D	**E**	F	D	D	**E**	D	D	D	**D**	E	D	D	**D**	**D**
				Delay	62	55	51	**55**	123	55	45	**74**	54	37	36	**42**	58	41	37	**45**	**54**
				V/C	0.58	0.71	0.46		1.06	0.74	0.14		0.66	0.41	0.27		0.68	0.50	0.15		**0.68**
				Q	46	83	56		110	92	21		90	76	39		78	84	20		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	59	-	124		80	-	194		45	-	81		57	-	160		
			Total 2035	LOS	E	D	D	**D**	F	D	D	**E**	D	D	D	**D**	E	D	D	**D**	**D**
				Delay	62	55	51	**55**	127	54	45	**76**	54	38	36	**42**	58	42	37	**46**	**54**
				V/C	0.58	0.71	0.50		1.07	0.73	0.14		0.66	0.43	0.29		0.68	0.53	0.15		**0.70**
				Q	46	83	62		111	92	21		92	79	42		78	87	20		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	59	-	118		79	-	194		43	-	78		57	-	160		
			Background 2040	LOS	E	D	D	**D**	F	D	D	**E**	D	D	D	**D**	E	D	D	**D**	**E**
				Delay	63	54	50	**55**	139	54	45	**79**	55	39	38	**44**	57	43	38	**46**	**56**
				V/C	0.60	0.71	0.50		1.11	0.75	0.15		0.69	0.46	0.32		0.68	0.54	0.16		**0.72**
				Q	48	86	63		116	95	21		104	80	46		83	88	21		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	57	-	117		74	-	194		31	-	74		52	-	159		
			Total 2040	LOS	E	D	D	**D**	F	D	D	**F**	E	D	D	**D**	E	D	D	**D**	**E**
				Delay	63	54	52	**55**	144	54	45	**80**	55	40	39	**44**	57	44	38	**47**	**56**
				V/C	0.60	0.71	0.55		1.12	0.75	0.15		0.70	0.47	0.33		0.68	0.56	0.16		**0.73**
				Q	48	86	69		118	95	21		106	83	48		83	92	21		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	57	-	111		72	-	194		29	-	72		52	-	159		
			Background 2045	LOS	E	D	D	**D**	F	D	D	**F**	E	D	D	**D**	E	D	D	**D**	**E**
				Delay	64	53	51	**54**	160	54	44	**85**	59	42	41	**47**	58	44	38	**47**	**58**
				V/C	0.62	0.71	0.55		1.17	0.75	0.15		0.76	0.50	0.36		0.70	0.57	0.18		**0.76**
				Q	50	89	71		125	99	22		119	84	53		99	93	24		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	55	-	109		65	-	193		16	-	67		36	-	156		
			Total 2045	LOS	E	D	D	**D**	F	D	D	**F**	E	D	D	**D**	E	D	D	**D**	**E**
				Delay	64	53	52	**54**	164	54	44	**86**	59	42	41	**47**	58	44	38	**47**	**59**
				V/C	0.62	0.71	0.58		1.18	0.75	0.15		0.77	0.52	0.38		0.70	0.59	0.18		**0.77**
				Q	50	89	76		126	99	22		122	87	55		99	96	24		
				Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
				Avail.	55	-	104		64	-	193		13	-	65		36	-	156		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
* - V/C ratio less than 0.01

5.2.2 Appleby Line at Upper Middle Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Appleby Line and Upper Middle Road, the eastbound through-right lane operates at LOS E with a v/c ratio exceeding 0.85 during the weekday AM peak hour. During this time, critical movements also occur in the southbound left-turn lane, with the 95th percentile queues exceeding the available storage by less than 50 m, as well as the through-right lane operating with a v/c ratio of 0.95. During the weekday PM peak hour, critical movements are present in the eastbound left, westbound through, westbound right, and southbound left-turn lanes, with 95th percentile queues exceeding the available storage by less than 20 m, 40 m, and 30 m respectively. The westbound through movement operates in the LOS E range with v/c ratios of over 0.90. During the Saturday peak hour, the southbound left-turn lane is also expected to exceed the available storage by less than 25 m.

Background traffic growth is anticipated to significantly increase delays for the existing critical movements. Under the 2035 Background Horizon, the westbound left-turn lane is forecast to operate at LOS F with a v/c ratio greater than 1.00 during the weekday AM peak hour. The northbound through-right lane is also forecast to operate at LOS C with a v/c ratio exceeding 0.85. The northbound through-right lane is also expected to experience an LOS B with a v/c ratio of 0.85 during the weekday PM peak hour. During the Saturday peak hour, the eastbound left and westbound right turn lanes are also expected to experience 95th percentile queues that extend beyond the available storage by less than 30 m. During this time, the westbound left-turn lane is also projected to degrade to LOS F with a v/c ratio greater than 0.95.

Under the 2040 Total horizon, the northbound left-turn lane is forecast to operate at LOS F with a v/c ratio of 0.95 during the weekday AM peak hour. The eastbound through-right is also anticipated to operate at LOS E with a v/c ratio over 0.85 during the weekday PM peak hour. During the Saturday peak hour, the northbound and southbound

through-right lanes are expected to operate with v/c ratios of 0.85 or greater.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Eastbound left (v/c > 0.95; 95th queue) (2024 Existing);
- Eastbound through-right (v/c > 0.85) (2024 Existing);
- Westbound through (v/c > 0.85) (2024 Existing);
- Westbound right (v/c > 0.85; 95th queue) (2024 Existing);
- Southbound left (95th queue) (2024 Existing);
- Southbound through-right (v/c > 0.85) (2024 Existing).
- Westbound left (v/c > 0.95) (2035 Background);
- Northbound through-right (v/c > 0.85) (2035 Background); and
- Northbound left (v/c > 0.95) (2040 Total).

TABLE 5.2A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Upper Middle Road	TCS	Existing	LOS	C	E	>	D	E	C	C	D	E	E	>	E	D	D	>	D	D
				Delay	29	55	>	51	72	32	28	43	63	55	>	56	50	51	>	51	51
				V/C	0.36	0.89	>		0.87	0.28	0.15		0.68	0.81	>		0.88	0.95	>		0.95
				Q	40	124	>		78	34	10		37	150	>		104	224	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	15	-	>		47	-	70		63	-	>		-49	-	>		
			Background 2035	LOS	C	F	>	F	F	C	C	E	F	E	>	E	F	D	>	E	E
				Delay	28	98	>	88	130	31	32	61	90	60	>	65	126	50	>	64	69
				V/C	0.44	1.08	>		1.09	0.26	0.18		0.89	0.88	>		1.13	0.96	>		1.16
				Q	48	182	>		109	31	12		51	149	>		158	207	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	7	-	>		16	-	68		49	-	>		-103	-	>		
			Total 2035	LOS	C	F	>	F	F	C	D	E	F	E	>	E	F	D	>	E	F
				Delay	28	150	>	133	131	34	42	63	88	69	>	72	185	50	>	78	87
				V/C	0.46	1.21	>		1.09	0.30	0.20		0.91	0.89	>		1.28	0.96	>		1.28
				Q	48	216	>		108	37	17		51	152	>		189	207	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	7	-	>		17	-	63		49	-	>		-134	-	>		
			Background 2040	LOS	C	F	>	F	F	C	D	E	F	E	>	E	F	E	>	E	F
				Delay	29	119	>	105	147	32	36	68	97	66	>	71	146	60	>	76	80
				V/C	0.47	1.14	>		1.15	0.27	0.19		0.93	0.92	>		1.19	1.00	>		1.22
				Q	50	196	>		114	33	12		54	162	>		169	225	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	5	-	>		11	-	68		46	-	>		-114	-	>		
			Total 2040	LOS	C	F	>	F	F	C	D	E	F	E	>	F	F	E	>	F	F
				Delay	29	174	>	153	148	35	46	70	94	78	>	80	208	60	>	91	99
				V/C	0.50	1.27	>		1.15	0.32	0.21		0.95	0.93	>		1.34	1.00	>		1.34
				Q	50	230	>		115	39	17		54	164	>		200	225	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	5	-	>		10	-	63		46	-	>		-145	-	>		
			Background 2045	LOS	C	F	>	F	F	C	D	E	F	E	>	F	F	E	>	F	F
				Delay	29	143	>	126	167	33	40	76	108	76	>	81	171	75	>	93	94
				V/C	0.50	1.19	>		1.20	0.29	0.20		0.98	0.97	>		1.25	1.05	>		1.28
				Q	53	211	>		120	34	13		58	175	>		181	244	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	2	-	>		5	-	67		42	-	>		-126	-	>		
			Total 2045	LOS	C	F	>	F	F	D	D	E	F	F	>	F	F	E	>	F	F
				Delay	29	198	>	174	168	36	46	76	108	87	>	90	235	75	>	108	114
				V/C	0.53	1.32	>		1.20	0.33	0.25		1.00	0.98	>		1.40	1.05	>		1.40
				Q	53	244	>		120	40	20		58	178	>		212	244	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	2	-	>		5	-	60		42	-	>		-157	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.2B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Upper Middle Road	TCS	Existing	LOS	E	D	>	E	D	E	E	E	F	C	>	C	E	D	>	D	D
				Delay	74	50	>	56	42	70	65	66	83	20	>	32	69	38	>	44	47
				V/C	0.87	0.52	>		0.50	0.91	0.78		0.70	0.84	>		0.84	0.62	>		0.87
				Q	74	65	>		42	133	119		64	166	>		81	116	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-19	-	>		83	-	-39		36	-	>		-26	-	>		
			Background 2035	LOS	F	E	>	E	E	E	F	F	F	B	>	C	F	D	>	D	E
				Delay	124	56	>	72	59	63	127	84	85	19	>	31	120	41	>	55	56
				V/C	1.05	0.73	>		0.78	0.87	1.07		0.75	0.85	>		1.07	0.64	>		1.05
				Q	100	95	>		56	118	182		79	126	>		115	118	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-45	-	>		69	-	-102		21	-	>		-60	-	>		
			Total 2035	LOS	F	E	>	E	E	E	F	F	F	C	>	C	F	D	>	E	E
				Delay	124	62	>	76	69	70	159	100	83	23	>	33	202	42	>	75	66
				V/C	1.05	0.84	>		0.83	0.93	1.17		0.76	0.88	>		1.29	0.65	>		1.20
				Q	100	116	>		64	134	201		74	163	>		147	118	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-45	-	>		61	-	-121		26	-	>		-92	-	>		
			Background 2040	LOS	F	E	>	E	E	E	F	F	F	C	>	C	F	D	>	E	E
				Delay	139	57	>	77	74	68	156	99	85	23	>	34	135	43	>	59	62
				V/C	1.10	0.77	>		0.86	0.91	1.16		0.77	0.89	>		1.12	0.68	>		1.10
				Q	106	100	>		68	131	200		81	167	>		119	124	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-51	-	>		57	-	-120		19	-	>		-64	-	>		
			Total 2040	LOS	F	E	>	F	E	E	F	F	F	C	>	D	F	D	>	E	E
				Delay	139	65	>	82	79	78	193	118	81	26	>	36	220	44	>	80	74
				V/C	1.10	0.88	>		0.88	0.97	1.25		0.77	0.92	>		1.34	0.69	>		1.26
				Q	106	125	>		70	145	219		73	194	>		149	124	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-51	-	>		55	-	-139		27	-	>		-94	-	>		
			Background 2045	LOS	F	E	>	F	F	E	F	F	F	C	>	D	F	D	>	E	E
				Delay	159	60	>	84	90	75	191	116	83	27	>	37	154	45	>	64	70
				V/C	1.16	0.81	>		0.93	0.96	1.25		0.78	0.94	>		1.18	0.72	>		1.16
				Q	114	106	>		76	142	218		80	211	>		121	130	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-59	-	>		49	-	-138		20	-	>		-66	-	>		
			Total 2045	LOS	F	E	>	F	F	F	F	F	E	C	>	D	F	D	>	F	F
				Delay	159	71	>	91	89	90	231	138	79	31	>	40	242	46	>	86	83
				V/C	1.16	0.92	>		0.92	1.02	1.35		0.78	0.96	>		1.40	0.73	>		1.32
				Q	114	135	>		76	156	238		73	272	>		152	129	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-59	-	>		49	-	-158		27	-	>		-97	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
* - V/C ratio less than 0.01

TABLE 5.2C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Upper Middle Road	TCS	Existing	LOS	E	D	>	D	D	D	D	D	D	B	>	C	C	C	>	C	C
				Delay	59	40	>	46	45	44	48	46	55	20	>	26	22	28	>	27	34
				V/C	0.84	0.43	>		0.72	0.64	0.67		0.60	0.74	>		0.67	0.70	>		0.77
				Q	52	35	>		42	57	64		34	155	>		77	158	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	3	-	>		83	-	16		66	-	>		-22	-	>		
			Background 2035	LOS	F	D	>	D	F	D	E	E	D	B	>	C	F	C	>	D	D
				Delay	83	40	>	53	91	38	59	56	51	20	>	25	83	33	>	41	41
				V/C	0.97	0.61	>		0.98	0.53	0.85		0.70	0.80	>		0.99	0.77	>		0.98
				Q	81	60	>		64	54	108		43	126	>		121	139	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-26	-	>		61	-	-28		57	-	>		-66	-	>		
			Total 2035	LOS	E	D	>	D	F	D	E	E	E	B	>	C	F	C	>	E	D
				Delay	78	40	>	50	98	37	63	57	58	17	>	24	185	35	>	63	47
				V/C	0.96	0.66	>		1.00	0.52	0.89		0.72	0.81	>		1.28	0.80	>		1.15
				Q	83	70	>		71	58	124		44	85	>		143	139	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-28	-	>		54	-	-44		56	-	>		-88	-	>		
			Background 2040	LOS	F	D	>	E	F	D	E	E	D	C	>	C	F	D	>	D	D
				Delay	96	40	>	56	102	38	63	59	52	20	>	26	124	36	>	51	45
				V/C	1.02	0.63	>		1.02	0.53	0.89		0.73	0.84	>		1.12	0.83	>		1.06
				Q	91	65	>		72	57	121		46	111	>		127	158	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-36	-	>		53	-	-41		54	-	>		-72	-	>		
			Total 2040	LOS	F	D	>	D	F	D	E	E	E	B	>	C	F	D	>	F	D
				Delay	90	39	>	53	109	36	67	60	59	17	>	24	258	40	>	81	54
				V/C	1.00	0.66	>		1.05	0.52	0.92		0.74	0.85	>		1.46	0.87	>		1.25
				Q	92	74	>		77	60	138		45	90	>		149	158	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-37	-	>		48	-	-58		55	-	>		-94	-	>		
			Background 2045	LOS	F	D	>	E	F	D	E	E	D	C	>	C	F	D	>	E	D
				Delay	106	39	>	58	110	36	66	61	54	22	>	27	196	43	>	68	52
				V/C	1.06	0.63	>		1.06	0.52	0.91		0.76	0.88	>		1.31	0.91	>		1.17
				Q	101	69	>		79	60	136		48	103	>		133	173	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-46	-	>		46	-	-56		52	-	>		-78	-	>		
			Total 2045	LOS	F	D	>	E	F	D	E	E	E	B	>	C	F	D	>	F	E
				Delay	105	39	>	57	126	36	74	66	60	18	>	25	336	47	>	101	62
				V/C	1.06	0.68	>		1.11	0.52	0.96		0.76	0.89	>		1.64	0.94	>		1.36
				Q	104	79	>		88	63	151		44	107	>		155	173	>		
				Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
				Avail.	-49	-	>		37	-	-71		56	-	>		-100	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
* - V/C ratio less than 0.01

5.2.3 Upper Middle Road at West School Driveway/Private Driveway

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Within Capacity
2035 Total	Within Capacity
2040 Background	Within Capacity
2040 Total	Within Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at the intersection of the Corpus Christi High School West Driveway and Upper Middle Road currently operate at LOS D or better during the weekday peak hours. Under the Background conditions, the intersection is expected to operate at similar levels to the base year conditions. Critical movement is noted in the 2045 Background horizon in the northbound through-left lane operating at LOS E with a v/c ratio of 0.85 during the weekday AM peak hour.

Under the 2045 Total horizon, the eastbound through-right lane is forecast to worsen, operating at LOS D with a v/c ratio greater than 0.85 during the weekday AM peak hour.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Northbound through-left (v/c > 0.85) (2045 Background); and
- Eastbound through-right (v/c > 0.85) (2045 Total).

TABLE 5.3A: AM PEAK HOUR OPERATIONS –UPPER MIDDLE ROAD & WEST SCHOOL DRIVEWAY/PRIVATE DRIVEWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	West School Driveway/Private Driveway & Upper Middle Road	TCS	Existing	LOS	B	C	>	C	B	A	>	A	<	D	D	D	<	C	>	C	C
				Delay	16	23	>	23	11	9	>	9	<	46	35	43	<	35	>	35	22
				V/C	0.01	0.64	>		0.18	0.26	>		<	0.55	0.06		<	0.01	>		0.60
				Q	1	114	>		7	38	>		<	54	9		<	0	>		
				Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
				Avail.	29	-	>		73	-	>		<	-	-		<	-	>		
			Background 2035	LOS	B	C	>	C	B	A	>	A	<	E	D	D	<	C	>	C	C
				Delay	17	30	>	30	15	9	>	10	<	58	36	51	<	35	>	35	27
				V/C	0.02	0.71	>		0.38	0.29	>		<	0.77	0.08		<	0.02	>		0.70
				Q	2	143	>		8	39	>		<	74	10		<	0	>		
				Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
				Avail.	28	-	>		72	-	>		<	-	-		<	-	>		
			Total 2035	LOS	B	C	>	C	B	A	>	A	<	E	D	D	<	C	>	C	C
				Delay	18	33	>	33	17	9	>	10	<	58	36	51	<	35	>	35	28
				V/C	0.02	0.78	>		0.38	0.33	>		<	0.77	0.08		<	0.02	>		0.75
				Q	2	149	>		8	41	>		<	74	10		<	0	>		
				Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
				Avail.	28	-	>		72	-	>		<	-	-		<	-	>		
			Background 2040	LOS	B	C	>	C	B	A	>	A	<	E	D	D	<	C	>	C	C
				Delay	17	31	>	31	15	9	>	10	<	62	36	53	<	35	>	35	28
				V/C	0.02	0.74	>		0.40	0.31	>		<	0.80	0.08		<	0.02	>		0.74
				Q	2	147	>		8	41	>		<	78	10		<	0	>		
				Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
				Avail.	28	-	>		72	-	>		<	-	-		<	-	>		
			Total 2040	LOS	B	C	>	C	B	A	>	A	<	E	D	D	<	C	>	C	C
				Delay	18	34	>	34	18	9	>	10	<	62	36	53	<	35	>	35	29
				V/C	0.02	0.82	>		0.40	0.34	>		<	0.80	0.08		<	0.02	>		0.79
				Q	2	154	>		8	42	>		<	78	10		<	0	>		
				Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
				Avail.	28	-	>		72	-	>		<	-	-		<	-	>		
			Background 2045	LOS	B	C	>	C	B	A	>	A	<	E	D	E	<	C	>	C	C
				Delay	17	32	>	32	16	10	>	10	<	66	36	56	<	35	>	35	29
				V/C	0.03	0.78	>		0.42	0.32	>		<	0.85	0.09		<	0.02	>		0.78
				Q	2	152	>		8	42	>		<	83	10		<	0	>		
				Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
				Avail.	28	-	>		72	-	>		<	-	-		<	-	>		
			Total 2045	LOS	B	D	>	D	B	A	>	A	<	E	D	E	<	C	>	C	C
				Delay	18	35	>	35	19	9	>	10	<	66	36	56	<	35	>	35	30
				V/C	0.03	0.85	>		0.42	0.36	>		<	0.85	0.09		<	0.02	>		0.83
				Q	2	158	>		8	44	>		<	83	10		<	0	>		
				Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
				Avail.	28	-	>		72	-	>		<	-	-		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
* - V/C ratio less than 0.01

TABLE 5.3B: PM PEAK HOUR OPERATIONS – WEST SCHOOL DRIVEWAY/PRIVATE DRIVEWAY & UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	West School Driveway/Private Driveway & Upper Middle Road	TCS	Existing	LOS	A	A	>	A		B	>	B	<	C	C	C	<	C	>	C	B
				Delay	7	8	>	8		18	>	18	<	34	32	34	<	32	>	32	16
				V/C	0.01	0.24	>			0.52	>		<	0.14	0.01		<	0.00	>		0.42
				Q	1	36	>			130	>		<	21	0		<	0	>		
				Stor.	30	-	>			-	>		<	-	-		<	-	>		
				Avail.	29	-	>			-	>		<	-	-		<	-	>		
			Background 2035	LOS	A	A	>	A		B	>	B	<	D	C	C	<	C	>	C	B
				Delay	8	8	>	8		20	>	20	<	35	32	35	<	32	>	32	17
				V/C	0.03	0.27	>			0.57	>		<	0.19	0.01		<	0.00	>		0.48
				Q	2	39	>			141	>		<	28	0		<	0	>		
				Stor.	30	-	>			-	>		<	-	-		<	-	>		
				Avail.	28	-	>			-	>		<	-	-		<	-	>		
			Total 2035	LOS	A	A	>	A		B	>	B	<	D	C	C	<	C	>	C	B
				Delay	8	9	>	9		20	>	20	<	35	32	35	<	32	>	32	16
				V/C	0.04	0.31	>			0.60	>		<	0.19	0.01		<	0.00	>		0.50
				Q	2	46	>			143	>		<	28	0		<	0	>		
				Stor.	30	-	>			-	>		<	-	-		<	-	>		
				Avail.	28	-	>			-	>		<	-	-		<	-	>		
			Background 2040	LOS	A	A	>	A		C	>	C	<	D	C	C	<	C	>	C	B
				Delay	8	8	>	8		20	>	20	<	35	32	35	<	32	>	32	17
				V/C	0.04	0.29	>			0.60	>		<	0.20	0.01		<	0.00	>		0.51
				Q	2	41	>			145	>		<	28	0		<	0	>		
				Stor.	30	-	>			-	>		<	-	-		<	-	>		
				Avail.	28	-	>			-	>		<	-	-		<	-	>		
			Total 2040	LOS	A	A	>	A		C	>	C	<	D	C	C	<	C	>	C	B
				Delay	8	9	>	9		20	>	20	<	35	32	35	<	32	>	32	17
				V/C	0.05	0.33	>			0.63	>		<	0.20	0.01		<	0.00	>		0.53
				Q	2	48	>			143	>		<	28	0		<	0	>		
				Stor.	30	-	>			-	>		<	-	-		<	-	>		
				Avail.	28	-	>			-	>		<	-	-		<	-	>		
			Background 2045	LOS	A	A	>	A		C	>	C	<	D	C	C	<	C	>	C	B
				Delay	8	9	>	9		21	>	21	<	36	32	35	<	32	>	32	17
				V/C	0.05	0.30	>			0.63	>		<	0.21	0.01		<	0.00	>		0.53
				Q	2	44	>			146	>		<	30	1		<	0	>		
				Stor.	30	-	>			-	>		<	-	-		<	-	>		
				Avail.	28	-	>			-	>		<	-	-		<	-	>		
			Total 2045	LOS	A	A	>	A		C	>	C	<	D	C	C	<	C	>	C	B
				Delay	8	9	>	9		21	>	21	<	36	32	35	<	32	>	32	17
				V/C	0.05	0.34	>			0.66	>		<	0.21	0.01		<	0.00	>		0.55
				Q	2	50	>			144	>		<	30	1		<	0	>		
				Stor.	30	-	>			-	>		<	-	-		<	-	>		
				Avail.	28	-	>			-	>		<	-	-		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.4 Upper Middle Road at East School Driveway

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of the Corpus Christi High School East Driveway and Upper Middle Road, the northbound left-turn lane currently operates at LOS F and LOS D during the weekday AM and PM peak hours respectively. The southbound approach is a private driveway to Upper Middle Road. All other lanes operate at acceptable conditions at LOS B or better.

With background traffic growth, the northbound left-turn lane is forecast to continue operating at LOS F with significant delays during the weekday AM peak hour. All other intersections operate at similar levels of service to the base year condition. Under the 2040 Background horizon, the westbound left-turn lane is forecast to operate at LOS C with a 95th percentile queue exceeding the available storage by 5 m.

The addition of site-generated traffic under the Total horizon is forecast to significantly increase delays in the northbound left-turn lane to critical levels during the weekday AM peak hour and degrade the movement to LOS F for the weekday PM peak hour. Under the 2035 Total horizon, the westbound left-turn lane is projected to have a 95th percentile queue length exceeds the available storage by less than 5 m.

The increase in northbound delays results from the growth in eastbound/westbound traffic along Upper Middle Road, leaving fewer gaps for northbound turning movements.

Critical Movements (LOS D or worse)

- Northbound left (LOS > D) (2024 Existing); and
- Westbound left (95th queue) (2035 Total).

TABLE 5.4A: AM PEAK HOUR OPERATIONS – EAST SCHOOL DRIVEWAY AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	East School Driveway & Upper Middle Road	TWSC	Existing	LOS		A	>	A	B	A		A	F		B	F					
				Delay		0	>	0	13	0		4	321		11	72					
				V/C		0.40	>		0.37	0.19			1.11		0.23						
				Q		0	>		14	0			36		7						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		16	-			-		-						
			Background 2035	LOS		A	>	A	C	A		A	F		B	F					
				Delay		0	>	0	19	0		5	Err		11	1985					
				V/C		0.33	>		0.58	0.18			3.92		0.32						
				Q		0	>		30	0			Err		11						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		0	-			-		-						
			Total 2035	LOS		A	>	A	C	A		A	F		B	F					
				Delay		0	>	0	20	0		5	Err		12	1986					
				V/C		0.38	>		0.61	0.20			5.38		0.35						
				Q		0	>		33	0			Err		13						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		-3	-			-		-						
			Background 2040	LOS		A	>	A	C	A		A	F		B	F					
				Delay		0	>	0	20	0		6	Err		12	1975					
				V/C		0.35	>		0.62	0.19			5.35		0.35						
				Q		0	>		35	0			Err		13						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		-5	-			-		-						
			Total 2040	LOS		A	>	A	C	A		A	F		B	F					
				Delay		0	>	0	22	0		6	Err		13	1976					
				V/C		0.40	>		0.64	0.21			7.31		0.39						
				Q		0	>		37	0			Err		15						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		-7	-			-		-						
			Background 2045	LOS		A	>	A	C	A		A	F		B	F					
				Delay		0	>	0	22	0		6	Err		12	1988					
				V/C		0.37	>		0.67	0.20			7.65		0.38						
				Q		0	>		40	0			Err		14						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		-10	-			-		-						
			Total 2045	LOS		A	>	A	C	A		A	F		B	F					
				Delay		0	>	0	23	0		6	Err		14	1989					
				V/C		0.41	>		0.67	0.22			10.21		0.43						
				Q		0	>		41	0			Err		17						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		-11	-			-		-						

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.4B: PM PEAK HOUR OPERATIONS – EAST SCHOOL DRIVEWAY AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	East School Driveway & Upper Middle Road	TWSC	Existing	LOS		A	>	A	A	A		A	D		A	C					
				Delay		0	>	0	9	0		0	28		10	16					
				V/C		0.23	>		0.02	0.36			0.12		0.06						
				Q		0	>		0	0			3		1						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		30	-			-		-						
			Background 2035	LOS		A	>	A	A	A		A	E		A	C					
				Delay		0	>	0	10	0		0	38		10	19					
				V/C		0.19	>		0.03	0.34			0.22		0.07						
				Q		0	>		1	0			7		2						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		29	-			-		-						
			Total 2035	LOS		A	>	A	B	A		A	E		A	C					
				Delay		0	>	0	10	0		0	47		9	22					
				V/C		0.22	>		0.03	0.35			0.27		0.07						
				Q		0	>		1	0			8		2						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		29	-			-		-						
			Background 2040	LOS		A	>	A	A	A		A	E		A	C					
				Delay		0	>	0	10	0		0	44		9	21					
				V/C		0.20	>		0.03	0.35			0.26		0.07						
				Q		0	>		1	0			8		2						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		29	-			-		-						
			Total 2040	LOS		A	>	A	B	A		A	F		A	C					
				Delay		0	>	0	10	0		0	54		9	25					
				V/C		0.23	>		0.03	0.37			0.31		0.07						
				Q		0	>		1	0			10		2						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		29	-			-		-						
			Background 2045	LOS		A	>	A	B	A		A	E		A	C					
				Delay		0	>	0	10	0		0	50		9	23					
				V/C		0.21	>		0.03	0.37			0.30		0.07						
				Q		0	>		1	0			9		2						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		29	-			-		-						
			Total 2045	LOS		A	>	A	B	A		A	F		A	D					
				Delay		0	>	0	10	0		0	62		9	27					
				V/C		0.24	>		0.03	0.39			0.36		0.07						
				Q		0	>		1	0			11		2						
				Stor.		-	>		30	-			-		-						
				Avail.		-	>		29	-			-		-						

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.5 Upper Middle Road at Quinte Street

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Upper Middle Road and Quinte Street, the southbound left-turn movement presently operates at LOS F during the AM peak hour with a v/c ratio greater than 1.00. All other movements are noted to be operating at LOS C or better during the weekday and Saturday peak hours.

Under the Background scenarios, the southbound left-turn lane is expected to continue operating at LOS F during the weekday AM peak hour with a significant increase in delays and a v/c ratio of over 3.00. Under the 2035 Background horizon, the southbound left-turn lane is also projected to degrade to LOS E-D during the weekday PM and Saturday peak hours respectively, with increased delays from background traffic growth. All other movements are expected to operate at acceptable levels of service.

Under the Total conditions, Quinte Street is proposed to extend south of Upper Middle Road to provide access to the development. With site-generated traffic volumes, the northbound and southbound movements are forecast to operate at LOS F with v/c ratios exceeding 1.00 and critical delays due to high traffic volumes during the weekday peak hours.

As one of the primary accesses to the subject site is proposed at this intersection, an increase in delay is expected. Improvements to the intersection will be required to accommodate the increase in vehicle traffic such as signalization and exclusive turn lanes.

Critical Movements (LOS D or worse)

- Southbound left (LOS > D) (2024 Existing)
- Northbound approach (LOS > D) (2035 Total)

TABLE 5.5A: AM PEAK HOUR OPERATIONS – QUINTE STREET AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Upper Middle Road & Quinte Street	TWSC	Existing	LOS	A	A		A		A	>	A					F		>	F	
				Delay	10	0		1		0	>	0					139		>	139	
				V/C	0.17	0.29				0.25	>						1.14		>		
				Q	5	0				0	>						106		>		
				Stor.	60	-				-	>						-		>		
				Avail.	55	-				-	>						-		>		
			Background 2035	LOS	B	A		A		A	>	A					F		>	F	
				Delay	13	0		2		0	>	0					Err		>	Err	
				V/C	0.31	0.27				0.21	>						3.06		>		
				Q	10	0				0	>						Err		>		
				Stor.	60	-				-	>						-		>		
				Avail.	50	-				-	>						-		>		
			Total 2035	LOS	B	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	14	0	>	2	<	0	>	0	<	Err	>	Err	<	Err	>	Err	
				V/C	0.32	0.36	>		<	0.00	>		<	6.62	>		<	4.77	>		
				Q	11	0	>		<	0	>		<	Err	>		<	Err	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	49	-	>		<	-	>		<	-	>		<	-	>		
			Background 2040	LOS	B	A		A		A	>	A					F		>	F	
				Delay	14	0		2		0	>	0					Err		>	Err	
				V/C	0.34	0.28				0.22	>						3.79		>		
				Q	12	0				0	>						Err		>		
				Stor.	60	-				-	>						-		>		
				Avail.	48	-				-	>						-		>		
			Total 2040	LOS	B	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	14	0	>	2	<	0	>	0	<	Err	>	Err	<	Err	>	Err	
				V/C	0.36	0.38	>		<	0.00	>		<	9.30	>		<	6.01	>		
				Q	13	0	>		<	0	>		<	Err	>		<	Err	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	47	-	>		<	-	>		<	-	>		<	-	>		
			Background 2045	LOS	B	A		A		A	>	A					F		>	F	
				Delay	14	0		2		0	>	0					Err		>	Err	
				V/C	0.37	0.30				0.23	>						4.70		>		
				Q	14	0				0	>						Err		>		
				Stor.	60	-				-	>						-		>		
				Avail.	46	-				-	>						-		>		
			Total 2045	LOS	C	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	15	0	>	2	<	0	>	0	<	Err	>	Err	<	Err	>	Err	
				V/C	0.39	0.39	>		<	0.00	>		<	13.42	>		<	7.57	>		
				Q	15	0	>		<	0	>		<	Err	>		<	Err	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	45	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.5B: PM PEAK HOUR OPERATIONS – QUINTE STREET AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Upper Middle Road & Quinte Street	TWSC	Existing	LOS	B	A		A		A	>	A					C		>	C	
				Delay	11	0		2		0	>	0					25		>	25	
				V/C	0.16	0.14				0.44	>						0.40		>		
				Q	4	0				0	>						15		>		
				Stor.	60	-				-	>						-		>		
				Avail.	56	-				-	>						-		>		
			Background 2035	LOS	B	A		A		A	>	A					E		>	E	
				Delay	11	0		2		0	>	0					43		>	43	
				V/C	0.22	0.13				0.37	>						0.66		>		
				Q	7	0				0	>						34		>		
				Stor.	60	-				-	>						-		>		
				Avail.	53	-				-	>						-		>		
			Total 2035	LOS	B	A	>	A	<	A	>	A	<	C	>	C	<	F	>	F	
				Delay	12	0	>	2	<	0	>	0	<	21	>	21	<	98	>	98	
				V/C	0.24	0.17	>		<	0.00*	>		<	0.06	>		<	0.92	>		
				Q	8	0	>		<	0	>		<	2	>		<	56	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	52	-	>		<	-	>		<	-	>		<	-	>		
			Background 2040	LOS	B	A		A		A	>	A					E		>	E	
				Delay	11	0		2		0	>	0					43		>	43	
				V/C	0.22	0.14				0.39	>						0.67		>		
				Q	7	0				0	>						35		>		
				Stor.	60	-				-	>						-		>		
				Avail.	53	-				-	>						-		>		
			Total 2040	LOS	B	A	>	A	<	A	>	A	<	C	>	C	<	F	>	F	
				Delay	11	0	>	2	<	0	>	0	<	18	>	18	<	96	>	96	
				V/C	0.24	0.18	>		<	0.00*	>		<	0.05	>		<	0.92	>		
				Q	7	0	>		<	0.0	>		<	1	>		<	58	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	53	-	>		<	-	>		<	-	>		<	-	>		
			Background 2045	LOS	B	A		A		A	>	A					E		>	E	
				Delay	10	0		2		0	>	0					46		>	46	
				V/C	0.21	0.15				0.41	>						0.71		>		
				Q	6	0				0	>						39		>		
				Stor.	60	-				-	>						-		>		
				Avail.	54	-				-	>						-		>		
			Total 2045	LOS	B	A	>	A	<	A	>	A	<	C	>	C	<	F	>	F	
				Delay	11	0	>	2	<	0	>	0	<	15	>	15	<	108	>	108	
				V/C	0.24	0.19	>		<	0.00*	>		<	0.04	>		<	0.97	>		
				Q	7	0	>		<	0.0	>		<	1	>		<	64	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	53	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.5C: SATURDAY PEAK HOUR OPERATIONS – QUINTE STREET AT UPPER MIDDLE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Upper Middle Road & Quinte Street	TWSC	Existing	LOS	A	A		A		A	>	A					C		>	C	
				Delay	10	0		2		0	>	0					19		>	19	
				V/C	0.10	0.12				0.32	>						0.30		>		
				Q	3	0				0	>						10		>		
				Stor.	60	-				-	>						-		>		
				Avail.	57	-				-	>						-		>		
			Background 2035	LOS	B	A		A		A	>	A					D		>	D	
				Delay	11	0		2		0	>	0					33		>	33	
				V/C	0.17	0.12				0.27	>						0.56		>		
				Q	5	0				0	>						26		>		
				Stor.	60	-				-	>						-		>		
				Avail.	55	-				-	>						-		>		
			Total 2035	LOS	B	A	>	A	<	A	>	A	<	D	>	D	<	F	>	F	
				Delay	11	0	>	2	<	0	>	0	<	31	>	31	<	51	>	51	
				V/C	0.17	0.15	>		<	0.00*	>		<	0.14	>		<	0.69	>		
				Q	5	0	>		<	0	>		<	4	>		<	36	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	55	-	>		<	-	>		<	-	>		<	-	>		
			Background 2040	LOS	B	A		A		A	>	A					E		>	E	
				Delay	11	0		2		0	>	0					39		>	39	
				V/C	0.18	0.12				0.29	>						0.62		>		
				Q	5	0				0	>						30		>		
				Stor.	60	-				-	>						-		>		
				Avail.	55	-				-	>						-		>		
			Total 2040	LOS	B	A	>	A	<	A	>	A	<	D	>	D	<	F	>	F	
				Delay	11	0	>	2	<	0	>	0	<	31	>	31	<	62	>	62	
				V/C	0.18	0.16	>		<	0.00*	>		<	0.14	>		<	0.77	>		
				Q	5	0	>		<	0	>		<	4	>		<	43	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	55	-	>		<	-	>		<	-	>		<	-	>		
			Background 2045	LOS	B	A		A		A	>	A					E		>	E	
				Delay	11	0		2		0	>	0					46		>	46	
				V/C	0.19	0.13				0.30	>						0.69		>		
				Q	6	0				0	>						36		>		
				Stor.	60	-				-	>						-		>		
				Avail.	54	-				-	>						-		>		
			Total 2045	LOS	B	A	>	A	<	A	>	A	<	D	>	D	<	F	>	F	
				Delay	11	0	>	2	<	0	>	0	<	32	>	32	<	77	>	77	
				V/C	0.19	0.16	>		<	0.00*	>		<	0.15	>		<	0.85	>		
				Q	6	0	>		<	0	>		<	4	>		<	50	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	54	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.6 Upper Middle Road at Sutton Drive

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At Upper Middle Road at Sutton drive, critical movement occurs in the southbound left-right lane, operating at LOS E with a v/c ratio over 1.00 during the weekday AM peak hour.

Under the 2035 Background horizon, the eastbound left-turn lane is forecast to degrade to LOS F during the weekday PM peak hour, with a v/c ratio exceeding 1.00 and queues extending beyond available storage by less than 35 m. During the same period, the westbound through-right lane is expected to operate at LOS C with a v/c ratio over 0.85. In the weekday AM peak hour, the southbound approach is anticipated to degrade to LOS E, with a v/c ratio greater than 1.00. By 2040, the eastbound left-turn lane is also expected to degrade to LOS E during the weekday AM peak hour, with a v/c ratio over 1.00. Additionally, the southbound left-right turn lanes are forecast to operate at LOS E with a v/c ratio exceeding 0.85 during the weekday PM peak hour.

Under the Total conditions, Sutton Drive is proposed to extend south of Upper Middle Road to provide access to the subject lands. Under the 2035 Total horizon, the southbound approach is projected to degrade to LOS F and LOS D during the weekday PM and Saturday peak hours respectively, with v/c ratios exceeding 0.85.

As one of the primary accesses to the subject site, an increase in delay is expected. Improvements to the intersection will be required to accommodate the increase in vehicle traffic such as additional turn lanes and dedicated signal phases.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Southbound movement (v/c > 0.85) (2024 Existing);
- Eastbound left (v/c > 0.95) (2035 Background); and
- Westbound through-right (v/c > 0.85) (2035 Background).

TABLE 5.6A: AM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT SUTTON DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Upper Middle Road & Sutton Drive	TCS	Existing	LOS	B	B		B		C	>	C					E		>	E	D
				Delay	12	13		13		26	>	26					78		>	78	36
				V/C	0.53	0.41				0.37	>						1.02		>		0.76
				Q	21	34				53	>						216		>		
				Stor.	60	-				-	>						-		>		
				Avail.	39	-				-	>						-		>		
			Background 2035	LOS	D	B		B		C	>	C					F		>	F	F
				Delay	50	10		19		26	>	26					229		>	229	84
				V/C	0.93	0.46				0.40	>						1.41		>		1.16
				Q	42	32				56	>						341		>		
				Stor.	60	-				-	>						-		>		
				Avail.	18	-				-	>						-		>		
			Total 2035	LOS	D	A	>	B	<	C	>	C	<	C	>	C	<	F	>	F	F
				Delay	50	10	>	18	<	26	>	26	<	24	>	24	<	393	>	393	126
				V/C	0.94	0.52	>		<	0.43	>		<	0.15	>		<	1.77	>		1.33
				Q	41	33	>		<	57	>		<	20	>		<	384	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	19	-	>		<	-	>		<	-	>		<	-	>		
			Background 2040	LOS	E	B		C		C	>	C					F		>	F	F
				Delay	76	10		25		26	>	26					260		>	260	96
				V/C	1.02	0.48				0.42	>						1.48		>		1.24
				Q	53	33				59	>						364		>		
				Stor.	60	-				-	>						-		>		
				Avail.	7	-				-	>						-		>		
			Total 2040	LOS	E	B	>	C	<	C	>	C	<	C	>	C	<	F	>	F	F
				Delay	77	10	>	24	<	27	>	27	<	23	>	23	<	434	>	434	141
				V/C	1.03	0.55	>		<	0.45	>		<	0.15	>		<	1.86	>		1.42
				Q	51	39	>		<	60	>		<	20	>		<	407	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	9	-	>		<	-	>		<	-	>		<	-	>		
			Background 2045	LOS	F	B		C		C	>	C					F		>	F	F
				Delay	109	10		32		27	>	27					295		>	295	110
				V/C	1.11	0.50				0.45	>						1.56		>		1.34
				Q	68	36				62	>						389		>		
				Stor.	60	-				-	>						-		>		
				Avail.	-8	-				-	>						-		>		
			Total 2045	LOS	F	B	>	C	<	C	>	C	<	C	>	C	<	F	>	F	F
				Delay	109	11	>	31	<	27	>	27	<	23	>	23	<	478	>	478	157
				V/C	1.12	0.57	>		<	0.48	>		<	0.15	>		<	1.96	>		1.52
				Q	61	43	>		<	64	>		<	20	>		<	433	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	-1	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.6B: PM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT SUTTON DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Upper Middle Road & Sutton Drive	TCS	Existing	LOS	E	A		C		C	>	C					D		>	D	C
				Delay	67	8		25		27	>	27					43		>	43	28
				V/C	0.74	0.16				0.82	>						0.59		>		0.74
				Q	55	20				188	>						89		>		
				Stor.	60	-				-	>						-		>		
				Avail.	5	-				-	>						-		>		
			Background 2035	LOS	F	A		D		C	>	C					E		>	E	D
				Delay	127	8		41		31	>	31					56		>	56	36
				V/C	1.01	0.18				0.90	>						0.82		>		0.97
				Q	92	22				215	>						141		>		
				Stor.	60	-				-	>						-		>		
				Avail.	-32	-				-	>						-		>		
			Total 2035	LOS	F	A	>	D	<	D	>	D	<	C	>	C	<	F	>	F	D
				Delay	129	8	>	40	<	39	>	39	<	35	>	35	<	92	>	92	45
				V/C	1.02	0.20	>		<	0.96	>		<	0.27	>		<	1.01	>		1.04
				Q	94	23	>		<	254	>		<	31	>		<	168	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	-34	-	>		<	-	>		<	-	>		<	-	>		
			Background 2040	LOS	F	A		D		D	>	D					E		>	E	D
				Delay	142	8		45		36	>	36					61		>	61	41
				V/C	1.06	0.19				0.95	>						0.87		>		1.03
				Q	100	23				247	>						154		>		
				Stor.	60	-				-	>						-		>		
				Avail.	-40	-				-	>						-		>		
			Total 2040	LOS	F	A	>	D	<	D	>	D	<	C	>	C	<	F	>	F	E
				Delay	144	8	>	44	<	50	>	50	<	35	>	35	<	109	>	109	55
				V/C	1.07	0.21	>		<	1.01	>		<	0.27	>		<	1.07	>		1.10
				Q	100	24	>		<	277	>		<	31	>		<	181	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	-40	-	>		<	-	>		<	-	>		<	-	>		
			Background 2045	LOS	F	A		D		D	>	D					E		>	E	D
				Delay	161	8		51		45	>	45					68		>	68	49
				V/C	1.12	0.20				0.99	>						0.92		>		1.08
				Q	107	24				283	>						167		>		
				Stor.	60	-				-	>						-		>		
				Avail.	-47	-				-	>						-		>		
			Total 2045	LOS	F	A	>	D	<	E	>	E	<	C	>	C	<	F	>	F	E
				Delay	163	8	>	49	<	67	>	67	<	35	>	35	<	128	>	128	69
				V/C	1.13	0.22	>		<	1.07	>		<	0.27	>		<	1.13	>		1.16
				Q	109	25	>		<	302	>		<	31	>		<	193	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	-49	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.6C: SATURDAY PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT SUTTON DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Upper Middle Road & Sutton Drive	TCS	Existing	LOS	B	B		B		B	>	B					D		>	D	B
				Delay	18	15		16		13	>	13					41		>	41	18
				V/C	0.25	0.14				0.47	>						0.71		>		0.51
				Q	28	39				79	>						60		>		
				Stor.	60	-				-	>						-		>		
				Avail.	32	-				-	>						-		>		
			Background 2035	LOS	C	B		C		B	>	B					D		>	D	C
				Delay	30	19		22		19	>	19					41		>	41	23
				V/C	0.52	0.17				0.61	>						0.79		>		0.65
				Q	42	46				98	>						80		>		
				Stor.	60	-				-	>						-		>		
				Avail.	18	-				-	>						-		>		
			Total 2035	LOS	C	C	>	C	<	C	>	C	<	C	>	C	<	D	>	D	C
				Delay	33	23	>	25	<	22	>	22	<	23	>	23	<	48	>	48	27
				V/C	0.56	0.20	>		<	0.69	>		<	0.12	>		<	0.86	>		0.74
				Q	43	49	>		<	102	>		<	13	>		<	100	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	17	-	>		<	-	>		<	-	>		<	-	>		
			Background 2040	LOS	C	C		C		B	>	B					D		>	D	C
				Delay	30	20		22		20	>	20					42		>	42	24
				V/C	0.58	0.19				0.65	>						0.81		>		0.69
				Q	45	48				104	>						86		>		
				Stor.	60	-				-	>						-		>		
				Avail.	15	-				-	>						-		>		
			Total 2040	LOS	C	C	>	C	<	C	>	C	<	C	>	C	<	D	>	D	C
				Delay	35	24	>	26	<	24	>	24	<	22	>	22	<	50	>	50	29
				V/C	0.61	0.21	>		<	0.74	>		<	0.11	>		<	0.88	>		0.78
				Q	45	51	>		<	109	>		<	13	>		<	109	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	15	-	>		<	-	>		<	-	>		<	-	>		
			Background 2045	LOS	C	C		C		C	>	C					D		>	D	C
				Delay	33	21		24		22	>	22					43		>	43	26
				V/C	0.62	0.20				0.69	>						0.82		>		0.73
				Q	49	50				112	>						91		>		
				Stor.	60	-				-	>						-		>		
				Avail.	11	-				-	>						-		>		
			Total 2045	LOS	D	C	>	C	<	C	>	C	<	C	>	C	<	D	>	D	C
				Delay	38	25	>	28	<	26	>	26	<	21	>	21	<	53	>	53	31
				V/C	0.64	0.22	>		<	0.80	>		<	0.11	>		<	0.90	>		0.82
				Q	49	53	>		<	117	>		<	13	>		<	117	>		
				Stor.	60	-	>		<	-	>		<	-	>		<	-	>		
				Avail.	11	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.7 Upper Middle Road at Baker Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Within Capacity
2035 Total	Within Capacity
2040 Background	Within Capacity
2040 Total	Within Capacity
2045 Background	Within Capacity
2045 Total	Within Capacity

Individual movements at the intersection of Upper Middle Road at Baker Drive presently operate at LOS C or better during the weekday peak hours. Similar levels of operation are expected under future Background and Total conditions with only minor increases in delay resulting from background traffic growth.

TABLE 5.7A: AM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT BAKER DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Upper Middle Road & Baker Drive	TWSC	Existing	LOS	A	A		A		A	>	A							B	B	
				Delay	8	0		0		0	>	0							10	10	
				V/C	0.03	0.32				0.17	>								0.07		
				Q	1	0				0	>								2		
				Stor.	100	-				-	>								-		
				Avail.	99	-				-	>								-		
			Background 2035	LOS	A	A		A		A	>	A							B	B	
				Delay	9	0		0		0	>	0							10	10	
				V/C	0.05	0.30				0.14	>								0.10		
				Q	1	0				0	>								2		
				Stor.	100	-				-	>								-		
				Avail.	99	-				-	>								-		
			Total 2035	LOS	A	A		A		A	>	A							B	B	
				Delay	9	0		0		0	>	0							10	10	
				V/C	0.05	0.30				0.14	>								0.10		
				Q	1	0				0	>								2		
				Stor.	100	-				-	>								-		
				Avail.	99	-				-	>								-		
			Background 2040	LOS	A	A		A		A	>	A							B	B	
				Delay	9	0		0		0	>	0							10	10	
				V/C	0.05	0.31				0.15	>								0.10		
				Q	1	0				0	>								3		
				Stor.	100	-				-	>								-		
				Avail.	99	-				-	>								-		
			Total 2040	LOS	A	A		A		A	>	A							B	B	
				Delay	9	0		0		0	>	0							10	10	
				V/C	0.05	0.31				0.15	>								0.10		
				Q	1	0				0	>								3		
				Stor.	100	-				-	>								-		
				Avail.	99	-				-	>								-		
			Background 2045	LOS	A	A		A		A	>	A							B	B	
				Delay	10	0		0		0	>	0							10	10	
				V/C	0.05	0.33				0.16	>								0.11		
				Q	1	0				0	>								3		
				Stor.	100	-				-	>								-		
				Avail.	99	-				-	>								-		
			Total 2045	LOS	A	A		A		A	>	A							B	B	
				Delay	10	0		0		0	>	0							10	10	
				V/C	0.05	0.33				0.16	>								0.11		
				Q	1	0				0	>								3		
				Stor.	100	-				-	>								-		
				Avail.	99	-				-	>								-		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.7B: PM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT BAKER DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Upper Middle Road & Baker Drive	TWSC	Existing	LOS	B	A		A		A	>	A							C	C	
				Delay	13	0		1		0	>	0							16	16	
				V/C	0.09	0.15				0.54	>								0.13		
				Q	2	0				0	>								3		
				Stor.	100	-				-	>								-		
				Avail.	98	-				-	>								-		
			Background 2035	LOS	C	A		A		A	>	A							C	C	
				Delay	20	0		2		0	>	0							16	16	
				V/C	0.19	0.14				0.45	>								0.16		
				Q	6	0				0	>								5		
				Stor.	100	-				-	>								-		
				Avail.	94	-				-	>								-		
			Total 2035	LOS	C	A		A		A	>	A							C	C	
				Delay	20	0		2		0	>	0							16	16	
				V/C	0.20	0.14				0.46	>								0.16		
				Q	6	0				0	>								5		
				Stor.	100	-				-	>								-		
				Avail.	94	-				-	>								-		
			Background 2040	LOS	C	A		A		A	>	A							C	C	
				Delay	22	0		2		0	>	0							16	16	
				V/C	0.22	0.15				0.48	>								0.18		
				Q	7	0				0	>								5		
				Stor.	100	-				-	>								-		
				Avail.	93	-				-	>								-		
			Total 2040	LOS	C	A		A		A	>	A							C	C	
				Delay	22	0		2		0	>	0							16	16	
				V/C	0.22	0.15				0.48	>								0.19		
				Q	7	0				0	>								5		
				Stor.	100	-				-	>								-		
				Avail.	93	-				-	>								-		
			Background 2045	LOS	C	A		A		A	>	A							C	C	
				Delay	24	0		2		0	>	0							17	17	
				V/C	0.26	0.15				0.50	>								0.20		
				Q	8	0				0	>								6		
				Stor.	100	-				-	>								-		
				Avail.	92	-				-	>								-		
			Total 2045	LOS	C	A		A		A	>	A							C	C	
				Delay	25	0		2		0	>	0							17	17	
				V/C	0.26	0.15				0.50	>								0.20		
				Q	8	0				0	>								6		
				Stor.	100	-				-	>								-		
				Avail.	92	-				-	>								-		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.8 Upper Middle Road at Deer Place

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At Upper Middle Road at Deer Place, the southbound approach operates at LOS D during the weekday PM peak hour.

Under the 2045 Background horizon, the southbound approach is forecast to degrade to LOS D during the weekday AM peak hour with a minor increase in delays from background traffic growth.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Critical Movements (LOS D or worse)

- Southbound movement (LOS > D) (2024 Existing).

TABLE 5.8A: AM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT DEER PLACE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach
AM Peak Hour	Upper Middle Road & Deer Place	TWSC	Existing	LOS	A	A		A		A	>	A					C		>	C
				Delay	8	0		0		0	>	0					19		>	19
				V/C	0.00*	0.31				0.17	>						0.10		>	
				Q	0	0				0	>						2		>	
				Stor.	100	-				-	>						-		>	
				Avail.	100	-				-	>						-		>	
			Background 2035	LOS	A	A		A		A	>	A					C		>	C
				Delay	9	0		0		0	>	0					23		>	23
				V/C	0.00*	0.29				0.14	>						0.16		>	
				Q	0	0				0	>						4		>	
				Stor.	100	-				-	>						-		>	
				Avail.	100	-				-	>						-		>	
			Total 2035	LOS	A	A		A		A	>	A					C		>	C
				Delay	9	0		0		0	>	0					23		>	23
				V/C	0.00*	0.29				0.14	>						0.16		>	
				Q	0	0				0	>						4		>	
				Stor.	100	-				-	>						-		>	
				Avail.	100	-				-	>						-		>	
			Background 2040	LOS	A	A		A		A	>	A					C		>	C
				Delay	9	0		0		0	>	0					25		>	25
				V/C	0.00*	0.30				0.15	>						0.18		>	
				Q	0	0				0	>						5		>	
				Stor.	100	-				-	>						-		>	
				Avail.	100	-				-	>						-		>	
			Total 2040	LOS	A	A		A		A	>	A					C		>	C
				Delay	9	0		0		0	>	0					25		>	25
				V/C	0.00*	0.30				0.15	>						0.18		>	
				Q	0	0				0	>						5		>	
				Stor.	100	-				-	>						-		>	
				Avail.	100	-				-	>						-		>	
			Background 2045	LOS	A	A		A		A	>	A					D		>	D
				Delay	9	0		0		0	>	0					28		>	28
				V/C	0.00*	0.31				0.16	>						0.21		>	
				Q	0	0				0	>						6		>	
				Stor.	100	-				-	>						-		>	
				Avail.	100	-				-	>						-		>	
			Total 2045	LOS	A	A		A		A	>	A					D		>	D
				Delay	9	0		0		0	>	0					28		>	28
				V/C	0.00*	0.32				0.16	>						0.21		>	
				Q	0	0				0	>						6		>	
				Stor.	100	-				-	>						-		>	
				Avail.	100	-				-	>						-		>	

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.8B: PM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT DEER PLACE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Upper Middle Road & Deer Place	TWSC	Existing	LOS	B	A		A		A	>	A					D	>		D	
				Delay	14	0		0		0	>	0					35	>		35	
				V/C	0.02	0.15				0.60	>						0.08	>			
				Q	0	0				0	>						2	>			
				Stor.	100	-				-	>						-	>			
				Avail.	100	-				-	>						-	>			
			Background 2035	LOS	C	A		A		A	>	A					F	>		F	
				Delay	20	0		0		0	>	0					75	>		75	
				V/C	0.05	0.14				0.50	>						0.22	>			
				Q	1	0				0	>						6	>			
				Stor.	100	-				-	>						-	>			
				Avail.	99	-				-	>						-	>			
			Total 2035	LOS	C	A		A		A	>	A					F	>		F	
				Delay	20	0		0		0	>	0					76	>		76	
				V/C	0.05	0.14				0.50	>						0.22	>			
				Q	1	0				0	>						6	>			
				Stor.	100	-				-	>						-	>			
				Avail.	99	-				-	>						-	>			
			Background 2040	LOS	C	A		A		A	>	A					F	>		F	
				Delay	22	0		0		0	>	0					89	>		89	
				V/C	0.06	0.15				0.53	>						0.26	>			
				Q	2	0				0	>						7	>			
				Stor.	100	-				-	>						-	>			
				Avail.	98	-				-	>						-	>			
			Total 2040	LOS	C	A		A		A	>	A					F	>		F	
				Delay	22	0		0		0	>	0					90	>		90	
				V/C	0.06	0.15				0.53	>						0.27	>			
				Q	2	0				0	>						7	>			
				Stor.	100	-				-	>						-	>			
				Avail.	98	-				-	>						-	>			
			Background 2045	LOS	C	A		A		A	>	A					F	>		F	
				Delay	24	0		0		0	>	0					134	>		134	
				V/C	0.07	0.15				0.55	>						0.38	>			
				Q	2	0				0	>						10	>			
				Stor.	100	-				-	>						-	>			
				Avail.	98	-				-	>						-	>			
			Total 2045	LOS	C	A		A		A	>	A					F	>		F	
				Delay	24	0		0		0	>	0					136	>		136	
				V/C	0.07	0.15				0.55	>						0.38	>			
				Q	2	0				0	>						10	>			
				Stor.	100	-				-	>						-	>			
				Avail.	98	-				-	>						-	>			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.9 Upper Middle Road at Blue Spruce Avenue

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at the intersection of Upper Middle Road and Blue Spruce Avenue presently operate at LOS C or better. The exception is the stop-controlled southbound approach, with a LOS D-F during the weekday and Saturday peak hours.

Under the 2035 Background horizon, the eastbound left-turn lane is expected to degrade to LOS D during the weekday PM peak hour. The southbound approach is also forecast to further degrade to LOS F during the weekday and Saturday peak hours with v/c ratios exceeding 1.00 due to increased delays from eastbound/westbound traffic growth along Upper Middle Road.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Critical Movements (LOS D or worse)

- Southbound movement (LOS > D) (2024 Existing); and
- Eastbound left (LOS > D) (2035 Background)

TABLE 5.9A: AM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT BLUE SPRUCE AVENUE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Blue Spruce Avenue & Upper Middle Road	TWSC	Existing	LOS	A	A		A		A	>	A					E		>	E	
				Delay	8	0		0		0	>	0					44		>	44	
				V/C	0.02	0.32				0.15	>						0.70		>		
				Q	0	0				0	>						39		>		
				Stor.	100	-				-	>						-		>		
				Avail.	100	-				-	>						-		>		
			Background 2035	LOS	A	A		A		A	>	A					F		>	F	
				Delay	9	0		0		0	>	0					164		>	164	
				V/C	0.03	0.30				0.12	>						1.18		>		
				Q	1	0				0	>						104		>		
				Stor.	100	-				-	>						-		>		
				Avail.	99	-				-	>						-		>		
			Total 2035	LOS	A	A		A	<	A	>	A					F		>	F	
				Delay	9	0		0	<	0	>	0					167		>	167	
				V/C	0.03	0.30			<	0.12	>						1.19		>		
				Q	1	0			<	0	>						104		>		
				Stor.	100	-			<	-	>						-		>		
				Avail.	99	-			<	-	>						-		>		
			Background 2040	LOS	A	A		A		A	>	A					F		>	F	
				Delay	9	0		0		0	>	0					229		>	229	
				V/C	0.03	0.31				0.13	>						1.35		>		
				Q	1	0				0	>						126		>		
				Stor.	100	-				-	>						-		>		
				Avail.	99	-				-	>						-		>		
			Total 2040	LOS	A	A		A	<	A	>	A					F		>	F	
				Delay	9	0		0	<	0	>	0					233		>	233	
				V/C	0.03	0.31			<	0.13	>						1.36		>		
				Q	1	0			<	0	>						126		>		
				Stor.	100	-			<	-	>						-		>		
				Avail.	99	-			<	-	>						-		>		
			Background 2045	LOS	A	A		A		A	>	A					F		>	F	
				Delay	9	0		0		0	>	0					313		>	313	
				V/C	0.04	0.33				0.14	>						1.54		>		
				Q	1	0				0	>						150		>		
				Stor.	100	-				-	>						-		>		
				Avail.	99	-				-	>						-		>		
			Total 2045	LOS	A	A		A	<	A	>	A					F		>	F	
				Delay	9	0		0	<	0	>	0					317		>	317	
				V/C	0.04	0.33			<	0.14	>						1.55		>		
				Q	1	0			<	0	>						151		>		
				Stor.	100	-			<	-	>						-		>		
				Avail.	99	-			<	-	>						-		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.9B: PM PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT BLUE SPRUCE AVENUE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Blue Spruce Avenue & Upper Middle Road	TWSC	Existing	LOS	C	A		A		A	>	A					F		>	F	
				Delay	15	0		1		0	>	0					207		>	207	
				V/C	0.08	0.14				0.61	>						1.05		>		
				Q	2	0				0	>						47		>		
				Stor.	100	-				-	>						-		>		
				Avail.	98	-				-	>						-		>		
			Background 2035	LOS	D	A		A		A	>	A					F		>	F	
				Delay	26	0		2		0	>	0					Err		>	Err	
				V/C	0.20	0.14				0.51	>						4.22		>		
				Q	6	0				0	>						Err		>		
				Stor.	100	-				-	>						-		>		
				Avail.	94	-				-	>						-		>		
			Total 2035	LOS	D	A		A		A	>	A					F		>	F	
				Delay	27	0		2		0	>	0					Err		>	Err	
				V/C	0.20	0.14				0.52	>						4.30		>		
				Q	6	0				0	>						Err		>		
				Stor.	100	-				-	>						-		>		
				Avail.	94	-				-	>						-		>		
			Background 2040	LOS	D	A		A		A	>	A					F		>	F	
				Delay	30	0		2		0	>	0					Err		>	Err	
				V/C	0.23	0.14				0.54	>						5.70		>		
				Q	7	0				0	>						Err		>		
				Stor.	100	-				-	>						-		>		
				Avail.	93	-				-	>						-		>		
			Total 2040	LOS	D	A		A		A	>	A					F		>	F	
				Delay	30	0		2		0	>	0					Err		>	Err	
				V/C	0.23	0.14				0.54	>						5.81		>		
				Q	7	0				0	>						Err		>		
				Stor.	100	-				-	>						-		>		
				Avail.	93	-				-	>						-		>		
			Background 2045	LOS	D	A		A		A	>	A					F		>	F	
				Delay	34	0		2		0	>	0					Err		>	Err	
				V/C	0.28	0.15				0.57	>						7.89		>		
				Q	9	0				0	>						Err		>		
				Stor.	100	-				-	>						-		>		
				Avail.	91	-				-	>						-		>		
			Total 2045	LOS	D	A		A		A	>	A					F		>	F	
				Delay	35	0		2		0	>	0					Err		>	Err	
				V/C	0.28	0.15				0.57	>						8.06		>		
				Q	9	0				0	>						Err		>		
				Stor.	100	-				-	>						-		>		
				Avail.	91	-				-	>						-		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.9C: SATURDAY PEAK HOUR OPERATIONS – UPPER MIDDLE ROAD AT BLUE SPRUCE AVENUE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Blue Spruce Avenue & Upper Middle Road	TWSC	Existing	LOS	A	A		A		A	>	A					D	>	D		
				Delay	10	0		1		0	>	0					26	>	26		
				V/C	0.03	0.13				0.33	>						0.29	>			
				Q	1	0				0	>						9	>			
				Stor.	100	-				-	>						-	>			
				Avail.	99	-				-	>						-	>			
			Background 2035	LOS	B	A		A		A	>	A					F	>	F		
				Delay	12	0		1		0	>	0					71	>	71		
				V/C	0.07	0.12				0.28	>						0.67	>			
				Q	2	0				0	>						30	>			
				Stor.	100	-				-	>						-	>			
				Avail.	98	-				-	>						-	>			
			Total 2035	LOS	B	A		A	<	A	>	A					F	>	F		
				Delay	12	0		1	<	0	>	0					73	>	73		
				V/C	0.07	0.13			<	0.28	>						0.68	>			
				Q	2	0			<	0	>						30	>			
				Stor.	100	-			<	-	>						-	>			
				Avail.	98	-			<	-	>						-	>			
			Background 2040	LOS	B	A		A		A	>	A					F	>	F		
				Delay	13	0		1		0	>	0					96	>	96		
				V/C	0.07	0.13				0.30	>						0.79	>			
				Q	2	0				0	>						37	>			
				Stor.	100	-				-	>						-	>			
				Avail.	98	-				-	>						-	>			
			Total 2040	LOS	B	A		A	<	A	>	A					F	>	F		
				Delay	13	0		1	<	0	>	0					100	>	100		
				V/C	0.07	0.13			<	0.30	>						0.80	>			
				Q	2	0			<	0	>						38	>			
				Stor.	100	-			<	-	>						-	>			
				Avail.	98	-			<	-	>						-	>			
			Background 2045	LOS	B	A		A		A	>	A					F	>	F		
				Delay	13	0		1		0	>	0					142	>	142		
				V/C	0.08	0.14				0.31	>						0.94	>			
				Q	2	0				0	>						47	>			
				Stor.	100	-				-	>						-	>			
				Avail.	98	-				-	>						-	>			
			Total 2045	LOS	B	A		A	<	A	>	A					F	>	F		
				Delay	13	0		1	<	0	>	0					147	>	147		
				V/C	0.08	0.14			<	0.31	>						0.96	>			
				Q	2	0			<	0	>						48	>			
				Stor.	100	-			<	-	>						-	>			
				Avail.	98	-			<	-	>						-	>			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.10 Burloak Drive at Bronte Creek Park Access

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Burloak Drive at Bronte Creek Park Access, the westbound approach currently operates at LOS F during the weekday PM peak hour, with delays of less than 70 seconds.

Under the 2035 Background horizon, the westbound approach is forecast to degrade to LOS F during the Saturday peak hour. The southbound left-turn is also projected to experience delays in the LOS D range under the 2040 Background horizon and is expected to deteriorate further with the future background growth during the weekday PM peak hour. The weekday AM peak hour will also see the westbound approach operate at LOS D, and is expected to continue experiencing high delays under future Total scenarios.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Critical Movements (LOS D or worse)

- Westbound movement (LOS > D) (2024 Existing);
- Southbound left (LOS > D) (2040 Background).

TABLE 5.10A: AM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT PARK ACCESS

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Burloak Drive & Park Access	TWSC	Existing	LOS					C		>	C		A	>	A	A	A		A	
				Delay					20		>	20		0	>	0	8	0		0	
				V/C					0.05		>			0.16	>		0.02	0.35			
				Q					1		>			0	>		0	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		145	-			
			Background 2035	LOS					C		>	C		A	>	A	A	A		A	
				Delay					24		>	24		0	>	0	9	0		0	
				V/C					0.08		>			0.14	>		0.02	0.33			
				Q					2		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Total 2035	LOS					C		>	C		A	>	A	A	A		A	
				Delay					24		>	24		0	>	0	9	0		0	
				V/C					0.08		>			0.14	>		0.02	0.33			
				Q					2		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Background 2040	LOS					D		>	D		A	>	A	A	A		A	
				Delay					26		>	26		0	>	0	9	0		0	
				V/C					0.09		>			0.14	>		0.03	0.34			
				Q					2		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Total 2040	LOS					D		>	D		A	>	A	A	A		A	
				Delay					26		>	26		0	>	0	9	0		0	
				V/C					0.09		>			0.14	>		0.03	0.34			
				Q					2		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Background 2045	LOS					D		>	D		A	>	A	A	A		A	
				Delay					27		>	27		0	>	0	9	0		0	
				V/C					0.12		>			0.15	>		0.03	0.36			
				Q					3		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Total 2045	LOS					D		>	D		A	>	A	A	A		A	
				Delay					28		>	28		0	>	0	9	0		0	
				V/C					0.12		>			0.15	>		0.03	0.36			
				Q					3		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.10B: PM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT PARK ACCESS

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Burloak Drive & Park Access	TWSC	Existing	LOS					F		>	F		A	>	A	B	A		A	
				Delay					67		>	67		0	>	0	14	0		1	
				V/C					0.45		>			0.62	>		0.07	0.14			
				Q					16		>			0	>		2	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		143	-			
			Background 2035	LOS					F		>	F		A	>	A	C	A		A	
				Delay					583		>	583		0	>	0	24	0		1	
				V/C					1.72		>			0.52	>		0.17	0.13			
				Q					55		>			0	>		5	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		140	-			
			Total 2035	LOS					F		>	F		A	>	A	C	A		A	
				Delay					598		>	598		0	>	0	24	0		1	
				V/C					1.75		>			0.52	>		0.17	0.14			
				Q					55		>			0	>		5	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		140	-			
			Background 2040	LOS					F		>	F		A	>	A	D	A		A	
				Delay					878		>	878		0	>	0	26	0		1	
				V/C					2.30		>			0.55	>		0.19	0.14			
				Q					64		>			0	>		6	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		139	-			
			Total 2040	LOS					F		>	F		A	>	A	D	A		A	
				Delay					899		>	899		0	>	0	26	0		1	
				V/C					2.34		>			0.55	>		0.20	0.14			
				Q					64		>			0	>		6	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		139	-			
			Background 2045	LOS					F		>	F		A	>	A	D	A		A	
				Delay					Err		>	Err		0	>	0	30	0		2	
				V/C					3.02		>			0.58	>		0.23	0.15			
				Q					Err		>			0	>		7	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		138	-			
			Total 2045	LOS					F		>	F		A	>	A	D	A		A	
				Delay					Err		>	Err		0	>	0	30	0		2	
				V/C					3.08		>			0.58	>		0.23	0.15			
				Q					Err		>			0	>		7	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		138	-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.10C: SATURDAY PEAK HOUR OPERATIONS – BURLOAK DRIVE AT PARK ACCESS

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Burloak Drive & Park Access	TWSC	Existing	LOS					C		>	C		A	>	A	A	A		A	
				Delay					24		>	24		0	>	0	10	0		0	
				V/C					0.27		>			0.35	>		0.02	0.14			
				Q					8		>			0	>		0	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		145	-			
			Background 2035	LOS					F		>	F		A	>	A	B	A		A	
				Delay					55		>	55		0	>	0	12	0		0	
				V/C					0.59		>			0.30	>		0.03	0.14			
				Q					25		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Total 2035	LOS					F		>	F		A	>	A	B	A		A	
				Delay					56		>	56		0	>	0	12	0		0	
				V/C					0.60		>			0.30	>		0.03	0.14			
				Q					26		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Background 2040	LOS					F		>	F		A	>	A	B	A		A	
				Delay					70		>	70		0	>	0	12	0		0	
				V/C					0.68		>			0.31	>		0.03	0.14			
				Q					31		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Total 2040	LOS					F		>	F		A	>	A	B	A		A	
				Delay					72		>	72		0	>	0	12	0		0	
				V/C					0.69		>			0.31	>		0.03	0.15			
				Q					32		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Background 2045	LOS					F		>	F		A	>	A	B	A		A	
				Delay					98		>	98		0	>	0	13	0		0	
				V/C					0.80		>			0.33	>		0.04	0.15			
				Q					39		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			
			Total 2045	LOS					F		>	F		A	>	A	B	A		A	
				Delay					101		>	101		0	>	0	13	0		0	
				V/C					0.82		>			0.33	>		0.04	0.15			
				Q					40		>			0	>		1	0			
				Stor.					-		>			-	>		145	-			
				Avail.					-		>			-	>		144	-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.11 Burloak Drive at Mainway

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at Burloak Drive and Mainway intersection presently operate at acceptable conditions, with a LOS D or better for all movements.

With background traffic growth, the northbound left-turn lane degrades to a LOS F with a v/c ratio exceeding 1.00 during the weekday AM and PM peak hours, with queue lengths exceeding the available storage by less than 105 m and 235 m respectively. The eastbound right-turn lane is also projected to experience critical delays at LOS F and v/c ratio grater than 0.95 during the weekday AM peak hour.

Under the 2035 Total conditions, the eastbound right-turn lane is also anticipated to operate in the LOS F range with a v/c ratio exceeding 1.00 and significant delays resulting from site-generated traffic, during the weekday PM peak hour. By 2045 Total scenario, northbound left-turn queues are forecast to extend up to 380 m and eastbound right-turn queues are forecast to extend up to 220 m.

Mainway is forecast to be the primary road to access the institutional and employment lands located on the south end of the subject site. As one of the primary accesses to the subject site, an increase in delay is expected along the Mainway corridor.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Eastbound right (v/c > 0.95) (2035 Background); and
- Northbound left (v/c > 0.95; 95th queue) (2035 Background).

TABLE 5.11A: AM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Burloak Drive & Mainway	TCS	Existing	LOS	D		D	D					C	A		B		B	>	B	C
				Delay	43		54	52					25	5		14		16	>	16	21
				V/C	0.20		0.68						0.77	0.16				0.58	>		0.78
				Q	20		57						84	29				117	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						26	-				-	>		
			Background 2035	LOS	D		F	E					F	A		F		C	>	C	E
				Delay	36		84	78					411	10		176		20	>	20	78
				V/C	0.18		0.97						1.82	0.20				0.69	>		1.65
				Q	25		139						187	33				131	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-77	-				-	>		
			Total 2035	LOS	D		F	F					F	A		F		C	>	C	F
				Delay	36		192	175					777	10		398		20	>	20	176
				V/C	0.18		1.28						2.64	0.20				0.69	>		2.37
				Q	25		194						286	34				132	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-176	-				-	>		
			Background 2040	LOS	D		F	F					F	A		F		C	>	C	F
				Delay	36		106	96					451	10		193		21	>	21	87
				V/C	0.19		1.04						1.91	0.21				0.73	>		1.74
				Q	26		152						199	36				142	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-89	-				-	>		
			Total 2040	LOS	D		F	F					F	B		F		C	>	C	F
				Delay	36		224	203					819	10		417		21	>	21	187
				V/C	0.19		1.36						2.73	0.21				0.73	>		2.46
				Q	26		206						298	37				142	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-188	-				-	>		
			Background 2045	LOS	D		F	F					F	B		F		C	>	C	F
				Delay	36		132	120					495	11		211		22	>	22	97
				V/C	0.20		1.13						2.00	0.22				0.76	>		1.84
				Q	27		166						211	39				153	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-101	-				-	>		
			Total 2045	LOS	D		F	F					F	B		F		C	>	C	F
				Delay	36		259	234					863	11		436		22	>	22	199
				V/C	0.20		1.44						2.83	0.22				0.77	>		2.56
				Q	27		220						311	40				154	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-201	-				-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.11B: PM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Burloak Drive & Mainway	TCS	Existing	LOS	D		D	D					B	B		B		B	>	B	B
				Delay	51		44	46					16	10		12		13	>	13	17
				V/C	0.61		0.20						0.72	0.57				0.26	>		0.73
				Q	48		26						105	138				48	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						5	-				-	>		
			Background 2035	LOS	D		D	D					F	B		D		B	>	B	D
				Delay	51		45	47					125	12		40		18	>	18	38
				V/C	0.68		0.52						1.17	0.65				0.34	>		1.12
				Q	60		50						247	143				52	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-137	-				-	>		
			Total 2035	LOS	D		F	F					F	B		F		B	>	B	F
				Delay	39		120	102					296	17		93		18	>	18	82
				V/C	0.49		1.09						1.57	0.72				0.34	>		1.50
				Q	60		164						338	148				52	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-228	-				-	>		
			Background 2040	LOS	D		D	D					F	B		D		B	>	B	D
				Delay	51		49	50					168	13		52		18	>	18	46
				V/C	0.70		0.64						1.28	0.69				0.35	>		1.21
				Q	63		62						319	157				55	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-209	-				-	>		
			Total 2040	LOS	D		F	F					F	B		F		B	>	B	F
				Delay	40		153	128					349	18		108		18	>	18	97
				V/C	0.52		1.18						1.69	0.75				0.36	>		1.61
				Q	63		180						361	160				55	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-251	-				-	>		
			Background 2045	LOS	D		D	D					F	B		E		B	>	B	E
				Delay	50		55	53					226	15		68		18	>	18	57
				V/C	0.69		0.74						1.42	0.74				0.37	>		1.33
				Q	67		85						342	169				58	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-232	-				-	>		
			Total 2045	LOS	D		F	F					F	B		F		B	>	B	F
				Delay	40		191	158					406	19		124		18	>	18	113
				V/C	0.55		1.28						1.82	0.79				0.37	>		1.74
				Q	67		196						380	172				58	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						-270	-				-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.11C: SATURDAY PEAK HOUR OPERATIONS – BURLOAK DRIVE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Burloak Drive & Mainway	TCS	Existing	LOS	D		C	C					A	A		A		A	>	A	A
				Delay	36		34	34					6	6		6		9	>	9	9
				V/C	0.35		0.06						0.38	0.32				0.25	>		0.40
				Q	19		13						26	46				33	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						84	-				-	>		
			Background 2035	LOS	C		C	C					B	A		A		B	>	B	B
				Delay	34		32	32					12	5		7		12	>	12	10
				V/C	0.36		0.09						0.65	0.37				0.31	>		0.64
				Q	24		15						50	47				42	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						60	-				-	>		
			Total 2035	LOS	C		C	C					B	A		A		B	>	B	B
				Delay	33		32	32					15	6		9		14	>	14	13
				V/C	0.36		0.15						0.74	0.38				0.34	>		0.71
				Q	23		19						77	58				42	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						33	-				-	>		
			Background 2040	LOS	C		C	C					B	A		A		B	>	B	B
				Delay	34		32	32					12	5		7		12	>	12	11
				V/C	0.38		0.09						0.70	0.39				0.33	>		0.68
				Q	24		16						55	52				44	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						55	-				-	>		
			Total 2040	LOS	C		C	C					B	A		A		B	>	B	B
				Delay	33		32	32					15	6		8		16	>	16	13
				V/C	0.37		0.16						0.75	0.39				0.38	>		0.72
				Q	24		20						70	63				44	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						40	-				-	>		
			Background 2045	LOS	C		C	C					B	A		A		B	>	B	B
				Delay	34		32	32					13	5		7		14	>	14	11
				V/C	0.39		0.10						0.73	0.41				0.36	>		0.71
				Q	25		16						60	57				46	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						50	-				-	>		
			Total 2045	LOS	C		C	C					B	A		A		B	>	B	B
				Delay	33		32	32					18	6		9		17	>	17	14
				V/C	0.38		0.16						0.78	0.41				0.41	>		0.76
				Q	25		20						85	69				47	>		
				Stor.	-		-						110	-				-	>		
				Avail.	-		-						25	-				-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.12 Mainway at Sutton Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At Sutton Drive and Mainway, individual movements during the weekday peak hour operate at acceptable conditions, with a LOS C or better for all movements.

Under the 2035 Background horizon, the northbound approach will likely operate in the LOS E range and degrade under future horizons with background traffic and development.

As Sutton Drive is expected to provide access to the development under the Total conditions, the site-generated traffic increases delays for southbound and northbound movements. The southbound and northbound approaches under the 2035 Total horizon is forecast to operate at LOS F during the weekday peak hours, with significant delays and v/c ratios greater than 0.85.

Critical Movements (LOS D or worse)

- Northbound movement (LOS > D) (2035 Background); and
- Southbound movement (LOS > D) (2035 Total).

TABLE 5.12A: AM PEAK HOUR OPERATIONS – SUTTON DRIVE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Sutton Drive & Mainway	TWSC	Existing	LOS		A	>	A	<	A		A	B		>	B					
				Delay		0	>	0	<	3		1	13		>	13					
				V/C		0.15	>		<	0.03			0.06		>						
				Q		0	>		<	1			2		>						
			Background 2035	LOS		A	>	A	<	A		A	B		>	B					
				Delay		0	>	0	<	3		1	14		>	14					
				V/C		0.17	>		<	0.03			0.07		>						
				Q		0	>		<	1			2		>						
			Total 2035	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	4	>	2	<	2	>	1	<	85	>	85	<	254	>	254	
				V/C	<	0.11	>		<	0.03	>		<	0.79	>		<	1.33	>		
				Q	<	3	>		<	1	>		<	40	>		<	92	>		
			Background 2040	LOS		A	>	A	<	A		A	B		>	B					
				Delay		0	>	0	<	3		1	15		>	15					
				V/C		0.18	>		<	0.04			0.08		>						
				Q		0	>		<	1			2		>						
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	4	>	2	<	2	>	1	<	101	>	101	<	319	>	319	
				V/C	<	0.11	>		<	0.04	>		<	0.85	>		<	1.48	>		
				Q	<	3	>		<	1	>		<	44	>		<	101	>		
			Background 2045	LOS		A	>	A	<	A		A	C		>	C					
				Delay		0	>	0	<	3		1	15		>	15					
				V/C		0.19	>		<	0.04			0.09		>						
				Q		0	>		<	1			2		>						
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	4	>	2	<	2	>	1	<	122	>	122	<	401	>	401	
				V/C	<	0.11	>		<	0.04	>		<	0.92	>		<	1.66	>		
				Q	<	3	>		<	1	>		<	50	>		<	110	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.12B: PM PEAK HOUR OPERATIONS – SUTTON DRIVE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Sutton Drive & Mainway	TWSC	Existing	LOS		A	>	A	<	A		A	C		>	C					
				Delay		0	>	0	<	1		0	24		>	24					
				V/C		0.14	>		<	0.01			0.56		>						
				Q		0	>		<	0			27		>						
			Background 2035	LOS		A	>	A	<	A		A	E		>	E					
				Delay		0	>	0	<	1		0	35		>	35					
				V/C		0.16	>		<	0.01			0.70		>						
				Q		0	>		<	0			41		>						
			Total 2035	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	1	>	1	<	0	>	0	<	903	>	903	<	945	>	945	
				V/C	<	0.03	>		<	0.01	>		<	2.82	>		<	2.95	>		
				Q	<	1	>		<	0	>		<	234	>		<	300	>		
			Background 2040	LOS		A	>	A	<	A		A	E		>	E					
				Delay		0	>	0	<	1		0	45		>	45					
				V/C		0.17	>		<	0.01			0.79		>						
				Q		0	>		<	0			52		>						
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	1	>	1	<	0	>	0	<	Err	>	Err	<	Err	>	Err	
				V/C	<	0.03	>		<	0.01	>		<	3.45	>		<	3.31	>		
				Q	<	1	>		<	0	>		<	Err	>		<	Err	>		
			Background 2045	LOS		A	>	A	<	A		A	F		>	F					
				Delay		0	>	0	<	1		0	62		>	62					
				V/C		0.18	>		<	0.02			0.88		>						
				Q		0	>		<	0			66		>						
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	1	>	1	<	0	>	0	<	Err	>	Err	<	Err	>	Err	
				V/C	<	0.03	>		<	0.02	>		<	4.38	>		<	3.78	>		
				Q	<	1	>		<	0	>		<	Err	>		<	Err	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.12C: SATURDAY PEAK HOUR OPERATIONS – SUTTON DRIVE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Sutton Drive & Mainway	TWSC	Existing	LOS		A	>	A	<	A		A	A		>	A					
				Delay		0	>	0	<	0		0	10		>	10					
				V/C		0.05	>		<	0.00*			0.03		>						
				Q		0	>		<	0			1		>						
			Background 2035	LOS		A	>	A	<	A		A	B		>	B					
				Delay		0	>	0	<	0		0	10		>	10					
				V/C		0.05	>		<	0.00*			0.04		>						
				Q		0	>		<	0			1		>						
			Total 2035	LOS	<	A	>	A	<	A	>	A	<	B	>	B	<	C	>	C	
				Delay	<	2	>	1	<	0	>	0	<	14	>	14	<	17	>	17	
				V/C	<	0.01	>		<	0.00*	>		<	0.15	>		<	0.34	>		
				Q	<	0	>		<	0	>		<	4	>		<	12	>		
			Background 2040	LOS		A	>	A	<	A		A	B		>	B					
				Delay		0	>	0	<	0		0	10		>	10					
				V/C		0.05	>		<	0.00*			0.04		>						
				Q		0	>		<	0.1			1		>						
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	B	>	B	<	C	>	C	
				Delay	<	2	>	1	<	0	>	0	<	14	>	14	<	17	>	17	
				V/C	<	0.01	>		<	0.00*	>		<	0.15	>		<	0.35	>		
				Q	<	0	>		<	0	>		<	4	>		<	12	>		
			Background 2045	LOS		A	>	A	<	A		A	B		>	B					
				Delay		0	>	0	<	0		0	10		>	10					
				V/C		0.06	>		<	0.00*			0.04		>						
				Q		0	>		<	0			1		>						
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	B	>	B	<	C	>	C	
				Delay	<	2	>	1	<	0	>	0	<	14	>	14	<	18	>	18	
				V/C	<	0.01	>		<	0.00*	>		<	0.16	>		<	0.36	>		
				Q	<	0	>		<	0	>		<	4	>		<	13	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.13 Mainway at Norjohn Court/Lampman Avenue

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Norjohn Court/Lampman Avenue at Mainway, critical movements are present in the northbound approach during the weekday peak hour, operating at LOS D-E. The southbound approach also experiences critical delays, operating at LOS E during the weekday PM peak hour.

Delays at these movements are expected to worsen with the addition of future background growth and site generated traffic under future Background and Total horizons.

Critical Movements (LOS D or worse)

- Northbound movement (LOS > D) (2024 Existing); and
- Southbound movement (LOS > D) (2024 Existing).

TABLE 5.13A: AM PEAK HOUR OPERATIONS – NORJOHN COURT/LAMPMAN AVENUE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Norjohn Court/Lampman Avenue & Mainway	TWSC	Existing	LOS	<	A	>	A	<	A	>	A	<	D	>	D	<	C	>	C	
				Delay	<	1	>	0	<	2	>	1	<	27	>	27	<	17	>	17	
				V/C	<	0.02	>		<	0.02	>		<	0.11	>		<	0.39	>		
				Q	<	0	>		<	0	>		<	3	>		<	15	>		
			Background 2035	LOS	<	A	>	A	<	A	>	A	<	E	>	E	<	C	>	C	
				Delay	<	1	>	0	<	2	>	1	<	36	>	36	<	20	>	20	
				V/C	<	0.02	>		<	0.03	>		<	0.16	>		<	0.48	>		
				Q	<	0	>		<	1	>		<	4	>		<	21	>		
			Total 2035	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	D	>	D	
				Delay	<	1	>	0	<	2	>	1	<	56	>	56	<	30	>	30	
				V/C	<	0.02	>		<	0.03	>		<	0.25	>		<	0.61	>		
				Q	<	0	>		<	1	>		<	7	>		<	30	>		
			Background 2040	LOS	<	A	>	A	<	A	>	A	<	E	>	E	<	C	>	C	
				Delay	<	1	>	0	<	2	>	1	<	40	>	40	<	23	>	23	
				V/C	<	0.02	>		<	0.03	>		<	0.18	>		<	0.53	>		
				Q	<	0	>		<	1	>		<	5	>		<	24	>		
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	D	>	D	
				Delay	<	1	>	0	<	2	>	1	<	63	>	63	<	34	>	34	
				V/C	<	0.02	>		<	0.03	>		<	0.27	>		<	0.67	>		
				Q	<	0	>		<	1	>		<	8	>		<	36	>		
			Background 2045	LOS	<	A	>	A	<	A	>	A	<	E	>	E	<	D	>	D	
				Delay	<	1	>	0	<	2	>	1	<	44	>	44	<	26	>	26	
				V/C	<	0.02	>		<	0.03	>		<	0.22	>		<	0.59	>		
				Q	<	0	>		<	1	>		<	6	>		<	29	>		
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	E	>	E	
				Delay	<	1	>	0	<	2	>	1	<	73	>	73	<	42	>	42	
				V/C	<	0.02	>		<	0.04	>		<	0.33	>		<	0.74	>		
				Q	<	0	>		<	1	>		<	10	>		<	45	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.13B: PM PEAK HOUR OPERATIONS –MAINWAY AT NORJOHN COURT/LAMPMAN AVENUE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Norjohn Court/Lampman Avenue & Mainway	TWSC	Existing	LOS	<	A	>	A	<	A	>	A	<	E	>	E	<	E	>	E	
				Delay	<	3	>	2	<	0	>	0	<	37	>	37	<	43	>	43	
				V/C	<	0.06	>		<	0.00*	>		<	0.47	>		<	0.54	>		
				Q	<	2	>		<	0.1	>		<	18	>		<	23	>		
			Background 2035	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	3	>	2	<	0	>	0	<	58	>	58	<	80	>	80	
				V/C	<	0.07	>		<	0.00*	>		<	0.64	>		<	0.77	>		
				Q	<	2	>		<	0	>		<	29	>		<	39	>		
			Total 2035	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	4	>	2	<	0	>	0	<	118	>	118	<	218	>	218	
				V/C	<	0.09	>		<	0.00*	>		<	0.88	>		<	1.16	>		
				Q	<	2	>		<	0	>		<	44	>		<	62	>		
			Background 2040	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	3	>	2	<	0	>	0	<	82	>	82	<	123	>	123	
				V/C	<	0.08	>		<	0.00*	>		<	0.77	>		<	0.93	>		
				Q	<	2	>		<	0	>		<	38	>		<	51	>		
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	4	>	2	<	0	>	0	<	180	>	180	<	334	>	334	
				V/C	<	0.10	>		<	0.00*	>		<	1.06	>		<	1.44	>		
				Q	<	3	>		<	0.1	>		<	56	>		<	77	>		
			Background 2045	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	4	>	2	<	0	>	0	<	116	>	116	<	183	>	183	
				V/C	<	0.09	>		<	0.00*	>		<	0.90	>		<	1.10	>		
				Q	<	2	>		<	0	>		<	47	>		<	62	>		
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	F	>	F	<	F	>	F	
				Delay	<	4	>	2	<	0	>	0	<	257	>	257	<	466	>	466	
				V/C	<	0.11	>		<	0.00*	>		<	1.26	>		<	1.72	>		
				Q	<	3	>		<	0	>		<	67	>		<	89	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.14 Appleby Line at Mainway

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Appleby Line and Mainway, the westbound through-right, and northbound left-turn lanes currently operate in the LOS F range with v/c ratios of 1.00 or greater during the PM peak hour. The northbound left-turn lane exceeds the available storage by less than 25 m during this time. The northbound through-right lane also exhibits a LOS C with a v/c ratio greater than 0.85

Under the 2035 Background horizon the eastbound left-turn lane is forecast to experience significant delays at LOS F with a v/c ratio exceeding 1.00 during the weekday PM peak hour. The 95th percentile queue for this movement is also anticipated to exceed the available storage by less than 15 m. Under the 2040 Background horizon, the eastbound through-right lane is projected to operate at LOS E with a v/c ratio greater than 0.85 during the weekday AM peak hour. The 95th percentile queue for this movement is also anticipated to extend 190 m and exceed the available storage by less than 95 m.

Under the 2035 Total conditions, the eastbound through-right is anticipated to experience critical delays ranging from LOS E during the weekday AM peak hour with a v/c ratio over 0.85. Under the 2040 Total horizons, the southbound left-turn lane is projected to have queues exceeding storage by less than 5 m, as well as a through-right lane with a v/c ratio over 0.85. Under the 2045 Total horizon, the westbound left-turn lane is expected to experience a LOS F with a v/c ratio over 0.95 during the weekday AM peak hour, and a 95th percentile queue exceeding storage by less than 10 m during the weekday PM peak hour.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Westbound through-right (v/c > 0.85) (2024 Existing);
- Northbound left (v/c > 0.95; 95th queue) (2024 Existing);
- Northbound through-right (v/c > 0.85) (2024 Existing);

- Eastbound left (v/c > 0.95; 95th queue) (2035 Background);
- Eastbound through-right (v/c > 0.85) (2035 Total);
- Westbound left (v/c > 0.95) (2045 Total);
- Southbound left (v/c > 0.95; 95th queue) (2040 Total); and
- Southbound through-right (v/c > 0.85) (2040 Total).

TABLE 5.14A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach
AM Peak Hour	Appleby Line & Mainway	TCS	Existing	LOS	D	D	>	D	D	D	>	D	C	C	>	C	B	B	>	B
				Delay	38	53	>	50	45	42	>	43	22	27	>	26	17	16	>	16
				V/C	0.49	0.79	>		0.60	0.18	>		0.58	0.60	>		0.59	0.78	>	
				Q	47	81	>		31	20	>		19	151	>		40	154	>	
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>	
				Avail.	38	-	>		59	-	>		76	-	>		25	-	>	
			Background 2035	LOS	D	E	>	D	D	D	>	D	C	C	>	C	D	B	>	B
				Delay	39	55	>	52	46	39	>	42	34	32	>	33	41	16	>	19
				V/C	0.56	0.84	>		0.66	0.18	>		0.77	0.64	>		0.74	0.80	>	
				Q	57	93	>		37	22	>		46	142	>		71	128	>	
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>	
				Avail.	28	-	>		53	-	>		49	-	>		-6	-	>	
			Total 2035	LOS	D	E	>	D	F	D	>	E	D	D	>	D	D	B	>	C
				Delay	39	59	>	54	85	38	>	57	41	35	>	36	54	18	>	22
				V/C	0.59	0.89	>		0.90	0.19	>		0.81	0.73	>		0.81	0.84	>	
				Q	61	113	>		59	24	>		38	157	>		77	160	>	
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>	
				Avail.	24	-	>		31	-	>		57	-	>		-12	-	>	
			Background 2040	LOS	D	E	>	D	D	D	>	D	D	C	>	C	D	B	>	C
				Delay	39	57	>	53	50	39	>	43	39	33	>	33	50	17	>	22
				V/C	0.58	0.87	>		0.70	0.18	>		0.81	0.69	>		0.79	0.84	>	
				Q	60	99	>		37	22	>		42	149	>		79	153	>	
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>	
				Avail.	25	-	>		53	-	>		53	-	>		-14	-	>	
			Total 2040	LOS	D	E	>	E	F	D	>	E	D	D	>	D	E	B	>	C
				Delay	39	62	>	56	96	38	>	62	47	36	>	37	58	20	>	24
				V/C	0.60	0.92	>		0.94	0.20	>		0.85	0.78	>		0.84	0.89	>	
				Q	64	122	>		64	25	>		35	168	>		82	190	>	
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>	
				Avail.	21	-	>		26	-	>		60	-	>		-17	-	>	
			Background 2045	LOS	D	E	>	D	E	D	>	D	D	C	>	C	E	B	>	C
				Delay	39	58	>	54	56	38	>	45	47	34	>	35	58	20	>	25
				V/C	0.60	0.89	>		0.76	0.19	>		0.86	0.74	>		0.84	0.89	>	
				Q	63	111	>		43	23	>		41	156	>		86	191	>	
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>	
				Avail.	22	-	>		47	-	>		54	-	>		-21	-	>	
			Total 2045	LOS	D	E	>	E	F	D	>	E	E	D	>	D	E	C	>	C
				Delay	39	66	>	60	108	38	>	66	56	37	>	39	58	23	>	27
				V/C	0.62	0.94	>		0.98	0.20	>		0.90	0.84	>		0.85	0.93	>	
				Q	66	132	>		68	25	>		34	182	>		79	244	>	
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>	
				Avail.	19	-	>		22	-	>		61	-	>		-14	-	>	

Overall
C
27
0.77
C
30
0.81
C
35
0.88
C
32
0.85
D
37
0.92
C
34
0.89
D
39
0.96

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.14B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Mainway	TCS	Existing	LOS	F	D	>	E	C	F	>	E	F	C	>	D	D	C	>	C	D
				Delay	82	46	>	58	35	86	>	79	99	22	>	36	44	24	>	25	45
				V/C	0.88	0.28	>		0.40	1.00	>		1.06	0.86	>		0.69	0.69	>		1.05
				Q	70	38	>		47	176	>		118	190	>		36	112	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	15	-	>		43	-	>		-23	-	>		29	-	>		
			Background 2035	LOS	F	D	>	F	D	F	>	F	F	B	>	E	D	C	>	C	E
				Delay	147	48	>	81	36	125	>	112	252	17	>	58	54	25	>	28	63
				V/C	1.10	0.34	>		0.48	1.12	>		1.41	0.82	>		0.78	0.70	>		1.34
				Q	96	43	>		54	208	>		188	141	>		45	113	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	-11	-	>		36	-	>		-93	-	>		20	-	>		
			Total 2035	LOS	F	D	>	F	D	F	>	F	F	B	>	E	D	C	>	C	E
				Delay	221	50	>	112	45	179	>	154	273	18	>	61	54	27	>	29	79
				V/C	1.30	0.41	>		0.73	1.26	>		1.46	0.85	>		0.78	0.73	>		1.42
				Q	118	49	>		81	244	>		184	161	>		42	118	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	-33	-	>		9	-	>		-89	-	>		23	-	>		
			Background 2040	LOS	F	D	>	F	D	F	>	F	F	B	>	E	E	C	>	C	E
				Delay	164	48	>	87	36	147	>	132	307	17	>	68	61	27	>	30	73
				V/C	1.15	0.37	>		0.52	1.18	>		1.54	0.85	>		0.81	0.73	>		1.44
				Q	102	47	>		56	224	>		190	167	>		48	121	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	-17	-	>		34	-	>		-95	-	>		17	-	>		
			Total 2040	LOS	F	D	>	F	D	F	>	F	F	B	>	E	E	C	>	C	F
				Delay	238	50	>	118	48	204	>	175	316	18	>	69	60	28	>	31	88
				V/C	1.34	0.44	>		0.78	1.31	>		1.55	0.89	>		0.81	0.76	>		1.50
				Q	123	53	>		88	260	>		185	194	>		46	126	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	-38	-	>		2	-	>		-90	-	>		19	-	>		
			Background 2045	LOS	F	D	>	F	D	F	>	F	F	B	>	E	E	C	>	C	F
				Delay	182	49	>	94	37	173	>	154	350	18	>	76	72	29	>	33	83
				V/C	1.20	0.40	>		0.55	1.24	>		1.64	0.89	>		0.86	0.77	>		1.53
				Q	108	50	>		59	241	>		189	202	>		53	130	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	-23	-	>		31	-	>		-94	-	>		12	-	>		
			Total 2045	LOS	F	D	>	F	D	F	>	F	F	B	>	E	E	C	>	C	F
				Delay	261	51	>	126	53	231	>	199	350	19	>	76	71	31	>	34	98
				V/C	1.40	0.47	>		0.82	1.38	>		1.64	0.93	>		0.86	0.80	>		1.58
				Q	130	56	>		97	276	>		181	219	>		52	135	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	-45	-	>		-7	-	>		-86	-	>		13	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.14C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT MAINWAY

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Mainway	TCS	Existing	LOS	D	D	>	D	D	D	>	D	C	A	>	A	B	C	>	C	C
				Delay	38	42	>	41	39	47	>	45	28	6	>	8	16	21	>	21	20
				V/C	0.45	0.20	>		0.27	0.54	>		0.50	0.58	>		0.21	0.63	>		0.59
				Q	34	18	>		22	38	>		23	14	>		14	127	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	51	-	>		68	-	>		72	-	>		51	-	>		
			Background 2035	LOS	D	D	>	D	D	D	>	D	D	A	>	B	B	C	>	C	C
				Delay	40	42	>	41	39	47	>	45	45	6	>	11	20	24	>	24	22
				V/C	0.58	0.21	>		0.32	0.57	>		0.67	0.57	>		0.33	0.67	>		0.67
				Q	41	20	>		26	42	>		45	33	>		19	132	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	44	-	>		64	-	>		50	-	>		46	-	>		
			Total 2035	LOS	D	D	>	D	D	D	>	D	D	A	>	B	C	C	>	C	C
				Delay	46	42	>	43	39	47	>	45	46	6	>	11	24	32	>	31	26
				V/C	0.70	0.23	>		0.38	0.59	>		0.68	0.60	>		0.35	0.71	>		0.72
				Q	48	21	>		30	44	>		45	45	>		19	153	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	37	-	>		60	-	>		50	-	>		46	-	>		
			Background 2040	LOS	D	D	>	D	D	D	>	D	D	A	>	B	C	C	>	C	C
				Delay	41	42	>	41	38	47	>	45	47	6	>	11	22	28	>	27	24
				V/C	0.61	0.22	>		0.32	0.59	>		0.66	0.61	>		0.37	0.72	>		0.70
				Q	43	20	>		26	44	>		47	39	>		21	143	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	42	-	>		64	-	>		48	-	>		44	-	>		
			Total 2040	LOS	D	D	>	D	D	D	>	D	D	A	>	B	C	C	>	C	C
				Delay	52	43	>	47	38	48	>	46	47	7	>	11	25	34	>	34	27
				V/C	0.76	0.26	>		0.39	0.64	>		0.66	0.63	>		0.39	0.76	>		0.74
				Q	50	22	>		30	46	>		46	51	>		19	161	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	35	-	>		60	-	>		49	-	>		46	-	>		
			Background 2045	LOS	D	D	>	D	D	D	>	D	D	A	>	B	C	C	>	C	C
				Delay	42	41	>	41	38	47	>	45	47	8	>	12	24	32	>	32	26
				V/C	0.64	0.22	>		0.34	0.60	>		0.64	0.64	>		0.41	0.79	>		0.74
				Q	44	20	>		27	46	>		48	46	>		22	154	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	41	-	>		63	-	>		47	-	>		43	-	>		
			Total 2045	LOS	E	D	>	D	D	D	>	D	D	A	>	B	C	D	>	D	C
				Delay	56	43	>	48	38	48	>	46	47	8	>	12	23	38	>	38	29
				V/C	0.79	0.27	>		0.41	0.65	>		0.64	0.66	>		0.43	0.82	>		0.78
				Q	52	22	>		31	48	>		48	59	>		19	188	>		
				Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
				Avail.	33	-	>		59	-	>		47	-	>		46	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.15 Appleby Line at Corporate Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Approaching Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at the intersection of Appleby Line at Corporate Drive presently operate within capacity, with a LOS E or better for all movements and v/c ratios less than 0.85. Similar levels are projected under the future Background horizons to the existing conditions.

Under the 2040 Background horizon, the westbound approach is forecast to operate at LOS E with a v/c ratio of 0.85, during the weekday PM peak hour.

Under the 2035 Total horizon, the westbound approach is projected to operate in the LOS E-F range during the weekday peak hours with a v/c ratio of 0.90. or greater. This movement is also expected to degrade in the Saturday peak hours to a LOS E with a v/c ratio of 0.85 by the 2040 Total horizon. The northbound through-right lane is anticipated to operate with a v/c ratio over 0.85 during the weekday PM peak hour under the same scenario.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Westbound movement (v/c > 0.85) (2035 Total); and
- Northbound through-right (v/c > 0.85) (2040 Total).

TABLE 5.15A:AM PEAK HOUR OPERATIONS – APPLEBY LINE AT CORPORATE DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Corporate Drive	TCS	Existing	LOS	<	D	>	D	<	E	>	E	C	C	>	C	A	A	>	A	B
				Delay	<	40	>	40	<	59	>	59	20	22	>	22	4	6	>	6	16
				V/C	<	0.13	>		<	0.78	>		0.25	0.44	>		0.18	0.64	>		0.69
				Q	<	16	>		<	73	>		16	142	>		4	78	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		34	-	>		116	-	>		
			Background 2035	LOS	<	D	>	D	<	E	>	E	D	C	>	C	A	A	>	A	B
				Delay	<	39	>	39	<	59	>	59	51	23	>	24	5	6	>	6	16
				V/C	<	0.18	>		<	0.81	>		0.59	0.44	>		0.29	0.63	>		0.70
				Q	<	20	>		<	81	>		20	132	>		5	73	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		30	-	>		115	-	>		
			Total 2035	LOS	<	C	>	C	<	E	>	E	E	C	>	C	A	A	>	A	C
				Delay	<	34	>	34	<	66	>	66	71	26	>	28	7	7	>	7	20
				V/C	<	0.15	>		<	0.90	>		0.70	0.50	>		0.35	0.68	>		0.77
				Q	<	20	>		<	122	>		17	135	>		5	73	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		33	-	>		115	-	>		
			Background 2040	LOS	<	D	>	D	<	E	>	E	E	C	>	C	A	A	>	A	B
				Delay	<	38	>	38	<	60	>	60	77	23	>	24	5	6	>	6	17
				V/C	<	0.20	>		<	0.82	>		0.74	0.47	>		0.32	0.67	>		0.76
				Q	<	22	>		<	85	>		22	140	>		5	73	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		28	-	>		115	-	>		
			Total 2040	LOS	<	C	>	C	<	E	>	E	E	C	>	C	B	A	>	A	C
				Delay	<	34	>	34	<	68	>	68	76	28	>	29	11	8	>	8	21
				V/C	<	0.16	>		<	0.91	>		0.74	0.54	>		0.37	0.72	>		0.81
				Q	<	22	>		<	129	>		17	143	>		5	72	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		33	-	>		115	-	>		
			Background 2045	LOS	<	D	>	D	<	E	>	E	F	C	>	C	A	A	>	A	B
				Delay	<	38	>	38	<	61	>	61	82	25	>	26	8	7	>	7	18
				V/C	<	0.21	>		<	0.84	>		0.77	0.51	>		0.34	0.71	>		0.79
				Q	<	24	>		<	91	>		21	147	>		5	73	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		29	-	>		115	-	>		
			Total 2045	LOS	<	C	>	C	<	E	>	E	E	C	>	C	B	A	>	A	C
				Delay	<	33	>	33	<	71	>	71	79	28	>	30	15	9	>	9	22
				V/C	<	0.17	>		<	0.93	>		0.77	0.57	>		0.41	0.76	>		0.85
				Q	<	24	>		<	139	>		16	150	>		5	72	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		34	-	>		115	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.15B:PM PEAK HOUR OPERATIONS – APPLEBY LINE AT CORPORATE DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Corporate Drive	TCS	Existing	LOS	<	D	>	D	<	E	>	E	A	A	>	A	C	A	>	A	B
				Delay	<	54	>	54	<	72	>	72	4	9	>	8	30	7	>	10	14
				V/C	<	0.43	>		<	0.79	>		0.13	0.77	>		0.53	0.38	>		0.76
				Q	<	37	>		<	76	>		2	229	>		31	103	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		48	-	>		89	-	>		
			Background 2035	LOS	<	D	>	D	<	E	>	E	A	A	>	A	D	A	>	B	B
				Delay	<	53	>	53	<	76	>	76	6	9	>	9	38	9	>	11	15
				V/C	<	0.45	>		<	0.83	>		0.26	0.75	>		0.69	0.40	>		0.76
				Q	<	40	>		<	86	>		3	163	>		41	107	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		79	-	>		
			Total 2035	LOS	<	D	>	D	<	F	>	F	A	B	>	B	D	B	>	B	C
				Delay	<	47	>	47	<	86	>	86	7	14	>	14	49	11	>	14	20
				V/C	<	0.34	>		<	0.92	>		0.28	0.84	>		0.76	0.42	>		0.86
				Q	<	40	>		<	131	>		3	175	>		38	107	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		82	-	>		
			Background 2040	LOS	<	D	>	D	<	E	>	E	A	B	>	A	D	B	>	B	B
				Delay	<	52	>	52	<	77	>	77	6	10	>	10	42	10	>	13	16
				V/C	<	0.46	>		<	0.85	>		0.29	0.79	>		0.72	0.42	>		0.80
				Q	<	43	>		<	91	>		3	168	>		38	117	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		82	-	>		
			Total 2040	LOS	<	D	>	D	<	F	>	F	A	B	>	B	D	B	>	B	C
				Delay	<	47	>	47	<	90	>	90	7	15	>	15	53	13	>	16	22
				V/C	<	0.35	>		<	0.94	>		0.32	0.89	>		0.79	0.45	>		0.90
				Q	<	42	>		<	140	>		3	195	>		37	117	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		83	-	>		
			Background 2045	LOS	<	D	>	D	<	E	>	E	A	B	>	B	D	B	>	B	B
				Delay	<	52	>	52	<	78	>	78	7	12	>	12	46	12	>	15	18
				V/C	<	0.46	>		<	0.86	>		0.34	0.84	>		0.75	0.45	>		0.84
				Q	<	45	>		<	98	>		3	196	>		38	128	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		82	-	>		
			Total 2045	LOS	<	D	>	D	<	F	>	F	A	B	>	B	E	B	>	B	C
				Delay	<	46	>	46	<	95	>	95	7	16	>	16	59	14	>	18	23
				V/C	<	0.36	>		<	0.97	>		0.37	0.94	>		0.83	0.47	>		0.94
				Q	<	44	>		<	149	>		3	249	>		37	127	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		83	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.15C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT CORPORATE DRIVE

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Corporate Drive	TCS	Existing	LOS	<	D	>	D	<	D	>	D	A	A	>	A	A	A	>	A	B
				Delay	<	41	>	41	<	53	>	53	4	6	>	6	4	6	>	6	10
				V/C	<	0.28	>		<	0.71	>		0.11	0.62	>		0.28	0.49	>		0.63
				Q	<	25	>		<	56	>		2	34	>		3	106	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		48	-	>		117	-	>		
			Background 2035	LOS	<	D	>	D	<	D	>	D	A	A	>	A	B	A	>	A	A
				Delay	<	40	>	40	<	54	>	54	8	6	>	6	11	5	>	5	10
				V/C	<	0.32	>		<	0.74	>		0.25	0.62	>		0.45	0.50	>		0.64
				Q	<	27	>		<	62	>		3	50	>		4	119	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		116	-	>		
			Total 2035	LOS	<	C	>	C	<	E	>	E	B	B	>	B	B	A	>	A	B
				Delay	<	34	>	34	<	58	>	58	12	10	>	10	13	8	>	9	14
				V/C	<	0.23	>		<	0.84	>		0.29	0.71	>		0.50	0.55	>		0.75
				Q	<	26	>		<	87	>		3	126	>		6	128	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		114	-	>		
			Background 2040	LOS	<	D	>	D	<	D	>	D	B	A	>	A	B	A	>	A	B
				Delay	<	39	>	39	<	54	>	54	10	7	>	7	15	5	>	6	10
				V/C	<	0.33	>		<	0.76	>		0.30	0.66	>		0.49	0.53	>		0.68
				Q	<	29	>		<	64	>		3	92	>		5	133	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		115	-	>		
			Total 2040	LOS	<	C	>	C	<	E	>	E	B	B	>	B	B	A	>	A	B
				Delay	<	34	>	34	<	58	>	58	15	12	>	12	14	8	>	9	14
				V/C	<	0.25	>		<	0.85	>		0.36	0.75	>		0.52	0.58	>		0.78
				Q	<	28	>		<	91	>		3	149	>		6	132	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		114	-	>		
			Background 2045	LOS	<	D	>	D	<	D	>	D	B	A	>	A	B	A	>	A	B
				Delay	<	39	>	39	<	54	>	54	13	8	>	8	16	5	>	6	10
				V/C	<	0.35	>		<	0.77	>		0.36	0.70	>		0.52	0.56	>		0.71
				Q	<	31	>		<	67	>		3	110	>		5	138	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		115	-	>		
			Total 2045	LOS	<	C	>	C	<	E	>	E	C	B	>	B	B	A	>	A	B
				Delay	<	33	>	33	<	59	>	59	21	13	>	13	15	9	>	9	15
				V/C	<	0.27	>		<	0.87	>		0.44	0.80	>		0.56	0.61	>		0.82
				Q	<	30	>		<	102	>		3	126	>		6	133	>		
				Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
				Avail.	<	-	>		<	-	>		47	-	>		114	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.16 Burloak Drive at North Service Road

Horizon Year	Operations
2024 Base Year	Approaching Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under existing conditions, various movements exhibit delays in the LOS E range or better, however, no critical movements are noted.

With background traffic growth, the northbound left-turn lane will degrade to LOS F with v/c ratios greater than 1.00 under the 2035 Background horizon during the weekday AM peak hour. The eastbound right-turn lane is forecast to degrade to LOS F with a v/c ratio greater than 0.95 under the 2040 Background horizon during the weekday PM peak hour.

Under the 2035 Total, the eastbound right-turn lane is forecast to degrade to LOS F with a v/c ratio greater than 1.00 during the weekday PM peak hour. Furthermore, under the 2045 Total horizon, the northbound through lane is anticipated to operate with a v/c ratio of 0.85 during the weekday PM peak hour.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Northbound left (v/c > 0.95) (2035 Background);
- Eastbound right (v/c > 0.95) (2035 Total); and
- Northbound through (v/c > 0.85) (2045 Total).

TABLE 5.16A: AM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT NORTH SERVICE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Burloak Drive & N Service Road	TCS	Existing	LOS	D		D	D					D	A		B		B	>	B	B
				Delay	50		49	49					40	2		17		11	>	11	15
				V/C	0.24		0.07						0.81	0.22				0.72	>		0.78
				Q	15		18						107	12				64	>		
				Stor.	60		-						140	-				-	>		
				Avail.	45		-						33	-				-	>		
			Background 2035	LOS	D		D	D					F	A		C		A	>	A	B
				Delay	48		47	47					80	2		32		8	>	8	20
				V/C	0.21		0.08						1.03	0.20				0.64	>		0.98
				Q	16		19						99	9				33	>		
				Stor.	60		-						140	-				-	>		
				Avail.	44		-						41	-				-	>		
			Total 2035	LOS	D		D	D					F	A		E		A	>	A	C
				Delay	48		47	47					148	2		56		10	>	10	32
				V/C	0.21		0.11						1.21	0.25				0.68	>		1.15
				Q	16		22						138	15				50	>		
				Stor.	60		-						140	-				-	>		
				Avail.	44		-						2	-				-	>		
			Background 2040	LOS	D		D	D					F	A		D		A	>	A	C
				Delay	48		47	47					99	2		40		8	>	8	23
				V/C	0.23		0.08						1.11	0.21				0.67	>		1.06
				Q	17		20						100	10				37	>		
				Stor.	60		-						140	-				-	>		
				Avail.	43		-						40	-				-	>		
			Total 2040	LOS	D		D	D					F	A		E		B	>	B	D
				Delay	48		47	47					170	3		64		10	>	10	36
				V/C	0.22		0.11						1.27	0.26				0.71	>		1.20
				Q	16		22						126	16				53	>		
				Stor.	60		-						140	-				-	>		
				Avail.	44		-						14	-				-	>		
			Background 2045	LOS	D		D	D					F	A		D		A	>	A	C
				Delay	48		47	47					126	2		51		8	>	8	28
				V/C	0.23		0.09						1.17	0.22				0.71	>		1.11
				Q	17		20						93	11				41	>		
				Stor.	60		-						140	-				-	>		
				Avail.	43		-						47	-				-	>		
			Total 2045	LOS	D		D	D					F	A		E		B	>	B	D
				Delay	48		47	47					198	3		75		10	>	10	40
				V/C	0.22		0.12						1.33	0.27				0.75	>		1.26
				Q	17		23						118	16				57	>		
				Stor.	60		-						140	-				-	>		
				Avail.	43		-						22	-				-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.16B: PM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT NORTH SERVICE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Burloak Drive & N Service Road	TCS	Existing	LOS	D		E	E					A	B		B		A	>	A	B
				Delay	42		62	57					8	12		12		8	>	8	18
				V/C	0.48		0.83						0.30	0.76				0.42	>		0.81
				Q	49		92						11	111				44	>		
				Stor.	60		-						140	-				-	>		
				Avail.	11		-						129	-				-	>		
			Background 2035	LOS	D		E	E					A	B		B		A	>	A	B
				Delay	38		74	64					10	12		12		9	>	9	20
				V/C	0.44		0.93						0.43	0.73				0.41	>		0.81
				Q	54		132						10	61				38	>		
				Stor.	60		-						140	-				-	>		
				Avail.	6		-						130	-				-	>		
			Total 2035	LOS	D		F	F					B	B		B		B	>	B	C
				Delay	37		138	114					19	14		14		13	>	13	30
				V/C	0.41		1.15						0.70	0.78				0.52	>		0.91
				Q	54		181						13	64				52	>		
				Stor.	60		-						140	-				-	>		
				Avail.	6		-						127	-				-	>		
			Background 2040	LOS	D		F	E					A	B		B		A	>	A	C
				Delay	37		83	71					10	13		12		10	>	10	21
				V/C	0.43		0.97						0.48	0.78				0.44	>		0.87
				Q	56		148						9	58				41	>		
				Stor.	60		-						140	-				-	>		
				Avail.	4		-						131	-				-	>		
			Total 2040	LOS	D		F	F					C	B		B		B	>	B	C
				Delay	37		171	139					20	13		14		13	>	13	34
				V/C	0.43		1.24						0.76	0.81				0.54	>		0.96
				Q	56		196						11	61				53	>		
				Stor.	60		-						140	-				-	>		
				Avail.	4		-						129	-				-	>		
			Background 2045	LOS	D		F	F					B	B		B		B	>	B	C
				Delay	37		108	90					10	12		12		10	>	10	24
				V/C	0.45		1.06						0.53	0.82				0.47	>		0.92
				Q	59		164						7	56				43	>		
				Stor.	60		-						140	-				-	>		
				Avail.	1		-						133	-				-	>		
			Total 2045	LOS	D		F	F					C	B		B		B	>	B	D
				Delay	37		203	164					23	13		14		13	>	13	38
				V/C	0.45		1.31						0.82	0.85				0.56	>		1.02
				Q	59		211						8	59				54	>		
				Stor.	60		-						140	-				-	>		
				Avail.	1		-						132	-				-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.16C: SATURDAY PEAK HOUR OPERATIONS – BURLOAK DRIVE AT NORTH SERVICE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Burloak Drive & N Service Road	TCS	Existing	LOS	D		D	D					A	A		A		A	>	A	A
				Delay	36		36	36					4	4		4		3	>	3	5
				V/C	0.11		0.03						0.19	0.39				0.27	>		0.40
				Q	7		10						10	44				12	>		
				Stor.	60		-						140	-				-	>		
				Avail.	53		-						130	-				-	>		
			Background 2035	LOS	D		D	D					A	A		A		A	>	A	A
				Delay	36		35	36					4	4		4		2	>	2	4
				V/C	0.12		0.04						0.25	0.36				0.25	>		0.37
				Q	7		11						8	28				9	>		
				Stor.	60		-						140	-				-	>		
				Avail.	53		-						132	-				-	>		
			Total 2035	LOS	C		C	C					A	A		A		A	>	A	A
				Delay	34		34	34					5	4		4		4	>	4	5
				V/C	0.08		0.06						0.33	0.40				0.31	>		0.39
				Q	7		14						10	30				15	>		
				Stor.	60		-						140	-				-	>		
				Avail.	53		-						130	-				-	>		
			Background 2040	LOS	D		D	D					A	A		A		A	>	A	A
				Delay	36		35	36					4	3		3		3	>	3	4
				V/C	0.13		0.04						0.25	0.38				0.27	>		0.39
				Q	8		11						8	25				10	>		
				Stor.	60		-						140	-				-	>		
				Avail.	52		-						132	-				-	>		
			Total 2040	LOS	C		C	C					A	A		A		A	>	A	A
				Delay	34		34	34					5	4		4		4	>	4	5
				V/C	0.09		0.06						0.35	0.42				0.33	>		0.41
				Q	7		14						9	27				15	>		
				Stor.	60		-						140	-				-	>		
				Avail.	53		-						131	-				-	>		
			Background 2045	LOS	D		D	D					A	A		A		A	>	A	A
				Delay	36		35	36					3	3		3		3	>	3	4
				V/C	0.13		0.04						0.27	0.40				0.28	>		0.40
				Q	8		11						7	23				10	>		
				Stor.	60		-						140	-				-	>		
				Avail.	52		-						133	-				-	>		
			Total 2045	LOS	C		C	C					A	A		A		A	>	A	A
				Delay	34		34	34					5	4		4		4	>	4	5
				V/C	0.10		0.06						0.37	0.44				0.34	>		0.43
				Q	8		14						8	25				15	>		
				Stor.	60		-						140	-				-	>		
				Avail.	52		-						132	-				-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.17 Burloak Drive at QEW WB Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Burloak Drive at the QEW Westbound Off-ramp, the westbound left-turn lane operates in the LOS E-F range with a v/c ratio greater than 1.00 during the weekday and Saturday peak hours. The westbound right-turn lane exhibits LOS F during the PM peak hour, with v/c ratios exceeding 1.00 and the right-turn lane queue exceeding the available storage by less than 180 m. Ramp queues are not expected to reach the bullnose, located approximately 450 m, and do not spill back to the mainline.

With the addition of background traffic growth, under the 2035 Background horizon, operations at the westbound right-turn lane are forecast to degrade to LOS F with a v/c ratio greater than 1.00, as well as queues exceeding the available storage by less than 70 m during the weekday AM peak hour, and by less than 100 m during the Saturday peak hour. The southbound approach during this scenario is also expected to operate at LOS D with a v/c ratio greater than 1.00 during the weekday PM peak hour.

Under the 2040 Background horizon, the southbound approach is projected to operate with a v/c ratio over 0.85 during the weekday AM peak hour. The northbound through-lane is also anticipated to operate with a v/c ratio over 0.85 during the weekday PM peak hour under the 2045 Background horizon. The westbound ramp left and right-turn 95th percentile queue lengths are forecast to extend between 325 and 865 m back during the peak hours and are forecast to spill back to the mainline.

Delays forecast under the future Background horizons are anticipated to worsen with the addition of site-generated traffic volumes but no new critical movements are expected as a result.

<u>Critical Movements</u> (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, v/c over 0.75 for ramp approaches, 95th Percentile queues over storage)

- Westbound left (v/c > 0.75) (2024 Existing);
- Westbound right (v/c > 0.75; 95th queue) (2024 Existing);
- Southbound movement (v/c > 0.85) (2035 Background); and
- Northbound movement (v/c > 0.85) (2045 Background).

TABLE 5.17A: AM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT QEW WB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Burloak Drive & QEW WB Off-Ramp	TCS	Existing	LOS					E		C	E		B		B		A		A	C
				Delay					76		32	62		12		12		2		2	31
				V/C					1.03		0.39			0.21				0.44			0.63
				Q					170		44			42				6			
				Stor.					-		160			-				-			
				Avail.					-		116			-				-			
			Background 2035	LOS					F		F	F		B		B		A		A	F
				Delay					277		142	234		11		11		9		9	111
				V/C					1.52		1.18			0.25				0.74			1.00
				Q					291		230			15				76			
				Stor.					-		160			-				-			
				Avail.					-		-70			-				-			
			Total 2035	LOS					F		F	F		B		B		A		A	F
				Delay					307		223	281		12		12		9		9	129
				V/C					1.58		1.38			0.31				0.77			1.04
				Q					307		276			26				69			
				Stor.					-		160			-				-			
				Avail.					-		-116			-				-			
			Background 2040	LOS					F		F	F		B		B		B		B	F
				Delay					407		314	378		10		10		15		15	178
				V/C					1.81		1.59			0.30				0.88			1.18
				Q					363		326			16				231			
				Stor.					-		160			-				-			
				Avail.					-		-166			-				-			
			Total 2040	LOS					F		F	F		B		B		B		B	F
				Delay					434		397	422		12		12		16		16	196
				V/C					1.87		1.77			0.36				0.91			1.22
				Q					377		369			29				247			
				Stor.					-		160			-				-			
				Avail.					-		-209			-				-			
			Background 2045	LOS					F		F	F		A		A		D		D	F
				Delay					561		516	547		9		9		43		43	266
				V/C					2.15		2.04			0.35				1.04			1.41
				Q					446		431			19				325			
				Stor.					-		160			-				-			
				Avail.					-		-271			-				-			
			Total 2045	LOS					F		F	F		A		A		D		D	F
				Delay					591		582	588		10		10		54		54	285
				V/C					2.22		2.19			0.41				1.07			1.45
				Q					462		465			32				341			
				Stor.					-		160			-				-			
				Avail.					-		-305			-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.17B: PM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT QEW WB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Burloak Drive & QEW WB Off-Ramp	TCS	Existing	LOS					F		F	F		C		C		C		C	E
				Delay					103		124	110		22		22		22		22	73
				V/C					1.15		1.18			0.51				0.60			0.92
				Q					304		336			88				106			
				Stor.					-		160			-				-			
				Avail.					-		-176			-				-			
			Background 2035	LOS					F		F	F		C		C		D		D	F
				Delay					345		402	363		22		22		52		52	228
				V/C					1.70		1.82			0.62				1.02			1.45
				Q					524		579			50				220			
				Stor.					-		160			-				-			
				Avail.					-		-419			-				-			
			Total 2035	LOS					F		F	F		C		C		E		E	F
				Delay					358		415	376		23		23		77		77	238
				V/C					1.73		1.85			0.65				1.09			1.50
				Q					535		590			56				229			
				Stor.					-		160			-				-			
				Avail.					-		-430			-				-			
			Background 2040	LOS					F		F	F		C		C		F		F	F
				Delay					490		560	512		24		24		126		126	335
				V/C					2.02		2.17			0.73				1.20			1.73
				Q					652		712			58				283			
				Stor.					-		160			-				-			
				Avail.					-		-552			-				-			
			Total 2040	LOS					F		F	F		C		C		F		F	F
				Delay					504		571	525		24		24		158		158	346
				V/C					2.05		2.19			0.77				1.28			1.78
				Q					664		721			64				292			
				Stor.					-		160			-				-			
				Avail.					-		-561			-				-			
			Background 2045	LOS					F		F	F		C		C		F		F	F
				Delay					662		746	689		28		28		224		224	464
				V/C					2.40		2.58			0.86				1.43			2.06
				Q					803		866			68				358			
				Stor.					-		160			-				-			
				Avail.					-		-706			-				-			
			Total 2045	LOS					F		F	F		C		C		F		F	F
				Delay					677		753	701		30		30		257		257	476
				V/C					2.44		2.60			0.90				1.50			2.10
				Q					815		872			74				367			
				Stor.					-		160			-				-			
				Avail.					-		-712			-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.17C: SATURDAY PEAK HOUR OPERATIONS – BURLOAK DRIVE AT QEW WB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Burloak Drive & QEW WB Off-Ramp	TCS	Existing	LOS					D		C	D		B		B		A		A	C
				Delay					55		25	46		13		13		5		5	32
				V/C					1.01		0.69			0.26				0.25			0.59
				Q					153		94			31				6			
				Stor.					-		160			-				-			
				Avail.					-		66			-				-			
			Background 2035	LOS					F		F	F		B		B		A		A	F
				Delay					250		213	238		13		13		7		7	153
				V/C					1.49		1.39			0.32				0.42			0.88
				Q					262		255			36				15			
				Stor.					-		160			-				-			
				Avail.					-		-95			-				-			
			Total 2035	LOS					F		F	F		B		B		A		A	F
				Delay					263		239	256		14		14		6		6	160
				V/C					1.52		1.45			0.35				0.46			0.92
				Q					268		268			40				14			
				Stor.					-		160			-				-			
				Avail.					-		-108			-				-			
			Background 2040	LOS					F		F	F		B		B		A		A	F
				Delay					375		368	373		14		14		8		8	238
				V/C					1.77		1.74			0.37				0.50			1.05
				Q					325		330			43				22			
				Stor.					-		160			-				-			
				Avail.					-		-170			-				-			
			Total 2040	LOS					F		F	F		B		B		A		A	F
				Delay					385		400	390		14		14		7		7	244
				V/C					1.79		1.82			0.40				0.53			1.09
				Q					329		345			47				20			
				Stor.					-		160			-				-			
				Avail.					-		-185			-				-			
			Background 2045	LOS					F		F	F		B		B		A		A	F
				Delay					525		547	532		15		15		9		9	339
				V/C					2.10		2.14			0.44				0.59			1.26
				Q					400		415			52				41			
				Stor.					-		160			-				-			
				Avail.					-		-255			-				-			
			Total 2045	LOS					F		F	F		B		B		A		A	F
				Delay					536		573	548		15		15		9		9	344
				V/C					2.13		2.20			0.47				0.63			1.31
				Q					405		427			56				28			
				Stor.					-		160			-				-			
				Avail.					-		-267			-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.18 Burloak Drive at QEW EB Off-Ramp/Red Oak Boulevard

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at the intersection of Burloak Drive at the QEW Eastbound Off-Ramp presently operate at acceptable conditions, with a LOS D or better for all movements.

Under the 2035 Background horizon, the southbound approach is forecast to experience with a v/c ratio greater than 0.90 during the weekday PM peak hour. This movement is also forecast to degrade to critical levels during the weekday AM and Saturday peak hours under the 2045 Background horizon, operating in the LOS C-E range respectively with v/c ratios greater than 1.00.

With the addition of site-generated traffic, under the 2035 Total horizon, the eastbound left-turn lane will exhibit delays in the LOS D range with a v/c ratio over 0.75 during the weekday AM peak hour. Furthermore, under the 2040 Total horizon, the southbound approach is projected to experience delays of LOS C with a v/c ratio greater than 0.85 during the weekday AM and Saturday peak hour.

Critical Movements (v/c over 0.85, v/c over 0.75 for ramp approaches)

- Southbound movement (v/c > 0.85) (2035 Background); and
- Eastbound left (v/c > 0.75) (2035 Total).

TABLE 5.18A: AM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT QEW EB OFF-RAMP/RED OAK BOULEVARD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	Existing	LOS	D	D	D	D			D	D		A	>	A		A		A	B
				Delay	49	46	45	46			49	49		8	>	8		9		9	16
				V/C	0.50	0.27	0.08				0.04			0.16	>			0.43			0.41
				Q	35	20	19				0			24	>			48			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	51				-			-	>			-			
			Background 2035	LOS	D	D	D	D			D	D		A	>	A		B		B	B
				Delay	50	44	43	46			49	49		9	>	9		13		13	18
				V/C	0.60	0.33	0.12				0.05			0.25	>			0.67			0.61
				Q	47	25	22				0			40	>			104			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	48				-			-	>			-			
			Total 2035	LOS	D	D	D	D			D	D		B	>	B		B		B	C
				Delay	52	38	37	43			49	49		13	>	13		19		19	23
				V/C	0.77	0.24	0.12				0.05			0.28	>			0.75			0.70
				Q	81	23	20				0			48	>			128			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	50				-			-	>			-			
			Background 2040	LOS	D	D	D	D			D	D		B	>	B		B		B	C
				Delay	50	43	42	44			49	49		10	>	10		18		18	21
				V/C	0.63	0.36	0.15				0.06			0.30	>			0.81			0.72
				Q	53	27	23				0			52	>			149			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	47				-			-	>			-			
			Total 2040	LOS	D	D	D	D			D	D		B	>	B		C		C	C
				Delay	54	38	36	43			49	49		14	>	14		24		24	26
				V/C	0.80	0.27	0.15				0.06			0.34	>			0.90			0.82
				Q	90	26	22				8			58	>			149			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	48				-			-	>			-			
			Background 2045	LOS	D	D	D	D			D	D		B	>	B		C		C	C
				Delay	49	42	41	44			48	48		13	>	13		35		35	31
				V/C	0.66	0.42	0.25				0.07			0.37	>			1.02			0.86
				Q	60	33	30				4			66	>			156			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	40				-			-	>			-			
			Total 2045	LOS	E	D	D	D			D	D		B	>	B		F		F	E
				Delay	55	37	36	43			47	47		17	>	17		91		91	64
				V/C	0.83	0.33	0.23				0.07			0.43	>			1.14			0.95
				Q	105	32	30				17			75	>			162			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	40				-			-	>			-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.18B: PM PEAK HOUR OPERATIONS – BURLOAK DRIVE AT QEW EB OFF-RAMP/RED OAK BOULEVARD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	Existing	LOS	D	D	D	D			D	D		A	>	A		A		A	B
				Delay	49	46	45	46			48	48		8	>	8		8		8	14
				V/C	0.51	0.19	0.08				0.06			0.18	>			0.65			0.57
				Q	36	16	18				0			26	>			78			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	52				-			-	>			-			
			Background 2035	LOS	D	D	D	D			A	A		A	>	A		B		B	B
				Delay	50	44	43	45			6	6		9	>	9		17		17	18
				V/C	0.60	0.24	0.11				0.09			0.27	>			0.95			0.85
				Q	47	20	20				0			44	>			131			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	50				-			-	>			-			
			Total 2035	LOS	D	D	D	D			A	A		B	>	B		C		C	C
				Delay	51	41	40	44			7	7		11	>	11		26		26	24
				V/C	0.67	0.21	0.11				0.09			0.29	>			1.01			0.89
				Q	60	19	20				0			49	>			124			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	50				-			-	>			-			
			Background 2040	LOS	D	D	D	D			A	A		B	>	B		F		F	E
				Delay	50	42	42	44			6	6		10	>	10		92		92	68
				V/C	0.64	0.26	0.13				0.10			0.33	>			1.16			1.01
				Q	54	22	22				0			55	>			131			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	48				-			-	>			-			
			Total 2040	LOS	D	D	D	D			A	A		B	>	B		F		F	F
				Delay	51	40	39	43			8	8		12	>	12		123		123	88
				V/C	0.70	0.23	0.13				0.10			0.35	>			1.23			1.05
				Q	65	21	20				0			62	>			134			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	50				-			-	>			-			
			Background 2045	LOS	D	D	D	D			A	A		B	>	B		F		F	F
				Delay	50	41	41	43			7	7		12	>	12		213		213	147
				V/C	0.67	0.31	0.22				0.12			0.40	>			1.43			1.20
				Q	61	26	27				0			72	>			142			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	43				-			-	>			-			
			Total 2045	LOS	D	D	D	D			A	A		B	>	B		F		F	F
				Delay	52	39	39	42			8	8		14	>	14		244		244	166
				V/C	0.74	0.28	0.21				0.12			0.43	>			1.50			1.24
				Q	75	26	27				0			76	>			136			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	43				-			-	>			-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.18C: SATURDAY PEAK HOUR OPERATIONS – BURLOAK DRIVE AT QEW EB OFF-RAMP/RED OAK BOULEVARD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	Existing	LOS	D	D	D	**D**			D	**D**		A	>	**A**		A		**A**	**B**
				Delay	49	48	46	**48**			48	**48**		8	>	**8**		10		**10**	**17**
				V/C	0.39	0.38	0.05				0.10			0.13	>			0.43			**0.40**
				Q	26	23	8				0			18	>			65			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	62				-			-	>			-			
			Background 2035	LOS	D	D	D	**D**			D	**D**		A	>	**A**		B		**B**	**B**
				Delay	49	48	45	**47**			48	**48**		9	>	**9**		14		**14**	**20**
				V/C	0.49	0.48	0.08				0.15			0.20	>			0.65			**0.59**
				Q	34	30	18				2			30	>			126			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	52				-			-	>			-			
			Total 2035	LOS	D	D	D	**D**			D	**D**		A	>	**A**		B		**B**	**C**
				Delay	50	45	43	**46**			48	**48**		10	>	**10**		16		**16**	**21**
				V/C	0.60	0.41	0.08				0.15			0.22	>			0.69			**0.62**
				Q	46	29	17				12			36	>			147			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	53				-			-	>			-			
			Background 2040	LOS	D	D	D	**D**			D	**D**		B	>	**B**		B		**B**	**C**
				Delay	49	48	44	**47**			47	**47**		10	>	**10**		19		**19**	**23**
				V/C	0.53	0.56	0.09				0.18			0.25	>			0.81			**0.70**
				Q	39	36	19				26			43	>			224			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	51				-			-	>			-			
			Total 2040	LOS	D	D	D	**D**			D	**D**		B	>	**B**		C		**C**	**C**
				Delay	50	45	42	**46**			49	**49**		12	>	**12**		23		**23**	**26**
				V/C	0.62	0.47	0.09				0.45			0.26	>			0.85			**0.77**
				Q	50	35	18				46			44	>			228			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	52				-			-	>			-			
			Background 2045	LOS	D	D	D	**D**			D	**D**		B	>	**B**		E		**E**	**D**
				Delay	48	48	43	**47**			50	**50**		14	>	**14**		70		**70**	**55**
				V/C	0.55	0.62	0.15				0.62			0.33	>			1.08			**0.93**
				Q	44	43	22				78			52	>			299			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	48				-			-	>			-			
			Total 2045	LOS	D	D	D	**D**			E	**E**		B	>	**B**		F		**F**	**E**
				Delay	50	45	41	**45**			56	**56**		16	>	**16**		94		**94**	**69**
				V/C	0.64	0.55	0.14				0.74			0.35	>			1.14			**0.98**
				Q	55	41	21				103			53	>			303			
				Stor.	-	-	70				-			-	>			-			
				Avail.	-	-	49				-			-	>			-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.19 Appleby Line at North Service Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Appleby Line at North Service Road, critical movements are exhibited in the westbound left-turn lane, operating at LOS F with a v/c ratio greater than 0.95 and queues exceeding the available storage by less than 40 m during the weekday PM peak hour.

Under the 2035 Background horizon, the westbound through-right and northbound left-turn lanes are projected to degrade to LOS D-E range with v/c ratios greater than 0.85 during the weekday PM peak hour. The northbound left-turn lane is anticipated to have queues exceeding the available storage by 20 m. The eastbound left-turn lane will also exhibit delays in the LOS F range with queues exceeding storage by less than 5 m during this time.

With the addition of site-generated traffic, under the 2035 and 2045 Total horizons, the northbound through-right lane is forecast to operate with a v/c ratio greater than 0.85 during the weekday AM and PM peak hours.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Westbound left (v/c > 0.95; 95th queue) (2024 Existing);
- Westbound through-right (v/c > 0.85) (2035 Background);
- Northbound left (95th queue) (2035 Background);
- Eastbound left (95th queue) (2035 Background); and
- Northbound through-right (v/c > 0.85) (2035 Total).

TABLE 5.19A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT NORTH SERVICE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & North Service Road	TCS	Existing	LOS	D	E	>	**E**	D	D	>	**D**	C	B	>	**C**	C	B	>	**B**	**B**
				Delay	48	58	>	**56**	42	38	>	**40**	24	20	>	**20**	23	12	>	**13**	**20**
				V/C	0.29	0.68	>		0.44	0.06	>		0.56	0.74	>		0.41	0.69	>		**0.71**
				Q	24	57	>		31	13	>		26	208	>		4	216	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	16	-	>		34	-	>		39	-	>		61	-	>		
			Background 2035	LOS	D	E	>	**E**	D	D	>	**D**	D	B	>	**B**	C	B	>	**B**	**C**
				Delay	48	60	>	**57**	42	37	>	**40**	43	18	>	**20**	33	13	>	**14**	**20**
				V/C	0.32	0.72	>		0.51	0.06	>		0.76	0.71	>		0.57	0.69	>		**0.75**
				Q	26	63	>		34	14	>		36	129	>		16	206	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	14	-	>		31	-	>		29	-	>		49	-	>		
			Total 2035	LOS	D	E	>	**E**	D	D	>	**D**	D	B	>	**C**	C	B	>	**B**	**C**
				Delay	48	60	>	**57**	42	37	>	**40**	45	18	>	**20**	35	13	>	**14**	**20**
				V/C	0.32	0.72	>		0.51	0.06	>		0.77	0.76	>		0.57	0.73	>		**0.76**
				Q	26	63	>		34	14	>		34	141	>		14	210	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	14	-	>		31	-	>		31	-	>		51	-	>		
			Background 2040	LOS	D	E	>	**E**	D	D	>	**D**	D	B	>	**B**	D	B	>	**B**	**C**
				Delay	48	61	>	**58**	40	36	>	**38**	42	17	>	**19**	36	14	>	**16**	**20**
				V/C	0.32	0.74	>		0.48	0.06	>		0.79	0.76	>		0.59	0.75	>		**0.77**
				Q	27	67	>		35	14	>		30	114	>		15	215	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	13	-	>		30	-	>		35	-	>		50	-	>		
			Total 2040	LOS	D	E	>	**E**	D	D	>	**D**	D	B	>	**B**	D	B	>	**B**	**C**
				Delay	48	61	>	**58**	40	36	>	**38**	39	18	>	**19**	38	15	>	**16**	**20**
				V/C	0.32	0.74	>		0.48	0.06	>		0.79	0.82	>		0.59	0.78	>		**0.80**
				Q	27	67	>		35	14	>		28	144	>		13	221	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	13	-	>		30	-	>		37	-	>		52	-	>		
			Background 2045	LOS	D	E	>	**E**	D	D	>	**D**	D	B	>	**B**	D	B	>	**B**	**C**
				Delay	47	62	>	**59**	40	36	>	**38**	39	18	>	**20**	39	15	>	**17**	**21**
				V/C	0.33	0.76	>		0.52	0.07	>		0.82	0.81	>		0.62	0.79	>		**0.81**
				Q	28	70	>		36	15	>		25	113	>		15	224	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	12	-	>		29	-	>		40	-	>		50	-	>		
			Total 2045	LOS	D	E	>	**E**	D	D	>	**D**	D	B	>	**C**	D	B	>	**B**	**C**
				Delay	47	62	>	**59**	40	36	>	**38**	40	19	>	**21**	40	16	>	**17**	**22**
				V/C	0.33	0.76	>		0.52	0.07	>		0.82	0.86	>		0.62	0.83	>		**0.83**
				Q	28	70	>		36	15	>		24	119	>		13	227	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	12	-	>		29	-	>		41	-	>		52	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.19B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT NORTH SERVICE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & North Service Road	TCS	Existing	LOS	E	E	>	E	F	E	>	E	C	B	>	C	C	D	>	D	D
				Delay	70	63	>	64	101	61	>	77	34	18	>	20	28	36	>	36	36
				V/C	0.60	0.52	>		0.99	0.82	>		0.79	0.84	>		0.40	0.63	>		0.92
				Q	31	46	>		105	128	>		58	247	>		12	200	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	9	-	>		-40	-	>		7	-	>		53	-	>		
			Background 2035	LOS	F	E	>	E	F	E	>	F	D	B	>	C	C	D	>	D	D
				Delay	105	62	>	72	133	68	>	95	49	16	>	21	29	45	>	44	42
				V/C	0.81	0.56	>		1.11	0.89	>		0.88	0.83	>		0.49	0.70	>		0.99
				Q	41	54	>		133	153	>		85	141	>		14	194	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	-1	-	>		-68	-	>		-20	-	>		51	-	>		
			Total 2035	LOS	F	E	>	E	F	E	>	F	D	B	>	C	C	D	>	D	D
				Delay	105	62	>	72	133	68	>	95	51	17	>	22	30	44	>	44	42
				V/C	0.81	0.56	>		1.11	0.89	>		0.88	0.85	>		0.49	0.77	>		0.99
				Q	41	54	>		133	153	>		89	151	>		13	206	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	-1	-	>		-68	-	>		-24	-	>		52	-	>		
			Background 2040	LOS	F	E	>	F	F	E	>	F	D	C	>	C	C	D	>	D	D
				Delay	146	62	>	82	152	71	>	104	54	22	>	27	31	47	>	46	47
				V/C	0.95	0.59	>		1.16	0.91	>		0.96	0.88	>		0.51	0.75	>		1.06
				Q	49	59	>		146	172	>		72	165	>		14	202	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	-9	-	>		-81	-	>		-7	-	>		51	-	>		
			Total 2040	LOS	F	E	>	F	F	E	>	F	D	C	>	C	C	D	>	D	D
				Delay	146	62	>	82	152	71	>	104	54	24	>	28	31	45	>	45	47
				V/C	0.95	0.59	>		1.16	0.91	>		0.96	0.91	>		0.51	0.81	>		1.06
				Q	49	59	>		146	172	>		70	174	>		13	215	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	-9	-	>		-81	-	>		-5	-	>		52	-	>		
			Background 2045	LOS	F	E	>	F	F	E	>	F	F	C	>	D	C	D	>	D	D
				Delay	166	61	>	86	164	70	>	109	81	29	>	36	33	48	>	47	53
				V/C	1.00	0.59	>		1.20	0.92	>		1.07	0.94	>		0.54	0.78	>		1.16
				Q	54	63	>		156	187	>		61	150	>		14	212	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	-14	-	>		-91	-	>		4	-	>		51	-	>		
			Total 2045	LOS	F	E	>	F	F	E	>	F	F	C	>	D	C	D	>	D	D
				Delay	166	61	>	86	164	70	>	109	82	31	>	38	33	46	>	46	53
				V/C	1.00	0.59	>		1.20	0.92	>		1.07	0.97	>		0.54	0.84	>		1.16
				Q	54	63	>		156	187	>		60	152	>		12	225	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	-14	-	>		-91	-	>		5	-	>		53	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.19C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT NORTH SERVICE ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & North Service Road	TCS	Existing	LOS	D	D	>	D	D	D	>	D	A	A	>	A	A	B	>	B	B
				Delay	52	48	>	50	42	40	>	41	5	8	>	8	6	14	>	14	14
				V/C	0.45	0.14	>		0.44	0.14	>		0.14	0.55	>		0.13	0.56	>		0.53
				Q	21	16	>		29	19	>		4	65	>		3	170	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	19	-	>		36	-	>		61	-	>		62	-	>		
			Background 2035	LOS	D	D	>	D	D	D	>	D	A	A	>	A	A	B	>	B	B
				Delay	52	48	>	50	42	40	>	41	6	7	>	7	6	13	>	13	13
				V/C	0.51	0.15	>		0.48	0.16	>		0.24	0.55	>		0.24	0.56	>		0.55
				Q	24	16	>		32	20	>		3	66	>		3	165	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	16	-	>		33	-	>		62	-	>		62	-	>		
			Total 2035	LOS	D	D	>	D	D	D	>	D	A	A	>	A	A	B	>	B	B
				Delay	52	48	>	50	42	40	>	41	8	7	>	7	7	14	>	14	14
				V/C	0.51	0.15	>		0.48	0.16	>		0.25	0.57	>		0.26	0.58	>		0.56
				Q	24	16	>		32	20	>		3	72	>		2	171	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	16	-	>		33	-	>		62	-	>		63	-	>		
			Background 2040	LOS	D	D	>	D	D	D	>	D	B	B	>	B	A	B	>	B	B
				Delay	53	48	>	50	40	38	>	39	10	11	>	11	8	15	>	15	15
				V/C	0.52	0.15	>		0.43	0.15	>		0.28	0.61	>		0.26	0.60	>		0.57
				Q	25	16	>		33	21	>		4	89	>		2	175	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	15	-	>		32	-	>		61	-	>		63	-	>		
			Total 2040	LOS	D	D	>	D	D	D	>	D	B	B	>	B	B	B	>	B	B
				Delay	53	48	>	50	40	38	>	39	13	11	>	11	10	16	>	15	16
				V/C	0.52	0.15	>		0.43	0.15	>		0.29	0.62	>		0.27	0.62	>		0.59
				Q	25	16	>		33	21	>		4	95	>		2	181	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	15	-	>		32	-	>		61	-	>		63	-	>		
			Background 2045	LOS	D	D	>	D	D	D	>	D	B	B	>	B	B	B	>	B	B
				Delay	54	48	>	50	40	38	>	39	15	14	>	14	11	15	>	15	17
				V/C	0.54	0.16	>		0.45	0.16	>		0.31	0.64	>		0.29	0.63	>		0.60
				Q	25	17	>		34	22	>		4	106	>		2	183	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	15	-	>		31	-	>		61	-	>		63	-	>		
			Total 2045	LOS	D	D	>	D	D	D	>	D	B	B	>	B	B	B	>	B	B
				Delay	54	48	>	50	40	38	>	39	17	14	>	14	13	15	>	15	17
				V/C	0.54	0.16	>		0.45	0.16	>		0.33	0.65	>		0.30	0.65	>		0.62
				Q	25	17	>		34	22	>		4	82	>		2	188	>		
				Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
				Avail.	15	-	>		31	-	>		61	-	>		63	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.20 Appleby Line at QEW WB Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Appleby Line at the QEW Westbound Off-Ramp, critical movements occur in the westbound right-turn lane, operating at LOS F with a v/c ratio greater than 1.00 during the weekday PM peak hour. Westbound ramp queues are not expected to reach the bullnose, located approximately 500 m, and do not spill back to the mainline.

Under the 2035 Background horizon, the westbound left-turn lane is forecast to operate at LOS E with a v/c ratio exceeding 0.95 during the weekday PM peak hour. The westbound right-turn lane will also degrade to LOS F with a v/c ratio greater than 1.00 during the weekday AM peak hour.

Under the 2040 Background horizon, the northbound approach is forecast to operate with a v/c ratio exceeding 0.85 during the weekday PM peak hour. This movement is also forecast to exhibit critical movements during the AM and Saturday peak hours under the 2045 Background horizon. The southbound through lane is projected to operate with a v/c ratio greater than 0.85 during the weekday PM peak hour under the 2045 horizon.

Under the 2045 Background horizon, the westbound left and right-turn 95th percentile queue lengths are forecast to extend between 325 and 865 m back during the weekday PM peak hour and are forecast to spill back to the mainline.

With the addition of site-generated traffic, under the 2040 Total horizon, the northbound approach will operate with a v/c ratio exceeding 0.85 during the weekday peak hours. The southbound approach is expected to operate with a v/c ratio greater than 0.85 during the weekday peak hours, under the 2045 Total horizon.

<u>Critical Movements</u> (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Westbound right (v/c > 0.75) (2024 Existing);
- Westbound left (v/c > 0.75) (2035 Background);
- Northbound approach (v/c > 0.85) (2040 Background); and
- Southbound approach (v/c > 0.85) (2045 Background).

TABLE 5.20A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT QEW WB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & QEW WB Off-Ramp	TCS	Existing	LOS					D		E	D		B		B		A		A	B
				Delay					39		63	52		12		12		4		4	18
				V/C					0.43		0.86			0.56				0.32			0.64
				Q					50		110			129				22			
				Stor.					210		-			-				-			
				Avail.					160		-			-				-			
			Background 2035	LOS					D		F	F		B		B		A		A	C
				Delay					37		170	108		13		13		4		4	30
				V/C					0.52		1.24			0.72				0.61			0.88
				Q					72		246			104				19			
				Stor.					210		-			-				-			
				Avail.					138		-			-				-			
			Total 2035	LOS					D		F	F		B		B		A		A	C
				Delay					37		172	109		14		14		4		4	31
				V/C					0.52		1.25			0.77				0.63			0.92
				Q					72		247			114				28			
				Stor.					210		-			-				-			
				Avail.					138		-			-				-			
			Background 2040	LOS					D		F	F		B		B		A		A	D
				Delay					38		264	159		16		16		4		4	43
				V/C					0.61		1.46			0.84				0.71			1.04
				Q					85		301			157				32			
				Stor.					210		-			-				-			
				Avail.					125		-			-				-			
			Total 2040	LOS					D		F	F		B		B		A		A	D
				Delay					38		266	160		18		18		5		5	43
				V/C					0.61		1.47			0.89				0.73			1.07
				Q					85		302			190				41			
				Stor.					210		-			-				-			
				Avail.					125		-			-				-			
			Background 2045	LOS					D		F	F		C		C		A		A	E
				Delay					41		376	219		24		24		8		8	62
				V/C					0.71		1.72			0.98				0.83			1.21
				Q					102		365			320				55			
				Stor.					210		-			-				-			
				Avail.					108		-			-				-			
			Total 2045	LOS					D		F	F		D		D		A		A	E
				Delay					41		377	220		38		38		9		9	66
				V/C					0.71		1.72			1.03				0.85			1.25
				Q					102		365			342				62			
				Stor.					210		-			-				-			
				Avail.					108		-			-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.20B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT QEW WB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & QEW WB Off-Ramp	TCS	Existing	LOS					D		F	F		B		B		A		A	E
				Delay					44		253	150		16		16		9		9	61
				V/C					0.68		1.43			0.62				0.41			0.89
				Q					117		358			143				42			
				Stor.					210		-			-				-			
				Avail.					93		-			-				-			
			Background 2035	LOS					E		F	F		B		B		B		B	F
				Delay					68		612	348		15		15		10		10	130
				V/C					0.97		2.24			0.76				0.69			1.25
				Q					199		606			85				66			
				Stor.					210		-			-				-			
				Avail.					11		-			-				-			
			Total 2035	LOS					E		F	F		B		B		A		A	F
				Delay					68		613	349		15		15		10		10	127
				V/C					0.97		2.24			0.78				0.72			1.27
				Q					199		607			86				64			
				Stor.					210		-			-				-			
				Avail.					11		-			-				-			
			Background 2040	LOS					F		F	F		B		B		B		B	F
				Delay					122		788	464		17		17		13		13	173
				V/C					1.14		2.63			0.88				0.80			1.47
				Q					256		726			97				84			
				Stor.					210		-			-				-			
				Avail.					-46		-			-				-			
			Total 2040	LOS					F		F	F		B		B		B		B	F
				Delay					122		788	464		18		18		12		12	170
				V/C					1.14		2.63			0.91				0.83			1.48
				Q					256		726			100				82			
				Stor.					210		-			-				-			
				Avail.					-46		-			-				-			
			Background 2045	LOS					F		F	F		D		D		C		C	F
				Delay					206		991	608		39		39		20		20	233
				V/C					1.34		3.08			1.03				0.94			1.72
				Q					323		862			395				109			
				Stor.					210		-			-				-			
				Avail.					-113		-			-				-			
			Total 2045	LOS					F		F	F		D		D		C		C	F
				Delay					206		991	608		48		48		22		22	233
				V/C					1.34		3.08			1.06				0.97			1.73
				Q					323		862			412				107			
				Stor.					210		-			-				-			
				Avail.					-113		-			-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.20C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT QEW WB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & QEW WB Off-Ramp	TCS	Existing	LOS					D		D	D		A		A		A		A	B
				Delay					46		48	47		5		5		2		2	13
				V/C					0.64		0.63			0.43				0.27			0.47
				Q					50		55			67				9			
				Stor.					210		-			-				-			
				Avail.					160		-			-				-			
			Background 2035	LOS					D		D	D		B		B		A		A	B
				Delay					35		54	43		14		14		5		5	17
				V/C					0.54		0.85			0.61				0.55			0.69
				Q					63		111			157				14			
				Stor.					210		-			-				-			
				Avail.					147		-			-				-			
			Total 2035	LOS					D		D	D		B		B		A		A	B
				Delay					35		54	43		14		14		5		5	16
				V/C					0.54		0.86			0.63				0.57			0.70
				Q					63		111			162				14			
				Stor.					210		-			-				-			
				Avail.					147		-			-				-			
			Background 2040	LOS					C		E	D		B		B		A		A	C
				Delay					34		60	45		19		19		9		9	21
				V/C					0.58		0.92			0.75				0.67			0.80
				Q					75		149			187				17			
				Stor.					210		-			-				-			
				Avail.					135		-			-				-			
			Total 2040	LOS					C		E	D		B		B		A		A	C
				Delay					34		61	46		20		20		8		8	21
				V/C					0.58		0.92			0.77				0.69			0.81
				Q					75		150			194				17			
				Stor.					210		-			-				-			
				Avail.					135		-			-				-			
			Background 2045	LOS					C		F	D		C		C		B		B	C
				Delay					34		81	54		26		26		15		15	27
				V/C					0.64		1.01			0.90				0.81			0.94
				Q					90		187			227				28			
				Stor.					210		-			-				-			
				Avail.					120		-			-				-			
			Total 2045	LOS					C		F	D		C		C		B		B	C
				Delay					34		81	54		27		27		15		15	28
				V/C					0.64		1.01			0.92				0.83			0.95
				Q					90		187			232				28			
				Stor.					210		-			-				-			
				Avail.					120		-			-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.21 Appleby Line at QEW EB Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at the intersection of Appleby Line at the QEW Eastbound Off-Ramp presently operate at acceptable conditions, with a LOS E or better for all movements. The exception being the eastbound left-turn off-ramp movement which operates with a v/c of 0.75 during the weekday AM peak hour.

With background traffic growth, the eastbound right-turn is forecast to operate at critical levels under the 2035, 2040, and 2045 horizons during the weekday and Saturday peak hours. The 95th percentile queue is forecast to extend up to 125 m, beyond the available storage by less than 55 m, but is not expected to reach the bullnose located approximately 415 m away.

Under the 2035 Background horizon, the eastbound left-turn lane is forecast to operate with delays in the LOS E range and a v/c ratio greater than 0.75 during the weekday PM and Saturday peak hours. Under the 2040 and 2045 Background horizons, the southbound approach is projected to operate with a v/c ratio of over 0.90 during the weekday PM and AM peak hours respectively. The northbound approach is projected to operate at LOS B and a v/c ratio exceeding 0.90 during the weekday AM peak hour.

Critical movements identified during the Background horizons is expected to worsen under the future Total conditions with the addition of site generated traffic volumes

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, v/c over 0.75 for ramp approaches, 95th Percentile queues over storage)

- Eastbound left (v/c > 0.75) (2024 Base);
- Eastbound right (v/c > 0.75; 95th queue) (2035 Background);
- Southbound movement (v/c > 0.85) (2040 Background); and
- Northbound movement (v/c > 0.85) (2045 Background).

TABLE 5.21A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT QEW EB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach														Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & QEW EB Off-Ramp	TCS	Existing	LOS	D		D	D						A		A		B		B	B
				Delay	50		42	47						5		5		10		10	18
				V/C	0.75		0.37							0.46				0.47			0.53
				Q	78		36							37				102			
				Stor.	180		70							-				-			
				Avail.	102		34							-				-			
			Background 2035	LOS	D		D	D						A		A		B		B	B
				Delay	45		37	42						7		7		15		15	19
				V/C	0.80		0.53							0.61				0.62			0.68
				Q	109		63							43				128			
				Stor.	180		70							-				-			
				Avail.	71		7							-				-			
			Total 2035	LOS	D		D	D						A		A		B		B	B
				Delay	45		36	42						8		8		16		16	20
				V/C	0.82		0.52							0.66				0.65			0.71
				Q	114		63							47				136			
				Stor.	180		70							-				-			
				Avail.	66		7							-				-			
			Background 2040	LOS	D		D	D						A		A		B		B	C
				Delay	44		35	41						10		10		19		19	22
				V/C	0.84		0.58							0.75				0.76			0.79
				Q	130		78							58				152			
				Stor.	180		70							-				-			
				Avail.	50		-8							-				-			
			Total 2040	LOS	D		C	D						B		B		B		B	C
				Delay	46		35	42						11		11		20		20	22
				V/C	0.86		0.58							0.80				0.80			0.82
				Q	137		78							62				160			
				Stor.	180		70							-				-			
				Avail.	43		-8							-				-			
			Background 2045	LOS	D		C	D						B		B		C		C	C
				Delay	49		35	44						17		17		26		26	28
				V/C	0.92		0.65							0.92				0.93			0.93
				Q	170		95							77				236			
				Stor.	180		70							-				-			
				Avail.	10		-25							-				-			
			Total 2045	LOS	D		C	D						C		C		C		C	C
				Delay	52		35	46						22		22		30		30	31
				V/C	0.94		0.64							0.97				0.97			0.96
				Q	180		96							293				286			
				Stor.	180		70							-				-			
				Avail.	0		-26							-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.21B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT QEW EB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																Overall
					Eastbound				Westbound				Northbound				Southbound				
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & QEW EB Off-Ramp	TCS	Existing	LOS	E		E	E						A		A		A		A	B
				Delay	62		59	61						6		6		6		6	17
				V/C	0.73		0.64							0.39				0.59			0.61
				Q	71		58							71				141			
				Stor.	180		70							-				-			
				Avail.	109		12							-				-			
			Background 2035	LOS	E		E	E						B		B		A		A	B
				Delay	57		56	57						10		10		8		8	19
				V/C	0.79		0.74							0.51				0.73			0.75
				Q	101		88							82				167			
				Stor.	180		70							-				-			
				Avail.	79		-18							-				-			
			Total 2035	LOS	E		E	E						B		B		A		A	B
				Delay	57		56	57						10		10		10		10	20
				V/C	0.79		0.74							0.53				0.76			0.77
				Q	102		88							85				202			
				Stor.	180		70							-				-			
				Avail.	78		-18							-				-			
			Background 2040	LOS	E		E	E						B		B		B		B	C
				Delay	55		55	55						14		14		14		14	23
				V/C	0.81		0.78							0.62				0.90			0.87
				Q	114		102							96				261			
				Stor.	180		70							-				-			
				Avail.	66		-32							-				-			
			Total 2040	LOS	E		D	D						B		B		B		B	C
				Delay	55		54	55						14		14		17		17	24
				V/C	0.81		0.77							0.64				0.93			0.90
				Q	115		101							98				296			
				Stor.	180		70							-				-			
				Avail.	65		-31							-				-			
			Background 2045	LOS	D		E	D						B		B		E		E	D
				Delay	55		55	55						20		20		66		66	49
				V/C	0.84		0.83							0.76				1.10			1.02
				Q	136		123							116				399			
				Stor.	180		70							-				-			
				Avail.	44		-53							-				-			
			Total 2045	LOS	E		D	D						B		B		F		F	E
				Delay	55		55	55						20		20		81		81	56
				V/C	0.85		0.83							0.78				1.13			1.04
				Q	137		123							118				419			
				Stor.	180		70							-				-			
				Avail.	43		-53							-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.21C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT QEW EB OFF-RAMP

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach														
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & QEW EB Off-Ramp	TCS	Existing	LOS	D		D	D						A		A		B		B	B
				Delay	47		40	44						2		2		11		11	16
				V/C	0.68		0.19							0.36				0.37			0.43
				Q	54		18							18				100			
				Stor.	180		70							-				-			
				Avail.	126		52							-				-			
			Background 2035	LOS	D		D	D						A		A		B		B	B
				Delay	44		38	42						4		4		17		17	18
				V/C	0.75		0.51							0.47				0.49			0.55
				Q	78		48							24				112			
				Stor.	180		70							-				-			
				Avail.	102		22							-				-			
			Total 2035	LOS	D		D	D						A		A		B		B	B
				Delay	44		38	42						4		4		17		17	18
				V/C	0.75		0.52							0.49				0.50			0.56
				Q	78		49							26				117			
				Stor.	180		70							-				-			
				Avail.	102		21							-				-			
			Background 2040	LOS	D		D	D						A		A		C		C	B
				Delay	43		37	41						5		5		21		21	20
				V/C	0.78		0.58							0.58				0.59			0.64
				Q	88		59							31				155			
				Stor.	180		70							-				-			
				Avail.	92		11							-				-			
			Total 2040	LOS	D		D	D						A		A		C		C	C
				Delay	43		37	41						5		5		22		22	20
				V/C	0.78		0.58							0.59				0.61			0.66
				Q	88		60							33				164			
				Stor.	180		70							-				-			
				Avail.	92		10							-				-			
			Background 2045	LOS	D		D	D						A		A		C		C	C
				Delay	42		37	40						8		8		26		26	23
				V/C	0.81		0.64							0.70				0.72			0.75
				Q	104		73							43				197			
				Stor.	180		70							-				-			
				Avail.	76		-3							-				-			
			Total 2045	LOS	D		D	D						A		A		C		C	C
				Delay	42		36	40						8		8		26		26	23
				V/C	0.82		0.64							0.72				0.74			0.76
				Q	106		74							45				205			
				Stor.	180		70							-				-			
				Avail.	74		-4							-				-			

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.22 Appleby Line at Harvester Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements occur in the eastbound left-turn, westbound left, and westbound through-right lanes during the weekday PM peak hour, operating at LOS E–F with v/c ratios exceeding 0.90. Queues in the eastbound left-turn lane exceed available storage by less than 15 m, while the westbound left-turn lane exceeds storage by approximately 40 m. During the weekday AM peak hour, the southbound left-turn lane operates at LOS D, with queues exceeding available storage by about 40 m. During the Saturday peak hour, the westbound left-turn lane degrades to LOS F, with a v/c ratio greater than 1.00 and queues extending beyond available storage by less than 75 m.

With background traffic growth, critical operations are forecast for the eastbound through-right lane during the weekday PM peak hours, operating at LOS E with a v/c ratio greater than 0.85.

With the addition of site-generated traffic, under the 2045 Total horizon, the northbound through-lane is projected to operate with a v/c ratio exceeding 0.85 during the weekday AM peak hour. The southbound through-lane is also expected to operate with a v/c ratio greater 0.85 during the weekday PM peak hour.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Eastbound left (v/c > 0.95; 95th queue) (2024 Existing);
- Westbound left (v/c > 0.95; 95th queue) (2024 Existing);
- Westbound through-right (v/c > 0.85) (2024 Existing);
- Southbound left (95th queue) (2024 Existing);
- Eastbound through-right (v/c > 0.85) (2040 Background);
- Northbound right (95th queue) (2045 Background);
- Northbound through (v/c > 0.85) (2045 Total); and
- Southbound through (v/c > 0.85) (2045 Total).

TABLE 5.22A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT HARVESTER ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Harvester Road	TCS	Existing	LOS	D	D	>	D	D	D	>	D	C	C	C	C	D	B	B	C	C
				Delay	38	52	>	49	43	47	>	46	22	34	26	32	53	15	20	27	35
				V/C	0.58	0.77	>		0.49	0.37	>		0.19	0.78	0.35		0.82	0.33	0.16		0.83
				Q	50	78	>		30	30	>		13	138	29		120	51	10		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	65	-	>		90	-	>		37	-	21		-40	-	75		
			Background 2035	LOS	D	D	>	D	D	D	>	D	C	C	C	C	E	B	D	D	D
				Delay	40	53	>	50	44	46	>	46	21	27	23	26	64	19	36	35	35
				V/C	0.67	0.81	>		0.56	0.40	>		0.26	0.76	0.41		0.94	0.31	0.19		0.92
				Q	57	88	>		33	33	>		11	80	26		158	63	23		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	58	-	>		87	-	>		39	-	24		-78	-	62		
			Total 2035	LOS	D	D	>	D	D	D	>	D	C	C	C	C	E	B	D	D	D
				Delay	45	53	>	51	44	47	>	46	21	27	23	26	74	20	37	39	37
				V/C	0.74	0.81	>		0.56	0.41	>		0.27	0.80	0.41		0.98	0.33	0.19		0.96
				Q	61	88	>		33	34	>		10	81	24		169	68	26		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	54	-	>		87	-	>		40	-	26		-89	-	59		
			Background 2040	LOS	D	D	>	D	D	D	>	D	C	C	C	C	E	C	D	D	D
				Delay	42	54	>	51	46	46	>	46	20	26	22	25	79	22	45	43	37
				V/C	0.70	0.83	>		0.61	0.41	>		0.28	0.79	0.45		1.01	0.33	0.20		0.98
				Q	60	92	>		34	34	>		10	70	23		171	71	26		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	55	-	>		86	-	>		40	-	27		-91	-	59		
			Total 2040	LOS	D	D	>	D	D	D	>	D	C	C	C	C	F	C	D	D	D
				Delay	48	53	>	52	46	46	>	46	20	27	22	25	90	23	48	47	39
				V/C	0.77	0.82	>		0.60	0.42	>		0.29	0.84	0.46		1.05	0.35	0.20		1.02
				Q	67	92	>		34	35	>		10	77	22		173	75	26		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	48	-	>		86	-	>		40	-	28		-93	-	59		
			Background 2045	LOS	D	D	>	D	D	D	>	D	B	C	C	C	F	C	D	D	D
				Delay	44	54	>	52	48	46	>	46	19	25	20	24	95	26	55	52	40
				V/C	0.74	0.84	>		0.65	0.41	>		0.28	0.83	0.50		1.08	0.36	0.21		1.04
				Q	62	98	>		36	36	>		9	70	22		143	67	20		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	53	-	>		84	-	>		41	-	28		-63	-	65		
			Total 2045	LOS	D	D	>	D	D	D	>	D	B	C	C	C	F	C	E	E	D
				Delay	51	54	>	54	48	46	>	47	19	26	20	24	109	26	58	56	42
				V/C	0.81	0.84	>		0.65	0.43	>		0.29	0.87	0.50		1.13	0.38	0.21		1.08
				Q	66	98	>		36	36	>		9	76	22		145	69	19		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	49	-	>		84	-	>		41	-	28		-65	-	66		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.22B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT HARVESTER ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Harvester Road	TCS	Existing	LOS	F	E	>	E	E	F	>	F	D	D	E	D	B	C	C	C	E
				Delay	81	62	>	70	64	129	>	108	53	39	61	44	18	35	23	32	60
				V/C	0.94	0.70	>		0.94	1.13	>		0.68	0.54	0.13		0.45	0.84	0.23		0.93
				Q	126	68	>		160	183	>		42	150	39		25	165	20		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	-11	-	>		-40	-	>		8	-	11		55	-	65		
			Background 2035	LOS	F	E	>	F	F	F	>	F	E	D	E	D	C	C	C	C	F
				Delay	116	72	>	91	101	205	>	172	56	40	66	46	25	32	34	32	80
				V/C	1.07	0.84	>		1.06	1.31	>		0.75	0.50	0.17		0.59	0.76	0.22		0.96
				Q	150	83	>		204	225	>		41	134	50		39	137	24		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	-35	-	>		-84	-	>		9	-	0		41	-	61		
			Total 2035	LOS	F	E	>	F	F	F	>	F	E	D	E	D	C	C	C	C	F
				Delay	127	72	>	95	101	212	>	176	58	41	67	46	32	33	34	33	83
				V/C	1.10	0.84	>		1.06	1.33	>		0.75	0.53	0.18		0.68	0.78	0.23		0.98
				Q	156	83	>		204	228	>		38	138	48		51	149	27		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	-41	-	>		-84	-	>		12	-	2		29	-	58		
			Background 2040	LOS	F	E	>	F	F	F	>	F	E	D	E	D	C	C	D	C	F
				Delay	135	80	>	103	119	236	>	199	60	41	63	46	28	34	38	34	91
				V/C	1.12	0.89	>		1.11	1.38	>		0.78	0.53	0.19		0.64	0.79	0.24		1.01
				Q	162	92	>		220	242	>		41	141	51		36	160	26		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	-47	-	>		-100	-	>		9	-	-1		44	-	59		
			Total 2040	LOS	F	E	>	F	F	F	>	F	E	D	E	D	C	D	D	D	F
				Delay	145	80	>	108	119	244	>	204	62	43	63	47	34	35	39	36	93
				V/C	1.15	0.89	>		1.11	1.40	>		0.79	0.55	0.19		0.73	0.82	0.25		1.03
				Q	168	92	>		220	245	>		40	145	50		46	165	26		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	-53	-	>		-100	-	>		10	-	0		34	-	59		
			Background 2045	LOS	F	F	>	F	F	F	>	F	E	D	E	D	C	D	D	D	F
				Delay	154	90	>	117	140	269	>	228	67	42	60	47	31	37	42	37	102
				V/C	1.17	0.95	>		1.17	1.46	>		0.83	0.56	0.21		0.70	0.83	0.26		1.06
				Q	172	100	>		236	258	>		43	143	51		31	136	20		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	-57	-	>		-116	-	>		7	-	-1		49	-	65		
			Total 2045	LOS	F	F	>	F	F	F	>	F	E	D	E	D	C	D	D	D	F
				Delay	165	90	>	122	140	276	>	233	66	44	61	48	34	38	42	38	104
				V/C	1.20	0.95	>		1.17	1.47	>		0.83	0.59	0.21		0.78	0.86	0.28		1.09
				Q	178	100	>		236	262	>		41	145	50		39	136	21		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	-63	-	>		-116	-	>		9	-	0		41	-	64		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.22C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT HARVESTER ROAD

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Harvester Road	TCS	Existing	LOS	D	D	>	D	F	D	>	F	A	B	A	B	B	B	B	B	D
				Delay	39	42	>	40	241	48	>	149	9	17	9	16	14	15	17	15	51
				V/C	0.53	0.17	>		1.41	0.70	>		0.19	0.58	0.21		0.32	0.45	0.06		0.83
				Q	33	16	>		192	58	>		6	140	9		17	67	4		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	82	-	>		-72	-	>		44	-	41		63	-	81		
			Background 2035	LOS	D	D	>	D	F	D	>	F	B	C	C	C	C	B	C	C	E
				Delay	42	40	>	41	268	47	>	159	17	24	30	24	25	18	29	20	58
				V/C	0.66	0.17	>		1.48	0.73	>		0.27	0.57	0.23		0.47	0.43	0.07		0.88
				Q	37	16	>		214	66	>		17	102	40		32	86	15		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	78	-	>		-94	-	>		33	-	10		48	-	70		
			Total 2035	LOS	D	D	>	D	F	D	>	F	B	C	C	C	C	B	C	C	E
				Delay	45	40	>	42	262	47	>	154	18	25	31	26	26	19	30	21	58
				V/C	0.69	0.17	>		1.46	0.73	>		0.28	0.59	0.23		0.52	0.44	0.08		0.89
				Q	38	16	>		212	65	>		17	105	40		38	90	16		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	77	-	>		-92	-	>		33	-	10		42	-	69		
			Background 2040	LOS	D	D	>	D	F	D	>	F	B	C	C	C	C	C	D	C	E
				Delay	44	39	>	41	282	47	>	166	20	27	34	28	26	24	40	26	63
				V/C	0.69	0.17	>		1.51	0.74	>		0.30	0.61	0.25		0.52	0.46	0.08		0.93
				Q	38	17	>		224	68	>		17	110	37		38	101	19		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	77	-	>		-104	-	>		33	-	13		42	-	66		
			Total 2040	LOS	D	D	>	D	F	D	>	F	C	C	C	C	C	C	D	C	E
				Delay	46	39	>	42	278	46	>	162	20	28	35	29	27	24	42	26	62
				V/C	0.72	0.17	>		1.50	0.74	>		0.31	0.64	0.25		0.56	0.47	0.08		0.94
				Q	38	16	>		223	68	>		17	112	37		41	104	19		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	77	-	>		-103	-	>		33	-	13		39	-	66		
			Background 2045	LOS	D	D	>	D	F	D	>	F	C	C	D	C	C	C	D	C	E
				Delay	46	38	>	41	303	46	>	176	22	30	38	31	25	28	44	29	68
				V/C	0.72	0.17	>		1.56	0.75	>		0.34	0.66	0.27		0.57	0.49	0.08		0.99
				Q	39	17	>		237	71	>		17	114	37		34	109	14		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	76	-	>		-117	-	>		33	-	13		46	-	71		
			Total 2045	LOS	D	D	>	D	F	D	>	F	C	C	D	C	C	C	D	C	E
				Delay	50	38	>	43	299	46	>	173	23	31	39	32	26	29	46	30	68
				V/C	0.77	0.17	>		1.55	0.76	>		0.35	0.68	0.28		0.61	0.50	0.08		1.00
				Q	42	17	>		236	72	>		17	115	36		38	112	14		
				Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
				Avail.	73	-	>		-116	-	>		33	-	14		42	-	71		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.23 Appleby Line at Fairview Street

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At the intersection of Appleby Line at Fairview Street, critical movements are present at the eastbound and southbound right-turn lanes, operating at LOS D and B with 95th percentile queue lengths exceeding the available storage by less than 10 m and 70 m, respectively during the weekday PM peak hour.

Under the 2035 Background horizon, critical movements are projected in the eastbound left-turn lane during the weekday peak hours, with queues exceeding the available storage by less than 5 m. During the weekday AM peak hour, the northbound through lane operates with a v/c ratio exceeding 0.90, while the southbound left-turn lane is forecast to experience queues that exceed the available storage by less than 15 m. During the weekday PM peak hour, the northbound left-turn lane is forecast to exhibit queues exceeding storage by less than 70 m. The southbound through-lane during the Saturday peak hour operates at LOS D with a v/c ratio greater than 0.90.

Under the 2040 Background horizon, critical movements are expected in the northbound left-turn lane during the weekday AM peak hour with queues exceeding storage by less than 15 m, as well as in the southbound through lane during the weekday PM peak hour with a v/c ratio greater than 0.90. During the Saturday peak hour, the eastbound right turn lane is expected to exceed storage by less than 10 m and the northbound through-lane to operate with a v/c ratio of 0.85.

Under the 2045 Background horizon, the southbound through lane is forecast to operate with a v/c ratio greater than 0.85 during the weekday AM peak hour. The eastbound right-turn lane is also expected to degrade to LOS E with queues exceeding storage by less than 5 m during the Saturday peak hour.

With the addition of site-generated traffic, critical movements that are identified under the Background horizons are anticipated to persist or worsen with the addition of site-generated traffic volumes under the future Total conditions.

<u>Critical Movements</u> (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Eastbound right (95th queue) (2024 Existing)
- Southbound right (95th queue) (2024 Existing)
- Eastbound left (95th queue) (2035 Background)
- Northbound left (95th queue) (2035 Background)
- Northbound through (v/c > 0.85) (2035 Background)
- Southbound left (95th queue) (2035 Background)
- Southbound through (v/c > 0.85) (2035 Background)

TABLE 5.23A: AM PEAK HOUR OPERATIONS – APPLEBY LINE AT FAIRVIEW STREET

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Fairview Street	TCS	Existing	LOS	D	D	D	D	D	D	D	D	B	C	B	C	C	C	F	D	D
				Delay	52	41	38	47	47	53	50	50	17	26	20	24	22	31	117	37	36
				V/C	0.76	0.34	0.13		0.40	0.38	0.09		0.46	0.57	0.07		0.50	0.55	0.07		0.58
				Q	73	46	19		26	29	12		32	128	4		49	134	12		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	12	-	31		54	-	-		43	-	51		26	-	88		
			Background 2035	LOS	D	D	D	D	D	D	D	D	C	D	C	D	C	D	E	D	D
				Delay	52	40	37	47	46	54	51	50	23	49	27	43	31	40	75	42	44
				V/C	0.81	0.40	0.16		0.46	0.47	0.17		0.60	0.91	0.09		0.66	0.67	0.09		0.78
				Q	90	53	20		30	34	25		59	192	10		88	130	20		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-5	-	30		50	-	-		16	-	45		-13	-	80		
			Total 2035	LOS	D	D	D	D	D	D	D	D	C	E	C	D	C	D	E	D	D
				Delay	53	39	37	47	46	54	52	50	24	62	28	53	31	41	70	42	48
				V/C	0.83	0.39	0.16		0.46	0.46	0.28		0.62	0.98	0.09		0.66	0.69	0.10		0.81
				Q	93	52	20		29	34	30		66	201	10		102	133	24		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-8	-	30		51	-	-		9	-	45		-27	-	76		
			Background 2040	LOS	D	D	D	D	D	D	D	D	C	F	C	E	C	D	E	D	E
				Delay	54	39	36	47	46	54	52	50	30	92	29	78	34	47	73	48	58
				V/C	0.85	0.41	0.20		0.50	0.49	0.30		0.65	1.08	0.10		0.69	0.81	0.10		0.86
				Q	100	57	23		32	37	31		88	224	14		108	145	23		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-15	-	27		48	-	-		-13	-	41		-33	-	77		
			Total 2040	LOS	D	D	D	D	D	D	D	D	C	F	C	F	D	D	E	D	E
				Delay	55	38	36	48	45	53	52	50	31	103	29	87	38	48	76	50	62
				V/C	0.86	0.40	0.20		0.49	0.47	0.39		0.66	1.11	0.10		0.75	0.82	0.11		0.89
				Q	104	56	22		31	36	36		94	232	14		122	148	25		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-19	-	28		49	-	-		-19	-	41		-47	-	75		
			Background 2045	LOS	E	D	D	D	D	D	D	D	D	F	C	F	D	D	E	E	E
				Delay	58	38	36	49	46	54	52	51	41	137	30	113	48	54	74	55	73
				V/C	0.90	0.42	0.29		0.53	0.50	0.41		0.77	1.19	0.12		0.83	0.90	0.11		0.95
				Q	118	61	33		33	39	37		112	260	18		130	164	24		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-33	-	17		47	-	-		-37	-	37		-55	-	76		
			Total 2045	LOS	E	D	D	D	D	D	D	D	D	F	C	F	E	E	E	E	E
				Delay	59	37	35	50	45	53	53	51	44	148	30	123	60	56	78	59	78
				V/C	0.91	0.41	0.28		0.52	0.48	0.48		0.80	1.22	0.12		0.90	0.91	0.12		0.98
				Q	124	60	32		32	38	41		118	268	18		144	171	26		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-39	-	18		48	-	-		-43	-	37		-69	-	74		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.23B: PM PEAK HOUR OPERATIONS – APPLEBY LINE AT FAIRVIEW STREET

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Fairview Street	TCS	Existing	LOS	E	D	D	E	D	E	D	E	C	C	B	C	B	C	B	B	C
				Delay	63	51	54	58	48	68	54	56	21	21	19	21	11	21	13	17	30
				V/C	0.74	0.29	0.52		0.57	0.71	0.09		0.57	0.28	0.07		0.27	0.65	0.73		0.70
				Q	69	38	57		59	72	18		44	70	5		16	156	169		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	16	-	-7		21	-	-		31	-	50		59	-	-69		
			Background 2035	LOS	E	D	E	E	D	E	D	D	D	C	C	C	B	C	F	F	E
				Delay	67	46	68	65	46	64	50	53	49	25	23	31	18	34	206	103	76
				V/C	0.83	0.27	0.82		0.62	0.72	0.11		0.75	0.27	0.08		0.42	0.83	1.39		1.06
				Q	89	41	106		65	83	19		142	59	10		22	158	345		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-4	-	-56		15	-	-		-67	-	45		53	-	-245		
			Total 2035	LOS	E	D	E	E	D	E	D	D	D	C	C	C	B	C	F	F	E
				Delay	68	45	67	65	46	64	50	53	50	26	23	31	17	34	224	110	79
				V/C	0.84	0.27	0.81		0.62	0.72	0.11		0.76	0.28	0.08		0.45	0.84	1.43		1.08
				Q	91	41	106		65	83	20		142	60	10		23	156	358		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-6	-	-56		15	-	-		-67	-	45		52	-	-258		
			Background 2040	LOS	E	D	E	E	D	E	D	D	F	C	C	D	B	D	F	F	F
				Delay	71	43	75	70	44	60	48	51	95	28	25	44	18	40	311	148	101
				V/C	0.88	0.27	0.89		0.64	0.70	0.15		0.98	0.32	0.09		0.49	0.92	1.63		1.23
				Q	103	45	143		72	92	23		161	66	13		24	180	520		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-18	-	-93		8	-	-		-86	-	42		51	-	-420		
			Total 2040	LOS	E	D	E	E	D	E	D	D	F	C	C	D	B	D	F	F	F
				Delay	72	43	75	70	45	61	49	51	96	28	26	44	18	40	326	155	105
				V/C	0.89	0.27	0.89		0.64	0.71	0.19		0.99	0.33	0.09		0.52	0.93	1.67		1.25
				Q	108	45	143		72	92	26		161	67	13		25	178	532		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-23	-	-93		8	-	-		-86	-	42		50	-	-432		
			Background 2045	LOS	E	D	F	E	D	E	D	D	F	C	C	F	B	E	F	F	F
				Delay	79	39	82	76	42	56	46	48	234	32	28	81	20	57	428	205	137
				V/C	0.94	0.26	0.95		0.66	0.67	0.23		1.36	0.38	0.10		0.60	1.01	1.89		1.41
				Q	121	49	181		80	102	32		181	73	14		26	224	586		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-36	-	-131		0	-	-		-106	-	41		49	-	-486		
			Total 2045	LOS	F	D	F	E	D	E	D	D	F	C	C	F	C	E	F	F	F
				Delay	82	39	82	77	42	56	47	48	234	32	28	80	20	58	444	212	141
				V/C	0.95	0.26	0.95		0.66	0.68	0.26		1.36	0.39	0.10		0.65	1.02	1.93		1.43
				Q	125	49	181		80	102	36		181	74	14		27	227	599		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-40	-	-131		0	-	-		-106	-	41		48	-	-499		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 5.23C: SATURDAY PEAK HOUR OPERATIONS – APPLEBY LINE AT FAIRVIEW STREET

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach																
					Eastbound				Westbound				Northbound				Southbound				Overall
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Fairview Street	TCS	Existing	LOS	D	D	D	D	D	D	D	D	B	B	B	B	B	C	D	C	C
				Delay	49	39	39	44	44	49	46	46	19	20	14	19	15	30	36	30	30
				V/C	0.69	0.23	0.19		0.50	0.43	0.08		0.58	0.53	0.05		0.28	0.75	0.19		0.68
				Q	52	27	22		32	31	6		50	114	0		13	126	14		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	33	-	28		48	-	-		25	-	55		62	-	86		
			Background 2035	LOS	D	D	D	D	D	D	D	D	C	C	B	C	C	D	F	D	D
				Delay	51	37	39	45	46	49	45	46	26	28	17	27	28	48	81	54	42
				V/C	0.78	0.25	0.44		0.60	0.49	0.10		0.61	0.74	0.07		0.48	0.93	0.24		0.78
				Q	66	32	46		38	36	16		77	176	1		23	139	29		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	19	-	4		42	-	-		-2	-	54		52	-	71		
			Total 2035	LOS	D	D	D	D	D	D	D	D	C	C	B	C	C	D	F	E	D
				Delay	51	37	39	45	46	49	45	46	26	29	18	28	30	49	85	56	44
				V/C	0.79	0.25	0.44		0.60	0.49	0.10		0.61	0.75	0.07		0.51	0.94	0.25		0.79
				Q	67	32	46		38	36	18		76	181	1		26	140	31		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	18	-	4		42	-	-		-1	-	54		49	-	69		
			Background 2040	LOS	D	D	D	D	D	D	D	D	C	C	B	C	C	E	F	E	D
				Delay	54	36	40	47	48	49	45	47	31	34	18	32	30	72	89	73	52
				V/C	0.83	0.26	0.55		0.65	0.52	0.12		0.69	0.85	0.08		0.58	1.03	0.27		0.86
				Q	74	34	59		41	39	20		95	215	3		26	159	33		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	11	-	-9		39	-	-		-20	-	52		49	-	67		
			Total 2040	LOS	D	D	D	D	D	D	D	D	C	C	B	C	C	E	F	E	D
				Delay	54	36	40	47	48	49	45	47	32	34	18	33	31	74	93	75	54
				V/C	0.84	0.26	0.54		0.66	0.52	0.15		0.69	0.86	0.07		0.59	1.04	0.28		0.87
				Q	79	34	59		41	39	22		95	218	3		28	162	34		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	6	-	-9		39	-	-		-20	-	52		47	-	66		
			Background 2045	LOS	E	C	D	D	D	D	D	D	D	D	B	D	C	F	F	F	E
				Delay	59	35	42	50	49	48	45	47	41	50	20	47	34	114	84	103	70
				V/C	0.89	0.27	0.64		0.68	0.51	0.22		0.81	0.98	0.08		0.61	1.14	0.33		0.96
				Q	89	35	70		42	40	24		134	265	5		31	188	35		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-4	-	-20		38	-	-		-59	-	50		44	-	65		
			Total 2045	LOS	E	C	D	D	D	D	D	D	D	D	B	D	C	F	F	F	E
				Delay	62	35	42	51	49	48	45	47	42	53	20	49	34	115	86	104	71
				V/C	0.90	0.27	0.64		0.68	0.51	0.24		0.82	0.99	0.08		0.63	1.15	0.34		0.96
				Q	91	35	70		42	40	26		134	267	5		33	190	36		
				Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
				Avail.	-6	-	-20		38	-	-		-59	-	50		42	-	64		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.2.24 Mainway at Site Access A

Horizon Year	Operations
2035 Total	Within Capacity
2040 Total	Within Capacity
2045 Total	Within Capacity

Individual movements at the intersection of Site Access A at Mainway is expected to operate at acceptable conditions under the future Total conditions, with a LOS C or better for all movements.

TABLE 5.24: PEAK HOUR OPERATIONS – MAINWAY AT SITE ACCESS A

Analysis Period	Intersection	Control Type	Scenario	MOE	Direction / Movement / Approach															Overall
					Eastbound				Westbound				Northbound				Southbound			
					Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Mainway & Site Access A	TWSC	Total 2035	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	B	>	B	
				Delay	<	2	>	1	<	0	>	0	<	0	>	0	<	12	>	12	
				V/C	<	0.05	>		<	0.00	>		<	0.00	>		<	0.05	>		
				Q	<	1	>		<	0	>		<	0	>		<	1	>		
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	B	>	B	
				Delay	<	2	>	1	<	0	>	0	<	0	>	0	<	12	>	12	
				V/C	<	0.05	>		<	0.00	>		<	0.00	>		<	0.05	>		
				Q	<	1	>		<	0	>		<	0	>		<	1	>		
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	B	>	B	
				Delay	<	2	>	1	<	0	>	0	<	0	>	0	<	12	>	12	
				V/C	<	0.05	>		<	0.00	>		<	0.00	>		<	0.05	>		
				Q	<	1	>		<	0	>		<	0	>		<	1	>		
PM Peak Hour	Mainway & Site Access A	TWSC	Total 2035	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	C	>	C	
				Delay	<	1	>	1	<	0	>	0	<	0	>	0	<	15	>	15	
				V/C	<	0.02	>		<	0.00	>		<	0.00	>		<	0.25	>		
				Q	<	1	>		<	0	>		<	0	>		<	8	>		
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	C	>	C	
				Delay	<	1	>	1	<	0	>	0	<	0	>	0	<	16	>	16	
				V/C	<	0.02	>		<	0.00	>		<	0.00	>		<	0.26	>		
				Q	<	1	>		<	0	>		<	0	>		<	8	>		
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	C	>	C	
				Delay	<	1	>	1	<	0	>	0	<	0	>	0	<	16	>	16	
				V/C	<	0.02	>		<	0.00	>		<	0.00	>		<	0.27	>		
				Q	<	1	>		<	0	>		<	0	>		<	9	>		
Sat Peak Hour	Mainway & Site Access A	TWSC	Total 2035	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	B	>	B	
				Delay	<	1	>	0	<	0	>	0	<	0	>	0	<	10	>	10	
				V/C	<	0.01	>		<	0.00	>		<	0.00	>		<	0.04	>		
				Q	<	0	>		<	0	>		<	0	>		<	1	>		
			Total 2040	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	B	>	B	
				Delay	<	1	>	0	<	0	>	0	<	0	>	0	<	10	>	10	
				V/C	<	0.01	>		<	0.00	>		<	0.00	>		<	0.04	>		
				Q	<	0	>		<	0	>		<	0	>		<	1	>		
			Total 2045	LOS	<	A	>	A	<	A	>	A	<	A	>	A	<	B	>	B	
				Delay	<	1	>	0	<	0	>	0	<	0	>	0	<	10	>	10	
				V/C	<	0.01	>		<	0.00	>		<	0.00	>		<	0.04	>		
				Q	<	0	>		<	0	>		<	0	>		<	1	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

5.3 Internal Intersection Capacity Analysis

With Phase 1 of the development, Corporate Drive is proposed as the primary east-west roadway through the site to Sutton Drive. The road will potentially connect to the existing Corporate Drive leading to Appleby Line. The City has requested that the analysis assume the connection will be in place.

An analysis is completed using internal site traffic volumes generated by the different parcels within the development and routed through the network.

Table 5.25 summarizes the capacity analyses for the internal Sutton Drive at Corporate Drive intersection. The capacity analysis results are included in **Appendix J**.

5.3.1 Sutton Drive at Corporate Drive

Horizon Year	Operations
All Total Horizons	Within Capacity

At the all-way stop-controlled intersection of Sutton Drive at Corporate Drive, all approaches are forecast to operate within capacity with LOS A or better during the weekday and Saturday peak hours.

As per comments from the City, alternative traffic control is considered including signalization and roundabout configurations.

A signal warrant analyses was conducted at the proposed intersection to evaluate the potential benefits of signalization. **Appendix K** contains the signal warrant analysis. The forecast volumes do not warrant signalization.

With signalization, delays would increase slightly compared to the all-way stop control conditions, the intersection would continue to operate at an acceptable LOS B or better.

As the intersection is anticipated to operate with acceptable levels of service with all-way stop control and signalization, a qualitative assessment of a roundabout configuration is conducted. The internal site volumes are not forecast to warrant a signal.

A roundabout reduces points of vehicle conflict, promotes lower speeds, reduces collision severity, and has the potential to reduce vehicle delay. As intersection delays are forecast to be LOS B or better, introducing a roundabout would provide limited operational

benefit while requiring a greater right-of-way and higher costs compared to the proposed all-way stop control.

In addition, pedestrian crossing at the roundabout may be a concern. Although splitter islands can provide a refuge, the total walking distance is often increased at a roundabout. Pedestrian visibility and vehicles not yielding to pedestrians are common concerns with roundabouts.

All three intersection controls are expected to accommodate vehicle traffic without issue. Considering the land requirements and pedestrian crossings, an all-way stop controlled intersection control is recommended for Phase 1 of the development.

TABLE 5.25: INTERNAL INTERSECTION ANALYSIS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Sutton Drive & Corporate Drive	AWSC	LOS	A		>	**A**					<	A		**A**		A	>	**A**	
			Delay	7		>	**7**					<	8		**8**		8	>	**8**	
			V/C	0.05		>						<	0.08				0.21	>		
			Q	15		>						<	15				19	>		
	Sutton Drive & Corporate Drive	TCS	LOS	B		>	**B**					<	A		**A**		A	>	**A**	**A**
			Delay	15		>	**15**					<	2		**2**		2	>	**2**	**4**
			V/C	0.03		>						<	0.05				0.15	>		**0.14**
			Q	0		>						<	4				9	>		
PM Peak Hour	Sutton Drive & Corporate Drive	AWSC	LOS	A		>	**A**					<	A		**A**		A	>	**A**	
			Delay	7		>	**7**					<	8		**8**		8	>	**8**	
			V/C	0.04		>						<	0.16				0.10	>		
			Q	15		>						<	18				16	>		
	Sutton Drive & Corporate Drive	TCS	LOS	B		>	**B**					<	A		**A**		A	>	**A**	**A**
			Delay	15		>	**15**					<	2		**2**		2	>	**2**	**4**
			V/C	0.02		>						<	0.12				0.07	>		**0.12**
			Q	0		>						<	7				4	>		
Sat Peak Hour	Sutton Drive & Corporate Drive	AWSC	LOS	A		>	**A**					<	A		**A**		A	>	**A**	
			Delay	7		>	**7**					<	8		**8**		8	>	**8**	
			V/C	0.05		>						<	0.10				0.11	>		
			Q	15		>						<	16				16	>		
	Sutton Drive & Corporate Drive	TCS	LOS	B		>	**B**					<	A		**A**		A	>	**A**	**A**
			Delay	14		>	**14**					<	2		**2**		2	>	**2**	**4**
			V/C	0.03		>						<	0.08				0.08	>		**0.08**
			Q	0		>						<	5				5	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
< / > - Shared with through movement

5.4 Appleby Line Corridor Analysis

Appleby Line is a north-south major arterial roadway with a six-lane cross section north of Taywood Drive, a four-lane cross-section at the Upper Middle Road intersection, and a five-lane cross-section south of Corporate Drive.

Appleby Line provides connection between the north end of Burlington, Highway 407, QEW, Appleby GO Station, and the Burlington waterfront (Appleby Place Window to the Lake).

Appleby Line is planned to be widened to six lanes between Fairview Street and Taywood Drive with the curb lanes converted to high occupancy vehicle (HOV) or bus rapid transit (BRT) lanes after completion of the road widening.

A corridor analysis has been conducted to assess the potential capacity constraints along Appleby Line, north of Dundas Street.

Arterial roads generally have a vehicle lane capacity of 900 vehicles per hour per lane (vph/ln). North of Dundas Street, Appleby Line has an approximate vehicle capacity of 2,700 vph per direction. With the planned conversion of the curb lane to HOV/BRT lanes, the vehicle capacity is expected to decrease. HOV lanes are reserved for vehicles with two or more occupants or electric/hybrid vehicles with a green license plate. It is assumed lane utilization would decrease to 0.80 to account for a lower number of vehicles meeting the criteria to use the HOV lane.

BRT lanes would be restricted to buses only and effectively decrease the vehicle capacity of the road to two lanes per direction. While both the HOV and BRT lane options decrease the vehicle capacity of the roadway, the person capacity of the roadway will increase by promoting and supporting higher occupancy modes of travel.

Table 5.26 outlines the directional capacity of Appleby Line and the forecast volumes for the peak direction of travel for each analysis period and horizon year.

Peak direction volumes on Appleby Line, north of Dundas Street currently range between 1,050 and 1,300 vph. With an estimated capacity of 2,700 vph, the v/c ratio for the corridor is less than 0.50 during the peak hours.

In the future horizons with the widening and HOV/BRT lanes, it is assumed that road capacity would decrease to 1,800-2,100 vph.

Background traffic growth is forecast to increase peak direction volumes to the 1,300-1,620 vph range and a v/c ratio of up to 0.90.

The addition of Phase 1 site traffic is forecast to increase peak direction volumes to the 1,320-1,670 vph range and a v/c ratio approaching 0.95.

With a conservative estimate of road capacity, the Appleby Line corridor north of Dundas Street is forecast to approach capacity with background traffic alone. The addition of site traffic decreases the potential available capacity for the peak direction.

However, it should be noted that multiple assumptions place this assessment on the conservative end of the forecast. This assessment assumes the third lane will be only utilized by buses, a high traffic growth rate (1-2% percent per annum) continues to 2045, and travel patterns and mode choice behaviour do not change.

If the lane operates as a HOV lane or bus lane and HOV lane, the capacity for the curb lane will increase. Automobile usage may shift to transit with network and service improvements, particularly with development around the Appleby GO MTSA.

TABLE 5.26: APPLEBY LINE CORRIDOR CAPACITY (NORTH OF DUNDAS STREET)

Horizon	Vehicle Capacity / Direction/ Hour	Peak Direction Volume (vph)			Volume/Capacity Ratio		
		AM	PM	Sat	AM	PM	Sat
Base	2,700	1,050	1,300	1,240	0.39	0.48	0.46
Background 2035	1,800	1,180	1,460	1,390	0.66	0.81	0.77
Background 2040	1,800	1,240	1,540	1,460	0.69	**0.85**	0.81
Background 2045	1,800	1,300	1,620	1,540	0.72	**0.90**	**0.85**
Total 2035	1,800	1,200	1,520	1,420	0.67	0.84	0.79
Total 2040	1,800	1,260	1,590	1,490	0.70	**0.88**	0.83
Total 2045	1,800	1,320	1,670	1,570	0.74	**0.93**	**0.87**

6 Mitigation

The following sections discusses the intersection operations and potential remedial measures that could be considered to better accommodate the forecast traffic volumes in the study area.

6.1 Queuing Assessment

A queue assessment of the study area intersections was conducted to provide a more accurate assessment of the potential queues. SimTraffic was utilized rather than Synchro in this assessment as microscopic models, such as SimTraffic, individually track each vehicle in the traffic system through the model and collect comprehensive operational measures of effectiveness for every vehicle during each 0.1 second of the simulation. Unlike Synchro, SimTraffic measures the full impact of queuing and blocking. Synchro is best used to determine level of service and delay at the macro level but is not ideal for assessments simulating real-world conditions. The analysis consisted of five (5) iterations of sixty (60) minute simulations to forecast the delay per vehicle in seconds. **Appendix L** provides the SimTraffic results.

Table 6.1 – 6.3 summarizes the existing storage lengths and the forecast 95th percentile queue lengths under the existing year, 2045 background, and 2045 total conditions.

Extensive queues are forecast throughout the network in the 2045 horizon year.

The 95th percentile queues along Upper Middle Road, Burloak Drive, and Appleby Line are forecast to extend up to 630 m during the peak hours and impact the upstream intersections.

At QEW ramps, 95th percentile queues are forecast to extend beyond the bullnose and potentially impact highway operations in the Background and Total scenarios.

Along streets with high volumes of through traffic (Appleby Line, Mainway, Burloak Drive, Upper Middle Road), left and right-turn movements can be impacted by downstream congestion. SimTraffic accounts for vehicle congestion throughout the network which results in longer queues at intersections.

Traffic signals along Appleby Line, Upper Middle Road, and Burloak Drive are coordinated, meaning green times along corridor align to allow for groups of vehicles to potentially progress with reduced delay.

Under Existing conditions queues spill back to upstream intersections and block intersections. This congestion is forecast to continue with background traffic growth and the addition of site traffic. Signal coordination should be reassessed as traffic grows to improve progression and avoid the blockage of intersections.

The impact of queues at individual intersections and intersection modifications are discussed further in the following sections.

TABLE 6.1: FORECAST QUEUE LENGTHS SUMMARY – AM PEAK HOUR (1/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
AM Peak Hour	Appleby Line & Dundas Street	Stor.	105	-	180	190	-	215	135	-	120	135	-	180
		2024 Base	132	246	154	209	199	22	59	866	54	100	134	18
		Avail.	-27	-	26	-19	-	193	76	-	66	35	-	162
		2045 Background	149	260	207	248	313	27	77	435	76	143	160	20
		Avail.	-44	-	-27	-58	-	188	58	-	44	-8	-	160
		2045 Total	146	252	191	247	302	28	91	314	80	134	183	21
		Avail.	-41	-	-11	-57	-	187	44	-	40	1	-	159
	Appleby Line & Upper Middle Road	Stor.	55	-	-	125	-	80	100	-	>	55	-	>
		2024 Base	58	96	>	70	36	2	49	119	>	77	262	>
		Avail.	-3	-	>	55	-	78	51	-	>	-22	-	>
		2045 Background	78	169	>	159	264	3	47	124	>	83	560	>
		Avail.	-23	-	>	-34	-	77	53	-	>	-28	-	>
		2045 Total	76	174	>	150	187	10	63	117	>	72	415	>
		Avail.	-21	-	>	-25	-	70	37	-	>	-17	-	>
	West School Driveway/Private Driveway & Upper Middle Road	Stor.	30	-	>	80	-	>	<	-	-	<	-	>
		2024 Base	3	54	>	13	38	>	<	48	18	<	11	>
		Avail.	27	-	>	67	-	>	<	-	-	<	-	>
		2045 Background	9	104	>	14	40	>	<	68	24	<	15	>
		Avail.	21	-	>	66	-	>	<	-	-	<	-	>
		2045 Total	9	58	>	16	44	>	<	67	21	<	13	>
		Avail.	21	-	>	64	-	>	<	-	-	<	-	>
	East School Driveway & Upper Middle Road	Stor.		-	>	30	-		-		-			
		2024 Base		10	>	27	7		18		21			
		Avail.		-	>	3	-		-		-			
		2045 Background		10	>	38	27		35		32			
		Avail.		-	>	-8	-		-		-			
		2045 Total		12	>	38	28		30		29			
		Avail.		-	>	-8	-		-		-			
	Upper Middle Road & Quinte Street	Stor.	60	-	>	-	-	>	<	-	>	<	-	>
		2024 Base	22	3			4	>				39		>
		Avail.	38	-			-	>				-		>
		2045 Background	29	1			7	>				147		>
		Avail.	31	-			-	>				-		>
		2045 Total	25	2	>	<	5	>	<	15	>	<	233	>
		Avail.	35	-	>	<	-	>	<	-	>	<	-	>
	Upper Middle Road & Sutton Drive	Stor.	60	-	>	<	-	>	<	-	>	<	-	>
		2024 Base	39	41			56	>				252		>
		Avail.	21	-			-	>				-		>
		2045 Background	59	47			57	>				236		>
		Avail.	1	-			-	>				-		>
		2045 Total	53	48	>	<	56	>	<	21	>	<	238	>
		Avail.	7	-	>	<	-	>	<	-	>	<	-	>
	Upper Middle Road & Baker Drive	Stor.	100	-			-	>						-
		2024 Base	8	0			0	>						13
		Avail.	92	-			-	>						-
		2045 Background	12	2			0	>						15
		Avail.	88	-			-	>						-
		2045 Total	12	0			0	>						15
		Avail.	88	-			-	>						-

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.1: FORECAST QUEUE LENGTHS SUMMARY – AM PEAK HOUR (2/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
AM Peak Hour	Upper Middle Road & Deer Place	Stor.	100	-			-	>				-		>
		2024 Base	2	-			0	>				14		>
		Avail.	98	-			-	>				-		>
		2045 Background	3	-			0	>				18		>
		Avail.	97	-			-	>				-		>
		2045 Total	4	-			0	>				16		>
		Avail.	96	-			-	>				-		>
	Upper Middle Road & Blue Spruce Avenue	Stor.	100	-		-	-	>	<	-	>	<	-	>
		2024 Base	6	-			2	>				33		>
		Avail.	94	-			-	>				-		>
		2045 Background	9	-			4	>				69		>
		Avail.	91	-			-	>				-		>
		2045 Total	9	-			2	>				55		>
		Avail.	91	-			-	>				-		>
	Burloak Drive & Park Access	Stor.	<	-	>	<	-	>	<	-	>	145	-	>
		2024 Base				11		>		1	>	8	0	
		Avail.				-		>		-	>	137	-	
		2045 Background				12		>		3	>	9	2	
		Avail.				-		>		-	>	136	-	
		2045 Total				14		>		1	>	8	2	
		Avail.				-		>		-	>	137	-	
	Burloak Drive & Mainway	Stor.	-		-				110	-			-	>
		2024 Base	26		56				49	20			76	>
		Avail.	-		-				61	-			-	>
		2045 Background	40		97				84	20			85	>
		Avail.	-		-				26	-			-	>
		2045 Total	69		151				140	305			86	>
		Avail.	-		-				-30	-			-	>
	Sutton Drive & Mainway	Stor.	-	-	-	-	-	-	-	-	-	-	-	-
		2024 Base		2	>	<	8		14		>			
		Avail.		-	>	<	-		-		>			
		2045 Background		6	>	<	11		16		>			
		Avail.		-	>	<	-		-		>			
		2045 Total	<	16	>	<	10	>	<	25	>	<	34	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
	Norjohn Court/Lampman Avenue & Mainway	Stor.	-	-	-	-	-	-	-	-	-	-	-	-
		2024 Base	<	6	>	<	8	>	<	14	>	<	23	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
		2045 Background	<	6	>	<	10	>	<	15	>	<	33	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
		2045 Total	<	7	>	<	10	>	<	17	>	<	31	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
	Appleby Line & Mainway	Stor.	85	-	>	90	-	>	95	-	>	65	-	>
		2024 Base	109	205	>	97	116	>	62	121	>	58	115	>
		Avail.	-24	-	>	-7	-	>	33	-	>	7	-	>
		2045 Background	118	208	>	119	160	>	50	107	>	49	87	>
		Avail.	-33	-	>	-29	-	>	45	-	>	16	-	>
		2045 Total	113	215	>	124	296	>	70	121	>	54	95	>
		Avail.	-28	-	>	-34	-	>	25	-	>	11	-	>
	Appleby Line & Corporate Drive	Stor.	<	-	>	<	-	>	50	-	>	120	-	>
		2024 Base	<	32	>	<	71	>	33	100	>	23	90	>
		Avail.	<	-	>	<	-	>	17	-	>	97	-	>
		2045 Background	<	32	>	<	87	>	37	94	>	22	67	>
		Avail.	<	-	>	<	-	>	13	-	>	98	-	>
		2045 Total	<	33	>	<	101	>	39	86	>	21	65	>
		Avail.	<	-	>	<	-	>	11	-	>	99	-	>

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.1: FORECAST QUEUE LENGTHS SUMMARY – AM PEAK HOUR (3/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
AM Peak Hour	Burloak Drive & N Service Road	Stor.	60		-				140	-			-	>
		2024 Base	16		25				94	28			80	>
		Avail.	44		-				46	-			-	>
		2045 Background	20		36				81	28			54	>
		Avail.	40		-				59	-			-	>
		2045 Total	22		46				102	48			57	>
		Avail.	38		-				38	-			-	>
	Burloak Drive & QEW WB Off-Ramp	Stor.				-		160		-			-	
		2024 Base				347		350		48			34	
		Avail.				-		-190		-			-	
		2045 Background				302		303		45			75	
		Avail.				-		-143		-			-	
		2045 Total				302		303		55			75	
		Avail.				-		-143		-			-	
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	Stor.	-	-	70			-		-	>	<	-	
		2024 Base	36	41	17			18		39	>	<	40	
		Avail.	-	-	53			-		-	>	<	-	
		2045 Background	51	47	86			28		84	>	<	89	
		Avail.	-	-	-16			-		-	>	<	-	
		2045 Total	87	81	73			25		94	>	<	97	
		Avail.	-	-	-3			-		-	>	<	-	
	Appleby Line & North Service Road	Stor.	40	-	>	65	-	>	65	-	>	65	-	>
		2024 Base	34	57	>	38	19	>	52	96	>	36	80	>
		Avail.	6	-		27	-	>	13	-	>	29	-	>
		2045 Background	42	102	>	47	19	>	40	91	>	38	67	>
		Avail.	-2	-		18	-	>	25	-	>	27	-	>
		2045 Total	42	83	>	46	23	>	41	92	>	38	65	>
		Avail.	-2	-		19	-	>	24	-	>	27	-	>
	Appleby Line & QEW WB Off-Ramp	Stor.				210		-		-			-	
		2024 Base				59		76		123			41	
		Avail.				151		-		-			-	
		2045 Background				339		342		106			41	
		Avail.				-129		-		-			-	
		2045 Total				341		341		111			41	
		Avail.				-131		-		-			-	
	Appleby Line & QEW EB Off-Ramp	Stor.	180		70					-			-	
		2024 Base	83		47					67			82	
		Avail.	97		23					-			-	
		2045 Background	165		155					84			95	
		Avail.	15		-85					-			-	
		2045 Total	176		172					95			158	
		Avail.	4		-102					-			-	
	Appleby Line & Harvester Road	Stor.	115	-	>	120	-	>	50	-	50	80	-	85
		2024 Base	99	138	>	63	68	>	45	194	75	93	94	25
		Avail.	16	-	>	57	-	>	5	-	-25	-13	-	60
		2045 Background	129	179	>	123	120	>	35	114	68	107	198	39
		Avail.	-14	-	>	-3	-	>	15	-	-18	-27	-	46
		2045 Total	140	187	>	107	118	>	36	102	67	105	293	35
		Avail.	-25	-	>	13	-	>	14	-	-17	-25	-	50
	Appleby Line & Fairview Street	Stor.	85	-	50	80	-	-	75	-	55	75	-	100
		2024 Base	110	63	42	36	37	32	62	97	52	66	105	45
		Avail.	-25	-	8	44	-	-	13	-	3	9	-	55
		2045 Background	373	377	71	49	52	45	100	382	83	95	369	152
		Avail.	-288	-	-21	31	-	-	-25	-	-28	-20	-	-52
		2045 Total	349	350	71	48	50	54	101	351	83	97	345	152
		Avail.	-264	-	-21	32	-	-	-26	-	-28	-22	-	-52

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.2: FORECAST QUEUE LENGTHS SUMMARY – PM PEAK HOUR (1/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
PM Peak Hour	Appleby Line & Dundas Street	Stor.	105	-	180	190	-	215	135	-	120	135	-	180
		2024 Base	138	275	206	214	289	197	152	2169	38	152	253	12
		Avail.	-33	-	-26	-24	-	18	-17	-	82	-17	-	168
		2045 Background	137	264	186	214	283	200	151	2275	50	153	214	24
		Avail.	-32	-	-6	-24	-	15	-16	-	70	-18	-	156
		2045 Total	140	262	193	211	283	213	151	2469	73	151	215	18
		Avail.	-35	-	-13	-21	-	2	-16	-	47	-16	-	162
	Appleby Line & Upper Middle Road	Stor.	55	-	-	125	-	80	100	-	>	55	-	>
		2024 Base	66	91	>	55	146	112	79	267	>	50	102	>
		Avail.	-11	-	>	70	-	-32	21	-	>	5	-	>
		2045 Background	75	151	>	54	417	112	85	418	>	52	94	>
		Avail.	-20	-	>	71	-	-32	15	-	>	3	-	>
		2045 Total	70	155	>	56	473	121	90	484	>	68	114	>
		Avail.	-15	-	>	69	-	-41	10	-	>	-13	-	>
	West School Driveway/Private Driveway & Upper Middle Road	Stor.	30	-	>	80	-	>	<	-	-	<	-	>
		2024 Base	5	39	>	0	94	>	<	26	9	<	7	>
		Avail.	25	-	>	80	-	>	<	-	-	<	-	>
		2045 Background	2	46	>	0	173	>	<	48	11	<	9	>
		Avail.	28	-	>	80	-	>	<	-	-	<	-	>
		2045 Total	3	44	>	0	169	>	<	41	10	<	9	>
		Avail.	27	-	>	80	-	>	<	-	-	<	-	>
	East School Driveway & Upper Middle Road	Stor.		-	>	30	-		-		-			
		2024 Base		1	>	8	0		13		16			
		Avail.		-	>	22	-		-		-			
		2045 Background		1	>	14	52		18		17			
		Avail.		-	>	16	-		-		-			
		2045 Total		2	>	9	40		17		17			
		Avail.		-	>	21	-		-		-			
	Upper Middle Road & Quinte Street	Stor.	60	-	>	-	-	>	<	-	>	<	-	>
		2024 Base	29	1			11	>				27		>
		Avail.	31	-			-	>				-		>
		2045 Background	41	10			81	>				135		>
		Avail.	19	-			-	>				-		>
		2045 Total	41	17	>	<	43	>	<	13	>	<	135	>
		Avail.	19	-	>	<	-	>	<	-	>	<	-	>
	Upper Middle Road & Sutton Drive	Stor.	60	-	>	<	-	>	<	-	>	<	-	>
		2024 Base	41	26			131	>				90		>
		Avail.	19	-			-	>				-		>
		2045 Background	61	44			139	>				343		>
		Avail.	-1	-			-	>				-		>
		2045 Total	63	46	>	<	141	>	<	35	>	<	286	>
		Avail.	-3	-	>	<	-	>	<	-	>	<	-	>
	Upper Middle Road & Baker Drive	Stor.	100	-			-	>						-
		2024 Base	15	-			1	>						14
		Avail.	85	-			-	>						-
		2045 Background	18	3			6	>						17
		Avail.	82	-			-	>						-
		2045 Total	19	-			6	>						19
		Avail.	81	-			-	>						-

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.2: FORECAST QUEUE LENGTHS SUMMARY – PM PEAK HOUR (2/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
PM Peak Hour	Upper Middle Road & Deer Place	Stor.	100	-			-	>				-		>
		2024 Base	7	-			1	>				10		>
		Avail.	93	-			-	>				-		>
		2045 Background	8	-			2	>				11		>
		Avail.	92	-			-	>				-		>
		2045 Total	9	-			2	>				12		>
		Avail.	91	-			-	>				-		>
	Upper Middle Road & Blue Spruce Avenue	Stor.	100	-	>	-	-	>	<	-	>	<	-	>
		2024 Base	14				13	>				24		>
		Avail.	86	-			-	>				-		>
		2045 Background	15				13	>				59		>
		Avail.	85	-			-	>				-		>
		2045 Total	15				12	>				89		>
		Avail.	85	-			-	>				-		>
	Burloak Drive & Park Access	Stor.	<	-	>	<	-	>	<	-	>	145	-	>
		2024 Base				16		>		3	>	10	0	
		Avail.				-		>		-	>	135	-	
		2045 Background				27		>		6	>	15	0	
		Avail.				-		>		-	>	130	-	
		2045 Total				24		>		3	>	15	0	
		Avail.				-		>		-	>	130	-	
	Burloak Drive & Mainway	Stor.	-		-				110	-			-	>
		2024 Base	46		37				70	71			40	>
		Avail.	-		-				40	-			-	>
		2045 Background	57		58				104	69			44	>
		Avail.	-		-				6	-			-	>
		2045 Total	80		112				125	116			45	>
		Avail.	-		-				-15	-			-	>
	Sutton Drive & Mainway	Stor.	-	-	-	-	-	-	-	-	-	-	-	-
		2024 Base		0	>	<	5		31		>			
		Avail.		-	>	<	-		-		>			
		2045 Background		2	>	<	4		31		>			
		Avail.		-	>	<	-		-		>			
		2045 Total	<	8	>	<	5	>	<	46	>	<	67	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
	Norjohn Court/Lampman Avenue & Mainway	Stor.	-	-	-	-	-	-	-	-	-	-	-	-
		2024 Base	<	14	>	<	10	>	<	18	>	<	18	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
		2045 Background	<	15	>	<	157	>	<	99	>	<	109	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
		2045 Total	<	13	>	<	305	>	<	104	>	<	108	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
	Appleby Line & Mainway	Stor.	85	-	>	90	-	>	95	-	>	65	-	>
		2024 Base	85	82	>	104	223	>	65	107	>	38	81	>
		Avail.	0	-	>	-14	-	>	30	-	>	27	-	>
		2045 Background	99	173	>	128	473	>	53	132	>	29	71	>
		Avail.	-14	-	>	-38	-	>	42	-	>	36	-	>
		2045 Total	95	152	>	127	463	>	73	83	>	24	78	>
		Avail.	-10	-	>	-37	-	>	22	-	>	41	-	>
	Appleby Line & Corporate Drive	Stor.	<	-	>	<	-	>	50	-	>	120	-	>
		2024 Base	<	35	>	<	63	>	18	72	>	22	55	>
		Avail.	<	-	>	<	-	>	32	-	>	98	-	>
		2045 Background	<	68	>	<	93	>	19	253	>	21	42	>
		Avail.	<	-	>	<	-	>	31	-	>	99	-	>
		2045 Total	<	56	>	<	102	>	11	193	>	23	43	>
		Avail.	<	-	>	<	-	>	39	-	>	97	-	>

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.2: FORECAST QUEUE LENGTHS SUMMARY – PM PEAK HOUR (3/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
PM Peak Hour	Burloak Drive & N Service Road	Stor.	60		-				140	-			-	>
		2024 Base	47		46				27	87			43	>
		Avail.	13		-				113	-			-	>
		2045 Background	66		105				26	101			41	>
		Avail.	-6		-				114	-			-	>
		2045 Total	83		165				32	75			51	>
		Avail.	-23		-				108	-			-	>
	Burloak Drive & QEW WB Off-Ramp	Stor.				-		160		-			-	
		2024 Base				346		346		66			64	
		Avail.				-		-186		-			-	
		2045 Background				334		334		84			265	
		Avail.				-		-174		-			-	
		2045 Total				327		325		82			277	
		Avail.				-		-165		-			-	
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	Stor.	-	-	70			-		-	>	<	-	
		2024 Base	35	44	26			17		39	>	<	34	
		Avail.	-	-	44			-		-	>	<	-	
		2045 Background	57	79	73			23		89	>	<	97	
		Avail.	-	-	-3			-		-	>	<	-	
		2045 Total	64	79	71			26		88	>	<	95	
		Avail.	-	-	-1			-		-	>	<	-	
	Appleby Line & North Service Road	Stor.	40	-	>	65	-	>	65	-	>	65	-	>
		2024 Base	39	64	>	85	150	>	72	101	>	38	131	>
		Avail.	1	-		-20	-	>	-7	-	>	27	-	>
		2045 Background	61	316	>	85	147	>	48	70	>	33	99	>
		Avail.	-21	-		-20	-	>	17	-	>	32	-	>
		2045 Total	58	274	>	85	148	>	54	79	>	26	102	>
		Avail.	-18	-		-20	-	>	11	-	>	39	-	>
	Appleby Line & QEW WB Off-Ramp	Stor.				210		-		-			-	
		2024 Base				184		174		101			44	
		Avail.				26		-		-			-	
		2045 Background				176		169		86			80	
		Avail.				34		-		-			-	
		2045 Total				180		168		94			78	
		Avail.				30		-		-			-	
	Appleby Line & QEW EB Off-Ramp	Stor.	180		70					-			-	
		2024 Base	77		50					49			68	
		Avail.	103		20					-			-	
		2045 Background	156		156					74			69	
		Avail.	24		-86					-			-	
		2045 Total	176		166					76			77	
		Avail.	4		-96					-			-	
	Appleby Line & Harvester Road	Stor.	115	-	>	120	-	>	50	-	50	80	-	85
		2024 Base	133	177	>	156	164	>	58	116	58	49	138	69
		Avail.	-18	-	>	-36	-	>	-8	-	-8	31	-	16
		2045 Background	137	165	>	154	167	>	41	124	45	38	108	56
		Avail.	-22	-	>	-34	-	>	9	-	5	42	-	29
		2045 Total	124	169	>	155	178	>	43	91	56	43	133	62
		Avail.	-9	-	>	-35	-	>	7	-	-6	37	-	23
	Appleby Line & Fairview Street	Stor.	85	-	50	80	-	-	75	-	55	75	-	100
		2024 Base	84	53	57	60	60	29	65	68	15	38	152	117
		Avail.	1	-	-7	20	-	-	10	-	40	37	-	-17
		2045 Background	209	233	63	80	92	39	82	272	16	54	525	108
		Avail.	-124	-	-13	0	-	-	-7	-	39	21	-	-8
		2045 Total	208	231	67	79	86	45	83	273	20	51	583	108
		Avail.	-123	-	-17	1	-	-	-8	-	35	24	-	-8

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.3: FORECAST QUEUE LENGTHS SUMMARY – SATURDAY PEAK HOUR (1/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Saturday Peak Hour	Appleby Line & Dundas Street	Stor.	105	-	180	190	-	215	135	-	120	135	-	180
		2024 Base	145	272	174	236	306	32	172	2019	43	176	349	28
		Avail.	-40	-	6	-46	-	183	-37	-	77	-41	-	152
		2045 Background	139	235	196	219	270	43	158	2410	67	152	294	13
		Avail.	-34	-	-16	-29	-	172	-23	-	53	-17	-	167
		2045 Total	141	230	205	211	251	29	152	2354	54	151	262	17
		Avail.	-36	-	-25	-21	-	186	-17	-	66	-16	-	163
	Appleby Line & Upper Middle Road	Stor.	55	-	-	125	-	80	100	-	>	55	-	>
		2024 Base	69	97	>	48	59	45	58	141	>	55	118	>
		Avail.	-14	-	>	77	-	35	42	-	>	0	-	>
		2045 Background	71	209	>	76	395	101	96	431	>	54	75	>
		Avail.	-16	-	>	49	-	-21	4	-	>	1	-	>
		2045 Total	74	214	>	85	320	102	88	359	>	63	84	>
		Avail.	-19	-	>	40	-	-22	12	-	>	-8	-	>
	Upper Middle Road & Quinte Street	Stor.	30	-	>	80	-	>	<	-	-	<	-	>
		2024 Base	19	3			5	>				19		>
		Avail.	11	-			-	>				-		>
		2045 Background	27	0			7	>				32		>
		Avail.	3	-			-	>				-		>
		2045 Total	27	3	>	<	12	>	<	14	>	<	31	>
		Avail.	3	-	>	<	-	>	<	-	>	<	-	>
	Upper Middle Road & Sutton Drive	Stor.	60	-	>	<	-	>	<	-	>	<	-	>
		2024 Base	27	34			66	>				70		>
		Avail.	33	-			-	>				-		>
		2045 Background	33	34			74	>				88		>
		Avail.	27	-			-	>				-		>
		2045 Total	30	35	>	<	72	>	<	18	>	<	99	>
		Avail.	30	-	>	<	-	>	<	-	>	<	-	>
	Upper Middle Road & Blue Spruce Avenue	Stor.	100	-		-	-	>	<	-	>	<	-	>
		2024 Base	10				2	>				18		>
		Avail.	90	-			-	>				-		>
		2045 Background	12				4	>				26		>
		Avail.	88	-			-	>				-		>
		2045 Total	12				5	>				24		>
		Avail.	88	-			-	>				-		>
	Burloak Drive & Park Access	Stor.	<	-	>	<	-	>	<	-	>	145	-	>
		2024 Base				19		>		2	>	7	0	
		Avail.				-		>		-	>	138	-	
		2045 Background				24		>		2	>	7	0	
		Avail.				-		>		-	>	138	-	
		2045 Total				23		>		3	>	8	0	>
		Avail.				-		>		-	>	137	-	>
	Burloak Drive & Mainway	Stor.	-		-				110	-			-	>
		2024 Base	21		19				33	36			29	>
		Avail.	-		-				77	-			-	>
		2045 Background	31		20				44	34			34	>
		Avail.	-		-				66	-			-	>
		2045 Total	24		27				56	40			38	>
		Avail.	-		-				54	-			-	>

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.3: FORECAST QUEUE LENGTHS SUMMARY – SATURDAY PEAK HOUR (2/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Saturday Peak Hour	Sutton Drive & Mainway	Stor.	-	-	-	-	-	-	-	-	-	-	-	-
		2024 Base		0	>	<	2		12		>			
		Avail.		-	>	<	-		-		>			
		2045 Background		0	>	<	2		13		>			
		Avail.		-	>	<	-		-		>			
		2045 Total	<	6	>	<	3	>	<	17	>	<	20	>
		Avail.	<	-	>	<	-	>	<	-	>	<	-	>
	Appleby Line & Mainway	Stor.	85	-	>	90	-	>	95	-	>	65	-	>
		2024 Base	37	34	>	23	45	>	31	61	>	32	98	>
		Avail.	48	-	>	67	-	>	64	-	>	33	-	>
		2045 Background	51	44	>	26	44	>	40	69	>	23	85	>
		Avail.	34	-	>	64	-	>	55	-	>	42	-	>
		2045 Total	69	39	>	29	45	>	39	64	>	23	93	>
		Avail.	16	-	>	61	-	>	56	-	>	42	-	>
	Appleby Line & Corporate Drive	Stor.	<	-	>	<	-	>	50	-	>	120	-	>
		2024 Base	<	31	>	<	59	>	11	55	>	19	62	>
		Avail.	<	-	>	<	-	>	39	-	>	101	-	>
		2045 Background	<	36	>	<	74	>	18	198	>	18	56	>
		Avail.	<	-	>	<	-	>	32	-	>	102	-	>
		2045 Total	<	40	>	<	91	>	18	123	>	18	64	>
		Avail.	<	-	>	<	-	>	32	-	>	102	-	>
	Burloak Drive & N Service Road	Stor.	60		-				140	-			-	>
		2024 Base	9		15				19	31			20	>
		Avail.	51		-				121	-			-	>
		2045 Background	13		18				18	24			14	>
		Avail.	47		-				122	-			-	>
		2045 Total	12		21				20	30			23	>
		Avail.	48		-				120	-			-	>
	Burloak Drive & QEW WB Off-Ramp	Stor.				-		160		-			-	
		2024 Base				281		277		36			23	
		Avail.				-		-117		-			-	
		2045 Background				308		309		55			46	
		Avail.				-		-149		-			-	
		2045 Total				299		300		57			45	
		Avail.				-		-140		-			-	

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

TABLE 6.3: FORECAST QUEUE LENGTHS SUMMARY – SATURDAY PEAK HOUR (3/3)

Analysis Period	Intersection	Horizon	Direction/Movement/Approach Queue Length (m)											
			Eastbound			Westbound			Northbound			Southbound		
			Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Saturday Peak Hour	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	Stor.	-	-	70			-		-	>		-	
		2024 Base	23	33	32			20		30	>	40	46	
		Avail.	-	-	38			-		-	>		-	
		2045 Background	41	48	57			36		67	>	74	75	
		Avail.	-	-	13			-		-	>		-	
		2045 Total	50	51	56			36		71	>	73	76	
		Avail.	-	-	14			-		-	>		-	
	Appleby Line & North Service Road	Stor.	40	-	>	65	-	>	65	-	>	65	-	>
		2024 Base	25	21	>	34	24	>	18	51	>	13	77	>
		Avail.	15	-		31	-	>	47	-	>	52	-	>
		2045 Background	28	27	>	40	31	>	13	57	>	13	58	>
		Avail.	12	-		25	-	>	52	-	>	52	-	>
		2045 Total	29	24	>	36	31	>	16	62	>	19	67	>
		Avail.	11	-		29	-	>	49	-	>	46	-	>
	Appleby Line & QEW WB Off-Ramp	Stor.				210		-		-			-	
		2024 Base				60		43		54			32	
		Avail.				150		-		-			-	
		2045 Background				99		122		102			57	
		Avail.				111		-		-			-	
		2045 Total				103		127		101			61	
		Avail.				107		-		-			-	
	Appleby Line & QEW EB Off-Ramp	Stor.	180		70					-			-	
		2024 Base	67		33					25			60	
		Avail.	113		37					-			-	
		2045 Background	109		91					53			102	
		Avail.	71		-21					-			-	
		2045 Total	109		101					49			108	
		Avail.	71		-31					-			-	
	Appleby Line & Harvester Road	Stor.	115	-	>	120	-	>	50	-	50	80	-	85
		2024 Base	38	27	>	142	293	>	39	94	54	25	65	15
		Avail.	77	-	>	-22	-	>	11	-	-4	55	-	70
		2045 Background	55	37	>	128	248	>	50	88	73	33	69	22
		Avail.	60	-	>	-8	-	>	0	-	-23	47	-	63
		2045 Total	56	38	>	129	241	>	48	89	72	50	125	44
		Avail.	59	-	>	-9	-	>	2	-	-22	30	-	41
	Appleby Line & Fairview Street	Stor.	85	-	50	80	-	-	75	-	55	75	-	100
		2024 Base	70	43	48	36	33	26	66	89	47	45	104	51
		Avail.	15	-	2	44	-	-	9	-	8	30	-	49
		2045 Background	147	131	66	50	40	36	88	359	81	116	563	133
		Avail.	-62	-	-16	30	-	-	-13	-	-26	-41	-	-33
		2045 Total	230	224	69	61	48	35	90	368	76	113	615	129
		Avail.	-145	-	-19	19	-	-	-15	-	-21	-38	-	-29

< / > - Shared with through movement
Stor. - Existing Storage (m)
Avail. - Available Storage (m)

6.2 Left Turn Lanes

The proposed new unsignalized intersections within the study area were assessed to determine if the future traffic volumes warrant the installation of a left-turn lane along the major roadway.

The warrants for left-turn lanes follow the Ministry of Transportation's (MTO) Geometric Design Standards[18] requirements. A 10 km/h design speed over the posted and/or assumed speed limit has been utilized. The percentages of left-turning vehicles in the approaching volume were rounded to the nearest 5 percent, as nomographs are only provided for 5 percent increments. **Table 6.4** summarizes the results of the left-turn lane warrant analyses. **Appendix M** contains the nomographs used for each intersection. The following turn lanes are warranted:

- Sutton Drive at Mainway - Eastbound left-turn lane with 25 m of storage. Widening of Mainway east and west of Sutton Drive would be likely required to develop the turn lane; and
- Site Access A at Mainway - Eastbound left-turn lane with 15 m of storage. Widening of Mainway east and west of Site Access A would be likely required to develop the turn lane.

TABLE 6.4: LEFT-TURN LANE WARRANT SUMMARY

	Quinte Street at Upper Middle Road			Sutton Drive at Mainway			Site Access A at Mainway		
Approach Direction	Westbound			Eastbound			Eastbound		
Design Speed	70 km/h			70 km/h			70 km/h		
Horizon	2045 Total			2045 Total			2045 Total		
Peak Hour	AM	PM	SAT	AM	PM	SAT	AM	PM	SAT
Advancing Volume	876	1938	1337	667	436	181	1059	381	240
Opposing Volumes	1459	1019	849	446	735	391	313	909	358
Left Turning Traffic	0	1	1	106	23	17	61	16	13
% of Left Turning Traffic	0.00%	0.05%	0.07%	15.89%	5.28%	9.39%	5.76%	4.20%	5.42%
Figure Used*	9A-32	9A-32	9A-32	9A-31	9A-31	9A-31	9A-31	9A-31	9A-31
Warranted	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**No**
Storage Length Required	-	-	-	25	15	15	15	15	-

Based on MTO Design Supplement for TAC Geometric Design Guide for Canadian Road - June 2023

[18]MTO Design Supplement for TAC Geometric Design Guide for Canadian Road, 2023

6.3 Intersection Modifications

A sensitivity analysis has been conducted for the 2045 Total horizon to assess the intersection operations with intersection modifications, including adjusting cycle lengths, lane configurations, or traffic control.

As outlined in the City of Burlington IMP[19] and Halton Region TMP[20], Burloak Drive and Upper Middle Road are identified to be widened between QEW and Appleby Line from four to six lanes and convert the curb lanes to HOV/BRT lanes after completion of the road widening. These modifications are also expected to be applied to Appleby Line between Fairview Street and Taywood Drive.

The widenings are expected to be complete by 2031 and have been included in the background and total traffic analysis.

Table 6.5-6.7 summarizes the results of the sensitivity analysis. **Appendix N** contains the detailed Synchro reports.

Signal warrant analyses were conducted on the study area intersections to determine if the projected traffic conditions would warrant improvements to traffic control. The signal warrant is based on the Ontario Traffic Manual (OTM) Justification 7[21]. The signal warrant analysis is provided in **Appendix K.**

Dedicated left-turn lanes are warranted at the various access intersection into the site as outlined in **Section 6.2**. Traffic volumes generally exceed the left-turn warrant bounds.

The recommended dedicated turn lane storage lengths are determined based on the forecasted 95th percentile queue lengths.

6.3.1 Appleby Line at Dundas Street

Under the future Total horizons, critical movements are projected in the westbound left-turn, northbound left-turn, northbound through, and southbound through-lanes throughout the weekday and Saturday peak hours, operating at LOS E-F and queues exceeding storage at the left-turn lanes.

To accommodate projected traffic volumes, the existing traffic control signal cycle times were optimized. This improvement is triggered by the 2035 Background volumes.

[19] City of Burlington, *Integrated Mobility Plan*, September 2023
[20] Halton Region, Appendix E - Transportation Master Plan to 2031, October 2011
[21] Ontario Traffic Manual (OTM) Book 12 – Traffic Signals, July 2011.

The signal warrant analysis indicates traffic control signals are not warranted under the 2045 horizon. Even though the signal criteria have not been met, installing unwarranted traffic control signals would improve operations for vehicles and support pedestrians and cyclists.

Despite applying these mitigation measures, several movements are still projected to exceed capacity with a v/c ratio exceeding 1.00 and operate with LOS F, primarily due to high traffic volumes along Appleby Line and Dundas Street as shown in **Table 6.5** and **Table 6.6**.

6.3.2 Appleby Line at Upper Middle Road

Critical movements are forecast in the eastbound left, eastbound through-right, westbound left, westbound right, westbound through, northbound left, northbound through-right, southbound left, and southbound through-right lanes under the Total horizons during the weekday and Saturday Peak hours. Operations are expected to be in the LOS B-F range with v/c ratios exceeding 0.85 and queues exceeding storage at the left-turn lanes.

To accommodate existing and projected traffic volumes, double westbound left and southbound left-turn lanes are added along with protected westbound and southbound left-turn phases and signal timing optimizations. A high-level functional drawing of the intersection can be found in **Appendix O**.

With the implementation of these mitigation measures, delays are expected to be reduced by up to 91 seconds on the eastbound approach, 66 seconds on the westbound approach, and up to 286 seconds for the southbound left-turn lane during the weekday and Saturday peak hours. Despite these reductions, several of the movements are still projected to exceed capacity with a v/c ratio exceeding 1.00, as well as queues exceeding the available storage at exclusive turn lanes primarily due to high traffic volumes along Appleby Line and Upper Middle Road.

6.3.3 Upper Middle Road at West School Driveway/Private Driveway

During the weekday AM peak hour, the eastbound through-right and northbound through-left lanes are projected to operate at LOS C and E respectively with v/c ratios of 0.85 under the future Total horizons.

To accommodate projected traffic volumes, the existing traffic signal cycle times were optimized. This improvement is triggered by the 2045 Background volumes.

With these mitigation measures, under the 2045 future Total horizon, the northbound through-left lane can see a reduction in delays by 51



seconds, with a v/c ratio less than 0.70 during the weekday AM peak. However, the eastbound through-right lane is still projected to be a critical movement as the v/c ratio exceeds 0.85, primarily due to high traffic volumes along Upper Middle Road.

6.3.4 Upper Middle Road at Quinte Street

Critical movements are anticipated in the northbound and southbound approaches with delays operating at LOS D-F during the weekday and Saturday peak hours under the future Total horizons.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected 2035 Total traffic volumes. Some possible upgrades include implementing the following:

- Signalize the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations);
- Separate eastbound left-turn lane; and
- Separate left-turn lanes for the northbound and southbound approaches with protected-permissive left-turn phases.

With these mitigation measures, a significant reduction in delays in the northbound and southbound movements are noted during the weekday and Saturday peak hours, improving to LOS C or better, with v/c ratios less than 0.30. Critical movement is note in the westbound approach with delays in the LOS D-E range during the weekday and Saturday peak hours with a v/c ratio over 0.95 due to high traffic volumes along Upper Middle Road.

6.3.5 Upper Middle Road at Sutton Drive

Critical movements are projected in the eastbound left, westbound approach, and southbound approach during the weekday and Saturday peak hours under the future Total horizons. Operations are forecast to be in the LOS D-F range with v/c ratios over 0.85 and queues exceeding storage for the left-turn lanes

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected 2035 Total traffic volumes. Some possible upgrades include implementing the following:

- Double southbound left-turn lanes;
- Northbound left-turn lane and protected-permissive phase;
- Westbound left-turn lane and protected-permissive phase; and

- Optimizing the timing of traffic signals.

A high-level functional drawing of the intersection can be found in **Appendix O**. Implementing these mitigation measures are projected to improve the operations of the eastbound, westbound, and northbound movements during the weekday and Saturday peak hours, with a reduction of delays by up to 93 seconds in the eastbound left and 444 seconds in the southbound approach.

Despite this, the eastbound and southbound left-turn lanes are expected to continue to experience queues greater than the available storage. The westbound through-right lane is still expected to operate with a v/c ratio exceeding 0.85 during the weekday PM peak hour, due to high traffic volumes along Upper Middle Road.

6.3.6 Upper Middle Road at Blue Spruce Avenue

Under the future Total horizons, critical movements are projected in the eastbound left-turn and southbound approach, operating at LOS D-F during the weekday and Saturday peak hours.

To accommodate existing and projected traffic volumes, traffic signals can be implemented to the existing stop-controlled intersection.

The signal warrant analysis indicates traffic control signals are not warranted under the 2045 horizon. Even though the signal criteria have not been met, installing unwarranted traffic control signals would improve operations for vehicles and support pedestrians and cyclists. The spacing between the upstream and downstream traffic control signals is 400 m or more.

These adjustments are forecast to improve the operation of the southbound movement during the weekday and Saturday peak hours, operating at LOS B or better with Delays are projected to be less than 20 seconds. Significant improvements are primarily noted in the southbound approach, with delays reduced by 306 seconds during the weekday peak hours. The westbound through-right lane during the weekday PM peak hour is noted to experience a v/c ratio over 0.90, however, it is still expected to operate in the LOS B range with delays less than 15 seconds. In addition to delay reduction, signalization of this intersection provides an opportunity for a controlled crossing for pedestrians and cyclists.

Overall, signalization is recommended to reduce delays for the southbound approach and support active transportation in the study area.

6.3.7 Burloak Drive at Bronte Creek Provincial Park Access

Critical movements are projected in the westbound approach and southbound left-turn lane during the weekday and Saturday peak hours under the future Total horizons, operating in the LOS D-F range. Delays on the westbound approach during the weekday PM peak hour with forecast to be greater than 700 seconds with a v/c ratio over 1.00.

To accommodate existing and projected traffic volumes, traffic signals can be implemented to the existing stop-controlled intersection. The signal warrant analysis indicates traffic control signals are not warranted under the 2045 horizon. The spacing between the upstream and downstream traffic control signals is 400 m or more.

These adjustments are forecast to improve the operation of this intersection, with all movements operating at LOS C or better, with delays less than 30 seconds during the weekday and Saturday peak hours. The westbound approach during the weekday PM peak hour will see the largest reduction in delays, with delays at 28 seconds and v/c ratio of less than 0.45.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

6.3.8 Burloak Drive at Mainway

Under the future Total horizons, critical movements are forecast in the eastbound right-turn and northbound left-turn lanes during the weekday peak hours, operating at LOS F with a v/c ratio over 1.00 and left-turn queues exceeding storage.

Adjustments to the roadway geometry are necessary to increase roadway capacity to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Optimize signal cycle times of the existing traffic signals; and
- Double northbound-left turn lanes with protected phase.

This improvement is triggered by the 2035 Background volumes. A high-level functional drawing of the intersection can be found in **Appendix O**. Implementation of traffic signal adjustments and implementing double northbound left-turn lanes is forecast to improve operations of the eastbound and northbound approaches during the weekday and Saturday peak hours, reducing delays by up to 825 seconds for the northbound left-turn lane. The eastbound right-turn lane is also expected to see a reduction in delays by up to 204 seconds. Despite this, the northbound left-turn lane will still exceed the



available storage by approximately 40 m due to the high traffic volumes along Burloak Drive and Mainway.

It is noted that double northbound left-turn lanes may not be feasible as the intersection may already be at the ultimate cross-section width with the widening of Burloak Drive. In addition, adding lanes may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments.

Alternative measures have been tested including increasing queue storage and signal timing phasing. Increasing queue storage lane alone is not expected to improve operations as it does not equate to additional capacity at the intersection. Alternative signal phasing had limited impact due to high traffic volumes on multiple approaches.

To avoid such area intense mitigation measures, the reduction of future growth and single occupant vehicles is required. An increased modal split will need to be considered to decrease the number of single person vehicle trips, which the site will also support through Transportation Demand Management (TDM) measures to improve active transportation and accessibility.

6.3.9 Mainway at Sutton Drive

Critical movements are forecast in the northbound and southbound approach during the weekday peak hours under the future Total horizons, operating at LOS F. Delays are expected to exceed 700 seconds with v/c ratios 0.90.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected 2035 Total traffic volumes. Some possible upgrades include implementing the following:

- Signalizing the intersection (OTM Warrants Satisfied); and
- Eastbound left-turn lane with a protected-permissive phase.

Reconfiguring the lane layout and signalizing the intersection is projected to improve the operations of the intersection. During the weekday and Saturday peak hours, all movements are expected to operate with LOS B or better with v/c ratios less than 0.85, with the exception being the southbound approach during the weekday PM peak hour operating at LOS D with a v/c ratio over 0.85. However, this mitigation measure is still expected to provide a substantial improvement, as the southbound approach improves from excessive delays and a v/c ratio exceeding 3.00 to below capacity.



6.3.10 Mainway at Norjohn Court/Lampman Avenue

Critical movements are forecast in the northbound and southbound approach during the weekday peak hours under the future Total horizons, operating at LOS E-F.

To accommodate existing and projected traffic volumes, traffic signals can be implemented to the existing stop-controlled intersection. Note that additional turn lanes with unsignalized intersection were tested but were not found to reduce the delays. As the delays stem from the high volume of eastbound/westbound traffic, northbound and southbound movements require controlled gaps to complete manoeuvres.

The signal warrant analysis indicates traffic control signals are not warranted under the 2045 horizon. Even though the signal criteria have not been met, installing unwarranted traffic control signals would improve operations for vehicles and support pedestrians and cyclists. The spacing between the upstream and downstream traffic control signals is 415 m or more.

Adjusting the signal timings is anticipated to improve operations for all movements, primarily in the northbound and southbound approaches by reducing delays by up to 449 seconds during the weekday peak hours.

6.3.11 Appleby Line at Mainway

Under the future Total conditions, critical movement is expected in the eastbound left, eastbound through-right, westbound left, westbound through-right, northbound left, northbound through-right, southbound left, and southbound through-right lanes, operating at LOS B-F with v/c ratios greater than 0.85 and left-turn queues exceeding the available storage.

To accommodate existing and projected traffic volumes, the existing traffic signal cycle times were optimized.

Optimized signal timings are anticipated to improve operations for all movements by reducing delays by up to 72 seconds in the eastbound left-turn lane, 81 seconds in the westbound left-turn lane, 188 seconds in the northbound left-turn lane, and 36 seconds in the southbound left-turn lane during the weekday peak hours. Although, critical movements are still expected in the eastbound left, westbound through-right, northbound left, northbound through-right, and southbound through-right movements due to high traffic volumes along Appleby Line, the proposed measures are anticipated to reduce delays primarily in the weekday PM peak hour.



Additional measures have been tested, including increasing queue storage. It is noted that increasing queue storage lane alone is not expected to improve operations as it does not equate to additional capacity at the intersection and does not change the forecast delay.

Increasing road capacity by adding travel lanes may not be feasible as the intersection may already be at the ultimate cross-section width with the widening of Appleby Line. In addition, adding lanes may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments.

6.3.12 Appleby Line at Corporate Drive

Under the future Total conditions, critical movement is expected in the westbound approach and northbound through-right lanes, operating at LOS B-F with v/c ratios greater than 0.85 during the weekday and Saturday peak hours.

To accommodate projected 2035 Total traffic volumes, the existing traffic signal cycle times were optimized.

Optimizing signal timings are anticipated to improve operations for all movements, primarily in the westbound approach by reducing delays by up to 40 seconds. Despite these reductions, critical movements are still noted in the westbound and northbound through-right movements during the weekday PM peak hour due to high traffic volumes along Appleby Line.

6.3.13 Burloak Drive at North Service Road

Critical movements are expected in the eastbound right, northbound left, and northbound through lanes under the future Total horizons during the weekday peak hours. Operations are primarily in the LOS F range, with the exception of the northbound through lane, operating at LOS B with v/c ratios greater than 0.85 during the weekday PM peak hour under the Total 2045 horizon.

To accommodate projected 2035 Background traffic volumes, double northbound left-turn lanes can be implemented along Burloak Drive. A high-level functional drawing of the intersection can be found in **Appendix O**.

Adjusting the lane configuration and signal timings are anticipated to improve operations for the northbound left-turn lane during the weekday AM peak hour by reducing delays by up to 164 seconds. During the weekday PM peak hour, delays in the eastbound right-turn lane are expected to improve by up to 153 seconds. However, critical



movements are still projected at the intersection due to high traffic volumes along Burloak Drive.

6.3.14 Burloak Drive at QEW Westbound Off-Ramp

Critical movements are expected in the westbound left, westbound right, northbound through, and southbound through lanes during the weekday and Saturday peak hours during the existing, Background, and Total horizons. Operations range from LOS C-F with v/c ratios greater than 0.90 and right-turn queues exceeding the available storage.

Adjustments to the roadway geometry and traffic control are necessary to accommodate existing and projected traffic volumes. Some possible upgrades include implementing the following:

- Separating the existing westbound left-right turn lane to double left and right turn lanes; and
- Optimizing the timing of traffic signals

Implementing these measures are forecast to reduce delays by up to 605 seconds in the westbound approach during the weekday and Saturday peak hours. Despite the delay reductions, capacity issues are still expected. The movements still exceeding capacity includes the westbound approach, northbound, and southbound approaches due to the high traffic volumes along Burloak Drive and QEW off-ramp during the future horizon.

Although westbound queuing is forecast to extend beyond the available storage, queues are not expected to impact QEW mainline highway operations with mitigation measures.

6.3.15 Burloak Drive at QEW Eastbound Off-Ramp/Red Oak Boulevard

Critical movements are projected in the eastbound left and southbound through lanes during the weekday and Saturday peak hours under the Total horizons, operating at LOS E-F with v/c ratios over 0.80.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected 2035 Background traffic volumes. Some possible upgrades include implementing the following:

- Converting the eastbound through lane to a through-left lane; and
- Optimize the timing of traffic signals.



The adjustments to the lane configuration and signal timings are projected to improve operations during the weekday and Saturday peak hours. The southbound approach is expected to operate with delays reduced by up to 37 seconds. Despite these reductions, critical movements are still anticipated due to high traffic volumes along Burloak Drive.

6.3.16 Appleby Line at North Service Road

Critical movements are projected in the eastbound left, westbound left, westbound through-right, northbound left, and northbound through-right lanes during the weekday PM peak hour, under the Total horizons. Operations range between LOS B-F with v/c ratios exceeding 0.85 and left-turn queues exceeding the available storage.

To accommodate existing and projected traffic volumes, the existing traffic signal cycle times were optimized.

Optimized signal timings are anticipated to improve operations by reducing delays for the eastbound left-turn lane by 34 seconds, 8 seconds for the westbound through-right, and 21 seconds for the northbound left-turn lane during the weekday PM peak hour. However, critical movements are still projected at the intersection with queues exceeding the available storage, due to high traffic volumes along Appleby Line. The movements still exceeding capacity includes the eastbound left, westbound approach, northbound approach, and southbound through-right lanes.

6.3.17 Appleby Line at QEW Westbound Off-Ramp

Critical movements are projected in the westbound left, westbound right, northbound through, and southbound through lanes during the weekday and Saturday peak hours under the future Background and Total conditions. The westbound approach operates at LOS F with v/c ratios over 1.00 and left-turn queues exceeding storage during the weekday PM peak hour. The northbound and southbound approaches operate at LOS A-D with v/c ratios greater than 0.85.

Adjustments to the roadway geometry and traffic control are necessary to accommodate existing projected traffic volumes. Some possible upgrades include implementing the following:

- Double westbound right-turn lanes; and
- Optimize the timing of traffic signals.

Implementing these measures are forecast to reduce delays by up to 158 seconds in the westbound left and 850 seconds in the westbound

right-turn lane during the weekday and Saturday peak hours and by 22 seconds in the northbound approach during the weekday AM peak hour. Despite the significant delay reductions in the westbound approach, capacity issues are still expected. The movements still exceeding capacity includes the westbound left-turn, westbound right-turn, northbound, and southbound approaches due to the high traffic volumes at Appleby Line at QEW Westbound Off-ramp. With the mitigation measures, queuing on the QEW westbound off-ramp is not expected to impact the QEW mainline operations.

6.3.18 Appleby Line at QEW Eastbound Off-Ramp

Under future Total conditions, critical movements are projected for the eastbound left, eastbound right, northbound through, and southbound through lanes during the weekday and Saturday peak hours. The eastbound approach operates at LOS C-E with v/c ratios over 0.60 and right-turn queues exceeding storage. The northbound and southbound approaches operate at LOS C with v/c ratios greater than 0.95 during the weekday AM peak, and at LOS F with a v/c ratio over 1.00 during the weekday PM peak hour.

To accommodate existing and projected traffic volumes, the existing traffic signal cycle times were optimized.

Implementing these measures are forecast to reduce delays by up to 18 seconds in the eastbound approach during the weekday and Saturday peak hours. During the PM peak hour, delays are reduced by up to 44 seconds in the southbound approach. However, these movements are still projected to operate as critical movements due to high traffic volumes at the intersection.

Although queuing is forecast to extend beyond the available storage, queues are not expected to impact QEW mainline highway operations.

6.3.19 Appleby Line at Harvester Road

Critical movements are projected in the eastbound left, eastbound through-right, westbound left, westbound through-right, northbound through, southbound left, and southbound through lanes during the weekday and Saturday peak hours under the Total horizons. Operations range from LOS C-F with v/c ratios greater than 0.85 and left-turn queues exceeding the available storage.

Adjustments to the roadway geometry and traffic control are necessary to accommodate existing and projected traffic volumes. Some possible upgrades include implementing the following:

- Double southbound left-turn lanes with a protected phase; and

- Optimize the timing of traffic signals.

A high-level functional drawing of the intersection can be found in **Appendix O**. Implementing these measures are forecast to reduce delays by up to 43 seconds in the eastbound approach, and 146 seconds in the westbound approach during the weekday PM peak hour. The southbound left-turn lane can also see a reduced delay of 61 seconds during the weekday AM peak hour. However, the eastbound left, westbound approach, northbound through, northbound right, southbound left and southbound through lanes are still projected to operate as critical movements due to high traffic volumes at the intersection.

6.3.20 Appleby Line at Fairview Street

Critical movements are projected in the eastbound left, eastbound right, northbound left, northbound through, southbound left, southbound through, and southbound right-turn lanes during the weekday and Saturday peak hours under the Total horizons. Operations range from LOS D-F with v/c ratios greater than 0.90 for through lanes, as well as the left and right-turn queues exceeding the available storage.

To accommodate existing and projected traffic volumes, the existing traffic signal cycle times were optimized.

Despite applying these mitigation measures, several movements are still projected to exceed capacity with a v/c ratio exceeding 1.00, as well as queues exceeding the available storage at exclusive turn lanes primarily due to high traffic volumes along Appleby Line and Fairview Street.

TABLE 6.5: SENSITIVITY ANALYSIS – AM PEAK HOUR MITIGATION 1 (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Dundas Street	TCS	LOS	E	E	E	E	F	D	C	E	F	D	D	D	F	D	C	E	E
			Delay	62	70	57	66	116	38	33	65	96	38	39	50	138	41	34	60	61
			V/C	0.65	0.99	0.83		1.05	0.46	0.10		0.92	0.41	0.41		1.08	0.60	0.12		0.86
			Q	50	188	158		113	74	17		65	66	60		80	99	18		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	55	-	22		77	-	198		70	-	60		55	-	162		
	Appleby Line & Upper Middle Road	TCS	LOS	C	F	>	F	F	C	C	E	F	D	>	E	F	E	>	E	E
			Delay	25	92	>	83	124	32	33	58	131	51	>	64	103	64	>	72	70
			V/C	0.46	1.08	>		1.04	0.25	0.27		1.04	0.89	>		1.03	1.01	>		1.08
			Q	50	223	>		72	38	32		61	139	>		104	214	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	5	-	>		53	-	48		39	-	>		-49	-	>		
	West School Driveway/Private Driveway & Upper Middle Road	TCS	LOS	B	D	>	D	B	B	>	B	<	C	C	C	<	C	>	C	C
			Delay	15	43	>	42	19	13	>	13	<	33	22	29	<	21	>	21	32
			V/C	0.04	0.99	>		0.33	0.38	>		<	0.64	0.09		<	0.02	>		0.81
			Q	3	125	>		9	39	>		<	57	8		<	0	>		
			Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
			Avail.	27	-	>		71	-	>		<	-	-		<	-	>		
	Quinte Street & Upper Middle Road	TCS	LOS	C	C	>	C	<	E	>	E	B	B	>	B	B	B	>	B	C
			Delay	22	22	>	22	<	58	>	58	11	10	>	11	17	17	>	17	33
			V/C	0.69	0.82	>		<	1.01	>		0.08	0.00	>		0.26	0.22	>		0.60
			Q	27	67	>		<	58	>		6	0	>		25	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	33	-	>		<	-	>		24	-	>		20	-	>		
	Sutton Drive & Upper Middle Road	TCS	LOS	B	B	>	B	B	C	>	C	D	D	>	D	D	C	>	C	C
			Delay	15	18	>	18	17	22	>	22	38	41	>	38	36	32	>	34	24
			V/C	0.62	0.56	>		0.02	0.57	>		0.32	0.03	>		0.76	0.50	>		0.70
			Q	64	87	>		1	38	>		13	4	>		109	37	>		
			Stor.	60	-	>		60	-	>		30	-	>		60	-	>		
			Avail.	-4	-	>		59	-	>		17	-	>		-49	-	>		
	Upper Middle Road & Blue Spruce Avenue	TCS	LOS	A	B		B		A	>	A					B		>	B	B
			Delay	8	16		16		9	>	9					11		>	11	14
			V/C	0.11	0.82				0.31	>						0.40		>		0.61
			Q	6	114				18	>						30		>		
			Stor.	100	-				-	>						-		>		
			Avail.	94	-				-	>						-		>		
	Burloak Drive & Park Access	TCS	LOS					C		>	C		A	>	A	A	A		A	A
			Delay					24		>	24		2	>	2	2	2		2	2
			V/C					0.30		>			0.18	>		0.05	0.47			0.46
			Q					6		>			10	>		1	24			
			Stor.					-		>			-	>		145	-			
			Avail.					-		>			-	>		144	-			
	Burloak Drive & Mainway	TCS	LOS	C		E	D					D	A		C		D	>	D	D
			Delay	32		55	53					42	7		24		51	>	51	42
			V/C	0.19		0.85						0.80	0.20				0.99	>		0.90
			Q	22		90						103	23				194	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						7	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	B	B	>	B	<	B	>	B	<	B	>	B	<	B	>	B	B
			Delay	11	11	>	11	<	14	>	14	<	14	>	14	<	16	>	16	13
			V/C	0.29	0.34	>		<	0.39	>		<	0.21	>		<	0.36	>		0.39
			Q	18	37	>		<	26	>		<	18	>		<	27	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	7	-	>		<	-	>		<	-	>		<	-	>		
	Norjohn Court/Lampman Avenue & Mainway	TCS	LOS	<	A	>	A	<	A	>	A	<	B	>	B	<	C	>	C	A
			Delay	<	8	>	8	<	6	>	6	<	17	>	17	<	22	>	22	9
			V/C	<	0.59	>		<	0.15	>		<	0.02	>		<	0.59	>		0.59
			Q	<	62	>		<	15	>		<	4	>		<	27	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.5: SENSITIVITY ANALYSIS – AM PEAK HOUR MITIGATION 1 (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Mainway	TCS	LOS	C	D	>	D	C	C	>	C	D	D	>	D	C	D	>	D	D
			Delay	29	43	>	40	27	30	>	29	53	40	>	41	22	50	>	47	43
			V/C	0.55	0.82	>		0.41	0.18	>		0.72	0.71	>		0.67	0.99	>		0.87
			Q	51	94	>		17	21	>		40	123	>		31	206	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	34	-	>		73	-	>		55	-	>		34	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	D	>	D	D	B	>	C	B	B	>	B	C
			Delay	<	22	>	22	<	42	>	42	44	20	>	20	12	16	>	16	20
			V/C	<	0.18	>		<	0.84	>		0.55	0.60	>		0.39	0.75	>		0.83
			Q	<	17	>		<	80	>		28	89	>		16	136	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		22	-	>		104	-	>		
	Burloak Drive & N Service Road	TCS	LOS	D		D	D					C	A		B		C	>	C	C
			Delay	43		42	42					34	4		15		34	>	34	26
			V/C	0.20		0.12						0.62	0.25				0.78	>		0.66
			Q	16		22						70	26				126	>		
			Stor.	60		-						140	-				-	>		
			Avail.	44		-						70	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					F		F	F		C		C		F		F	F
			Delay					87		156	121		27		27		123		123	108
			V/C					1.07		1.24			0.45				1.17			1.20
			Q					334		388			96				416			
			Stor.					-		160			-				-			
			Avail.					-		-228			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	D	D	D	D			D	D		B	>	B		E		E	E
			Delay	52	41	38	43			47	47		16	>	16		76		76	55
			V/C	0.75	0.52	0.24				0.07			0.41	>			1.10			0.91
			Q	83	48	30				17			75	>			324			
			Stor.	-	-	70			-	-			-	>			-			
			Avail.	-	-	40				-			-	>			-			
	Appleby Line & North Service Road	TCS	LOS	D	D	>	D	C	C	>	C	C	C	>	C	C	D	>	D	C
			Delay	40	49	>	47	33	30	>	32	29	26	>	26	25	44	>	43	35
			V/C	0.30	0.68	>		0.46	0.07	>		0.67	0.83	>		0.53	0.82	>		0.78
			Q	24	58	>		30	12	>		46	211	>		25	177	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	16	-	>		35	-	>		19	-	>		40	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					C		E	D		C		C		B		B	C
			Delay					32		64	49		26		26		16		16	28
			V/C					0.73		1.00			0.95				0.78			0.97
			Q					80		125			222				132			
			Stor.					210		-			-				-			
			Avail.					130		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	D		C	D						C		C		C		C	C
			Delay	47		22	38						26		26		26		26	29
			V/C	0.98		0.68							0.94				0.94			0.96
			Q	121		61							153				153			
			Stor.	180		70							-				-			
			Avail.	59		9							-				-			
	Appleby Line & Harvester Road	TCS	LOS	D	D	>	D	C	C	>	C	C	D	C	D	D	C	B	C	C
			Delay	43	40	>	41	29	32	>	32	20	38	31	36	48	21	19	28	34
			V/C	0.77	0.77	>		0.52	0.38	>		0.29	0.87	0.49		0.79	0.39	0.21		0.81
			Q	49	76	>		26	32	>		19	120	61		92	62	20		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	66	-	>		94	-	>		31	-	-11		-12	-	65		
	Appleby Line & Fairview Street	TCS	LOS	E	D	D	D	D	D	D	D	D	F	C	F	F	D	C	D	E
			Delay	62	36	35	51	46	53	53	51	47	110	28	94	92	39	28	46	64
			V/C	0.93	0.41	0.32		0.55	0.48	0.48		0.82	1.13	0.12		1.00	0.78	0.12		0.98
			Q	128	60	37		33	38	41		118	256	17		151	131	16		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	-43	-	13		47	-	-		-43	-	38		-76	-	84		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.6: SENSITIVITY ANALYSIS – PM PEAK HOUR MITIGATION 1 (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Dundas Street	TCS	LOS	F	D	D	E	F	E	C	F	F	D	D	F	E	D	D	D	E
			Delay	126	47	43	58	169	73	34	89	168	53	53	82	76	47	44	54	74
			V/C	0.99	0.61	0.36		1.19	1.01	0.20		1.19	0.82	0.68		0.84	0.61	0.38		1.03
			Q	62	98	50		146	241	21		147	147	118		84	103	60		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	43	-	130		44	-	194		-12	-	2		51	-	120		
	Appleby Line & Upper Middle Road	TCS	LOS	F	D	>	E	E	D	F	E	E	D	>	D	F	D	>	D	E
			Delay	120	42	>	60	61	42	124	72	60	49	>	51	126	37	>	55	58
			V/C	1.08	0.73	>		0.69	0.73	1.11		0.84	0.98	>		1.08	0.76	>		1.05
			Q	92	92	>		35	92	188		75	208	>		74	116	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	-37	-	>		90	-	-108		25	-	>		-19	-	>		
	West School Driveway/Private Driveway & Upper Middle Road	TCS	LOS	A	B	>	B	A	B	>	B	<	B	B	B	<	B	>	B	B
			Delay	9	11	>	11	0	16	>	16	<	15	14	15	<	14	>	14	14
			V/C	0.03	0.39	>		0.00	0.75	>		<	0.15	0.01		<	0.00	>		0.54
			Q	2	38	>		0	93	>		<	16	0		<	0	>		
			Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
			Avail.	28	-	>		80	-	>		<	-	-		<	-	>		
	Quinte Street & Upper Middle Road	TCS	LOS	D	B	>	B	<	D	>	D	B	B	>	B	C	C	>	C	C
			Delay	42	11	>	16	<	36	>	36	20	19	>	20	24	24	>	24	29
			V/C	0.84	0.30	>		<	0.96	>		0.04	0.00	>		0.14	0.08	>		0.65
			Q	52	32	>		<	141	>		6	0	>		19	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	8	-	>		<	-	>		24	-	>		26	-	>		
	Upper Middle Road & Sutton Drive	TCS	LOS	F	B	>	C	B	F	>	F	E	D	>	E	C	C	>	C	E
			Delay	81	16	>	33	18	99	>	98	56	51	>	56	30	29	>	30	74
			V/C	0.96	0.25	>		0.02	1.13	>		0.55	0.06	>		0.25	0.15	>		0.79
			Q	87	37	>		3	243	>		22	6	>		57	21	>		
			Stor.	60	-	>		60	-	>		55	-	>		60	-	>		
			Avail.	-27	-	>		57	-	>		33	-	>		3	-	>		
	Upper Middle Road & Blue Spruce Avenue	TCS	LOS	B	A		A		B	>	B					B		>	B	B
			Delay	16	7		8		14	>	14					16		>	16	13
			V/C	0.37	0.27				0.92	>						0.23		>		0.67
			Q	12	22				139	>						22		>		
			Stor.	100	-				-	>						-		>		
			Avail.	88	-				-	>						-		>		
	Burloak Drive & Park Access	TCS	LOS					C		>	C		A	>	A	A	A		A	A
			Delay					28		>	28		4	>	4	9	1		1	4
			V/C					0.44		>			0.64	>		0.34	0.19			0.62
			Q					17		>			69	>		13	2			
			Stor.					-		>			-	>		145	-			
			Avail.					-		>			-	>		132	-			
	Burloak Drive & Mainway	TCS	LOS	C		D	D					D	B		C		C	>	C	C
			Delay	35		51	48					38	14		20		33	>	33	28
			V/C	0.50		0.83						0.83	0.73				0.58	>		0.82
			Q	52		93						150	167				67	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						-40	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	A	A	>	A	<	B	>	B	<	C	>	C	<	D	>	D	C
			Delay	8	8	>	8	<	18	>	18	<	34	>	34	<	37	>	37	22
			V/C	0.13	0.29	>		<	0.69	>		<	0.82	>		<	0.86	>		0.76
			Q	3	18	>		<	61	>		<	68	>		<	80	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	22	-	>		<	-	>		<	-	>		<	-	>		
	Norjohn Court/Lampman Avenue & Mainway	TCS	LOS	<	A	>	A	<	B	>	B	<	B	>	B	<	B	>	B	B
			Delay	<	8	>	8	<	14	>	14	<	18	>	18	<	17	>	17	13
			V/C	<	0.35	>		<	0.83	>		<	0.26	>		<	0.24	>		0.63
			Q	<	20	>		<	73	>		<	18	>		<	17	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.6: SENSITIVITY ANALYSIS – PM PEAK HOUR MITIGATION 1 (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Mainway	TCS	LOS	F	D	>	F	E	F	>	F	F	D	>	E	E	E	>	E	E
			Delay	189	41	>	94	65	118	>	108	162	46	>	66	73	67	>	68	79
			V/C	1.25	0.34	>		0.72	1.13	>		1.19	0.95	>		0.69	0.99	>		1.21
			Q	121	47	>		53	239	>		181	177	>		32	190	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	-36	-	>		37	-	>		-86	-	>		33	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	D	>	D	B	C	>	C	C	B	>	B	C
			Delay	<	33	>	33	<	55	>	55	20	32	>	31	28	10	>	12	26
			V/C	<	0.31	>		<	0.85	>		0.32	0.94	>		0.64	0.44	>		0.88
			Q	<	29	>		<	88	>		20	244	>		40	75	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		30	-	>		80	-	>		
	Burloak Drive & N Service Road	TCS	LOS	C		D	D					D	C		C		C	>	C	C
			Delay	24		50	44					47	27		28		25	>	25	30
			V/C	0.32		0.91						0.68	0.93				0.69	>		0.99
			Q	41		139						36	204				95	>		
			Stor.	60		-						140	-				-	>		
			Avail.	19		-						104	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					F		F	F		E		E		F		F	F
			Delay					260		390	324		55		55		287		287	271
			V/C					1.50		1.79			0.91				1.52			1.69
			Q					694		806			200				460			
			Stor.					-		160			-				-			
			Avail.					-		-646			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	E	E	D	E			E	E		B	>	B		F		F	F
			Delay	70	56	55	59			71	71		16	>	16		227		227	159
			V/C	0.75	0.47	0.38				0.61			0.41	>			1.43			1.22
			Q	91	49	48				53			100	>			681			
			Stor.	-	-	70				-			-	>			-			
			Avail.	-	-	22				-			-	>			-			
	Appleby Line & North Service Road	TCS	LOS	F	D	>	E	F	E	>	F	E	C	>	C	D	E	>	E	E
			Delay	132	54	>	73	167	62	>	105	61	31	>	35	44	66	>	65	56
			V/C	0.92	0.50	>		1.21	0.88	>		0.89	0.86	>		0.48	0.85	>		1.04
			Q	44	54	>		131	151	>		160	284	>		17	160	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	-4	-	>		-66	-	>		-95	-	>		48	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					D		F	F		F		F		F		F	F
			Delay					48		141	96		120		120		96		96	104
			V/C					0.92		1.20			1.17				1.11			1.18
			Q					252		375			413				380			
			Stor.					210		-			-				-			
			Avail.					-42		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	E		E	E						B		B		D		D	D
			Delay	70		66	68						12		12		37		37	36
			V/C	1.01		0.98							0.67				1.02			1.02
			Q	119		108							100				265			
			Stor.	180		70							-				-			
			Avail.	61		-38							-				-			
	Appleby Line & Harvester Road	TCS	LOS	F	D	>	E	F	F	>	F	E	D	C	D	E	E	C	E	E
			Delay	129	42	>	79	82	89	>	87	58	40	34	41	70	60	33	57	64
			V/C	1.13	0.50	>		1.05	1.05	>		0.79	0.65	0.21		0.76	0.98	0.33		1.04
			Q	164	67	>		176	199	>		49	106	31		48	206	45		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	-49	-	>		-56	-	>		1	-	19		32	-	40		
	Appleby Line & Fairview Street	TCS	LOS	F	D	F	F	E	E	D	E	F	C	C	F	C	D	F	F	F
			Delay	210	46	94	143	58	62	50	57	242	33	26	83	24	37	318	150	125
			V/C	1.29	0.29	0.97		0.78	0.70	0.15		1.38	0.51	0.10		0.62	0.73	1.60		1.40
			Q	158	56	188		100	110	25		171	118	13		53	172	552		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	-73	-	-138		-20	-	-		-96	-	42		22	-	-452		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.7: SENSITIVITY ANALYSIS – SATURDAY PEAK HOUR MITIGATION 1 (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Dundas Street	TCS	LOS	E	E	D	E	F	D	D	E	E	D	D	D	E	D	D	D	E
			Delay	68	57	54	58	132	54	45	77	60	41	41	47	62	46	40	49	58
			V/C	0.66	0.75	0.56		1.09	0.73	0.15		0.75	0.50	0.39		0.74	0.59	0.20		0.75
			Q	53	94	72		124	101	22		119	89	61		99	100	28		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	52	-	108		66	-	193		16	-	59		36	-	152		
	Appleby Line & Upper Middle Road	TCS	LOS	E	C	>	D	E	C	D	D	D	D	>	D	D	D	>	D	D
			Delay	69	34	>	44	75	30	49	45	50	44	>	45	50	38	>	40	43
			V/C	0.95	0.68	>		0.90	0.47	0.84		0.78	0.95	>		0.79	0.89	>		0.94
			Q	72	65	>		46	45	107		61	149	>		65	130	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	-17	-	>		79	-	-27		39	-	>		-10	-	>		
	Quinte Street & Upper Middle Road	TCS	LOS	C	B	>	B	<	D	>	D	B	B	>	B	B	B	>	B	C
			Delay	24	13	>	15	<	43	>	43	12	11	>	12	16	16	>	16	31
			V/C	0.69	0.36	>		<	0.98	>		0.05	0.00	>		0.14	0.08	>		0.54
			Q	23	29	>		<	98	>		6	0	>		16	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	37	-	>		<	-	>		24	-	>		29	-	>		
	Sutton Drive & Upper Middle Road	TCS	LOS	B	B	>	B	B	B	>	B	D	D	>	D	C	C	>	C	B
			Delay	12	10	>	11	12	18	>	18	40	43	>	40	28	34	>	31	19
			V/C	0.54	0.20	>		0.02	0.59	>		0.27	0.05	>		0.30	0.13	>		0.52
			Q	24	29	>		2	89	>		13	5	>		25	19	>		
			Stor.	60	-	>		60	-	>		55	-	>		60	-	>		
			Avail.	36	-	>		58	-	>		42	-	>		35	-	>		
	Upper Middle Road & Blue Spruce Avenue	TCS	LOS	B	A		A		A	>	A					B		>	B	A
			Delay	13	8		8		10	>	10					14		>	14	10
			V/C	0.29	0.27				0.54	>						0.15		>		0.39
			Q	9	20				44	>						14		>		
			Stor.	100	-				-	>						-		>		
			Avail.	91	-				-	>						-		>		
	Burloak Drive & Park Access	TCS	LOS					B		>	B		A	>	A	A	A		A	A
			Delay					20		>	20		3	>	3	3	3		3	4
			V/C					0.46		>			0.41	>		0.08	0.22			0.42
			Q					16		>			14	>		3	15			
			Stor.					-		>			-	>		145	-			
			Avail.					-		>			-	>		142	-			
	Burloak Drive & Mainway	TCS	LOS	D		D	D					D	A		B		C	>	C	B
			Delay	39		36	37					40	4		14		21	>	21	19
			V/C	0.42		0.16						0.55	0.35				0.36	>		0.44
			Q	28		21						65	35				36	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						45	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	A	A	>	A	<	B	>	B	<	B	>	B	<	B	>	B	B
			Delay	7	7	>	7	<	11	>	11	<	13	>	13	<	16	>	16	11
			V/C	0.04	0.09	>		<	0.27	>		<	0.12	>		<	0.31	>		0.29
			Q	3	8	>		<	24	>		<	12	>		<	24	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	22	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.7: SENSITIVITY ANALYSIS – SATURDAY PEAK HOUR MITIGATION 1 (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Mainway	TCS	LOS	D	C	>	D	D	D	>	D	C	C	>	C	D	C	>	C	C
			Delay	40	35	>	37	45	39	>	41	34	27	>	28	43	26	>	27	30
			V/C	0.71	0.24	>		0.50	0.58	>		0.64	0.64	>		0.32	0.78	>		0.75
			Q	44	20	>		18	41	>		61	119	>		14	146	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	41	-	>		72	-	>		34	-	>		51	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	D	>	D	C	C	>	C	B	B	>	B	B
			Delay	<	24	>	24	<	37	>	37	25	23	>	23	15	12	>	12	20
			V/C	<	0.27	>		<	0.77	>		0.36	0.82	>		0.44	0.59	>		0.80
			Q	<	23	>		<	65	>		18	169	>		16	101	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		32	-	>		104	-	>		
	Burloak Drive & N Service Road	TCS	LOS	D		D	D					D	A		A		A	>	A	A
			Delay	39		39	39					37	4		7		9	>	9	9
			V/C	0.11		0.06						0.40	0.37				0.29	>		0.37
			Q	8		15						26	38				42	>		
			Stor.	60		-						140	-				-	>		
			Avail.	52		-						114	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					D		C	D		D		D		E		E	D
			Delay					49		25	39		45		45		73		73	47
			V/C					1.03		0.90			0.76				1.01			1.02
			Q					353		229			102				160			
			Stor.					-		160			-				-			
			Avail.					-		-69			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	E	E	E	E			E	E		B	>	B		E		E	D
			Delay	68	68	57	66			78	78		17	>	17		57		57	52
			V/C	0.66	0.74	0.11				0.79			0.31	>			1.03			0.94
			Q	74	72	23				86			82	>			439			
			Stor.	-	-	70			-	-			-	>			-			
			Avail.	-	-	47				-			-	>			-			
	Appleby Line & North Service Road	TCS	LOS	D	D	>	D	C	C	>	C	A	B	>	B	C	C	>	C	C
			Delay	44	40	>	42	34	32	>	33	9	14	>	13	21	27	>	27	22
			V/C	0.50	0.15	>		0.45	0.16	>		0.27	0.60	>		0.27	0.61	>		0.58
			Q	22	15	>		29	19	>		7	116	>		0	156	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	18	-	>		36	-	>		58	-	>		65	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					C		C	C		B		B		B		B	B
			Delay					28		25	26		14		14		12		12	16
			V/C					0.82		0.73			0.84				0.76			0.83
			Q					63		47			100				83			
			Stor.					210		-			-				-			
			Avail.					147		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	C		B	C						B		B		B		B	B
			Delay	23		19	22						14		14		14		14	16
			V/C	0.81		0.64							0.78				0.80			0.80
			Q	60		41							77				80			
			Stor.	180		70							-				-			
			Avail.	120		29							-				-			
	Appleby Line & Harvester Road	TCS	LOS	D	C	>	D	F	D	>	F	B	C	B	C	D	B	B	C	E
			Delay	45	34	>	39	309	42	>	175	14	24	19	23	44	20	16	22	62
			V/C	0.76	0.17	>		1.58	0.74	>		0.30	0.62	0.25		0.45	0.47	0.08		0.95
			Q	38	16	>		218	64	>		17	110	31		24	81	12		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	77	-	>		-98	-	>		33	-	19		56	-	73		
	Appleby Line & Fairview Street	TCS	LOS	E	D	D	E	D	D	D	D	D	C	B	C	C	C	C	C	D
			Delay	63	45	55	58	43	46	44	44	40	27	15	29	28	35	25	32	37
			V/C	0.92	0.41	0.69		0.59	0.41	0.19		0.78	0.80	0.09		0.67	0.81	0.30		0.85
			Q	64	38	60		47	38	22		124	240	14		46	177	24		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	21	-	-10		33	-	-		-49	-	41		29	-	76		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement
** - V/C ratio less than 0.01*

6.4 Modal Shift Reduction Modification

Sustainability is a principle that cuts across all developments as it is ingrained in developing a balanced multi-modal transportation system and is supported by the City of Burlington. The City is committed to building and maintaining a community that meets today's needs while providing a high quality of life.

The traffic growth rates on the surrounding road network are forecast to be between 1-4%, compounded annually, as confirmed during pre-consultation comments with the City, Region, and MTO. By the 10-year after build-out horizon, the growth rates result in existing traffic increasing by up to 106% without the proposed development.

This growth assumes the auto-centric travel patterns of today continue into the future and does not account for mode share targets.

The Region and City have identified modal split targets within the Transportation Master Plan[22] and Integrated Mobility Plan[23], respectively.

The Region has identified transit mode share targets to be reached over the next several years, with transit mode share seeking a target of 20% of all trips.

The City of Burlington has outlined a mode-share-driven approach rather than a corridor-capacity approach for addressing future travel demand. The City of Burlington IMP identifies the existing mode share for the study area as 91% auto, 3% transit, 1% bicycle, and 6% walking.

The subject site location is designated as a “Business Park zone”, which the City proposes a 2051 target mode share of 75% auto, 13% transit, 5% bicycle, and 7% walking for an overall 16% mode shift away from auto modes.

However, if the subject site is considered a “Residential” zone like the Orchard subdivision north of Upper Middle Road, the proposed 2051 target mode share is 72% auto, 15% transit, 5% bicycle, and 8% walking for an overall 19% mode shift away from auto modes.

The Appleby GO MTSA, located less than 5 km from the subject site, has proposed mode share targets of 55% auto, 23% transit, 9% bicycle, and 13% walking for an overall 36% mode shift away from

[22] Halton Region, The Road to Change, Halton Regional Transportation Master Plan (2031), September 2011.
[23] City of Burlington, *Integrated Mobility Plan*, September 2023

auto modes[24]. Given the proximity to the Appleby MTSA, the density and mix of the development, and the potential for convenient and frequent transit service between the site and the Appleby MTSA, future transit mode shares have the potential to shift higher than the 13-15% target.

Table 6.8 summarizes the existing and proposed mode share targets.

TABLE 6.8: CITY OF BURLINGTON PROPOSED MODE SHARE TARGETS

Mode Share	Auto	Transit	Bicycle	Walk	Shift from Auto
Existing (Business Park)	91%	3%	1%	6%	-
Proposed Target (Business Park)	75%	13%	5%	7%	-16%
Proposed Target (Residential)	72%	15%	5%	8%	-19%
Proposed Target (MTSA)	55%	23%	9%	13%	-36%

A sensitivity analysis to assess the impact of auto mode share shifts on the intersection operations has been undertaken for the Total 10-year traffic conditions with mitigation measures. A 15% reduction to auto traffic at all intersections has been applied to account for a shift towards transit and active transportation.

Table 6.9 – 6.11 summarizes the results of the sensitivity analysis. **Appendix P** contains the detailed Synchro reports. The shift from auto mode share is forecast to decrease delay at the study area intersections.

The expected growth in traffic (both non-site and site generated) would still require mitigation to address forecast delays.

[24] City of Burlington, Major Transit Station Areas – Transportation Assessment, September 2023

TABLE 6.9: SENSITIVITY ANALYSIS – AM PEAK HOUR MITIGATION 2 (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Dundas Street	TCS	LOS	E	D	D	D	E	D	C	D	E	D	D	D	F	D	C	D	D
			Delay	61	52	46	52	79	37	34	51	73	36	36	44	82	38	33	47	49
			V/C	0.57	0.87	0.65		0.89	0.39	0.09		0.75	0.35	0.29		0.84	0.50	0.10		0.73
			Q	44	141	103		89	62	16		52	56	38		64	82	17		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	61	-	77		101	-	199		83	-	82		71	-	163		
	Appleby Line & Upper Middle Road	TCS	LOS	C	E	>	D	F	C	C	D	E	D	>	D	E	D	>	D	D
			Delay	25	55	>	51	85	32	32	47	79	43	>	48	70	42	>	48	49
			V/C	0.38	0.93	>		0.89	0.21	0.19		0.83	0.73	>		0.88	0.85	>		0.92
			Q	43	169	>		58	32	21		49	112	>		82	157	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	12	-	>		67	-	59		51	-	>		-27	-	>		
	West School Driveway/Private Driveway & Upper Middle Road	TCS	LOS	B	C	>	C	B	B	>	B	<	C	C	C	<	C	>	C	C
			Delay	15	27	>	27	16	12	>	12	<	30	21	27	<	21	>	21	23
			V/C	0.02	0.84	>		0.28	0.32	>		<	0.54	0.07		<	0.02	>		0.68
			Q	3	98	>		8	33	>		<	48	8		<	0	>		
			Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
			Avail.	27	-	>		72	-	>		<	-	-		<	-	>		
	Quinte Street & Upper Middle Road	TCS	LOS	B	B	>	B	<	C	>	C	B	B	>	B	B	B	>	B	C
			Delay	18	19	>	19	<	34	>	34	11	10	>	11	17	16	>	17	23
			V/C	0.60	0.69	>		<	0.85	>		0.06	0.00	>		0.22	0.19	>		0.51
			Q	23	54	>		<	48	>		5	0	>		21	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	37	-	>		<	-	>		25	-	>		24	-	>		
	Sutton Drive & Upper Middle Road	TCS	LOS	A	B	>	B	B	B	>	B	D	D	>	D	D	C	>	D	C
			Delay	9	13	>	12	10	13	>	13	41	42	>	41	48	33	>	43	22
			V/C	0.52	0.41	>		0.01	0.33	>		0.36	0.04	>		0.87	0.24	>		0.62
			Q	39	61	>		0	26	>		13	4	>		90	18	>		
			Stor.	60	-	>		60	-	>		30	-	>		60	-	>		
			Avail.	21	-	>		60	-	>		17	-	>		-30	-	>		
	Upper Middle Road & Blue Spruce Avenue	TCS	LOS	A	B		B		A	>	A					B		>	B	B
			Delay	7	11		11		8	>	8					11		>	11	10
			V/C	0.09	0.70				0.26	>						0.33		>		0.51
			Q	3	59				16	>						25		>		
			Stor.	100	-				-	>						-		>		
			Avail.	97	-				-	>						-		>		
	Burloak Drive & Park Access	TCS	LOS					C		>	C		A	>	A	A	A		A	A
			Delay					24		>	24		1	>	1	2	2		2	2
			V/C					0.24		>			0.15	>		0.04	0.40			0.39
			Q					5		>			8	>		1	23			
			Stor.					-		>			-	>		145	-			
			Avail.					-		>			-	>		144	-			
	Burloak Drive & Mainway	TCS	LOS	D		D	D					D	A		C		C	>	C	C
			Delay	36		47	46					46	5		25		24	>	24	28
			V/C	0.22		0.69						0.78	0.15				0.68	>		0.71
			Q	20		57						60	20				149	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						50	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	A	A	>	A	<	B	>	B	<	B	>	B	<	B	>	B	B
			Delay	9	9	>	9	<	14	>	14	<	14	>	14	<	15	>	15	12
			V/C	0.22	0.29	>		<	0.33	>		<	0.17	>		<	0.29	>		0.32
			Q	16	28	>		<	22	>		<	16	>		<	22	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	10	-	>		<	-	>		<	-	>		<	-	>		
	Norjohn Court/Lampman Avenue & Mainway	TCS	LOS	<	A	>	A	<	A	>	A	<	B	>	B	<	C	>	C	A
			Delay	<	6	>	6	<	4	>	4	<	18	>	18	<	22	>	22	8
			V/C	<	0.49	>		<	0.12	>		<	0.02	>		<	0.52	>		0.49
			Q	<	44	>		<	11	>		<	3	>		<	24	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.9: SENSITIVITY ANALYSIS – AM PEAK HOUR MITIGATION 2 (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Mainway	TCS	LOS	C	D	>	D	C	C	>	C	D	C	>	C	B	C	>	C	C
			Delay	30	43	>	40	28	33	>	31	41	32	>	33	16	29	>	28	32
			V/C	0.50	0.78	>		0.34	0.17	>		0.60	0.56	>		0.46	0.79	>		0.74
			Q	44	78	>		16	18	>		43	98	>		21	148	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	41	-	>		74	-	>		52	-	>		44	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	D	>	D	C	B	>	B	A	B	>	B	B
			Delay	<	24	>	24	<	39	>	39	30	16	>	17	9	12	>	12	16
			V/C	<	0.15	>		<	0.78	>		0.42	0.47	>		0.27	0.60	>		0.70
			Q	<	14	>		<	65	>		23	72	>		14	105	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		27	-	>		106	-	>		
	Burloak Drive & N Service Road	TCS	LOS	D		D	D					D	A		B		C	>	C	C
			Delay	43		42	42					38	3		16		22	>	22	21
			V/C	0.18		0.10						0.65	0.21				0.60	>		0.56
			Q	14		20						62	21				115	>		
			Stor.	60		-						140	-				-	>		
			Avail.	46		-						78	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					D		E	E		C		C		E		E	D
			Delay					48		72	60		26		26		58		58	54
			V/C					0.91		1.02			0.38				1.00			1.01
			Q					241		287			80				317			
			Stor.					-		160			-				-			
			Avail.					-		-127			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	D	D	D	D			D	D		B	>	B		C		C	C
			Delay	51	41	39	43			49	49		12	>	12		24		24	25
			V/C	0.71	0.45	0.15				0.06			0.33	>			0.87			0.78
			Q	71	38	22				6			58	>			239			
			Stor.	-	-	70				-			-	>			-			
			Avail.	-	-	48				-			-	>			-			
	Appleby Line & North Service Road	TCS	LOS	D	D	>	D	C	C	>	C	B	B	>	B	C	C	>	C	C
			Delay	42	48	>	47	34	31	>	33	17	18	>	18	24	35	>	34	27
			V/C	0.29	0.64	>		0.39	0.06	>		0.59	0.66	>		0.50	0.65	>		0.65
			Q	22	51	>		27	12	>		34	139	>		25	155	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	18	-	>		38	-	>		31	-	>		40	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					C		D	D		B		B		B		B	B
			Delay					31		44	38		16		16		13		13	20
			V/C					0.65		0.88			0.79				0.65			0.82
			Q					66		97			140				100			
			Stor.					210		-			-				-			
			Avail.					144		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	C		C	C						B		B		B		B	B
			Delay	29		21	26						17		17		17		17	19
			V/C	0.86		0.59							0.79				0.79			0.82
			Q	94		50							101				102			
			Stor.	180		70							-				-			
			Avail.	86		20							-				-			
	Appleby Line & Harvester Road	TCS	LOS	D	D	>	D	C	C	>	C	B	C	C	C	D	B	B	C	C
			Delay	37	40	>	39	31	34	>	34	20	33	27	31	37	17	17	23	30
			V/C	0.68	0.72	>		0.47	0.31	>		0.23	0.74	0.32		0.55	0.30	0.18		0.69
			Q	45	67	>		25	24	>		16	98	34		61	49	18		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	70	-	>		95	-	>		34	-	16		19	-	67		
	Appleby Line & Fairview Street	TCS	LOS	D	D	D	D	D	D	D	D	C	E	C	D	D	C	C	C	D
			Delay	55	39	36	48	46	54	52	51	24	56	27	49	40	31	24	32	43
			V/C	0.85	0.39	0.18		0.49	0.46	0.29		0.63	0.96	0.09		0.73	0.60	0.10		0.83
			Q	97	54	22		30	35	30		54	198	11		112	107	14		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	-12	-	28		50	-	-		21	-	44		-37	-	86		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.10: SENSITIVITY ANALYSIS – PM PEAK HOUR MITIGATION 2 (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Dundas Street	TCS	LOS	F	D	D	D	F	D	C	E	F	D	D	E	E	D	D	D	E
			Delay	93	47	42	53	108	52	34	62	89	46	45	57	69	45	42	50	56
			V/C	0.84	0.54	0.21		1.02	0.89	0.17		0.95	0.66	0.49		0.74	0.52	0.29		0.87
			Q	50	83	27		117	179	20		117	121	80		66	86	46		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	55	-	153		73	-	195		18	-	40		69	-	134		
	Appleby Line & Upper Middle Road	TCS	LOS	E	D	>	D	E	D	E	D	D	C	>	D	E	C	>	D	D
			Delay	56	41	>	44	56	41	70	53	54	33	>	37	74	32	>	40	43
			V/C	0.85	0.64	>		0.60	0.67	0.91		0.75	0.81	>		0.87	0.60	>		0.86
			Q	58	74	>		28	77	136		59	151	>		60	94	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	-3	-	>		97	-	-56		41	-	>		-5	-	>		
	West School Driveway/Private Driveway & Upper Middle Road	TCS	LOS	A	B	>	B	A	B	>	B	<	B	B	B	<	B	>	B	B
			Delay	9	10	>	10	0	14	>	14	<	15	14	15	<	14	>	14	12
			V/C	0.03	0.33	>		0.00	0.64	>		<	0.13	0.01		<	0.00	>		0.45
			Q	2	32	>		0	73	>		<	14	0		<	0	>		
			Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
			Avail.	28	-	>		80	-	>		<	-	-		<	-	>		
	Quinte Street & Upper Middle Road	TCS	LOS	C	B	>	B	<	C	>	C	B	B	>	B	C	C	>	C	C
			Delay	25	10	>	13	<	26	>	26	20	19	>	20	24	23	>	24	21
			V/C	0.71	0.26	>		<	0.81	>		0.03	0.00	>		0.12	0.07	>		0.55
			Q	38	27	>		<	108	>		6	0	>		17	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	22	-	>		<	-	>		24	-	>		28	-	>		
	Upper Middle Road & Sutton Drive	TCS	LOS	D	B	>	C	B	D	>	D	D	D	>	D	C	C	>	C	D
			Delay	50	15	>	24	18	43	>	43	53	51	>	53	30	28	>	29	38
			V/C	0.82	0.21	>		0.02	0.96	>		0.47	0.05	>		0.21	0.11	>		0.67
			Q	66	31	>		3	169	>		20	5	>		46	17	>		
			Stor.	60	-	>		60	-	>		55	-	>		60	-	>		
			Avail.	-6	-	>		57	-	>		35	-	>		14	-	>		
	Upper Middle Road & Blue Spruce Avenue	TCS	LOS	B	A		A		A	>	A					B		>	B	A
			Delay	14	7		8		10	>	10					16		>	16	10
			V/C	0.32	0.23				0.78	>						0.19		>		0.57
			Q	10	18				68	>						19		>		
			Stor.	100	-				-	>						-		>		
			Avail.	90	-				-	>						-		>		
	Burloak Drive & Park Access	TCS	LOS					C		>	C		A	>	A	A	A		A	A
			Delay					28		>	28		3	>	3	8	0		1	3
			V/C					0.37		>			0.54	>		0.29	0.16			0.52
			Q					14		>			48	>		10	1			
			Stor.					-		>			-	>		145	-			
			Avail.					-		>			-	>		135	-			
	Burloak Drive & Mainway	TCS	LOS	D		D	D					D	A		B		C	>	C	C
			Delay	40		41	41					40	9		17		24	>	24	22
			V/C	0.56		0.58						0.81	0.57				0.37	>		0.67
			Q	46		48						111	120				56	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						-1	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	A	A	>	A	<	B	>	B	<	C	>	C	<	C	>	C	B
			Delay	8	8	>	8	<	16	>	16	<	25	>	25	<	26	>	26	17
			V/C	0.10	0.24	>		<	0.56	>		<	0.67	>		<	0.71	>		0.63
			Q	3	15	>		<	50	>		<	47	>		<	57	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	22	-	>		<	-	>		<	-	>		<	-	>		
	Norjohn Court/Lampman Avenue & Mainway	TCS	LOS	<	A	>	A	<	B	>	B	<	B	>	B	<	B	>	B	B
			Delay	<	8	>	8	<	10	>	10	<	17	>	17	<	16	>	16	10
			V/C	<	0.27	>		<	0.70	>		<	0.22	>		<	0.16	>		0.53
			Q	<	16	>		<	58	>		<	16	>		<	12	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.10: SENSITIVITY ANALYSIS – PM PEAK HOUR MITIGATION 2 (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Mainway	TCS	LOS	F	D	>	E	E	E	>	E	F	C	>	D	E	D	>	D	D
			Delay	122	40	>	69	63	66	>	66	105	32	>	45	67	50	>	51	54
			V/C	1.06	0.27	>		0.65	0.96	>		1.00	0.80	>		0.58	0.84	>		1.02
			Q	97	37	>		46	184	>		161	142	>		25	142	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	-12	-	>		44	-	>		-66	-	>		40	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	D	>	D	B	B	>	B	B	A	>	A	B
			Delay	<	35	>	35	<	50	>	50	14	20	>	20	18	8	>	9	19
			V/C	<	0.27	>		<	0.78	>		0.21	0.75	>		0.55	0.36	>		0.74
			Q	<	24	>		<	71	>		15	170	>		28	60	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		35	-	>		92	-	>		
	Burloak Drive & N Service Road	TCS	LOS	C		D	D					D	B		B		B	>	B	C
			Delay	27		46	41					41	15		17		20	>	20	22
			V/C	0.33		0.84						0.53	0.71				0.52	>		0.81
			Q	35		89						28	140				78	>		
			Stor.	60		-						140	-				-	>		
			Avail.	25		-						112	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					F		F	F		D		D		F		F	F
			Delay					160		269	214		47		47		186		186	180
			V/C					1.28		1.52			0.77				1.29			1.43
			Q					550		649			161				366			
			Stor.					-		160			-				-			
			Avail.					-		-489			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	E	E	E	E			E	E		B	>	B		F		F	E
			Delay	71	57	56	60			64	64		12	>	12		90		90	70
			V/C	0.73	0.40	0.26				0.11			0.32	>			1.13			0.99
			Q	80	40	35				24			75	>			522			
			Stor.	-	-	70				-			-	>			-			
			Avail.	-	-	35				-			-	>			-			
	Apleby Line/Appleby Line & North Service Road	TCS	LOS	E	E	>	E	F	E	>	F	D	C	>	C	C	D	>	D	D
			Delay	76	57	>	61	127	60	>	87	40	22	>	24	34	52	>	51	44
			V/C	0.68	0.44	>		1.09	0.83	>		0.79	0.69	>		0.38	0.61	>		0.92
			Q	32	42	>		105	127	>		95	196	>		17	145	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	8	-	>		-40	-	>		-30	-	>		48	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					D		E	E		E		E		D		D	D
			Delay					38		73	56		56		56		47		47	53
			V/C					0.78		1.02			0.99				0.94			1.01
			Q					194		292			314				272			
			Stor.					210		-			-				-			
			Avail.					16		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	D		D	D						A		A		B		B	C
			Delay	46		44	45						10		10		16		16	20
			V/C	0.88		0.85							0.57				0.86			0.86
			Q	93		84							77				163			
			Stor.	180		70							-				-			
			Avail.	87		-14							-				-			
	Appleby Line & Harvester Road	TCS	LOS	E	D	>	E	D	E	>	D	D	D	C	D	E	D	C	D	D
			Delay	78	42	>	57	40	59	>	53	40	37	31	36	64	42	31	42	46
			V/C	0.96	0.42	>		0.87	0.91	>		0.66	0.53	0.14		0.67	0.81	0.23		0.88
			Q	128	54	>		110	148	>		38	88	21		39	154	28		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	-13	-	>		10	-	>		12	-	29		41	-	57		
	Appleby Line & Fairview Street	TCS	LOS	F	D	E	F	E	E	D	E	D	C	C	C	B	C	F	F	E
			Delay	135	50	75	100	60	69	54	61	46	26	22	30	19	33	166	86	75
			V/C	1.09	0.30	0.85		0.75	0.74	0.12		0.82	0.39	0.09		0.44	0.60	1.25		1.11
			Q	127	49	119		83	94	23		118	98	7		44	138	412		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	-42	-	-69		-3	-	-		-43	-	48		31	-	-312		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.11: SENSITIVITY ANALYSIS – SATURDAY PEAK HOUR MITIGATION 2 (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Dundas Street	TCS	LOS	E	E	D	E	F	E	D	E	E	C	C	D	E	D	C	D	D
			Delay	66	60	53	59	88	55	47	64	61	35	34	43	62	38	34	44	52
			V/C	0.59	0.73	0.37		0.93	0.69	0.13		0.71	0.37	0.25		0.70	0.43	0.14		0.63
			Q	45	83	47		98	89	22		85	75	37		74	83	20		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	60	-	133		92	-	193		50	-	83		61	-	160		
	Appleby Line & Upper Middle Road	TCS	LOS	D	D	>	D	E	C	D	D	D	C	>	C	D	C	>	C	C
			Delay	50	37	>	40	56	34	43	41	44	27	>	30	44	27	>	30	34
			V/C	0.84	0.65	>		0.76	0.48	0.72		0.66	0.71	>		0.68	0.66	>		0.76
			Q	48	50	>		36	38	65		49	108	>		52	96	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	7	-	>		89	-	15		51	-	>		3	-	>		
	Quinte Street & Upper Middle Road	TCS	LOS	B	B	>	B	<	C	>	C	B	B	>	B	B	B	>	B	C
			Delay	18	13	>	14	<	30	>	30	11	11	>	11	15	14	>	14	23
			V/C	0.59	0.31	>		<	0.86	>		0.04	0.00	>		0.11	0.07	>		0.46
			Q	17	24	>		<	70	>		5	0	>		14	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	43	-	>		<	-	>		25	-	>		31	-	>		
	Sutton Drive & Upper Middle Road	TCS	LOS	A	A	>	A	B	B	>	B	D	D	>	D	C	C	>	C	B
			Delay	9	10	>	10	12	17	>	17	40	43	>	40	28	34	>	30	17
			V/C	0.40	0.17	>		0.01	0.49	>		0.23	0.05	>		0.25	0.11	>		0.43
			Q	16	24	>		2	70	>		11	5	>		22	18	>		
			Stor.	60	-	>		60	-	>		55	-	>		60	-	>		
			Avail.	44	-	>		58	-	>		44	-	>		38	-	>		
	Upper Middle Road & Blue Spruce Avenue	TCS	LOS	A	A		A		A	>	A					B		>	B	A
			Delay	10	8		8		9	>	9					13		>	13	9
			V/C	0.19	0.23				0.46	>						0.12		>		0.33
			Q	7	17				35	>						12		>		
			Stor.	100	-				-	>						-		>		
			Avail.	93	-				-	>						-		>		
	Burloak Drive & Park Access	TCS	LOS					B		>	B		A	>	A	A			A	A
			Delay					20		>	20		2	>	2	3	3		3	3
			V/C					0.37		>			0.35	>		0.05	0.19			0.35
			Q					14		>			11	>		2	12			
			Stor.					-		>			-	>		145	-			
			Avail.					-		>			-	>		143	-			
	Burloak Drive & Mainway	TCS	LOS	D		D	D					D	A		B		B	>	B	B
			Delay	38		37	37					42	4		14		18	>	18	18
			V/C	0.37		0.14						0.57	0.30				0.27	>		0.39
			Q	25		20						57	30				31	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						53	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	A	A	>	A	<	B	>	B	<	B	>	B	<	B	>	B	B
			Delay	7	7	>	7	<	11	>	11	<	13	>	13	<	15	>	15	11
			V/C	0.03	0.08	>		<	0.23	>		<	0.10	>		<	0.26	>		0.24
			Q	3	7	>		<	20	>		<	11	>		<	21	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	22	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 6.11: SENSITIVITY ANALYSIS – SATURDAY PEAK HOUR MITIGATION 2 (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Appleby Line & Mainway	TCS	LOS	C	D	>	D	D	D	>	D	C	C	>	C	D	B	>	C	C
			Delay	35	36	>	36	45	40	>	41	28	22	>	23	43	20	>	21	25
			V/C	0.59	0.22	>		0.43	0.53	>		0.59	0.53	>		0.28	0.60	>		0.62
			Q	39	18	>		16	35	>		51	95	>		12	99	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	46	-	>		74	-	>		44	-	>		53	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	D	>	D	B	B	>	B	B	A	>	A	B
			Delay	<	26	>	26	<	38	>	38	15	18	>	18	11	10	>	10	16
			V/C	<	0.23	>		<	0.74	>		0.19	0.65	>		0.36	0.47	>		0.67
			Q	<	20	>		<	57	>		12	127	>		13	74	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		38	-	>		107	-	>		
	Burloak Drive & N Service Road	TCS	LOS	D		D	D					D	A		A		A	>	A	A
			Delay	39		39	39					37	3		7		7	>	7	8
			V/C	0.10		0.05						0.36	0.31				0.25	>		0.31
			Q	8		14						22	30				22	>		
			Stor.	60		-						140	-				-	>		
			Avail.	52		-						118	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					C		B	C		D		D		D		D	C
			Delay					23		18	21		41		41		49		49	30
			V/C					0.88		0.77			0.63				0.85			0.87
			Q					229		159			85				119			
			Stor.					-		160			-				-			
			Avail.					-		1			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	E	E	E	E			E	E		B	>	B		C		C	C
			Delay	70	69	59	67			70	70		11	>	11		20		20	29
			V/C	0.64	0.70	0.09				0.56			0.24	>			0.77			0.74
			Q	65	62	22				52			57	>			270			
			Stor.	-	-	70				-			-	>			-			
			Avail.	-	-	48				-			-	>			-			
	Appleby Line & North Service Road	TCS	LOS	D	D	>	D	C	C	>	C	A	B	>	B	B	C	>	C	B
			Delay	44	41	>	42	34	32	>	33	8	12	>	12	16	22	>	22	19
			V/C	0.44	0.13	>		0.39	0.13	>		0.18	0.50	>		0.18	0.51	>		0.49
			Q	20	14	>		26	17	>		6	90	>		11	128	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	20	-	>		39	-	>		59	-	>		54	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					C		C	C		B		B		A		A	B
			Delay					24		23	24		11		11		10		10	13
			V/C					0.72		0.63			0.71				0.64			0.71
			Q					47		39			75				64			
			Stor.					210		-			-				-			
			Avail.					163		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	C		B	B						B		B		B		B	B
			Delay	21		18	20						11		11		11		11	13
			V/C	0.71		0.56							0.65				0.66			0.68
			Q	47		34							60				62			
			Stor.	180		70							-				-			
			Avail.	133		36							-				-			
	Appleby Line & Harvester Road	TCS	LOS	D	D	>	D	F	D	>	F	B	B	B	B	D	B	B	B	D
			Delay	38	36	>	37	257	43	>	150	12	20	16	19	44	16	14	19	53
			V/C	0.64	0.16	>		1.46	0.70	>		0.21	0.49	0.18		0.40	0.37	0.07		0.79
			Q	33	15	>		185	55	>		13	83	19		22	62	9		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	82	-	>		-65	-	>		37	-	31		58	-	76		
	Appleby Line & Fairview Street	TCS	LOS	E	D	D	E	D	D	D	D	C	B	B	C	B	C	B	C	C
			Delay	67	49	49	58	46	50	46	47	28	20	12	20	14	23	19	22	30
			V/C	0.91	0.46	0.45		0.58	0.46	0.11		0.72	0.63	0.07		0.43	0.58	0.26		0.79
			Q	60	37	40		45	36	19		67	161	9		20	131	22		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	25	-	10		35	-	-		8	-	46		55	-	78		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
< / > - Shared with through movement
** - V/C ratio less than 0.01*

6.5 Active Transportation and Transit Trips

6.5.1 Active Transportation

The proposed mixed-use development will support pedestrian travel by providing pedestrian connections in and around the subject site, including sidewalks on at least one side of the road for the internal network, excluding laneways.

Pedestrian network connectivity and walkability are expected to improve with the proposed development as more walkable destinations are added to the subject site, such as retail and employment land uses. People in the Phase 1 development can also access the surrounding destinations through the proposed sidewalk connections to the existing municipal sidewalks and controlled crossings at Sutton Drive. To access Bronte Creek Provincial Park, pedestrians from Phase 1 can cross Upper Middle Road at the Sutton Drive signalized intersection and utilize existing sidewalks on the north side of Upper Middle Road. As part of the Phase 1 development, an unwarranted signal is recommended at the Bronte Creek Provincial Park access. The unwarranted signal will provide an additional controlled crossing of Burloak Drive for pedestrians and cyclists.

The recommended signalization Mainway at Sutton Drive will enhance walkability by adding additional pedestrian-controlled crossings along Mainway, which currently have relatively long spacing between controlled crossing points. Signalization will also enhance the cycling network by providing controlled crossing points for cyclists.

The proposed residential, retail, institutional, and employment mix supports the sustainable community vision outlined by the City in the Official Plan and IMP.

The City recognizes that cycling is important in intensification areas with high demand for trips and road capacity for auto demand that cannot be provided, such as Upper Middle Road and Burloak Drive. In the study area, on-street bike lanes are provided along Appleby Line, Upper Middle Road, Burloak Drive, Corporate Drive, and Sutton Drive.

The City of Burlington Cycling Plan[25] indicates future improvements to the city cycling network. These improvements include protected bikeways along Mainway and North Service Road through the study area.

The proposed development supports this cycling infrastructure by including mixed-use land-use, sidewalk connections, and providing the

[25] City of Burlington, *Cycling Plan,* (Burlington: City of Burlington).

additional road right-of-way to accommodate the cycling infrastructure throughout the subject site. Pedestrian facilities will be included on the internal roadways with sidewalks along at least one side of the road for the majority of the streets. Dedicated cycling facilities will be considered along the neighbourhood collector streets such as Sutton Drive and Corporate Drive.

6.5.2 Transit Service

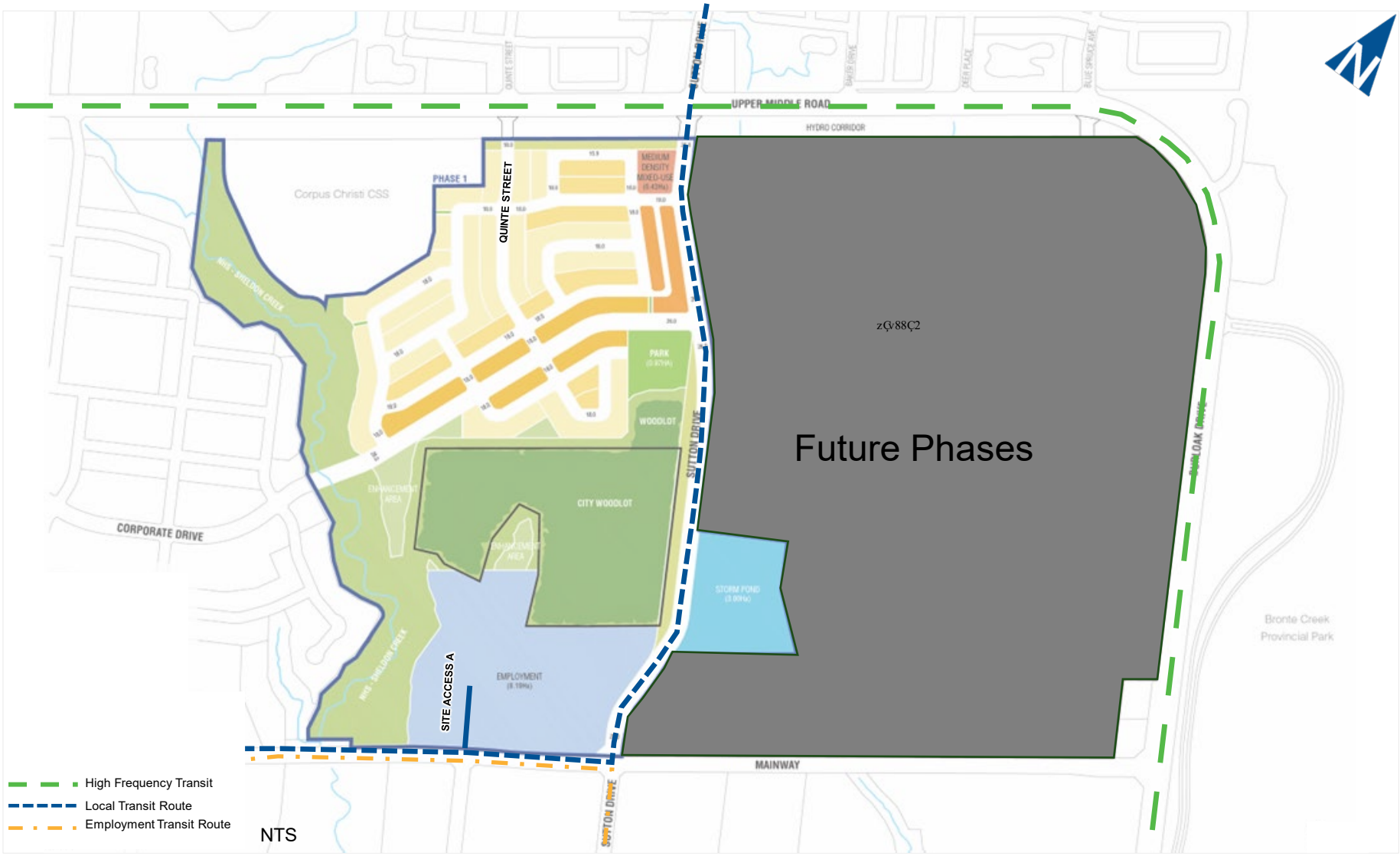
Burlington Transit operates four routes which serve the subject site, primarily on Upper Middle Road and Mainway, east of Sutton Drive.

With the development of the subject site and the future HOV/BRT lanes along Upper Middle Road and Burloak Drive, Burlington Transit is expected to review the transit service coverage and stop locations in the study area that are easily accessible for a potential transit route.

Based on the network and the layout of the subject site, three potential transit routes should be considered to enhance the transit network:

- A high frequency route along Burloak Drive and Upper Middle Road to utilize the planned HOV/BRT lane. The mixed-use density of the development and the placement of the proposed retail land use along Upper Middle Road and Burloak Drive provide attractive and convenient destinations which can support a high frequency route.
- A local route serving the employment and institutional area at the south end of the site along Mainway. Currently, route 81 operates in the area but stop placement and route frequency should be reviewed with the development of the site.
- A local route along Sutton Drive through the subject site. This route would help serve the internal residential land uses and could provide stops at the proposed school and institutional blocks. Route 11 partially serves this area but continues on Upper Middle Road. With the development of the site, this route could be extended through the site or a new local route could be considered.

Figure 6.1 illustrates the potential transit routes. The potential routes would expand on the existing routes to provide transit service to the subject site. Given the proximity to the Appleby GO MTSA, these routes would also provide a convenient and efficient connection to regional transit services, supporting increased accessibility and encouraging transit-oriented development.



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Potential Transit Routes

Bronte Creek Meadows, Burlington
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Figure 6.1

6.6 Corporate Drive Connection

The site concept plan shows a potential connection of Corporate Drive through the site to the west over Sheldon Creek. The feasibility and timing of this Corporate Drive connection has yet to be determined but the City has requested that the analysis assume the connection will be in place.

A qualitative assessment has been conducted to assess the impacts the Corporate Drive connection could have on the site generated traffic and the traffic operations if it is not constructed with Phase 1 of the development.

The existing Corporate Drive, east of Appleby Line, is a two-lane neighbourhood connector with an assumed regulatory 50 km/h. Along with layby parking, sidewalks and bike lanes are on either side of the road.

Corporate Drive, east of Appleby Line, primarily serves as a connector road for the surrounding residential subdivision. There are two all-way stop-controlled intersections between Appleby Line and the subject site.

The Phase 1 assignment estimates 100 to 140 two-way peak hour trips to use the Corporate Drive connection. Although the potential Corporate Drive connection will provide a direct route to the subject site, the all-way stop-controlled intersections east of Appleby Line will add delay.

When travelling from the north or south along Appleby Line, routes along Upper Middle Road (an arterial road) or Mainway (a collector road) would provide faster, uninterrupted routes to the subject site.

Within the site, there are approximately 100-150 residential units along Corporate Drive, west of Sutton Road, where travelling across the new connection may be a shorter distance than using Mainway or Upper Middle Road. The Corporate Drive connection may serve as an alternative route to avoid highly congested intersections for a subset of site trips but is not expected to serve a primary route for the large amount of site traffic.

Without the connection, the site traffic using Corporate Drive would divert to Quinte Street or Sutton Drive to access the arterial roads. The operations of the access intersections outlined in **Section 6.3** show that at the access intersections generally have capacity for additional inbound and outbound movements from the site. Diverting the 100-140

peak hour trips to the other access roads is not expected to substantially change operations at those intersections.

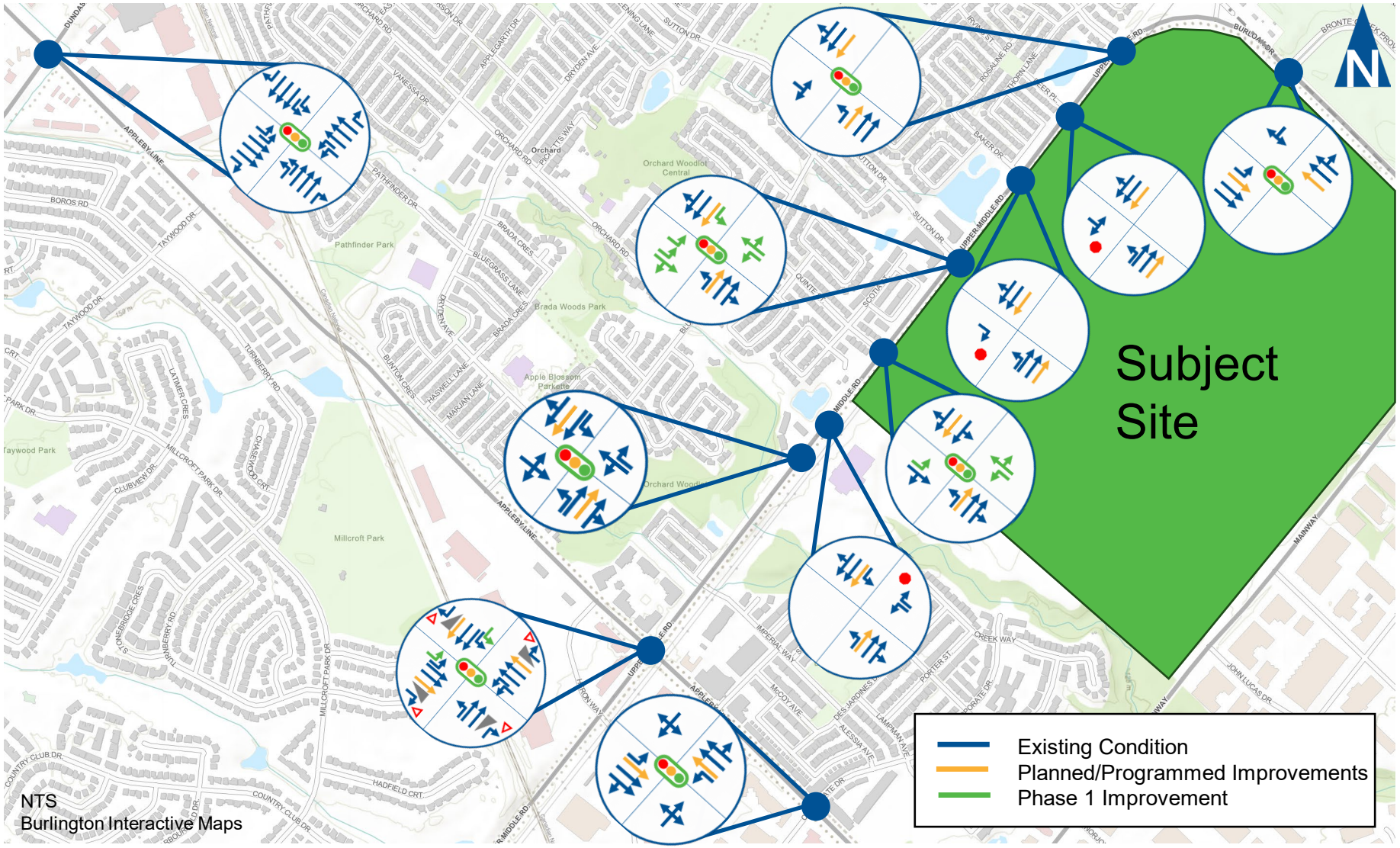
Overall, the operations of the Phase 1 development do not require the Corporate Drive connection. Although the connection will help to accommodate some site traffic, the alternative site accesses have capacity to serve the Phase 1 development.

6.7 Improvement Summary

Various improvements are proposed to mitigate future traffic operations at the study area intersections. These improvements address existing conditions, background traffic growth, or site generated traffic.

Figure 6.2 illustrates the proposed future lane configurations and traffic controls.

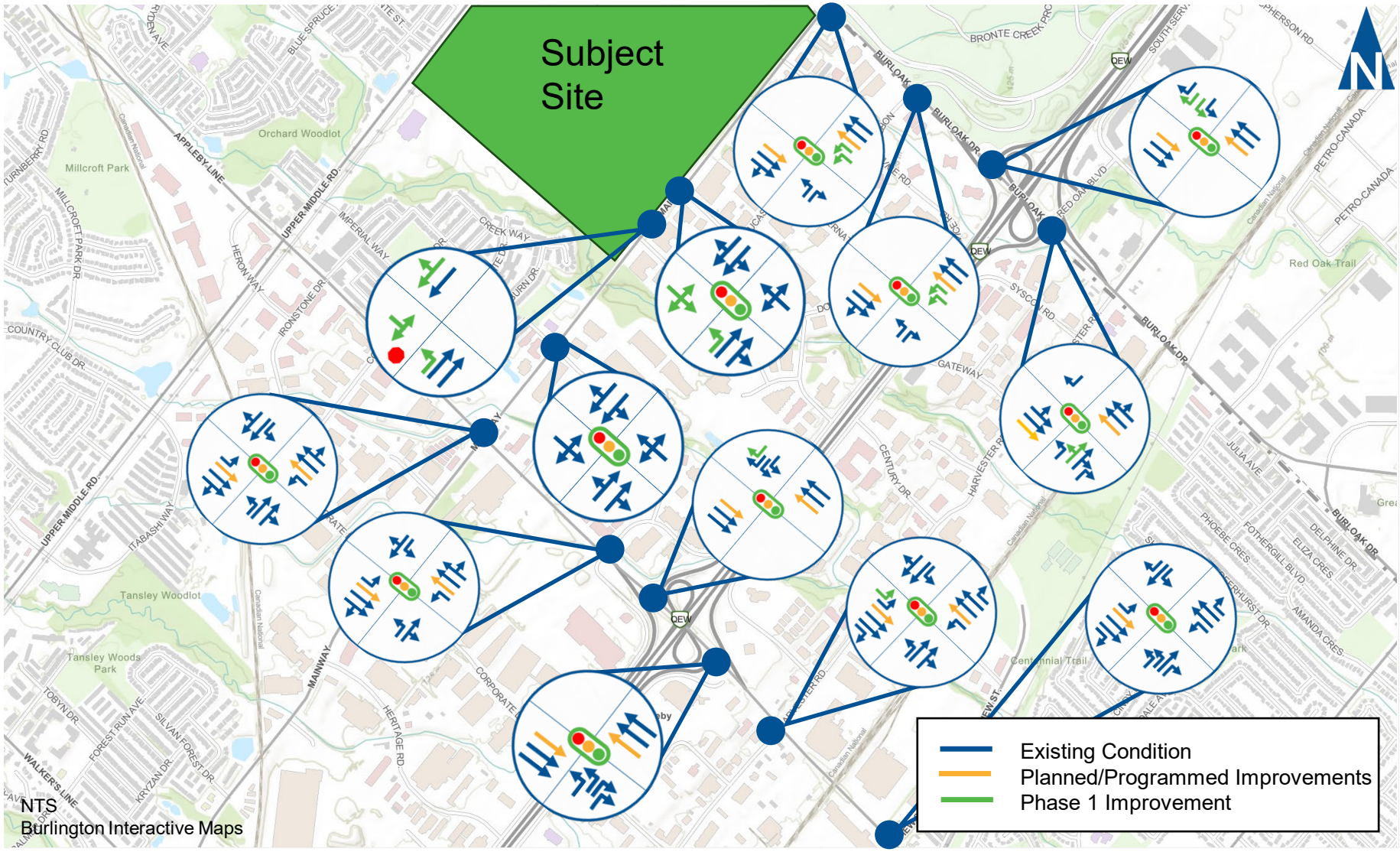
Table 6.12 summarizes the mitigation measures for improvement.



Proposed Phase 1 Lane Configuration and Traffic Control -North of Corporate Drive

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Figure 6.2A



Proposed Phase 1 Lane Configuration and Traffic Control -South of Corporate Drive

Bronte Creek Meadows, Burlington
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Figure 6.2B

TABLE 6.12: PHASE 1 PROPOSED MITIGATION MEASURES

Intersection	Improvement	Horizon Year	Applicant Responsibility
Appleby Line & Dundas Street	Signal timing adjustments	2035 Background	No
Appleby Line & Upper Middle Road	Double westbound left-turn lanes	Base Year; All Horizons	No
	Double southbound left-turn lanes		
	Signal timing adjustments		
West School Driveway/Private Driveway & Upper Middle Road	Signal timing adjustments	2045 Background	No
Quinte Street & Upper Middle Road	Signalization (Unwarranted)	2035 Total	**Yes**
	Northbound left-turn lane (30 m storage)		
	Southbound left-turn lane (45 storage)		
Sutton Drive & Upper Middle Road	Double southbound left-turn lanes	2035 Total	**Yes**
	Northbound left-turn lane (30 m storage)		
	Westbound left-turn lane (60 m storage)		
	Adjusted signal timings		
Blue Spruce Avenue & Upper Middle Road	Signalization (Unwarranted)	Base Year; All Horizons	No
Burloak Drive & Park Access	Signalization (Unwarranted)	Base Year; All Horizons	No
Burloak Drive & Mainway	Double northbound left-turn lanes	2035 Background	No
	Adjusted signal timings		
Sutton Drive & Mainway	Signalization (OTM Warrants Satisfied)	2035 Total	**Yes**
	Eastbound left-turn lane (25 m storage)		
Site Access A & Mainway	Eastbound left-turn lane (15 m storage)	2035 Total	**Yes**
Norjohn Court/Lampman Avenue & Mainway	Signalization (Unwarranted)	Base Year; All Horizons	No
Appleby Line & Mainway	Signal timing adjustments	Base Year; All Horizons	No
Appleby Line & Corporate Drive	Signal timing adjustments	2035 Total	No
Burloak Drive & N Service Road	Double northbound left-turn lanes	2035 Background	No
	Adjusted signal timings		

TABLE 6.12: PHASE 1 PROPOSED MITIGATION MEASURES (CONTINUED)

Intersection	Improvement	Horizon Year	Applicant Responsibility
Burloak Drive & QEW WB Off-Ramp	Separating the existing left-right turn lane to double left and right turn lanes	Base Year; All Horizons	No
	Signal timing adjustments		
Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	Signal timing adjustments	2035 Background	No
	Convert the existing eastbound through-lane to a shared eastbound through-left lane		
Appleby Line & North Service Road	Signal timing adjustments	Base Year; All Horizons	No
Appleby Line & QEW WB Off-Ramp	Signal timing adjustments	Base Year; All Horizons	No
	Double westbound right-turn lanes		
Appleby Line & QEW EB Off-Ramp	Signal timing adjustments	Base Year; All Horizons	No
Appleby Line & Harvester Road	Signal timing adjustments	Base Year; All Horizons	No
	Double southbound left-turn lane		
Appleby Line & Fairview Street	Signal timing adjustments	Base Year; All Horizons	No



6.8 MTO Highway Improvement Cost Sharing

The analysis determined that a number of improvements are required at the study area intersections including Highway ramp terminals. As outlined in **Section 6.6**, the following Highway ramp lane improvements are recommended:

- Burloak Drive & QEW WB Off-Ramp - Separating the existing left-right turn lane to double left and right turn lanes;
- Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard - Convert the existing eastbound through-lane to a shared eastbound through-left lane; and
- Appleby Line & QEW WB Off-Ramp - Double westbound right-turn lanes.

Highway improvements are required to accommodate the existing and background growth traffic. As improvements are required regardless of the site development, the Applicant should not be responsible for the full cost of the improvements.

A calculation of the percentage of future traffic associated with the site has been calculated to determine a fair share contribution that can be explored between the Applicant and the road authorities.

Cost-sharing arrangements for specific highway improvements are dependent on the degree that the improvements are warranted by the projected development traffic versus the existing/projected background traffic and timing of the construction.

The fair share is calculated by comparing the relative amount of Phase 1 traffic increase at the critical movements that require improvements for the horizon year when the improvement is triggered.

Table 6.13 summarizes the fair share calculations for the Phase 1 improvements.

At Burloak Drive at QEW Westbound Off-Ramp, separating the existing westbound left-right turn lane to double left and right turn lanes are recommended to address the base year critical movements. As this is a base year condition, the site traffic does not contribute to the traffic triggering the improvement.

At Burloak Drive at QEW Eastbound Off-Ramp/Red Oak Boulevard, converting the eastbound through lane to a through-left lane is recommended to address critical movements triggered in the 2035 Total horizon. A review of the forecasted volumes shows the Phase 1

development traffic accounts for 49% of the peak eastbound right-turn volumes.

At Appleby Line at QEW Westbound Off-Ramp, double westbound right-turn lanes are recommended to address the base year critical movements. As this is a base year condition, the site traffic does not contribute to the traffic triggering the improvement.

TABLE 6.13: FAIR SHARE CONTRIBUTION

Intersection	Improvement	Timeline	Source of Traffic Contributing to Improvement				
			Base Year	General Growth	Background Developments	Phase 1	Total
Burloak Drive & QEW WB Off-Ramp	Separating the existing left-right turn lane to double left and right turn lanes[a]	Existing	1246 *100%*	- *0%*	- *0%*	- *0%*	1246 *100%*
Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	Convert the existing eastbound through-lane to a shared eastbound through-left lane[b]	2035	84 *35%*	39 *16%*	0 *0%*	116 *49%*	239 *100%*
Appleby Line & QEW WB Off-Ramp	Double westbound right-turn lanes[c]	Existing	697 *100%*	- *0%*	- *0%*	- *0%*	697 *100%*

a Volume based on Base Year AM, PM, Sat Peaks of WBR
b Volume based on 2035 Total AM, PM, Sat Peaks of EBL
c Volume based on Base Year AM, PM, Sat Peaks of WBR

7 Full Build-Out Assessment

The Full Build-Out is anticipated to be completed in a horizon beyond Year 2045 (10 years after Phase 1 Build-Out), at an unknown time.

The concept shows Phases 2 to 4 located between Sutton Road and Burloak Drive. The development application is for the Phase 1 lands only. However, to provide a high-level long-range assessment of the potential road improvements required to accommodate the possible development, a Full Build-Out scenario has been assessed.

The Full Build-Out stats are based on high-level assumptions of development densities, community needs, and are subject to change.

7.1 Development Description

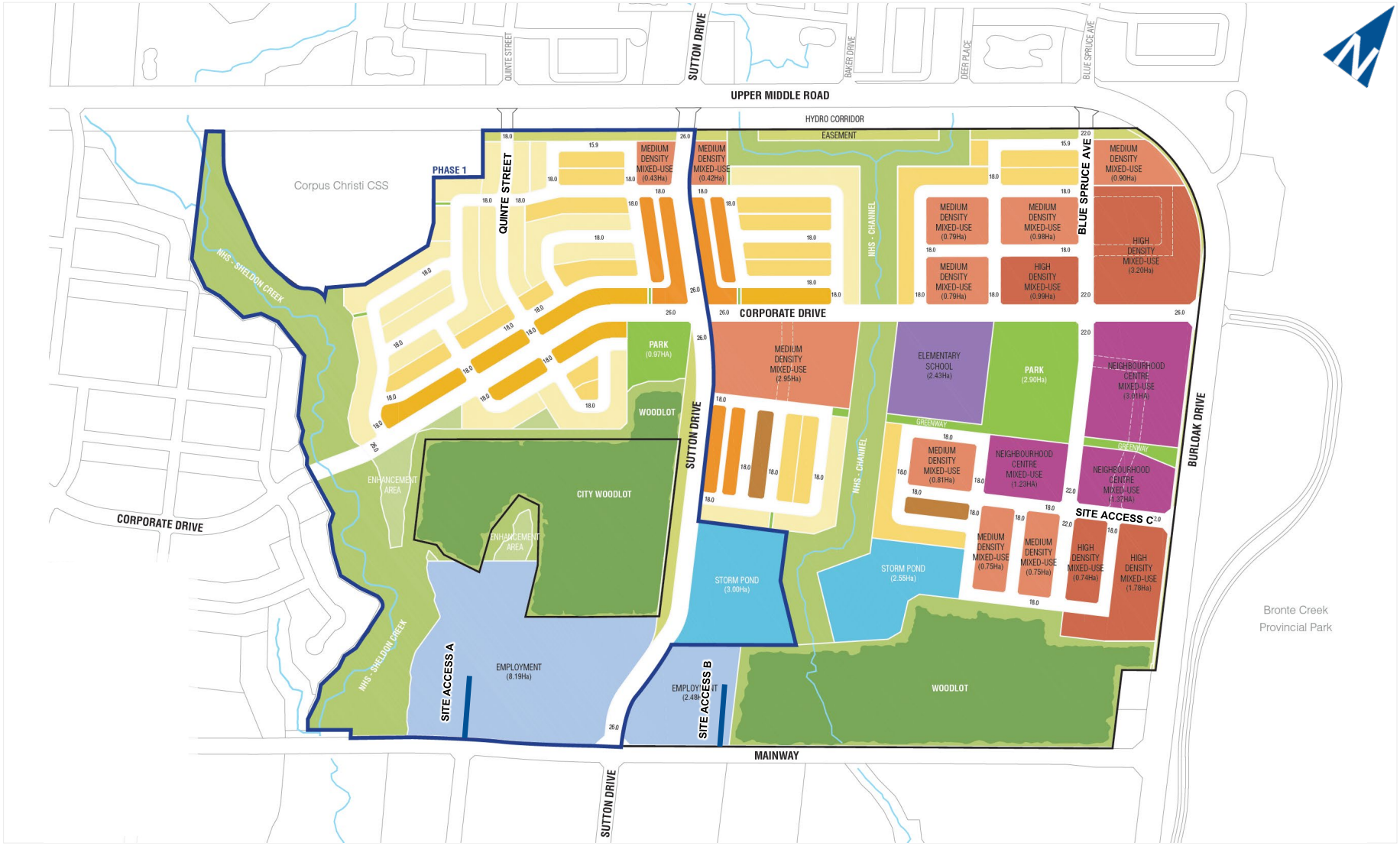
Beyond the Phase 1 development, the full build-out envisions residential (single detached, townhomes, and apartment units), commercial/retail/office, community space, and an elementary school.

The Full Build-Out plans are highly conceptual and subject to change. For the purpose of this assessment, the total site stats (including Phase 1) are estimated to be:

- Single Detached Housing Units – 250 units
- Multifamily Low-Rise Units – 1,220 units
- Multifamily Medium/High-Rise Units – 7,530 units
- Office Space – 23,225 m^2 (250,000 sq.ft.) GFA
- Community Space – 2,695 m^2 (29,000 sq.ft.) GFA
- Commercial Retail Space – 9,105 m^2 (98,000 sq.ft.) GFA
- Elementary School – 600 students

Figure 7.1 illustrates the conceptual Full Build-Out of the subject site.

Vehicle access to Phases 2 to 4 are proposed via a street connection across Blue Spruce Avenue at Upper Middle Road; the Corporate Drive extension to Bronte Creek Provincial Park entrance at Burloak Drive; and a new street connection to Burloak Drive approximately 335 m south of the Corporate Drive extension.



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Full Build-Out Site Concept Plan

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Figure 7.1

7.2 Trip Generation

The trip generation for the Full Build-Out follows the same methodology as Phase 1, outlined in **Section 3.2**. The following additional LUCs were referenced:

- LUC 222 (Multifamily Housing – High Rise);
- LUC 495 (Recreational Community Center);
- LUC 520 (Elementary School);
- LUC 710 (General Office Building);
- LUC 750 (Office Park); and
- LUC 821 (Shopping Plaza).

The estimates of pass-by trips were derived using the Trip Generation Handbook published by ITE[26]. Pass-by trips are a subset of a trip generation that only applies to commercial/retail developments. These trips are made by vehicles already present on the roadway, which businesses attract them into their site as they pass by. The ITE Trip Generation Handbook provides the following pass-by trip rates:

- LUC 821 Shopping Plaza: 40% pass-by trip rate during the weekday PM peak hour and 31% during the Saturday peak hour. No information is available for a pass-by rate during the AM peak hour.

Pass-by trips have only been applied to LUC 821 Shopping Plaza land use located near the arterial roads. This assumption represents vehicles on arterial roads visiting the highly visible retail stores requiring only a short deviation from their current route. Retail land use located within the site, not visible from the arterial roads, are not assumed to have pass-by trips.

Table 7.1 summarizes the forecast full build-out site-generated trips (inclusive of Phase 1), with internal and pass-by credits applied. The site's full build-out trip generation is estimated to be approximately 4,103 new vehicle trips during the weekday AM peak hour, 4,170 new vehicle trips during the weekday PM peak hour, and 3,571 new vehicle trips during the Saturday peak hour.

Figure 7.2 illustrates the site concept plan with each development block into a Traffic Analysis Zone (TAZ). **Table 7.2** summarizes the forecast site-generated trips generated by the TAZ into the total volumes per each land use code. **Figure 7.3** illustrates the site location

[26] Institute of Transportation Engineers. Trip Generation Handbook, 3rd Edition. Washington D.C. 2004.

and additional study area intersections introduced with the full build-out.

Trips are distributed to the network following the same methodology outlined in **Section 3.2.5**.

Figures 7.4 - 7.6 illustrate the net Full Build-Out site-generated traffic estimates for the external and internal road networks.

Figures 7.7 – 7.9 illustrate the Total traffic estimates with Full Build-Out for the external and internal road networks.

TABLE 7.1: FULL BUILD-OUT TRIP GENERATION

ITE Land Use Code / Number of Units	Trips	AM Peak Hour				PM Peak Hour				Sat Peak Hour			
		Rate	In	Out	Sum	Rate	In	Out	Sum	Rate	In	Out	Sum
210 - Single Family Detached Housing - 250 Units	Total	--	47	126	**173**	--	139	85	**224**	--	125	111	**236**
	Internal	2%	1	2	**3**	3%	4	2	**6**	2%	3	2	**5**
	New	**98%**	**46**	**124**	**170**	**97%**	**135**	**83**	**218**	**98%**	**122**	**109**	**231**
220 - Multifamily Housing (Low-Rise) - 1220 Units	Total	--	106	334	**440**	--	368	225	**593**	0.49	227	371	**598**
	Internal	3%	3	11	**14**	4%	15	9	**24**	3%	10	5	**15**
	New	**97%**	**103**	**323**	**426**	**96%**	**353**	**216**	**569**	**97%**	**217**	**366**	**583**
221 - Multifamily Housing (Mid-Rise) - 3180 Units	Total	--	305	1023	**1328**	--	735	413	**1148**	0.36	584	561	**1145**
	Internal	3%	8	28	**36**	5%	40	23	**63**	3%	27	13	**40**
	New	**97%**	**297**	**995**	**1292**	**95%**	**695**	**390**	**1085**	**97%**	**557**	**548**	**1105**
222 - Multifamily Housing (High-Rise) - 4350 Units	Total	0.20	252	618	**870**	0.26	690	441	**1131**	0.26	690	441	**1131**
	Internal	6%	12	38	**50**	8%	55	31	**86**	5%	37	18	**55**
	New	**94%**	**240**	**580**	**820**	**92%**	**635**	**410**	**1045**	**95%**	**653**	**423**	**1076**
520 - Elementary School - 600 Students	Total	0.73	237	201	**438**	0.16	44	52	**96**	--	--	--	**--**
	Internal	40%	95	80	**175**	40%	18	21	**38**	--	--	--	**--**
	New	**60%**	**142**	**121**	**263**	**60%**	**26**	**31**	**58**	**--**	**--**	**--**	**--**
Institutional - 2,382 Employees	Total	0.28	554	113	**667**	0.25	125	471	**596**	0.32	103	87	**190**
	Internal	9%	50	10	**60**	9%	11	42	**54**	9%	9	8	**17**
	New	**91%**	**504**	**103**	**607**	**91%**	**114**	**429**	**542**	**91%**	**94**	**79**	**173**
750 - Office Park - 200,000 sq.ft	Total	--	216	27	**243**	1.21	36	206	**242**	--	--	--	**--**
	Internal	9%	15	8	**23**	19%	26	21	**47**	--	--	--	**--**
	New	**91%**	**201**	**19**	**220**	**81%**	**10**	**185**	**195**	**--**	**--**	**--**	**--**
710 - General Office Building - 50,000 sq.ft	Total	--	67	9	**76**	--	13	68	**81**	--	--	--	**--**
	Internal	8%	4	2	**6**	15%	7	5	**12**	--	--	--	**--**
	New	**92%**	**63**	**7**	**70**	**85%**	**6**	**63**	**69**	**--**	**--**	**--**	**--**
495 - Recreational Community Center - 29,000 sq.ft	Total	2.02	37	22	**59**	2.89	40	44	**84**	1.14	18	15	**33**
	Internal	--	0	0	**0**	--	0	0	**0**	--	0	0	**0**
	New	**--**	**37**	**22**	**59**	**--**	**40**	**44**	**84**	**--**	**18**	**15**	**33**
821 - Shopping Plaza (40-150k) - 65,000 sq.ft	Total	1.59	64	39	**103**	4.76	152	157	**309**	--	174	160	**334**
	Internal	35%	20	16	**36**	26%	31	48	**79**	19%	20	45	**65**
	Pass-by	--	0	0	**0**	40%	46	46	**92**	31%	42	42	**84**
	New	**65%**	**44**	**23**	**67**	**45%**	**75**	**63**	**138**	**55%**	**112**	**73**	**185**
822 - Strip Retail Plaza (<40k) - 8,000 sq.ft	Total	3.93	17	14	**31**	6.29	25	25	**50**	6.63	27	26	**53**
	Internal	16%	3	2	**5**	20%	4	6	**10**	15%	2	6	**8**
	New	**84%**	**14**	**12**	**26**	**80%**	**21**	**19**	**40**	**85%**	**25**	**20**	**45**
822 - Strip Retail Plaza (<40k) - 10,000 sq.ft	Total	3.93	21	18	**39**	4.76	32	31	**63**	6.63	34	32	**66**
	Internal	15%	3	3	**6**	19%	5	7	**12**	15%	3	7	**10**
	New	**85%**	**18**	**15**	**33**	**81%**	**27**	**24**	**51**	**85%**	**31**	**25**	**56**
822 - Strip Retail Plaza (<40k) - 10,000 sq.ft	Total	3.93	21	18	**39**	4.76	32	31	**63**	6.63	34	32	**66**
	Internal	15%	3	3	**6**	19%	5	7	**12**	15%	3	7	**10**
	New	**85%**	**18**	**15**	**33**	**81%**	**27**	**24**	**51**	**85%**	**31**	**25**	**56**
822 - Strip Retail Plaza (<40k) - 5,000 sq.ft	Total	4%	11	9	**20**	4.76	16	15	**31**	6.63	17	16	**33**
	Internal	15%	2	1	**3**	19%	2	4	**6**	15%	1	4	**5**
	New	**85%**	**9**	**8**	**17**	**81%**	**14**	**11**	**25**	**85%**	**16**	**12**	**28**
Total	**Total**	--	**1955**	**2571**	**4526**	--	**2447**	**2264**	**4711**	--	**2033**	**1852**	**3885**
	Internal	9%	**219**	**204**	**423**	10%	**223**	**226**	**449**	6%	**115**	**115**	**230**
	Pass-by	0%	**0**	**0**	**0**	2%	**46**	**46**	**92**	2%	**42**	**42**	**84**
	New	**91%**	**1736**	**2367**	**4103**	**89%**	**2178**	**1992**	**4170**	**92%**	**1876**	**1695**	**3571**

Note: Trip generation volumes and number of units is Inclusive of Phase 1
Equations
LUC 210 AM T = 0.67(X) + 5.59 | PM Ln(T) = 0.92 Ln(X) + 0.33 | SAT T = 0.90(X) + 10.97
LUC 220 AM T = 0.35(X) + 12.93 | PM T = 0.48(X) + 7.35 | SAT Avg Rate 0.49
LUC 221 AM T = 0.42(X) - 7.77 | PM T = 0.36(X) + 3.07 | SAT Avg Rate 0.36
LUC 222 AM Avg Rate 0.20 | PM Avg Rate 0.26 | SAT Avg Rate 0.26
LUC 495 - AM Avg Rate 2.02 | PM Avg Rate 2.89 | SAT Avg Rate 1.14
LUC 520 - AM Avg Rate 0.73 | PM Avg Rate 0.16 | SAT Avg Rate 0.32
LUC 710 - AM T = 1.12(X) + 19.95 | PM T = 0.99(X) + 31.14
LUC 750 - AM Ln(T) = 0.91 Ln(X) + 0.67 | PM Avg Rate 1.21
Institutional Avg Rate AM = 0.28 | PM = 0.25
LUC 821 - AM Avg Rate 1.59 | PM Avg Rate 4.76 | SAT T = 7.18(X) - 132.42
LUC 822 AM Avg Rate 3.93 | PM Avg Rate 6.29 | Avg Rate SAT = 6.63



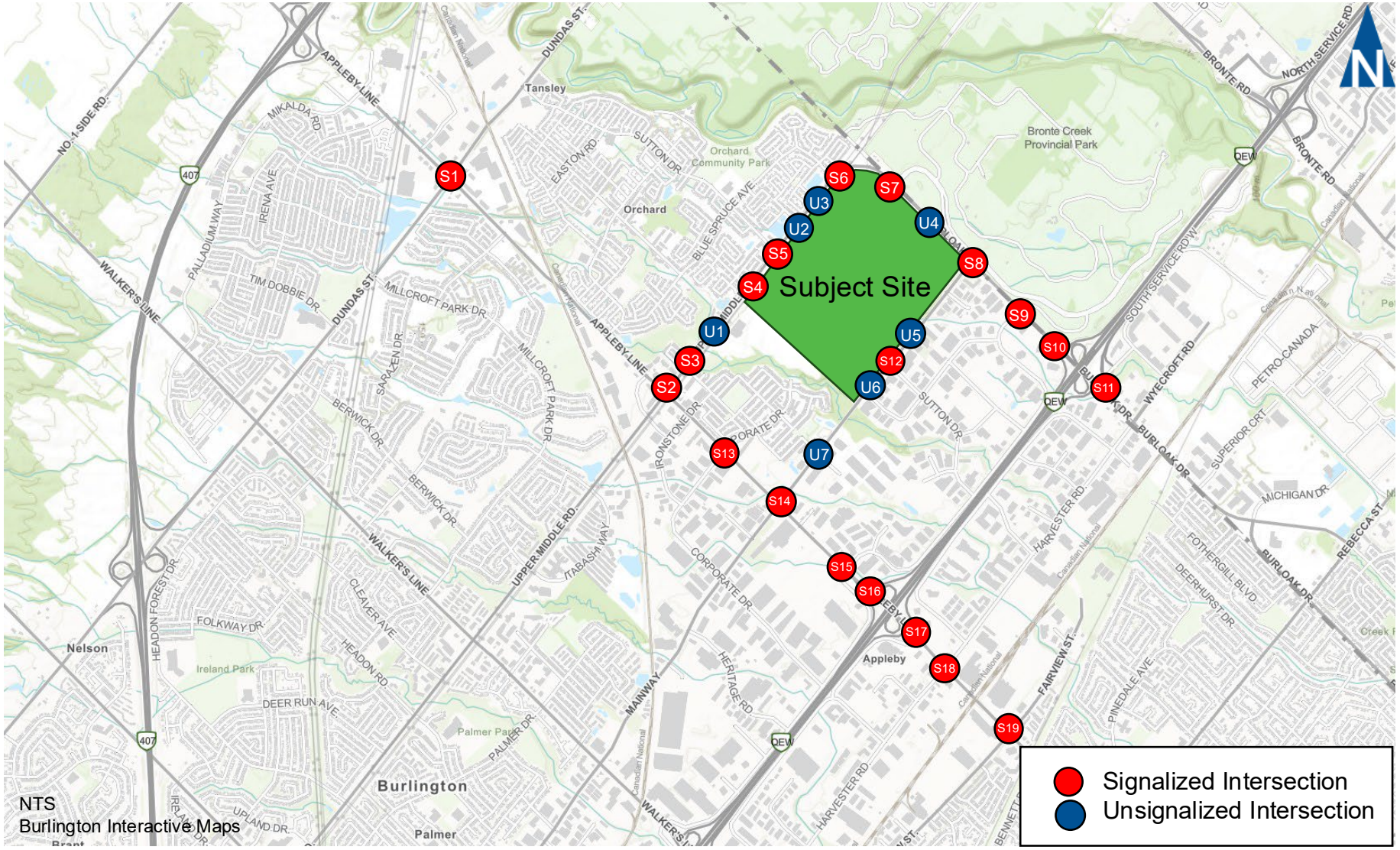
Full-Build Out
Traffic Analysis Zones

Bronte Creek Meadows, Burlington
230533

Figure 7.2

TABLE 7.2: FULL BUILD-OUT TRIP GENERATION BY TAZ

TAZ	LUC	Units/GFA/ Employees		AM Peak Hour			PM Peak Hour			Sat Peak Hour		
				In	Out	Total	In	Out	Total	In	Out	Total
A	210 - Single Family Detached Housing	107	units	20	53	**73**	58	36	**94**	52	47	**99**
	220 - Multifamily Housing (Low-Rise)	83	units	8	22	**30**	24	15	**39**	15	25	**40**
B	210 - Single Family Detached Housing	54	units	10	27	**37**	29	18	**47**	26	24	**50**
	220 - Multifamily Housing (Low-Rise)	201	units	17	53	**70**	58	36	**94**	36	60	**96**
	221 - Multifamily Housing (Mid-Rise)	160	units	15	51	**66**	35	20	**55**	28	28	**56**
	822 - Strip Retail Plaza (<40k)	8,000	sq.ft.	14	12	**26**	21	19	**40**	25	20	**45**
C	210 - Single Family Detached Housing	30	units	6	15	**21**	16	10	**26**	15	13	**28**
	220 - Multifamily Housing (Low-Rise)	53	units	4	14	**18**	15	9	**24**	9	16	**25**
D	221 - Multifamily Housing (Mid-Rise)	100	units	9	31	**40**	22	12	**34**	18	18	**36**
	Institutional	766,000	sq.ft.	504	103	**607**	114	429	**542**	94	79	**173**
E	210 - Single Family Detached Housing	32	units	6	16	**22**	17	10	**27**	16	13	**29**
	220 - Multifamily Housing (Low-Rise)	181	units	15	48	**63**	53	32	**85**	32	54	**86**
	221 - Multifamily Housing (Mid-Rise)	160	units	15	50	**65**	35	20	**55**	28	28	**56**
F	210 - Single Family Detached Housing	27	units	4	13	**17**	15	9	**24**	13	12	**25**
	220 - Multifamily Housing (Low-Rise)	150	units	13	40	**53**	44	27	**71**	27	45	**72**
	221 - Multifamily Housing (Mid-Rise)	890	units	83	278	**361**	195	109	**304**	156	153	**309**
	822 - Strip Retail Plaza (<40k)	10,000	sq.ft.	18	15	**33**	27	24	**51**	31	25	**56**
G	750 - Office Park	200,000	sq.ft.	201	19	**220**	10	185	**195**	--	--	**--**
H	220 - Multifamily Housing (Low-Rise)	468	units	39	124	**163**	135	82	**217**	83	140	**223**
	221 - Multifamily Housing (Mid-Rise)	570	units	53	178	**231**	124	70	**194**	99	98	**197**
	222 - Multifamily Housing (High-Rise)	500	units	27	67	**94**	73	47	**120**	75	49	**124**
	822 - Strip Retail Plaza (<40k)	5,000	sq.ft.	9	8	**17**	14	11	**25**	16	12	**28**
I	520 - Elementary School	60,000	sq.ft.	142	121	**263**	26	31	**58**	--	--	**--**
J	220 - Multifamily Housing (Low-Rise)	84	units	7	22	**29**	24	15	**39**	15	26	**41**
	221 - Multifamily Housing (Mid-Rise)	1,000	units	93	313	**406**	218	122	**340**	175	172	**347**
	495 - Recreational Community Center	29,000	sq.ft.	37	22	**59**	40	44	**84**	18	15	**33**
K	221 - Multifamily Housing (Mid-Rise)	300	units	29	94	**123**	66	37	**103**	53	51	**104**
	222 - Multifamily Housing (High-Rise)	1,250	units	69	167	**236**	182	118	**300**	188	122	**310**
	822 - Strip Retail Plaza (<40k)	10,000	sq.ft.	18	15	**33**	27	24	**51**	31	25	**56**
L	821 - Shopping Plaza (40-150k)	65,000	sq.ft.	44	23	**67**	75	63	**138**	112	73	**185**
	710 - General Office Building	50,000	sq.ft.	63	7	**70**	6	63	**69**	--	--	**--**
	222 - Multifamily Housing (High-Rise)	1,000	units	56	133	**189**	146	95	**241**	150	97	**247**
M	222 - Multifamily Housing (High-Rise)	1,600	units	88	213	**301**	234	150	**384**	240	155	**395**
Total New Generation				**1,736**	**2,367**	**4,103**	**2,178**	**1,992**	**4,170**	**1,876**	**1,695**	**3,571**

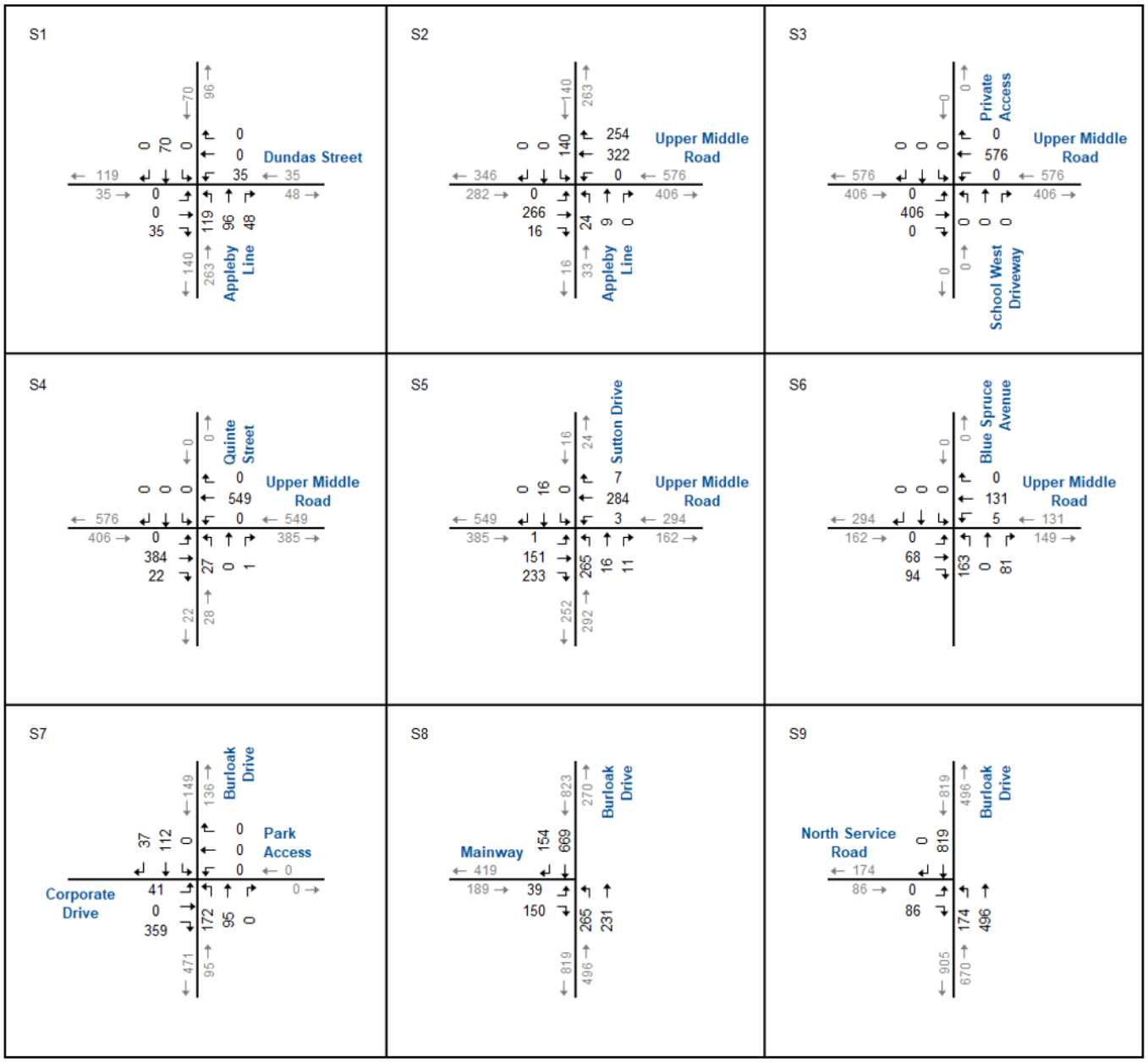


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Full Build Site Location & Study Area

Bronte Creek Meadows, Burlington
230533

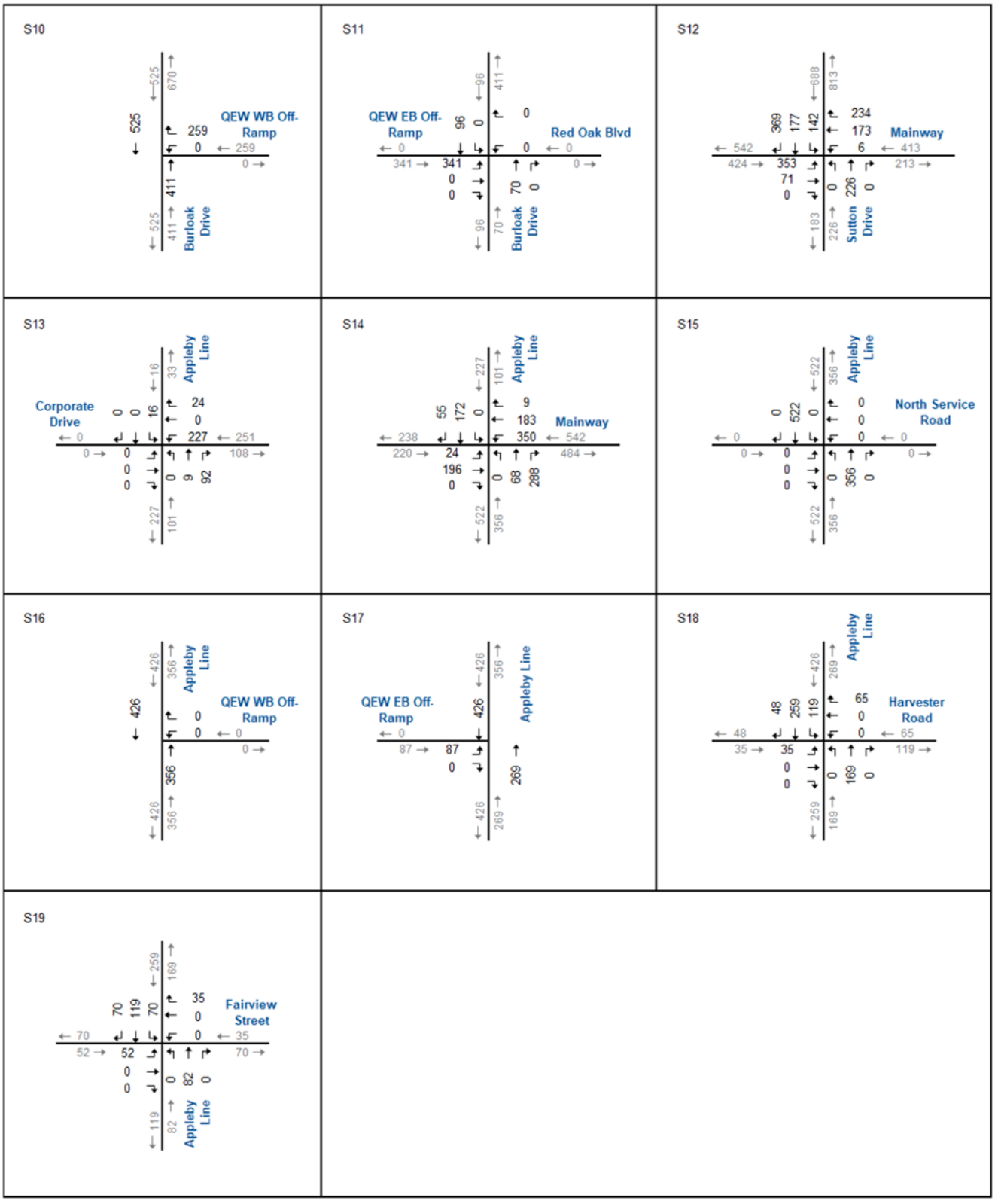
Figure 7.3



Full Build Site Traffic Volumes Weekday AM Peak Hour (Signalized Intersections) (1/2)

Bronte Creek Meadows, Burlington
230553

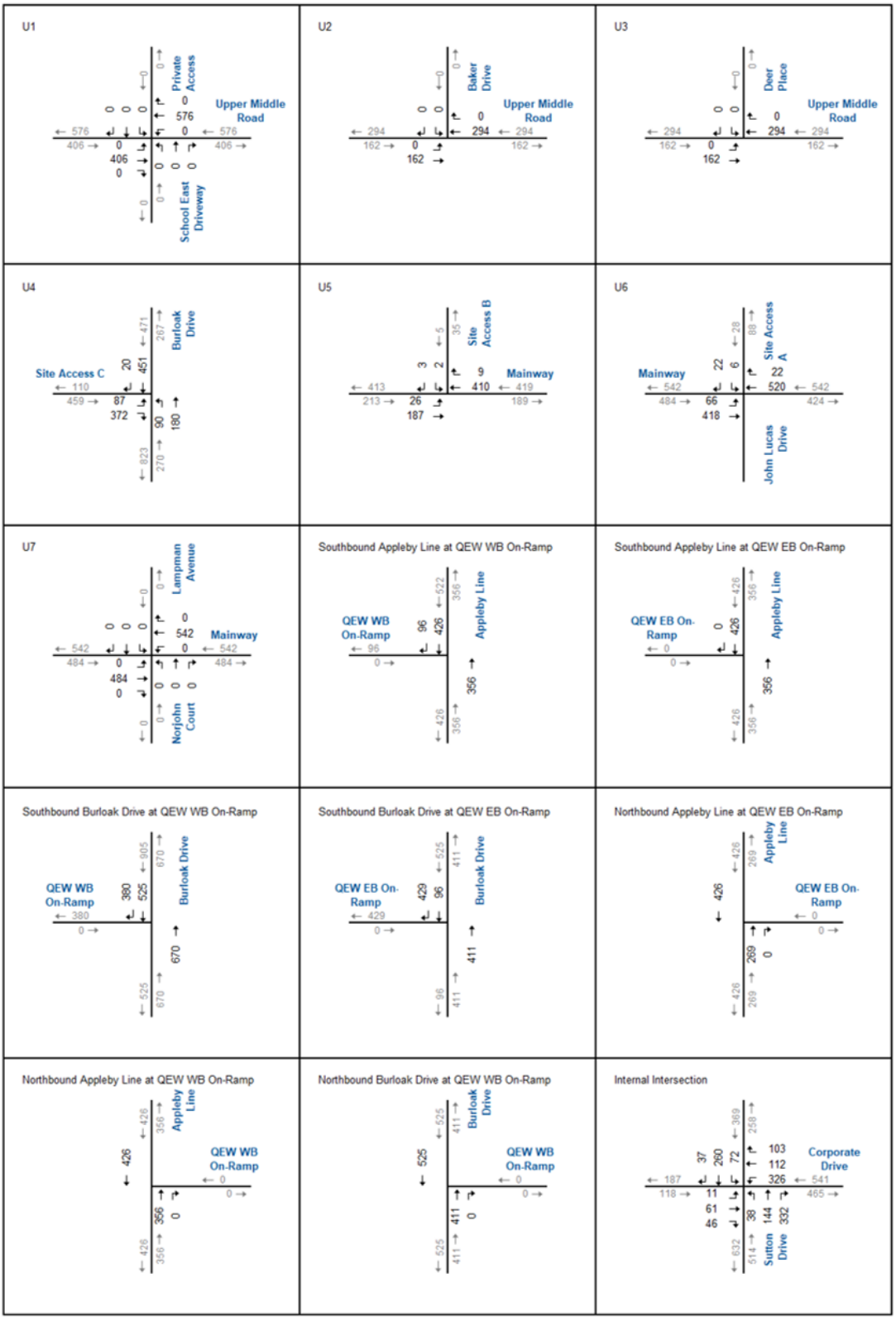
Figure 7.4A



Full Build Site Traffic Volumes Weekday AM Peak Hour (Signalized Intersections) (2/2)

Bronte Creek Meadows, Burlington
230553

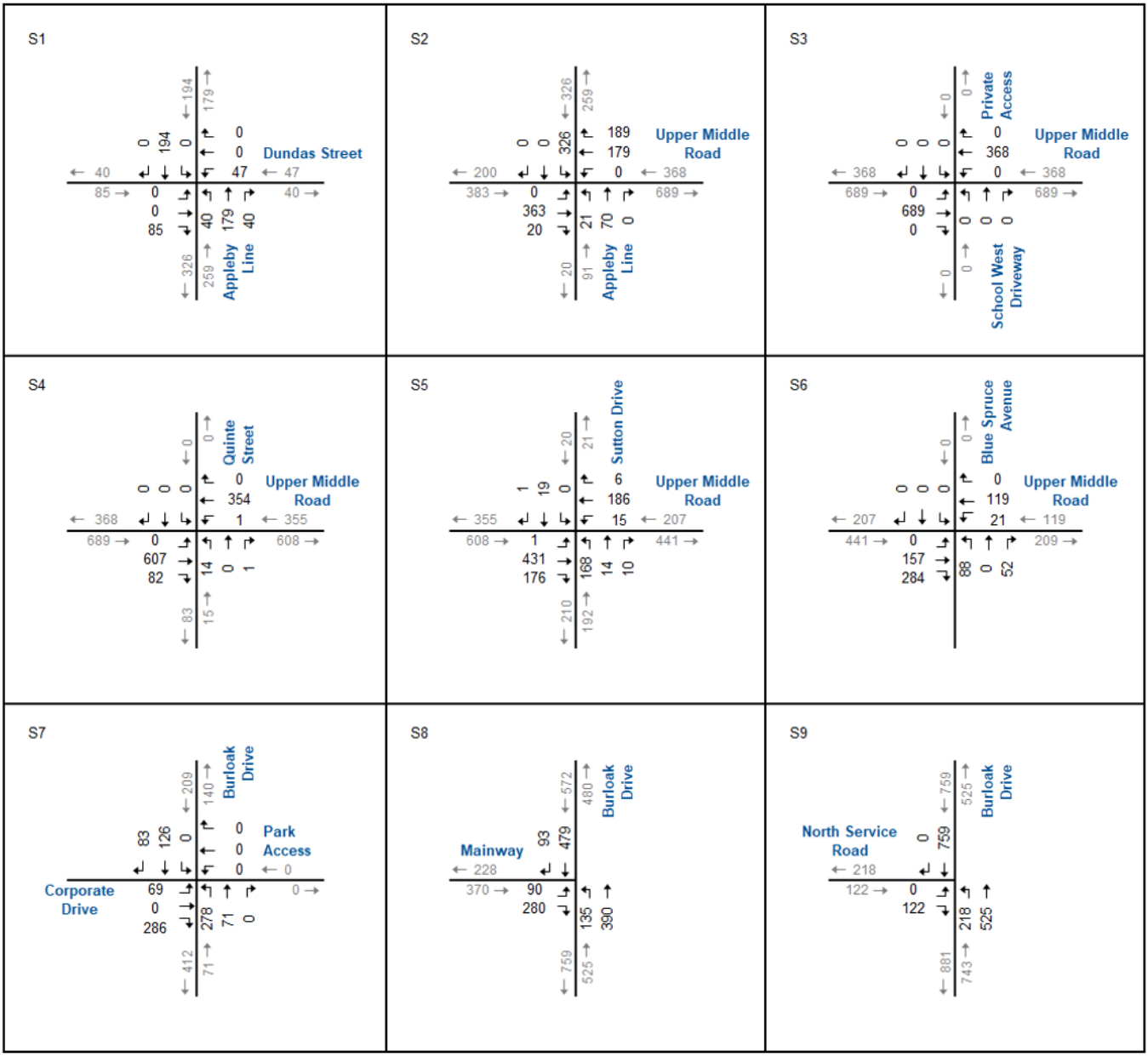
Figure 7.4B



Full Build Site Traffic Volumes Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

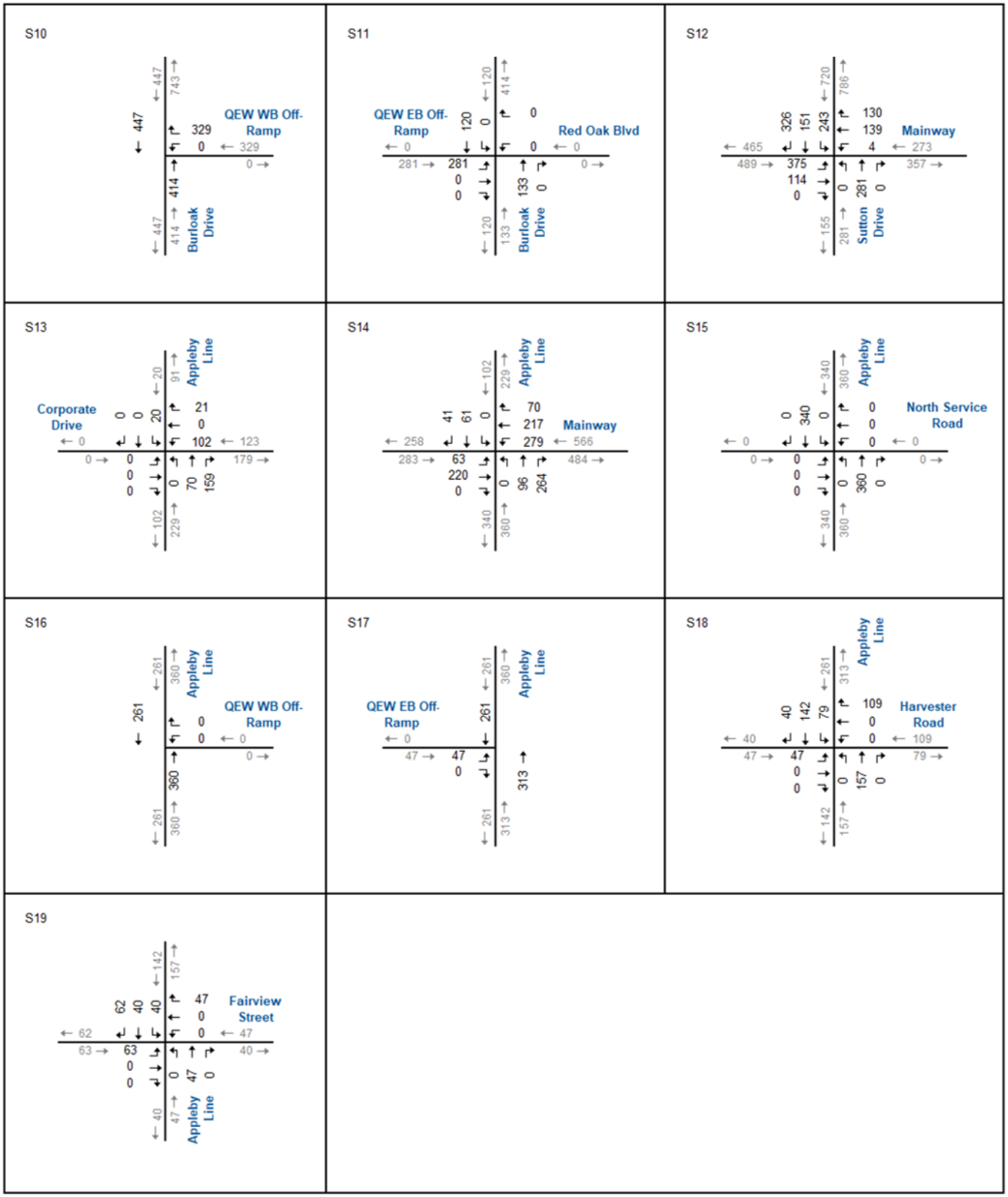
Figure 7.4C



Full Build Site Traffic Volumes Weekday PM Peak Hour (Signalized Intersections) (1/2)

Bronte Creek Meadows, Burlington
230553

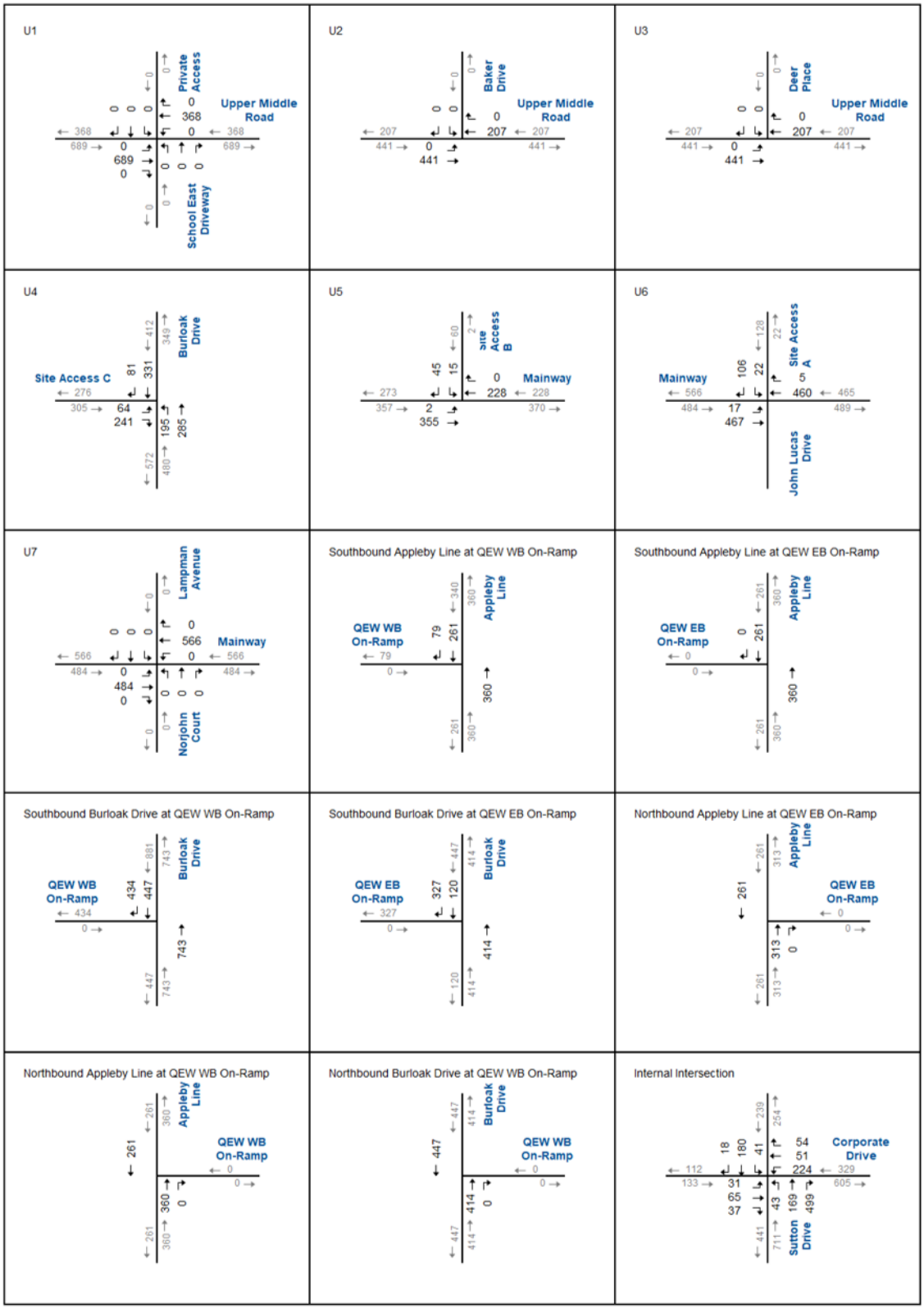
Figure 7.5A



Full Build Site Traffic Volumes Weekday PM Peak Hour (Signalized Intersections) (2/2)

Bronte Creek Meadows, Burlington
230553

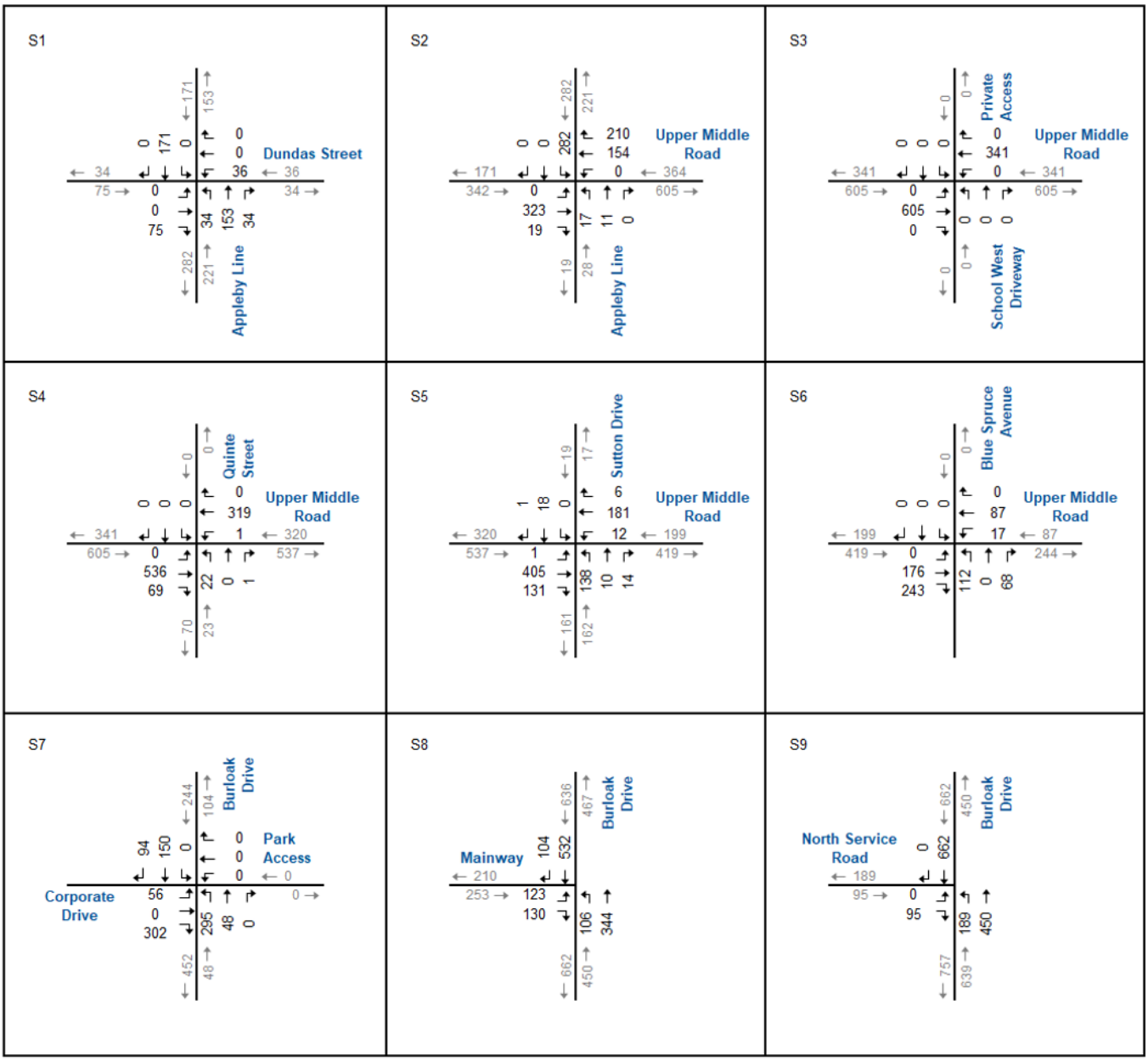
Figure 7.5B



Full Build Site Traffic Volumes
Weekday PM Peak Hour
(Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

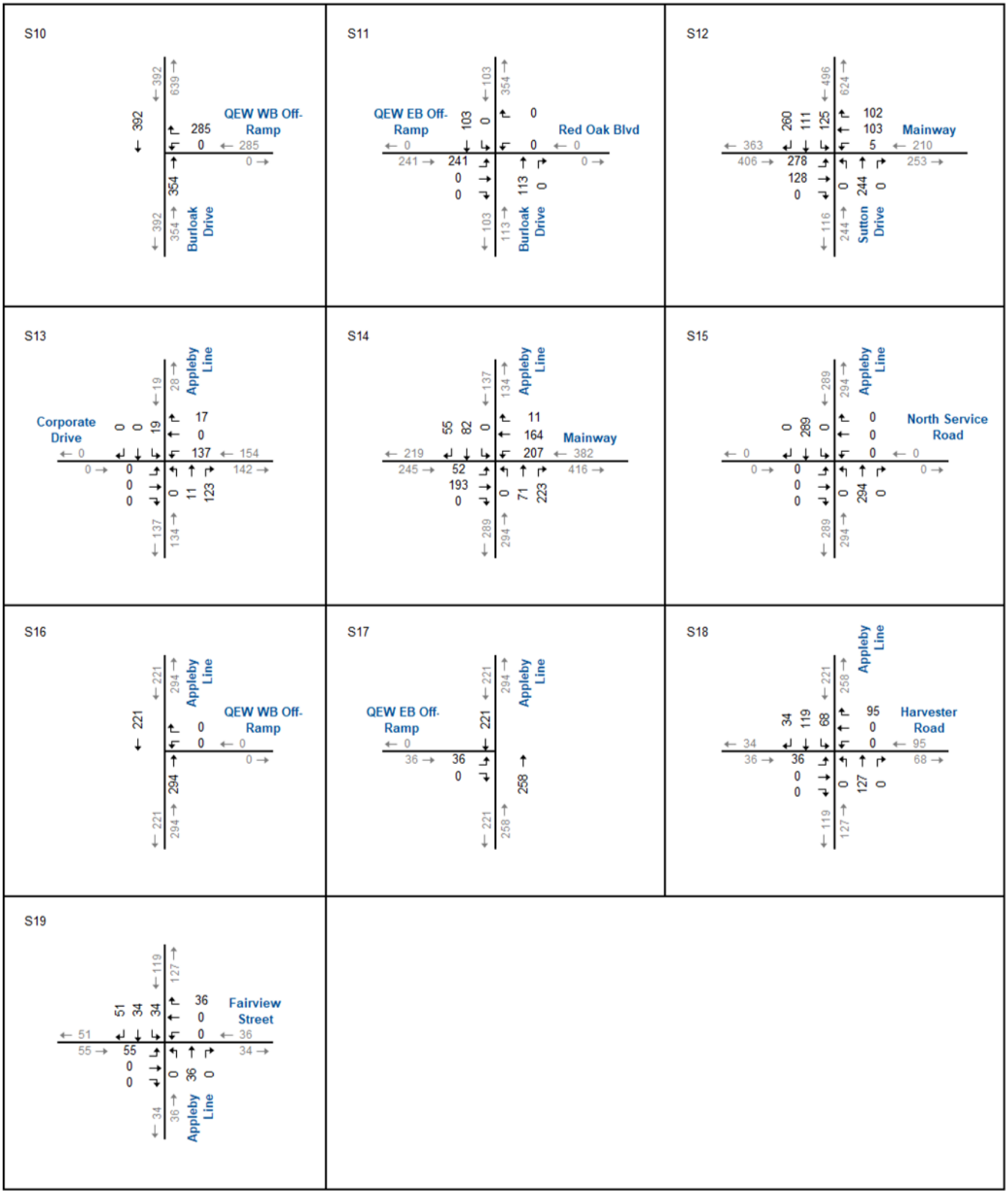
Figure 7.5C



Full Build Site Traffic Volumes Saturday Peak Hour (Signalized Intersections) (1/2)

Bronte Creek Meadows, Burlington
230553

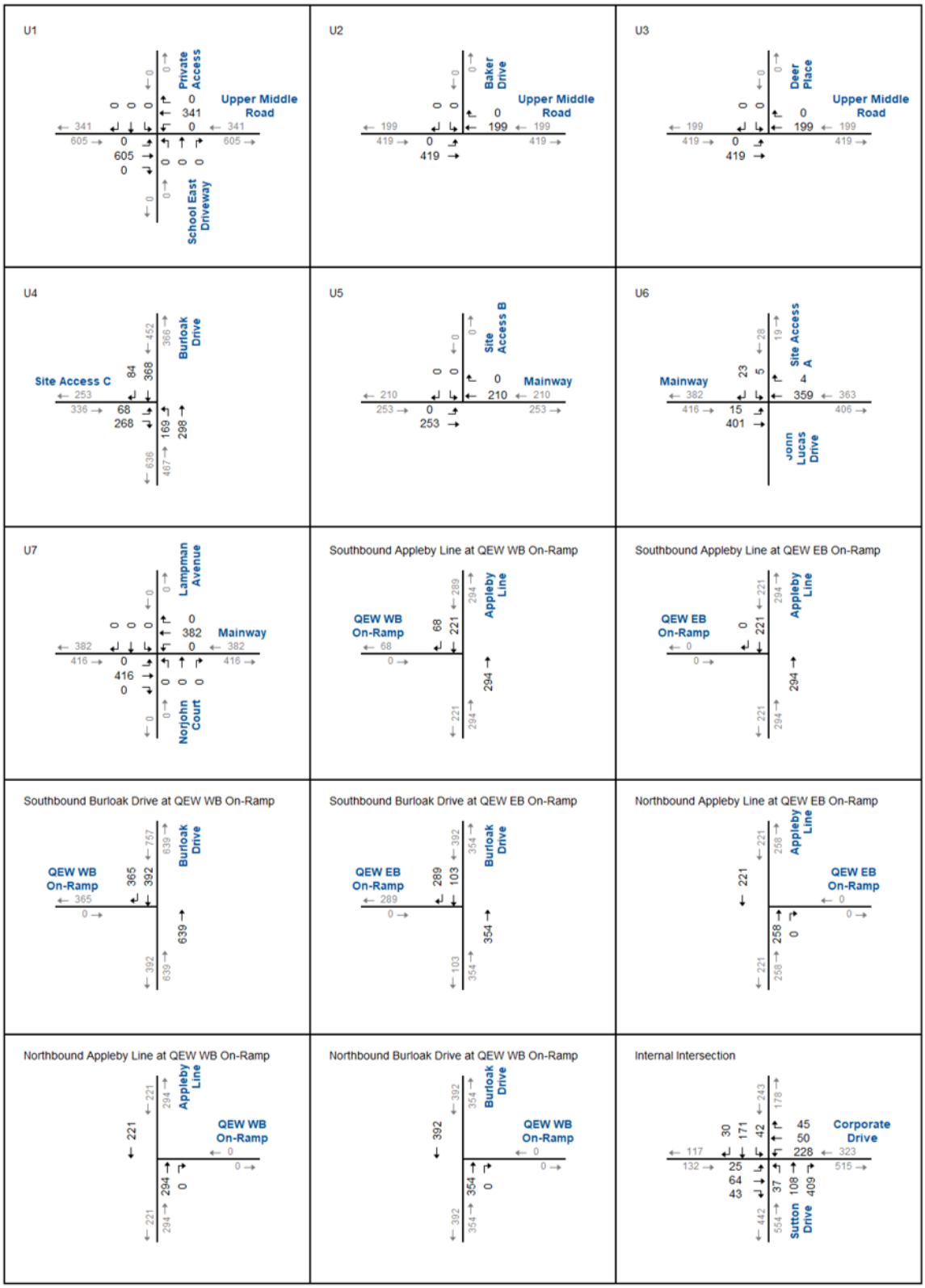
Figure 7.6A



Full Build Site Traffic Volumes Saturday Peak Hour (Signalized Intersections) (2/2)

Bronte Creek Meadows, Burlington
230553

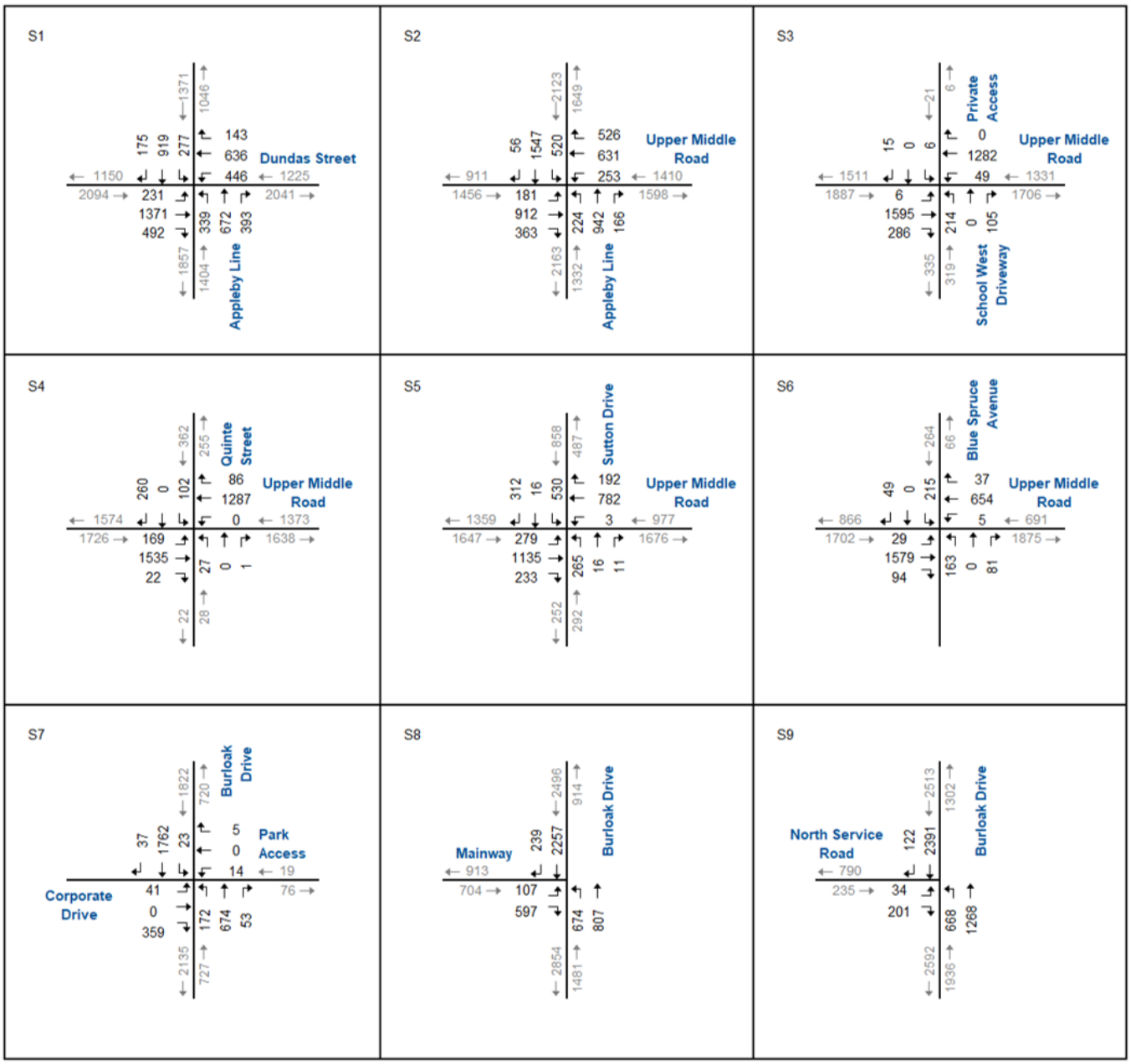
Figure 7.6B



Full Build Site Traffic Volumes
Saturday Peak Hour
(Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

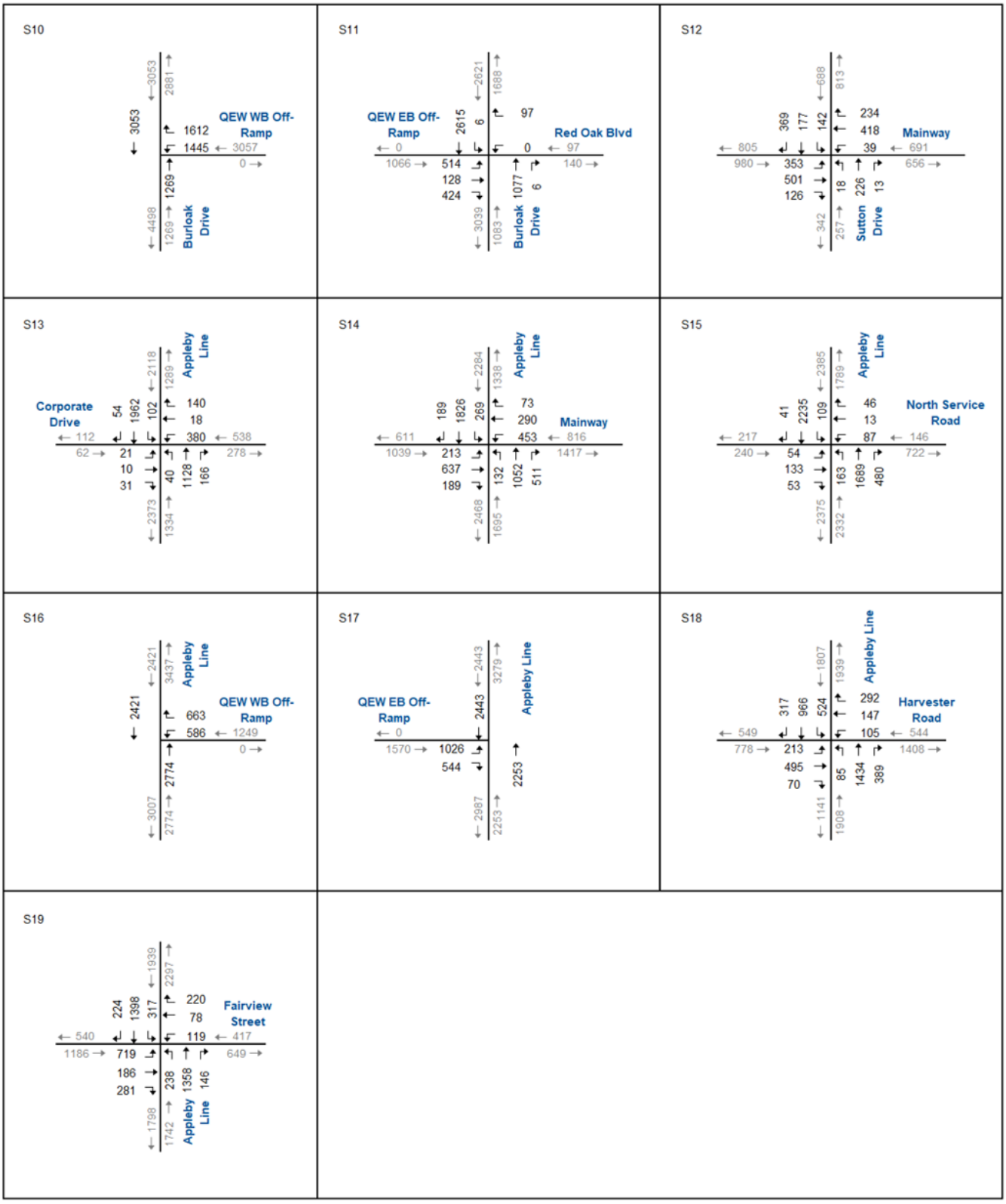
Figure 7.6C



Full Build Total Traffic Volumes 2045 Weekday AM Peak Hour (Signalized Intersections) (1/2)

Bronte Creek Meadows, Burlington
230553

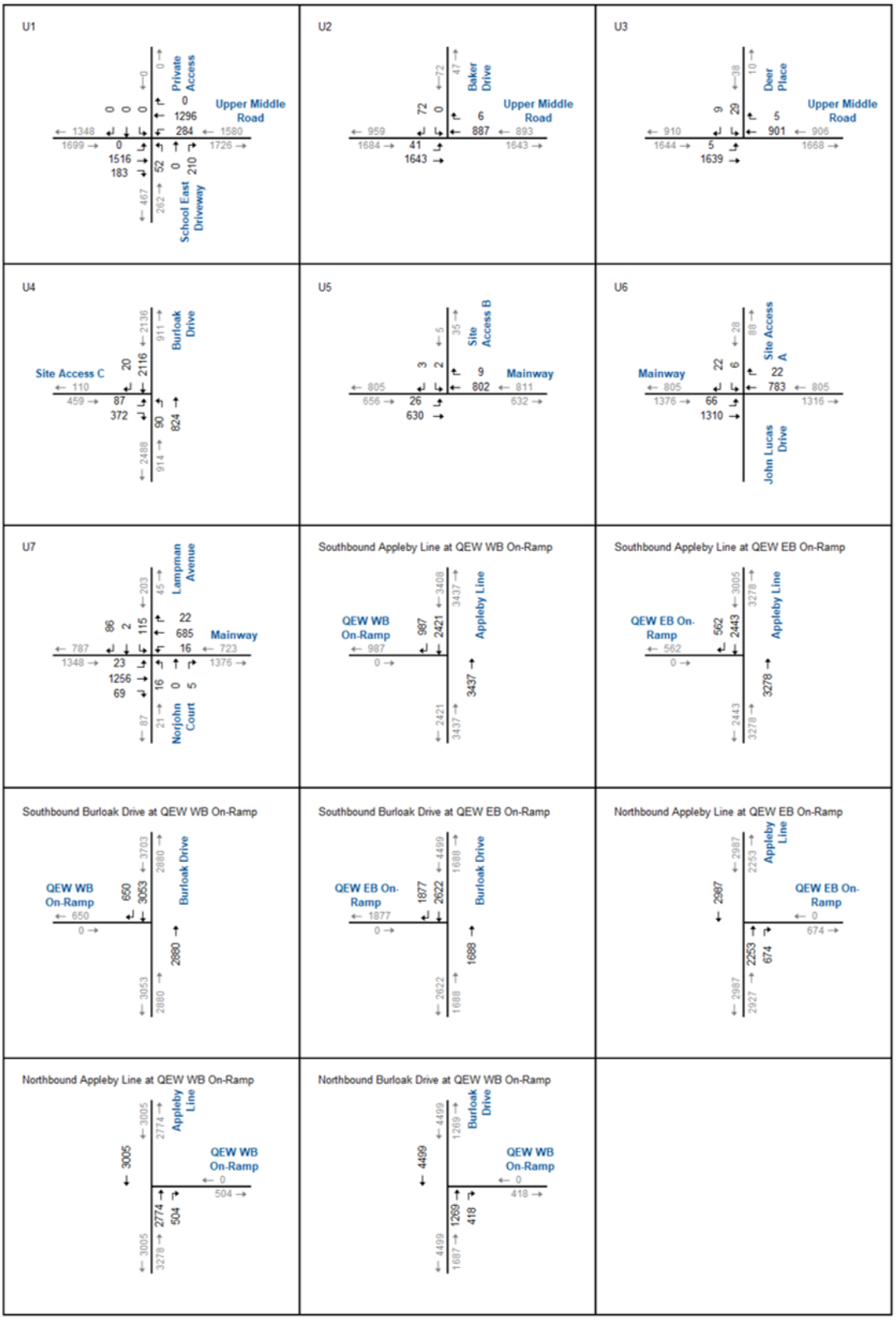
Figure 7.7A



Full Build Total Traffic Volumes 2045 Weekday AM Peak Hour (Signalized Intersections) (2/2)

Bronte Creek Meadows, Burlington
230553

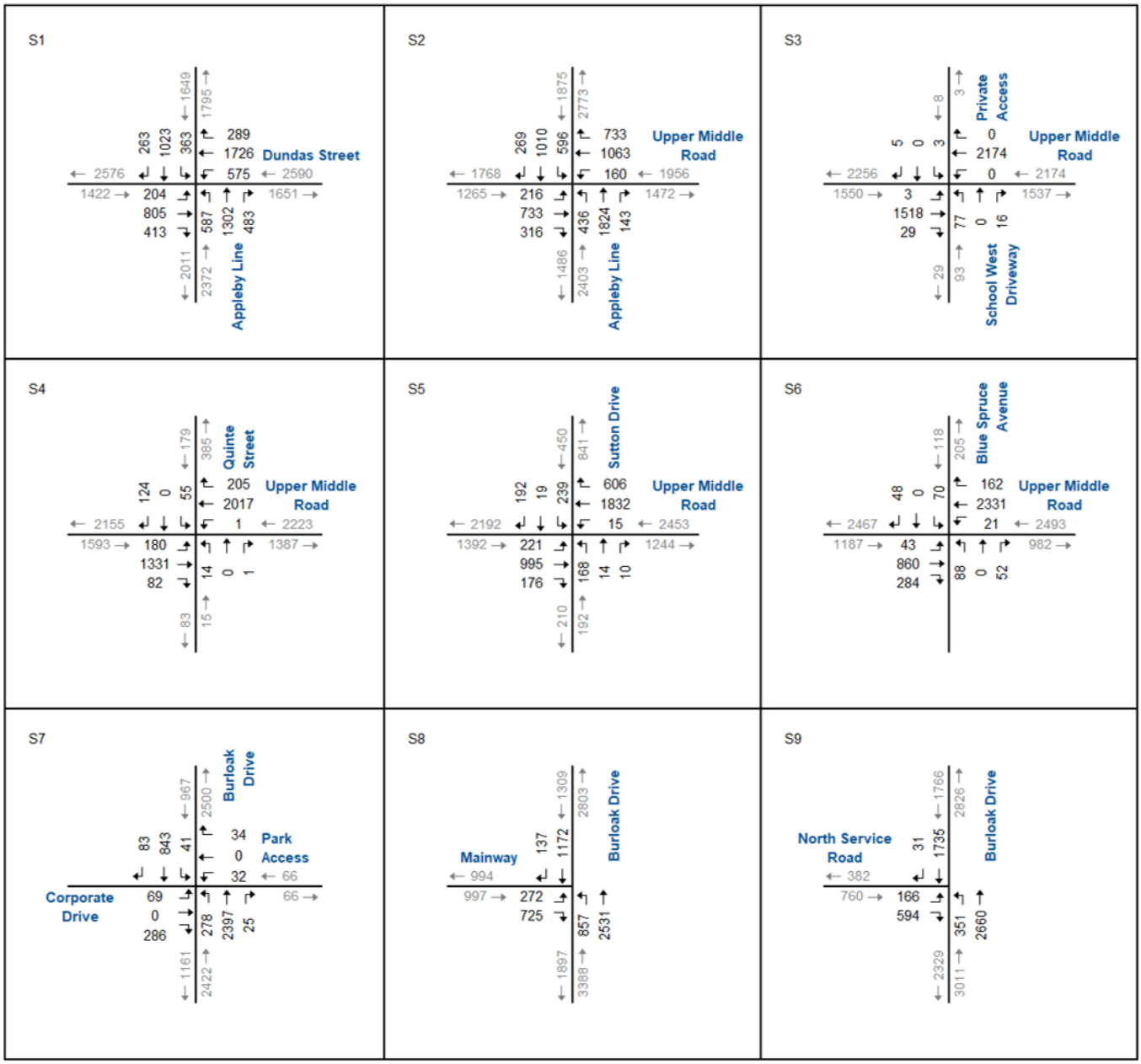
Figure 7.7B



Full Build Total Traffic Volumes 2045 Weekday AM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

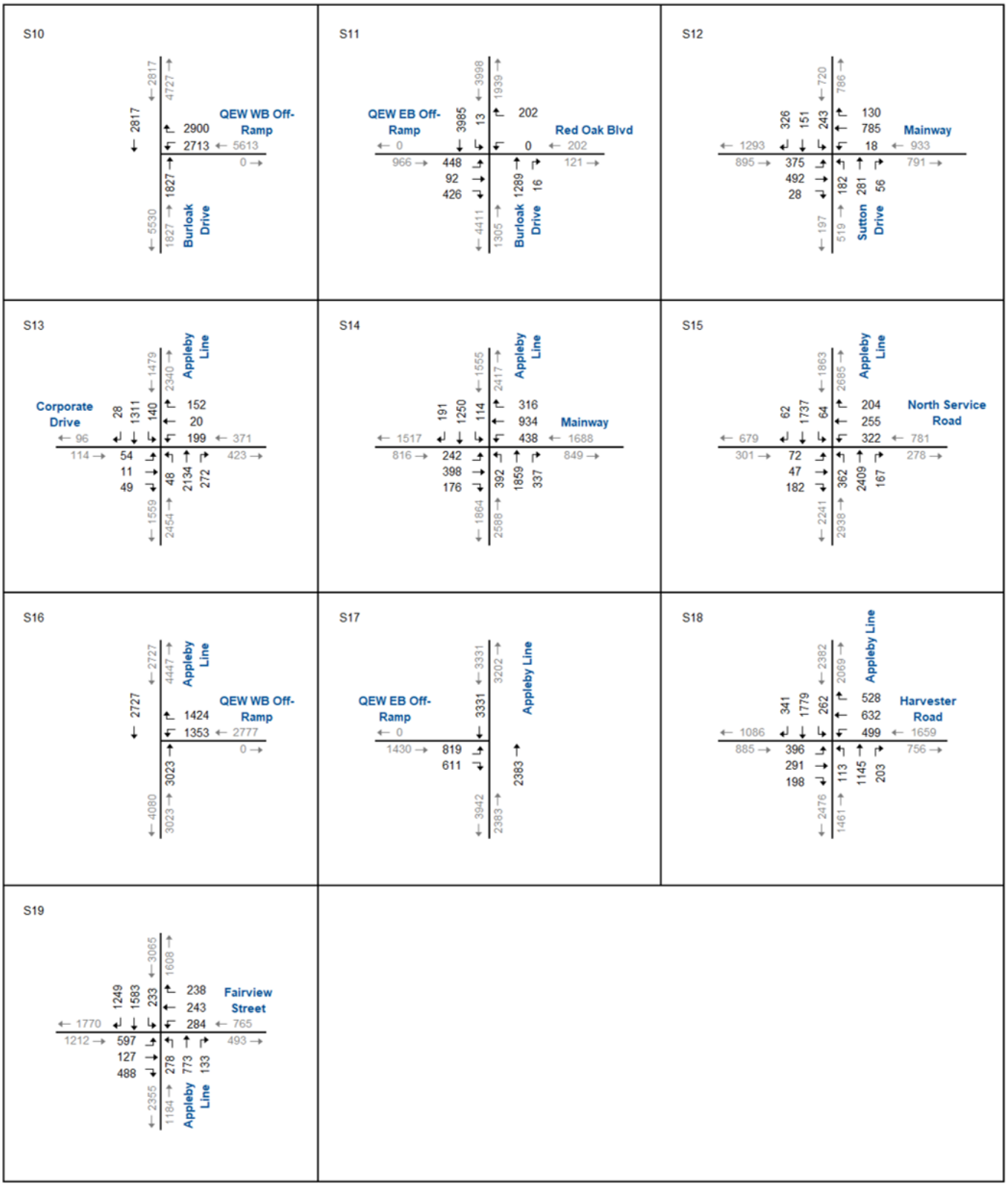
Figure 7.7C



Full Build Total Traffic Volumes 2045 Weekday PM Peak Hour (Signalized Intersections) (1/2)

Bronte Creek Meadows, Burlington
230553

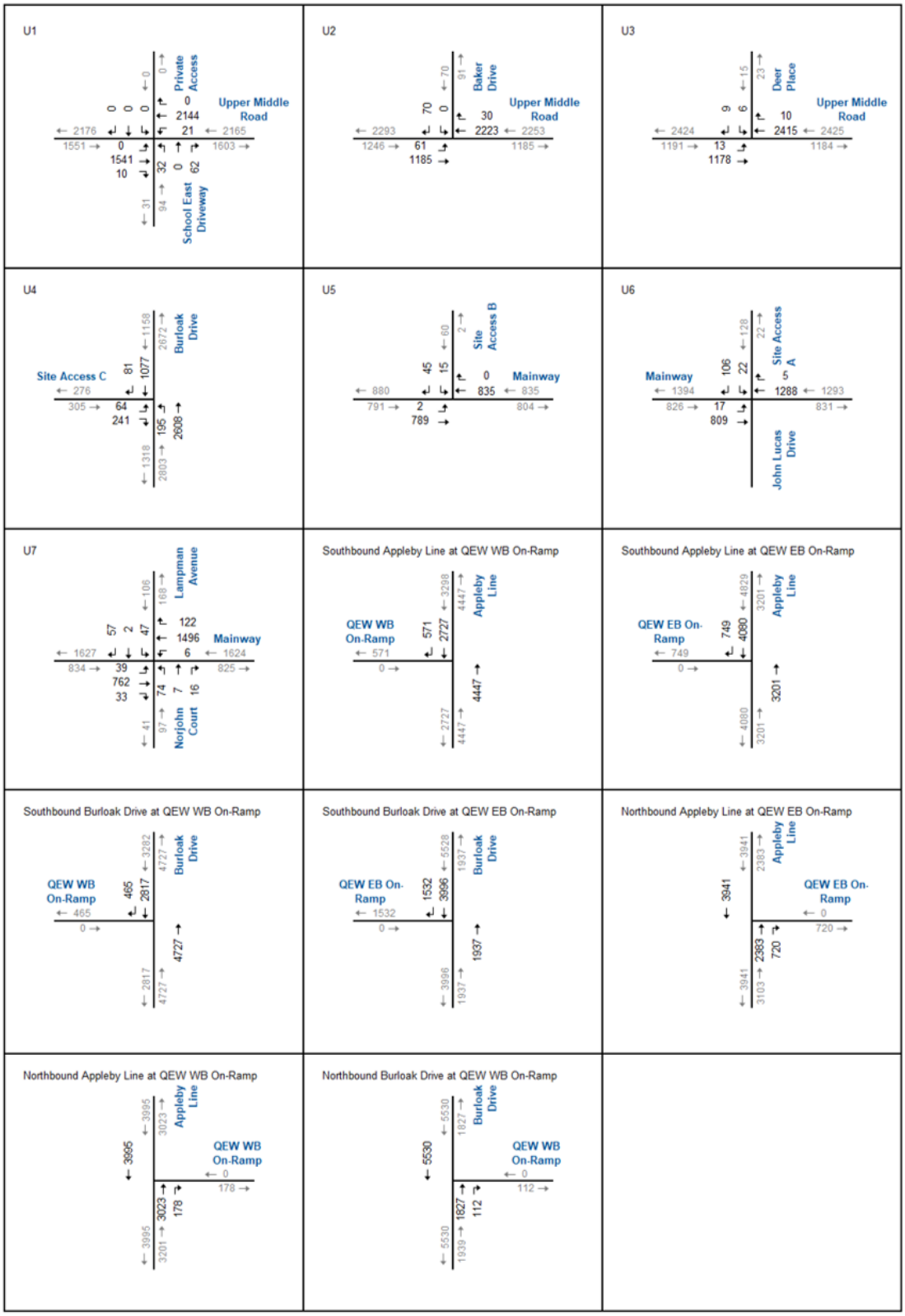
Figure 7.8A



Full Build Total Traffic Volumes 2045 Weekday PM Peak Hour (Signalized Intersections) (2/2)

Bronte Creek Meadows, Burlington
230553

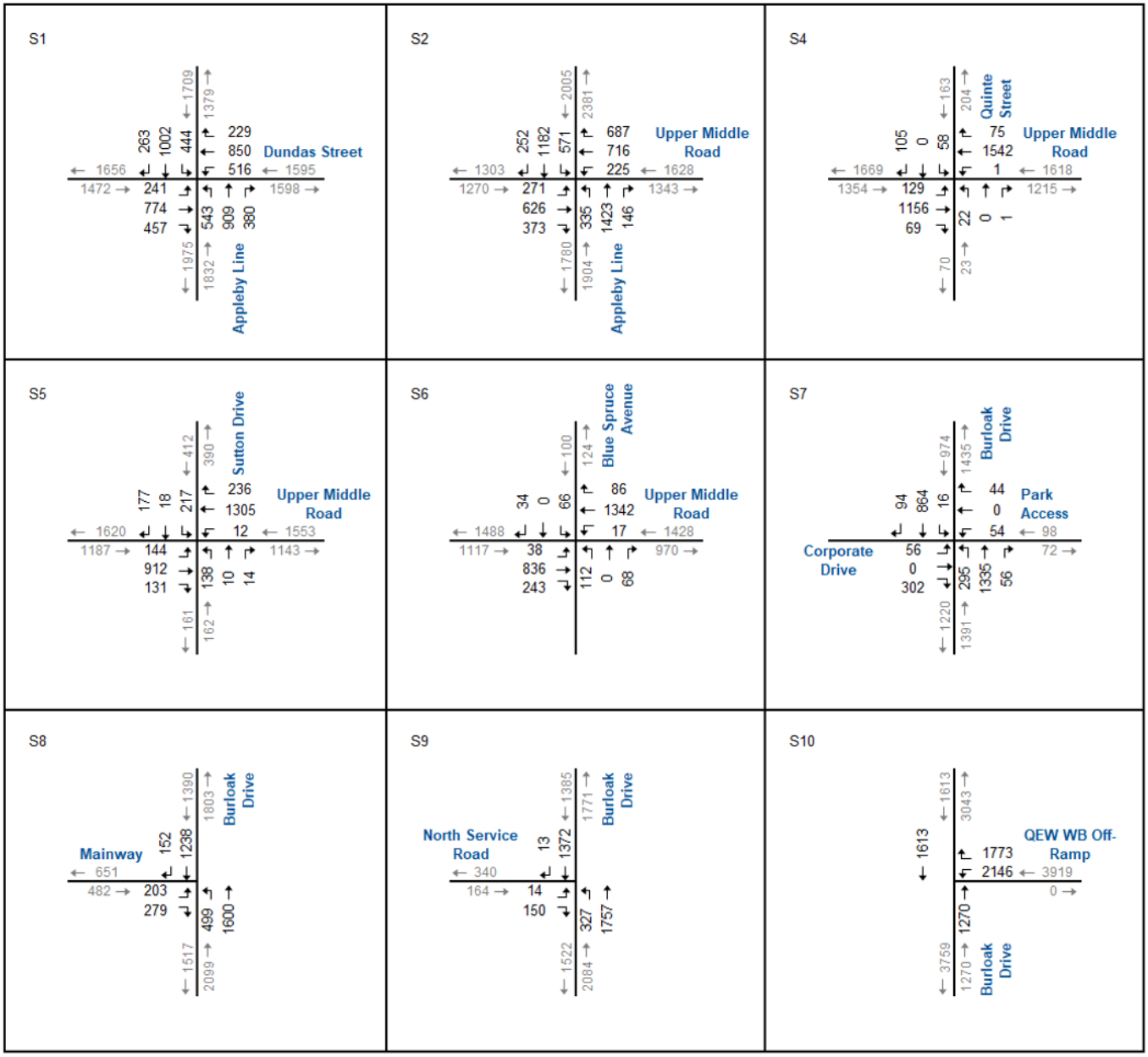
Figure 7.8B



Full Build Total Traffic Volumes 2045 Weekday PM Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

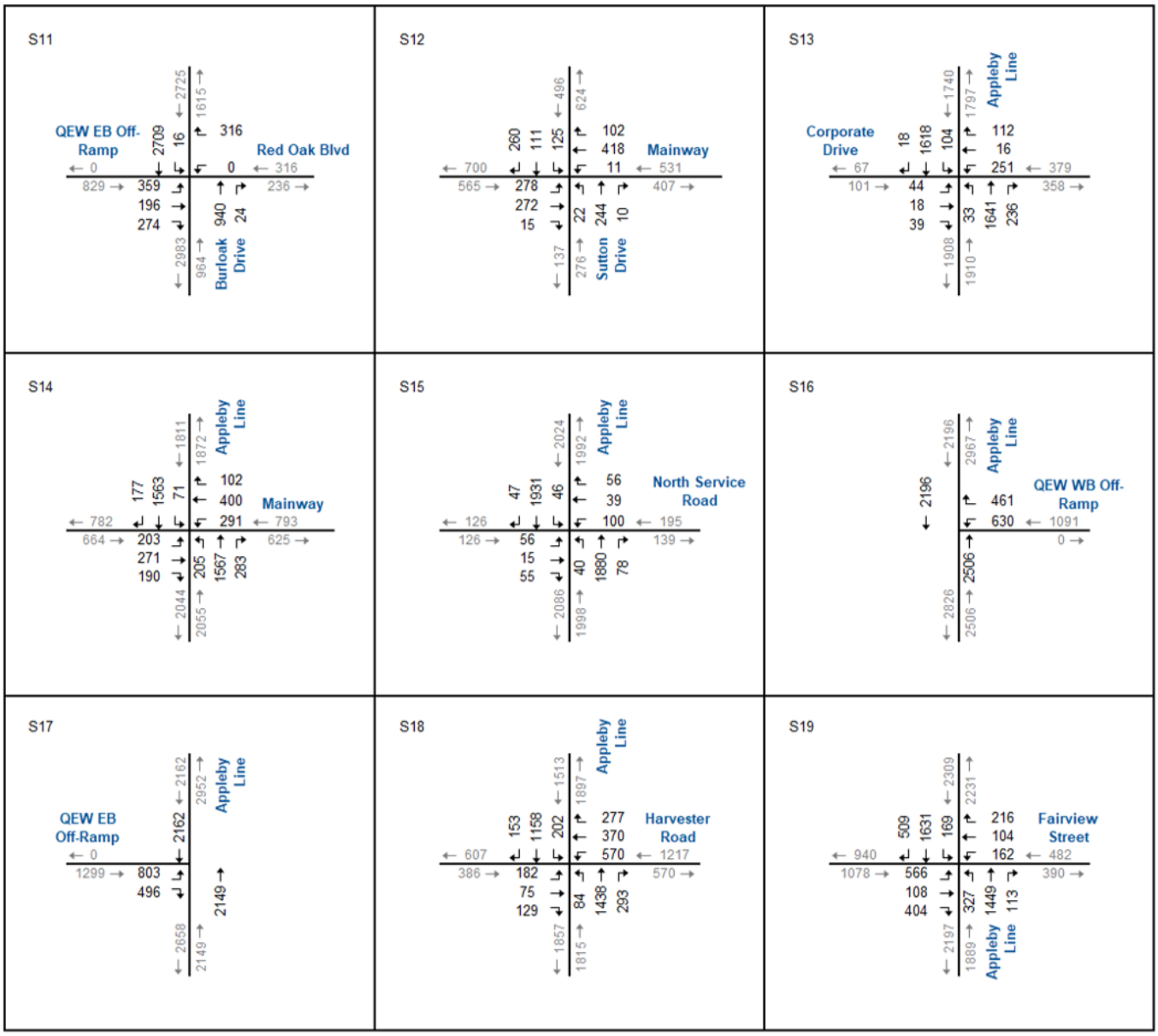
Figure 7.8C



Full Build Total Traffic Volumes 2045 Saturday Peak Hour (Signalized Intersections) (1/2)

Bronte Creek Meadows, Burlington
230553

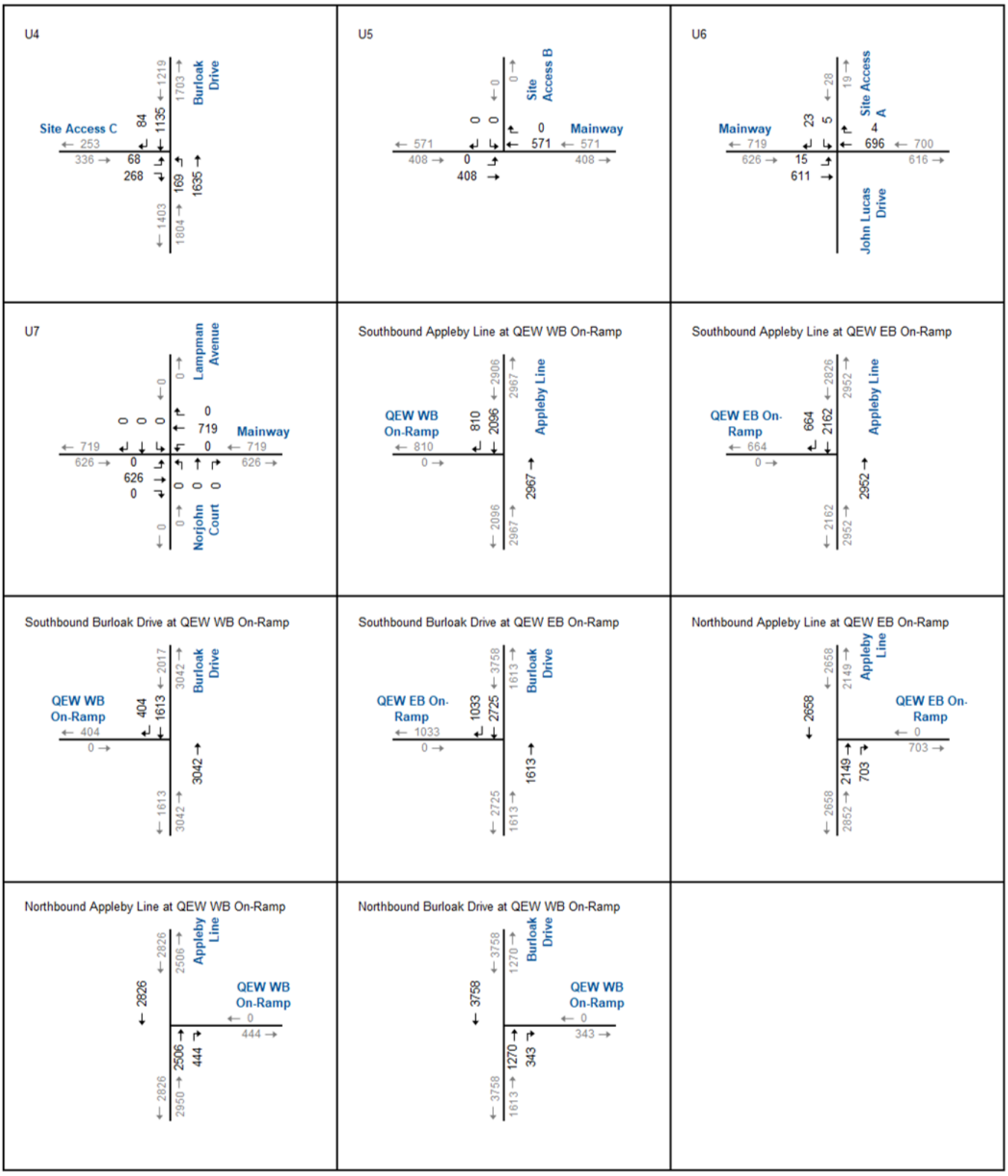
Figure 7.9A



Full Build Total Traffic Volumes 2045 Saturday Peak Hour (Signalized Intersections) (2/2)

Bronte Creek Meadows, Burlington
230553

Figure 7.9B



Full Build Total Traffic Volumes 2045 Saturday Peak Hour (Unsignalized Intersections)

Bronte Creek Meadows, Burlington
230553

Figure 7.9C

7.3 Intersection Assessment

For the purpose of this study, Full Build-Out site traffic is assigned to the Year 2045 horizon with the Phase 1 mitigation measures in place (outlined in **Section 6.6**). Mode shift reductions (forecast to be 15%), as outlined in **Section 6.3**, have not been applied.

Tables 7.3 – 7.6 summarize the capacity analyses for the study area intersections for the 2045 horizon. The capacity analysis results are included in **Appendix Q**.

The following sub-sections outline the operations of the study area intersections with focus on critical movements resulting from the Phase 2-4 site traffic not previously identified in the Phase 1 results.

Under the 2045 horizon year, many study area intersections are forecast to operate at or near their functional capacity. Since the Full Build-Out site traffic assignment adheres to the same methodology utilized in Phase 1, the majority of impacted movements have already been identified, with appropriate mitigation measures previously proposed to address these constraints.

Overall, the study area intersections are forecast to operate at similar levels to the Phase 1 2045 Total Scenario; the exceptions being the new site access intersections for the future phases.

7.3.1 Upper Middle Road at Blue Spruce Avenue

Horizon Year	Operations
2045 Total (Full Build-Out)	Approaching Capacity

Under Full Build-Out of the site, Blue Spruce Avenue is proposed to extend south of Upper Middle Road to provide access to the development. With Phase 1 mitigation measures, the intersection has been assumed to be signalized by Full Build-Out. With site-generated traffic volumes, the westbound approach is forecast to operate at LOS C and v/c ratios exceeding 0.95 during the weekday PM peak hour.

As one of the primary accesses to the subject site, an increase in delay is expected. Improvements to the intersection will be required to accommodate the increase in vehicle traffic.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Westbound movement (v/c > 0.85) (Full Build-Out)

7.3.2 Burloak Drive at Corporate Drive/ Bronte Creek Park Access

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

With Full Build-Out of the site, Corporate Drive will be connected to the eastbound approach of the intersection. With Phase 1 mitigation measures, the intersection has been assumed to be signalized by Full Build-Out.

The addition of site-generated traffic degrades the northbound approach to operate with delays in the LOS A-E range and a v/c ratio greater than 0.90 during the peak hours.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Northbound movement (v/c > 0.85) (Full Build-Out)

7.3.3 Burloak Drive at Site Access C

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

With Full Build-Out of the site, a future full-moves connection at Burloak Drive at Site Access C is planned to provide additional access to the development, located south of the Burloak Drive at Bronte Creek Park/Corporate Drive intersection. Under the assumed two-way stop-control, the eastbound approach is forecast to operate with delays in the LOS F range during the peak hours.

Critical Movements (LOS D or worse)

- Eastbound movement (LOS > D) (Full Build-Out).

7.3.4 Mainway at Sutton Drive

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

The Full Build-Out scenario is forecast to operate similarly to the Phase 1 2045 horizon. Even with Phase 1 mitigation measures, several movements are still projected to experience critical movements including the eastbound left, westbound through-left, northbound approach, and southbound approach.

Critical Movements (v/c over 0.85, v/c over 0.95 for exclusive turn lanes, 95th Percentile queues over storage)

- Eastbound left (v/c > 0.95; 95th queue) (Full Build-Out);
- Westbound through-right (v/c > 0.85) (Full Build-Out);
- Northbound movement (v/c > 0.85) (Full Build-Out); and
- Southbound movement (v/c > 0.85) (Full Build-Out).

7.3.5 Mainway at Site Access B

Horizon Year	Operations
2045 Total (Full Build-Out)	Within Capacity

A new site connection at Mainway and Site Access B is provided to accommodate for additional site generated traffic for the Office Park development located along Mainway, east of Sutton Drive. Under the assumed two-way stop-control, all movements are forecast to operate at LOS C or better.

7.3.6 Sutton Drive at Corporate Drive

Horizon Year	Operations
2045 Total (Full Build-Out) All-Way Stop	Exceeding Capacity
2045 Total (Full Build-Out) Signalized	Within Capacity

As future development phases proceeds, Corporate Drive is planned to extend across the development lands to provide for a new access at the existing intersection of Burloak Drive at Bronte Creek Park Access. With this extension, the primary internal intersection of Sutton Drive at Corporate Drive will transition from a T-intersection to a four-leg cross intersection.

With the proposed all-way stop control at the intersection of Sutton Drive at Corporate Drive, the northbound approach is expected to operate with critical delays of LOS F with v/c ratios greater than 1.00 during the weekday and Saturday peak hours. The westbound and southbound approaches are also expected to operate with critical delays at LOS F and E respectively with v/c ratios over 0.85 during the weekday AM peak hour.

A secondary analysis was conducted using traffic control signals at the intersection to mitigate the projected delays. The signal warrant analysis is provided in **Appendix K**

Although signal warrants indicate that signalization is not required at the intersection, implementing them is projected to show a significant improvement in reducing delays. During the weekday PM and Saturday peak hours, all movements operate at LOS B or better with v/c ratios less than 0.75. The westbound approach during the weekday AM peak hour will still operate as critical with a v/c ratio over 0.85, however delays are expected to be reduced by 126 seconds and operate at LOS C.

Signalizing the internal intersection will also support active transportation through and within the subject site.

Critical Movements (LOS D or worse)

- Eastbound movement (LOS > D) (Full Build-Out).

TABLE 7.3: FULL BUILD ANALYSIS – AM PEAK HOUR (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Dundas Street	TCS	LOS	E	E	E	E	F	D	C	F	F	D	D	E	F	D	C	E	E
			Delay	62	70	69	69	191	39	35	94	182	36	39	72	179	41	33	68	74
			V/C	0.65	0.99	0.91		1.25	0.48	0.10		1.21	0.44	0.48		1.18	0.61	0.12		0.90
			Q	50	188	181		129	75	18		99	74	74		84	104	18		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	55	-	-1		61	-	197		36	-	46		51	-	162		
	Appleby Line & Upper Middle Road	TCS	LOS	C	F	>	F	F	C	D	E	F	E	>	F	F	E	>	F	F
			Delay	29	119	>	108	153	34	42	59	187	75	>	94	139	77	>	92	89
			V/C	0.61	1.14	>		1.10	0.38	0.68		1.18	0.98	>		1.12	1.03	>		1.13
			Q	54	305	>		82	70	129		77	179	>		145	248	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	1	-	>		43	-	-49		23	-	>		-90	-	>		
	West School Driveway/Private Driveway & Upper Middle Road	TCS	LOS	B	D	>	D	C	B	>	B	<	D	C	D	<	C	>	C	C
			Delay	15	48	>	48	22	14	>	14	<	42	26	37	<	25	>	25	34
			V/C	0.07	1.02	>		0.36	0.58	>		<	0.71	0.09		<	0.02	>		0.89
			Q	3	158	>		9	70	>		<	66	8		<	0	>		
			Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
			Avail.	27	-	>		71	-	>		<	-	-		<	-	>		
	East School Driveway & Upper Middle Road	TWSC	LOS		A	>	A	E	A		A	F		C	E					
			Delay		0	>	0	39	0		7	167		17	46					
			V/C		0.50	>		0.82	0.36			0.91		0.49						
			Q		0	>		64	0			38		22						
			Stor.		-	>		30	-			-		-						
			Avail.		-	>		-34	-			-		-						
	Quinte Street & Upper Middle Road	TCS	LOS	D	C	>	C	<	D	>	D	B	B	>	B	C	C	>	C	C
			Delay	51	20	>	23	<	53	>	53	16	15	>	16	25	24	>	24	35
			V/C	0.91	0.82	>		<	1.02	>		0.13	0.00	>		0.33	0.27	>		0.71
			Q	40	85	>		<	96	>		8	0	>		29	14	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	20	-	>		<	-	>		22	-	>		16	-	>		
	Sutton Drive & Upper Middle Road	TCS	LOS	E	D	>	D	C	E	>	E	D	D	>	D	D	D	>	D	D
			Delay	72	38	>	44	34	79	>	79	40	36	>	40	35	40	>	37	51
			V/C	1.00	0.90	>		0.05	1.04	>		0.79	0.08	>		0.69	0.75	>		0.91
			Q	107	150	>		2	91	>		53	10	>		101	84	>		
			Stor.	60	-	>		60	-	>		30	-	>		60	-	>		
			Avail.	-47	-	>		58	-	>		-23	-	>		-41	-	>		
	Upper Middle Road & Baker Drive	TWSC	LOS	B	A		A		A	>	A							B	B	
			Delay	11	0		0		0	>	0							12	12	
			V/C	0.07	0.36				0.23	>								0.13		
			Q	2	0				0	>								4		
			Stor.	100	-				-	>								-		
			Avail.	98	-				-	>								-		
	Upper Middle Road & Deer Place	TWSC	LOS	A	A		A		A	>	A					E		>	E	
			Delay	10	0		0		0	>	0					43		>	43	
			V/C	0.00*	0.35				0.23	>						0.31		>		
			Q	0	0				0	>						10		>		
			Stor.	100	-				-	>						-		>		
			Avail.	100	-				-	>						-		>		
	Blue Spruce Avenue & Upper Middle Road	TCS	LOS	B	C	>	C	<	A	>	A	<	B	>	B	<	B	>	B	B
			Delay	12	24	>	24	<	10	>	10	<	17	>	17	<	16	>	16	19
			V/C	0.12	0.81	>		<	0.37	>		<	0.55	>		<	0.64	>		0.73
			Q	3	137	>		<	24	>		<	37	>		<	51	>		
			Stor.	100	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	97	-	>		<	-	>		<	-	>		<	-	>		
	Burloak Drive & Corporate Drive/Park Access	TCS	LOS	<	D	>	D	<	C	>	C	<	A	>	A	A	A	>	A	B
			Delay	<	42	>	42	<	21	>	21	<	6	>	6	5	8	>	8	12
			V/C	<	0.84	>		<	0.02	>		<	1.66	>		0.08	0.60	>		0.72
			Q	<	82	>		<	0	>		<	34	>		4	70	>		
			Stor.	<	-	>		<	-	>		<	-	>		145	-	>		
			Avail.	<	-	>		<	-	>		<	-	>		141	-	>		
	Burloak Drive & Site Access C	TWSC	LOS	F		>	F					<	B		A		A	>	A	
			Delay	Err		>	Err					<	14		4		0	>	0	
			V/C	6.26		>						<	0.34				0.54	>		
			Q	Err		>						<	12				0	>		
			Stor.	-		>						<	-				-	>		
			Avail.	-		>						<	-				-	>		
	Burloak Drive & Mainway	TCS	LOS	D		F	F					F	A		E		F	>	F	F
			Delay	50		206	182					163	7		78		102	>	102	106
			V/C	0.31		1.28						1.18	0.25				1.13	>		1.17
			Q	51		252						190	28				391	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						-80	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	F	B	>	E	<	D	>	D	<	B	>	B	<	F	>	F	E
			Delay	144	16	>	62	<	44	>	44	<	17	>	17	<	115	>	115	67
			V/C	1.22	0.45	>		<	0.90	>		<	0.39	>		<	1.17	>		1.24
			Q	118	51	>		<	93	>		<	50	>		<	208	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	-93	-	>		<	-	>		<	-	>		<	-	>		
	Norjohn Court/Lampman Avenue & Mainway	TCS	LOS	<	B	>	B	<	A	>	A	<	B	>	B	<	C	>	C	B
			Delay	<	10	>	10	<	6	>	6	<	19	>	19	<	26	>	26	10
			V/C	<	0.76	>		<	0.45	>		<	0.02	>		<	0.63	>		0.73
			Q	<	98	>		<	42	>		<	4	>		<	32	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.3: FULL BUILD ANALYSIS – AM PEAK HOUR (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Appleby Line & Mainway	TCS	LOS	C	F	>	E	F	D	>	E	F	D	>	D	D	E	>	E	E
			Delay	34	89	>	78	96	38	>	70	102	44	>	48	42	72	>	68	64
			V/C	0.61	1.04	>		1.06	0.42	>		0.97	0.84	>		0.84	1.05	>		1.07
			Q	64	172	>		103	60	>		48	140	>		43	255	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	21	-	>		-13	-	>		47	-	>		22	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	B	>	B	<	E	>	E	D	C	>	C	B	C	>	C	C
			Delay	<	17	>	17	<	70	>	70	48	29	>	30	18	28	>	27	34
			V/C	<	0.14	>		<	1.02	>		0.55	0.79	>		0.52	0.90	>		1.01
			Q	<	16	>		<	161	>		26	97	>		19	143	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		24	-	>		101	-	>		
	Burloak Drive & N Service Road	TCS	LOS	E		E	E					D	A		B		C	>	C	C
			Delay	67		66	67					52	1		19		32	>	32	28
			V/C	0.27		0.15						0.72	0.30				0.95	>		0.82
			Q	21		31						84	10				135	>		
			Stor.	60		-						140	-				-	>		
			Avail.	39		-						56	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					F		F	F		C		C		F		F	F
			Delay					87		232	163		30		30		201		201	156
			V/C					1.07		1.41			0.57				1.38			1.39
			Q					334		467			129				524			
			Stor.					-		160			-				-			
			Avail.					-		-307			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	F	F	E	F			E	E		B	>	B		D		D	D
			Delay	122	121	72	110			65	65		14	>	14		42		42	51
			V/C	1.04	1.08	0.79				0.29			0.38	>			0.99			0.96
			Q	172	156	117				32			70	>			347			
			Stor.	-	-	70				-			-	>			-			
			Avail.	-	-	-47				-			-	>			-			
	Appleby Line & North Service Road	TCS	LOS	D	E	>	E	D	D	>	D	D	C	>	C	C	D	>	D	C
			Delay	48	61	>	58	41	36	>	39	45	28	>	29	25	37	>	36	34
			V/C	0.32	0.73	>		0.49	0.07	>		0.72	0.86	>		0.61	0.94	>		0.84
			Q	28	69	>		36	14	>		66	257	>		20	169	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	12	-	>		29	-	>		-1	-	>		45	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					D		F	E		B		B		B		B	C
			Delay					39		90	66		19		19		20		20	28
			V/C					0.78		1.06			0.99				0.88			1.01
			Q					90		143			208				186			
			Stor.					210		-			-				-			
			Avail.					120		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	E		C	E						C		C		C		C	D
			Delay	70		31	57						28		28		32		32	37
			V/C	1.04		0.67							0.93				1.01			1.02
			Q	177		84							200				252			
			Stor.	180		70							-				-			
			Avail.	3		-14							-				-			
	Appleby Line & Harvester Road	TCS	LOS	F	D	>	E	C	D	>	D	C	E	D	D	D	C	B	C	D
			Delay	100	46	>	60	34	36	>	36	24	56	36	50	46	21	19	28	42
			V/C	1.01	0.79	>		0.57	0.37	>		0.37	0.98	0.56		0.78	0.46	0.24		0.94
			Q	83	84	>		30	32	>		20	166	79		105	82	20		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	32	-	>		90	-	>		30	-	-29		-25	-	65		
	Appleby Line & Fairview Street	TCS	LOS	E	D	C	D	D	D	E	D	E	F	C	F	F	D	C	E	E
			Delay	67	35	34	54	45	52	57	53	58	128	27	110	208	42	28	67	77
			V/C	0.95	0.39	0.31		0.53	0.45	0.61		0.88	1.18	0.12		1.33	0.84	0.16		1.12
			Q	138	59	37		33	38	51		120	271	17		193	145	18		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	-53	-	13		47	-	-		-45	-	38		-118	-	82		
	Mainway & Site Access A	TWSC	LOS	B	A		A		A	>	A					C		>	C	
			Delay	10	0		0		0	>	0					24		>	24	
			V/C	0.09	0.42				0.33	>						0.14		>		
			Q	2	0				0	>						4		>		
			Stor.	25	-				-	>						-		>		
			Avail.	23	-				-	>						-		>		
	Mainway & Site Access B	TWSC	LOS	<	A		A		A	>	A					C		>	C	
			Delay	<	2		0		0	>	0					17		>	17	
			V/C	<	0.04				0.34	>						0.02		>		
			Q	<	1				0	>						0		>		
			Stor.	<	-				-	>						-		>		
			Avail.	<	-				-	>						-		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.4: FULL BUILD ANALYSIS – PM PEAK HOUR (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Dundas Street	TCS	LOS	F	D	D	E	F	E	C	F	F	D	C	E	E	D	D	D	E
			Delay	126	47	47	58	203	73	34	97	186	35	22	70	76	50	44	55	74
			V/C	0.99	0.61	0.54		1.28	1.01	0.20		1.25	0.90	0.74		0.84	0.73	0.38		1.09
			Q	62	98	84		160	241	21		96	130	52		84	125	60		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	43	-	96		30	-	194		39	-	68		51	-	120		
	Appleby Line & Upper Middle Road	TCS	LOS	F	F	>	F	F	D	F	F	E	F	>	F	F	C	>	E	F
			Delay	222	87	>	110	140	49	173	103	79	93	>	90	160	22	>	66	91
			V/C	1.33	1.03	>		1.00	0.74	1.23		0.89	1.08	>		1.20	0.71	>		1.23
			Q	124	218	>		52	126	279		96	281	>		128	102	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	-69	-	>		73	-	-199		4	-	>		-73	-	>		
	West School Driveway/Private Driveway & Upper Middle Road	TCS	LOS	A	B	>	B	A	B	>	B	<	B	B	B	<	B	>	B	B
			Delay	9	13	>	13	0	19	>	19	<	15	14	15	<	14	>	14	17
			V/C	0.03	0.62	>		0.00	0.87	>		<	0.15	0.01		<	0.00	>		0.61
			Q	2	69	>		0	118	>		<	16	0		<	0	>		
			Stor.	30	-	>		80	-	>		<	-	-		<	-	>		
			Avail.	28	-	>		80	-	>		<	-	-		<	-	>		
	East School Driveway & Upper Middle Road	TWSC	LOS		A	>	A	B	A		A	B		A	B					
			Delay		0	>	0	12	0		0	11		10	10					
			V/C		0.39	>		0.04	0.45			0.05		0.08						
			Q		0	>		1	0			1		2						
			Stor.		-	>		30	-			-		-						
			Avail.		-	>		29	-			-		-						
	Quinte Street & Upper Middle Road	TCS	LOS	E	B	>	B	<	E	>	E	B	B	>	B	C	C	>	C	D
			Delay	59	13	>	18	<	69	>	69	20	19	>	20	24	24	>	24	46
			V/C	0.90	0.51	>		<	1.08	>		0.04	0.00	>		0.14	0.08	>		0.72
			Q	55	61	>		<	194	>		6	0	>		19	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	5	-	>		<	-	>		24	-	>		26	-	>		
	Upper Middle Road & Sutton Drive	TCS	LOS	F	B	>	C	B	E	>	E	E	D	>	E	D	D	>	D	D
			Delay	106	16	>	30	14	58	>	58	60	51	>	59	49	43	>	47	48
			V/C	1.01	0.42	>		0.08	1.06	>		0.72	0.08	>		0.43	0.28	>		0.90
			Q	105	78	>		1	274	>		59	12	>		62	41	>		
			Stor.	60	-	>		60	-	>		55	-	>		60	-	>		
			Avail.	-45	-	>		59	-	>		-4	-	>		-2	-	>		
	Upper Middle Road & Baker Drive	TWSC	LOS	B	A		A		A	>	A							B	B	
			Delay	13	0		1		0	>	0							12	12	
			V/C	0.13	0.24				0.55	>								0.12		
			Q	4	0				0	>								3		
			Stor.	100	-				-	>								-		
			Avail.	96	-				-	>								-		
	Upper Middle Road & Deer Place	TWSC	LOS	B	A		A		A	>	A					E		>	E	
			Delay	14	0		0		0	>	0					44		>	44	
			V/C	0.03	0.25				0.60	>						0.15		>		
			Q	1	0				0	>						4		>		
			Stor.	100	-				-	>						-		>		
			Avail.	99	-				-	>						-		>		
	Blue Spruce Avenue & Upper Middle Road	TCS	LOS	C	B	>	B	<	C	>	C	<	C	>	C	<	B	>	B	C
			Delay	22	11	>	11	<	27	>	27	<	20	>	20	<	19	>	19	22
			V/C	0.41	0.40	>		<	0.99	>		<	0.30	>		<	0.30	>		0.77
			Q	17	60	>		<	165	>		<	25	>		<	25	>		
			Stor.	100	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	83	-	>		<	-	>		<	-	>		<	-	>		
	Burloak Drive & Corporate Drive/Park Access	TCS	LOS	<	C	>	C	<	C	>	C	<	E	>	E	B	A	>	A	D
			Delay	<	24	>	24	<	21	>	21	<	77	>	77	11	4	>	4	54
			V/C	<	0.48	>		<	0.07	>		<	1.14	>		0.34	0.28	>		1.11
			Q	<	26	>		<	4	>		<	202	>		16	27	>		
			Stor.	<	-	>		<	-	>		<	-	>		145	-	>		
			Avail.	<	-	>		<	-	>		<	-	>		129	-	>		
	Burloak Drive & Site Access C	TWSC	LOS	F		>	F					<	B		A		A	>	A	
			Delay	Err		>	Err					<	11		3		0	>	0	
			V/C	5.97		>						<	0.39				0.28	>		
			Q	Err		>						<	14				0	>		
			Stor.	-		>						<	-				-	>		
			Avail.	-		>						<	-				-	>		
	Burloak Drive & Mainway	TCS	LOS	D		E	E					E	C		D		E	>	E	D
			Delay	38		71	62					62	27		36		72	>	72	49
			V/C	0.64		0.95						0.98	0.90				1.03	>		0.99
			Q	89		163						138	175				158	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						-28	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	F	C	>	F	<	F	>	F	<	F	>	F	<	F	>	F	F
			Delay	330	27	>	154	<	228	>	228	<	109	>	109	<	229	>	229	186
			V/C	1.62	0.45	>		<	1.39	>		<	1.13	>		<	1.42	>		1.54
			Q	193	70	>		<	216	>		<	227	>		<	329	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	-168	-	>		<	-	>		<	-	>		<	-	>		
	Norjohn Court/Lampman Avenue & Mainway	TCS	LOS	<	B	>	B	<	B	>	B	<	C	>	C	<	C	>	C	B
			Delay	<	10	>	10	<	18	>	18	<	30	>	30	<	29	>	29	17
			V/C	<	0.66	>		<	0.91	>		<	0.38	>		<	0.34	>		0.77
			Q	<	54	>		<	127	>		<	27	>		<	26	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.4: FULL BUILD ANALYSIS – PM PEAK HOUR (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Appleby Line & Mainway	TCS	LOS	F	D	>	F	E	F	>	F	F	F	>	F	F	F	>	F	F
			Delay	175	53	>	89	78	165	>	142	235	139	>	154	84	90	>	89	128
			V/C	1.22	0.72	>		0.90	1.24	>		1.37	1.20	>		0.74	1.05	>		1.33
			Q	144	114	>		106	311	>		230	348	>		36	220	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	-59	-	>		-16	-	>		-135	-	>		29	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	E	>	E	C	E	>	E	D	B	>	B	D
			Delay	<	29	>	29	<	64	>	64	23	64	>	64	40	13	>	15	47
			V/C	<	0.26	>		<	0.93	>		0.35	1.06	>		0.76	0.47	>		0.99
			Q	<	29	>		<	132	>		20	264	>		48	75	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		30	-	>		72	-	>		
	Burloak Drive & N Service Road	TCS	LOS	C		F	F					E	D		D		C	>	C	D
			Delay	31		96	82					78	39		44		32	>	32	46
			V/C	0.35		1.05						0.95	1.00				0.95	>		1.07
			Q	54		195						80	287				103	>		
			Stor.	60		-						140	-				-	>		
			Avail.	6		-						60	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					F		F	F		F		F		F		F	F
			Delay					277		496	390		96		96		345		345	325
			V/C					1.54		2.02			1.08				1.66			1.88
			Q					702		921			287				533			
			Stor.					-		160			-				-			
			Avail.					-		-761			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	E	E	D	E			F	F		C	>	C		F		F	F
			Delay	73	58	49	60			92	92		22	>	22		325		325	217
			V/C	0.85	0.75	0.33				0.83			0.50	>			1.64			1.34
			Q	129	97	48				95			114	>			706			
			Stor.	-	-	70				-			-	>			-			
			Avail.	-	-	22				-			-	>			-			
	Apleby Line/Appleby Line & North Service Road	TCS	LOS	F	D	>	E	F	E	>	F	E	D	>	D	C	E	>	E	E
			Delay	132	54	>	73	167	62	>	105	62	42	>	45	33	58	>	57	58
			V/C	0.92	0.50	>		1.21	0.88	>		0.89	0.97	>		0.48	0.98	>		1.08
			Q	44	54	>		131	151	>		160	348	>		18	252	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	-4	-	>		-66	-	>		-95	-	>		47	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					E		F	F		F		F		F		F	F
			Delay					62		181	123		140		140		98		98	121
			V/C					0.99		1.30			1.23				1.13			1.26
			Q					265		368			439				383			
			Stor.					210		-			-				-			
			Avail.					-55		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	F		E	E						B		B		E		E	D
			Delay	85		66	77						13		13		57		57	47
			V/C	1.06		0.99							0.75				1.08			1.07
			Q	127		108							123				291			
			Stor.	180		70							-				-			
			Avail.	53		-38							-				-			
	Appleby Line & Harvester Road	TCS	LOS	F	D	>	F	E	F	>	F	E	D	D	D	E	E	D	E	E
			Delay	158	46	>	96	71	127	>	110	75	48	38	49	76	74	37	69	79
			V/C	1.20	0.52	>		1.01	1.14	>		0.85	0.77	0.22		0.81	1.03	0.40		1.10
			Q	198	73	>		182	240	>		56	134	35		62	240	62		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	-83	-	>		-62	-	>		-6	-	15		18	-	23		
	Appleby Line & Fairview Street	TCS	LOS	F	D	F	F	E	E	D	E	F	C	C	F	C	D	F	F	F
			Delay	262	46	94	172	58	62	52	57	255	34	27	85	29	38	350	164	138
			V/C	1.41	0.29	0.97		0.78	0.70	0.29		1.41	0.54	0.10		0.72	0.74	1.67		1.46
			Q	178	56	188		100	110	42		173	126	13		60	176	583		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	-93	-	-138		-20	-	-		-98	-	42		15	-	-483		
	Mainway & Site Access A	TWSC	LOS	B	A		A		A	>	A					C		>	C	
			Delay	12	0		0		0	>	0					25		>	25	
			V/C	0.03	0.26				0.55	>						0.44		>		
			Q	1	0				0	>						17		>		
			Stor.	25	-				-	>						-		>		
			Avail.	24	-				-	>						-		>		
	Mainway & Site Access B	TWSC	LOS	<	A		A		A	>	A					C		>	C	
			Delay	<	0		0		0	>	0					17		>	17	
			V/C	<	0.00*				0.36	>						0.18		>		
			Q	<	0				0	>						5		>		
			Stor.	<	-				-	>						-		>		
			Avail.	<	-				-	>						-		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.5: FULL BUILD ANALYSIS – SATURDAY PEAK HOUR (1/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
SAT Peak Hour	Appleby Line & Dundas Street	TCS	LOS	E	D	E	E	F	D	D	F	E	D	D	D	E	D	D	D	E
			Delay	68	55	62	59	157	52	44	85	65	43	42	50	65	48	40	51	61
			V/C	0.66	0.71	0.74		1.16	0.70	0.15		0.83	0.57	0.44		0.78	0.68	0.20		0.81
			Q	53	92	101		136	98	21		139	105	72		110	118	28		
			Stor.	105	-	180		190	-	215		135	-	120		135	-	180		
			Avail.	52	-	79		54	-	194		-4	-	48		25	-	152		
	Appleby Line & Upper Middle Road	TCS	LOS	F	E	>	E	F	D	F	F	E	E	>	E	F	D	>	E	E
			Delay	102	71	>	78	94	38	128	84	67	65	>	65	105	42	>	60	70
			V/C	1.04	0.99	>		0.92	0.50	1.13		0.83	1.00	>		1.05	0.82	>		1.07
			Q	111	177	>		57	72	227		68	189	>		122	145	>		
			Stor.	55	-	>		125	-	80		100	-	>		55	-	>		
			Avail.	-56	-	>		68	-	-147		32	-	>		-67	-	>		
	Quinte Street & Upper Middle Road	TCS	LOS	C	B	>	B	<	D	>	D	B	B	>	B	C	C	>	C	C
			Delay	26	14	>	15	<	42	>	42	16	15	>	16	21	20	>	21	29
			V/C	0.70	0.54	>		<	0.98	>		0.06	0.00	>		0.16	0.08	>		0.62
			Q	31	55	>		<	126	>		7	0	>		18	0	>		
			Stor.	60	-	>		<	-	>		30	-	>		45	-	>		
			Avail.	29	-	>		<	-	>		23	-	>		27	-	>		
	Sutton Drive & Upper Middle Road	TCS	LOS	B	B	>	B	B	C	>	C	D	D	>	D	C	C	>	C	C
			Delay	17	14	>	15	14	24	>	24	40	41	>	40	25	34	>	29	22
			V/C	0.59	0.42	>		0.06	0.74	>		0.60	0.12	>		0.27	0.19	>		0.63
			Q	28	61	>		3	111	>		35	9	>		24	23	>		
			Stor.	60	-	>		60	-	>		55	-	>		60	-	>		
			Avail.	32	-	>		57	-	>		20	-	>		36	-	>		
	Blue Spruce Avenue & Upper Middle Road	TCS	LOS	B	A	>	A	<	A	>	A	<	B	>	B	<	B	>	B	A
			Delay	14	8	>	8	<	7	>	7	<	19	>	19	<	16	>	16	9
			V/C	0.32	0.38	>		<	0.58	>		<	0.37	>		<	0.20	>		0.51
			Q	10	28	>		<	36	>		<	29	>		<	17	>		
			Stor.	100	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	90	-	>		<	-	>		<	-	>		<	-	>		
	Burloak Drive & Corporate Drive/Park Access	TCS	LOS	<	C	>	C	<	C	>	C	<	A	>	A	A	A	>	A	A
			Delay	<	24	>	24	<	22	>	22	<	8	>	8	6	5	>	5	9
			V/C	<	0.45	>		<	0.15	>		<	0.94	>		0.13	0.29	>		0.77
			Q	<	25	>		<	10	>		<	107	>		4	42	>		
			Stor.	<	-	>		<	-	>		<	-	>		145	-	>		
			Avail.	<	-	>		<	-	>		<	-	>		141	-	>		
	Burloak Drive & Site Access C	TWSC	LOS	F		>	F					<	A		A		A	>	A	
			Delay	Err		>	Err					<	10		3		0	>	0	
			V/C	3.74		>						<	0.36				0.29	>		
			Q	Err		>						<	13				0	>		
			Stor.	-		>						<	-				-	>		
			Avail.	-		>						<	-				-	>		
	Burloak Drive & Mainway	TCS	LOS	D		C	D					D	A		B		C	>	C	C
			Delay	40		32	35					38	7		14		31	>	31	22
			V/C	0.66		0.23						0.56	0.49				0.81	>		0.69
			Q	55		23						66	45				108	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						44	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	B	A	>	B	<	B	>	B	<	B	>	B	<	D	>	D	C
			Delay	13	7	>	10	<	16	>	16	<	18	>	18	<	50	>	50	24
			V/C	0.69	0.16	>		<	0.47	>		<	0.48	>		<	0.95	>		0.85
			Q	35	13	>		<	33	>		<	42	>		<	99	>		
			Stor.	25	-	>		<	-	>		<	-	>		<	-	>		
			Avail.	-10	-	>		<	-	>		<	-	>		<	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.5: FULL BUILD ANALYSIS – SATURDAY PEAK HOUR (2/2)

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
SAT Peak Hour	Appleby Line & Mainway	TCS	LOS	F	D	>	D	F	D	>	E	D	C	>	C	D	C	>	C	D
			Delay	83	42	>	54	100	44	>	65	42	29	>	30	48	32	>	33	39
			V/C	0.94	0.59	>		1.00	0.74	>		0.65	0.76	>		0.34	0.85	>		0.85
			Q	63	48	>		62	67	>		64	129	>		15	176	>		
			Stor.	85	-	>		90	-	>		95	-	>		65	-	>		
			Avail.	22	-	>		28	-	>		31	-	>		50	-	>		
	Appleby Line & Corporate Drive	TCS	LOS	<	C	>	C	<	D	>	D	C	D	>	D	B	B	>	B	C
			Delay	<	21	>	21	<	44	>	44	30	39	>	38	20	16	>	16	29
			V/C	<	0.23	>		<	0.88	>		0.39	0.97	>		0.52	0.65	>		0.92
			Q	<	23	>		<	105	>		18	179	>		19	101	>		
			Stor.	<	-	>		<	-	>		50	-	>		120	-	>		
			Avail.	<	-	>		<	-	>		32	-	>		101	-	>		
	Burloak Drive & N Service Road	TCS	LOS	D		D	D					C	A		A		C	>	C	C
			Delay	37		37	37					33	5		9		34	>	34	20
			V/C	0.08		0.11						0.50	0.48				0.59	>		0.52
			Q	8		18						43	58				111	>		
			Stor.	60		-						140	-				-	>		
			Avail.	52		-						97	-				-	>		
	Burloak Drive & QEW WB Off-Ramp	TCS	LOS					E		E	E		D		D		F		F	E
			Delay					76		80	78		50		50		91		91	76
			V/C					1.09		1.09			0.83				1.07			1.08
			Q					422		396			151				230			
			Stor.					-		160			-				-			
			Avail.					-		-236			-				-			
	Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	TCS	LOS	E	E	D	E			F	F		C	>	C		F		F	F
			Delay	70	66	52	64			83	83		25	>	25		154		154	108
			V/C	0.76	0.79	0.14				0.88			0.41	>			1.25			1.07
			Q	105	98	25				132			96	>			472			
			Stor.	-	-	70				-			-	>			-			
			Avail.	-	-	45				-			-	>			-			
	Appleby Line & North Service Road	TCS	LOS	D	D	>	D	D	C	>	D	B	B	>	B	C	C	>	C	C
			Delay	50	45	>	47	37	35	>	36	12	16	>	16	25	28	>	28	24
			V/C	0.52	0.16	>		0.41	0.15	>		0.31	0.68	>		0.28	0.67	>		0.62
			Q	24	16	>		32	20	>		7	143	>		9	181	>		
			Stor.	40	-	>		65	-	>		65	-	>		65	-	>		
			Avail.	16	-	>		33	-	>		58	-	>		56	-	>		
	Appleby Line & QEW WB Off-Ramp	TCS	LOS					C		C	C		B		B		B		B	B
			Delay					32		27	30		14		14		13		13	16
			V/C					0.86		0.77			0.91				0.81			0.90
			Q					67		54			100				92			
			Stor.					210		-			-				-			
			Avail.					143		-			-				-			
	Appleby Line & QEW EB Off-Ramp	TCS	LOS	C		C	C						B		B		B		B	B
			Delay	28		21	25						15		15		15		15	17
			V/C	0.85		0.65							0.83				0.83			0.84
			Q	74		45							94				91			
			Stor.	180		70							-				-			
			Avail.	106		25							-				-			
	Appleby Line & Harvester Road	TCS	LOS	F	C	>	E	F	D	>	F	B	C	C	C	D	C	B	C	E
			Delay	86	34	>	58	303	42	>	164	16	27	21	26	43	20	16	23	62
			V/C	0.96	0.16	>		1.57	0.75	>		0.34	0.71	0.27		0.52	0.51	0.10		1.00
			Q	52	16	>		216	65	>		17	124	35		32	91	14		
			Stor.	115	-	>		120	-	>		50	-	50		80	-	85		
			Avail.	63	-	>		-96	-	>		33	-	15		48	-	71		
	Appleby Line & Fairview Street	TCS	LOS	E	D	E	E	D	D	D	D	D	C	B	C	C	D	C	C	D
			Delay	72	44	55	63	42	45	44	43	39	32	16	32	32	37	26	34	40
			V/C	0.97	0.39	0.72		0.57	0.39	0.33		0.77	0.86	0.09		0.71	0.85	0.33		0.89
			Q	68	38	64		46	37	32		130	248	14		68	179	25		
			Stor.	85	-	50		80	-	-		75	-	55		75	-	100		
			Avail.	17	-	-14		34	-	-		-55	-	41		7	-	75		
	Mainway & Site Access A	TWSC	LOS	A	A		A		A	>	A					C		A	B	
			Delay	9	0		0		0	>	0					21		10	12	
			V/C	0.02	0.20				0.30	>						0.02		0.03		
			Q	0	0				0	>						0		1		
			Stor.	25	-				-	>						-		-		
			Avail.	25	-				-	>						-		-		
	Mainway & Site Access B	TWSC	LOS	<	A		A		A	>	A					A		>	A	
			Delay	<	0		0		0	>	0					0		>	0	
			V/C	<	0.00				0.24	>						0.00		>		
			Q	<	0				0	>						0		>		
			Stor.	<	-				-	>						-		>		
			Avail.	<	-				-	>						-		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.6: FULL BUILD-OUT INTERNAL INTERSECTION ANALYSIS

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Sutton Drive & Corporate Drive	AWSC	LOS	<	C	>	**C**	<	F	>	**F**	<	F	>	**F**	<	E	>	**E**	
			Delay	<	16	>	**16**	<	152	>	**152**	<	106	>	**106**	<	44	>	**44**	
			V/C	<	0.32	>		<	1.25	>		<	1.13	>		<	0.87	>		
			Q	<	118	>		<	67	>		<	165	>		<	129	>		
	Sutton Drive & Corporate Drive	TCS	LOS	<	A	>	**A**	<	C	>	**C**	<	C	>	**C**	<	C	>	**C**	**C**
			Delay	<	8	>	**8**	<	26	>	**26**	<	22	>	**22**	<	25	>	**25**	**23**
			V/C	<	0.13	>		<	0.89	>		<	0.78	>		<	0.80	>		**0.85**
			Q	<	13	>		<	121	>		<	90	>		<	82	>		
PM Peak Hour	Sutton Drive & Corporate Drive	AWSC	LOS	<	B	>	**B**	<	C	>	**C**	<	F	>	**F**	<	C	>	**C**	
			Delay	<	14	>	**14**	<	25	>	**25**	<	168	>	**168**	<	17	>	**17**	
			V/C	<	0.31	>		<	0.70	>		<	1.30	>		<	0.51	>		
			Q	<	21	>		<	36	>		<	128	>		<	26	>		
	Sutton Drive & Corporate Drive	TCS	LOS	<	B	>	**B**	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	**B**
			Delay	<	11	>	**11**	<	20	>	**20**	<	16	>	**16**	<	8	>	**8**	**15**
			V/C	<	0.22	>		<	0.74	>		<	0.80	>		<	0.35	>		**0.77**
			Q	<	19	>		<	70	>		<	107	>		<	28	>		
Sat Peak Hour	Sutton Drive & Corporate Drive	AWSC	LOS	<	B	>	**B**	<	C	>	**C**	<	F	>	**F**	<	C	>	**C**	
			Delay	<	14	>	**14**	<	24	>	**24**	<	65	>	**65**	<	17	>	**17**	
			V/C	<	0.30	>		<	0.69	>		<	1.01	>		<	0.52	>		
			Q	<	21	>		<	32	>		<	62	>		<	25	>		
	Sutton Drive & Corporate Drive	TCS	LOS	<	A	>	**A**	<	B	>	**B**	<	B	>	**B**	<	A	>	**A**	**B**
			Delay	<	8	>	**8**	<	14	>	**14**	<	11	>	**11**	<	9	>	**9**	**11**
			V/C	<	0.19	>		<	0.70	>		<	0.60	>		<	0.42	>		**0.65**
			Q	<	14	>		<	55	>		<	39	>		<	29	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
TCS - Traffic Control Signal
< / > - Shared with through movement

7.4 Full Build-Out Left Turn Lanes

The unsignalized intersections within the study area were reassessed to determine whether the additional site-generated traffic associated with the full build-out would warrant the installation of a left-turn lane on the major roadway in accordance with MTO Geometric Design Standards. The same assumptions indicated in **Section 6.2** were applied for this reassessment. **Table 7.7** summarizes the results of the left-turn lane warrant analyses. **Appendix M** contains the nomographs used for each intersection. The following turn lanes are warranted:

- Blue Spruce Avenue at Upper Middle Road – Westbound left-turn lane with 15 m of storage;
- Corporate Drive/Park Access at Burloak Drive – Northbound left-turn lane with over 120 m of storage;
- Site Access C at Burloak Drive – Northbound left-turn lane with over 120 m of storage;
- Sutton Drive at Mainway - Eastbound left-turn lane with over 130 m of storage;
- Site Access A at Mainway - Eastbound left-turn lane with 25 m of storage; and
- Site Access B at Mainway - Eastbound left-turn lane with 15 m of storage.

TABLE 7.7: LEFT-TURN LANE WARRANT SUMMARY

	Quinte Street at Upper Middle Road			Blue Spruce Ave at Upper Middle Rd		
Approach Direction	Westbound			Westbound		
Design Speed	70 km/h			70 km/h		
Horizon	2045 Total			2045 Total		
Peak Hour	AM	PM	SAT	AM	PM	SAT
Advancing Volume	1373	2223	1618	696	2514	1445
Opposing Volumes	1726	1593	1354	1702	1187	1117
Left Turning Traffic	0	1	1	5	21	17
% of Left Turning Traffic	0.00%	0.04%	0.06%	0.72%	0.84%	1.18%
Figure Used*	9A-32	9A-32	9A-32	9A-32	9A-32	9A-32
Warranted	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**
Storage Length Required	-	-	-	15	15	15
	Corporate Drive/Park Access at Burloak Drive			Site Access C at Burloak Drive		
Approach Direction	Northbound			Northbound		
Design Speed	70 km/h			70 km/h		
Horizon	2045 Total			2045 Total		
Peak Hour	AM	PM	SAT	AM	PM	SAT
Advancing Volume	899	2700	1686	914	2803	1804
Opposing Volumes	1822	967	974	2136	1158	1219
Left Turning Traffic	172	278	295	90	195	169
% of Left Turning Traffic	19.13%	10.30%	17.50%	9.85%	6.96%	9.37%
Figure Used*	9A-32	9A-32	9A-32	9A-32	9A-32	9A-32
Warranted	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Storage Length Required	120+	120+	120+	120+	120+	120+
	Sutton Drive at Mainway			Site Access A at Mainway		
Approach Direction	Eastbound			Eastbound		
Design Speed	70 km/h			70 km/h		
Horizon	2045 Total			2045 Total		
Peak Hour	AM	PM	SAT	AM	PM	SAT
Advancing Volume	980	895	565	1376	826	626
Opposing Volumes	691	933	531	805	1293	700
Left Turning Traffic	353	375	278	66	17	15
% of Left Turning Traffic	36.02%	41.90%	49.20%	4.80%	2.06%	2.40%
Figure Used*	9A-31	9A-31	9A-31	9A-31	9A-31	9A-31
Warranted	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Storage Length Required	130	130+	50	25	15	15
	Site Access B at Mainway					
Approach Direction	Eastbound					
Design Speed	70 km/h					
Horizon	2045 Total					
Peak Hour	AM	PM	SAT			
Advancing Volume	656	791	408			
Opposing Volumes	811	835	571			
Left Turning Traffic	26	2	0			
% of Left Turning Traffic	3.96%	0.25%	0.00%			
Figure Used*	9A-31	9A-31	9A-31			
Warranted	**Yes**	**No**	**No**			
Storage Length Required	15	-				

Based on MTO Design Supplement for TAC Geometric Design Guide for Canadian Road - June 2023

7.5 Mitigation Measures

Overall, the study area intersections are forecast to operate at levels consistent with the Phase 1 2045 Total Scenario. The Full Build-Out traffic is expected to impact the network similar to Phase 1, where previously identified critical movements in the background scenarios will see further increases in delay. As outlined in **Section 6.6**, proposed intersection improvements generally include the addition of exclusive turn lanes, signalization, or signal timing adjustments.

Many study area intersections experiencing critical movements are expected to reach their ultimate cross-sections by Year 2045. At these locations, further lane expansion is either not physically feasible or would negatively impact the pedestrian and cycling environments.

For signalized intersections where widening is not an option, mitigation is generally limited to signal timing optimization or Transportation Demand Management (TDM) strategies, such as transit enhancements, HOV lanes, and policy shifts, designed to reduce or slow the growth of single-occupant vehicle trips.

Building upon the mitigation measures identified for Phase 1, the intersections outlined in the following sections require additional measures to accommodate the Full Build-Out traffic volumes.

Tables 7.8 – 7.10 summarize the capacity analyses for the study area intersections for the 2045 horizon. The capacity analysis results are included in **Appendix R**.

7.5.1 Upper Middle Road at Blue Spruce Avenue

With future phases of the development, Blue Spruce Avenue is proposed to be extended south of Upper Middle Road to provide for an additional access to the site. To accommodate for the additional site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM Warrants satisfied); and
- Left-turn Lane and protected-permissive phase for westbound traffic.

Overall, signalization is recommended to reduce delays for northbound and southbound approaches and support active transportation in the study area.

7.5.2 Burloak Drive at Corporate Drive/ Bronte Creek Park Access

With future phases of the development, Corporate Drive is proposed to be extended east through the development lands, providing a new access to site from the existing Burloak Drive at Bronte Creek Park intersection. To accommodate for the additional site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM warrants satisfied); and
- Implement a left-turn lane and phase for northbound traffic.

In the Phase 1 mitigation measures, signalization was identified as potential improvement although the signal was unwarranted. With the Full Build-Out of the site, the signal is warranted. As one of the primary accesses to the future phases, an increase in delay is expected and a northbound left-turn lane is recommended.

Overall, with the mitigation measures, the intersection is forecast to operate with delays in the LOS D range or better with v/c ratios less than 0.85 during the peak hours.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

7.5.3 Burloak Drive at Site Access C

A future connection at Burloak Drive at Site Access C is planned to provide additional access to the development, located south of the Burloak Drive at Bronte Creek Park/Corporate Drive access. To accommodate for the additional site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM warrants not satisfied);
- Northbound left-turn lane as per left-turn warrant;
- Northbound left-turn protected-permissive phase; and
- Separate eastbound left-turn and right-turn lanes.

Overall, with the mitigation measures, the intersection is forecast to operate with delays in the LOS C range or better with v/c ratios less than 0.85 during the peak hours.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

7.5.4 Mainway at Sutton Drive

To accommodate for additional site-generated traffic from future phases, the following additional mitigation measures were implemented at the intersection of Sutton Drive at Mainway:

- Separate southbound left-turn and through-right lanes; and
- Separate westbound-right turn lane.

Reconfiguring the lane layout and signalizing the intersection is projected to improve the operations of the intersection. However, several movements are still projected to experience critical movements particularly during the weekday PM peak hour.

Delays can be attributed to the high traffic volumes along Mainway and Sutton Drive.

7.5.5 Mainway at Site Access B

A new site connection at Mainway and Site Access B is provided to accommodate for additional site generated traffic for the Office Park development located along Mainway, east of Sutton Drive. The following mitigation measures were implemented in the analysis:

- Implement an eastbound left-turn lane as per left-turn warrant.

Overall, operations are expected to be at acceptable levels with delays in the LOS C range or better during the peak hours.



TABLE 7.8: FULL BUILD ANALYSIS – AM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																	
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
AM Peak Hour	Blue Spruce Avenue & Upper Middle Road	TCS	LOS	B	C	>	C	A	A	>	A	<	B	>	B	<	B	>	B	B
			Delay	12	24	>	24	8	9	>	9	<	17	>	17	<	16	>	16	19
			V/C	0.12	0.81	>		0.04	0.34	>		<	0.55	>		<	0.64	>		0.73
			Q	3	137	>		2	23	>		<	37	>		<	51	>		
			Stor.	100	-	>		15	-	>		<	-	>		<	-	>		
			Avail.	97	-	>		13	-	>		<	-	>		<	-	>		
	Burloak Drive & Corporate Drive/Park Access	TCS	LOS	<	D	>	D	<	C	>	C	B	A	>	A	B	B	>	B	B
			Delay	<	42	>	42	<	21	>	21	18	5	>	8	10	18	>	18	18
			V/C	<	0.84	>		<	0.02	>		0.68	0.25	>		0.08	0.81	>		0.80
			Q	<	82	>		<	0	>		40	22	>		6	108	>		
			Stor.	<	-	>		<	-	>		120	-	>		145	-	>		
			Avail.	<	-	>		<	-	>		80	-	>		139	-	>		
	Burloak Drive & Site Access C	TCS	LOS	C		D	D					C	A		A		B	>	B	B
			Delay	24		46	42					25	4		6		18	>	18	18
			V/C	0.24		0.85						0.48	0.27				0.85	>		0.82
			Q	24		87						19	24				140	>		
			Stor.	15		-						120	-				-	>		
			Avail.	-9		-						101	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	C	B	>	B	<	C	C	C	<	C	>	C	C	C	>	C	C
			Delay	26	11	>	17	<	25	20	23	<	25	>	25	21	33	>	31	23
			V/C	0.85	0.40	>		<	0.61	0.26		<	0.62	>		0.46	0.83	>		0.89
			Q	72	39	>		<	49	23		<	57	>		34	117	>		
			Stor.	130	-	>		<	-	15		<	-	>		40	-	>		
			Avail.	58	-	>		<	-	-8		<	-	>		6	-	>		
	Mainway & Site Access B	TWSC	LOS	A	A		A		A	>	A					C		>	C	
			Delay	10	0		0		0	>	0					17		>	17	
			V/C	0.04	0.20				0.34	>						0.02		>		
			Q	1	0				0	>						0		>		
			Stor.	15	-				-	>						-		>		
			Avail.	14	-				-	>						-		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.9: FULL BUILD ANALYSIS – PM PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																Overall
				Eastbound				Westbound				Northbound				Southbound				
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
PM Peak Hour	Blue Spruce Avenue & Upper Middle Road	TCS	LOS	C	B	>	B	A	B	>	B	<	C	>	C	<	B	>	B	B
			Delay	22	11	>	11	7	16	>	16	<	20	>	20	<	19	>	19	15
			V/C	0.41	0.40	>		0.11	0.90	>		<	0.30	>		<	0.30	>		0.71
			Q	17	60	>		4	124	>		<	25	>		<	25	>		
			Stor.	100	-	>		15	-	>		<	-	>		<	-	>		
			Avail.	83	-	>		11	-	>		<	-	>		<	-	>		
	Burloak Drive & Corporate Drive/Park Access	TCS	LOS	<	C	>	C	<	C	>	C	A	A	>	A	B	B	>	B	B
			Delay	<	24	>	24	<	21	>	21	7	7	>	7	18	12	>	12	10
			V/C	<	0.48	>		<	0.07	>		0.61	0.73	>		0.34	0.42	>		0.75
			Q	<	26	>		<	4	>		44	119	>		17	44	>		
			Stor.	<	-	>		<	-	>		120	-	>		145	-	>		
			Avail.	<	-	>		<	-	>		76	-	>		128	-	>		
	Burloak Drive & Site Access C	TCS	LOS	C		C	C					A	A		A		A	>	A	A
			Delay	29		28	28					6	6		6		10	>	10	9
			V/C	0.32		0.17						0.52	0.74				0.45	>		0.74
			Q	19		18						21	107				60	>		
			Stor.	15		-						120	-				-	>		
			Avail.	-4		-						99	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	F	C	>	F	<	F	D	F	<	F	>	F	C	C	>	C	F
			Delay	330	27	>	154	<	141	39	126	<	271	>	271	34	22	>	26	136
			V/C	1.62	0.45	>		<	1.18	0.29		<	1.51	>		0.73	0.58	>		1.59
			Q	193	70	>		<	174	37		<	264	>		84	97	>		
			Stor.	130	-	>		<	-	15		<	-	>		40	-	>		
			Avail.	-63	-	>		<	-	-22		<	-	>		-44	-	>		
	Mainway & Site Access B	TWSC	LOS	A	A		A		A		A					C		>	C	
			Delay	10	0		0		0		0					17		>	17	
			V/C	0.00*	0.25				0.27							0.18		>		
			Q	0	0				0							5		>		
			Stor.	15	-				-	-						-		>		
			Avail.	15	-				-	-						-		>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio
Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal
TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

TABLE 7.10: FULL BUILD ANALYSIS – SATURDAY PEAK HOUR

Analysis Period	Intersection	Control Type	MOE	Direction/Movement/Approach																
				Eastbound				Westbound				Northbound				Southbound				Overall
				Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	Left	Through	Right	Approach	
Sat Peak Hour	Blue Spruce Avenue & Upper Middle Road	TCS	LOS	B	A	>	A	A	A	>	A	<	B	>	B	<	B	>	B	A
			Delay	14	8	>	8	8	8	>	8	<	19	>	19	<	16	>	16	9
			V/C	0.31	0.38	>		0.08	0.53	>		<	0.37	>		<	0.20	>		0.47
			Q	10	28	>		3	41	>		<	29	>		<	17	>		
			Stor.	100	-	>		15	-	>		<	-	>		<	-	>		
			Avail.	90	-	>		12	-	>		<	-	>		<	-	>		
	Burloak Drive & Corporate Drive/Park Access	TCS	LOS	<	C	>	C	<	C	>	C	B	A	>	A	B	B	>	B	B
			Delay	<	24	>	24	<	22	>	22	17	4	>	6	14	15	>	15	12
			V/C	<	0.45	>		<	0.15	>		0.67	0.42	>		0.12	0.44	>		0.66
			Q	<	25	>		<	10	>		54	28	>		5	55	>		
			Stor.	<	-	>		<	-	>		120	-	>		145	-	>		
			Avail.	<	-	>		<	-	>		66	-	>		140	-	>		
	Burloak Drive & Site Access C	TCS	LOS	C		C	C					A	A		A		B	>	B	A
			Delay	24		23	23					6	4		4		11	>	11	9
			V/C	0.30		0.18						0.49	0.49				0.52	>		0.50
			Q	17		17						20	47				62	>		
			Stor.	15		-						120	-				-	>		
			Avail.	-2		-						100	-				-	>		
	Burloak Drive & Mainway	TCS	LOS	D		C	D					D	A		B		C	>	C	C
			Delay	40		32	35					38	7		14		31	>	31	22
			V/C	0.66		0.23						0.56	0.49				0.81	>		0.69
			Q	55		23						66	45				108	>		
			Stor.	-		-						110	-				-	>		
			Avail.	-		-						44	-				-	>		
	Sutton Drive & Mainway	TCS	LOS	B	A	>	A	<	B	B	B	<	B	>	B	B	B	>	B	B
			Delay	11	7	>	9	<	15	13	15	<	18	>	18	18	17	>	17	14
			V/C	0.61	0.16	>		<	0.39	0.07		<	0.48	>		0.40	0.41	>		0.60
			Q	29	13	>		<	29	7		<	42	>		24	32	>		
			Stor.	130	-	>		<	-	15		<	-	>		40	-	>		
			Avail.	101	-	>		<	-	8		<	-	>		16	-	>		

MOE - Measure of Effectiveness
LOS - Level of Service
Delay - Average Delay per Vehicle in Seconds
V/C - Volume to Capacity Ratio

Q - 95th Percentile Queue Length (m)
Stor. - Existing Storage (m)
Avail. - Available Storage (m)
TCS - Traffic Control Signal

TWSC - Two-Way Stop Control
< / > - Shared with through movement
** - V/C ratio less than 0.01*

7.6 Access Density

Access spacing for the full development has been assessed. Note that the future phases concepts are preliminary, not part of this application, and subject to change. As such the access locations may be adjusted in future concepts as the development progresses.

7.6.1 Arterial Intersection Spacing (Upper Middle Road and Burloak Drive)

Based on the Halton Region Access Management Guidelines[27], 300-400 m should be provided between intersections along arterial roads. It is recognized that characteristics of land parcels may not lend themselves to this level of spacing. As seen along Upper Middle Drive, the intersection spacing between Baker Drive, Deer Place, and Blue Spruce Road is less than 200 m.

Per the Transportation Association of Canada Geometric Design Guide for Canadian Roads[28] (TAC Guide) the recommended minimum intersection spacing along an Arterial Road is 200 m (Section 9.4.2.1). Accordingly, the Ontario Traffic Manual states that for an intersection/driveway to be considered for future signalization, a minimum spacing of 215 m for roads posted at 60 km/h or less and up to 350 m for roads posted at 80 km/h is recommended between adjacent signalized intersections.

Additionally, if it is recognized that characteristics of land parcels may not lend themselves to this level of spacing, reduced spacing of 100 m could be considered acceptable subject to restricted movements implemented (right in/out). However, a spacing of 30 to 60 metres can also be considered if the spacing is not conducive due to physical or economic reasons.

Based on the proposed connections to Upper Middle Road and Burloak Drive, the following is noted concerning intersection spacing:

- Corporate Drive at Burloak Drive is approximately 450 m south of Blue Spruce Avenue and Upper Middle Road and 335 m north of Site Access C. The spacing meets the minimum requirement for potential signalization.
- Site Access C at Burloak Drive is approximately 335 m south of Corporate Drive at Burloak Drive and 380 m north of Mainway at Burloak Drive. The spacing meets the minimum requirement for potential signalization.

[27] Halton Region, Access Management Guidelines, January 2015
[28] Geometric Design Guide for Canadian Roads, Transportation Association of Canada, 2017

- Blue Spruce Avenue at Upper Middle Road is proposed to be 450 m north of Corporate Drive and 190 m east of Deer Place at Upper Middle Road. This existing spacing aligns with minimum spacing requirements to permit a full movement connection. The spacing does not meet the minimum requirement for potential signalization. However, a signalized intersection at Blue Spruce Avenue at Upper Middle Road should be considered given the future planned widening of Upper Middle Road to accommodate pedestrian crossings, provide an opportunity for safe cycling connections over the roadway, and improve access to the residential areas on Upper Middle Road's north and south sides.

7.6.2 Collector Intersection Spacing (Corporate Drive, Sutton Drive, Mainway)

Per the TAC Guide the recommended minimum intersection spacing along a Collector Road is 60 m (Section 9.4.2.2).

Based on the proposed connections, the following is noted concerning intersection spacing:

- Corporate Drive at Sutton Drive is approximately 330 m south of Upper Middle Road at Sutton Drive and meets the minimum spacing requirement along a collector road to permit full movements.
- Mainway at Sutton Drive is approximately 165 m west of Mainway at Site Access B and 265 m east of Mainway at Site Access A and meets the minimum spacing requirements to permit full movements.
- Mainway at Site Access A is 265 m west of Mainway at Sutton Drive and meets the minimum spacing requirements to permit full movements.
- Mainway at Site Access B is approximately 165 m east of Mainway at Sutton Drive and 745 m west of Mainway at Burloak Drive and meets the minimum spacing requirements to permit full movements.
- Internal roads throughout the development are generally spaced at least 60 m and meet the minimum spacing requirement along a collector road.

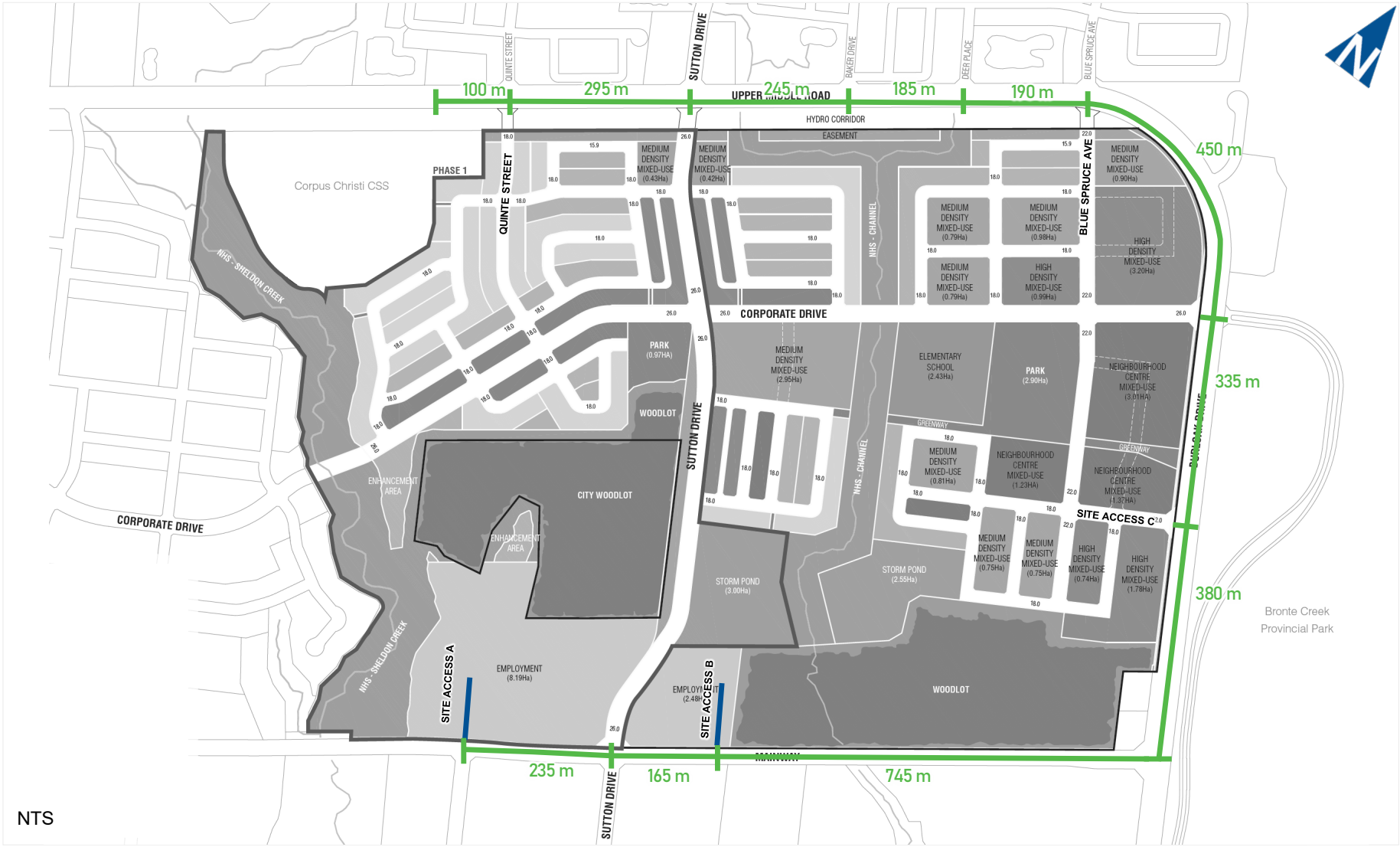
7.6.3 Local Roadways

The external and internal access points will comprise collector and local roads under the jurisdiction of the City of Burlington (i.e. public roads) and private roads facilitating property access within the blocks.

The TAC Guide was reviewed to determine the appropriateness of the access arrangement.

Preceding the analysis noted below, it can be summarized that the road system has been reviewed for general feasibility and found to be satisfactory.

Figure 7.10 illustrates the proposed spacing between the development access points.



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Development Access Spacing

Bronte Creek Meadows, Burlington
230533

Figure 7.10

7.7 Sight Line Assessment

The horizontal curve of Burloak Drive at Upper Middle Road potentially limits sight lines for the proposed site driveways at Blue Spruce Avenue and the Bronte Creek Park access (Street D). The sight distances at the roadways have been reviewed in accordance with the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR)[29].

The posted speed limit on Burloak Drive and Upper Middle Road is 60 km/h. A design speed of 70 km/h (10 km/h above the posted speed limit) has been used to calculate the required stopping sight distance (SSD), and intersection sight distance (ISD) for proposed site driveways.

SSD is the distance required for a vehicle approaching an intersection from either direction to perceive, react and come to a complete stop to avoid colliding with an object on the road; in this respect, SSD can be considered the minimum visibility criterion for the safe operation of an unsignalized intersection.

ISD is based on the time required for perception, reaction, and completion of the desired maneuver (typically, a left turn) once the driver on a minor street approach (or driveway) decides to execute the maneuver. The calculation for the critical ISD includes the time to (1) turn left and clear the near half of the intersection without conflicting with the vehicles approaching from the left; and (2), upon turning left, accelerate to the operating speed on the roadway without causing approaching vehicles on the main road to unduly reduce their speed. In this context, ISD can be considered the desirable visibility criterion for the operation of an unsignalized intersection. The ISD has been adjusted to account for Burloak Drive and Upper Middle Road being widened to three lanes in each direction.

Table 7.11 and Table 7.12 summarizes the sight distance measurement requirements set out in the TAC Guide for a design speed of 70 km/h. Sight distance is estimated using aerial imagery of the existing conditions and is measured from the approximate ultimate curb location. As the roadway is planned to be widened, sight lines may be altered with the reconstruction of the roadway.

7.7.1 Blue Spruce Avenue Access

To the northeast along Upper Middle Road, approximately 160 m of unobstructed sight distance within the right of way is available at the

[29] Geometric Design Guide for Canadian Roads, Transportation Association of Canada, 2017

proposed access across from Blue Spruce Avenue. To the northwest Burloak Drive, approximately 140 m of unobstructed sight distance within the right of way is available at the proposed access across from the Bronte Creek Park access.

Figure 7.11A illustrates the estimated sight distance from the Blue Spruce Avenue access.

The access location across from Blue Spruce Avenue meets and exceeds the prescribed intersection sight distances set out in the TAC Guide for a design speed of 70 km/h.[30]

7.7.2 Bronte Creek Park Driveway (Street D)

The access location across from the Bronte Creek Park access meets the prescribed intersection sight distances set out in the TAC Guide for a design speed of 70 km/h aside from the left turning movement. It should be noted that the unobstructed site distance measurements are only measured within the right-of-way. With minimal set-back on Block 429, 462, and 428 the sight lines are anticipated to meet TAC standards. The area should be kept clear of landscaping and other features that could limit driver sightlines.

Figure 7.11B illustrates the estimated sight distance from the Bronte Creek Park Driveway.

[30] Ibid. *Section 2.5.5 Decision Sight Distance.*

TABLE 7.11: BLUE SPRUCE AVENUE SIGHT DISTANCE ASSESSMENT

Sight Distance Measurement	Sight Distance (70 km/h Design Speed)	Approximate Sight Distance	Satisfactory
Minimum Stopping Sight Distance[31] *Driver approaching the site driveway.*	105 m	170 m	**Yes**
Intersection Sight Distance (Right Turn from Stop)[32] *Driver looks to the left before turning right to exit the site.*	130 m	>200 m	**Yes**
Intersection Sight Distance (Left Turn from Stop) (Crossing two additional lanes)[33] *Driver looks both directions before turning left to exit the site.*	170 m	170 m	**Yes**

TABLE 7.12: BRONTE CREEK PARK ACCESS SIGHT DISTANCE ASSESSMENT

Sight Distance Measurement	Sight Distance (70 km/h Design Speed)	Measured Sight Distance	Satisfactory
Minimum Stopping Sight Distance *Driver approaching the site driveway.*	105 m	160 m	**Yes**
Intersection Sight Distance (Right Turn from Stop) *Driver looks to the left before turning right to exit the site.*	130 m	160 m	**Yes**
Intersection Sight Distance (Left Turn from Stop) (Crossing two additional lanes) *Driver looks both directions before turning left to exit the site.*	170 m	160 m	**No**

[31] Ibid. *Table 2.5.2: Stopping Sight Distance on Level Roadways for Automobiles.*
[32] Ibid. *Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop.*
[33] Ibid. *Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn from Stop.*



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Sight Distance from Proposed Blue Spruce Avenue Access

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Figure 7.11A



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Sight Distance from Proposed Corporate Drive Access

Bronte Creek Meadows, Burlington
230553

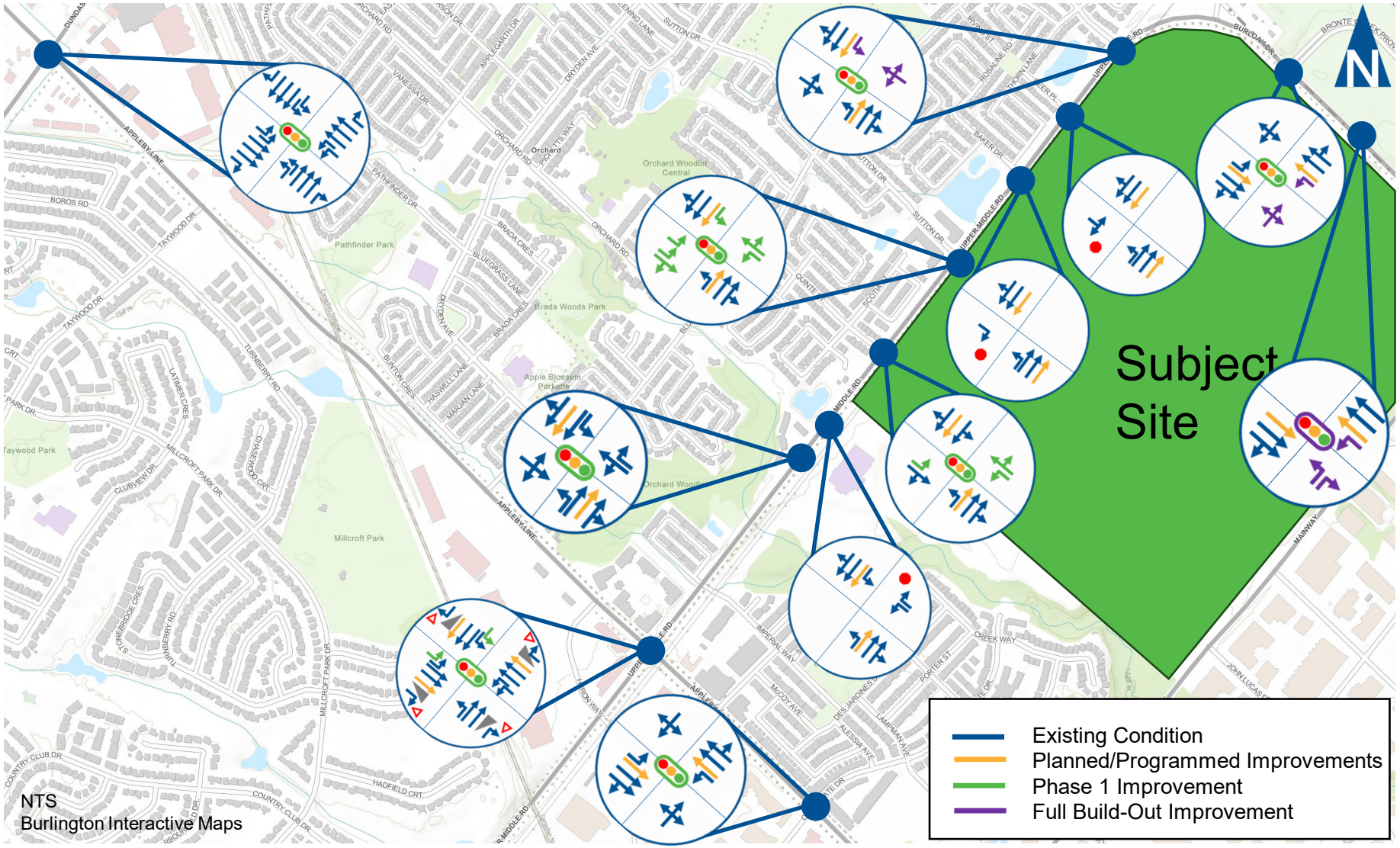
Figure 7.11B

7.8 Full Build-Out Improvement Summary

In addition to the improvements identified for the Phase 1 development, improvements are proposed to mitigate future traffic operations at the study area intersections for the Full Build-Out of the subject lands. These improvements address conditions not previously identified in the Phase 1 improvements.

Figure 7.12 illustrates the proposed future lane configurations and traffic controls.

Table 7.13 summarizes the mitigation measures for improvement.

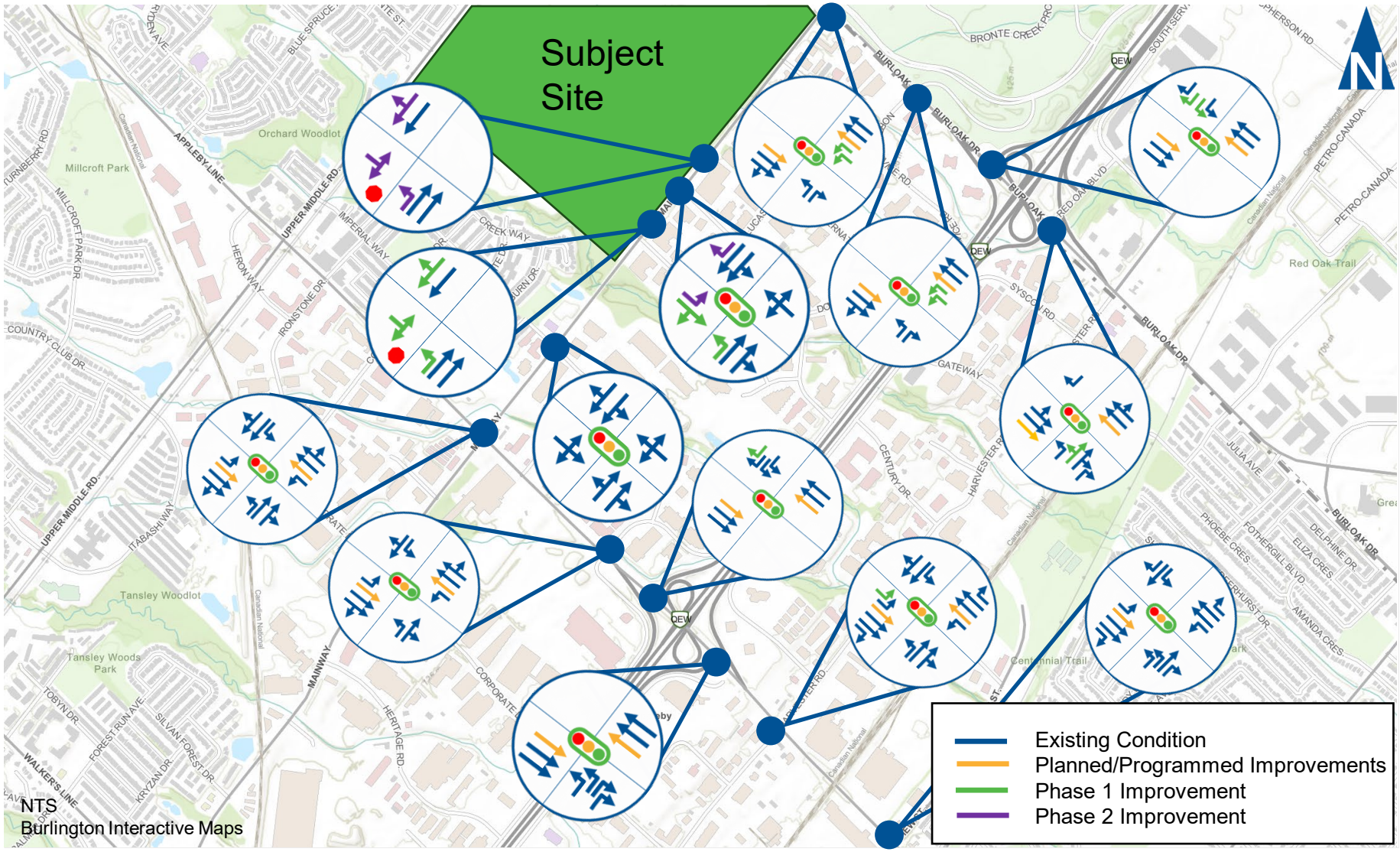


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Proposed Full Build-Out Lane Configuration and Traffic Control -North of Corporate Drive

Bronte Creek Meadows, Burlington
230533

Figure 7.12A



Proposed Full Build-Out Lane Configuration and Traffic Control -South of Corporate Drive

Bronte Creek Meadows, Burlington
230533

Figure 7.12B

TABLE 7.13: FULL BUILD-OUT PROPOSED MITIGATION MEASURES

Intersection	Improvement	Horizon Year	Applicant Responsibility
Blue Spruce Avenue & Upper Middle Road	Signalization (OTM Warrants satisfied)	Full Build-Out	**Yes**
	Westbound left-turn lane		
Burloak Drive & Corporate Drive	Signalization (OTM Warrants satisfied)	Full Build-Out	**Yes**
	Northbound left-turn lane		
Burloak Drive & Site Access C	Signalization (OTM Warrants not satisfied)	Full Build-Out	**Yes**
	Northbound left-turn lane		
	Eastbound left-turn lane		
Sutton Drive & Mainway	Westbound right-turn lane	Full Build-Out	**Yes**
	Southbound left-turn lane		
Site Access B & Mainway	Eastbound left-turn lane	Full Build-Out	**Yes**
Sutton Drive & Corporate Drive	Signalization (Unwarranted)	Full Build-Out	**Yes**

8 Neighbourhood Impacts

8.1 Infrastructure Impacts

The Ministry of Ontario released a guideline called "A Guideline for Highway Improvements Associated with Development[34]" to clarify who is responsible for roadway improvements when land use development requires it. This guide outlines the steps municipalities and stakeholders must follow when constructing improvements to a roadway, whether directly or indirectly. Although this guide is primarily intended for roads under Provincial jurisdiction, it provides valuable insight into the responsibilities involved in these projects.

Section 3A of the guideline outlines the following:

> *"Where a proposed Development will gain access to a provincial highway either directly by private entrance or by a new municipal road, the Proponent is responsible (financially or otherwise) for all warranted Highway Improvements, identified in the approved Traffic Impact Study. The Proponent is also responsible for any Highway Improvements that are not required immediately but that have been identified as being warranted in the future as a result of the Development. Any such future Highway Improvements are the responsibility (financially or otherwise) of the Proponent and must be addressed to MTO's satisfaction before MTO permits will be issued."*

Section 3C of the guideline outlines the following:

> *"Based upon MTO's review of a Proponent's Traffic Impact Study, it identifies a warrant for Highway Improvements based on existing and/or projected background traffic volumes. The Proponent would be responsible (financially or otherwise) for any additional Highway Improvements required over and above the existing and/or projected background traffic volumes, in order to accommodate the proposed Development traffic."*

Based on the above, the Applicant will be responsible for the costs related to new roadway connections to Upper Middle Road, Burloak Drive, and Mainway, which includes left turn lanes and potentially unwarranted traffic control signals. Moreover, the Applicant will bear the cost of potentially unwarranted traffic control signals due to the deterioration of operations at the intersection of Mainway at Sutton Drive. This is reflected based on the capacity of the intersections

[34] Ministry of Transportation Ontario, A Guideline for Highway Improvements Associated with Development, May 2005

projected to operate over capacity with the development build-out compared to operating within capacity under the no-build scenario (background horizon).

8.2 Neighbourhood Infiltration

Based on the road classification and network connectivity, most site traffic is expected to use Upper Middle Road, Burloak Drive, and Mainway to access the site.

Given the all-way stop control measures and anticipated travel time along external neighbourhood collector roads, such as Sutton Drive, it is unexpected that a substantial amount of site-generated traffic will infiltrate the adjacent neighbourhood subdivisions.

Although we do not foresee Sutton Drive (north of Upper Middle Road) or the potential Corporate Drive connection to be used significantly by development traffic, the Applicant may work with the community and undertake a traffic monitoring program once the proposed development is built out. The monitoring effort will focus on traffic patterns from the development through Sutton Drive and the potential Corporate Drive connection. If the results of the monitoring and subsequent analysis identify a significant portion of site traffic is travelling through the adjacent neighbourhoods, the Applicant will work with the City of Burlington to implement appropriate corrective measures. These may include the implementation of a Traffic Management Plan and additional traffic calming features on these existing roadways.

The monitoring study should begin 12 months (1 year) after the development is completed.

Thresholds for identifying the need for mitigation measures will depend on the type of study conducted. Potential measures may include a speed study to determine the presence of excessive speeding and/or licence plate traces to determine the proportion of site traffic using Sutton Drive or the potential Corporate Drive connection.

9 Transportation Demand Management

9.1 Proposed Measures

Transportation Demand Management (TDM) planning is intended to encourage sustainable transportation modes and minimize single-occupant vehicle trips as part of a community transportation management strategy. The design of the concept plan will provide the framework for TDM and facilitate establishing a higher priority for sustainable modes of transportation over single-occupant vehicles where appropriate. This relates to the internal road system, which is being designed to create TDM-supportive opportunities for the placement of buildings and public amenity spaces along the streets and at their intersections, desirable locations for building entrances and vehicular access, and well-defined pedestrian circulation routes and safer road crossings.

The use of transit places less reliance on personal automobiles for trips that can be completed with convenient and desirable transit options. Convenient and desirable transit can be provided by providing well-lit transit stops, seating, and weather-protective shelters. The subject site is currently served by four Burlington Transit routes that operate primarily on Upper Middle Road, Mainway, and Appleby Line and provide connections to Appleby GO, Burlington GO, and GO 407 Carpool Stations. The closest bus stops serving these routes are near site access intersections to major roadways such as Upper Middle Road, Appleby Line, and Mainway. The site layout will provide direct links connecting residents and visitors to nearby stops, making the development area more navigable towards local bus stops.

The development lands also lend themselves to TDM benefits associated with mixed or multi-use development. This form of development supports sustainability initiatives by promoting complementary land uses in close proximity. The primary effect is to allow locally generated trips to be made by foot, bike, public transit (including privately operated shuttles, taxis, uber, etc.), or private vehicle (car) while only travelling on the internal sidewalk, path or road networks (“internal capture trips”). Since car trips with local origins and destinations would not leave the development community, the potential traffic impact on the surrounding arterial road network (“external trips”) would be reduced.

As individual development blocks are build-out, TDM measures will be included in the site plan design and reviewed through the SPA process.

10 MMLOS Assessment

Intersection Level of Service (LOS) is a recognized metric for categorizing the delay experienced by drivers at intersections. The term “Level of Service” denotes how well a traffic movement operates under given traffic demands, lane arrangements, and traffic controls. It converts average delay at intersections into a scale from A to F, where A indicates the least delay and F indicates the greatest delay. The metric is extensively used in transportation planning, but it is limited to the experience of car drivers.

Multi-modal Level of Service (MMLOS) extends this concept to incorporate the experience of modes beyond car drivers. It converts a variety of factors into a scale from A to F for each mode; A indicates the best experience for users of that mode, and F shows the worst experience. As the output is a *set* of indicators, it reveals where changes have different (or opposite) effects on each mode.

The City of Burlington requested a MMLOS assessment for Mainway between Burloak Drive and Appleby line, as well as Sutton Drive between Mainway and John Lucas Drive during pre-consultation comments.

10.1 OTC MMLOS

The OTC MMLOS Guidelines[35] provide a methodology to assess the performance of all travel modes. The guidelines identify nine general street types for analysis. The guidelines were developed after reviewing national and international best practices in MMLOS analysis. **Table 10.1** outlines the roadway categories assumed for the study area intersections.

TABLE 10.1: MMLOS STREET TYPE CLASSIFICATION

Roadway	Classification	MMLOS Applicable Classification
Mainway (Burloak Drive and Appleby Line)	Industrial Connector	Industrial Connector
Sutton Drive (Mainway and John Lucas Drive)	Industrial Connector	Industrial Connector

[35] Dillion Consulting. *Multi-Modal Level of Service Guidelines*. (Toronto: Ontario Traffic Council, 2022)

10.1.1 Level of Service Target

Based on the street type, the MMLOS guidelines provide base LOS targets, ultimately identifying which modes should be prioritized. The base LOS targets for roadways within the study area are given in **Table 10.2**.

The level of service along segments for pedestrians is determined based on three criteria: facility width, buffer width and maximum distance between controlled crossings. Concerning cyclists, the criteria include facility width, buffer width and conflicts with other modes (in-lane conflicts and crossing point conflicts). Transit includes the facility type, passenger amenities, and pedestrian level of service. Level of service for trucks is based on the width of the curb lane and the car level of service. Car level of service contains criteria related to the mid-block v/c ratio and curb lane conflicts.

TABLE 10.2: MMLOS TARGETS PER STREET TYPE

Street Classification	Walking	Cycling	Transit	Trucks	Cars
Industrial Connector	E	D	D	B	D

10.1.2 Mainway MMLOS Segment Analysis

Table 10.3 summarizes the MMLOS analysis for the segment of Mainway between Appleby Line and Burloak Drive. The existing and future conditions for the segment's lengths are assumed to be the same and are considered in a single row.

Pedestrian MMLOS along Mainway is in the D range meeting and exceeding the target grade. Mainway from Lampman Avenue to Burloak Drive in the westbound direction does not pass the design check (i.e. pedestrian facilities required), assessing the target level is not feasible.

Regarding the cycling MMLOS, as Mainway does not pass the design check (i.e., at a minimum protected facility is required), assessing the target level is not feasible.

Transit MMLOS along Mainway is in the E range, one grade below the target. This could be improved by providing passenger amenities such as shelters, seating, or shade trees, or by improving pedestrian MMLOS.

Truck MMLOS along Mainway is in the B range meeting the target grade.

Car MMLOS along Mainway is within the A to C range meeting and exceeding the target grade.

10.1.3 Sutton Drive MMLOS Segment Analysis

Table 10.3 summarizes the MMLOS analysis for the segment of Sutton Drive between Mainway and John Lucas Drive. The existing and future conditions for the segment's lengths are assumed to be the same and are considered in a single row.

Pedestrian MMLOS along Sutton Drive is in the LOS E range in the northbound direction, meeting the target grade. Sutton Drive in the southbound direction does not pass the design check (i.e. pedestrian facilities required), assessing the target level is not feasible.

Regarding the cycling MMLOS, as Sutton Drive does not support any cycling facilities, it does not pass the design check (i.e., at a minimum protected facility is required), assessing the target level is not feasible.

Transit MMLOS along Sutton Drive is in the F range, for both sides of the roadway. This could be improved by providing passenger amenities such as shelters, seating, or shade trees, or by improving pedestrians MMLOS.

Truck MMLOS along Sutton Drive is in the B range meeting the target grade.

Car MMLOS along Mainway is in the LOS B range, exceeding the target grade of LOS D.

TABLE 10.3: MMLOS SEGMENT ANALYSIS

Direction	Segment	Walking	Cycling	Transit	Trucks	Cars
NB	Sutton Drive (Mainway to John Lucas Drive)	E	N/A	F	B	B
SB	Sutton Drive (Mainway to John Lucas Drive)	N/A	N/A	F	B	B
EB	Mainway (Appleby Line to Lampman Avenue)	D	N/A	E	B	A
	Mainway (Lampman Avenue to Burloak Drive)	D	N/A	E	B	C
WB	Mainway (Appleby Line to Lampman Avenue)	D	N/A	E	B	A
	Mainway (Lampman Avenue to Burloak Drive)	N/A	N/A	E	B	C

11 Conclusions and Recommendations

11.1 Conclusions

Transportation Impact Assessment

The proposed Phase 1 development will generate approximately 934 new vehicle trips during the weekday AM peak hour, 960 new vehicle trips during the weekday PM peak hour, and 631 new vehicle trips during the Saturday peak hour

Detailed traffic analysis was conducted for each of the study area intersections under Base (2024), 2035, 2040, and 2045 traffic conditions. The capacity analysis showed that deficiencies currently exist and are projected to occur at certain locations within the study area with anticipated growth in traffic, including the proposed development.

Increasing the intersection capacity through additional through lanes or dedicated turn lanes may not be feasible or desirable for an active transportation-friendly roadway cross-section. If capacity of the intersection cannot be increased, then the demand (traffic volume) will need to be decreased through TDM and alternative modes of transportation.

The following capacity constraints at the study area intersections are identified.

Appleby Line at Dundas Street

Horizon Year	Operations
2024 Base Year	Approaching Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

During the Base Year, several movements are approaching capacity during the peak hours. Under the future Background horizon, several movements are forecast to experience critical movements including the westbound left-turn lane as well as the northbound through.

With the addition to site generated traffic, the projected critical movements are expected to worsen under the future Total horizons

and near-capacity movements such as the northbound left and southbound through, are forecast to have v/c ratios above the critical thresholds.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Despite applying these mitigation measures, several movements are still projected to exceed capacity with a v/c ratio exceeding 1.00 and operate with LOS F, primarily due to high traffic volumes along Appleby Line and Dundas Street.

Appleby Line at Upper Middle Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are present in the Base Year operations for several movements including the eastbound left, eastbound through-right, westbound through, westbound right, southbound through-right, and southbound left-turn lanes throughout the weekday and Saturday peak hours, operating at LOS C-E and queues exceeding storage at the left-turn lanes. It is forecast that these movements will further deteriorate under the future Background and Total conditions, ultimately operating at LOS E-F with v/c ratios greater than 1.00 during the weekday and Saturday peak hours.

To accommodate projected traffic volumes, double westbound left and southbound left-turn lanes were added with protected phasing and the existing traffic signal cycle times were adjusted.

With the implementation of these mitigation measures, delays are expected to be reduced by over 280 seconds for the eastbound approach, westbound approach, northbound approach, and the southbound left-turn lane during the weekday and Saturday peak hours. Despite these reductions, several of the movements are still projected to exceed capacity with a v/c ratio exceeding 1.00, as well as queues exceeding the available storage at exclusive turn lanes primarily due to high traffic volumes along Appleby Line and Upper Middle Road.

Upper Middle Road at West School Driveway/Private Driveway

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Within Capacity
2035 Total	Within Capacity
2040 Background	Within Capacity
2040 Total	Within Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

It is anticipated that under the Background conditions, critical movement is noted in the 2045 Background horizon in the northbound through-left lane operating at LOS E with a v/c ratio of 0.85 during the weekday AM peak hour.

Under the 2045 Total horizon, the eastbound through-right lane is forecast to worsen, operating at LOS D with a v/c ratio greater than 0.85 during the weekday AM peak hour.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted, in addition to the widening of Upper Middle Road.

With these mitigation measures, under the 2045 future Total horizon, the northbound through-left lane can see a reduction in delays by 51 seconds, with a v/c ratio less than 0.70 during the weekday AM peak hour. However, the eastbound through-right lane is still projected to be a critical movement as the v/c ratio exceeds 0.85, primarily due to high traffic volumes along Upper Middle Road.

Upper Middle Road at East School Driveway

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Currently, the northbound left-turn lane operates at LOS F and LOS D during the weekday AM and PM peak hours respectively. All other lanes operate at acceptable conditions at LOS B or better.

Under Background conditions, the westbound left-turn lane 95th percentile queues are forecast to exceed the available storage.

The addition of site-generated traffic is forecast to significantly increase delays for the northbound left-turn movement due to the lack of capacity from background traffic growth.

Upper Middle Road at Quinte Street

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under existing conditions, critical movement is observed in the southbound left-turn lane, operating at LOS F with a v/c ratio greater than 1.00 during the weekday AM peak hour.

Under the Background conditions, the operations of the southbound left-turn lane are forecast to worsen during the weekday PM and Saturday peak hours, operating at LOS D-E.

Under future Total conditions, during the weekday AM peak hours, the northbound approach is forecast to degrade to LOS F with critical delays and v/c ratios significantly exceeding 1.00.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Signalize the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations);
- Separate eastbound left-turn lane; and
- Separate left-turn lanes for the northbound and southbound approaches with protected-permissive left-turn phases.

With these mitigation measures, a significant reduction in delays in the northbound and southbound movements are noted during the weekday and Saturday peak hours, improving to LOS C or better, with v/c ratios less than 0.30. Critical movement is note in the westbound approach with delays in the LOS D-E range during the weekday and Saturday

peak hours with a v/c ratio over 0.95 due to high traffic volumes along Upper Middle Road.

Upper Middle Road at Sutton Drive

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movement is noted in the westbound through-right lane during the weekday PM peak operating at LOS C with a v/c ratio of 0.85.

By the 2035 Background horizon, the intersection is projected to experience critical movements including the eastbound left-turn lane (LOS F, v/c > 1.00) with queues exceeding storage by up to 35 m, and the southbound approach (LOS E, v/c > 1.00) during weekday peak hours.

It is anticipated that during the future Total horizon, the westbound approach will degrade to LOS F with a v/c ratio over 1.00 during the weekday AM and Saturday peak hours, as well as in the southbound approach during the weekday PM and Saturday peak hours.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Double southbound left-turn lanes;
- Northbound left-turn lane and protected-permissive phase;
- Westbound left-turn lane and protected-permissive phase; and
- Optimizing the timing of traffic signals.

Despite this, the eastbound and southbound left-turn lanes are expected to continue to experience queues greater than the available storage. The westbound through-right lane is still expected to operate with a v/c ratio exceeding 0.85 during the weekday PM peak hour, due to high traffic volumes along Upper Middle Road.

Upper Middle Road at Baker Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Within Capacity
2035 Total	Within Capacity
2040 Background	Within Capacity
2040 Total	Within Capacity
2045 Background	Within Capacity
2045 Total	Within Capacity

Individual movements at the intersection of Upper Middle Road at Baker Drive presently operate at LOS C or better during the weekday peak hours. Similar levels of operation are expected under future Background and Total conditions with only a minor increase in delay resulting from background traffic growth

Upper Middle Road at Deer Place

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

At Upper Middle Road at Deer Place, movements during the weekday peak hour currently operate at acceptable conditions, with the exception being the southbound approach, operating at LOS D during the weekday PM peak hour.

Under the 2045 Background horizon, the southbound approach is forecast to degrade to LOS D during the weekday AM peak hour with a minor increase in delays from background traffic growth.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Upper Middle Road at Blue Spruce Avenue

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under existing conditions, the southbound approach operates at LOS D-F range during the weekday AM/PM and Saturday peak hours. Operations are projected to further degrade with Background traffic growth. Under Background conditions, the eastbound left-turn lane is expected to degrade to LOS D during the weekday PM peak hour. The southbound approach is also forecast to further degrade to LOS F during the weekday and Saturday peak hours with v/c ratios exceeding 1.00 due to increased delays from eastbound/westbound traffic growth along Upper Middle Road.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Adjustments to the roadway geometry should be considered to accommodate projected background traffic volumes. Some possible upgrades include implementing the following:

- Signalize the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations).

These adjustments are forecast to improve the operation of the southbound movement during the weekday and Saturday peak hours, operating at LOS B or better with Delays projected to be less than 20 seconds. In addition to delay reduction, signalization of this intersection provides a controlled crossing for pedestrians and cyclists.

Burloak Drive at Bronte Creek Park Access

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under existing conditions, the westbound approach currently operates at LOS F during the weekday PM peak hour, with delays of less than 70 seconds.

Performance expected to further deteriorate under future Background scenarios due to background growth. Under Background conditions, this movement is also projected to degrade to LOS F during the Saturday peak hour. Additionally, during the weekday PM peak hour, the southbound left-turn movement is forecast to decline to LOS D.

Total conditions operate similar to background with only a minor increase in delay resulting from site traffic.

Adjustments to the roadway geometry should be considered to accommodate projected background traffic volumes. Some possible upgrades include implementing the following:

- Signalize the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations).

These adjustments are forecast to improve the operation of this intersection, with all movements operating at LOS C or better, with delays less than 30 seconds during the weekday and Saturday peak hours. The westbound approach during the weekday PM peak hour will see the largest reduction in delays, with delays at 28 seconds and v/c ratio of less than 0.45.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

Burloak Drive at Mainway

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under Background conditions, the northbound left-turn lane degrades to a LOS F with a v/c ratio exceeding 1.00 during the weekday AM and PM peak hours, with queue lengths exceeding the available storage by less than 80 m and 140 m respectively. The eastbound right-turn lane is also projected to experience critical delays at LOS F and v/c ratio grater than 0.95 during the weekday AM peak hour.

Under the future Total horizon, the eastbound right-turn lane is also anticipated to operate in the LOS F range with a v/c ratio exceeding 1.00 and significant delays resulting from site-generated traffic, during the weekday PM peak hour.

Adjustments to the roadway geometry are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Optimize signal cycle times of the existing traffic signals; and
- Double northbound-left turn lanes with protected phase.

Traffic signal adjustments and implementing double northbound left-turn lanes is forecast to improve operations of the eastbound and northbound approaches during the weekday and Saturday peak hours. However, the northbound left-turn lane will still exceed the available storage by approximately 40 m due to the high traffic volumes along Burloak Drive and Mainway.

It is noted that double northbound left-turn lanes may not be feasible as the intersection may already be at the ultimate cross-section width with the widening of Burloak Drive. In addition, adding lanes may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments.

To avoid such area intense mitigation measures, the reduction of future growth and single occupant vehicles is required. An increased modal split will need to be considered to decrease the number of single

person vehicle trips, which the site will also support through TDM measures to improve active transportation and accessibility.

Mainway at Sutton Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under Background conditions, the northbound approach will likely operate in the LOS E range and degrade under future horizons with background traffic.

Under future Total conditions, critical movements are forecast in the northbound and southbound approaches during the weekday and Saturday peak hours and, operating at LOS F with a v/c ratio greater than 1.00.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Signalizing the intersection (OTM Warrants Satisfied); and
- Eastbound left-turn lane with a protected-permissive phase.

Reconfiguring the lane layout and signalizing the intersection is projected to improve the operations of the intersection. During the weekday and Saturday peak hours, all movements are expected to operate with LOS B or better with v/c ratios less than 0.85, with the exception being the southbound approach during the weekday PM peak hour operating at LOS D with a v/c ratio over 0.85. However, this mitigation measure is still expected to provide a substantial improvement, as the southbound approach improves from excessive delays and a v/c ratio exceeding 3.00 to tolerable conditions. Delays can be attributed to the high traffic volumes along Mainway and site traffic along Sutton Drive.

Mainway at Norjohn Court/Lampman Avenue

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the northbound and southbound approaches during the weekday peak hours, operating at LOS D-E. Under future Background and Total horizons, these movements are projected to degrade to LOS F with significant delays and v/c ratios exceeding 1.00.

To accommodate projected traffic volumes, traffic signals can be implemented to the existing stop-controlled intersection.

- Signalizing the intersection (OTM Warrants Not Satisfied – Signalization recommended based on operational considerations).

The signal warrant analysis indicates traffic control signals are not warranted under the 2045 horizon. Even though the signal criteria have not been met, installing unwarranted traffic control signals would improve operations.

With signalization, northbound and southbound approaches are forecast to have delays reduced by up to 449 seconds during the weekday peak hours.

Additional turn lanes with unsignalized intersection were tested but were not found to reduce the delays. As the delays stem from the high volume of eastbound/westbound traffic, northbound and southbound movements require controlled gaps to complete manoeuvres

Appleby Line at Mainway

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the westbound through-right and northbound left-turn lanes, operating at LOS F with v/c ratios greater than 1.00 during the weekday PM peak hour.

Under Background conditions, the eastbound left is forecast to operate with v/c ratios exceeding 0.95, as well as queues exceeding the available storage for the left-turn lane.

Several movements are forecast to worsen under Total conditions, including the eastbound left, eastbound through-right, westbound left, northbound through-right, southbound left, and southbound through-right lanes throughout the weekday and Saturday peak hours.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Adjusting the signal timings are anticipated to significantly improve operations for all movements by reducing delays during the weekday AM peak hour. Although, critical movements are still expected in the eastbound left, westbound through-right, northbound left, northbound through-right, and southbound through-right movements due to high traffic volumes, the proposed measures are anticipated to reduce delays by up to 299 seconds during the weekday PM peak hour as well.

Additional measures have been tested, including increasing queue storage. Increasing road capacity by adding travel lanes may not be feasible as the intersection may already be at the ultimate cross-section width with the widening of Appleby Line. In addition, adding lanes may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments. The reduction of future growth and single occupant vehicles is required.

Appleby Line at Corporate Drive

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Approaching Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under the Background conditions, critical movement is projected for the westbound approach, operating at LOS E with a v/c ratio of 0.85 during the weekday PM peak hour, and is expected to worsen under future Total conditions.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Adjusting the signal timings is anticipated to slightly improve operations for the westbound approach by improving the v/c ratio to less than 0.85 during the weekday PM peak hour. Despite these reductions, critical movements are still noted in the westbound and northbound through-right movements during the weekday PM peak hour due to high traffic volumes along Appleby Line.

Burloak Drive at North Service Road

Horizon Year	Operations
2024 Base Year	Approaching Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Under Background conditions, critical movements are forecast in the northbound left-turn lanes during the weekday AM peak hour, operating at LOS F with v/c ratios exceeding 1.00.

With increased traffic volumes in the future Total horizon, the eastbound right-turn lane is forecast to degrade to LOS F with a v/c ratio greater than 1.00 during the weekday PM peak hour and the northbound through lane is anticipated to operate with a v/c ratio of 0.85 during the weekday PM peak hour.

To accommodate projected traffic volumes, double northbound left-turn lanes can be implemented along Burloak Drive.

Adjusting the lane configuration and signal timings are anticipated to improve operations for the northbound left-turn lane during the weekday AM peak hour by reducing delays by up to 164 seconds. During the weekday PM peak hour, delays in the eastbound right-turn lane are expected to improve by up to 153 seconds. However, critical movements are still projected at the intersection due to high traffic volumes along Burloak Drive.

Burloak Drive at QEW Westbound Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the westbound approach during the weekday and Saturday peak hours, operating at LOS D-F with v/c ratios exceeding 1.00. Delays are projected to worsen with Background traffic growth and site-generated traffic, and the queues are forecast to extend beyond the available storage. The southbound approach is also forecast to operate with a v/c ratio exceeding 1.00 during the weekday PM peak hour.

Under the 2045 Background horizon, the westbound ramp left and right-turn 95th percentile queue lengths are forecast to extend between 325 and 865 m back during the peak hours and are forecast to spill back to the mainline. However, SimTraffic queuing analysis estimates 95th percentile queue lengths are forecast to extend up to 350 m back during the weekday PM peak hour and is not expected to reach the bullnose, located approximately 500 m.

Under Total conditions, the northbound approach will operate with a v/c ratio exceeding 0.85 during the weekday peak hours. The southbound approach is expected to operate with a v/c ratio greater than 0.85 during the weekday peak hours, under the 2045 Total horizon.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Separating the existing westbound left-right turn lane to double left and right turn lanes; and
- Optimizing the timing of traffic signals.

Implementing these measures are forecast to significantly reduce delays during the weekday and Saturday peak hours. Despite the significant delay reductions, capacity issues are still expected. The movements still exceeding capacity includes the westbound approach, northbound, and southbound approaches due to the high traffic volumes along Burloak Drive during the future horizon.

Burloak Drive at QEW Eastbound Off-Ramp/Red Oak Boulevard

Horizon Year	Operations
2024 Base Year	Within Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Individual movements at the intersection of Burloak Drive at the QEW Eastbound Off-Ramp presently operate at acceptable conditions, with a LOS D or better for all movements.

Under the Background horizon, the southbound approach is projected to experience with a v/c ratio greater than 0.90 during the weekday PM peak hour.

Under future Total conditions, critical movements are forecast in the eastbound left-turn lane, operating at LOS D range with a v/c ratio over 0.75 during the weekday AM peak hour and Saturday peak hours.

The eastbound left-turn 95th percentile queue length is forecast to extend over up to 105 m back during the weekday AM peak hour. Ramp queues are not expected to reach the bullnose, located approximately 450 m, and are not forecast to spill back to the mainline.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Converting the eastbound through lane to a through-left lane; and
- Optimize the timing of traffic signals.

The adjustments to the lane configuration and signal timings are projected to improve operations during the weekday and Saturday peak hours. The southbound approach is expected to operate with delays reduced by up to 37 seconds. Despite these reductions, critical movements are still anticipated due to high traffic volumes along Burloak Drive.

Appleby Line at North Service Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

In the Base Year, a critical movement is observed in the westbound left-turn lane, operating at LOS F with a v/c ratio greater than 0.95 and queues exceeding the available storage during the weekday PM peak hour.

Under Background conditions, critical movements are forecast in the eastbound left, westbound through-right, and northbound approach during the weekday PM peak hours, operating with v/c ratios greater 0.95 and queues exceeding storage for the left-turn lanes.

With increased traffic volumes in the future Total horizon, the northbound and southbound through-right lanes are projected to operate with v/c ratios exceeding 0.85 during the weekday peak hours.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Adjusting the signal timings are anticipated to improve operations for the northbound left-turn and southbound through-right lane by reducing delays by up to 34 seconds. However, critical movements are still projected at the intersection due to high traffic volumes at the intersection.

Appleby Line at QEW Westbound Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the westbound right-turn lane during the weekday PM peak hour, operating at LOS F with v/c ratios exceeding 1.00.

Under Background conditions, the northbound approach is also projected to operate with v/c ratios above 0.85 during both weekday peak periods. In the weekday AM peak hour, the westbound right-turn lane is expected to worsen to LOS F with a v/c ratio greater than 1.00. Additionally, during the weekday PM peak hour, the westbound left-turn lane is forecast to degrade to LOS F, with a v/c ratio exceeding 1.00. The westbound left and right-turn 95th percentile queue lengths are forecast to extend between 315 and 865 m back during the weekday PM peak hour and are forecast to spill back to the mainline.

However, SimTraffic queuing analysis estimates 95th percentile queue lengths are forecast to extend up to 350 m back during the peak hours and is not expected to reach the bullnose, located approximately 500 m .

The southbound approach is expected to operate with v/c ratios above 0.90 during the weekday PM peak hour, and above 0.85 during the AM peak hour. Overall, delays are anticipated to worsen under Total conditions with the addition of site-generated traffic.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Double westbound right-turn lanes; and
- Optimize the timing of traffic signals.

Implementing these measures are forecast to significantly reduce delays in the westbound approach and the northbound approach. During the weekday PM peak hour, despite delay reductions of up to 850 seconds in the westbound approach, capacity issues are still

expected. The movements still exceeding capacity includes the westbound left-turn, westbound right-turn, northbound, and southbound approaches due to the high traffic volumes at Appleby Line at QEW Westbound Off-ramp. With the mitigation measures, queuing on the QEW westbound off-ramp is not expected to impact the mainline operations.

Appleby Line at QEW Eastbound Off-Ramp

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Base year scenario show critical operations for the eastbound left-turn off-ramp movement which operates with a v/c of 0.75 during the weekday AM peak hour.

Under Background conditions, the eastbound right-turn lane is forecast to operate with queues exceeding the available storage during the peak hours. The 95th percentile queue is forecast to extend beyond the available storage by less than 55 m and is not expected to reach the bullnose located approximately 415 m away.

Under future Total conditions, the eastbound left-turn lane is forecast to degrade to LOS E with a v/c ratio over 0.95 during the weekday AM peak hour. The eastbound left-turn lane is forecast to have queues exceeding the available storage by less than 15 m during the weekday AM peak hour but is not expected to reach the bullnose located approximately 415 m away.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Implementing these measures are forecast to reduce delays by up to 18 seconds in the eastbound approach during the weekday and Saturday peak hours. During the PM peak hour, delays are reduced by up to 44 seconds in the southbound approach. However, these movements are still projected to operate as critical movements due to high traffic volumes at the intersection.

Although queuing is forecast to extend beyond the available storage, queues are not expected to impact QEW mainline highway operations.

Appleby Line at Harvester Road

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are observed in the eastbound left-turn and westbound through-right lane, operating at LOS F with v/c ratios greater than 0.95. The westbound left-turn lane operates at LOS E-F during the weekday PM and Saturday peak hours with a v/c ratio greater than 0.90. The southbound left-turn lane also exhibits queues exceeding the available storage during the weekday AM peak hour. These movements are anticipated to degrade with future traffic growth.

With background traffic growth, critical operations are forecast for the eastbound through-right lane under the 2040 horizon during the weekday PM peak hours, operating at LOS E with a v/c ratio greater than 0.85.

Under the Total conditions, the eastbound left-turn lane will degrade to LOS F with v/c ratios greater than 0.95 during the weekday AM and Saturday peak hours. The northbound and southbound through lanes are also expected to operate with v/c ratios exceeding 0.85 during the weekday AM and PM peak hours respectively.

Adjustments to the roadway geometry and traffic control are necessary to accommodate projected traffic volumes. Some possible upgrades include implementing the following:

- Double southbound left-turn lanes with a protected phase; and
- Optimize the timing of traffic signals.

Implementing these measures are forecast to significantly reduce delays in the eastbound and in the westbound approach during the weekday and Saturday peak hours. However, the eastbound left, westbound approach, northbound through, northbound right, southbound left and southbound through lanes are still projected to operate as critical movements due to high traffic volumes at the intersection.

Double northbound left-turn lanes may not be feasible and may not be desirable as increasing roadway width can have negative impacts to pedestrian and cycling environments.

Appleby Line at Fairview Street

Horizon Year	Operations
2024 Base Year	Exceeding Capacity
2035 Background	Exceeding Capacity
2035 Total	Exceeding Capacity
2040 Background	Exceeding Capacity
2040 Total	Exceeding Capacity
2045 Background	Exceeding Capacity
2045 Total	Exceeding Capacity

Critical movements are present at the eastbound and southbound right-turn lanes, operating at LOS D and B with 95th percentile queue lengths exceeding the available storage by less than 70 m.

Under future Background conditions, the eastbound left-turn, northbound left-turn and southbound through lanes are forecast to operate as critical movements, at LOS D-F with 95th percentile queues exceeding the storage for left-turning movements, during the weekday peak hours. The southbound left-turn lane will also operate with queues exceeding the storage during the weekday AM peak hour. The northbound through movement is forecast to operate with delays in the LOS D range or worse and a v/c ratio greater than 0.90 during the AM peak hour.

These movements are projected to worsen with the addition of site-generated traffic under Total conditions, deteriorating to LOS D-F.

To accommodate projected traffic volumes, the existing traffic signal cycle times were adjusted.

Despite applying these mitigation measures, several movements are still projected to exceed capacity with a v/c ratio exceeding 1.00, as well as queues exceeding the available storage at exclusive turn lanes primarily due to high traffic volumes along Appleby Line and Fairview Street.

Mainway at Site Access A

Horizon Year	Operations
2035 Total	Within Capacity
2040 Total	Within Capacity
2045 Total	Within Capacity

A new site connection at Mainway and Site Access A is provided to accommodate for additional site generated traffic for the healthcare and institutional development located along Mainway. Individual movements at the intersection of Site Access A at Mainway is expected to operate at acceptable conditions under the future Total conditions, with a LOS C or better for all movements.

Sutton Drive at Corporate Drive

Horizon Year	Operations
All Total Horizons	Within Capacity

At the all-way stop-controlled internal site intersection of Sutton Drive at Corporate Drive, all approaches are forecast to operate within capacity with a LOS A or better during the weekday and Saturday peak hours.

As per comments from the City, alternative traffic control is considered including signalization and roundabout configurations. All three intersection controls are expected to accommodate vehicle traffic without issue. However, considering the land requirements and pedestrian crossings, an all-way stop controlled intersection control is recommended.

Full Build-Out Assessment

The full build-out is anticipated to be completed in a horizon beyond Year 2045 (10 years after Phase 1 Build-Out), at an unknown time.

The concept shows Phases 2 to 4 located between Sutton Road and Burloak Drive. The development application is for the Phase 1 lands only. However, to provide a high-level long-range assessment of the potential road improvements required to accommodate the possible development, a Full Build-Out scenario has been assessed.

The Full Build-Out stats are based on high-level assumptions of development densities, community needs, and are subject to change.

Under the 2045 horizon year, many study area intersections are forecast to operate at or near their functional capacity. Since the Full Build-Out site traffic assignment adheres to the same methodology utilized in Phase 1, the majority of impacted movements have already been identified, with appropriate mitigation measures previously proposed to address these constraints.

Overall, the study area intersections are forecast to operate at similar levels to the Phase 1 2045 Total Scenario; the exceptions being the new site access intersections for the future phases. The following capacity constraints at the new site access intersections are identified.

Upper Middle Road at Blue Spruce Avenue

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

Under Full Build-Out of the site, Blue Spruce Avenue is proposed to extend south of Upper Middle Road to provide access to the development. With Phase 1 mitigation measures, the intersection has been assumed to be signalized by Full Build-Out. With site-generated traffic volumes, the westbound approach is forecast to operate at LOS C and v/c ratios exceeding 0.95 during the weekday PM peak hour.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM Warrants satisfied); and
- Left-turn Lane and protected-permissive phase for westbound traffic.

Overall, signalization is recommended to reduce delays for northbound and southbound approaches and support walkability in the study area.

Burloak Drive at Corporate Drive/ Bronte Creek Park Access

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

With future phases of the development, Corporate Drive is proposed to be extended east through the development lands, providing a new access to site from the existing Burloak Drive at Bronte Creek Park intersection. The intersection has been assumed to be signalized under the Phase 1 mitigation measures.

The addition of site-generated traffic degrades the northbound approach to operate with delays in the LOS A-E range and a v/c ratio greater than 0.90 during the peak hours.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM warrants satisfied); and
- Implement a left-turn lane and phase for northbound traffic.

In the Phase 1 mitigation measures, signalization was identified as potential improvement although the signal was unwarranted. With the Full Build-Out of the site, the signal is warranted. Overall, with the mitigation measures, the intersection is forecast to operate with delays in the LOS D range or better with v/c ratios less than 0.85 during the peak hours.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

Burloak Drive at Site Access C

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

A future connection at Burloak Drive at Site Access C is planned to provide additional access to the development, located south of the Burloak Drive at Bronte Creek Park/Corporate Drive intersection. Under the assumed two-way stop-control, the eastbound approach is forecast to operate with delays in the LOS F range.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Signalizing the intersection (OTM warrants not satisfied);
- Northbound left-turn lane as per left-turn warrant;
- Northbound left-turn protected-permissive phase; and
- Separate eastbound left-turn and right-turn lanes.

Overall, with the mitigation measures, the intersection is forecast to operate with delays in the LOS C range or better with v/c ratios less than 0.85 during the peak hours.

A traffic signal is also expected to improve pedestrian and cycling safety by providing a control crossing of Burloak Drive.

Mainway at Sutton Drive

Horizon Year	Operations
2045 Total (Full Build-Out)	Exceeding Capacity

The Full Build-Out scenario is forecast to operate similarly to the Phase 1 2045 horizon. Even with Phase 1 mitigation measures, several movements are still projected to experience critical movements including the eastbound left, westbound through-left, northbound approach, and southbound approach.

To accommodate for the additional Full Build-Out site-generated traffic volumes, the following mitigation measures were incorporated in the analysis:

- Separate southbound left-turn and through-right lanes; and
- Separate westbound-right turn lane.

Reconfiguring the lane layout and signalizing the intersection is projected to improve the operations of the intersection. However, several movements are still projected to experience critical movements particularly during the weekday PM peak hour.

Delays can be attributed to the high traffic volumes along Mainway and Sutton Drive.

Mainway at Site Access B

Horizon Year	Operations
2045 Total (Full Build-Out)	Within Capacity

A new site connection at Mainway and Site Access B is provided to accommodate for additional site generated traffic for the Office Park development located along Mainway, east of Sutton Drive. The following mitigation measures were implemented in the analysis:

- Implement an eastbound left-turn lane as per left-turn warrant.

Overall, operations are expected to be at acceptable levels with delays in the LOS C range or better during the peak hours.

Neighbourhood Impact Assessment

To support the development, the Applicant will be responsible for the costs related to new roadway connections to Upper Middle Road, Burloak Drive, and Mainway, which includes left turn lanes and traffic control signals. Moreover, the Applicant will bear the cost of potentially unwarranted traffic control signals due to the deterioration of operations at the intersection of Upper Middle Road at Blue Spruce Avenue, Burloak Drive at Site Access A, Burloak Drive at Corporate Drive, and Mainway at Sutton Drive, caused by the build-out of the development. This is reflected based on the assessment of the intersections projected to operate over capacity due to site generated traffic.

Based on the road classification and network connectivity, most site traffic is expected to use Upper Middle Road, Burloak Drive, and Mainway to access the site.

It is not expected that Sutton Drive (north of Upper Middle Road) or the potential Corporate Drive connection will used significantly by development traffic due to the distance, stop-controlled intersections, and local road designs.

Transportation Demand Management

A key TDM strategy will be the provision of public transit to this area. The use of transit places less reliance on personal automobiles for trips that can be completed with convenient and desirable transit options. The subject site is currently served by four Burlington Transit routes that operate primarily on Upper Middle Road, Mainway, and Appleby Line and provide connections to Appleby GO, Burlington GO, and GO Bus 407 Carpool Stations; however, additional routes and capacity should be provided to serve the future community.

The development lands also lend themselves to TDM benefits associated with mixed or multi-use development. This form of development supports sustainability initiatives by promoting complementary land uses in close proximity.

The future traffic operations with the development cannot be fully mitigated by auto infrastructure improvements alone. This is recognized in the City of Burlington’s Official Plan, which identifies an integrated and multi-modal transportation system that will be achieved by prioritizing decision-making to shift more trips away from the private car and to more sustainable transportation options, such as walking, biking, transit and car sharing.

Future plans include High Occupancy Vehicle (HOV)/Bus Lanes along Upper Middle Road and Burloak Drive. The provision of high-density mixed-use developments in the proposed development is essential to achieving the goals of the City.

As individual development blocks are build-out, TDM measures will be included in the site plan design and reviewed through the SPA process.

11.2 Recommendations

Based on the findings of this study, it is recommended that:

- The road authority plan for the future implementation of the remedial measures summarized in **Table 11.1**. **Figure 7.12** illustrates the proposed remedial measures.
- The Applicant will work with the road authorities to determine appropriate cost sharing contributions for the planned roadway improvements outlined in **Table 11.1**.
- The City should plan to meet its mode share targets by continuing to promote TDM measures and supporting shifts to alternative modes of travel to reduce single-occupant vehicle trips
- Burlington Transit consider adding new transit routes and infrastructure to serve the proposed development.

TABLE 11.1: PROPOSED MITIGATION MEASURES

Intersection	Improvement	Horizon Year	Applicant Responsibility
Appleby Line & Dundas Street	Signal timing adjustments	2035 Background	No
Appleby Line & Upper Middle Road	Double westbound left-turn lanes	Base Year; All Horizons	No
	Double southbound left-turn lanes		
	Signal timing adjustments		
West School Driveway/Private Driveway & Upper Middle Road	Signal timing adjustments	2045 Background	No
Quinte Street & Upper Middle Road	Signalization (OTM Warrants satisfied)	2035 Total	**Yes**
	Northbound left-turn lane (30 m storage)		
	Southbound left-turn lane (45 storage)		
Sutton Drive & Upper Middle Road	Double southbound left-turn lanes	2035 Total	**Yes**
	Northbound left-turn lane (30 m storage)		
	Westbound left-turn lane (60 m storage)		
	Adjusted signal timings		
Blue Spruce Avenue & Upper Middle Road	Signalization (Unwarranted)	Base Year; All Horizons	No
	Westbound left-turn lane	Full Build-Out	**Yes**
Burloak Drive & Corporate Drive/ Park Access	Signalization (Unwarranted)	Base Year; All Horizons	No
	Northbound left-turn lane	Full Build-Out	**Yes**
Burloak Drive & Site Access C	Signalization (OTM Warrants not satisfied)	Full Build-Out	**Yes**
	Northbound left-turn lane		
	Eastbound left-turn lane		
Burloak Drive & Mainway	Double northbound left-turn lanes	2035 Background	No
	Adjusted signal timings		
Mainway & Sutton Drive	Signalization (OTM Warrants satisfied)	2035 Total	**Yes**
	Eastbound left-turn lane (25 m storage)		
	Westbound right-turn lane	Full Build-Out	**Yes**
	Southbound left-turn lane		
Corporate Drive & Sutton Drive	Signalization (Unwarranted)	Full Build-Out	**Yes**
Site Access A & Mainway	Eastbound left-turn lane (15 m storage)	2035 Total	**Yes**
Site Access B & Mainway	Eastbound left-turn lane	Full Build-Out	**Yes**
Norjohn Court/Lampman Avenue & Mainway	Signalization (OTM Warrants satisfied)	Base Year; All Horizons	No
Appleby Line & Mainway	Signal timing adjustments	Base Year; All Horizons	No



TABLE 11.1: PROPOSED MITIGATION MEASURES (CONTINUED)

Intersection	Improvement	Horizon Year	Applicant Responsibility
Appleby Line & Corporate Drive	Signal timing adjustments	2035 Total	No
Burloak Drive & N Service Road	Double northbound left-turn lanes	2035 Background	No
	Adjusted signal timings		
Burloak Drive & QEW WB Off-Ramp	Separating the existing left-right turn lane to double left and right turn lanes	Base Year; All Horizons	No
	Signal timing adjustments		
Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard	Signal timing adjustments	2035 Background	No
	Convert the existing eastbound through-lane to a shared eastbound through-left lane		
Appleby Line & North Service Road	Signal timing adjustments	Base Year; All Horizons	No
Appleby Line & QEW WB Off-Ramp	Signal timing adjustments	Base Year; All Horizons	No
	Double westbound right-turn lanes		
Appleby Line & QEW EB Off-Ramp	Signal timing adjustments	Base Year; All Horizons	No
Appleby Line & Harvester Road	Signal timing adjustments	Base Year; All Horizons	No
	Double southbound left-turn lane		
Appleby Line & Fairview Street	Signal timing adjustments	Base Year; All Horizons	No



Appendix A

Terms of Reference

Greg Lue

From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: August 2, 2024 1:21 PM
To: Greg Lue; Sara Gregory; Douglas, Thomas; Lucas, Sandra; Schneider, Jaclyn; Edgcumbe, Kaylan; Krusto, Matt; Huycke, Adam
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - 2024/07/31 Meeting Minutes
Attachments: 2024-07-31 BCM TIS ToR - Meeting Minutes.docx

Hi everyone,

I hope this email finds you well.

Attached, please find the minutes from our meeting held on Wednesday, July 31st. The document includes a summary of the key points discussed, decisions made, and action items assigned.

Please review the attached minutes and let me know if you have any questions or require further clarification.

Happy long weekend.

Best regards,

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca



Our working hours may be different. You are not obligated to reply outside of your typical working hours.

From: Greg Lue <glue@ptsl.com>
Sent: Monday, July 29, 2024 8:52 AM
To: Napoli, Derek <Derek.Napoli@burlington.ca>
Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Thanks Derek, I'm free this Wednesday at 2 if you are available otherwise let me know a date a time that works for you all.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: Friday, July 26, 2024 3:50 PM
To: Greg Lue <glue@ptsl.com>
Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Good afternoon Greg,

We're happy to discuss the scope of the study area. I'll organize a discussion meeting within the next few weeks. Our schedules are almost full next week but we could potentially meet between 2:00 and 3PM Wednesday, July 31st. Otherwise, we can organize a meeting early August.

Enjoy your weekend!

Best regards,
Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca



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From: Greg Lue <glue@ptsl.com>
Sent: Thursday, July 25, 2024 11:43 AM
To: Napoli, Derek <Derek.Napoli@burlington.ca>
Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Derek,
Thanks for providing those comments on the TOR. We have reviewed the comments provided by the City and wanted to discuss the expanded study area.

1. We do not feel that additional analysis along Appleby Line is warranted. Specifically, our preliminary site traffic forecasts estimate less than 250 vehicles per direction during the peak hours north of Upper Middle Road or south of Mainway. Based on the location, the primary access to the QEW will Burloak Drive. Site traffic along Appleby Line through the majority of the additional intersections listed will be north/south through traffic. I'm not sure what benefit the analysis will provide as it is unlikely further geometric and/or traffic control upgrades beyond the planned six-lane widening could be required.
2. The intersection of Old Burloak Drive & Burloak Drive (unsignalized) does not generate a significant volume. We will omit this intersection from the assessment; however we will discuss the implications of queue lengths from the upstream and downstream intersections.

Based on the above, we respectfully request you review the following and reconsider the need for an expanded study area.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: Friday, July 19, 2024 1:51 PM
To: Greg Lue <glue@ptsl.com>
Cc: Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Good afternoon,

Please find below the City's updates to the Terms of Reference. Please let me know if you have any questions and I hope you have a great weekend.

Terms of Reference

1. Study Area Intersections
   - Appleby Line & Fairview Street (signalized)
   - Appleby Line & Harvester Road (signalized)
   - Appleby Line & QEW EB Off-Ramp (signalized)
   - Appleby Line & QEW WB Off-Ramp (signalized)
   - Appleby Line & North Service Road (signalized)
   - Appleby Line & Appleby Ice Centre (signalized)
   - Appleby Line & Mainway (signalized)
   - Appleby Line & Corporate Drive (signalized)
   - Appleby Line & Upper Middle Road (signalized)
   - Appleby Line & Heron Way (signalized)
   - Appleby Line & Dryden Avenue (signalized)
   - Appleby Line & Taywood Drive (signalized)
   - Appleby Line & 2435 Appleby Line Outlet Mall (signalized)
   - Appleby Line & Dundas Street (signalized)
   - Appleby Line & Harrison Court (signalized)
   - Appleby Line & Thomas Alton Boulevard (signalized)
   - Appleby Line & Palladium Way (signalized)
   - Appleby Line & Highway 407 EB Off-Ramp (signalized)
   - Appleby Line & Highway 407 WB Off-Ramp (signalized)
   - Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
   - Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)
   - Quinte Street & Upper Middle Road (unsignalized)
   - Sutton Drive & Upper Middle Road (signalized)
   - Baker Drive & Upper Middle Road (unsignalized)
   - Deer Place & Upper Middle Road (unsignalized)
   - Blue Spruce Avenue & Upper Middle Road (unsignalized)
   - Old Burloak Drive & Burloak Drive (unsignalized)
   - Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
   - Lampman Avenue/Norjohn Court & Mainway (unsignalized)
   - Sutton Drive & Mainway (unsignalized)
   - John Lucas Drive & Mainway (unsignalized)
   - Burloak Drive & Mainway (signalized)
   - Burloak Drive & North Service Road (signalized)
   - Burloak Drive & QEW WB Off-Ramp (signalized)
   - Burloak Drive & QEW EB Off-Ramp (signalized)
   - Eight internal intersections

2. Existing Data
    - Traffic counts from 2023 are acceptable but 2024 traffic counts are preferred. The collection of any new TMC data must wait until at least mid September.

3. Horizon Years
    - 2024 Base Year
    - 2040 Horizon Year (Full Build-out)

4. Analysis Periods
    - Weekday AM peak hour
    - Weekday PM peak hour

5. Analysis
    - Synchro 11
    - HCM 2000
    - SimTraffic Queueing (five 60-min iterations)

6. Background Traffic
    - Generalized growth rate 1% per annum for all City of Burlington roadways except along Fairview Street use 2% (a 2% percent growth rate accounts for the planned developments at Fairview St and Appleby Ln that are in early pre-con planning stages)
    - Background developments
        - 2273 Turnberry Road
        - Latch Development - 1989 Appleby Line
        - 5030-5045 Tico Creek Common
        - Millcroft Greens – 2155 Country Club Drive
        - 5219 Upper Middle Road
        - 1860-1900 Appleby Line

7. Site Traffic Estimates
    - ITE Trip Generation Data 11th Edition
    - No modal split reductions

8. Site Traffic Distribution
    - Existing travel patterns/TTS data

9. TDM Plan
    - Will outline existing and proposed TDM measures and assess their likely effectiveness for the proposed development.

10. Report
    - We will document the study methodologies, findings, and conclusions in a report with appendices containing the detailed analysis results and any data collected.
    - Mainway Multi-modal Level of Service (MMLOS) Study from Burloak Drive to Appleby Line.

11. Future Considerations
    - Future amendments, including MMLOS, will be required when the locations of future roads have been finalized.

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca



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From: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Sent: Tuesday, July 16, 2024 12:10 PM
To: Greg Lue <glue@ptsl.com>
Cc: Napoli, Derek <Derek.Napoli@burlington.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg, we are just pulling the last pieces together and will send them through the planner on the file.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

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From: Greg Lue <glue@ptsl.com>
Sent: Tuesday, July 16, 2024 11:59 AM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Cc: Napoli, Derek <Derek.Napoli@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Sandra,

Just following up on this to see if the City had any other comments on the TOR to add to the Region's comments below.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Krusto, Matt <Matt.Krusto@halton.ca>
Sent: Tuesday, July 2, 2024 3:31 PM
To: Greg Lue <glue@ptsl.com>
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Huycke, Adam <Adam.Huycke@halton.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>; thomas.douglas@burlington.ca; Taylor.Kirchknopf@burlington.ca; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Aside from our previously stated T of R comments by Halton Region, I have the following additional comments on your below items.

Growth Rates:

-since the application is for Local Official Plan Amendment, Zoning By-Law Amendment and Draft Plan of Subdivision, the 4% does not fully include the proposed residential development traffic generation & distribution
-the 4% along Burloak and Upper Middle Road, specifically for this area, is directly from Halton's EMME model and should not be adjusted/altered
-while not specifically from the model, the 4% will also account for local traffic using these roadways as opposed to staying on the at-capacity QEW westbound through the City, thus supporting the higher growth rate
-for the TIS Report recommendations, please clearly outline which area intersection mitigation measures are attributed to the development site traffic, and those attributed to background and total traffic volumes.

Intersection Plan:

The intersection plan included in the email does not match the one Halton Transportation Development Review staff commented on previously. Regardless, on our **attached** intersection plan we have labelled black dots the intersection

locations Halton would support as acceptable, based on surrounding existing conditions. Halton's intersection plan was previously included with our last comments as well. Please use this plan when making revisions to your draft plan and intersection locations, as part of the transportation impact study.

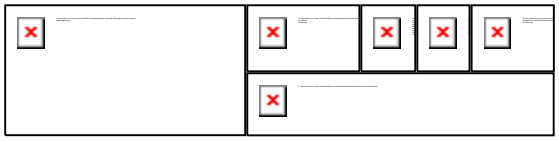
All other locations shown (right-in/right-out) will not be reviewed/supported until the submission of a transportation impact study. All intersections (full movement signalized) and accesses proposed (right-in/right-out) must be fully detailed and justified in the transportation impact study.

Lastly, any City of Burlington comments on the T of R, which I understand are forthcoming, will be supported by Halton Region.

Thanks,

Matt

Matt Krusto
Supervisor, Transportation Development Review
Development Services
Public Works
Halton Region
905-825-6000, ext. 7225 | 1-866-442-5866



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From: Greg Lue <glue@ptsl.com>
Sent: Tuesday, July 2, 2024 11:50 AM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>; Scattolon, Walter <Walter.Scattolon@halton.ca>
Cc: Napoli, Derek <Derek.Napoli@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Kirchknopf, Taylor <Taylor.Kirchknopf@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Sandra and Walter,
Just following up to see if you feedback on the TOR and clarifications regarding the growth rate.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Sent: Thursday, June 13, 2024 10:19 AM
To: Greg Lue <glue@ptsl.com>
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Kirchknopf, Taylor <Taylor.Kirchknopf@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Stay tuned on our feedback on the ToR. We will reach out with a joint City/Region response shortly.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

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From: Lucas, Sandra
Sent: Thursday, June 13, 2024 9:09 AM
To: glue@ptsl.com
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Good morning, Greg

Thanks for reaching out to Dan O regarding BCM who forwarded the email.

Going forward you are welcome to connect with Derek and myself on the development, who are in carriage of this development with the City of Burlington.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

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From: Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Sent: Wednesday, June 12, 2024 1:54 PM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

FYI……

From: Greg Lue <glue@ptsl.com>
Sent: Monday, June 10, 2024 11:59 AM
To: Walter.Scattolon@halton.ca; Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Subject: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi all,
Thanks for providing comments on the Bronte Creek Meadows Terms of Reference. **City of Burlington**, please let me know if you have any additional comments.

With regards to the growth rate, the Region stated:

> *Halton's most up to date and acceptable growth rates (confirmed by Halton's Infrastructure Planning Policy group in April 2024) to use for this Study are as follows:*
> - *Burloak Drive north of Mainway: 4% to 2031 and then 1% from 2031 to 2041*
> - *Upper Middle Road west of Burloak Drive: 4% to 2031 and then 1% from 2031 to 2041*
> - *Appleby Line at Upper Middle Road: 2% to 2031 and then 1% from 2031 to 2041"*

The 4% per annum along Burloak and Upper Middle seems very high for this area which appears to be mostly developed except for the proposed site. Does the 4% include the proposed Bronte Creek Meadows development? I did a rough check of the Region's growth rate and it puts volumes into a similar range as applying 1% per annum growth rate plus the proposed development traffic so I worry that applying the 4% growth rate to this study would be double counting/overestimating traffic growth in the area.
Looking at the City of Burlington's development applications in the area, I've noted a few surrounding developments (attached) which will be included as background developments in the analysis. Would

the Region/City accept a 1% per annum growth rate on the roadways in addition to the five noted background developments traffic?

Please see below for an updated Terms of Reference:

Paradigm Transportations Solutions Limited has been retained to conduct a Transportation Impact Analysis for a proposed development located southeast of Upper Middle Road and Burloak Drive (Bronte Creek Meadows) in the City of Burlington. The property owner is proposing to develop the lands with a mixed-use subdivision including employment, institutional, retail, and variety of low, medium, and high-density residential uses in addition to park and open space. Vehicle access is proposed via connections to Upper Middle Road, Burloak Drive, and Mainway. A preliminary site concept is attached.

Based on the size of the development, a horizon year of 2040 is proposed to capture the full-build out of the development and the long-term transportation impacts and improvements that may be required to accommodate future traffic growth.

<u>Proposed Terms of Reference</u>

Study Area Intersections

- Appleby Line & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)
- Quinte Street & Upper Middle Road (unsignalized)
- Sutton Drive & Upper Middle Road (signalized)
- Baker Drive & Upper Middle Road (unsignalized)
- Deer Place & Upper Middle Road (unsignalized)
- Blue Spruce Avenue & Upper Middle Road (unsignalized)
- Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
- Appleby Line & Corporate Drive (signalized)
- Appleby Line & Mainway (signalized)
- Lampman Avenue/Norjohn Court & Mainway (unsignalized)
- Sutton Drive & Mainway (unsignalized)
- Burloak Drive & Mainway (signalized)
- Burloak Drive & North Service Road (signalized)
- Burloak Drive & QEW WB Off-Ramp (signalized)
- Burloak Drive & QEW EB Off-Ramp (signalized)
- Eight internal intersections

Existing Data

- Weekday AM and PM counts collected on Sept 28, 2023
- Does the City/Region have any concerns with new Saturday traffic data being collected in the coming weeks?

Horizon Years

- 2024 Base Year
- 2040 Horizon Year

Analysis Periods

- Weekday AM peak hour
- Weekday PM peak hour
- Saturday peak hour

Analysis

- Synchro 11
- HCM 2000

- SimTraffic Queueing (five 60-min iterations)

Background Traffic

- Generalized growth rate 1% per annum
- Traffic generated by any in stream developments in the area. **City of Burlington**– can you comment on this and provide any relevant studies or inputs to estimate the traffic for the site(s)?

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- Widening of Burloak, Upper Middle Road, and Appleby from 4 to 6 lanes with the curb lanes converted to high occupancy vehicle (HOV) or bus rapid transit (BRT) lanes after completion of the road widening
- Widening to be assumed to be completed by 2032 and will be included in the future background and future total (with development) scenarios

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- ITE Trip Generation Data 11th Edition
- No modal split reductions

Site Traffic Distribution.

- Existing travel patterns/TTS data

Access Management

- Access management and spacing will be discussed
- Region proposed access locations will be considered. If different locations are proposed, justification will be provided for why they should be permitted.

TDM Plan

- Will outline existing and proposed TDM measures and assess their likely effectiveness for the proposed development

Report

- We will document the study methodologies, findings, and conclusions in a report with appendices containing the detailed analysis results and any data collected.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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w: www.ptsl.com

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Greg Lue

From: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Sent: August 12, 2024 7:20 PM
To: Greg Lue
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Re: Traffic Impact Study Terms of Reference
Land Development Planning - **Bronte Creek Meadows**
5164 - 5900 Upper Middle Road and 5201 Mainway, Burlington, ON. (**QEW**)
MTO Pre-consultation No.: **2024-20T-000515**

After review of the TIS Terms of Reference for the above-described proposed development, and in accordance with the PTHIA, the MTO Traffic Office offers the following comments and highlighted in your ToR below in **red**:

- The TIS must be completed by a RAQS qualified consultant. Any data collected for the TIS must be by a RAQS qualified company/consultant.
- Study must include QEW/Appleby ramps in the analysis as well.
- Growth rate for QEW/Burloak is 3.5%, QEW/Appleby is 3.3%.

Please do not hesitate to contact me if you have any questions.

Thanks,

Paul Nunes
Senior Project Manager (Peel/Halton) | Corridor Management, Central Region West | Operations Division
Ministry of Transportation | Ontario Public Service
416-270-3108 | paul.nunes@ontario.ca

Ontario

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From: Greg Lue <glue@ptsl.com>
Sent: Thursday, August 8, 2024 11:43 AM
To: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Subject: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Paul,
Back in April you provided the following comments on the Traffic Impact Study TOR for the Bronte Creek Meadows development located northwest Burloak Drive at Mainway in the City of Burlington:

> *Please note that if the site is to be designated / zoned as Mixed Use then it will be classified as a major traffic generator, and will be*
> *subject to MTO's 800 m permit control provisions, as per Sec 38(2)(f) of the PTHIA.*

We recommend that the Traffic Impact Study (TIS) be completed in accordance with MTO's 2023 TIS Guidelines, and that the municipality act as the proponent. A development proposal of this magnitude will most likely be phased over a number of years, with periodic TIS updates required to confirm if / when improvements to the QEW / Burloak Drive interchange may be required. MTO's preference is to have the municipality coordinate and present to MTO a plan for highway interchange improvements, if / when required, and make appropriate arrangements to recover costs for and ultimately design and construct any required highway improvements.

Based on your comments we will expand out horizon years to follow the MTO guidelines and include full build-out, 5 year, and 10 year horizons. At this stage of the application detailed phasing of the development is not set. As such, we're proposing to analysis the full build-out year plus 5/10 year horizons.

We expect the majority of the traffic to use Burloak Drive/QEW interchange as that is the closest and most direct interchange for the subject site. We've recently had a discussion with the City of Burlington and Halton Region regarding their comments on the study and wanted to confirm with the MTO that the changes to the TOR and study area are acceptable. Based on your comments and discussion with the City of Burlington and Halton Region we've expanded the study to include the following highlighted changes

1. Study Area Intersections
   - Appleby Line & Fairview Street (signalized)
   - Appleby Line & Harvester Road (signalized)
   - Appleby Line & North Service Road (signalized)
   - Appleby Line & Mainway (signalized)
   - Appleby Line & Corporate Drive (signalized)
   - Appleby Line & Upper Middle Road (signalized)
   - Appleby Line & Dundas Street (signalized)
   - Appleby Line & QEW WB Off-Ramp (signalized)
   - Appleby Line & QEW EB Off-Ramp (signalized)
   - Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
   - Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)
   - Quinte Street & Upper Middle Road (unsignalized)
   - Sutton Drive & Upper Middle Road (signalized)
   - Baker Drive & Upper Middle Road (unsignalized)
   - Deer Place & Upper Middle Road (unsignalized)
   - Blue Spruce Avenue & Upper Middle Road (unsignalized)
   - Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
   - Lampman Avenue/Norjohn Court & Mainway (unsignalized)
   - Sutton Drive & Mainway (unsignalized)
   - Burloak Drive & Mainway (signalized)
   - Burloak Drive & North Service Road (signalized)
   - Burloak Drive & QEW WB Off-Ramp (signalized)
   - Burloak Drive & QEW EB Off-Ramp (signalized)

2. Analysis Period: Weekday AM peak hour, Weekday PM peak hour, Saturday peak hour
3. Horizon Years: 2035 (Opening), 2040 (+5 years), 2045 (+10 years)

4. Analysis
   - Synchro 11 – we will accept version 11 until Dec 2024, then only accept version 12
   - HCM 2000
   - SimTraffic Queueing (five 60-min iterations)

5. Background Traffic
   - Generalized growth rate 1% per annum for all City of Burlington roadways except along Fairview Street use 2% (a 2% percent growth rate accounts for the planned developments at Fairview St and Appleby Ln that are in early pre-con planning stages)
   - Burloak Drive north of Mainway: 4% to 2031 and then 1% from 2031 to 2045
   - Upper Middle Road west of Burloak Drive: 4% to 2031 and then 1% from 2031 to 2045
   - Appleby Line at Upper Middle Road: 2% to 2031 and then 1% from 2031 to 2045
   - Growth rate for QEW/Burloak is 3.5%, QEW/Appleby is 3.3%

   - Background developments
     - 2273 Turnberry Road
     - Latch Development - 1989 Appleby Line
     - 5030-5045 Tico Creek Common
     - Millcroft Greens – 2155 Country Club Drive
     - 5219 Upper Middle Road
     - 1860-1900 Appleby Line

6. Site Traffic Estimates
   - ITE Trip Generation Data 11th Edition
   - No modal split reductions

7. Site Traffic Distribution
   - Existing travel patterns/TTS data

8. Sight line analysis for access intersections

9. TDM Plan
   - Will outline existing and proposed TDM measures and assess their likely effectiveness for the proposed development.

10. Future transit routing

11. Multi-modal Level of Service (MMLOS) Study for Mainway from Burloak Drive to Appleby Line.

12. Report
   - We will document the study methodologies, findings, and conclusions in a report with appendices containing the detailed analysis results and any data collected.
   - The need for geometric improvements shall be reviewed at all locations in the study area and for each proposed development stage. The TIS shall clearly identify transportation impacts by movement, the transportation system improvements that are needed to mitigate these impacts, and the timing of any recommended improvements. A schematic representation of all geometric improvements shall be included as part of the TIS, identifying lane arrangements and intersection improvements for each horizon year.

Please let me know if you have any comments on the updated TOR.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

5A-150 Pinebush Road, Cambridge ON N1R 8J8
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m: 905.981.7479
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Greg Lue

From: Krusto, Matt <Matt.Krusto@halton.ca>
Sent: July 2, 2024 3:31 PM
To: Greg Lue
Cc: Scattolon, Walter; Huycke, Adam; Lucas, Sandra; Napoli, Derek; thomas.douglas@burlington.ca; Taylor.Kirchknopf@burlington.ca; Schneider, Jaclyn; Ozimkovic, Dan
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference
Attachments: Intersection Mark Up Plan April 2024.pdf

Hi Greg,

Aside from our previously stated T of R comments by Halton Region, I have the following additional comments on your below items.

Growth Rates:

-since the application is for Local Official Plan Amendment, Zoning By-Law Amendment and Draft Plan of Subdivision, the 4% does not fully include the proposed residential development traffic generation & distribution
-the 4% along Burloak and Upper Middle Road, specifically for this area, is directly from Halton's EMME model and should not be adjusted/altered
-while not specifically from the model, the 4% will also account for local traffic using these roadways as opposed to staying on the at-capacity QEW westbound through the City, thus supporting the higher growth rate
-for the TIS Report recommendations, please clearly outline which area intersection mitigation measures are attributed to the development site traffic, and those attributed to background and total traffic volumes.

Intersection Plan:

The intersection plan included in the email does not match the one Halton Transportation Development Review staff commented on previously. Regardless, on our **attached** intersection plan we have labelled black dots the intersection locations Halton would support as acceptable, based on surrounding existing conditions. Halton's intersection plan was previously included with our last comments as well. Please use this plan when making revisions to your draft plan and intersection locations, as part of the transportation impact study.

All other locations shown (right-in/right-out) will not be reviewed/supported until the submission of a transportation impact study. All intersections (full movement signalized) and accesses proposed (right-in/right-out) must be fully detailed and justified in the transportation impact study.

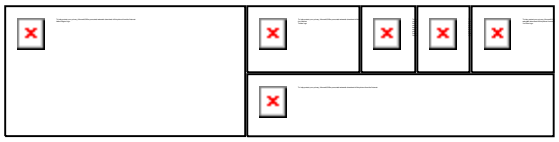
Lastly, any City of Burlington comments on the T of R, which I understand are forthcoming, will be supported by Halton Region.

Thanks,

Matt

Matt Krusto
Supervisor, Transportation Development Review
Development Services

Public Works
Halton Region
905-825-6000, ext. 7225 | 1-866-442-5866



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From: Greg Lue <glue@ptsl.com>
Sent: Tuesday, July 2, 2024 11:50 AM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>; Scattolon, Walter <Walter.Scattolon@halton.ca>
Cc: Napoli, Derek <Derek.Napoli@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Kirchknopf, Taylor <Taylor.Kirchknopf@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Sandra and Walter,
Just following up to see if you feedback on the TOR and clarifications regarding the growth rate.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Sent: Thursday, June 13, 2024 10:19 AM
To: Greg Lue <glue@ptsl.com>
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Kirchknopf, Taylor <Taylor.Kirchknopf@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Stay tuned on our feedback on the ToR. We will reach out with a joint City/Region response shortly.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6



Our working hours may be different. You are not obligated to reply outside of your typical working hours.

From: Lucas, Sandra
Sent: Thursday, June 13, 2024 9:09 AM
To: glue@ptsl.com
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Good morning, Greg

Thanks for reaching out to Dan O regarding BCM who forwarded the email.

Going forward you are welcome to connect with Derek and myself on the development, who are in carriage of this development with the City of Burlington.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6



Our working hours may be different. You are not obligated to reply outside of your typical working hours.

From: Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Sent: Wednesday, June 12, 2024 1:54 PM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

FYI……

From: Greg Lue <glue@ptsl.com>
Sent: Monday, June 10, 2024 11:59 AM
To: Walter.Scattolon@halton.ca; Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Subject: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi all,
Thanks for providing comments on the Bronte Creek Meadows Terms of Reference. **City of Burlington**, please let me know if you have any additional comments.

With regards to the growth rate, the Region stated:

> *Halton's most up to date and acceptable growth rates (confirmed by Halton's Infrastructure Planning Policy group in April 2024) to use for this Study are as follows:*
> - *Burloak Drive north of Mainway: 4% to 2031 and then 1% from 2031 to 2041*
> - *Upper Middle Road west of Burloak Drive: 4% to 2031 and then 1% from 2031 to 2041*
> - *Appleby Line at Upper Middle Road: 2% to 2031 and then 1% from 2031 to 2041"*

The 4% per annum along Burloak and Upper Middle seems very high for this area which appears to be mostly developed except for the proposed site. Does the 4% include the proposed Bronte Creek Meadows development? I did a rough check of the Region's growth rate and it puts volumes into a similar range as applying 1% per annum growth rate plus the proposed development traffic so I worry that applying the 4% growth rate to this study would be double counting/overestimating traffic growth in the area.
Looking at the City of Burlington's development applications in the area, I've noted a few surrounding developments (attached) which will be included as background developments in the analysis. Would the Region/City accept a 1% per annum growth rate on the roadways in addition to the five noted background developments traffic?

Please see below for an updated Terms of Reference:

Paradigm Transportations Solutions Limited has been retained to conduct a Transportation Impact Analysis for a proposed development located southeast of Upper Middle Road and Burloak Drive (Bronte Creek Meadows) in the City of Burlington. The property owner is proposing to develop the lands with a mixed-use subdivision including employment, institutional, retail, and variety of low, medium, and high-density residential uses in addition to park and open space. Vehicle access is proposed via connections to Upper Middle Road, Burloak Drive, and Mainway. A preliminary site concept is attached.

Based on the size of the development, a horizon year of 2040 is proposed to capture the full-build out of the development and the long-term transportation impacts and improvements that may be required to accommodate future traffic growth.

Proposed Terms of Reference

Study Area Intersections

- Appleby Line & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)
- Quinte Street & Upper Middle Road (unsignalized)
- Sutton Drive & Upper Middle Road (signalized)
- Baker Drive & Upper Middle Road (unsignalized)
- Deer Place & Upper Middle Road (unsignalized)
- Blue Spruce Avenue & Upper Middle Road (unsignalized)
- Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
- Appleby Line & Corporate Drive (signalized)
- Appleby Line & Mainway (signalized)
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- Eight internal intersections

Existing Data

- Weekday AM and PM counts collected on Sept 28, 2023
- Does the City/Region have any concerns with new Saturday traffic data being collected in the coming weeks?

Horizon Years

- 2024 Base Year
- 2040 Horizon Year

Analysis Periods

- Weekday AM peak hour
- Weekday PM peak hour
- Saturday peak hour

Analysis

- Synchro 11
- HCM 2000
- SimTraffic Queueing (five 60-min iterations)

Background Traffic

- Generalized growth rate 1% per annum
- Traffic generated by any in stream developments in the area. **City of Burlington**– can you comment on this and provide any relevant studies or inputs to estimate the traffic for the site(s)?

Future Network

- Widening of Burloak, Upper Middle Road, and Appleby from 4 to 6 lanes with the curb lanes converted to high occupancy vehicle (HOV) or bus rapid transit (BRT) lanes after completion of the road widening
- Widening to be assumed to be completed by 2032 and will be included in the future background and future total (with development) scenarios

Site Traffic Estimates

- ITE Trip Generation Data 11th Edition
- No modal split reductions

Site Traffic Distribution.

- Existing travel patterns/TTS data

Access Management

- Access management and spacing will be discussed

- Region proposed access locations will be considered. If different locations are proposed, justification will be provided for why they should be permitted.

TDM Plan

- Will outline existing and proposed TDM measures and assess their likely effectiveness for the proposed development

Report

- We will document the study methodologies, findings, and conclusions in a report with appendices containing the detailed analysis results and any data collected.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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Greg Lue

From: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Sent: November 7, 2024 3:38 PM
To: Greg Lue
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Re: Traffic Impact Study - Terms of Reference
Land Development Planning - Bronte Creek Meadows
5164 - 5900 Upper Middle Road and 5201 Mainway, Burlington, ON. (**QEW**)
MTO Pre-consultation No.: **2024-20T-000515**

Yes, Saturday analysis required, and please note we asked for both Burloak and Appleby ramps to be analyzed.

Thanks,

Paul Nunes
Senior Project Manager (Peel/Halton) | Corridor Management, Central Region West | Operations Division
Ministry of Transportation | Ontario Public Service
416-270-3108 | paul.nunes@ontario.ca

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From: Greg Lue <glue@ptsl.com>
Sent: Thursday, November 7, 2024 10:45 AM
To: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Paul,
Thanks for the comments. I just gave you a call about Saturday traffic counts. I wanted to ask if the MTO requires the Saturday analysis or not. The Region had requested the Saturday analysis because the proposed subdivision development has retail land uses. We collected a number of counts on Saturday July 13, 2024. The City then provided comment that they would not accept counts collected in the summer with one of the reasons being the absence of school traffic and possible variations in commuter traffic. However, given these are Saturday counts, this should not be as much of an issue. We proposed applying a conservative +15% summer adjustment factor for the July counts based fall/summer data we have in the corridor and MTO AADT data on the QEW but the City still wants us to recount the Saturday. Attached is our unprocessed TMC data for the weekday AM/PM and Saturday peak hours and correspondence with the City for reference.

I would like to ask MTO if you require Saturday analysis for the highway ramps. Based on our data, the highest volumes occur during the weekday AM and PM peak hours and our trip generation forecasts are highest for the weekday AM and PM peak hours. If we are to recount the Saturday

TMCs collected in July as requested by the City (which includes the QEW/Burloak ramps), would the MTO require us to count the QEW/Burloak ramps or would it be acceptable for us to omit the QEW ramps from the Saturday analysis as they do not experience the critical peak hour volumes?

Please let me know or feel free to give me a call to discuss.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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m: 905.981.7479

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From: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Sent: August 12, 2024 7:20 PM
To: Greg Lue <glue@ptsl.com>
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Re: Traffic Impact Study Terms of Reference
Land Development Planning - **Bronte Creek Meadows**
5164 - 5900 Upper Middle Road and 5201 Mainway, Burlington, ON. (**QEW**)
MTO Pre-consultation No.: **2024-20T-000515**

After review of the TIS Terms of Reference for the above-described proposed development, and in accordance with the PTHIA, the MTO Traffic Office offers the following comments and highlighted in your ToR below in **red**:

- The TIS must be completed by a RAQS qualified consultant. Any data collected for the TIS must be by a RAQS qualified company/consultant.
- Study must include QEW/Appleby ramps in the analysis as well.
- Growth rate for QEW/Burloak is 3.5%, QEW/Appleby is 3.3%.

Please do not hesitate to contact me if you have any questions.

Thanks,

Paul Nunes
Senior Project Manager (Peel/Halton) | Corridor Management, Central Region West | Operations Division
Ministry of Transportation | Ontario Public Service

416-270-3108 | paul.nunes@ontario.ca

Ontario

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From: Greg Lue <glue@ptsl.com>
Sent: Thursday, August 8, 2024 11:43 AM
To: Nunes, Paul (MTO) <Paul.Nunes@ontario.ca>
Subject: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Paul,
Back in April you provided the following comments on the Traffic Impact Study TOR for the Bronte Creek Meadows development located northwest Burloak Drive at Mainway in the City of Burlington:

> *Please note that if the site is to be designated / zoned as Mixed Use then it will be classified as a major traffic generator, and will be subject to MTO's 800 m permit control provisions, as per Sec 38(2)(f) of the PTHIA. We recommend that the Traffic Impact Study (TIS) be completed in accordance with MTO's 2023 TIS Guidelines, and that the municipality act as the proponent. A development proposal of this magnitude will most likely be phased over a number of years, with periodic TIS updates required to confirm if / when improvements to the QEW / Burloak Drive interchange may be required. MTO's preference is to have the municipality coordinate and present to MTO a plan for highway interchange improvements, if / when required, and make appropriate arrangements to recover costs for and ultimately design and construct any required highway improvements.*

Based on your comments we will expand out horizon years to follow the MTO guidelines and include full build-out, 5 year, and 10 year horizons. At this stage of the application detailed phasing of the development is not set. As such, we're proposing to analysis the full build-out year plus 5/10 year horizons.

We expect the majority of the traffic to use Burloak Drive/QEW interchange as that is the closest and most direct interchange for the subject site. We've recently had a discussion with the City of Burlington and Halton Region regarding their comments on the study and wanted to confirm with the MTO that the changes to the TOR and study area are acceptable. Based on your comments and discussion with the City of Burlington and Halton Region we've expanded the study to include the following highlighted changes

1. Study Area Intersections
   - Appleby Line & Fairview Street (signalized)
   - Appleby Line & Harvester Road (signalized)
   - Appleby Line & North Service Road (signalized)
   - Appleby Line & Mainway (signalized)
   - Appleby Line & Corporate Drive (signalized)
   - Appleby Line & Upper Middle Road (signalized)
   - Appleby Line & Dundas Street (signalized)

- Appleby Line & QEW WB Off-Ramp (signalized)
- Appleby Line & QEW EB Off-Ramp (signalized)
- Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)
- Quinte Street & Upper Middle Road (unsignalized)
- Sutton Drive & Upper Middle Road (signalized)
- Baker Drive & Upper Middle Road (unsignalized)
- Deer Place & Upper Middle Road (unsignalized)
- Blue Spruce Avenue & Upper Middle Road (unsignalized)
- Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
- Lampman Avenue/Norjohn Court & Mainway (unsignalized)
- Sutton Drive & Mainway (unsignalized)
- Burloak Drive & Mainway (signalized)
- Burloak Drive & North Service Road (signalized)
- Burloak Drive & QEW WB Off-Ramp (signalized)
- Burloak Drive & QEW EB Off-Ramp (signalized)

2. Analysis Period: Weekday AM peak hour, Weekday PM peak hour, Saturday peak hour
3. Horizon Years: 2035 (Opening), 2040 (+5 years), 2045 (+10 years)

4. Analysis
   - Synchro 11 – we will accept version 11 until Dec 2024, then only accept version 12
   - HCM 2000
   - SimTraffic Queueing (five 60-min iterations)

5. Background Traffic
   - Generalized growth rate 1% per annum for all City of Burlington roadways except along Fairview Street use 2% (a 2% percent growth rate accounts for the planned developments at Fairview St and Appleby Ln that are in early pre-con planning stages)
   - Burloak Drive north of Mainway: 4% to 2031 and then 1% from 2031 to 2045
   - Upper Middle Road west of Burloak Drive: 4% to 2031 and then 1% from 2031 to 2045
   - Appleby Line at Upper Middle Road: 2% to 2031 and then 1% from 2031 to 2045
   - Growth rate for QEW/Burloak is 3.5%, QEW/Appleby is 3.3%

   - Background developments
     - 2273 Turnberry Road
     - Latch Development - 1989 Appleby Line
     - 5030-5045 Tico Creek Common
     - Millcroft Greens – 2155 Country Club Drive
     - 5219 Upper Middle Road
     - 1860-1900 Appleby Line

6. Site Traffic Estimates
   - ITE Trip Generation Data 11th Edition
   - No modal split reductions

7. Site Traffic Distribution
   - Existing travel patterns/TTS data

8. Sight line analysis for access intersections

9. TDM Plan
   - Will outline existing and proposed TDM measures and assess their likely effectiveness for the proposed development.

10. Future transit routing

11. Multi-modal Level of Service (MMLOS) Study for Mainway from Burloak Drive to Appleby Line.

12. Report
   - We will document the study methodologies, findings, and conclusions in a report with appendices containing the detailed analysis results and any data collected.
   - The need for geometric improvements shall be reviewed at all locations in the study area and for each proposed development stage. The TIS shall clearly identify transportation impacts by movement, the transportation system improvements that are needed to mitigate these impacts, and the timing of any recommended improvements. A schematic representation of all geometric improvements shall be included as part of the TIS, identifying lane arrangements and intersection improvements for each horizon year.

Please let me know if you have any comments on the updated TOR.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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Greg Lue

From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: November 20, 2024 4:15 PM
To: Greg Lue
Cc: Scattolon, Walter; Lucas, Sandra; Krusto, Matt
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Greg,

After discussions between the City and Region, we have the following comments with respect to the traffic distribution for the TIS:

- An additional Corporate Drive Extension scenario must be added to outline volume redistribution relief,
    - Noting that the Corporate Drive Extension also provides access to Mainway via Sutton Drive.

- High volumes of inbound site traffic originating from Appleby Line and Mainway intersection, are noted entering the site (NBL), during the PM and Saturday peak hours at the Burloak Drive and Corporate Drive intersection. Allocate a higher proportion of the inbound site traffic to Sutton Drive and Mainway (EBL) to avoid long queues and multiple left-turns along Burloak Drive.

- Where left-turn volumes at intersections that approach or exceed 400 vehicles per hour, review the requirement for dual left-turn lanes (i.e., northbound Burloak Drive at Corporate Drive, Burloak Drive at Mainway (NB, EB), Upper Middle Road at Appleby Line (WB conversion of hatched area)).
    - This will require, as part of the TIS, a functional plan showing Burloak Drive at 6 lanes with a northbound dual left-turn lane at Corporate Drive and Mainway intersection.
    - Burloak Drive is shown the Region's Capital Budget for start of construction in 2029 for the widening from 4 to 6 lanes (Harvester Rd to Upper Middle Rd).

- The Upper Middle Road at Appleby Line intersection must be closely reviewed, and recommendations provided for improvements based on site volumes. For example, recommendations including but not limited to: dual westbound left-turn lanes (convert hatched area), extending existing westbound right-turn channelized lane.

- The spacing of the Corporate Drive intersection at Burloak Drive, as previously noted, is not acceptable. While spacing is not shown on the plan, it appears to remain in the same location as previous plans. Detailed intersection spacing is required as part of the TIS to confirm intersection spacing is acceptable and will require internal plan changes should the intersection spacing be found unacceptable.

- The Upper Middle Road intersections have now changed, with an intersection connection shown at Blue Spruce instead of Deer Place. The Upper Middle Road development intersection connections are now show at Quinte, Sutton and Blue Spruce (previously it was shown at Quinte, Sutton and Deer Place). For the Upper Middle Road at Blue Spruce intersection, a safety and sight-line analysis will be required due to the horizontal curve along Upper Middle Road/Burloak Drive immediately to the southeast, and the proposed development buildings along this curved section of Burloak Drive close to property line.

- Inform the MTO where high site volumes are noted at the QEW ramps (300-400 vehicles).

Confirmation for the removal of the noted intersections from the Saturday counts/analysis:

- Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)
- Baker Drive & Upper Middle Road (unsignalized)
- Deer Place & Upper Middle Road (unsignalized)
- Lampman Avenue/Norjohn Court & Mainway (unsignalized)

Please let me know if you have any questions or require any clarification.

Best Regards,

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca



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From: Greg Lue <glue@ptsl.com>
Sent: Thursday, November 7, 2024 12:50 PM
To: Napoli, Derek <Derek.Napoli@burlington.ca>
Cc: Lucas, Sandra <Sandra.Lucas@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

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Hi Derek,
Just gave you a call to discuss the summer factor and recounting the July intersections.

I understand the request for a Saturday peak hour analysis as the development includes retail developments. Reviewing the weekday commuter traffic patterns and the collected TMC data, Saturday does not appear to have the critical volumes as observed during the weekday peak hours. In addition, our trip generation forecasts estimate Saturday peak hour to be the lowest generator of the peak hours.

In an effort to provide a Saturday analysis that fulfills the City/Region's requirements but also streamlines the number of recounted/analyzed intersections, would the City/Region be open to accepting a Saturday analysis that focusses on the higher volume intersections in the study area and omits the lower volume side streets? Below is a list of the intersections collected in July that would

need to be recounted. I've marked some in red which are low volume and could possibly be omitted from the recount/Saturday analysis

- Appleby Line & Mainway (signalized)
- Appleby Line & Corporate Drive (signalized)
- Appleby Line & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized) – no school traffic on Saturday
- Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized) – no school traffic on Saturday
- Quinte Street & Upper Middle Road (unsignalized)
- Sutton Drive & Upper Middle Road (signalized)
- Baker Drive & Upper Middle Road (unsignalized) – relatively low volume on saturday
- Deer Place & Upper Middle Road (unsignalized) – relatively low volume on saturday
- Blue Spruce Avenue & Upper Middle Road (unsignalized)
- Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
- Lampman Avenue/Norjohn Court & Mainway (unsignalized) – relatively low volume on saturday
- Sutton Drive & Mainway (unsignalized)
- Burloak Drive & Mainway (signalized)
- Burloak Drive & North Service Road (signalized)
- Burloak Drive & QEW WB Off-Ramp (signalized)
- Burloak Drive & QEW EB Off-Ramp (signalized)

I've reached out to MTO about possibly omitting the QEW ramps from Saturday analysis and reached out to the Region for their general thoughts on the July counts. I've also cc'd the Region to keep them in the loop on this email.

Let me know if this sounds acceptable to the City. Please let me know if you want to have a call or set up a meeting to discuss. As the number of available weeks to count before the holiday quickly dwindles, I hope we can sort this out soon.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: November 6, 2024 4:47 PM

To: Greg Lue <glue@ptsl.com>
Cc: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

Hi Greg,

I haven't yet been able to meet with the Region to discuss the Trip Distribution but I can provide our comments with regard to the use of the summer traffic counts and the seasonal adjustment factor. In addition to our concerns with using counts taken during summer, Transportation Planning were concerned with counts taken after the flooding that occurred in July. The counts were in fact take a few days before the flooding occurred on July 15th to 16th.

While the turning movement counts were not collected after the summer flood and understanding the rational you put forward, I must still advise that we cannot support utilizing the summer turning movement counts with a seasonal adjustment factor. The proposed seasonal adjustment factor assumption is based on a small sample size that is unlikely to hold up to scrutiny at a hearing. Additionally, the MTO's seasonal variation data is not representative of the Bronte Creek Meadows area road network. My recommendation is to use turning movement counts collected following the standard practices previously outlined below on October 4th and the Terms of Reference.

I will provide comments regarding the proposed Trip Distribution soon after I'm able to meet with the Region. Please let me know if you have any questions.

Best Regards,

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

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derek.napoli@burlington.ca



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From: Greg Lue <glue@ptsl.com>
Sent: Tuesday, November 5, 2024 2:37 PM
To: Napoli, Derek <Derek.Napoli@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

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Hi Derek,
Just following up to see if you had the City and Region's comments regarding the Trip Distribution and Summer Factor.

Thanks !

Greg

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: October 21, 2024 8:43 AM
To: Greg Lue <glue@ptsl.com>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

Good morning Greg,

Apologies for not providing an update last week. I'm meeting with the Region this week to discuss the trip distribution and summer factor to ensure we are all on the same page.

Can you please provide the date of the Saturday count that was completed in July?

Thank you and I hope you enjoy the warm weather.

Regards,

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca

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From: Greg Lue <glue@ptsl.com>
Sent: Monday, October 7, 2024 1:24 PM
To: Napoli, Derek <Derek.Napoli@burlington.ca>

Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Huycke, Adam <Adam.Huycke@halton.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

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Hi Derek,
Thanks for the update on the status of the Trip Distribution and Assignment letter.

As for the seasonal adjustment factor, I completely understand the need for counts to be collected during typical weekdays and during the school year given the proximity to the school in the study area. Weekday counts were collected during the school year in October 2023. The portion of counts collected in July are for the Saturday peak hour.

While not as ideal as counts during the school year, Saturday counts should have limited impact from trips from the nearby school and are applicable for a summer adjustment factor to be applied. Our proposed summer adjustment factor based on a comparison of July 2024 and September 2024 count data provides a sufficient conservative estimation (err on high side) for Saturday peak hour volumes throughout the study area and we request the City reconsider their requirement to recollect the portion of Saturday counts collected in July.

From our previous discussions, a Saturday peak hour was required to assess the impact from the proposed retail portion of the development. In a review of the Saturday traffic counts we see the peak directional Saturday volumes do not exceed the weekday AM and PM peak hour directional volumes (see attached excel). Trip generation during the Saturday peak hour is forecasted to be less than the weekday AM and PM peak hours. Considering these factors, we estimate that the Saturday peak hour, even with a +15%summer adjustment factor applied, will not be the critical volumes impacting movements.

We acknowledge the importance of analyzing Saturday peak hour for retail developments and having representative traffic counts are required for that analysis. Considering school trips are not impacting our summer counts, the conservative summer adjustment factor proposed, and the more higher volume traffic/site traffic during the weekday peak hours, we feel adjusted Saturday counts will be representative for the analysis.

With this reasoning, please let me know if it's acceptable to move forward with the summer adjustment. I'm happy to set up a call to discuss further.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: October 4, 2024 1:18 PM
To: Greg Lue <glue@ptsl.com>
Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Huycke, Adam <Adam.Huycke@halton.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

Hi Greg,

Thank you for providing the Trip Distribution and Assignment letter. Transportation Planning is still in the process of reviewing the letter and we will provide feedback once the review is complete next week. If any questions or clarifications arise during the review, we'll reach out.

While I understand the rationale behind your proposed seasonal adjustment factor, I must advise that adjustment factors cannot be applied in this case. As per the terms of reference, traffic counts must avoid being collected during summer months. One of the reasons for this restriction includes the absence of school generated trips from Corpus Christi Catholic Secondary School, located immediately to the west of the development lands. Additionally, the OLT have made their position known to the City and Region that accepting traffic counts taken during non-standard periods cannot withstand strict scrutiny.
To avoid this situation, the following standard practices for collecting turning movement count data must be followed:

- The counts are conducted on a "typical" mid-week weekday (Tuesday, Wednesday or Thursday),
- Avoid counts during the Thanksgiving and Christmas holidays (mid-December to mid-January),
- Avoid counts during March Break, and
- Avoid counts during the summer (mid to late June to 1st week of September).

The City requires proceeding with collecting new traffic count data that adhere to the established terms of reference and the above-mentioned standard practices. Let me know if you need further clarification on this.

Regards,

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

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derek.napoli@burlington.ca



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From: Greg Lue <glue@ptsl.com>
Sent: Monday, September 30, 2024 5:33 PM
To: Napoli, Derek <Derek.Napoli@burlington.ca>; Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Huycke, Adam <Adam.Huycke@halton.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - Trip Distribution and Summer Factor

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HI All,
Just following up on this to see if there were any comments on the trip distribution and assignment.

Additionally, as we collected counts during July, we wish to get comment on our summer adjustment factor before we get too far. Based on volumes along Appleby Line observed in July and September, we've observed a +14% adjustment for southbound traffic along Appleby Line but a -10% adjustment for northbound traffic. MTO QEW AADT data at the Appleby interchange shows a +8% seasonal variation between AADT and Summer AADT. Based on our observations we propose applying a +15% summer factor to all counts collected in July with some manual adjustments for continuity of traffic flow between neighbouring intersections.

Please let me know if you have any comment on the trip distribution or on the proposed summer adjustment factor.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
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m: 905.981.7479

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From: Greg Lue
Sent: September 13, 2024 9:50 AM
To: 'Napoli, Derek' <Derek.Napoli@burlington.ca>; Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Huycke, Adam <Adam.Huycke@halton.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - 2024/07/31 Meeting Minutes

Hi all,
Just following up on these action items. I reached out to the MTO and they've requested we include the Appleby Line ramps. As discussed, please see the attached Trip Distribution and Assignment letter which outlines the assumptions for the site trip distribution to the surrounding network and the Appleby MTSA. Please let me know if you have any comments/questions or would like to schedule a call to discuss. We appreciate you agreeing to take a look at this before the final TIS is submitted.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

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m: 905.981.7479

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From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: August 2, 2024 1:21 PM
To: Greg Lue <glue@ptsl.com>; Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Huycke, Adam <Adam.Huycke@halton.ca>
Subject: RE: (230553) Bronte Creek Meadows - TIS Terms of Reference - 2024/07/31 Meeting Minutes

Hi everyone,

I hope this email finds you well.

Attached, please find the minutes from our meeting held on Wednesday, July 31st. The document includes a summary of the key points discussed, decisions made, and action items assigned.

Please review the attached minutes and let me know if you have any questions or require further clarification.

Happy long weekend.

Best regards,

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca

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From: Greg Lue <glue@ptsl.com>
Sent: Monday, July 29, 2024 8:52 AM
To: Napoli, Derek <Derek.Napoli@burlington.ca>
Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Thanks Derek, I'm free this Wednesday at 2 if you are available otherwise let me know a date a time that works for you all.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: Friday, July 26, 2024 3:50 PM
To: Greg Lue <glue@ptsl.com>
Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Edgcumbe, Kaylan <Kaylan.Edgcumbe@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Good afternoon Greg,

We're happy to discuss the scope of the study area. I'll organize a discussion meeting within the next few weeks. Our schedules are almost full next week but we could potentially meet between 2:00 and 3PM Wednesday, July 31st. Otherwise, we can organize a meeting early August.

Enjoy your weekend!

Best regards,
Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca



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From: Greg Lue <glue@ptsl.com>
Sent: Thursday, July 25, 2024 11:43 AM
To: Napoli, Derek <Derek.Napoli@burlington.ca>
Cc: Sara Gregory <sgregory@bousfields.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Derek,
Thanks for providing those comments on the TOR. We have reviewed the comments provided by the City and wanted to discuss the expanded study area.

1. We do not feel that additional analysis along Appleby Line is warranted. Specifically, our preliminary site traffic forecasts estimate less than 250 vehicles per direction during the peak hours north of Upper Middle Road or south of Mainway. Based on the location, the primary access to the QEW will Burloak Drive. Site traffic along Appleby Line through the majority of the additional intersections listed will be north/south through traffic. I'm not sure what benefit the analysis will provide as it is unlikely further geometric and/or traffic control upgrades beyond the planned six-lane widening could be required.
2. The intersection of Old Burloak Drive & Burloak Drive (unsignalized) does not generate a significant volume. We will omit this intersection from the assessment; however we will discuss the implications of queue lengths from the upstream and downstream intersections.

Based on the above, we respectfully request you review the following and reconsider the need for an expanded study area.

Thanks,

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

Paradigm operates on a four-day workweek. Our offices are closed on Fridays.

From: Napoli, Derek <Derek.Napoli@burlington.ca>
Sent: Friday, July 19, 2024 1:51 PM
To: Greg Lue <glue@ptsl.com>
Cc: Douglas, Thomas <Thomas.Douglas@burlington.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Good afternoon,

Please find below the City's updates to the Terms of Reference. Please let me know if you have any questions and I hope you have a great weekend.

Terms of Reference

1. Study Area Intersections
   - Appleby Line & Fairview Street (signalized)
   - Appleby Line & Harvester Road (signalized)
   - Appleby Line & QEW EB Off-Ramp (signalized)
   - Appleby Line & QEW WB Off-Ramp (signalized)
   - Appleby Line & North Service Road (signalized)
   - Appleby Line & Appleby Ice Centre (signalized)
   - Appleby Line & Mainway (signalized)
   - Appleby Line & Corporate Drive (signalized)
   - Appleby Line & Upper Middle Road (signalized)
   - Appleby Line & Heron Way (signalized)
   - Appleby Line & Dryden Avenue (signalized)
   - Appleby Line & Taywood Drive (signalized)
   - Appleby Line & 2435 Appleby Line Outlet Mall (signalized)
   - Appleby Line & Dundas Street (signalized)
   - Appleby Line & Harrison Court (signalized)
   - Appleby Line & Thomas Alton Boulevard (signalized)
   - Appleby Line & Palladium Way (signalized)
   - Appleby Line & Highway 407 EB Off-Ramp (signalized)
   - Appleby Line & Highway 407 WB Off-Ramp (signalized)
   - Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
   - Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)

- Quinte Street & Upper Middle Road (unsignalized)
- Sutton Drive & Upper Middle Road (signalized)
- Baker Drive & Upper Middle Road (unsignalized)
- Deer Place & Upper Middle Road (unsignalized)
- Blue Spruce Avenue & Upper Middle Road (unsignalized)
- Old Burloak Drive & Burloak Drive (unsignalized)
- Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
- Lampman Avenue/Norjohn Court & Mainway (unsignalized)
- Sutton Drive & Mainway (unsignalized)
- John Lucas Drive & Mainway (unsignalized)
- Burloak Drive & Mainway (signalized)
- Burloak Drive & North Service Road (signalized)
- Burloak Drive & QEW WB Off-Ramp (signalized)
- Burloak Drive & QEW EB Off-Ramp (signalized)
- Eight internal intersections

2. Existing Data
    - Traffic counts from 2023 are acceptable but 2024 traffic counts are preferred. The collection of any new TMC data must wait until at least mid September.

3. Horizon Years
    - 2024 Base Year
    - 2040 Horizon Year (Full Build-out)

4. Analysis Periods
    - Weekday AM peak hour
    - Weekday PM peak hour

5. Analysis
    - Synchro 11
    - HCM 2000
    - SimTraffic Queueing (five 60-min iterations)

6. Background Traffic
    - Generalized growth rate 1% per annum for all City of Burlington roadways except along Fairview Street use 2% (a 2% percent growth rate accounts for the planned developments at Fairview St and Appleby Ln that are in early pre-con planning stages)
    - Background developments
        - 2273 Turnberry Road
        - Latch Development - 1989 Appleby Line
        - 5030-5045 Tico Creek Common
        - Millcroft Greens – 2155 Country Club Drive
        - 5219 Upper Middle Road
        - 1860-1900 Appleby Line

7. Site Traffic Estimates
    - ITE Trip Generation Data 11th Edition
    - No modal split reductions

8. Site Traffic Distribution
    - Existing travel patterns/TTS data

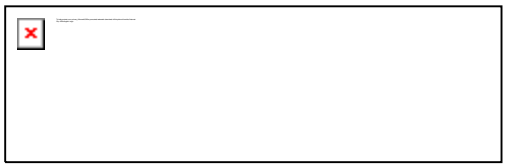
9. TDM Plan
    - Will outline existing and proposed TDM measures and assess their likely effectiveness for the proposed development.

10. Report
    - We will document the study methodologies, findings, and conclusions in a report with appendices containing the detailed analysis results and any data collected.
    - Mainway Multi-modal Level of Service (MMLOS) Study from Burloak Drive to Appleby Line.

11. Future Considerations
    - Future amendments, including MMLOS, will be required when the locations of future roads have been finalized.

Derek Napoli, C.E.T.
Transportation Planning Technologist
Transportation

(905) 335-7600 ext.7972
derek.napoli@burlington.ca



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From: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Sent: Tuesday, July 16, 2024 12:10 PM
To: Greg Lue <glue@ptsl.com>
Cc: Napoli, Derek <Derek.Napoli@burlington.ca>; Douglas, Thomas <Thomas.Douglas@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg, we are just pulling the last pieces together and will send them through the planner on the file.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

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From: Greg Lue <glue@ptsl.com>
Sent: Tuesday, July 16, 2024 11:59 AM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Cc: Napoli, Derek <Derek.Napoli@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Sandra,

Just following up on this to see if the City had any other comments on the TOR to add to the Region's comments below.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Krusto, Matt <Matt.Krusto@halton.ca>
Sent: Tuesday, July 2, 2024 3:31 PM
To: Greg Lue <glue@ptsl.com>
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Huycke, Adam <Adam.Huycke@halton.ca>; Lucas, Sandra <Sandra.Lucas@burlington.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>; thomas.douglas@burlington.ca; Taylor.Kirchknopf@burlington.ca; Schneider, Jaclyn <Jaclyn.Schneider@burlington.ca>; Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Aside from our previously stated T of R comments by Halton Region, I have the following additional comments on your below items.

Growth Rates:

-since the application is for Local Official Plan Amendment, Zoning By-Law Amendment and Draft Plan of Subdivision, the 4% does not fully include the proposed residential development traffic generation & distribution
-the 4% along Burloak and Upper Middle Road, specifically for this area, is directly from Halton's EMME model and should not be adjusted/altered
-while not specifically from the model, the 4% will also account for local traffic using these roadways as opposed to staying on the at-capacity QEW westbound through the City, thus supporting the higher growth rate
-for the TIS Report recommendations, please clearly outline which area intersection mitigation measures are attributed to the development site traffic, and those attributed to background and total traffic volumes.

Intersection Plan:

The intersection plan included in the email does not match the one Halton Transportation Development Review staff commented on previously. Regardless, on our **attached** intersection plan we have labelled black dots the intersection

locations Halton would support as acceptable, based on surrounding existing conditions. Halton's intersection plan was previously included with our last comments as well. Please use this plan when making revisions to your draft plan and intersection locations, as part of the transportation impact study.

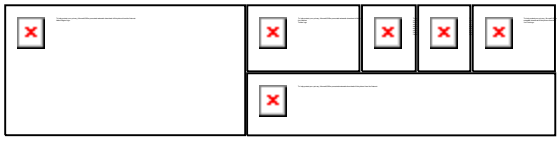
All other locations shown (right-in/right-out) will not be reviewed/supported until the submission of a transportation impact study. All intersections (full movement signalized) and accesses proposed (right-in/right-out) must be fully detailed and justified in the transportation impact study.

Lastly, any City of Burlington comments on the T of R, which I understand are forthcoming, will be supported by Halton Region.

Thanks,

Matt

Matt Krusto
Supervisor, Transportation Development Review
Development Services
Public Works
Halton Region
905-825-6000, ext. 7225 | 1-866-442-5866



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From: Greg Lue <glue@ptsl.com>
Sent: Tuesday, July 2, 2024 11:50 AM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>; Scattolon, Walter <Walter.Scattolon@halton.ca>
Cc: Napoli, Derek <Derek.Napoli@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Kirchknopf, Taylor <Taylor.Kirchknopf@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi Sandra and Walter,
Just following up to see if you feedback on the TOR and clarifications regarding the growth rate.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

Paradigm Transportation Solutions Limited
p: 905.381.2229 x307
m: 905.981.7479

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From: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Sent: Thursday, June 13, 2024 10:19 AM
To: Greg Lue <glue@ptsl.com>
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>; Krusto, Matt <Matt.Krusto@halton.ca>; Kirchknopf, Taylor <Taylor.Kirchknopf@burlington.ca>
Subject: RE: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Hi Greg,

Stay tuned on our feedback on the ToR. We will reach out with a joint City/Region response shortly.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

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From: Lucas, Sandra
Sent: Thursday, June 13, 2024 9:09 AM
To: glue@ptsl.com
Cc: Scattolon, Walter <Walter.Scattolon@halton.ca>; Napoli, Derek <Derek.Napoli@burlington.ca>
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

Good morning, Greg

Thanks for reaching out to Dan O regarding BCM who forwarded the email.

Going forward you are welcome to connect with Derek and myself on the development, who are in carriage of this development with the City of Burlington.

Regards

Sandra Lucas (she/her)
Supervisor of Transportation Planning
Transportation Services Department

MAIN: 905-335-7600 ext 7401
sandra.lucas@burlington.ca

426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

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From: Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Sent: Wednesday, June 12, 2024 1:54 PM
To: Lucas, Sandra <Sandra.Lucas@burlington.ca>
Subject: FW: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

FYI……

From: Greg Lue <glue@ptsl.com>
Sent: Monday, June 10, 2024 11:59 AM
To: Walter.Scattolon@halton.ca; Ozimkovic, Dan <Dan.Ozimkovic@burlington.ca>
Subject: (230553) Bronte Creek Meadows - Transportation Impact Study - Terms of Reference

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Hi all,
Thanks for providing comments on the Bronte Creek Meadows Terms of Reference. **City of Burlington**, please let me know if you have any additional comments.

With regards to the growth rate, the Region stated:

> *Halton's most up to date and acceptable growth rates (confirmed by Halton's Infrastructure Planning Policy group in April 2024) to use for this Study are as follows:*
> - *Burloak Drive north of Mainway: 4% to 2031 and then 1% from 2031 to 2041*
> - *Upper Middle Road west of Burloak Drive: 4% to 2031 and then 1% from 2031 to 2041*
> - *Appleby Line at Upper Middle Road: 2% to 2031 and then 1% from 2031 to 2041"*

The 4% per annum along Burloak and Upper Middle seems very high for this area which appears to be mostly developed except for the proposed site. Does the 4% include the proposed Bronte Creek Meadows development? I did a rough check of the Region's growth rate and it puts volumes into a similar range as applying 1% per annum growth rate plus the proposed development traffic so I worry that applying the 4% growth rate to this study would be double counting/overestimating traffic growth in the area.
Looking at the City of Burlington's development applications in the area, I've noted a few surrounding developments (attached) which will be included as background developments in the analysis. Would

the Region/City accept a 1% per annum growth rate on the roadways in addition to the five noted background developments traffic?

Please see below for an updated Terms of Reference:

Paradigm Transportations Solutions Limited has been retained to conduct a Transportation Impact Analysis for a proposed development located southeast of Upper Middle Road and Burloak Drive (Bronte Creek Meadows) in the City of Burlington. The property owner is proposing to develop the lands with a mixed-use subdivision including employment, institutional, retail, and variety of low, medium, and high-density residential uses in addition to park and open space. Vehicle access is proposed via connections to Upper Middle Road, Burloak Drive, and Mainway. A preliminary site concept is attached.

Based on the size of the development, a horizon year of 2040 is proposed to capture the full-build out of the development and the long-term transportation impacts and improvements that may be required to accommodate future traffic growth.

<u>Proposed Terms of Reference</u>

Study Area Intersections

- Appleby Line & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School West Driveway & Upper Middle Road (signalized)
- Corpus Christi Catholic Secondary School East Driveway & Upper Middle Road (signalized)
- Quinte Street & Upper Middle Road (unsignalized)
- Sutton Drive & Upper Middle Road (signalized)
- Baker Drive & Upper Middle Road (unsignalized)
- Deer Place & Upper Middle Road (unsignalized)
- Blue Spruce Avenue & Upper Middle Road (unsignalized)
- Bronte Creek Provincial Park Access & Burloak Drive (unsignalized)
- Appleby Line & Corporate Drive (signalized)
- Appleby Line & Mainway (signalized)
- Lampman Avenue/Norjohn Court & Mainway (unsignalized)
- Sutton Drive & Mainway (unsignalized)
- Burloak Drive & Mainway (signalized)
- Burloak Drive & North Service Road (signalized)
- Burloak Drive & QEW WB Off-Ramp (signalized)
- Burloak Drive & QEW EB Off-Ramp (signalized)
- Eight internal intersections

Existing Data

- Weekday AM and PM counts collected on Sept 28, 2023
- Does the City/Region have any concerns with new Saturday traffic data being collected in the coming weeks?

Horizon Years

- 2024 Base Year
- 2040 Horizon Year

Analysis Periods

- Weekday AM peak hour
- Weekday PM peak hour
- Saturday peak hour

Analysis

- Synchro 11
- HCM 2000

- SimTraffic Queueing (five 60-min iterations)

Background Traffic

- Generalized growth rate 1% per annum
- Traffic generated by any in stream developments in the area. **City of Burlington**– can you comment on this and provide any relevant studies or inputs to estimate the traffic for the site(s)?

Future Network

- Widening of Burloak, Upper Middle Road, and Appleby from 4 to 6 lanes with the curb lanes converted to high occupancy vehicle (HOV) or bus rapid transit (BRT) lanes after completion of the road widening
- Widening to be assumed to be completed by 2032 and will be included in the future background and future total (with development) scenarios

Site Traffic Estimates

- ITE Trip Generation Data 11th Edition
- No modal split reductions

Site Traffic Distribution.

- Existing travel patterns/TTS data

Access Management

- Access management and spacing will be discussed
- Region proposed access locations will be considered. If different locations are proposed, justification will be provided for why they should be permitted.

TDM Plan

- Will outline existing and proposed TDM measures and assess their likely effectiveness for the proposed development

Report

- We will document the study methodologies, findings, and conclusions in a report with appendices containing the detailed analysis results and any data collected.

Thanks !

Greg Lue, M.A.Sc., P.Eng.
Project Manager, Associate
(he/him)

paradigm TRANSPORTATION SOLUTIONS LIMITED

Great Place To Work. Certified NOV 2023 - NOV 2024 CANADA

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CITY OF Burlington

426 Brant Street • P.O. Box 5013 • Burlington • Ontario • L7R 3Z6 • www.burlington.ca

Meeting Minutes

Topic: **Bronte Creek Meadows TIS Terms of Reference Updates**

Date: **July 31, 2024 / 2:00 to 3:00 PM**

Virtual Attendees:

Derek Napoli, City of Burlington
Sandra Lucas, City of Burlington
Jaclyn Schneider, City of Burlington
Matt Krusto, Halton Region
Adam Huycke, Halton Region
Sara Gregory, Bousfields Inc.
Greg Lue, Paradigm Transportation Solutions Limited

Agenda Items

1. Bronte Creek Meadows Traffic Impact Study – Terms of Reference
   - Expanded list of study area intersections
     - Appleby Line intersections north of Upper Middle Road
     - Appleby Line intersections south of Mainway
     - Mainway and Burloak Drive unsignalized intersections
2. Bronte Creek Meadows Trip Distribution

Topics	Person Responsible	Action Items
Appleby Line intersections to include in TIS north of Upper Middle Road.	Greg Lue	Along Appleby Line, include only Dundas Street (RR 5) intersection.
Appleby Line intersections to include in TIS south of Mainway.	Greg Lue	Along Appleby Line, include Fairview Street, Harvester Road, North Service Road intersections.
Other unsignalized intersections from the Terms of Reference to be omitted from TIS along Mainway and Burloak Drive.	Greg Lue	Leave out Old Burloak Drive and John Lucas Drive intersections.

Highway 407 and QEW ramps to include in TIS.	Greg Lue	Follow up with MTO regarding the study of Highway 407 and QEW ramps.
Appropriate dates and times for conducting turning movement counts.	Greg Lue	Weekday and weekend turning movement counts (TMC) are preferably conducted outside of summer months (i.e., mid-June to mid-September). TMCs taken during summer months must use a seasonal adjustment factor to approximate typical traffic patterns.
Development trip distribution preliminary report.	Greg Lue	A preliminary Bronte Creek Meadows Trip Distribution report is to be submitted for review.

Appendix B

Existing Traffic Data

Appleby Line @ Corporate Dr

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

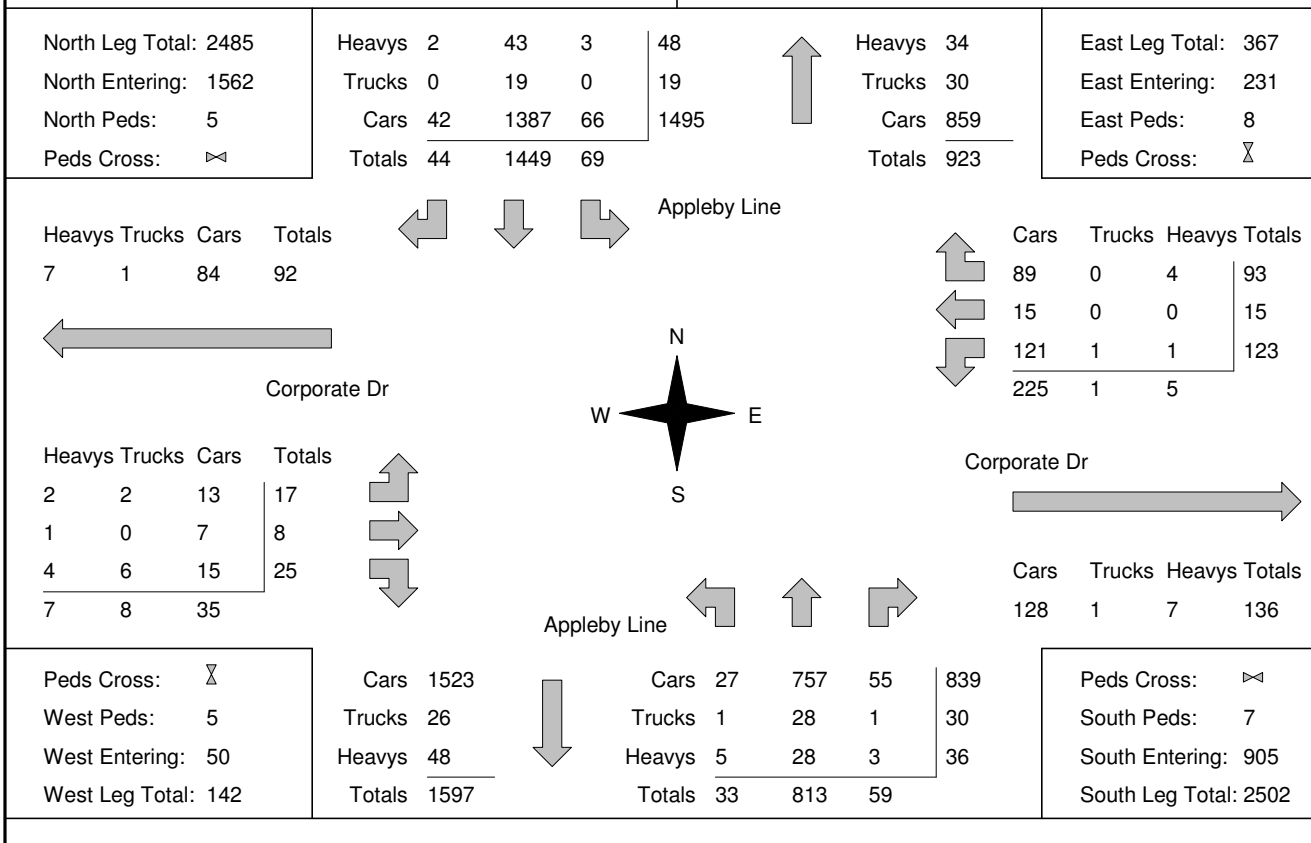
Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & Corporate Dr
TFR File #: 2
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Corporate Dr

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:00:00
To: 13:00:00

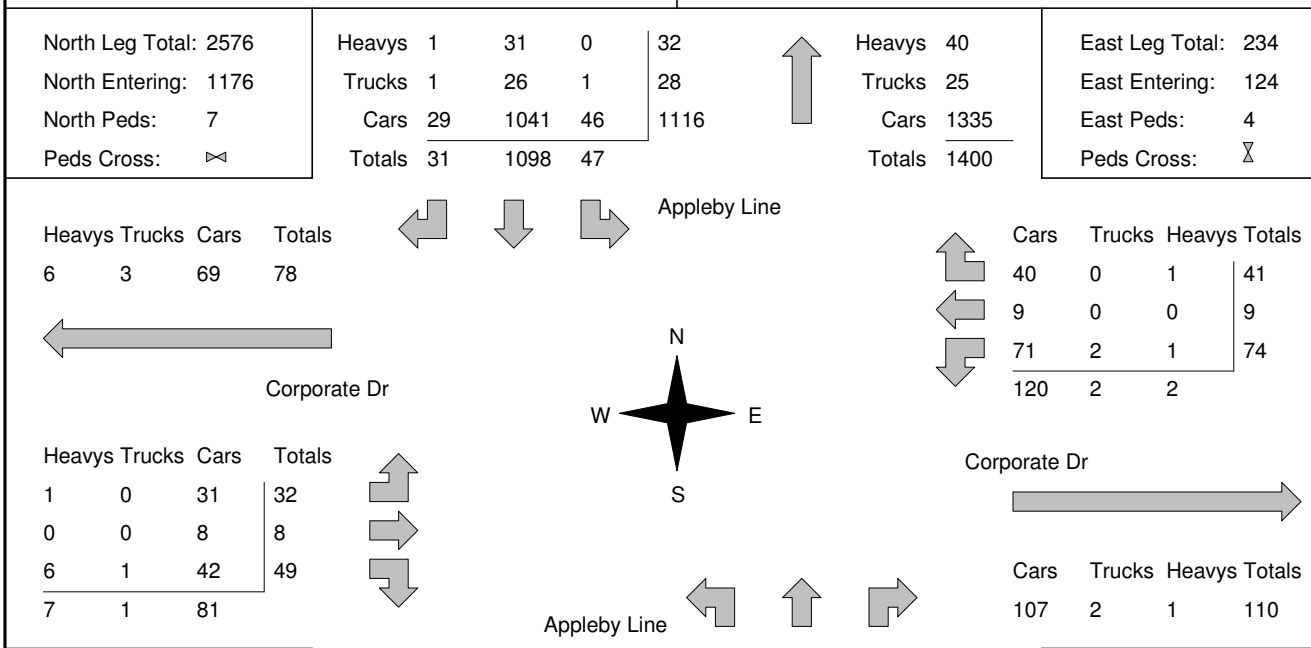
Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & Corporate Dr
TFR File #: 2
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Corporate Dr

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

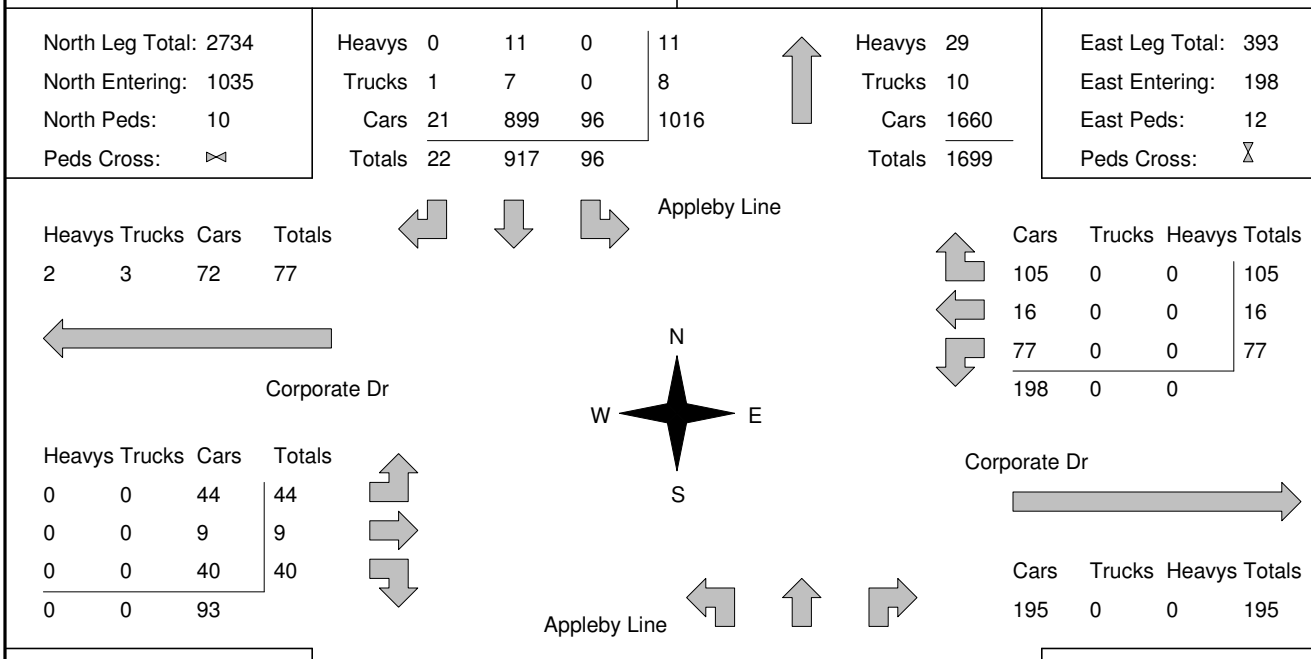
Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & Corporate Dr
TFR File #: 2
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Corporate Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & Corporate Dr
TFR File #: 2
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	19014			
North Entering:	9405			
North Peds:	48			
Peds Cross:	⋈			
Heavys	9	256	8	273
Trucks	6	130	1	137
Cars	205	8325	465	8995
Totals	220	8711	474	
Heavys	295			
Trucks	155			
Cars	9159			
Totals	9609			
East Leg Total:	2354			
East Entering:	1299			
East Peds:	63			
Peds Cross:	⧖			

Appleby Line

Heavys	Trucks	Cars	Totals
31	16	510	557

Cars	Trucks	Heavys	Totals
543	6	12	561
90	0	0	90
639	5	4	648
1272	11	16	

Corporate Dr

N

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Heavys	Trucks	Cars	Totals
6	4	213	223
1	0	61	62
31	19	224	274
38	23	498	

Corporate Dr

Cars	Trucks	Heavys	Totals
1031	5	19	1055

Appleby Line

Peds Cross:	⧖			
West Peds:	80			
West Entering:	559			
West Leg Total:	1116			
Cars	9188			
Trucks	154			
Heavys	291			
Totals	9633			
Cars	215	8403	505	9123
Trucks	10	145	4	159
Heavys	22	277	10	309
Totals	247	8825	519	
Peds Cross:	⋈			
South Peds:	36			
South Entering:	9591			
South Leg Total:	19224			

Comments

Appleby Line @ Mainway

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

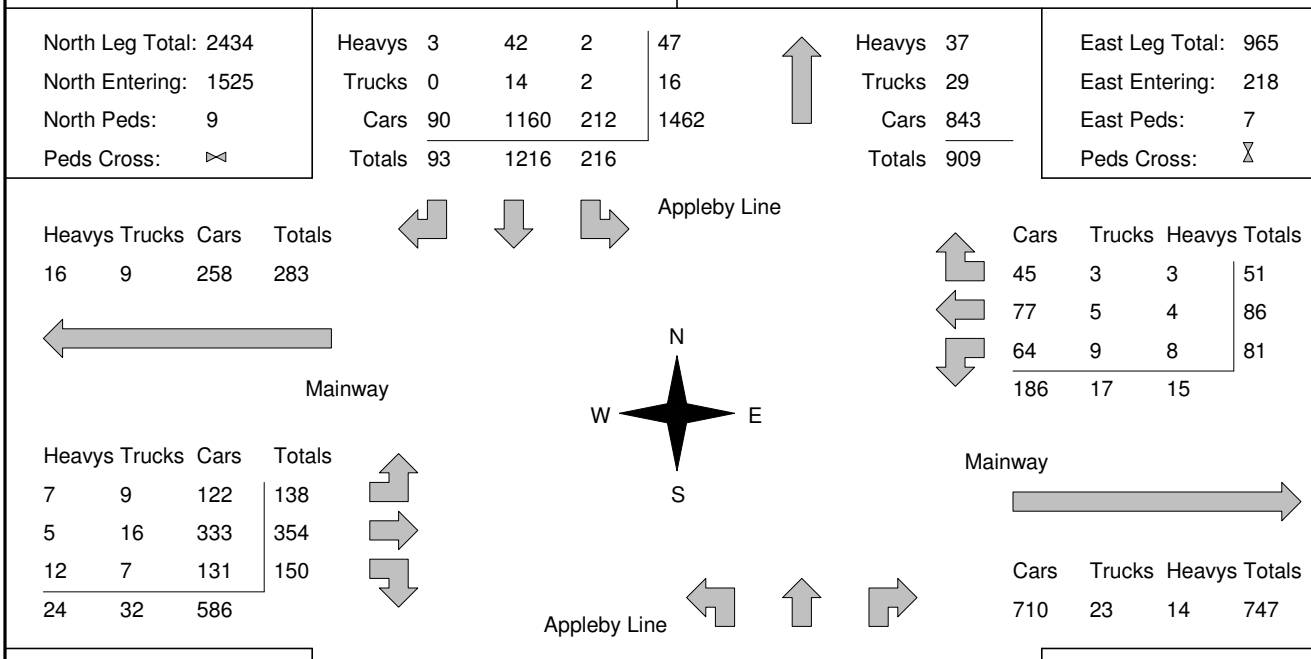
Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & Mainway
TFR File #: 3
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Mainway

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:00:00
To: 13:00:00

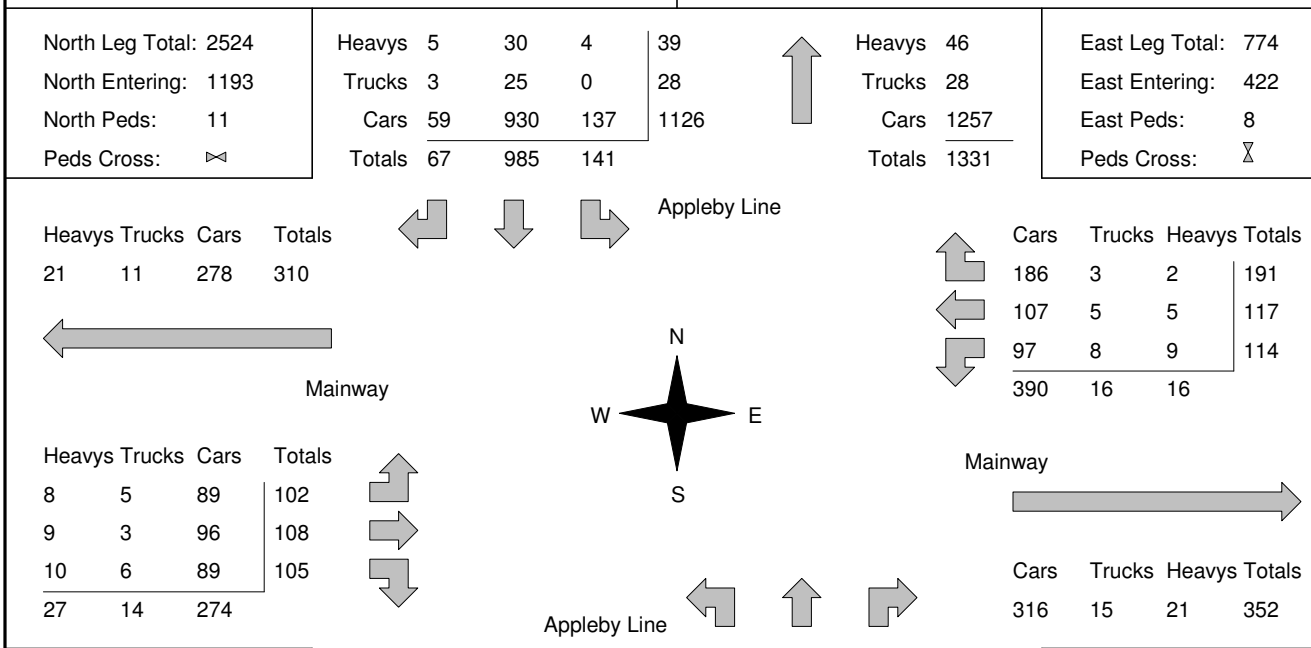
Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & Mainway
TFR File #: 3
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Mainway

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

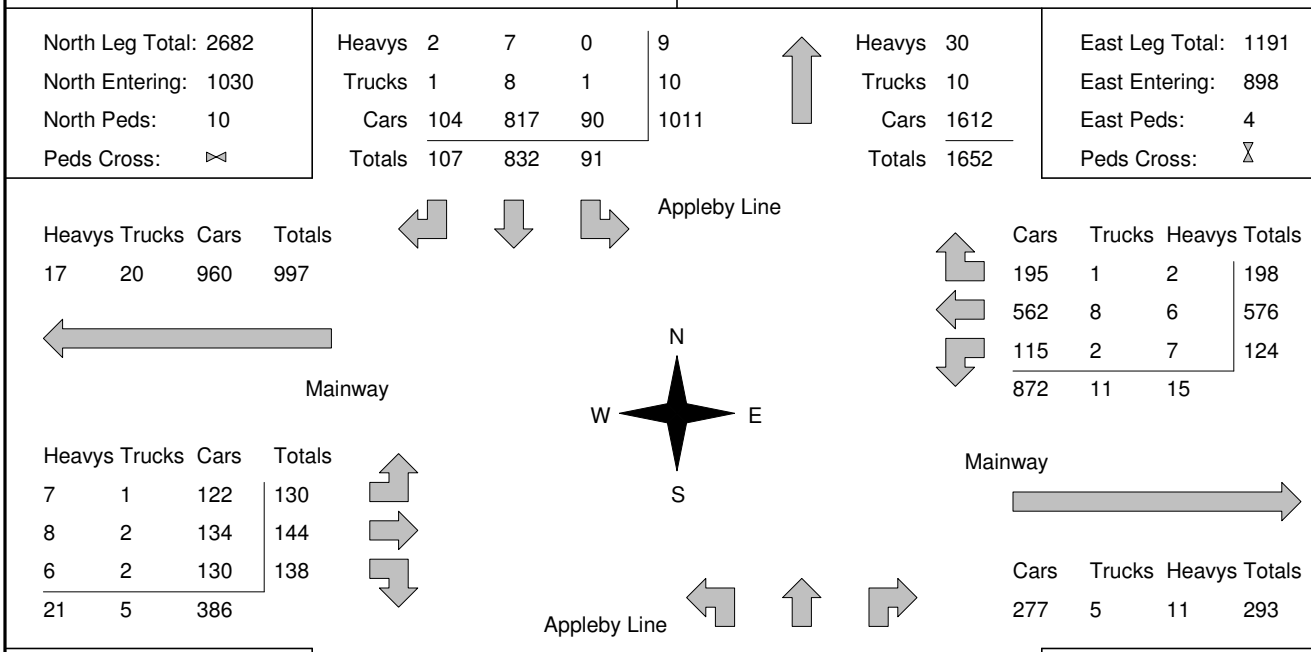
Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & Mainway
TFR File #: 3
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Mainway

Total Count Diagram

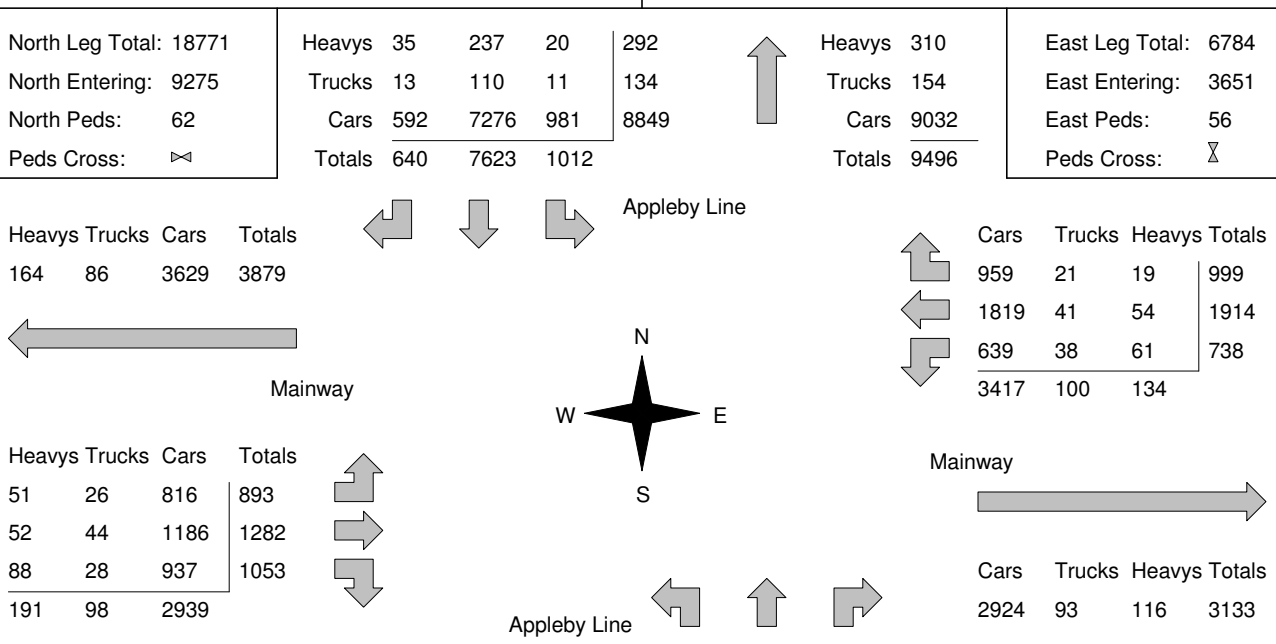
Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & Mainway
TFR File #: 3
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Upper Middle Rd

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Upper Middle Rd
TFR File #: 1
Count date: 28-Sep-2023

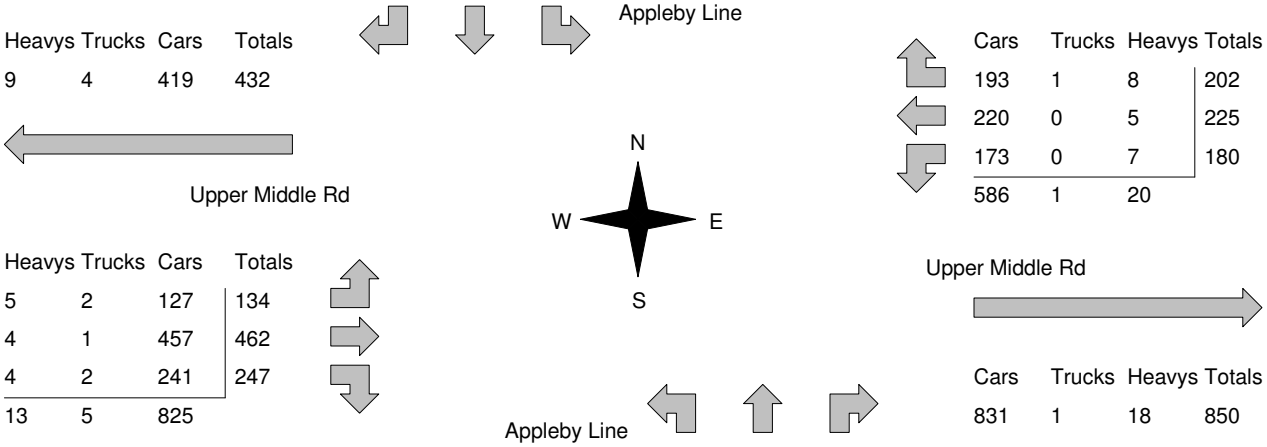
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	2448			
North Entering:	1463			
North Peds:	7			
Peds Cross:	⋈			
Heavys	2	34	9	45
Trucks	2	12	0	14
Cars	63	1073	268	1404
Totals	67	1119	277	
Heavys	44			
Trucks	28			
Cars	913			
Totals	985			
East Leg Total:	1457			
East Entering:	607			
East Peds:	15			
Peds Cross:	⧖			



Peds Cross:	⧖			
West Peds:	11			
West Entering:	843			
West Leg Total:	1275			
Cars	1487			
Trucks	14			
Heavys	45			
Totals	1546			
Cars	136	593	106	835
Trucks	2	25	0	27
Heavys	2	31	5	38
Totals	140	649	111	
Peds Cross:	⋈			
South Peds:	27			
South Entering:	900			
South Leg Total:	2446			

Comments

Appleby Line @ Upper Middle Rd

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:00:00
To: 13:00:00

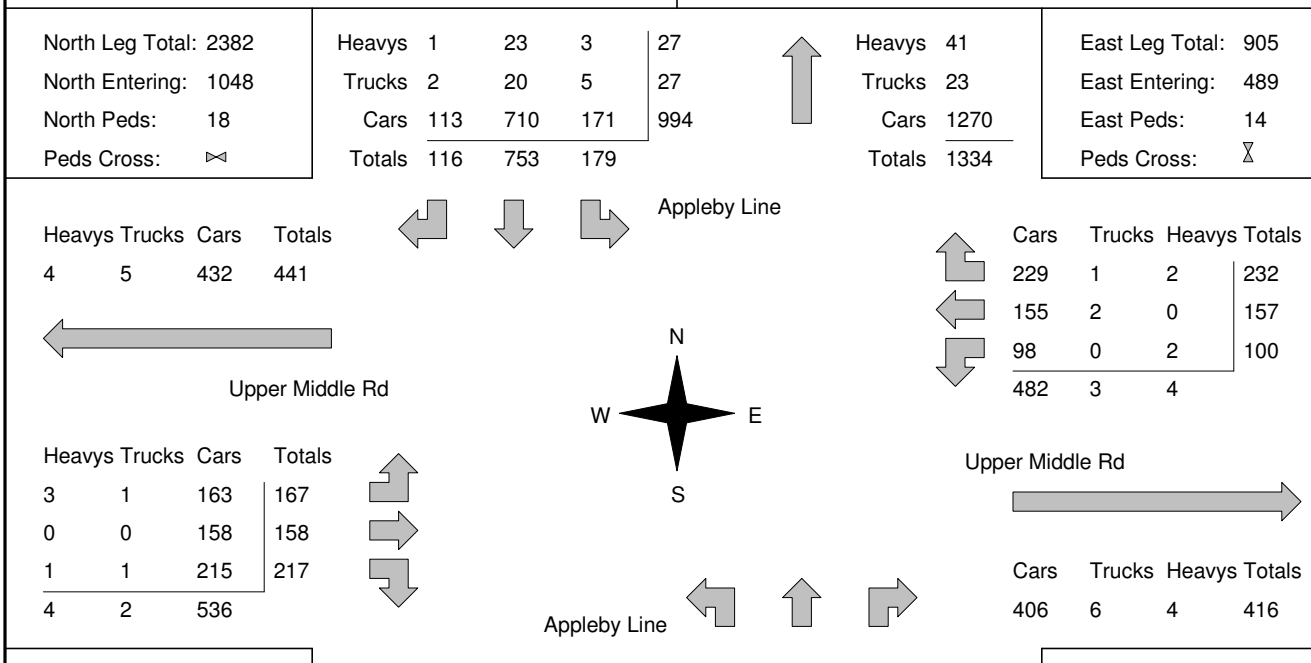
Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Upper Middle Rd
TFR File #: 1
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Upper Middle Rd

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

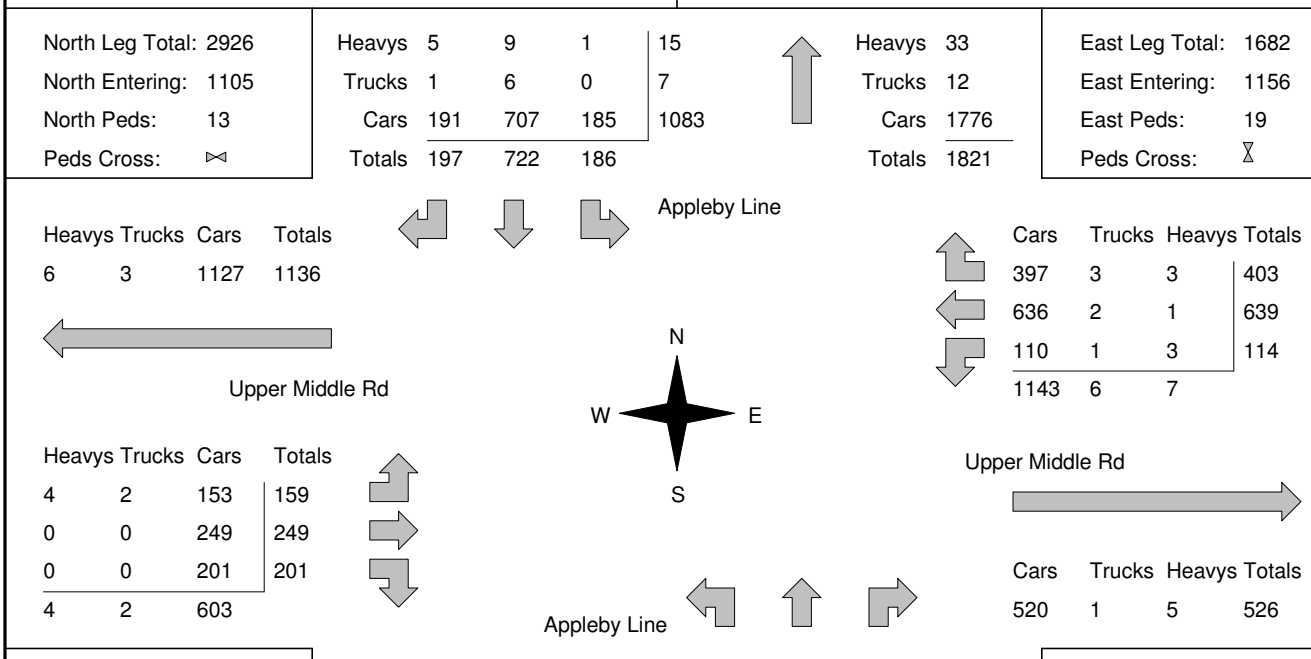
Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Upper Middle Rd
TFR File #: 1
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Upper Middle Rd

Total Count Diagram

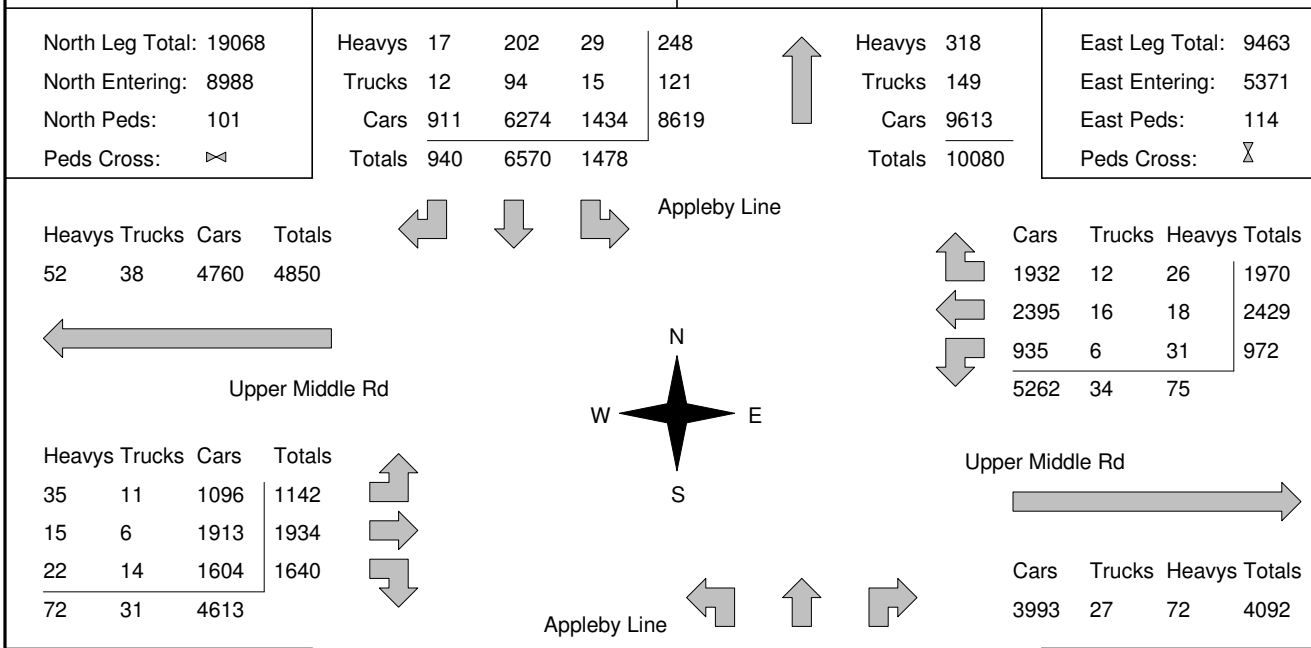
Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Upper Middle Rd
TFR File #: 1
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Burloak Dr @ Bronte Creek Park

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000013
Intersection: Burloak Dr & Bronte Creek Park Acc
TFR File #: 13
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 1406
North Entering: 1044
North Peds: 0
Peds Cross: ⋈

Heavys	5	0	5
Trucks	2	0	2
Cars	1023	14	1037
Totals	1030	14	

Heavys	8
Trucks	3
Cars	351
Totals	362

East Leg Total: 60
East Entering: 12
East Peds: 1
Peds Cross: ⋈

Burloak Dr

Cars	Trucks	Heavys	Totals
3	0	0	3
9	0	0	9
12	0	0	

N
W E
S

Bronte Creek Park Access

Cars	Trucks	Heavys	Totals
48	0	0	48

Burloak Dr

Cars	1032
Trucks	2
Heavys	5
Totals	1039

Cars	348	34	382
Trucks	3	0	3
Heavys	8	0	8
Totals	359	34	

Peds Cross: ⋈
South Peds: 0
South Entering: 393
South Leg Total: 1432

Comments

Burloak Dr @ Bronte Creek Park

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Burlington
Site #: 0000000013
Intersection: Burloak Dr & Bronte Creek Park Acc
TFR File #: 13
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

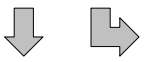
Major Road: Burloak Dr runs N/S

North Leg Total: 931
North Entering: 391
North Peds: 0
Peds Cross: ⋈

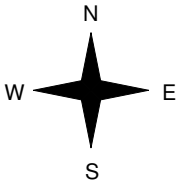
Heavys	3	0	3
Trucks	4	0	4
Cars	374	10	384
Totals	381	10	

Heavys	4
Trucks	5
Cars	531
Totals	540

East Leg Total: 67
East Entering: 34
East Peds: 0
Peds Cross: ⋈



	Cars	Trucks	Heavys	Totals
	8	0	0	8
	25	0	1	26
	33	0	1	



Bronte Creek Park Access

	Cars	Trucks	Heavys	Totals
	33	0	0	33



Cars	399		
Trucks	4		
Heavys	4		
Totals	407		

Cars	523	23	546
Trucks	5	0	5
Heavys	4	0	4
Totals	532	23	

Peds Cross: ⋈
South Peds: 0
South Entering: 555
South Leg Total: 962

Comments

Burloak Dr @ Bronte Creek Park

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000013
Intersection: Burloak Dr & Bronte Creek Park Acc
TFR File #: 13
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 1942
North Entering: 466
North Peds: 0
Peds Cross: ⋈

Heavys	3	0	3
Trucks	0	0	0
Cars	437	26	463
Totals	440	26	

Heavys	13
Trucks	4
Cars	1459
Totals	1476

East Leg Total: 84
East Entering: 42
East Peds: 1
Peds Cross: ⧖

Burloak Dr

Cars	Trucks	Heavys	Totals
22	0	0	22
20	0	0	20
42	0	0	

N
W E
S

Bronte Creek Park Access

Cars	Trucks	Heavys	Totals
42	0	0	42

Burloak Dr

Cars	457
Trucks	0
Heavys	3
Totals	460

Cars	1437	16	1453
Trucks	4	0	4
Heavys	13	0	13
Totals	1454	16	

Peds Cross: ⋈
South Peds: 0
South Entering: 1470
South Leg Total: 1930

Comments

Burloak Dr @ Bronte Creek Park

Total Count Diagram

Municipality: Burlington
Site #: 0000000013
Intersection: Burloak Dr & Bronte Creek Park Acc
TFR File #: 13
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 10003
North Entering: 4498
North Peds: 0
Peds Cross: ⋈

Heavys	37	0	37
Trucks	22	0	22
Cars	4325	114	4439
Totals	4384	114	

Heavys	58
Trucks	35
Cars	5412
Totals	5505

East Leg Total: 531
East Entering: 239
East Peds: 13
Peds Cross: ⋈

Burloak Dr

	Cars	Trucks	Heavys	Totals
	105	1	0	106
	132	0	1	133
	237	1	1	

N
W E
S

Bronte Creek Park Access

	Cars	Trucks	Heavys	Totals
	289	1	2	292

Burloak Dr

Cars	4457		
Trucks	22		
Heavys	38		
Totals	4517		

Cars	5307	175	5482
Trucks	34	1	35
Heavys	58	2	60
Totals	5399	178	

Peds Cross: ⋈
South Peds: 2
South Entering: 5577
South Leg Total: 10094

Comments

Burloak Dr @ Mainway

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

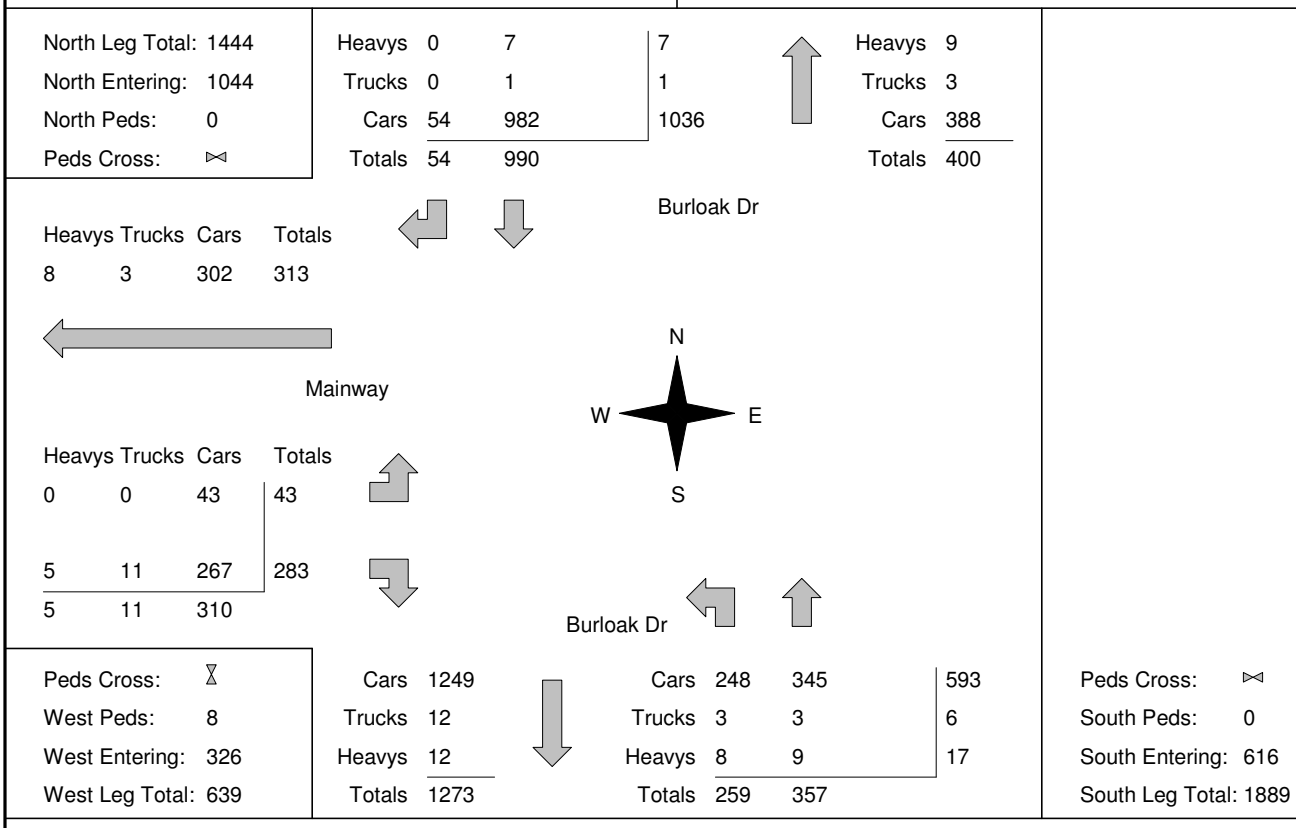
Municipality: Burlington
Site #: 0000000014
Intersection: Burloak Dr & Mainway
TFR File #: 14
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ Mainway

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

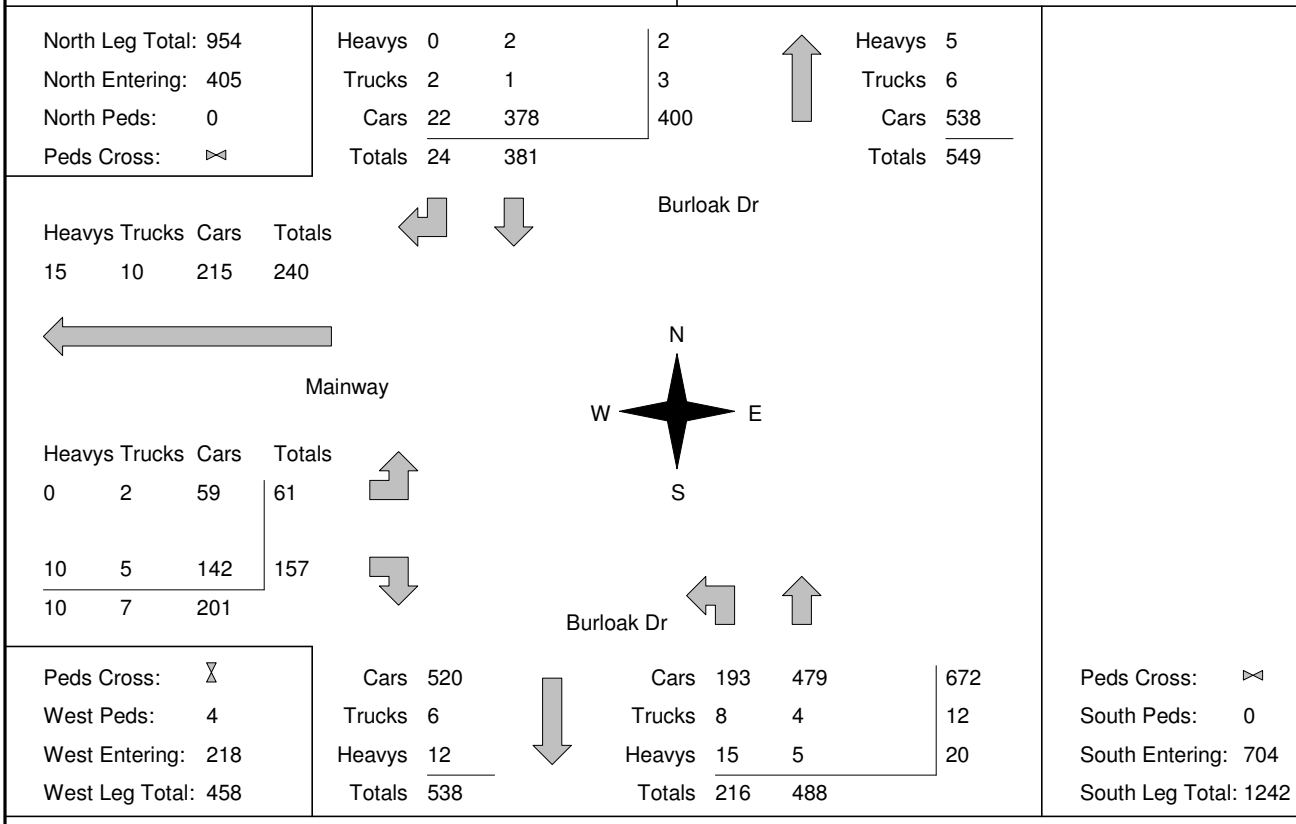
Municipality: Burlington
Site #: 0000000014
Intersection: Burloak Dr & Mainway
TFR File #: 14
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ Mainway

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

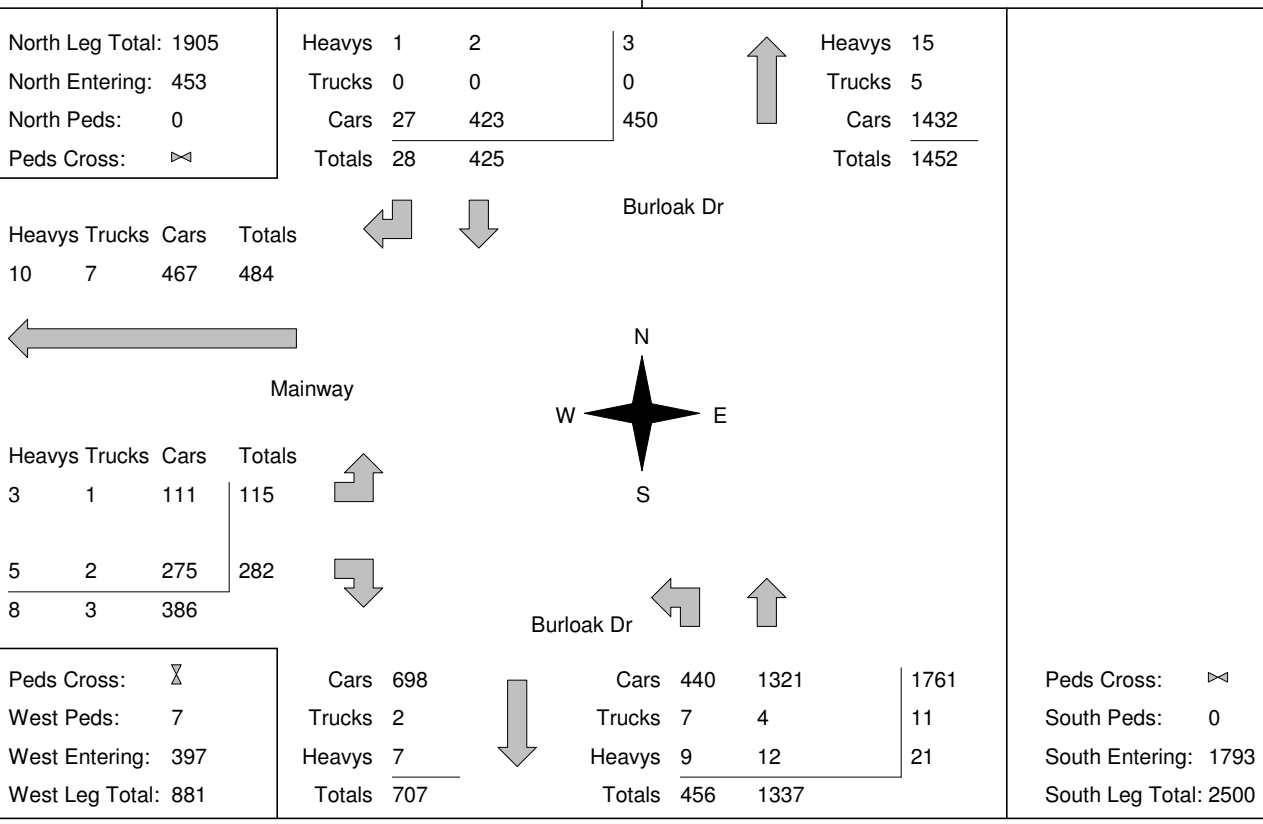
Municipality: Burlington
Site #: 0000000014
Intersection: Burloak Dr & Mainway
TFR File #: 14
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ Mainway

Total Count Diagram

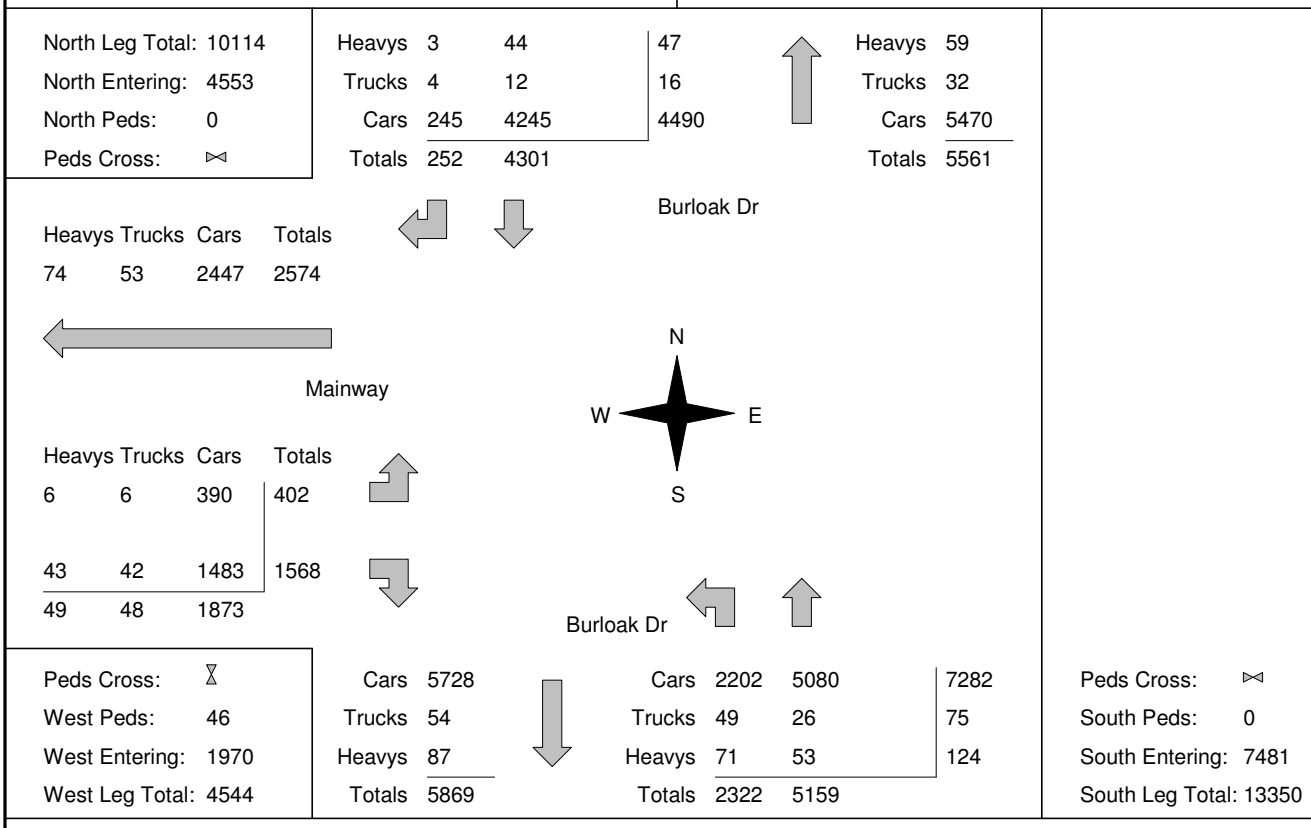
Municipality: Burlington
Site #: 0000000014
Intersection: Burloak Dr & Mainway
TFR File #: 14
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ North Service Rd

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

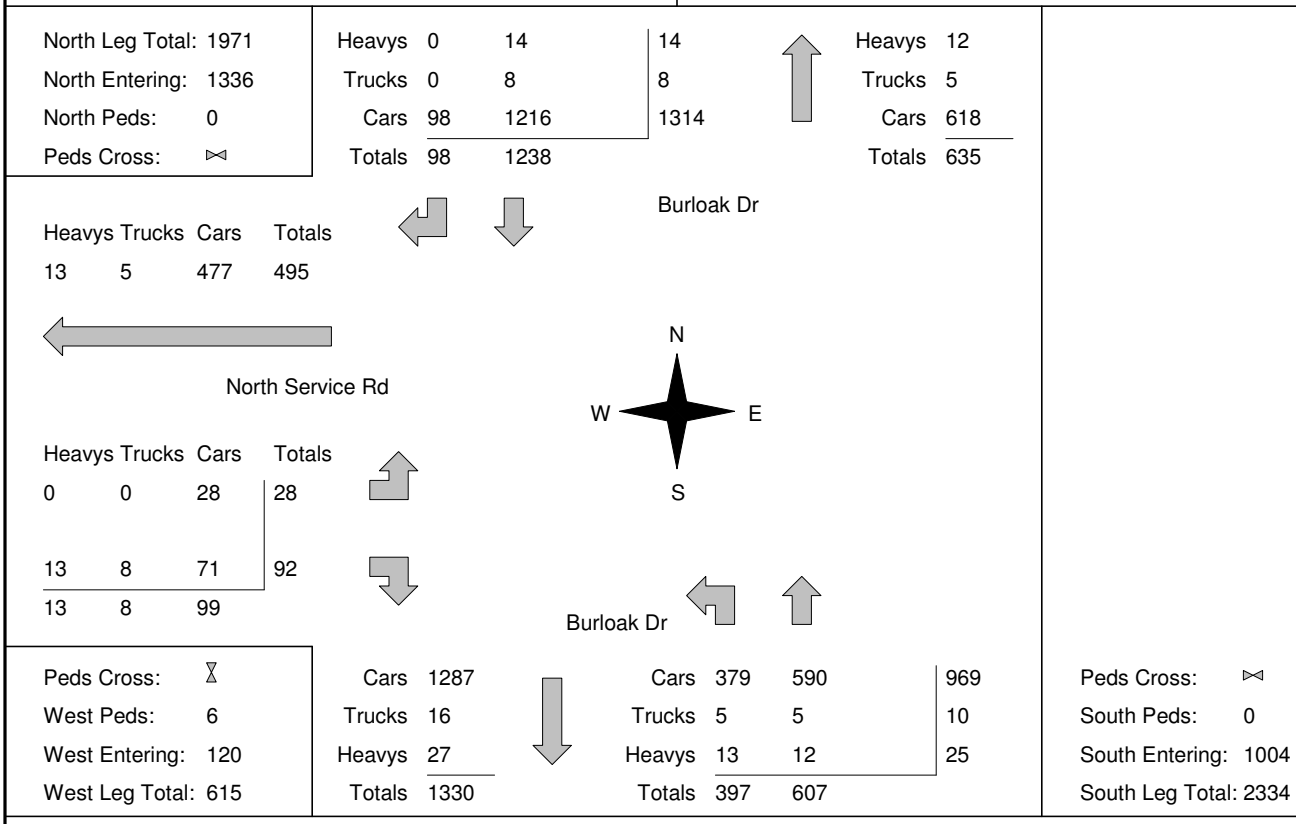
Municipality: Burlington
Site #: 0000000015
Intersection: Burloak Dr & North Service Rd
TFR File #: 15
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ North Service Rd

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

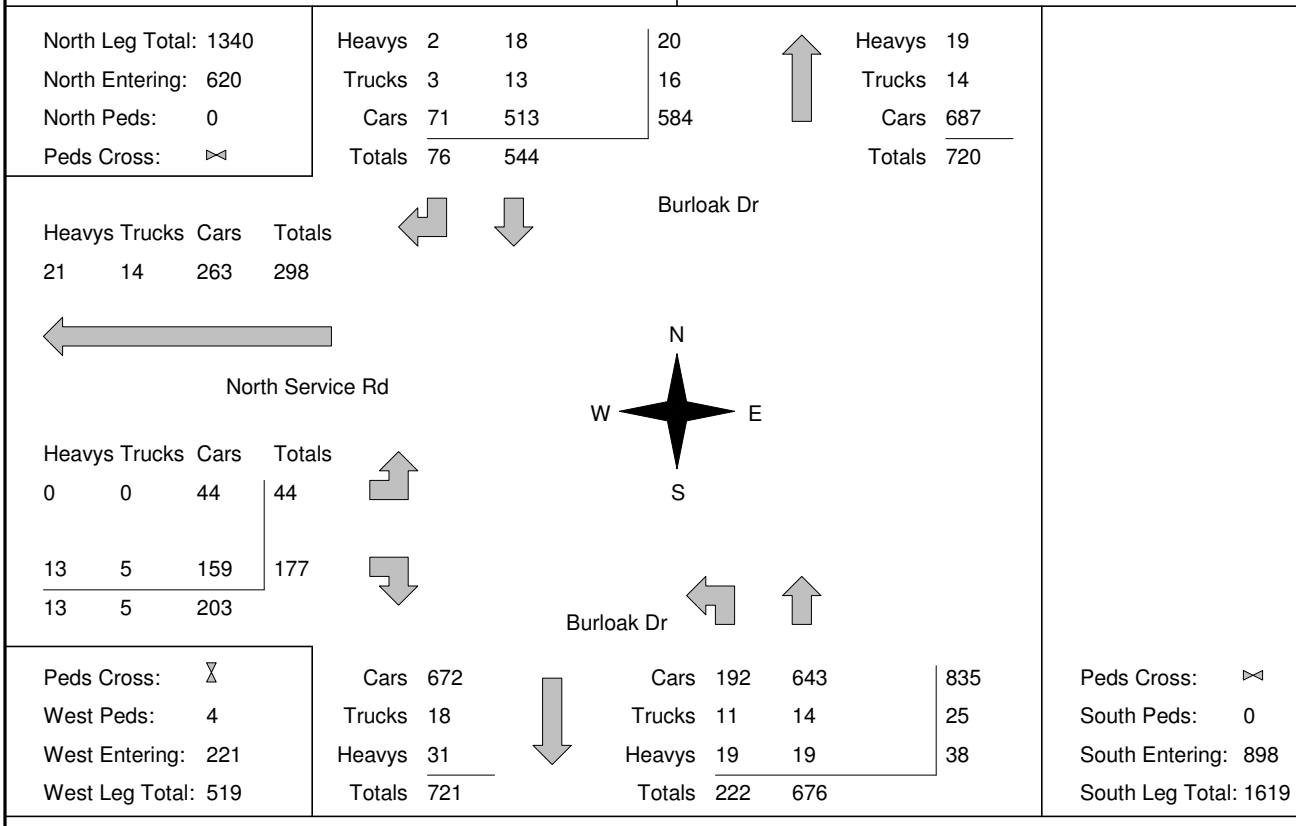
Municipality: Burlington
Site #: 0000000015
Intersection: Burloak Dr & North Service Rd
TFR File #: 15
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ North Service Rd

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

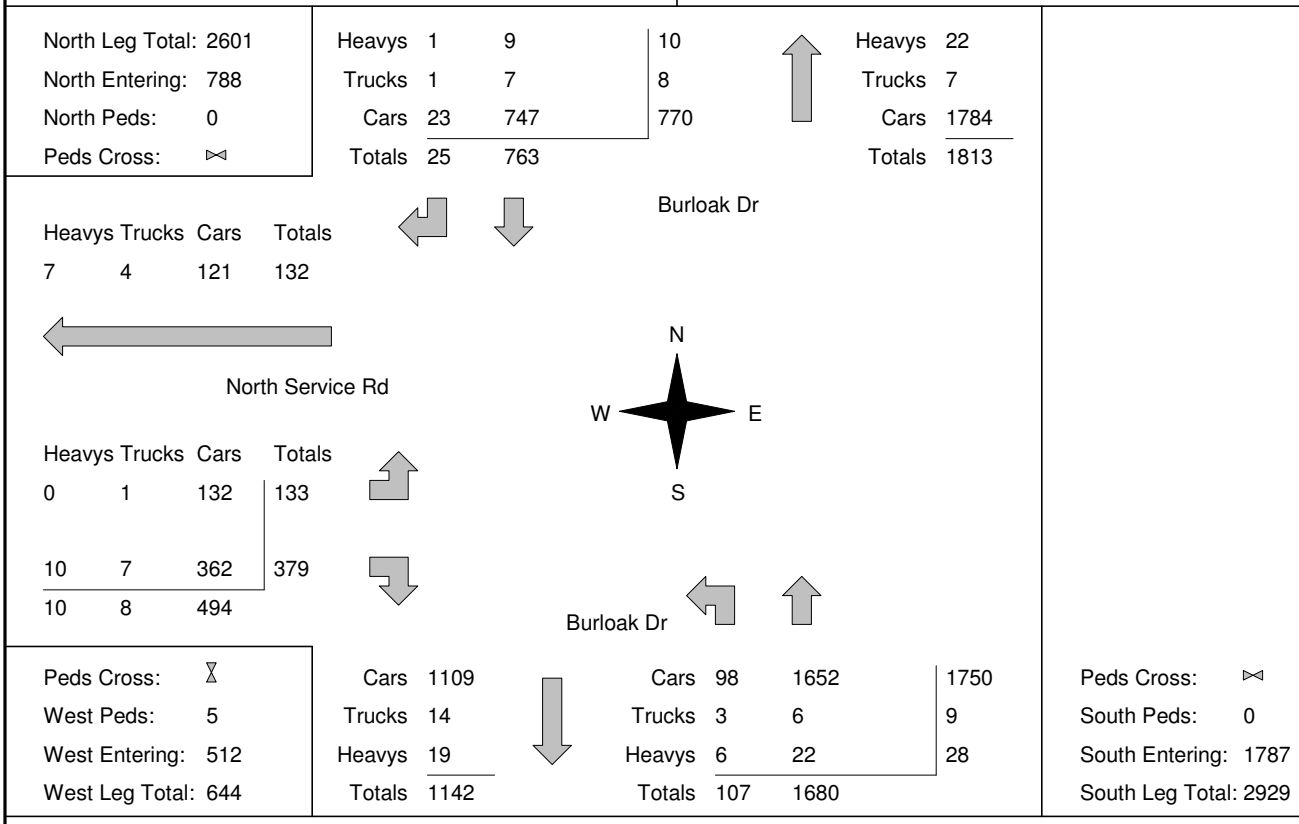
Municipality: Burlington
Site #: 0000000015
Intersection: Burloak Dr & North Service Rd
TFR File #: 15
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ North Service Rd

Total Count Diagram

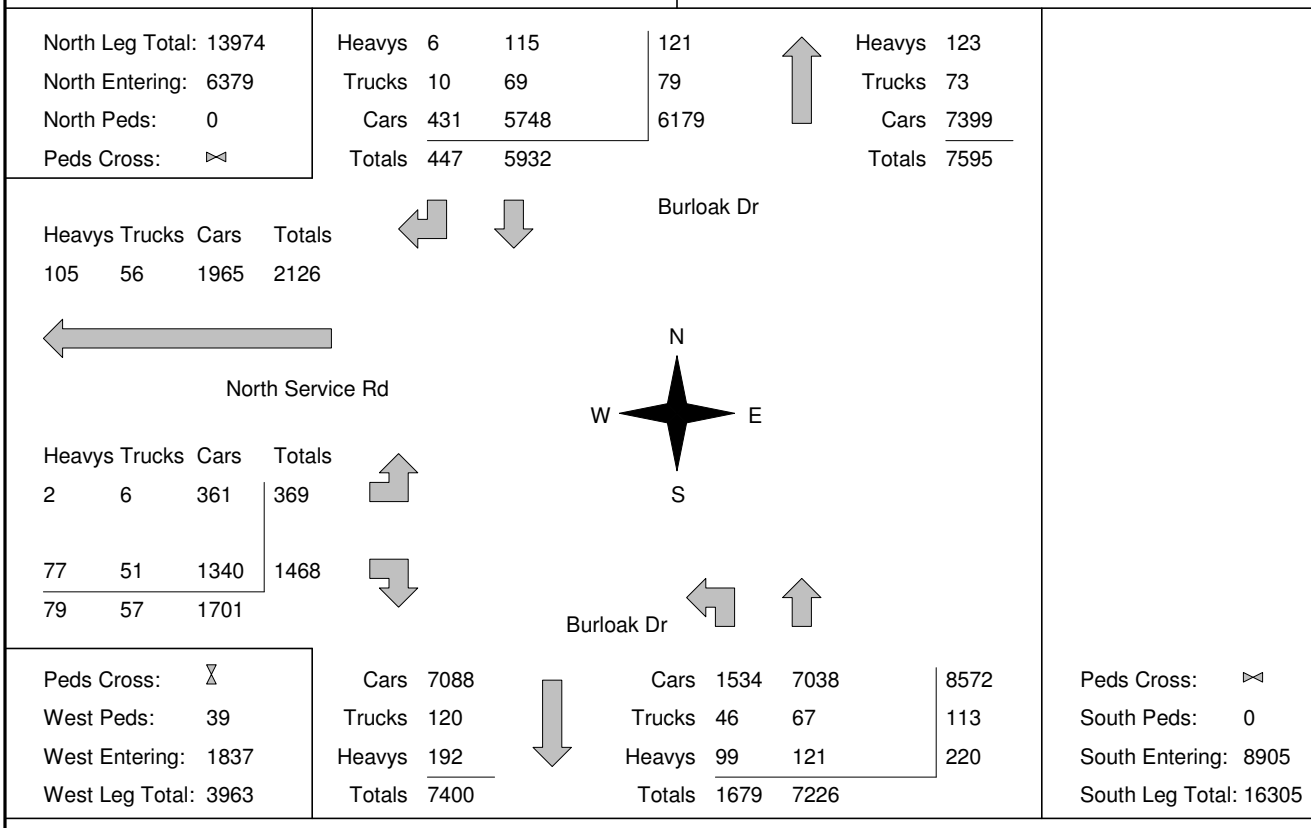
Municipality: Burlington
Site #: 0000000015
Intersection: Burloak Dr & North Service Rd
TFR File #: 15
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ QEW EB Off Ramp

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 8:15:00
To: 9:15:00

Municipality: Burlington
Site #: 0000000017
Intersection: Burloak Dr & QEW EB Off Ramp
TFR File #: 17
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total:	1763			
North Entering:	1172			
North Peds:	0			
Peds Cross:	⋈			
Heavys	0	37	0	37
Trucks	0	17	0	17
Cars	0	1115	3	1118
Totals	0	1169	3	
Heavys	18			
Trucks	6			
Cars	567			
Totals	591			
East Leg Total:	111			
East Entering:	45			
East Peds:	0			
Peds Cross:	⧖			

Burloak Dr

Heavys	Trucks	Cars	Totals
0	0	0	0

QEW EB Off Ramp

Heavys	Trucks	Cars	Totals
2	0	79	81
2	3	55	60
12	7	180	199
16	10	314	

Cars	Trucks	Heavys	Totals
38	1	6	45
0	0	0	0
0	0	0	0
38	1	6	

N
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Red Oak Blvd

Cars	Trucks	Heavys	Totals
61	3	2	66

Burloak Dr

Peds Cross:	⧖			
West Peds:	10			
West Entering:	340			
West Leg Total:	340			
Cars	1295			
Trucks	24			
Heavys	49			
Totals	1368			
Cars	0	450	3	453
Trucks	0	5	0	5
Heavys	0	10	0	10
Totals	0	465	3	
Peds Cross:	⋈			
South Peds:	1			
South Entering:	468			
South Leg Total:	1836			

Comments

Burloak Dr @ QEW EB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

Municipality: Burlington
Site #: 0000000017
Intersection: Burloak Dr & QEW EB Off Ramp
TFR File #: 17
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

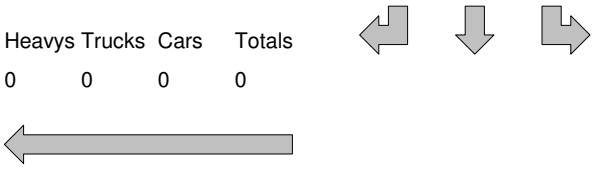
Major Road: Burloak Dr runs N/S

North Leg Total:	1568
North Entering:	930
North Peds:	0
Peds Cross:	⋈

Heavys	0	39	0	39
Trucks	0	24	0	24
Cars	0	862	5	867
Totals	0	925	5	

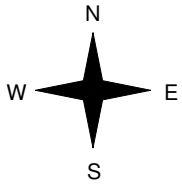
Heavys	33
Trucks	8
Cars	597
Totals	638

East Leg Total:	226
East Entering:	130
East Peds:	0
Peds Cross:	⧖



Heavys	Trucks	Cars	Totals
0	0	0	0

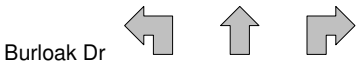
Cars	Trucks	Heavys	Totals
125	1	4	130
0	0	0	0
0	0	0	0
125	1	4	



Heavys	Trucks	Cars	Totals
9	0	63	72
1	1	83	85
15	6	153	174
25	7	299	



Cars	Trucks	Heavys	Totals
94	1	1	96



Peds Cross:	⧖
West Peds:	5
West Entering:	331
West Leg Total:	331

Cars	1015
Trucks	30
Heavys	54
Totals	1099

Cars	0	409	6	415
Trucks	0	7	0	7
Heavys	0	20	0	20
Totals	0	436	6	

Peds Cross:	⋈
South Peds:	0
South Entering:	442
South Leg Total:	1541

Comments

Burloak Dr @ QEW EB Off Ramp

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

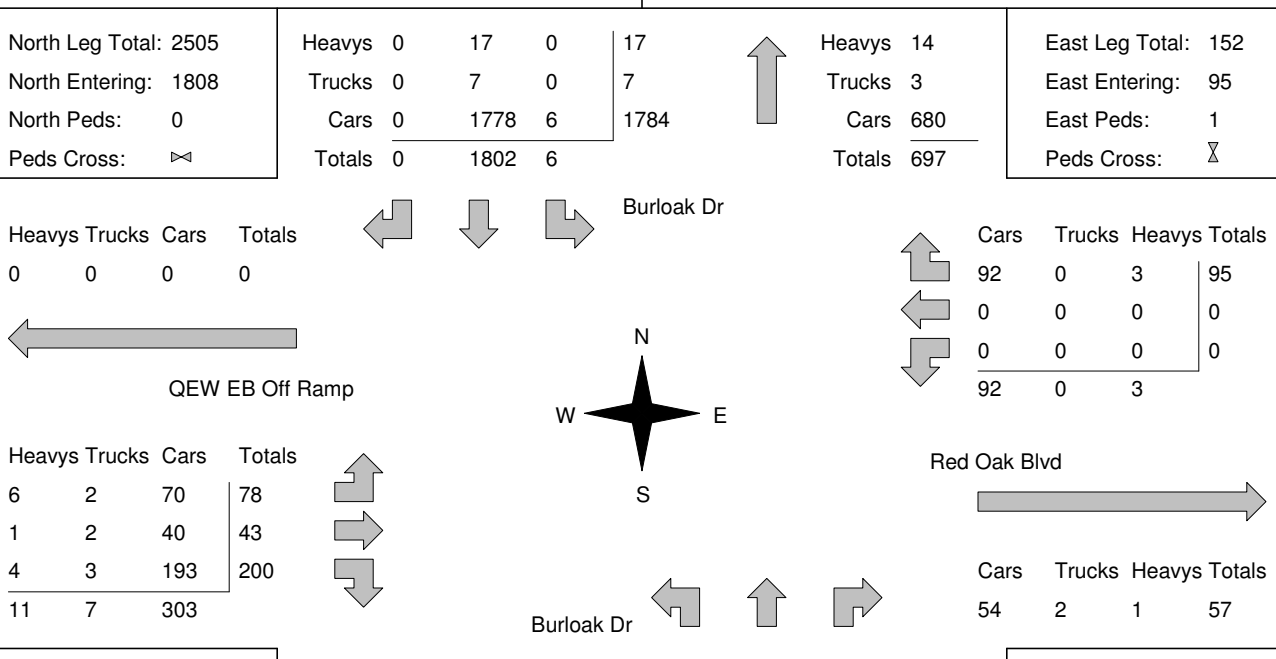
Municipality: Burlington
Site #: 0000000017
Intersection: Burloak Dr & QEW EB Off Ramp
TFR File #: 17
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ QEW EB Off Ramp

Total Count Diagram

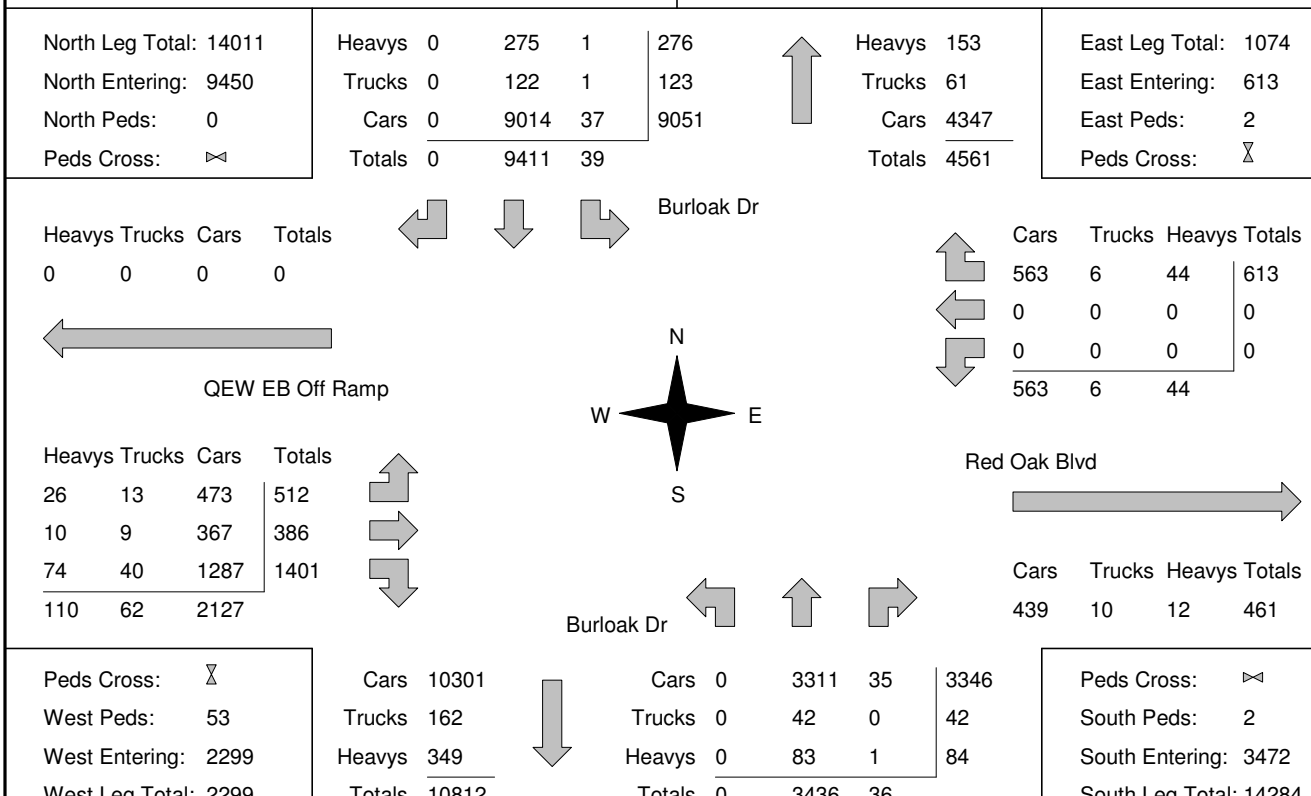
Municipality: Burlington
Site #: 0000000017
Intersection: Burloak Dr & QEW EB Off Ramp
TFR File #: 17
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ QEW WB Off Ramp

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000016
Intersection: Burloak Dr & QEW WB Off Ramp
TFR File #: 16
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 2200
North Entering: 1171
North Peds: 0
Peds Cross: ⋈

Heavys	19	0	19
Trucks	17	0	17
Cars	1135	0	1135
Totals	1171	0	

Heavys	24
Trucks	9
Cars	996
Totals	1029

East Leg Total: 1329
East Entering: 1329
East Peds: 0
Peds Cross: ⋈

Burloak Dr

	Cars	Trucks	Heavys	Totals
	613	5	16	634
	650	13	32	695
	1263	18	48	

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QEW WB Off Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0

Burloak Dr

Cars	1785		
Trucks	30		
Heavys	51		
Totals	1866		

Cars	383	0	383
Trucks	4	0	4
Heavys	8	0	8
Totals	395	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 395
South Leg Total: 2261

Comments

Burloak Dr @ QEW WB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

Municipality: Burlington
Site #: 0000000016
Intersection: Burloak Dr & QEW WB Off Ramp
TFR File #: 16
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 1541
North Entering: 649
North Peds: 0
Peds Cross: ⋈

Heavys	23	0	23
Trucks	14	0	14
Cars	612	0	612
Totals	649	0	

Heavys	37
Trucks	20
Cars	835
Totals	892

East Leg Total: 1040
East Entering: 1040
East Peds: 0
Peds Cross: ⋈

Burloak Dr

	Cars	Trucks	Heavys	Totals
	402	16	21	439
	547	25	29	601
	949	41	50	

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QEW WB Off Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0

Burloak Dr

Cars	1159		
Trucks	39		
Heavys	52		
Totals	1250		

Cars	433	0	433
Trucks	4	0	4
Heavys	16	0	16
Totals	453	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 453
South Leg Total: 1703

Comments

Burloak Dr @ QEW WB Off Ramp

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000016
Intersection: Burloak Dr & QEW WB Off Ramp
TFR File #: 16
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 2948
North Entering: 1100
North Peds: 0
Peds Cross: ⋈

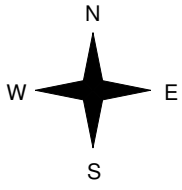
Heavys	18	0	18
Trucks	2	0	2
Cars	1080	0	1080
Totals	1100	0	

Heavys	26
Trucks	13
Cars	1809
Totals	1848

East Leg Total: 2508
East Entering: 2508
East Peds: 1
Peds Cross: ⋈



	Cars	Trucks	Heavys	Totals
	1182	10	12	1204
	1282	8	14	1304
	2464	18	26	



QEW WB Off Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0

Burloak Dr

Cars	2362
Trucks	10
Heavys	32
Totals	2404

Cars	627	0	627
Trucks	3	0	3
Heavys	14	0	14
Totals	644	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 644
South Leg Total: 3048

Comments

Burloak Dr @ QEW WB Off Ramp

Total Count Diagram

Municipality: Burlington
Site #: 0000000016
Intersection: Burloak Dr & QEW WB Off Ramp
TFR File #: 16
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 15810
North Entering: 6768
North Peds: 0
Peds Cross: ⋈

Heavys	164	0	164
Trucks	99	0	99
Cars	6505	0	6505
Totals	6768	0	

Heavys	220
Trucks	113
Cars	8709
Totals	9042

East Leg Total: 12010
East Entering: 12010
East Peds: 1
Peds Cross: ⋈

Burloak Dr

	Cars	Trucks	Heavys	Totals
	5454	83	138	5675
	6016	107	212	6335
	11470	190	350	

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QEW WB Off Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0

Burloak Dr

Cars	12521		
Trucks	206		
Heavys	376		
Totals	13103		

Cars	3255	0	3255
Trucks	30	0	30
Heavys	82	0	82
Totals	3367	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 3367
South Leg Total: 16470

Comments

Mainway @ Lampman Ave

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

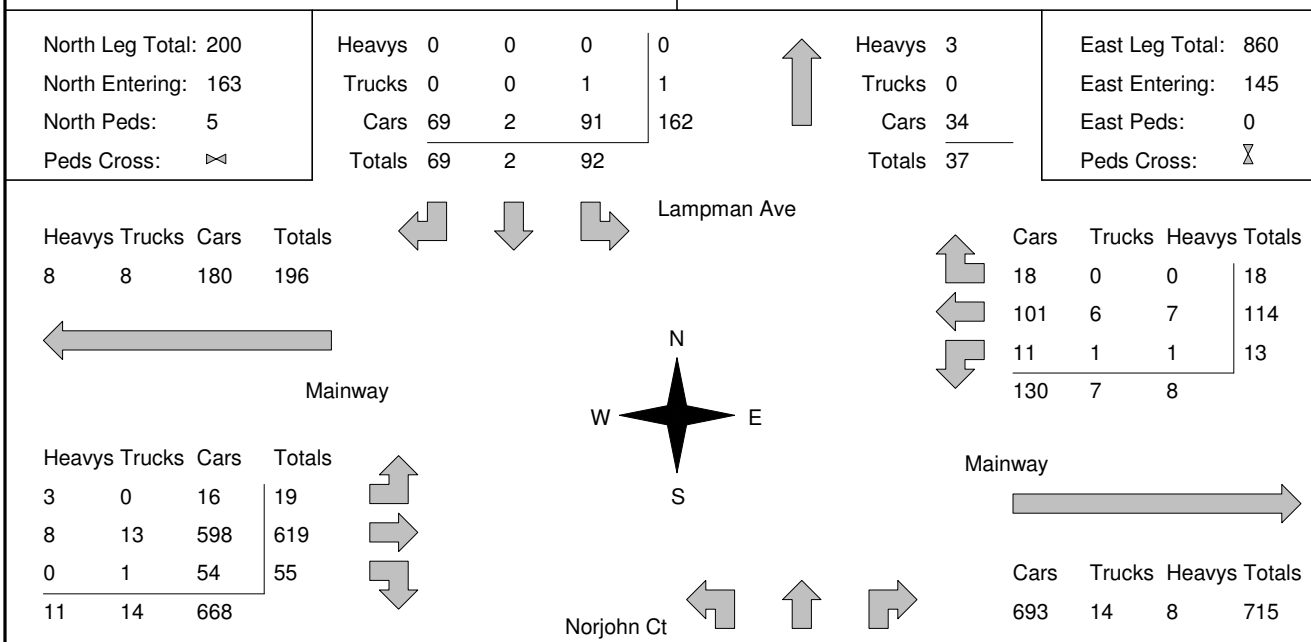
Municipality: Burlington
Site #: 0000000004
Intersection: Mainway & Lampman Ave
TFR File #: 4
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E



Comments

Mainway @ Lampman Ave

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

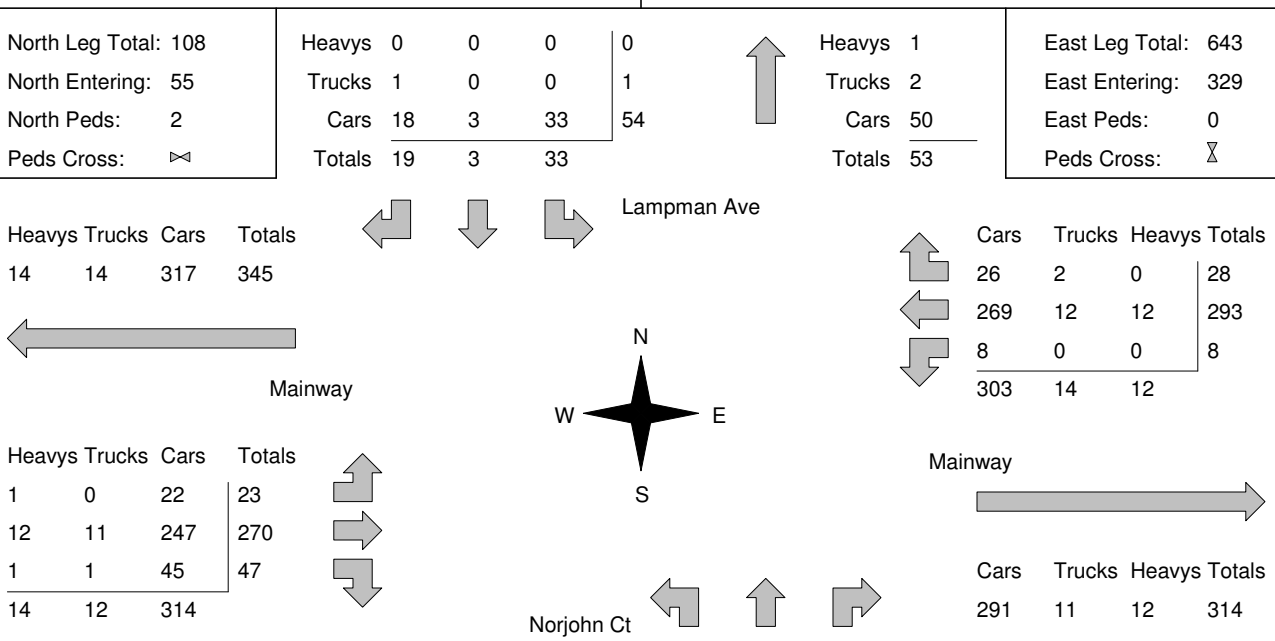
Municipality: Burlington
Site #: 0000000004
Intersection: Mainway & Lampman Ave
TFR File #: 4
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E



Comments

Mainway @ Lampman Ave

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

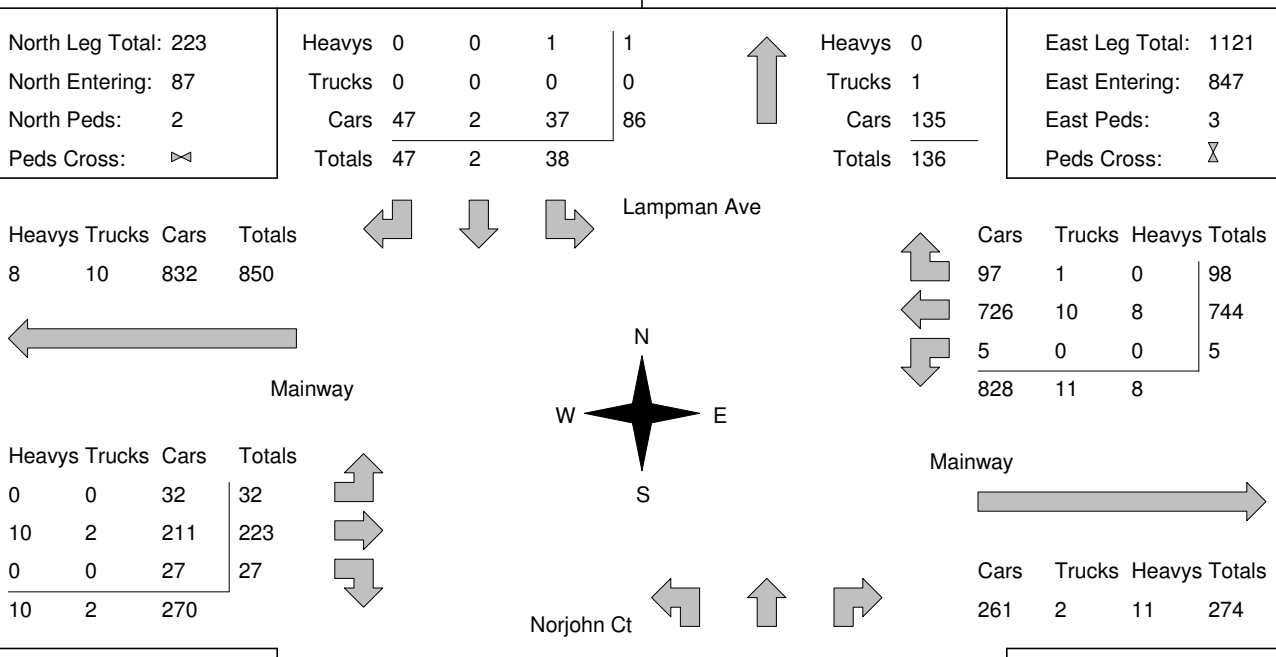
Municipality: Burlington
Site #: 0000000004
Intersection: Mainway & Lampman Ave
TFR File #: 4
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E



Comments

Mainway @ Lampman Ave

Total Count Diagram

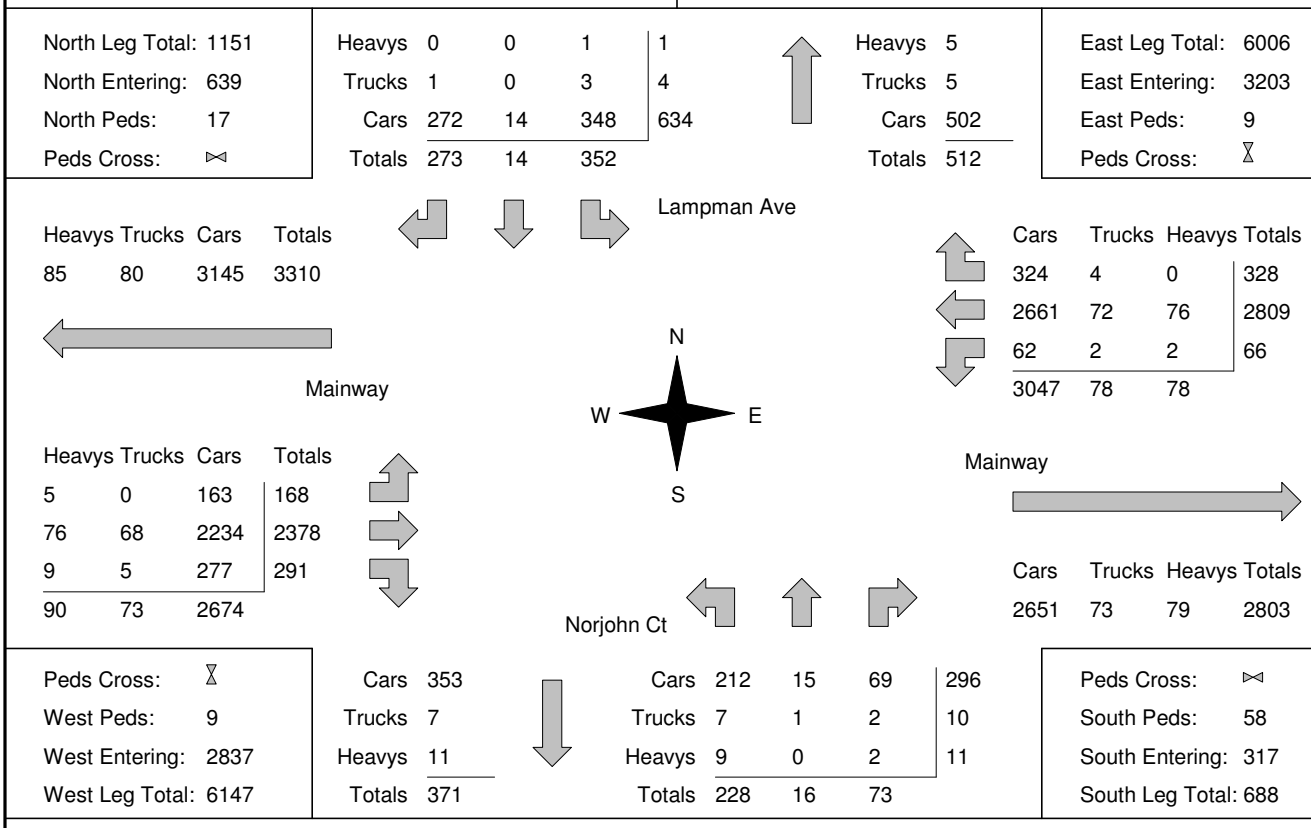
Municipality: Burlington
Site #: 0000000004
Intersection: Mainway & Lampman Ave
TFR File #: 4
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E



Comments

Mainway @ Sutton Dr

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 8:00:00
To: 9:00:00

Municipality: Burlington
Site #: 0000000005
Intersection: Mainway & Sutton Dr
TFR File #: 5
Count date: 28-Sep-2023

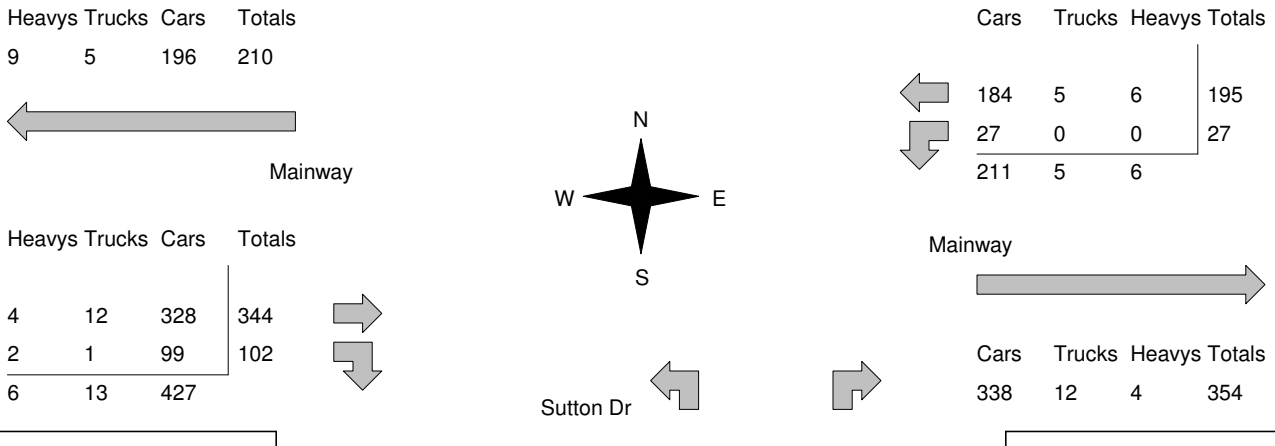
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E

East Leg Total: 576
East Entering: 222
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 446
West Leg Total: 656

Cars 126
Trucks 1
Heavys 2
Totals 129

Cars 12 10 22
Trucks 0 0 0
Heavys 3 0 3
Totals 15 10

Peds Cross:
South Peds: 2
South Entering: 25
South Leg Total: 154

Comments

Mainway @ Sutton Dr

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Burlington
Site #: 0000000005
Intersection: Mainway & Sutton Dr
TFR File #: 5
Count date: 28-Sep-2023

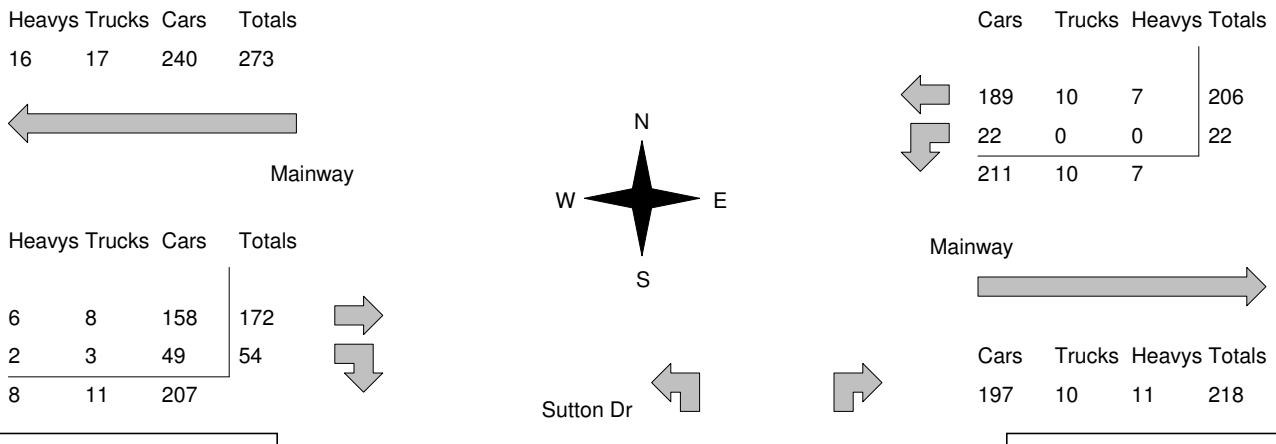
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E

East Leg Total: 446
East Entering: 228
East Peds: 1
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 226
West Leg Total: 499

Cars 71
Trucks 3
Heavys 2
Totals 76

Cars 51 39 90
Trucks 7 2 9
Heavys 9 5 14
Totals 67 46

Peds Cross: ⋈
South Peds: 10
South Entering: 113
South Leg Total: 189

Comments

Mainway @ Sutton Dr

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Burlington
Site #: 0000000005
Intersection: Mainway & Sutton Dr
TFR File #: 5
Count date: 28-Sep-2023

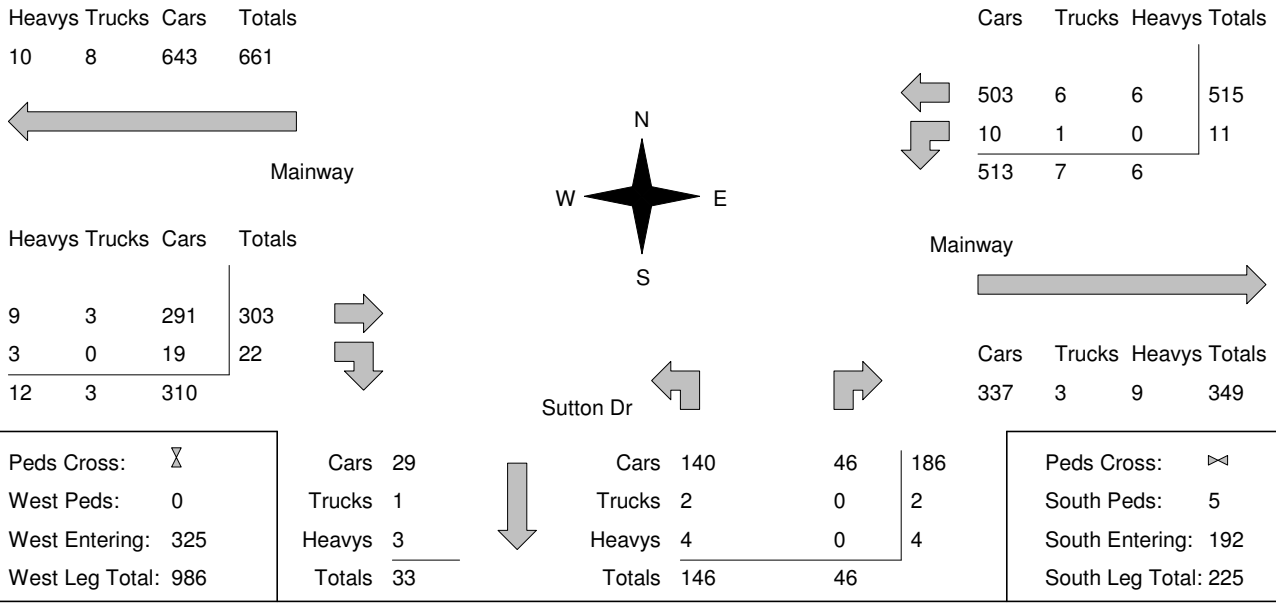
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E

East Leg Total: 875
East Entering: 526
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 325
West Leg Total: 986

Cars 29
Trucks 1
Heavys 3
Totals 33

Cars 140 46 186
Trucks 2 0 2
Heavys 4 0 4
Totals 146 46

Peds Cross: ⋈
South Peds: 5
South Entering: 192
South Leg Total: 225

Comments

Mainway @ Sutton Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000005
Intersection: Mainway & Sutton Dr
TFR File #: 5
Count date: 28-Sep-2023

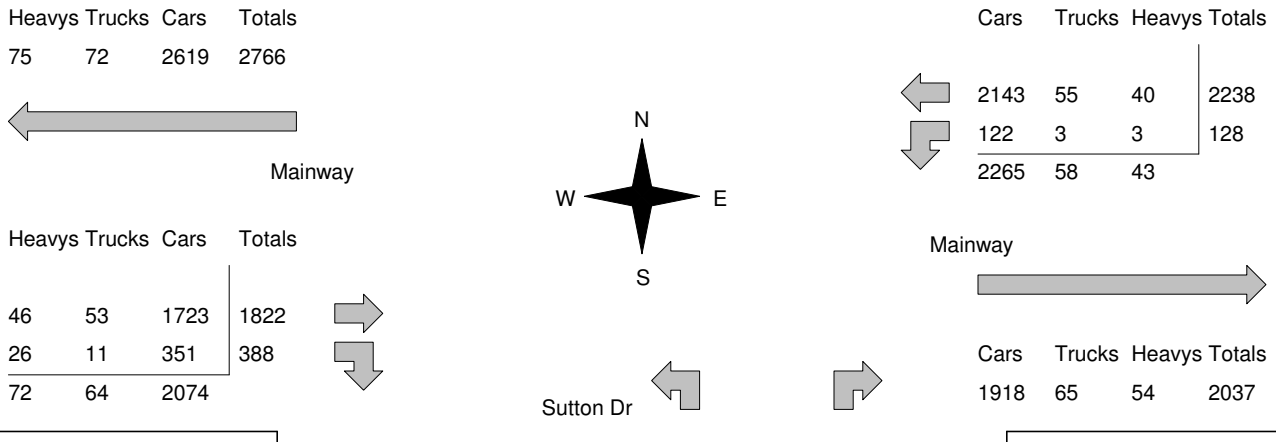
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E

East Leg Total: 4403
East Entering: 2366
East Peds: 2
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 2210
West Leg Total: 4976

Cars 473
Trucks 14
Heavys 29
Totals 516

Cars 476 195 671
Trucks 17 12 29
Heavys 35 8 43
Totals 528 215

Peds Cross: ⋈
South Peds: 55
South Entering: 743
South Leg Total: 1259

Comments

Upper Middle Rd @ Baker Dr

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000010
Intersection: Upper Middle Rd & Baker Dr
TFR File #: 10
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

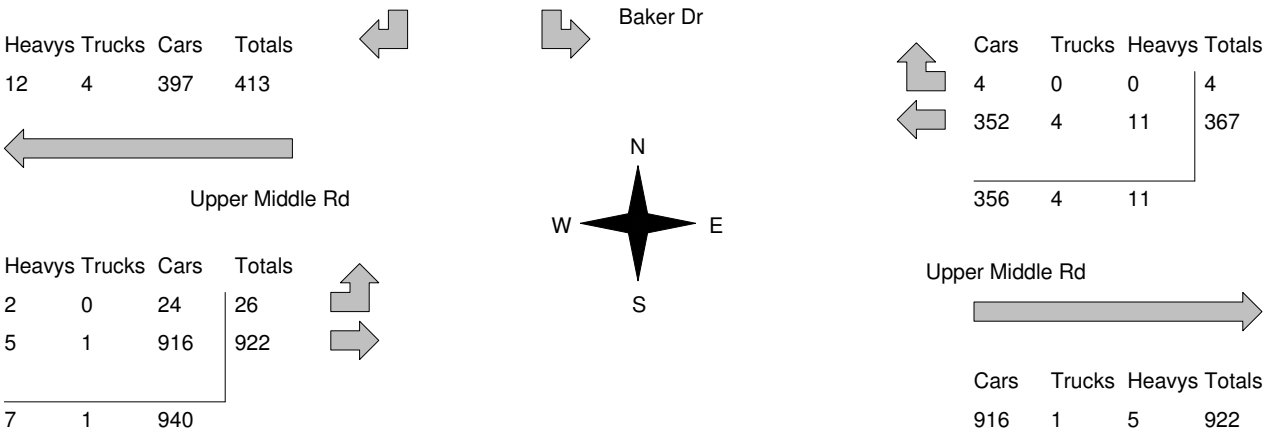
Major Road: Upper Middle Rd runs W/E

North Leg Total: 76
North Entering: 46
North Peds: 18
Peds Cross: ⋈

Heavys	1	0	1
Trucks	0	0	0
Cars	45	0	45
Totals	46	0	

Heavys	2	
Trucks	0	
Cars	28	
Totals	30	

East Leg Total: 1293
East Entering: 371
East Peds: 0
Peds Cross: ⧖



Heavys	Trucks	Cars	Totals
12	4	397	413

Cars	Trucks	Heavys	Totals
4	0	0	4
352	4	11	367
356	4	11	

Heavys	Trucks	Cars	Totals
2	0	24	26
5	1	916	922
7	1	940	

Cars	Trucks	Heavys	Totals
916	1	5	922

Peds Cross: ⧖
West Peds: 0
West Entering: 948
West Leg Total: 1361

Comments

Upper Middle Rd @ Baker Dr

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Burlington
Site #: 0000000010
Intersection: Upper Middle Rd & Baker Dr
TFR File #: 10
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total:	54		
North Entering:	16		
North Peds:	13		
Peds Cross:	⋈		

Heavys	0	0	0
Trucks	0	0	0
Cars	16	0	16
Totals	16	0	

Heavys	0		
Trucks	0		
Cars	38		
Totals	38		

East Leg Total:	887
East Entering:	520
East Peds:	0
Peds Cross:	⧖

Baker Dr

Heavys	Trucks	Cars	Totals
3	5	516	524

Cars	Trucks	Heavys	Totals
12	0	0	12
500	5	3	508
512	5	3	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	26	26
3	4	360	367
3	4	386	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
360	4	3	367

Peds Cross:	⧖
West Peds:	0
West Entering:	393
West Leg Total:	917

Comments

Upper Middle Rd @ Baker Dr

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000010
Intersection: Upper Middle Rd & Baker Dr
TFR File #: 10
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

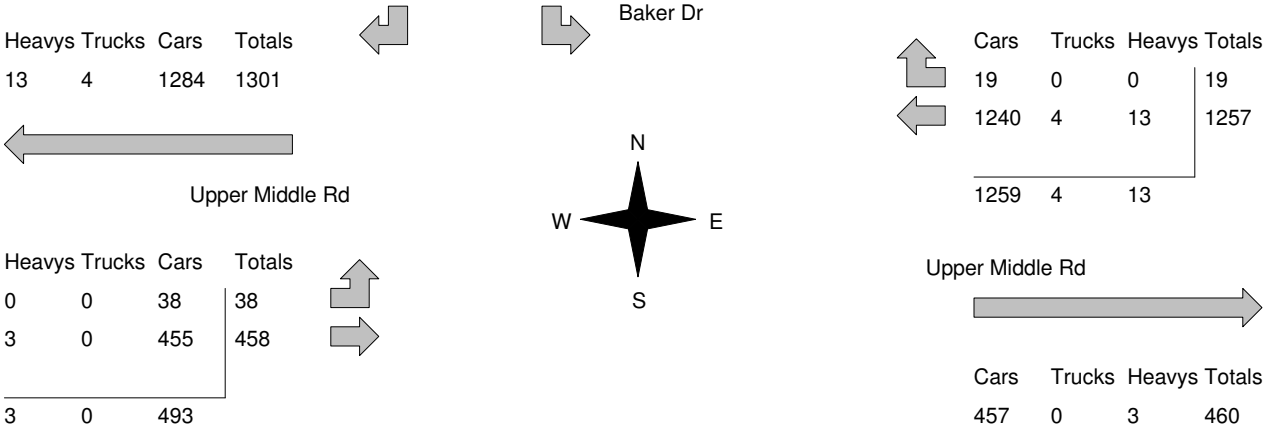
Major Road: Upper Middle Rd runs W/E

North Leg Total: 103
North Entering: 46
North Peds: 9
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	44	2	46
Totals	44	2	

Heavys	0
Trucks	0
Cars	57
Totals	57

East Leg Total: 1736
East Entering: 1276
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 496
West Leg Total: 1797

Comments

Upper Middle Rd @ Baker Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000010
Intersection: Upper Middle Rd & Baker Dr
TFR File #: 10
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 526
North Entering: 260
North Peds: 116
Peds Cross: ⋈

Heavys	2	0	2
Trucks	1	0	1
Cars	247	10	257
Totals	250	10	

Heavys	3
Trucks	0
Cars	263
Totals	266

East Leg Total: 9183
East Entering: 5082
East Peds: 0
Peds Cross: ⧖

Baker Dr

Heavys	Trucks	Cars	Totals
62	33	5154	5249

Upper Middle Rd

Heavys	Trucks	Cars	Totals
3	0	180	183
43	19	4029	4091
46	19	4209	

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Cars	Trucks	Heavys	Totals
83	0	0	83
4907	32	60	4999
4990	32	60	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
4039	19	43	4101

Peds Cross: ⧖
West Peds: 4
West Entering: 4274
West Leg Total: 9523

Comments

Upper Middle Rd @ Blue Spruce Ave

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:30:00
To: 8:30:00

Municipality: Burlington
Site #: 0000000012
Intersection: Upper Middle Rd & Blue Spruce Ave
TFR File #: 12
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 210
North Entering: 169
North Peds: 10
Peds Cross: ⋈

Heavys	3	0	3
Trucks	0	1	1
Cars	29	136	165
Totals	32	137	

Heavys	1
Trucks	1
Cars	39
Totals	41

East Leg Total: 1424
East Entering: 346
East Peds: 0
Peds Cross: ⧖

Blue Spruce Ave

Heavys	Trucks	Cars	Totals
12	4	339	355

Upper Middle Rd

Heavys	Trucks	Cars	Totals
1	0	17	18
8	0	933	941
9	0	950	

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W E
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Cars	Trucks	Heavys	Totals
22	1	0	23
310	4	9	323
332	5	9	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
1069	1	8	1078

Peds Cross: ⧖
West Peds: 0
West Entering: 959
West Leg Total: 1314

Comments

Upper Middle Rd @ Blue Spruce Ave

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Burlington
Site #: 0000000012
Intersection: Upper Middle Rd & Blue Spruce Ave
TFR File #: 12
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

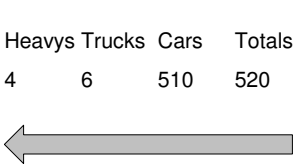
Major Road: Upper Middle Rd runs W/E

North Leg Total: 109
North Entering: 49
North Peds: 7
Peds Cross: ⋈

Heavys	1	0	1
Trucks	0	0	0
Cars	13	35	48
Totals	14	35	

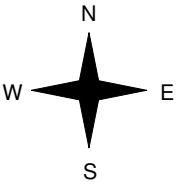
Heavys	2
Trucks	0
Cars	58
Totals	60

East Leg Total: 931
East Entering: 544
East Peds: 0
Peds Cross: ⧖

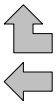


Heavys	Trucks	Cars	Totals
4	6	510	520

Upper Middle Rd

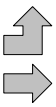


Blue Spruce Ave



Cars	Trucks	Heavys	Totals
37	0	1	38
497	6	3	506
534	6	4	

Heavys	Trucks	Cars	Totals
1	0	21	22
3	4	345	352
4	4	366	



Upper Middle Rd

Cars	Trucks	Heavys	Totals
380	4	3	387

Peds Cross: ⧖
West Peds: 0
West Entering: 374
West Leg Total: 894

Comments

Upper Middle Rd @ Blue Spruce Ave

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000012
Intersection: Upper Middle Rd & Blue Spruce Ave
TFR File #: 12
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 205
North Entering: 75
North Peds: 14
Peds Cross: ⋈

Heavys	0	0	0
Trucks	1	0	1
Cars	30	44	74
Totals	31	44	

Heavys	0
Trucks	0
Cars	130
Totals	130

East Leg Total: 1960
East Entering: 1484
East Peds: 0
Peds Cross: ⧖

Blue Spruce Ave

Heavys	Trucks	Cars	Totals
12	6	1394	1412

Cars	Trucks	Heavys	Totals
103	0	0	103
1364	5	12	1381
1467	5	12	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	27	27
3	0	429	432
3	0	456	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
473	0	3	476

Peds Cross: ⧖
West Peds: 0
West Entering: 459
West Leg Total: 1871

Comments

Upper Middle Rd @ Blue Spruce Ave

Total Count Diagram

Municipality: Burlington
Site #: 0000000012
Intersection: Upper Middle Rd & Blue Spruce Ave
TFR File #: 12
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 1281
North Entering: 701
North Peds: 86
Peds Cross: ⋈

Heavys	8	2	10
Trucks	1	1	2
Cars	152	537	689
Totals	161	540	

Heavys	6
Trucks	5
Cars	569
Totals	580

East Leg Total: 10093
East Entering: 5561
East Peds: 2
Peds Cross: ⧖

Blue Spruce Ave

Heavys	Trucks	Cars	Totals
60	37	5203	5300

Cars	Trucks	Heavys	Totals
415	4	3	422
5051	36	52	5139
5466	40	55	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
3	1	154	158
39	19	3934	3992
42	20	4088	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
4471	20	41	4532

Peds Cross: ⧖
West Peds: 0
West Entering: 4150
West Leg Total: 9450

Comments

Upper Middle Rd @ Corpus Christi (East)

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000007
Intersection: Upper Middle Rd & Corpus Christi E
TFR File #: 7
Count date: 28-Sep-2023

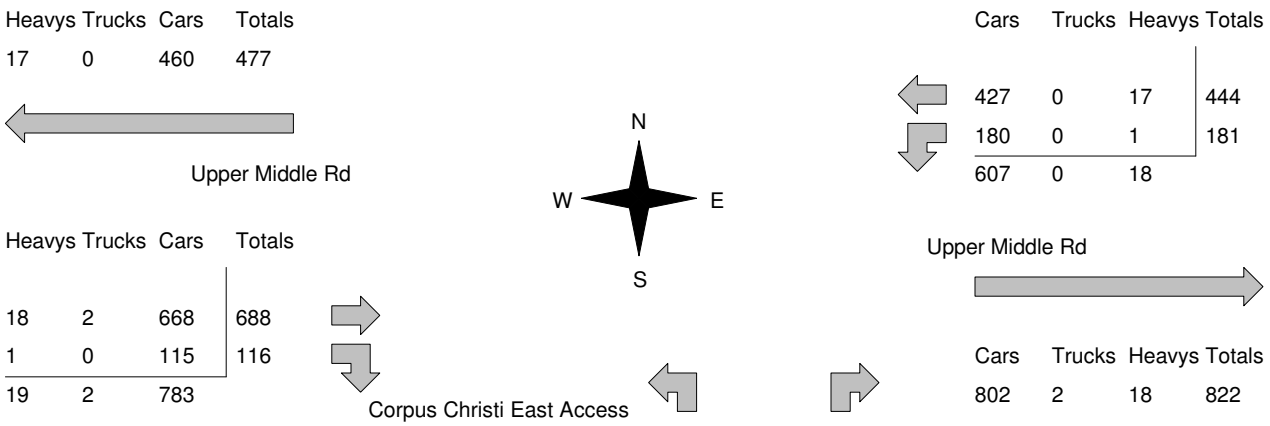
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

East Leg Total: 1447
East Entering: 625
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 804
West Leg Total: 1281

Cars 295
Trucks 0
Heavys 2
Totals 297

Cars 33 134 167
Trucks 0 0 0
Heavys 0 0 0
Totals 33 134

Peds Cross: ⋈
South Peds: 12
South Entering: 167
South Leg Total: 464

Comments

Upper Middle Rd @ Corpus Christi (East)

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

Municipality: Burlington
Site #: 0000000007
Intersection: Upper Middle Rd & Corpus Christi E
TFR File #: 7
Count date: 28-Sep-2023

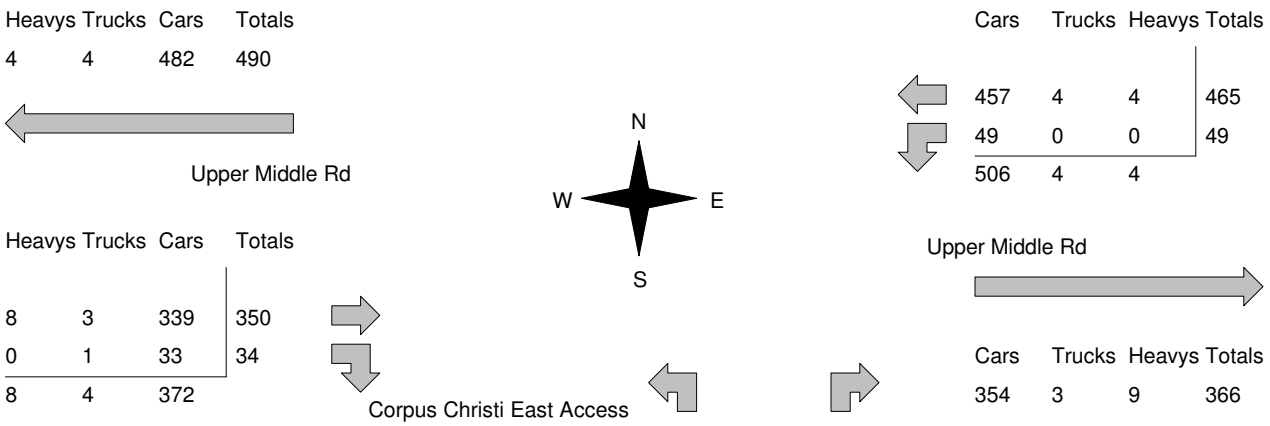
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

East Leg Total: 880
East Entering: 514
East Peds: 3
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 384
West Leg Total: 874

Cars 82
Trucks 1
Heavys 0
Totals 83

Cars 25 15 40
Trucks 0 0 0
Heavys 0 1 1
Totals 25 16

Peds Cross: ⋈
South Peds: 83
South Entering: 41
South Leg Total: 124

Comments

Upper Middle Rd @ Corpus Christi (East)

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000007
Intersection: Upper Middle Rd & Corpus Christi E
TFR File #: 7
Count date: 28-Sep-2023

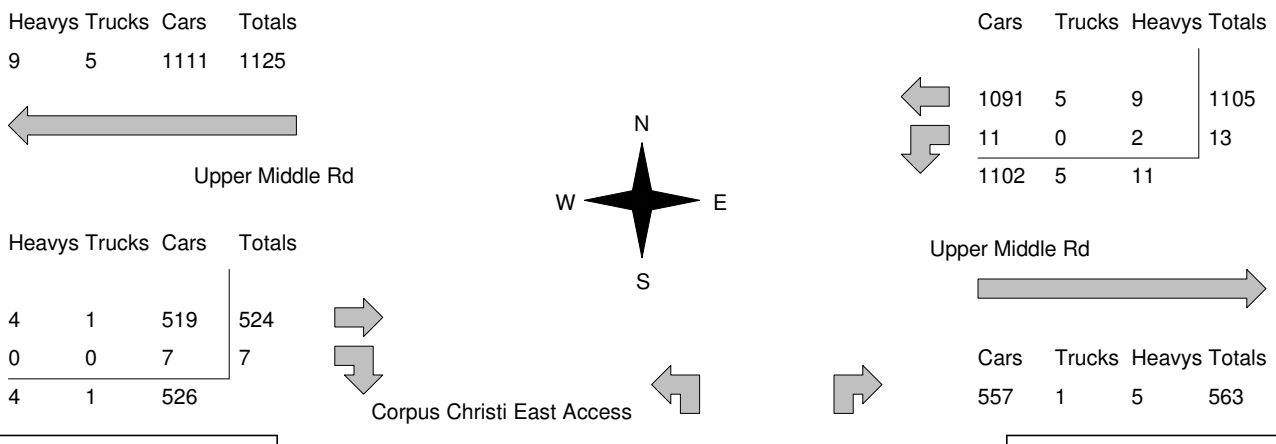
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

East Leg Total: 1681
East Entering: 1118
East Peds: 0
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 531
West Leg Total: 1656

Cars 18
Trucks 0
Heavys 2
Totals 20

Cars 20 38 58
Trucks 0 0 0
Heavys 0 1 1
Totals 20 39

Peds Cross:
South Peds: 17
South Entering: 59
South Leg Total: 79

Comments

Upper Middle Rd @ Corpus Christi (East)

Total Count Diagram

Municipality: Burlington
Site #: 0000000007
Intersection: Upper Middle Rd & Corpus Christi E
TFR File #: 7
Count date: 28-Sep-2023

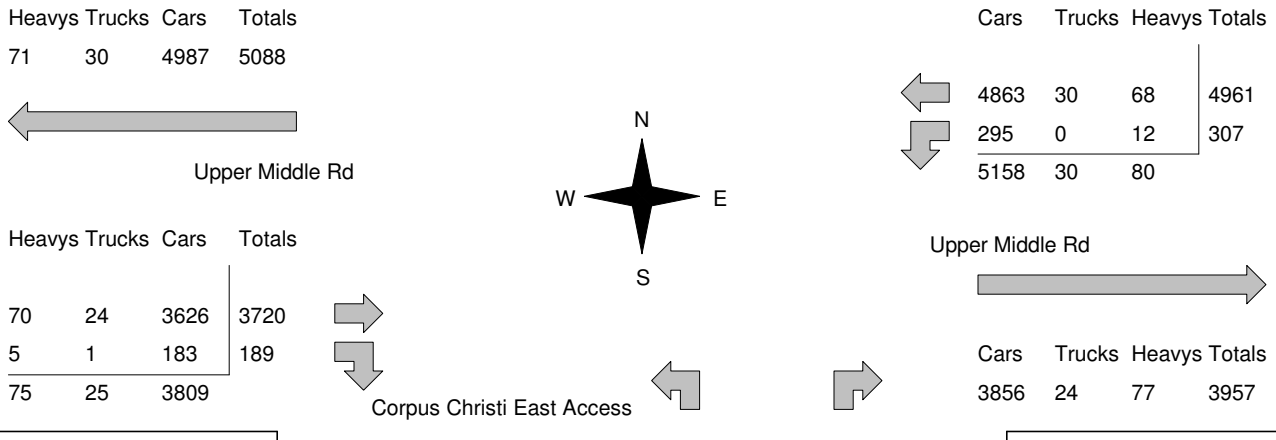
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

East Leg Total: 9225
East Entering: 5268
East Peds: 3
Peds Cross:



Peds Cross:
West Peds: 0
West Entering: 3909
West Leg Total: 8997

Cars 478
Trucks 1
Heavys 17
Totals 496

Cars 124 230 354
Trucks 0 0 0
Heavys 3 7 10
Totals 127 237

Peds Cross:
South Peds: 173
South Entering: 364
South Leg Total: 860

Comments

Upper Middle Rd @ Corpus Christi (West)

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

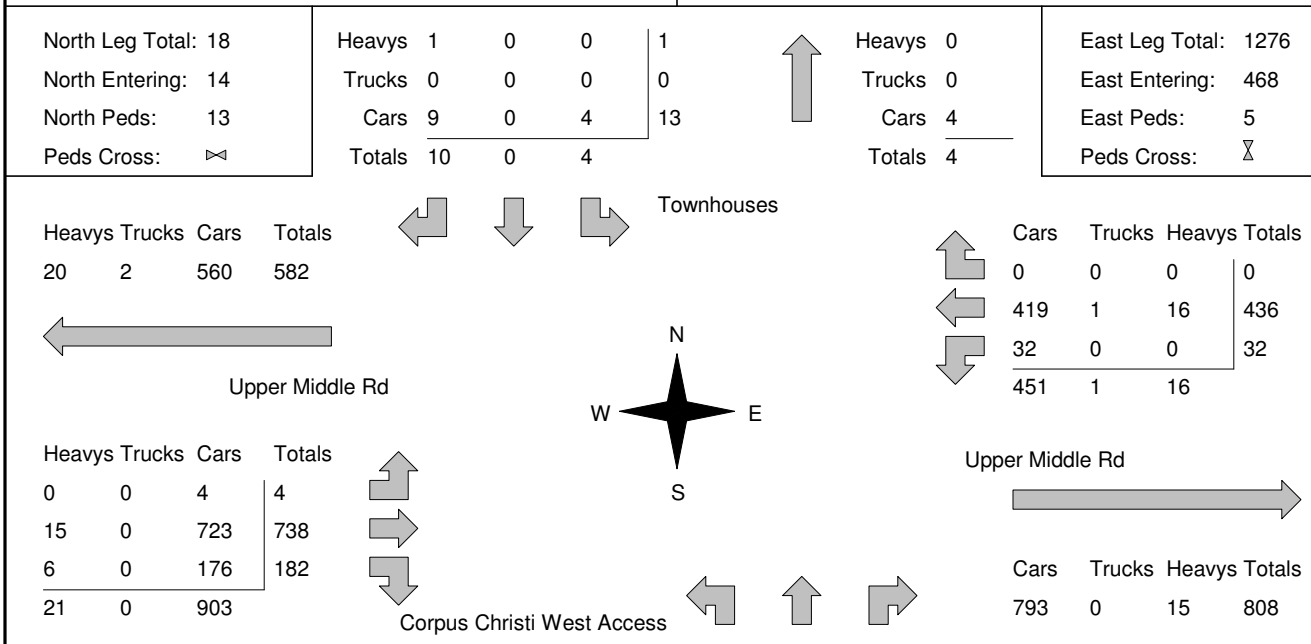
Municipality: Burlington
Site #: 0000000006
Intersection: Upper Middle Rd & Corpus Christi W
TFR File #: 6
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E



Comments

Upper Middle Rd @ Corpus Christi (West)

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

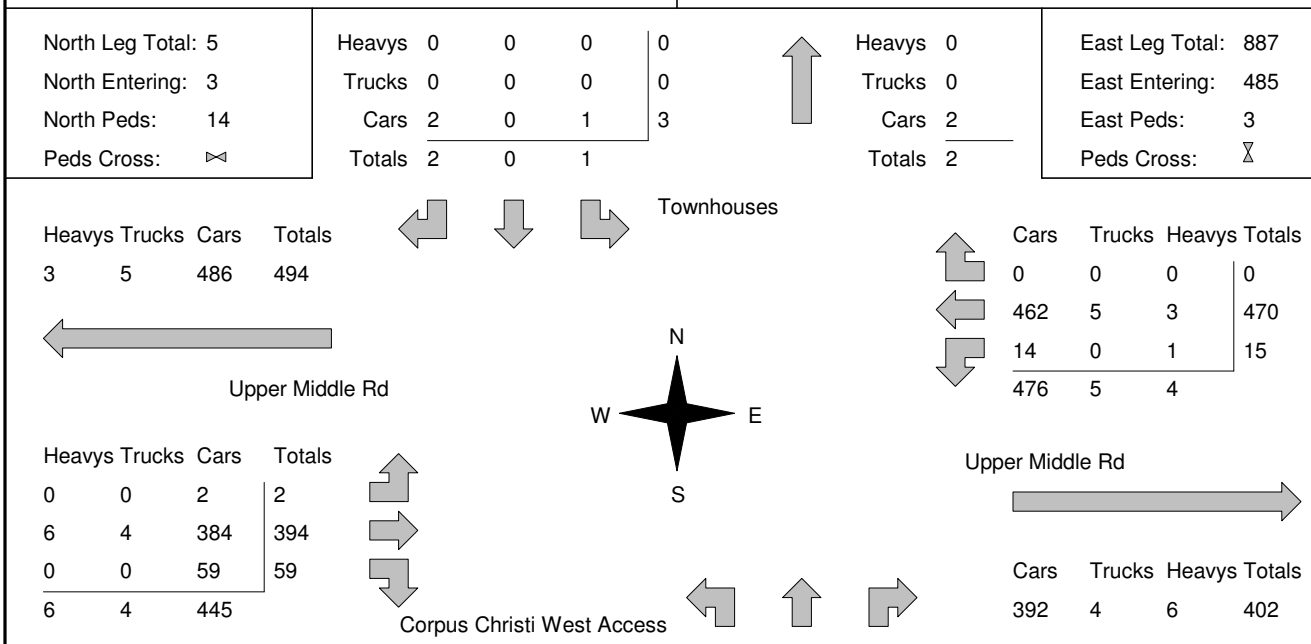
Municipality: Burlington
Site #: 0000000006
Intersection: Upper Middle Rd & Corpus Christi W
TFR File #: 6
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E



Comments

Upper Middle Rd @ Corpus Christi (West)

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000006
Intersection: Upper Middle Rd & Corpus Christi W
TFR File #: 6
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total:	7
North Entering:	5
North Peds:	10
Peds Cross:	⋈

Heavys	0	0	0	0
Trucks	0	0	0	0
Cars	3	0	2	5
Totals	3	0	2	

Heavys	0
Trucks	0
Cars	2
Totals	2

East Leg Total:	1647
East Entering:	1124
East Peds:	1
Peds Cross:	⧖

Townhouses

Heavys	Trucks	Cars	Totals
7	5	1164	1176

Upper Middle Rd

Heavys	Trucks	Cars	Totals
0	0	2	2
4	1	505	510
1	0	17	18
5	1	524	

Cars	Trucks	Heavys	Totals
0	0	0	0
1112	5	7	1124
0	0	0	0
1112	5	7	

N
W E
S

Upper Middle Rd

Cars	Trucks	Heavys	Totals
518	1	4	523

Corpus Christi West Access

Peds Cross:	⧖
West Peds:	1
West Entering:	530
West Leg Total:	1706

Cars	17
Trucks	0
Heavys	1
Totals	18

Cars	49	0	11	60
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	49	0	11	

Peds Cross:	⋈
South Peds:	20
South Entering:	60
South Leg Total:	78

Comments

Upper Middle Rd @ Corpus Christi (West)

Total Count Diagram

Municipality: Burlington
Site #: 0000000006
Intersection: Upper Middle Rd & Corpus Christi W
TFR File #: 6
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total:	62
North Entering:	38
North Peds:	114
Peds Cross:	⋈

Heavys	3	0	0	3
Trucks	0	0	0	0
Cars	25	0	10	35
Totals	28	0	10	

Heavys	1		
Trucks	0		
Cars	23		
Totals	24		

East Leg Total:	9020
East Entering:	5089
East Peds:	14
Peds Cross:	⧖

Heavys	Trucks	Cars	Totals
77	30	5221	5328

Townhouses

Cars	Trucks	Heavys	Totals
0	0	0	0
4916	29	70	5015
72	0	2	74
4988	29	72	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
1	0	23	24
68	25	3714	3807
8	0	358	366
77	25	4095	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
3838	25	68	3931

Corpus Christi West Access

Peds Cross:	⧖
West Peds:	13
West Entering:	4197
West Leg Total:	9525

Cars	430			
Trucks	0			
Heavys	10			
Totals	440			

Cars	280	0	114	394
Trucks	1	0	0	1
Heavys	4	0	0	4
Totals	285	0	114	

Peds Cross:	⋈
South Peds:	136
South Entering:	399
South Leg Total:	839

Comments

Upper Middle Rd @ Deer Pl

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000011
Intersection: Upper Middle Rd & Deer Pl
TFR File #: 11
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

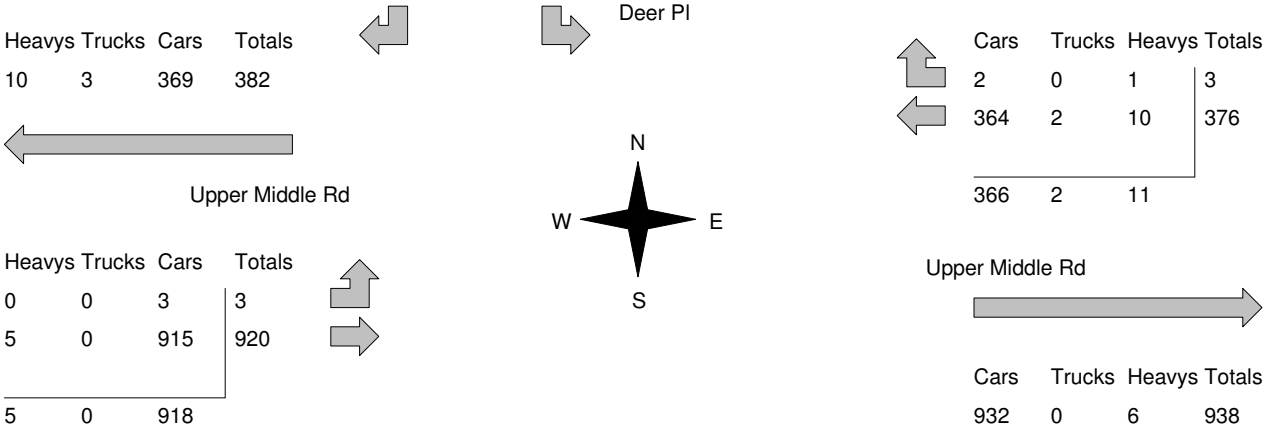
Major Road: Upper Middle Rd runs W/E

North Leg Total: 30
North Entering: 24
North Peds: 14
Peds Cross: ⋈

Heavys	0	1	1
Trucks	1	0	1
Cars	5	17	22
Totals	6	18	

Heavys	1
Trucks	0
Cars	5
Totals	6

East Leg Total: 1317
East Entering: 379
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 923
West Leg Total: 1305

Comments

Upper Middle Rd @ Deer Pl

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Burlington
Site #: 0000000011
Intersection: Upper Middle Rd & Deer Pl
TFR File #: 11
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 15
North Entering: 11
North Peds: 8
Peds Cross: ⋈

Heavys	0	1	1
Trucks	0	0	0
Cars	4	6	10
Totals	4	7	

Heavys	1
Trucks	0
Cars	3
Totals	4

East Leg Total: 892
East Entering: 512
East Peds: 0
Peds Cross: ⧖

Deer Pl

Heavys	Trucks	Cars	Totals
3	6	504	513

Upper Middle Rd

Heavys	Trucks	Cars	Totals
0	0	1	1
2	3	368	373
2	3	369	

N
W E
S

Cars	Trucks	Heavys	Totals
2	0	1	3
500	6	3	509
502	6	4	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
374	3	3	380

Peds Cross: ⧖
West Peds: 0
West Entering: 374
West Leg Total: 887

Comments

Upper Middle Rd @ Deer Pl

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000011
Intersection: Upper Middle Rd & Deer Pl
TFR File #: 11
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 25
North Entering: 10
North Peds: 16
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	6	4	10
Totals	6	4	

Heavys	0
Trucks	0
Cars	15
Totals	15

East Leg Total: 1843
East Entering: 1386
East Peds: 0
Peds Cross: ⧖

Deer Pl

Heavys	Trucks	Cars	Totals
13	6	1366	1385

Cars	Trucks	Heavys	Totals
7	0	0	7
1360	6	13	1379
1367	6	13	

Upper Middle Rd

N
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Heavys	Trucks	Cars	Totals
0	0	8	8
3	0	450	453
3	0	458	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
454	0	3	457

Peds Cross: ⧖
West Peds: 0
West Entering: 461
West Leg Total: 1846

Comments

Upper Middle Rd @ Deer Pl

Total Count Diagram

Municipality: Burlington
Site #: 0000000011
Intersection: Upper Middle Rd & Deer Pl
TFR File #: 11
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

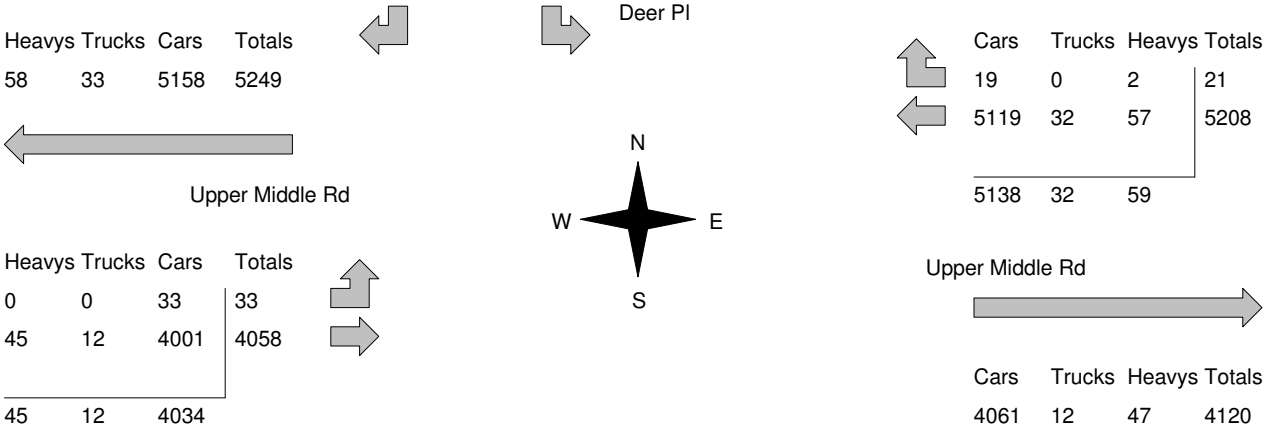
Major Road: Upper Middle Rd runs W/E

North Leg Total: 157
North Entering: 103
North Peds: 108
Peds Cross: ⋈

Heavys	1	2	3
Trucks	1	0	1
Cars	39	60	99
Totals	41	62	

Heavys	2
Trucks	0
Cars	52
Totals	54

East Leg Total: 9349
East Entering: 5229
East Peds: 2
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 1
West Entering: 4091
West Leg Total: 9340

Comments

Upper Middle Rd @ Quinte St

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000008
Intersection: Upper Middle Rd & Quinte St
TFR File #: 8
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

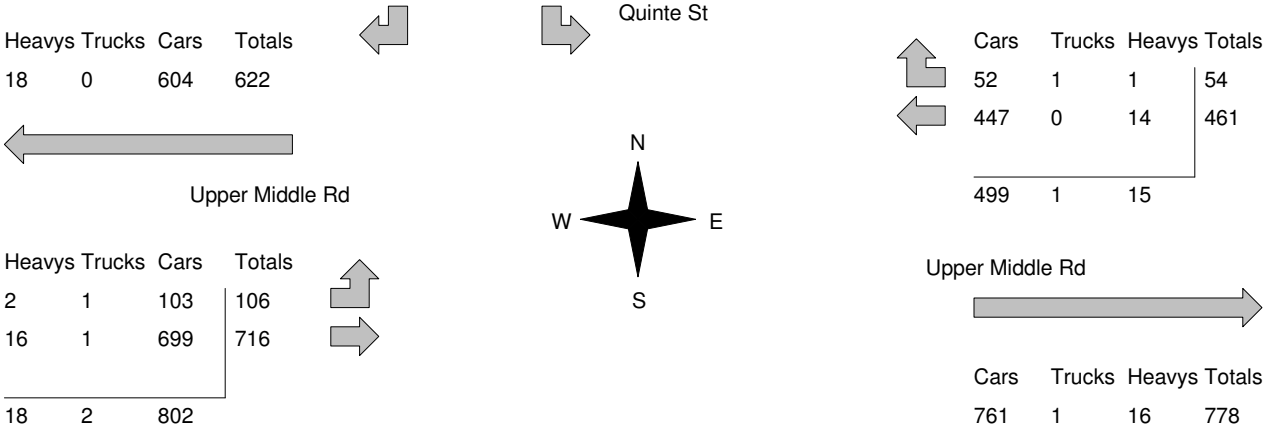
Major Road: Upper Middle Rd runs W/E

North Leg Total: 383
North Entering: 223
North Peds: 29
Peds Cross: ⋈

Heavys	4	0	4
Trucks	0	0	0
Cars	157	62	219
Totals	161	62	

Heavys	3
Trucks	2
Cars	155
Totals	160

East Leg Total: 1293
East Entering: 515
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 1
West Entering: 822
West Leg Total: 1444

Comments

Upper Middle Rd @ Quinte St

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:15:00
To: 13:15:00

Municipality: Burlington
Site #: 0000000008
Intersection: Upper Middle Rd & Quinte St
TFR File #: 8
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 216
North Entering: 111
North Peds: 10
Peds Cross: ⋈

Heavys	0	0	0
Trucks	1	0	1
Cars	67	43	110
Totals	68	43	

Heavys	0
Trucks	4
Cars	101
Totals	105

East Leg Total: 856
East Entering: 500
East Peds: 2
Peds Cross: ⧖

Quinte St

Heavys	Trucks	Cars	Totals
4	4	512	520

Cars	Trucks	Heavys	Totals
45	3	0	48
445	3	4	452
490	6	4	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	1	56	57
9	2	302	313
9	3	358	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
345	2	9	356

Peds Cross: ⧖
West Peds: 1
West Entering: 370
West Leg Total: 890

Comments

Upper Middle Rd @ Quinte St

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000008
Intersection: Upper Middle Rd & Quinte St
TFR File #: 8
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

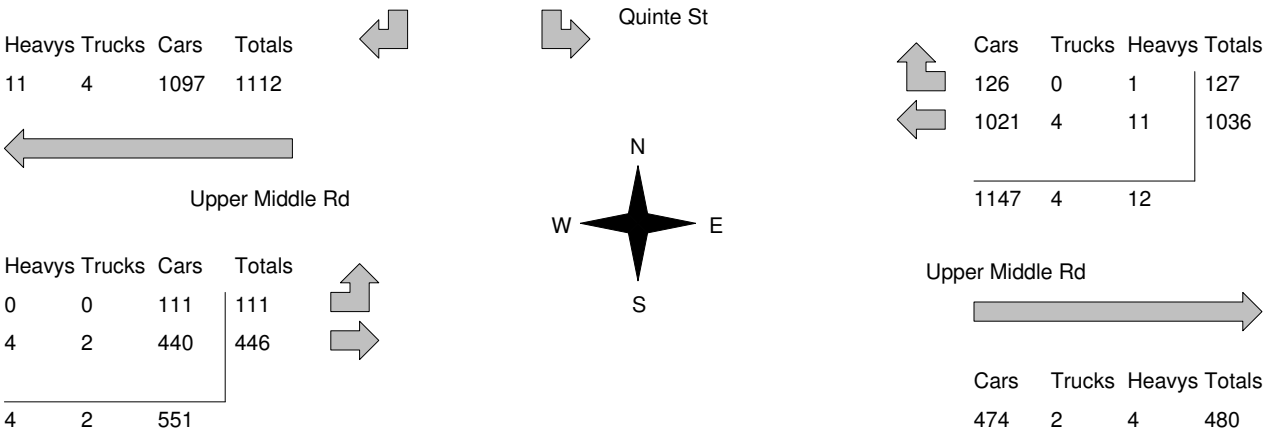
Major Road: Upper Middle Rd runs W/E

North Leg Total: 348
North Entering: 110
North Peds: 13
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	76	34	110
Totals	76	34	

Heavys	1
Trucks	0
Cars	237
Totals	238

East Leg Total: 1643
East Entering: 1163
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 1
West Entering: 557
West Leg Total: 1669

Comments

Upper Middle Rd @ Quinte St

Total Count Diagram

Municipality: Burlington
Site #: 0000000008
Intersection: Upper Middle Rd & Quinte St
TFR File #: 8
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 2014
North Entering: 982
North Peds: 103
Peds Cross: ⋈

Heavys	7	4	11
Trucks	1	0	1
Cars	582	388	970
Totals	590	392	

Heavys	12
Trucks	10
Cars	1010
Totals	1032

East Leg Total: 8917
East Entering: 5140
East Peds: 6
Peds Cross: ⋈

Quinte St

Heavys	Trucks	Cars	Totals
80	26	5151	5257

Cars	Trucks	Heavys	Totals
463	4	6	473
4569	25	73	4667
5032	29	79	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
6	6	547	559
70	18	3297	3385
76	24	3844	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
3685	18	74	3777

Peds Cross: ⋈
West Peds: 8
West Entering: 3944
West Leg Total: 9201

Comments

Upper Middle Rd @ Sutton Dr

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 10:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Burlington
Site #: 0000000009
Intersection: Upper Middle Rd & Sutton Dr
TFR File #: 9
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total:	829
North Entering:	535
North Peds:	24
Peds Cross:	⋈

Heavys	7	0	7
Trucks	0	0	0
Cars	191	337	528
Totals	198	337	

Heavys	12
Trucks	3
Cars	279
Totals	294

East Leg Total:	1368
East Entering:	424
East Peds:	16
Peds Cross:	⧖

Sutton Dr

Heavys	Trucks	Cars	Totals
15	1	489	505

Cars	Trucks	Heavys	Totals
112	2	3	117
298	1	8	307
410	3	11	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
9	1	167	177
7	0	600	607
16	1	767	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
937	0	7	944

Peds Cross:	⧖
West Peds:	6
West Entering:	784
West Leg Total:	1289

Comments

Upper Middle Rd @ Sutton Dr

Mid-day Peak Diagram

Specified Period
From: 11:30:00
To: 13:30:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Burlington
Site #: 0000000009
Intersection: Upper Middle Rd & Sutton Dr
TFR File #: 9
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 379
North Entering: 188
North Peds: 4
Peds Cross: ⋈

Heavys	1	1	2
Trucks	1	1	2
Cars	79	105	184
Totals	81	107	

Heavys	7
Trucks	0
Cars	184
Totals	191

East Leg Total: 913
East Entering: 525
East Peds: 8
Peds Cross: ⧖

Sutton Dr

Heavys	Trucks	Cars	Totals
3	6	486	495

Cars	Trucks	Heavys	Totals
109	0	2	111
407	5	2	414
516	5	4	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
5	0	75	80
1	2	278	281
6	2	353	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
383	3	2	388

Peds Cross: ⧖
West Peds: 1
West Entering: 361
West Leg Total: 856

Comments

Upper Middle Rd @ Sutton Dr

Afternoon Peak Diagram

Specified Period
From: 16:00:00
To: 19:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Municipality: Burlington
Site #: 0000000009
Intersection: Upper Middle Rd & Sutton Dr
TFR File #: 9
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 794
North Entering: 273
North Peds: 8
Peds Cross: ⋈

Heavys	3	0	3
Trucks	0	0	0
Cars	118	152	270
Totals	121	152	

Heavys	7
Trucks	2
Cars	512
Totals	521

East Leg Total: 1898
East Entering: 1403
East Peds: 5
Peds Cross: ⧖

Sutton Dr

Heavys	Trucks	Cars	Totals
12	5	1125	1142

Upper Middle Rd

Heavys	Trucks	Cars	Totals
3	1	135	139
2	0	341	343
5	1	476	

Cars	Trucks	Heavys	Totals
377	1	4	382
1007	5	9	1021
1384	6	13	

N
W E
S

Upper Middle Rd

Cars	Trucks	Heavys	Totals
493	0	2	495

Peds Cross: ⧖
West Peds: 2
West Entering: 482
West Leg Total: 1624

Comments

Upper Middle Rd @ Sutton Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000009
Intersection: Upper Middle Rd & Sutton Dr
TFR File #: 9
Count date: 28-Sep-2023

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Cam

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 4413
North Entering: 2271
North Peds: 66
Peds Cross: ⋈

Heavys	30	10	40
Trucks	5	3	8
Cars	900	1323	2223
Totals	935	1336	

Heavys	55
Trucks	9
Cars	2078
Totals	2142

East Leg Total: 9718
East Entering: 5445
East Peds: 46
Peds Cross: ⧖

Sutton Dr

Heavys	Trucks	Cars	Totals
75	30	4980	5085

Upper Middle Rd

Heavys	Trucks	Cars	Totals
38	5	804	847
36	14	2887	2937
74	19	3691	

N
W E
S

Cars	Trucks	Heavys	Totals
1274	4	17	1295
4080	25	45	4150
5354	29	62	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
4210	17	46	4273

Peds Cross: ⧖
West Peds: 121
West Entering: 3784
West Leg Total: 8869

Comments

Appleby Line @ Dundas St

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 13:30:00
To: 14:30:00

Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Dundas St
TFR File #: 1
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 2216
North Entering: 1237
North Peds: 13
Peds Cross: ⋈

Heavys	0	3	2	5
Trucks	1	1	1	3
Cars	213	659	357	1229
Totals	214	663	360	

Heavys	8
Trucks	2
Cars	969
Totals	979

East Leg Total: 2461
East Entering: 1230
East Peds: 21
Peds Cross: ⋈

Heavys	Trucks	Cars	Totals
3	6	1271	1280

Appleby Line

Cars	Trucks	Heavys	Totals
180	1	5	186
665	5	3	673
369	1	1	371
1214	7	9	

Dundas St

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	193	193
6	1	602	609
0	0	291	291
6	1	1086	

Dundas St

Cars	Trucks	Heavys	Totals
1220	3	8	1231

Appleby Line

Peds Cross: ⧖
West Peds: 5
West Entering: 1093
West Leg Total: 2373

Cars	1319
Trucks	2
Heavys	4
Totals	1325

Cars	393	596	261	1250
Trucks	0	1	1	2
Heavys	0	3	0	3
Totals	393	600	262	

Peds Cross: ⋈
South Peds: 11
South Entering: 1255
South Leg Total: 2580

Comments

Appleby Line @ Dundas St

Total Count Diagram

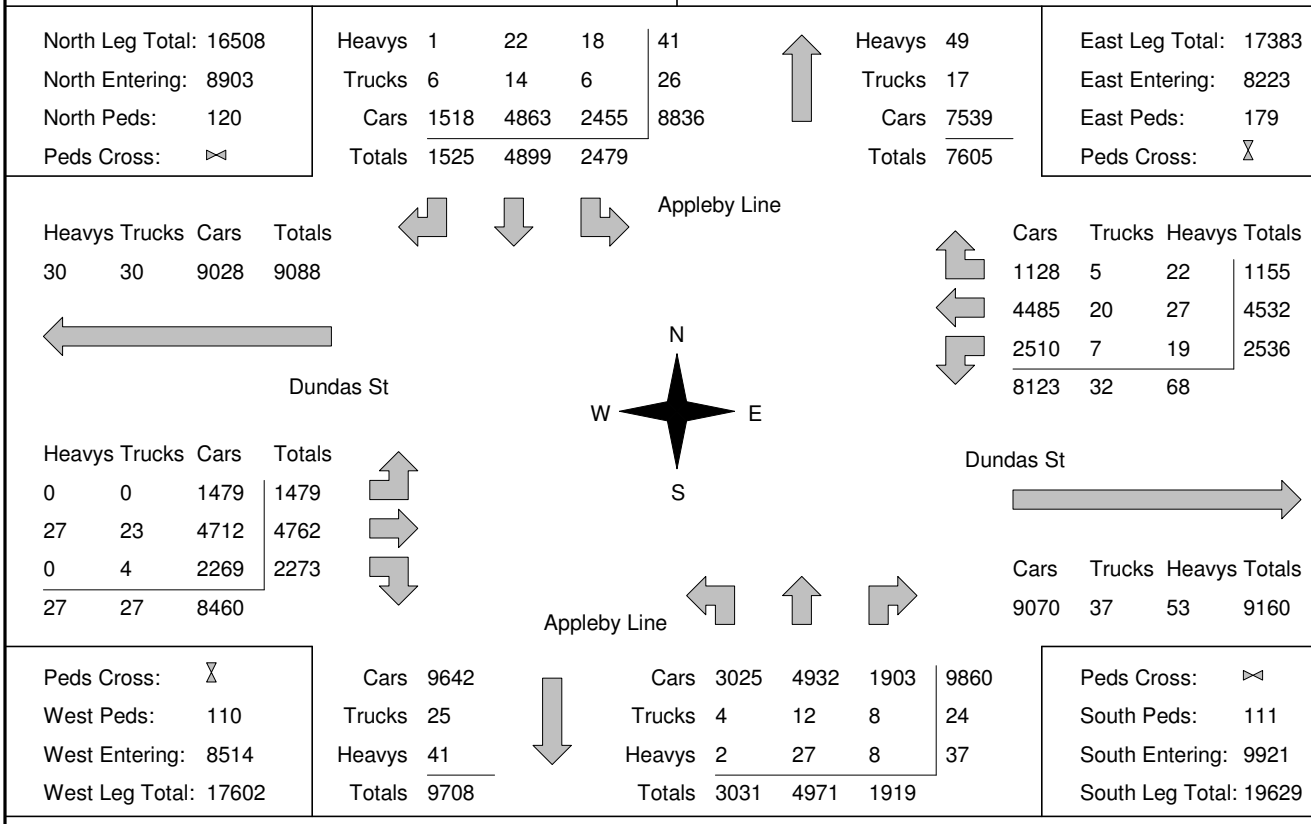
Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Dundas St
TFR File #: 1
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Fairview St

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 13:15:00
To: 14:15:00

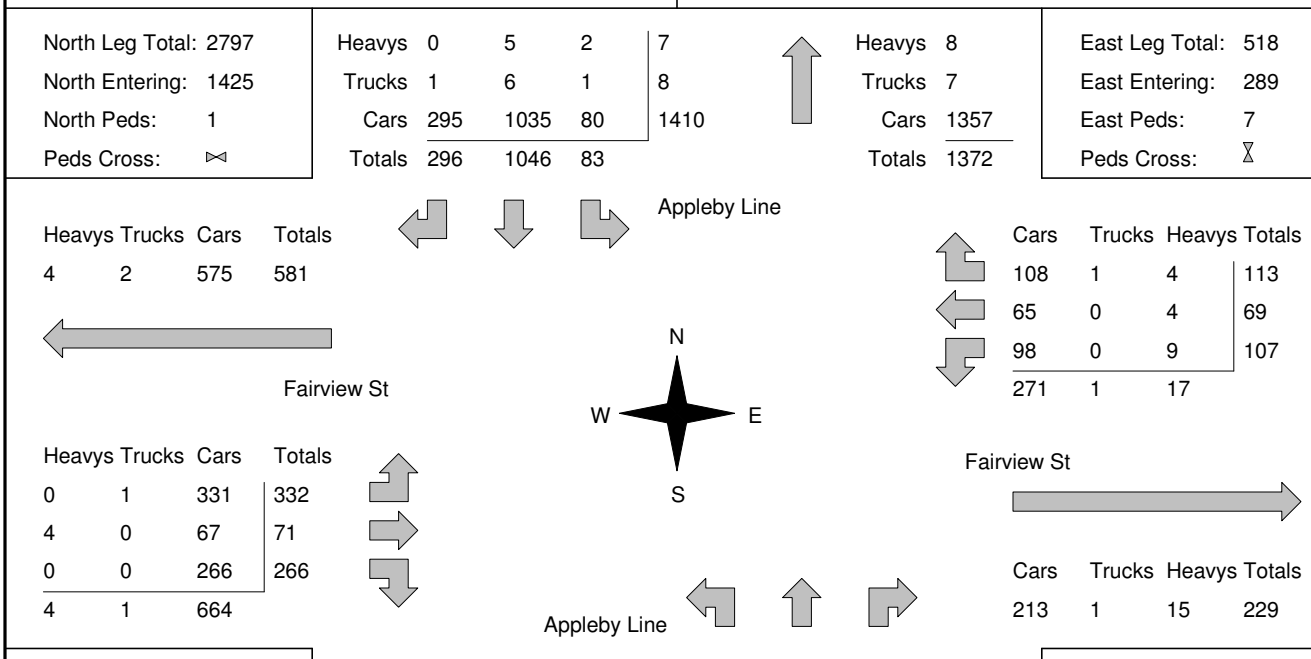
Municipality: Burlington
Site #: 0000000006
Intersection: Appleby Line & Fairview St
TFR File #: 6
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Fairview St

Total Count Diagram

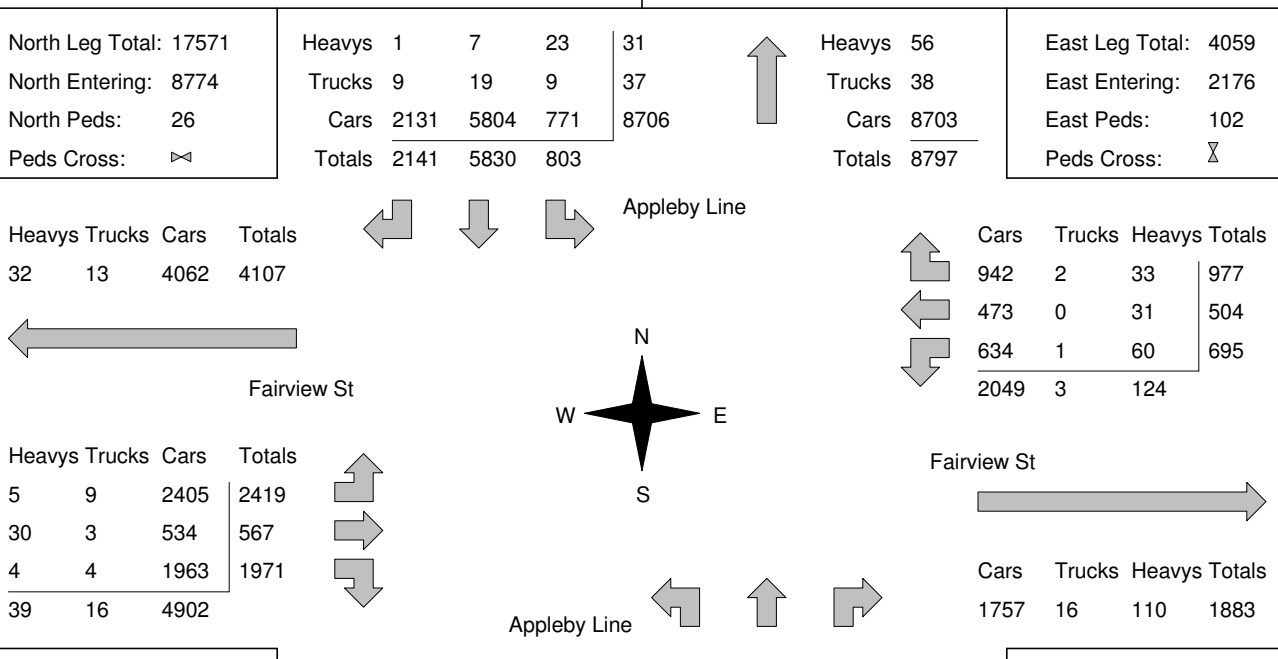
Municipality: Burlington
Site #: 0000000006
Intersection: Appleby Line & Fairview St
TFR File #: 6
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Harvester Rd

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 13:00:00
To: 14:00:00

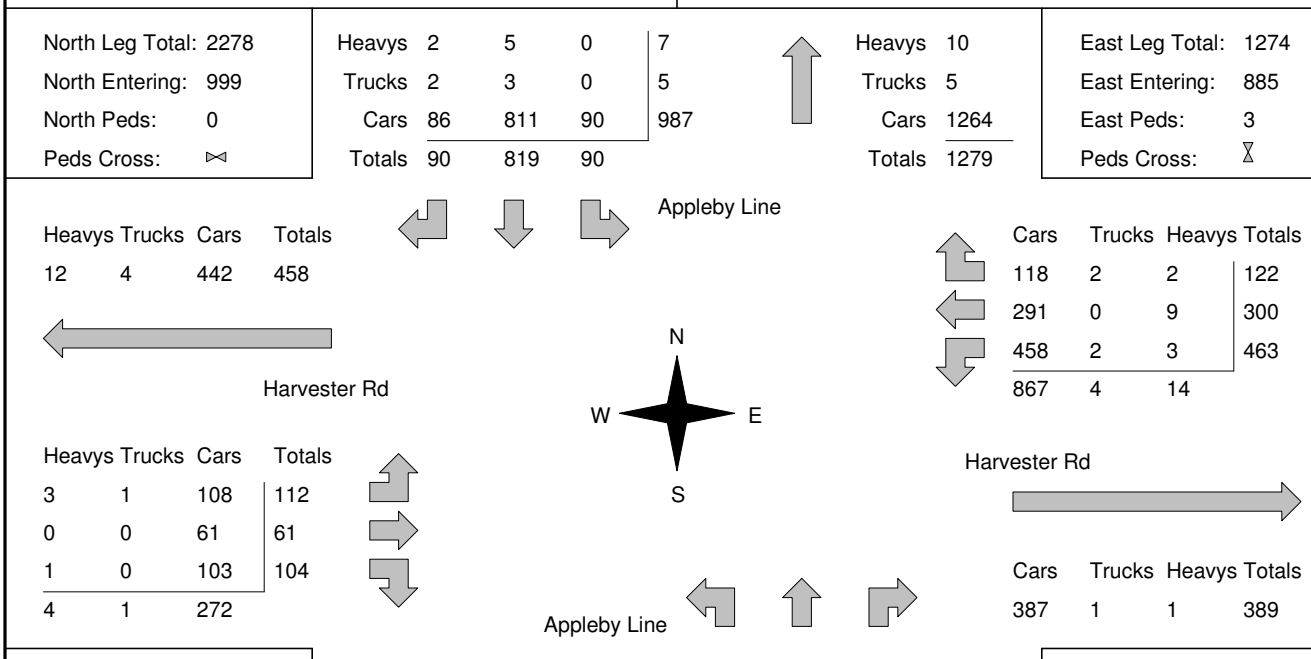
Municipality: Burlington
Site #: 0000000005
Intersection: Appleby Line & Harvester Rd
TFR File #: 5
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ Harvester Rd

Total Count Diagram

Municipality: Burlington
Site #: 0000000005
Intersection: Appleby Line & Harvester Rd
TFR File #: 5
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	17010			
North Entering:	8184			
North Peds:	12			
Peds Cross:	⋈			
Heavys	64	22	12	98
Trucks	11	18	1	30
Cars	795	6580	681	8056
Totals	870	6620	694	
Heavys	78			
Trucks	44			
Cars	8704			
Totals	8826			
East Leg Total:	6355			
East Entering:	3675			
East Peds:	18			
Peds Cross:	⧖			

Appleby Line

Heavys	Trucks	Cars	Totals
86	23	2322	2431

Cars	Trucks	Heavys	Totals
903	9	20	932
1131	4	18	1153
1567	5	18	1590
3601	18	56	

Harvester Rd

N
W E
S

Heavys	Trucks	Cars	Totals
19	13	811	843
4	5	722	731
2	2	618	622
25	20	2151	

Harvester Rd

Cars	Trucks	Heavys	Totals
2639	11	30	2680

Appleby Line

Peds Cross:	⧖			
West Peds:	12			
West Entering:	2196			
West Leg Total:	4627			
Cars	8765			
Trucks	25			
Heavys	42			
Totals	8832			
Cars	396	6990	1236	8622
Trucks	8	22	5	35
Heavys	4	39	14	57
Totals	408	7051	1255	
Peds Cross:	⋈			
South Peds:	10			
South Entering:	8714			
South Leg Total:	17546			

Comments

Appleby Line @ North Service Rd

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 12:30:00
To: 13:30:00

Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & North Service Rd
TFR File #: 2
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	2515			
North Entering:	1268			
North Peds:	1			
Peds Cross:	⋈			
Heavys	0	9	0	9
Trucks	0	6	0	6
Cars	36	1182	35	1253
Totals	36	1197	35	
Heavys	9			
Trucks	4			
Cars	1234			
Totals	1247			
East Leg Total:	266			
East Entering:	156			
East Peds:	3			
Peds Cross:	⧖			

Appleby Line

Heavys	Trucks	Cars	Totals
3	0	98	101

North Service Rd

Cars	Trucks	Heavys	Totals
43	0	0	43
32	0	0	32
80	0	1	81
155	0	1	

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	43	43
0	0	12	12
3	0	42	45
3	0	97	

North Service Rd

Cars	Trucks	Heavys	Totals
110	0	0	110

Appleby Line

Peds Cross:	⧖			
West Peds:	0			
West Entering:	100			
West Leg Total:	201			
Cars	1304			
Trucks	6			
Heavys	13			
Totals	1323			
Cars	30	1148	63	1241
Trucks	0	4	0	4
Heavys	3	9	0	12
Totals	33	1161	63	
Peds Cross:	⋈			
South Peds:	0			
South Entering:	1257			
South Leg Total:	2580			

Comments

Appleby Line @ North Service Rd

Total Count Diagram

Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & North Service Rd
TFR File #: 2
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	18209
North Entering:	9346
North Peds:	6
Peds Cross:	⋈

Heavys	1	79	0	80
Trucks	0	42	0	42
Cars	227	8797	200	9224
Totals	228	8918	200	

Heavys	61
Trucks	40
Cars	8762
Totals	8863

East Leg Total:	1456
East Entering:	796
East Peds:	9
Peds Cross:	⧖

Appleby Line

Heavys	Trucks	Cars	Totals
14	6	712	732

Cars	Trucks	Heavys	Totals
240	0	2	242
150	0	0	150
399	1	4	404
789	1	6	

North Service Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	304	304
0	1	90	91
13	2	290	305
13	3	684	

North Service Rd

Cars	Trucks	Heavys	Totals
652	2	6	660

Appleby Line

Peds Cross:	⧖
West Peds:	11
West Entering:	700
West Leg Total:	1432

Cars	9486
Trucks	45
Heavys	96
Totals	9627

Cars	335	8218	362	8915
Trucks	6	40	1	47
Heavys	13	59	6	78
Totals	354	8317	369	

Peds Cross:	⋈
South Peds:	2
South Entering:	9040
South Leg Total:	18667

Comments

Appleby Line @ QEW EB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 13:45:00
To: 14:45:00

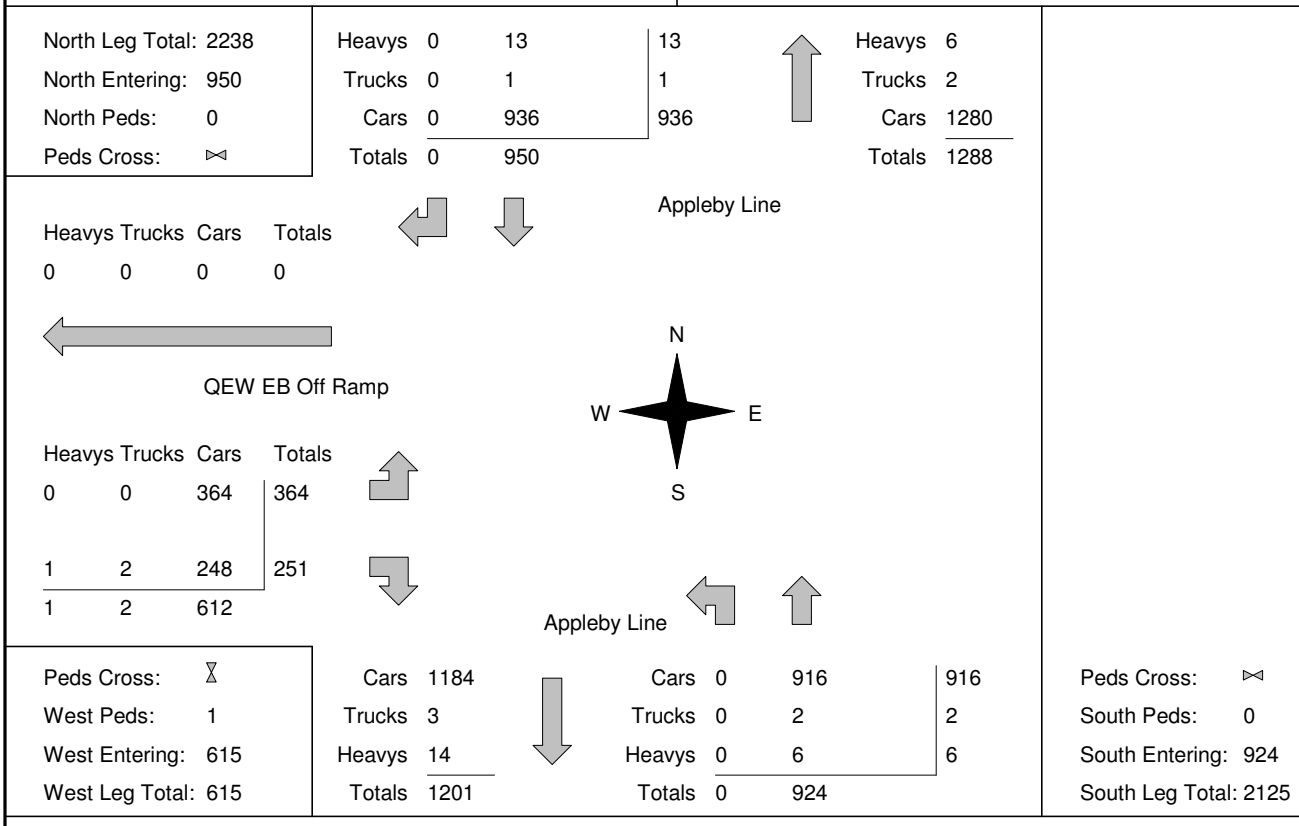
Municipality: Burlington
Site #: 0000000004
Intersection: Appleby Line & QEW EB Off Ramp
TFR File #: 4
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ QEW EB Off Ramp

Total Count Diagram

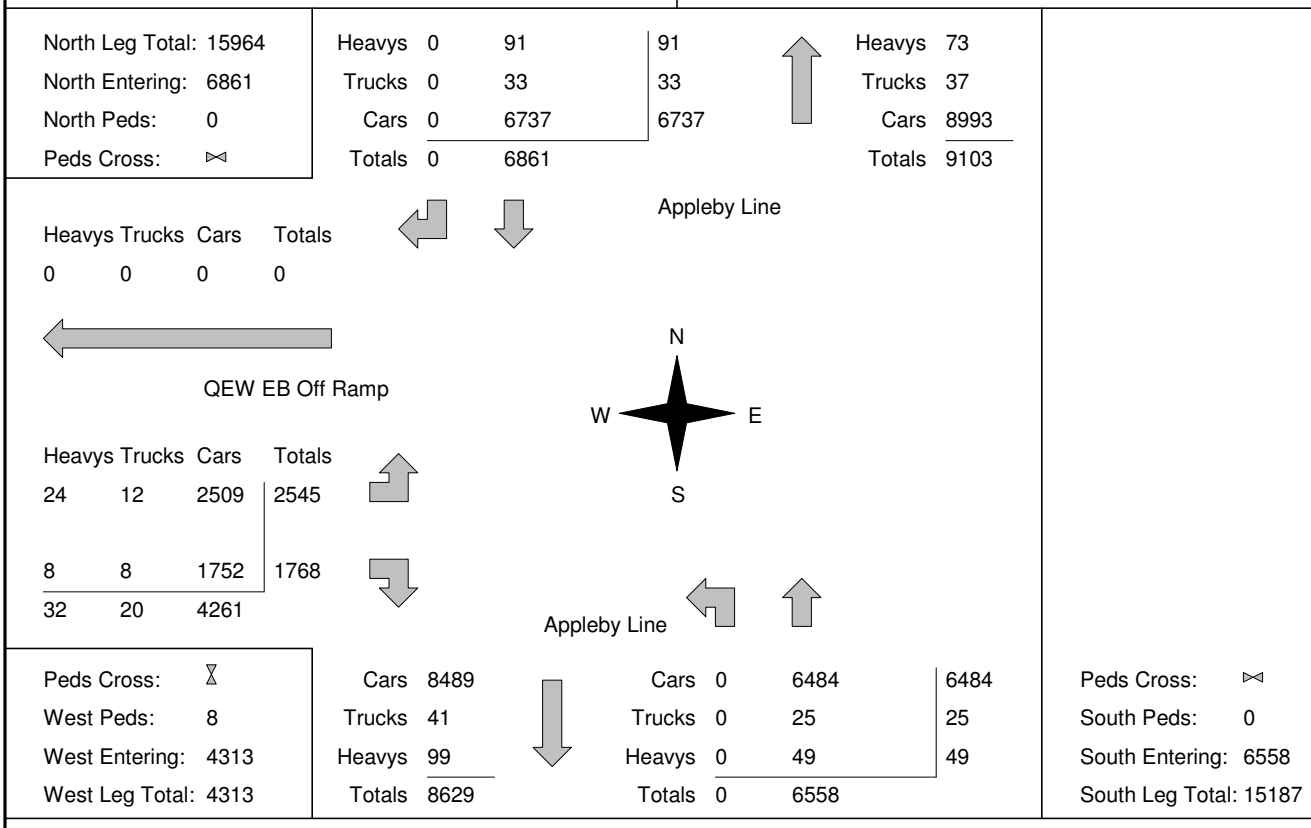
Municipality: Burlington
Site #: 0000000004
Intersection: Appleby Line & QEW EB Off Ramp
TFR File #: 4
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ QEW WB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 13:45:00
To: 14:45:00

Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & QEW WB Off Ramp
TFR File #: 3
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 2221
North Entering: 948
North Peds: 0
Peds Cross: ⋈

Heavys	5	0	5
Trucks	3	0	3
Cars	940	0	940
Totals	948	0	

Heavys	6
Trucks	2
Cars	1265
Totals	1273

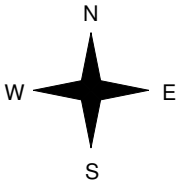
East Leg Total: 529
East Entering: 529
East Peds: 0
Peds Cross: ⋈



Appleby Line



Cars	Trucks	Heavys	Totals
206	1	3	210
311	1	7	319
517	2	10	



QEW WB Off Ramp



Cars	Trucks	Heavys	Totals
0	0	0	0



Appleby Line

Cars	1251		
Trucks	4		
Heavys	12		
Totals	1267		



Cars	1059	0	1059
Trucks	1	0	1
Heavys	3	0	3
Totals	1063	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 1063
South Leg Total: 2330

Comments

Appleby Line @ QEW WB Off Ramp

Total Count Diagram

Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & QEW WB Off Ramp
TFR File #: 3
Count date: 7-Sep-2024

Weather conditions:
Clear/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 15900
North Entering: 6759
North Peds: 0
Peds Cross: ⋈

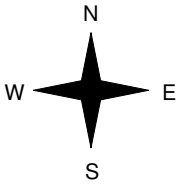
Heavys	74	0	74
Trucks	28	0	28
Cars	6657	0	6657
Totals	6759	0	

Heavys	83
Trucks	47
Cars	9011
Totals	9141

East Leg Total: 4127
East Entering: 4127
East Peds: 0
Peds Cross: ⋈

Appleby Line

	Cars	Trucks	Heavys	Totals
	1756	17	24	1797
	2277	21	32	2330
	4033	38	56	



QEW WB Off Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0

Appleby Line

Cars	8934		
Trucks	49		
Heavys	106		
Totals	9089		

Cars	7255	0	7255
Trucks	30	0	30
Heavys	59	0	59
Totals	7344	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 7344
South Leg Total: 16433

Comments

Appleby Line @ Corporate Dr

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 14:00:00
To: 15:00:00

Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & Corporate Dr
TFR File #: 2
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	2565			
North Entering:	1250			
North Peds:	8			
Peds Cross:	⋈			
Heavys	0	5	0	5
Trucks	0	2	0	2
Cars	15	1159	69	1243
Totals	15	1166	69	
Heavys	6			
Trucks	5			
Cars	1304			
Totals	1315			
East Leg Total:	357			
East Entering:	182			
East Peds:	5			
Peds Cross:	⧖			

Appleby Line

Heavys	Trucks	Cars	Totals
0	0	55	55

Corporate Dr

Cars	Trucks	Heavys	Totals
77	0	0	77
13	0	0	13
90	2	0	92
180	2	0	

N
W E
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Heavys	Trucks	Cars	Totals
0	0	35	35
0	0	15	15
0	1	31	32
0	1	81	

Corporate Dr

Cars	Trucks	Heavys	Totals
175	0	0	175

Appleby Line

Peds Cross:	⧖			
West Peds:	6			
West Entering:	82			
West Leg Total:	137			
Cars	1280			
Trucks	5			
Heavys	5			
Totals	1290			
Cars	27	1192	91	1310
Trucks	0	5	0	5
Heavys	0	6	0	6
Totals	27	1203	91	
Peds Cross:	⋈			
South Peds:	2			
South Entering:	1321			
South Leg Total:	2611			

Comments

Appleby Line @ Corporate Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000002
Intersection: Appleby Line & Corporate Dr
TFR File #: 2
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	19388			
North Entering:	9414			
North Peds:	32			
Peds Cross:	⋈			
Heavys	0	34	0	34
Trucks	0	39	8	47
Cars	102	8746	485	9333
Totals	102	8819	493	
Heavys	40			
Trucks	52			
Cars	9882			
Totals	9974			
East Leg Total:	2459			
East Entering:	1284			
East Peds:	36			
Peds Cross:	⧖			

Appleby Line

Heavys	Trucks	Cars	Totals
0	5	384	389

Corporate Dr

Cars	Trucks	Heavys	Totals
562	4	0	566
79	2	0	81
631	6	0	637
1272	12	0	

N
W E
S

Heavys	Trucks	Cars	Totals
1	4	241	246
0	0	75	75
2	6	194	202
3	10	510	

Corporate Dr

Cars	Trucks	Heavys	Totals
1164	11	0	1175

Appleby Line

Peds Cross:	⧖			
West Peds:	62			
West Entering:	523			
West Leg Total:	912			
Cars	9571			
Trucks	51			
Heavys	36			
Totals	9658			
Cars	203	9079	604	9886
Trucks	3	44	3	50
Heavys	0	39	0	39
Totals	206	9162	607	
Peds Cross:	⋈			
South Peds:	34			
South Entering:	9975			
South Leg Total:	19633			

Comments

Appleby Line @ Mainway

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & Mainway
TFR File #: 3
Count date: 16-Nov-2024

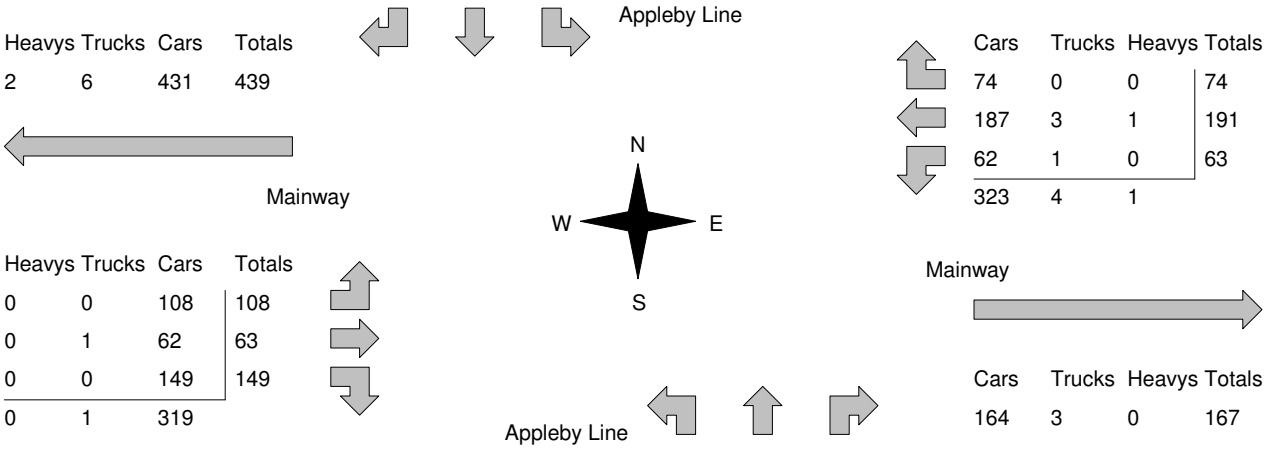
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	2503			
North Entering:	1212			
North Peds:	1			
Peds Cross:	⋈			
Heavys	1	4	0	5
Trucks	3	6	1	10
Cars	81	1059	57	1197
Totals	85	1069	58	
Heavys	5			
Trucks	3			
Cars	1283			
Totals	1291			
East Leg Total:	495			
East Entering:	328			
East Peds:	1			
Peds Cross:	⧖			



Peds Cross:	⧖			
West Peds:	2			
West Entering:	320			
West Leg Total:	759			
Cars	1270			
Trucks	7			
Heavys	4			
Totals	1281			
Cars	163	1101	45	1309
Trucks	0	3	1	4
Heavys	0	5	0	5
Totals	163	1109	46	
Peds Cross:	⋈			
South Peds:	1			
South Entering:	1318			
South Leg Total:	2599			

Comments

Appleby Line @ Mainway

Total Count Diagram

Municipality: Burlington
Site #: 0000000003
Intersection: Appleby Line & Mainway
TFR File #: 3
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	18917			
North Entering:	8985			
North Peds:	29			
Peds Cross:	⋈			
Heavys	1	42	1	44
Trucks	10	35	5	50
Cars	634	7895	362	8891
Totals	645	7972	368	
Heavys	50			
Trucks	44			
Cars	9838			
Totals	9932			
East Leg Total:	2618			
East Entering:	1579			
East Peds:	27			
Peds Cross:	⧖			

Appleby Line

Heavys	Trucks	Cars	Totals
15	22	2352	2389

Cars	Trucks	Heavys	Totals
487	6	0	493
682	6	10	698
382	5	1	388
1551	17	11	

Mainway

N
W E
S

Heavys	Trucks	Cars	Totals
2	9	819	830
0	2	354	356
2	3	978	983
4	14	2151	

Mainway

Cars	Trucks	Heavys	Totals
1024	9	6	1039

Appleby Line

Peds Cross:	⧖			
West Peds:	19			
West Entering:	2169			
West Leg Total:	4558			
Cars	9255			
Trucks	43			
Heavys	45			
Totals	9343			
Cars	1036	8532	308	9876
Trucks	6	29	2	37
Heavys	4	48	5	57
Totals	1046	8609	315	
Peds Cross:	⋈			
South Peds:	11			
South Entering:	9970			
South Leg Total:	19313			

Comments

Appleby Line @ Upper Middle Rd

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Upper Middle Rd
TFR File #: 1
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 2834
North Entering: 1253
North Peds: 11
Peds Cross: ⋈

Heavys	0	3	1	4
Trucks	1	4	1	6
Cars	188	852	203	1243
Totals	189	859	205	

Heavys	8
Trucks	5
Cars	1568
Totals	1581

East Leg Total: 1438
East Entering: 933
East Peds: 7
Peds Cross: ⋈

Appleby Line

Heavys	Trucks	Cars	Totals
1	3	822	826

Upper Middle Rd

Cars	Trucks	Heavys	Totals
359	1	0	360
405	2	1	408
163	0	2	165
927	3	3	

N
W E
S

Heavys	Trucks	Cars	Totals
4	2	197	203
0	0	204	204
0	2	244	246
4	4	645	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
501	1	3	505

Appleby Line

Peds Cross: ⋈
West Peds: 10
West Entering: 653
West Leg Total: 1479

Cars	1259
Trucks	6
Heavys	5
Totals	1270

Cars	229	1012	94	1335
Trucks	0	2	0	2
Heavys	0	4	2	6
Totals	229	1018	96	

Peds Cross: ⋈
South Peds: 9
South Entering: 1343
South Leg Total: 2613

Comments

Appleby Line @ Upper Middle Rd

Total Count Diagram

Municipality: Burlington
Site #: 0000000001
Intersection: Appleby Line & Upper Middle Rd
TFR File #: 1
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total:	20439			
North Entering:	9212			
North Peds:	86			
Peds Cross:	⋈			
Heavys	1	17	1	19
Trucks	5	32	4	41
Cars	1150	6595	1407	9152
Totals	1156	6644	1412	
Heavys	54			
Trucks	35			
Cars	11138			
Totals	11227			
East Leg Total:	9666			
East Entering:	5851			
East Peds:	58			
Peds Cross:	⧖			

Appleby Line

Heavys	Trucks	Cars	Totals
5	18	5048	5071

Upper Middle Rd

Heavys	Trucks	Cars	Totals
16	4	1434	1454
0	5	1593	1598
2	8	1647	1657
18	17	4674	

Cars	Trucks	Heavys	Totals
2332	7	5	2344
2339	9	2	2350
1137	5	15	1157
5808	21	22	

N
W E
S

Upper Middle Rd

Cars	Trucks	Heavys	Totals
3780	17	18	3815

Appleby Line

Peds Cross:	⧖			
West Peds:	103			
West Entering:	4709			
West Leg Total:	9780			
Cars	9379			
Trucks	45			
Heavys	34			
Totals	9458			
Cars	1559	7372	780	9711
Trucks	4	24	8	36
Heavys	2	33	17	52
Totals	1565	7429	805	
Peds Cross:	⋈			
South Peds:	53			
South Entering:	9799			
South Leg Total:	19257			

Comments

Burloak Dr @ Bronte Creek Park

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000013
Intersection: Burloak Dr & Bronte Creek Park Acc
TFR File #: 13
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 1321
North Entering: 467
North Peds: 0
Peds Cross: ⋈

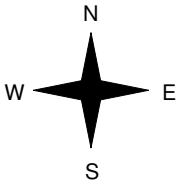
Heavys	1	0	1
Trucks	1	0	1
Cars	454	11	465
Totals	456	11	

Heavys	2	
Trucks	1	
Cars	851	
Totals	854	

East Leg Total: 113
East Entering: 65
East Peds: 1
Peds Cross: ⋈

Burloak Dr

Cars	Trucks	Heavys	Totals
29	0	0	29
36	0	0	36
65	0	0	



Bronte Creek Park Access

Cars	Trucks	Heavys	Totals
48	0	0	48

Burloak Dr

Cars	490		
Trucks	1		
Heavys	1		
Totals	492		

Cars	822	37	859
Trucks	1	0	1
Heavys	2	0	2
Totals	825	37	

Peds Cross: ⋈
South Peds: 0
South Entering: 862
South Leg Total: 1354

Comments

Burloak Dr @ Bronte Creek Park

Total Count Diagram

Municipality: Burlington
Site #: 0000000013
Intersection: Burloak Dr & Bronte Creek Park Acc
TFR File #: 13
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Burloak Dr runs N/S

North Leg Total: 8660
North Entering: 3368
North Peds: 3
Peds Cross: ⋈

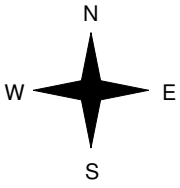
Heavys	1	0	1
Trucks	8	0	8
Cars	3239	120	3359
Totals	3248	120	

Heavys	7
Trucks	16
Cars	5269
Totals	5292

East Leg Total: 764
East Entering: 421
East Peds: 20
Peds Cross: ⋈



	Cars	Trucks	Heavys	Totals
	160	0	0	160
	261	0	0	261
	421	0	0	



Bronte Creek Park Access

	Cars	Trucks	Heavys	Totals
	343	0	0	343



Cars	3500		
Trucks	8		
Heavys	1		
Totals	3509		

Cars	5109	223	5332
Trucks	16	0	16
Heavys	7	0	7
Totals	5132	223	

Peds Cross: ⋈
South Peds: 4
South Entering: 5355
South Leg Total: 8864

Comments

Burloak Dr @ Mainway

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

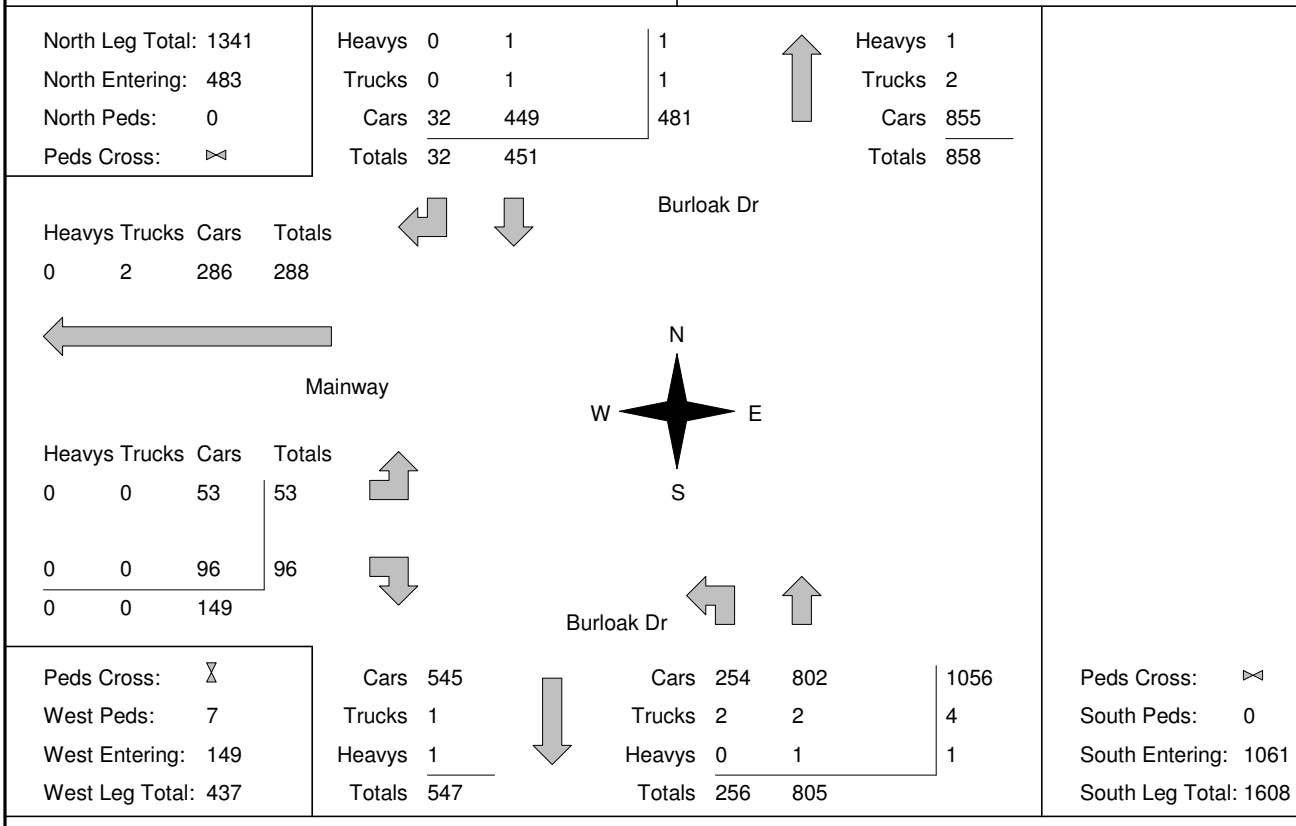
Municipality: Burlington
Site #: 0000000014
Intersection: Burloak Dr & Mainway
TFR File #: 14
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ Mainway

Total Count Diagram

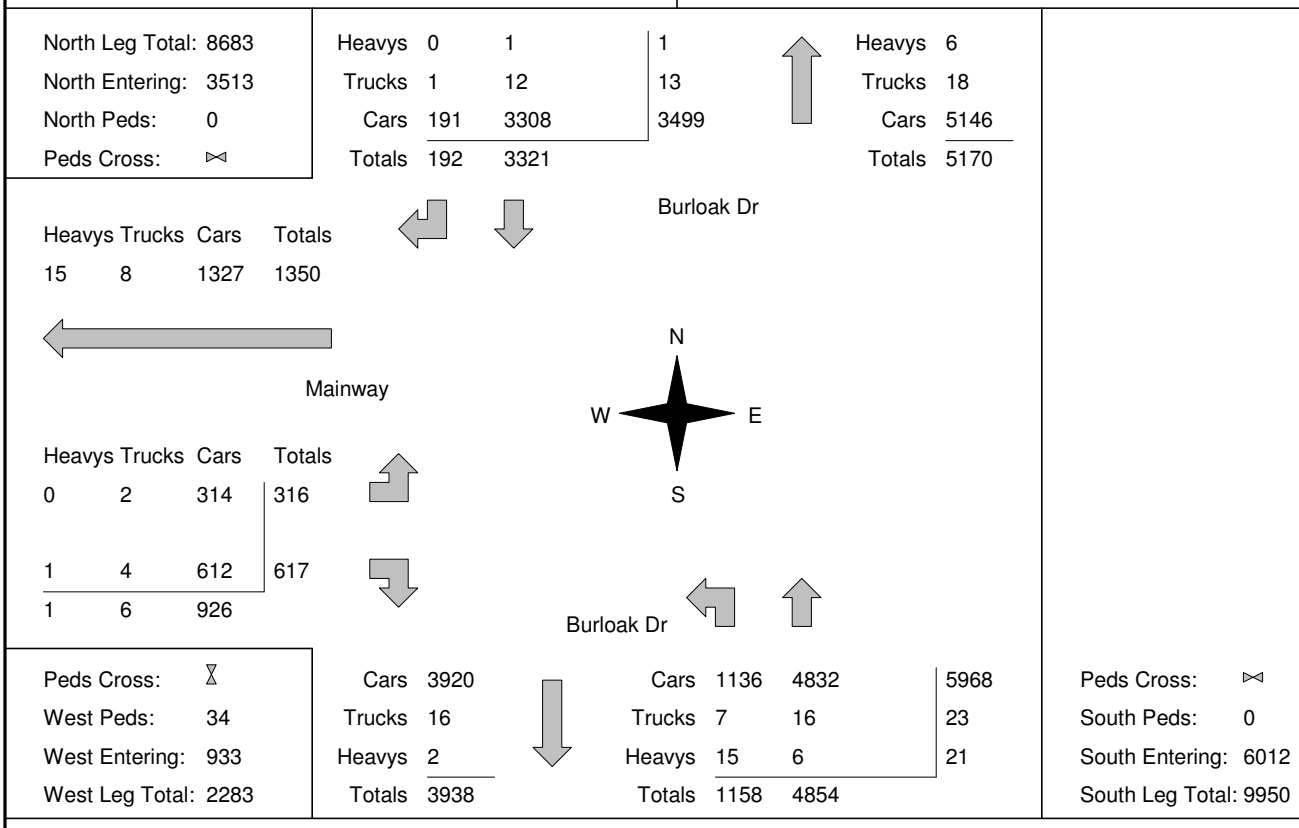
Municipality: Burlington
Site #: 0000000014
Intersection: Burloak Dr & Mainway
TFR File #: 14
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ North Service Rd

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

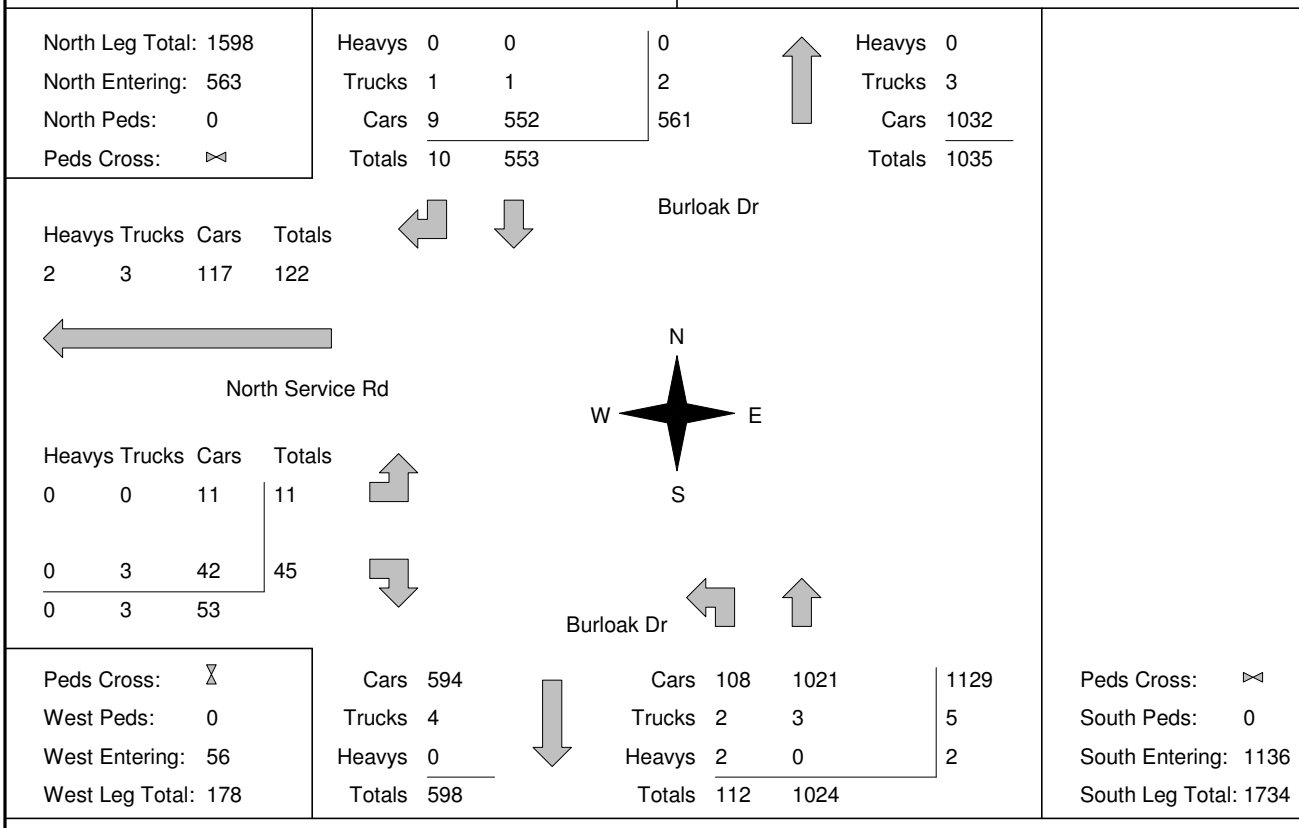
Municipality: Burlington
Site #: 0000000015
Intersection: Burloak Dr & North Service Rd
TFR File #: 15
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ North Service Rd

Total Count Diagram

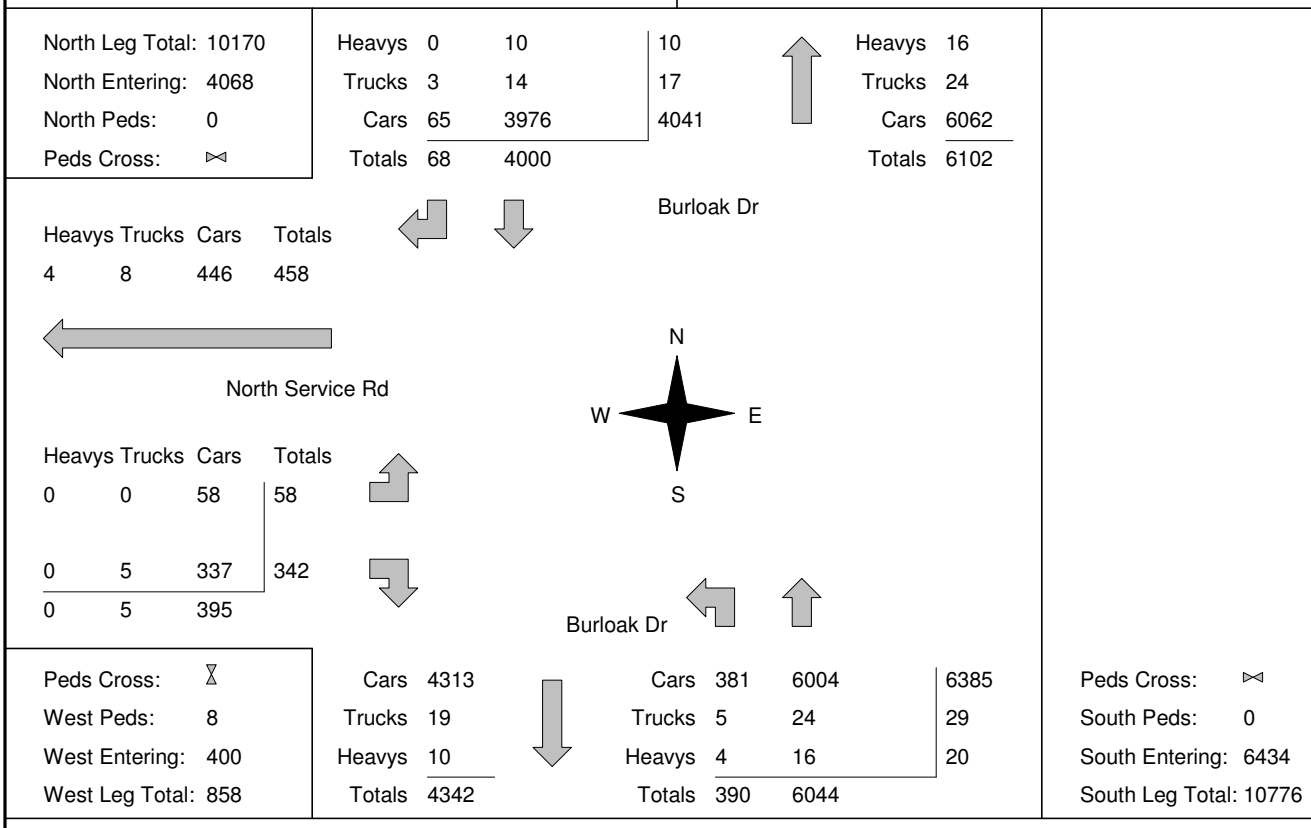
Municipality: Burlington
Site #: 0000000015
Intersection: Burloak Dr & North Service Rd
TFR File #: 15
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ QEW EB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 12:00:00
To: 13:00:00

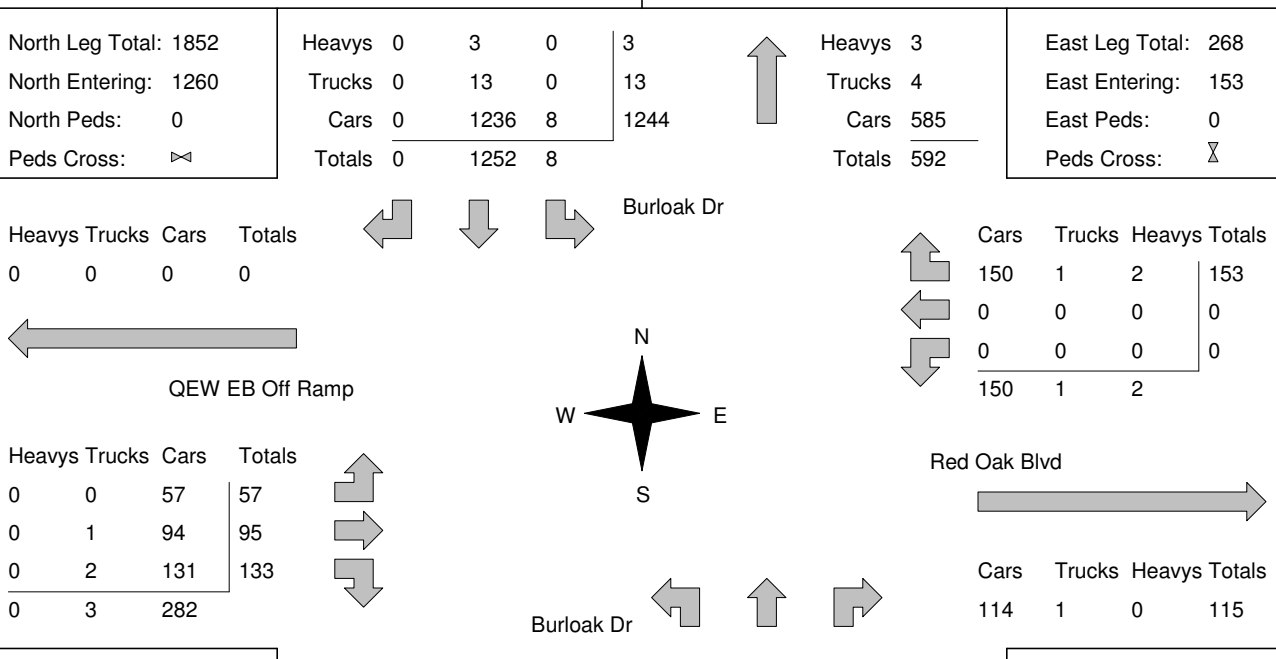
Municipality: Burlington
Site #: 0000000017
Intersection: Burloak Dr & QEW EB Off Ramp
TFR File #: 17
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ QEW EB Off Ramp

Total Count Diagram

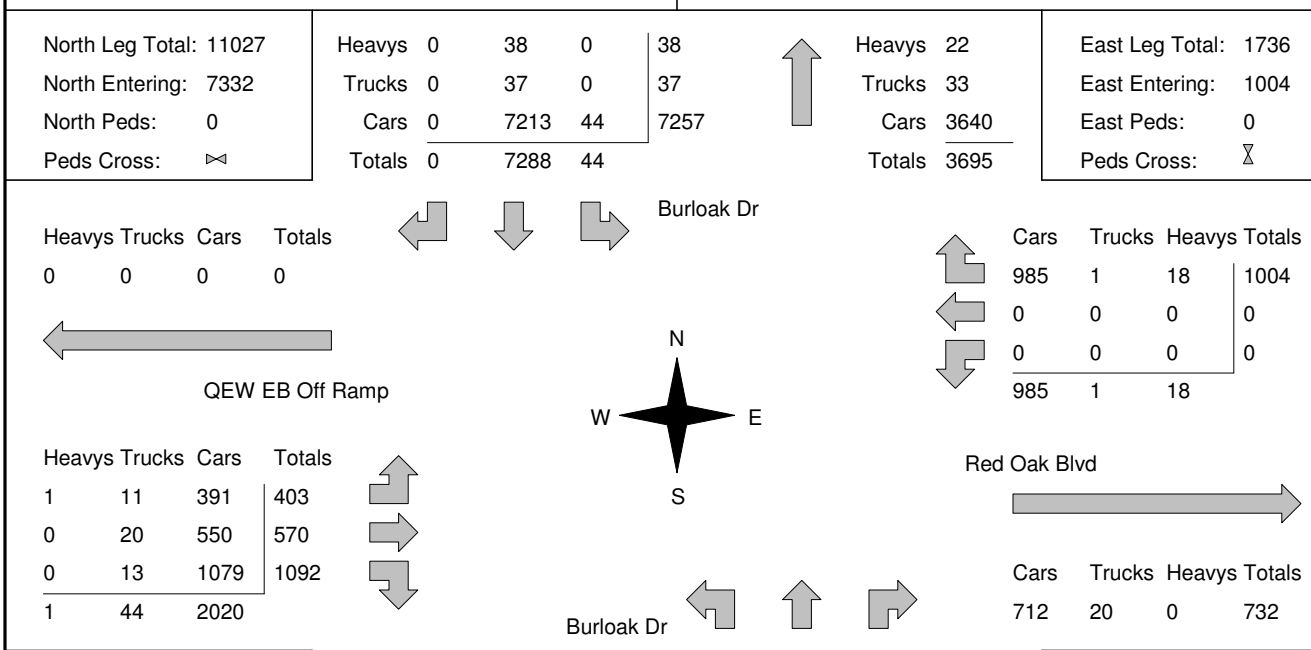
Municipality: Burlington
Site #: 0000000017
Intersection: Burloak Dr & QEW EB Off Ramp
TFR File #: 17
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Burloak Dr runs N/S



Comments

Burloak Dr @ QEW WB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000016
Intersection: Burloak Dr & QEW WB Off Ramp
TFR File #: 16
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

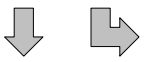
Major Road: Burloak Dr runs N/S

North Leg Total: 1724
North Entering: 579
North Peds: 0
Peds Cross: ⋈

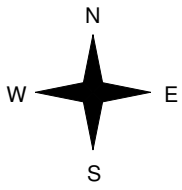
Heavys	2	0	2
Trucks	2	0	2
Cars	575	0	575
Totals	579	0	

Heavys	4
Trucks	3
Cars	1138
Totals	1145

East Leg Total: 1762
East Entering: 1762
East Peds: 0
Peds Cross: ⋈



	Cars	Trucks	Heavys	Totals
	715	3	2	720
	1025	10	7	1042
	1740	13	9	



QEW WB Off Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0



Cars	1600
Trucks	12
Heavys	9
Totals	1621

Cars	423	0	423
Trucks	0	0	0
Heavys	2	0	2
Totals	425	0	

Peds Cross: ⋈
South Peds: 1
South Entering: 425
South Leg Total: 2046

Comments

Burloak Dr @ QEW WB Off Ramp

Total Count Diagram

Municipality: Burlington
Site #: 0000000016
Intersection: Burloak Dr & QEW WB Off Ramp
TFR File #: 16
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

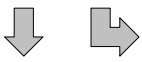
Major Road: Burloak Dr runs N/S

North Leg Total: 10750
North Entering: 4120
North Peds: 0
Peds Cross: ⋈

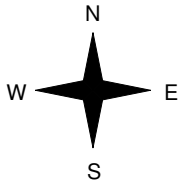
Heavys	10	0	10
Trucks	11	0	11
Cars	4099	0	4099
Totals	4120	0	

Heavys	27
Trucks	22
Cars	6581
Totals	6630

East Leg Total: 9182
East Entering: 9182
East Peds: 0
Peds Cross: ⋈



Cars	Trucks	Heavys	Totals
3818	16	16	3850
5263	33	36	5332
9081	49	52	



QEW WB Off Ramp

Cars	Trucks	Heavys	Totals
0	0	0	0

Burloak Dr

Cars	9362
Trucks	44
Heavys	46
Totals	9452

Cars	2763	0	2763
Trucks	6	0	6
Heavys	11	0	11
Totals	2780	0	

Peds Cross: ⋈
South Peds: 3
South Entering: 2780
South Leg Total: 12232

Comments

Mainway @ Sutton Dr

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000005
Intersection: Mainway & Sutton Dr
TFR File #: 5
Count date: 16-Nov-2024

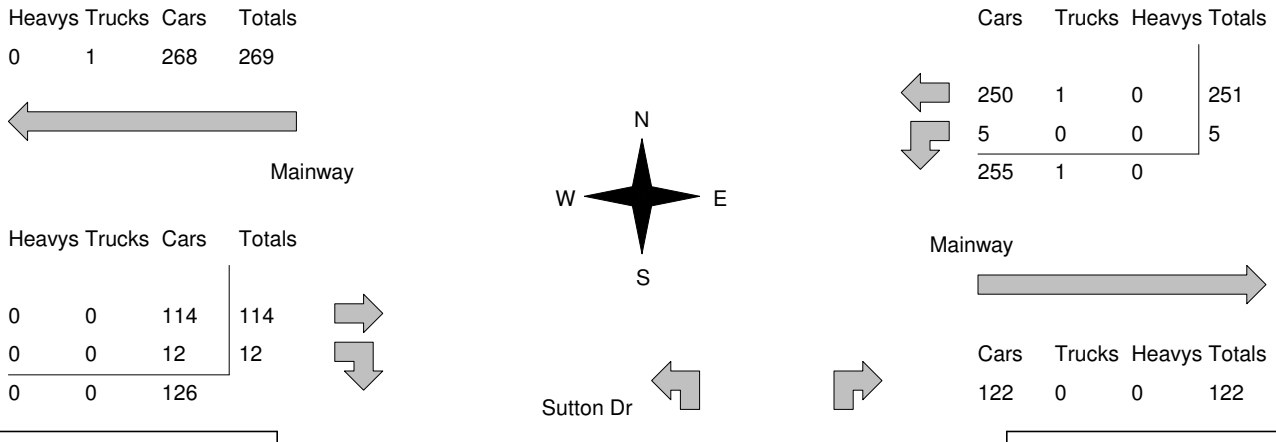
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E

East Leg Total: 378
East Entering: 256
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 126
West Leg Total: 395

Cars 17
Trucks 0
Heavys 0
Totals 17

Cars 18 8 26
Trucks 0 0 0
Heavys 0 0 0
Totals 18 8

Peds Cross: ⋈
South Peds: 3
South Entering: 26
South Leg Total: 43

Comments

Mainway @ Sutton Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000005
Intersection: Mainway & Sutton Dr
TFR File #: 5
Count date: 16-Nov-2024

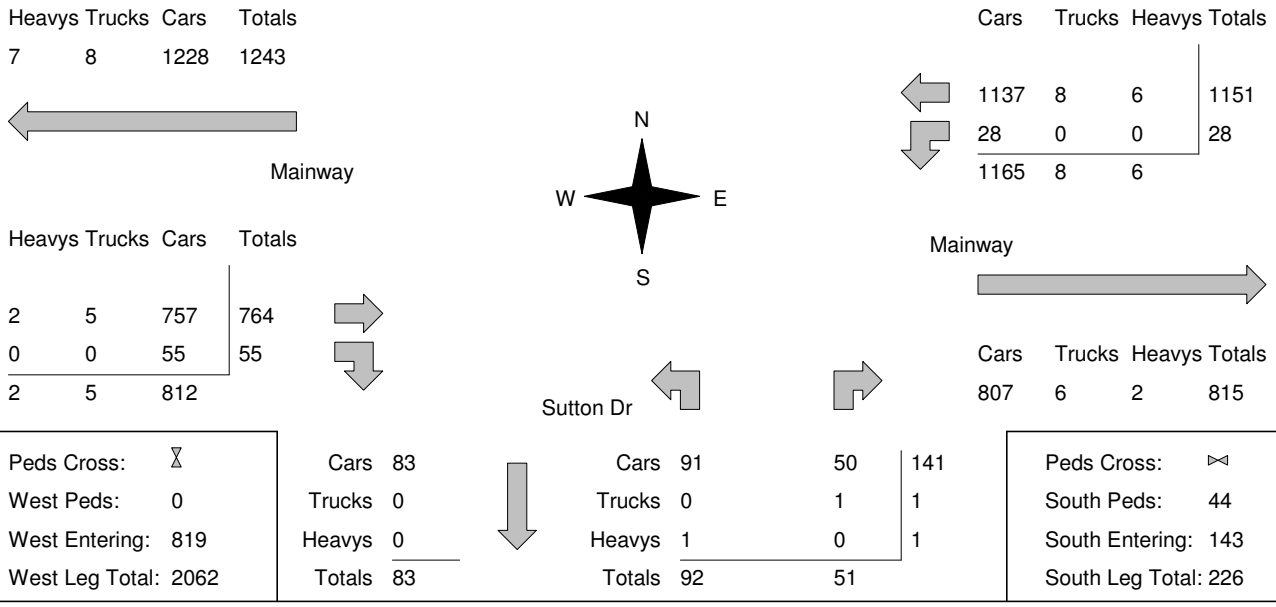
Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Mainway runs W/E

East Leg Total: 1994
East Entering: 1179
East Peds: 0
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 0
West Entering: 819
West Leg Total: 2062

Peds Cross: ⋈
South Peds: 44
South Entering: 143
South Leg Total: 226

Comments

Upper Middle Rd @ Baker Dr

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000010
Intersection: Upper Middle Rd & Baker Dr
TFR File #: 10
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 94
North Entering: 45
North Peds: 9
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	45	0	45
Totals	45	0	

Heavys	0
Trucks	0
Cars	49
Totals	49

East Leg Total: 1271
East Entering: 832
East Peds: 1
Peds Cross: ⧖

Baker Dr

Heavys	Trucks	Cars	Totals
1	3	860	864

Cars	Trucks	Heavys	Totals
13	0	0	13
815	3	1	819
828	3	1	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	36	36
1	0	438	439
1	0	474	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
438	0	1	439

Peds Cross: ⧖
West Peds: 0
West Entering: 475
West Leg Total: 1339

Comments

Upper Middle Rd @ Baker Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000010
Intersection: Upper Middle Rd & Baker Dr
TFR File #: 10
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

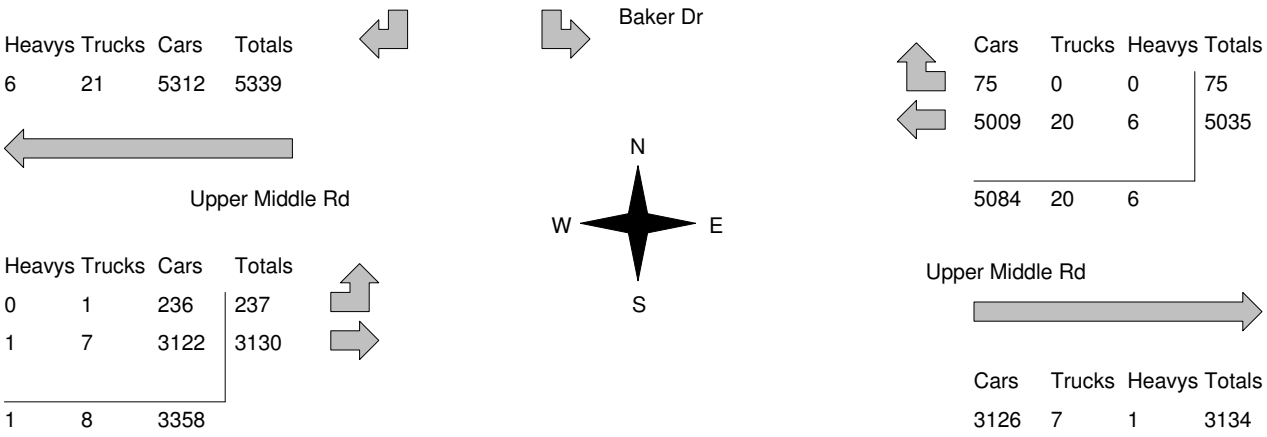
Major Road: Upper Middle Rd runs W/E

North Leg Total: 620
North Entering: 308
North Peds: 69
Peds Cross: ⋈

Heavys	0	0	0
Trucks	1	0	1
Cars	303	4	307
Totals	304	4	

Heavys	0
Trucks	1
Cars	311
Totals	312

East Leg Total: 8244
East Entering: 5110
East Peds: 1
Peds Cross: ⧖



Peds Cross: ⧖
West Peds: 1
West Entering: 3367
West Leg Total: 8706

Comments

Upper Middle Rd @ Blue Spruce Ave

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000012
Intersection: Upper Middle Rd & Blue Spruce Ave
TFR File #: 12
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 148
North Entering: 66
North Peds: 7
Peds Cross: ⋈

Heavys	0	0	0
Trucks	1	0	1
Cars	22	43	65
Totals	23	43	

Heavys	0
Trucks	0
Cars	82
Totals	82

East Leg Total: 1324
East Entering: 861
East Peds: 0
Peds Cross: ⧖

Blue Spruce Ave

Heavys	Trucks	Cars	Totals
2	2	823	827

Upper Middle Rd

Heavys	Trucks	Cars	Totals
0	0	25	25
1	1	418	420
1	1	443	

N
W E
S

Cars	Trucks	Heavys	Totals
57	0	0	57
801	1	2	804
858	1	2	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
461	1	1	463

Peds Cross: ⧖
West Peds: 0
West Entering: 445
West Leg Total: 1272

Comments

Upper Middle Rd @ Blue Spruce Ave

Total Count Diagram

Municipality: Burlington
Site #: 0000000012
Intersection: Upper Middle Rd & Blue Spruce Ave
TFR File #: 12
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 1207
North Entering: 612
North Peds: 65
Peds Cross: ⋈

Heavys	0	0	0
Trucks	2	2	4
Cars	195	413	608
Totals	197	415	

Heavys	0
Trucks	1
Cars	594
Totals	595

East Leg Total: 8712
East Entering: 5320
East Peds: 3
Peds Cross: ⧖

Blue Spruce Ave

Heavys	Trucks	Cars	Totals
7	15	5075	5097

Upper Middle Rd

Heavys	Trucks	Cars	Totals
0	0	175	175
2	8	2967	2977
2	8	3142	

N
W E
S

Cars	Trucks	Heavys	Totals
419	1	0	420
4880	13	7	4900
5299	14	7	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
3380	10	2	3392

Peds Cross: ⧖
West Peds: 1
West Entering: 3152
West Leg Total: 8249

Comments

Upper Middle Rd @ Deer Pl

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000011
Intersection: Upper Middle Rd & Deer Pl
TFR File #: 11
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 24
North Entering: 18
North Peds: 6
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	9	9	18
Totals	9	9	

Heavys	0
Trucks	0
Cars	6
Totals	6

East Leg Total: 1274
East Entering: 826
East Peds: 0
Peds Cross: ⧖

Deer Pl

Heavys	Trucks	Cars	Totals
1	3	829	833

Cars	Trucks	Heavys	Totals
2	0	0	2
820	3	1	824
822	3	1	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	4	4
1	1	437	439
1	1	441	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
446	1	1	448

Peds Cross: ⧖
West Peds: 0
West Entering: 443
West Leg Total: 1276

Comments

Upper Middle Rd @ Deer Pl

Total Count Diagram

Municipality: Burlington
Site #: 0000000011
Intersection: Upper Middle Rd & Deer Pl
TFR File #: 11
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total:	169		
North Entering:	101		
North Peds:	57		
Peds Cross:	⋈		

Heavys	0	0	0
Trucks	1	0	1
Cars	46	54	100
Totals	47	54	

Heavys	0
Trucks	0
Cars	68
Totals	68

East Leg Total:	8251
East Entering:	5104
East Peds:	1
Peds Cross:	⧖

Deer Pl

Heavys	Trucks	Cars	Totals
6	20	5102	5128

Cars	Trucks	Heavys	Totals
23	0	0	23
5056	19	6	5081
5079	19	6	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	0	45	45
1	6	3086	3093
1	6	3131	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
3140	6	1	3147

Peds Cross:	⧖
West Peds:	0
West Entering:	3138
West Leg Total:	8266

Comments

Upper Middle Rd @ Quinte St

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000008
Intersection: Upper Middle Rd & Quinte St
TFR File #: 8
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 231
North Entering: 104
North Peds: 18
Peds Cross: ⋈

Heavys	0	0	0
Trucks	0	0	0
Cars	67	37	104
Totals	67	37	

Heavys	0
Trucks	1
Cars	126
Totals	127

East Leg Total: 1264
East Entering: 832
East Peds: 1
Peds Cross: ⧖

Quinte St

Heavys	Trucks	Cars	Totals
3	3	847	853

Cars	Trucks	Heavys	Totals
46	0	0	46
780	3	3	786
826	3	3	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	1	80	81
3	2	390	395
3	3	470	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
427	2	3	432

Peds Cross: ⧖
West Peds: 0
West Entering: 476
West Leg Total: 1329

Comments

Upper Middle Rd @ Quinte St

Total Count Diagram

Municipality: Burlington
Site #: 0000000008
Intersection: Upper Middle Rd & Quinte St
TFR File #: 8
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Non-Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 1796
North Entering: 868
North Peds: 83
Peds Cross: ⋈

Heavys	0	0	0
Trucks	2	1	3
Cars	578	287	865
Totals	580	288	

Heavys	0
Trucks	4
Cars	924
Totals	928

East Leg Total: 8404
East Entering: 5181
East Peds: 4
Peds Cross: ⧖

Quinte St

Heavys	Trucks	Cars	Totals
21	22	5382	5425

Cars	Trucks	Heavys	Totals
335	1	0	336
4804	20	21	4845
5139	21	21	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
0	3	589	592
17	15	2903	2935
17	18	3492	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
3190	16	17	3223

Peds Cross: ⧖
West Peds: 0
West Entering: 3527
West Leg Total: 8952

Comments

Upper Middle Rd @ Sutton Dr

Mid-day Peak Diagram

Specified Period
From: 10:00:00
To: 18:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Burlington
Site #: 0000000009
Intersection: Upper Middle Rd & Sutton Dr
TFR File #: 9
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total: 506
North Entering: 260
North Peds: 12
Peds Cross: ⋈

Heavys	2	0	2
Trucks	1	0	1
Cars	113	144	257
Totals	116	144	

Heavys	3
Trucks	0
Cars	243
Totals	246

East Leg Total: 1332
East Entering: 869
East Peds: 0
Peds Cross: ⧖

Heavys	Trucks	Cars	Totals
4	3	826	833

Upper Middle Rd

Sutton Dr

Cars	Trucks	Heavys	Totals
151	0	1	152
713	2	2	717
864	2	3	

N
W E
S

Heavys	Trucks	Cars	Totals
2	0	92	94
1	2	316	319
3	2	408	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
460	2	1	463

Peds Cross: ⧖
West Peds: 0
West Entering: 413
West Leg Total: 1246

Comments

Upper Middle Rd @ Sutton Dr

Total Count Diagram

Municipality: Burlington
Site #: 0000000009
Intersection: Upper Middle Rd & Sutton Dr
TFR File #: 9
Count date: 16-Nov-2024

Weather conditions:
Cloudy/Dry

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Upper Middle Rd runs W/E

North Leg Total:	3724		
North Entering:	1828		
North Peds:	69		
Peds Cross:	⋈		

Heavys	15	0	15
Trucks	7	1	8
Cars	833	972	1805
Totals	855	973	

Heavys	16
Trucks	14
Cars	1866
Totals	1896

East Leg Total:	8692
East Entering:	5342
East Peds:	3
Peds Cross:	⋈

Sutton Dr

Heavys	Trucks	Cars	Totals
21	23	5100	5144

Cars	Trucks	Heavys	Totals
1044	8	1	1053
4267	16	6	4289
5311	24	7	

Upper Middle Rd

N
W E
S

Heavys	Trucks	Cars	Totals
15	6	822	843
1	8	2368	2377
16	14	3190	

Upper Middle Rd

Cars	Trucks	Heavys	Totals
3340	9	1	3350

Peds Cross:	⋈
West Peds:	6
West Entering:	3220
West Leg Total:	8364

Comments

Appleby Line @ QEW EB Off Ramp

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

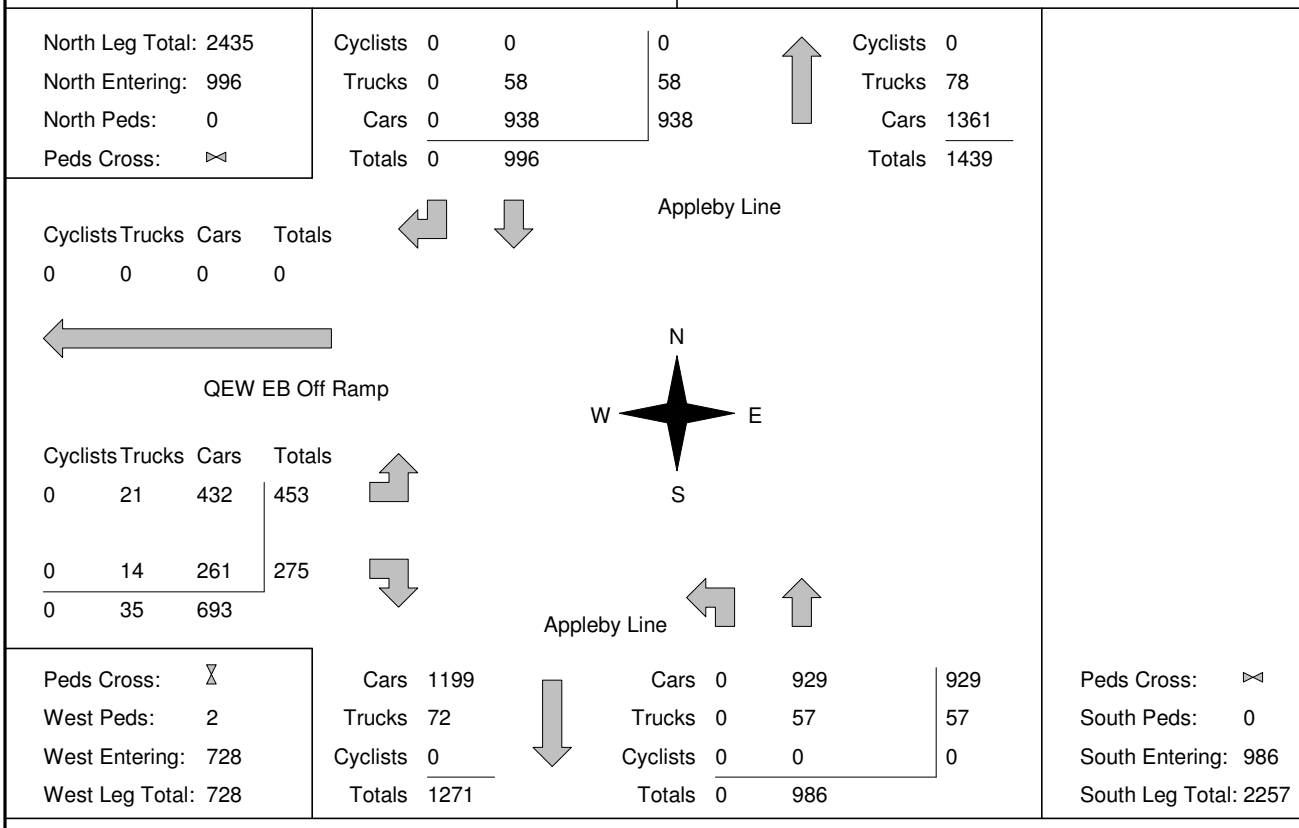
Municipality: Halton Region
Site #: 1024610100
Intersection: Appleby Line & QEW EB Off Ramp
TFR File #: 5
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ QEW EB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:30:00
To: 13:30:00

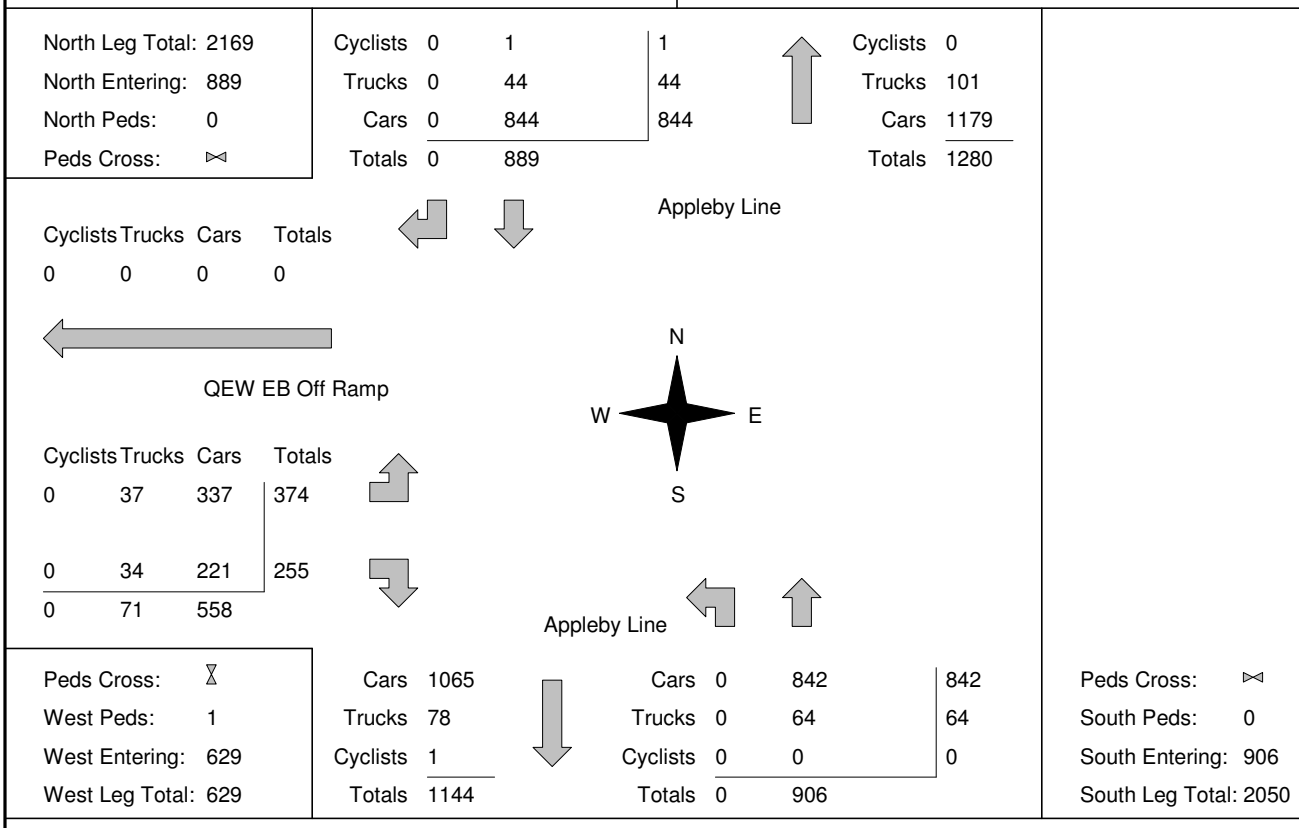
Municipality: Halton Region
Site #: 1024610100
Intersection: Appleby Line & QEW EB Off Ramp
TFR File #: 5
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ QEW EB Off Ramp

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:00:00
To: 17:00:00

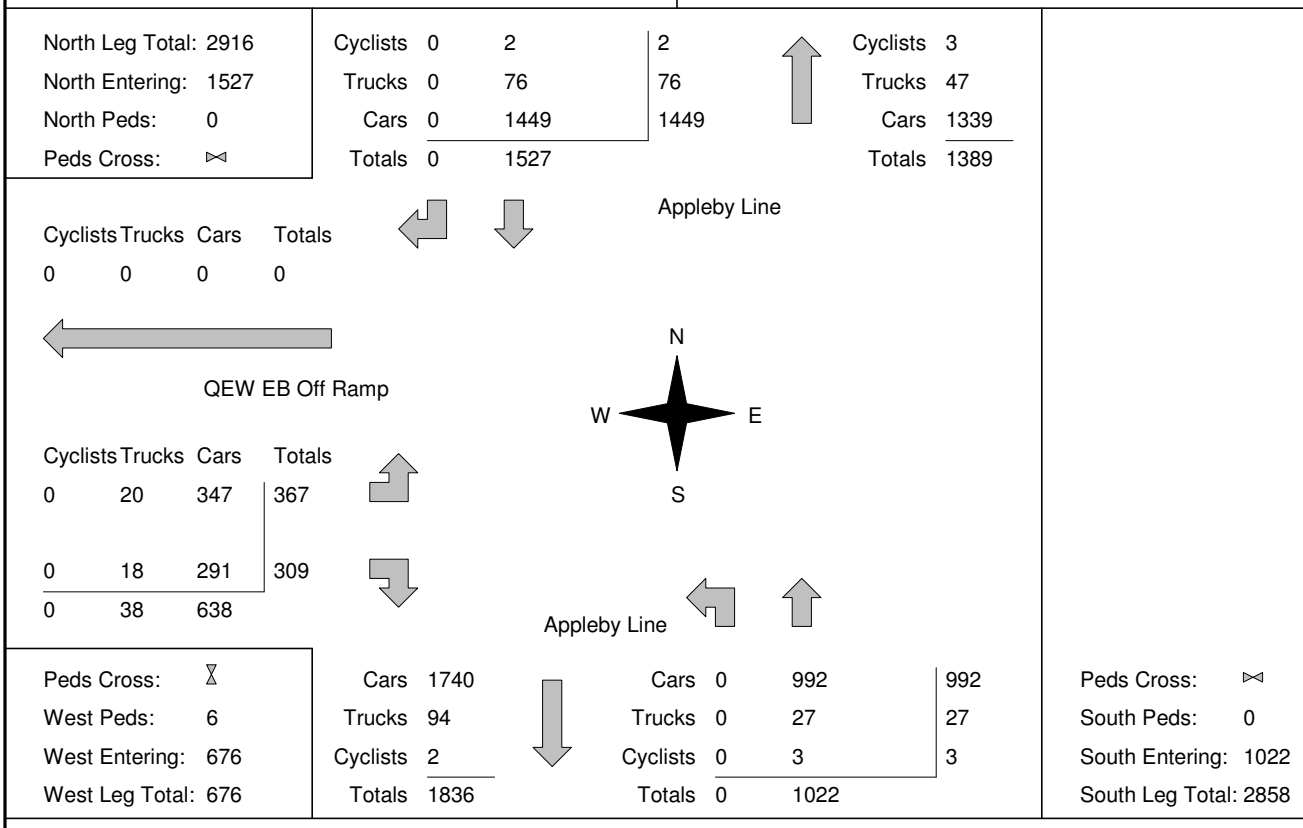
Municipality: Halton Region
Site #: 1024610100
Intersection: Appleby Line & QEW EB Off Ramp
TFR File #: 5
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ QEW EB Off Ramp

Total Count Diagram

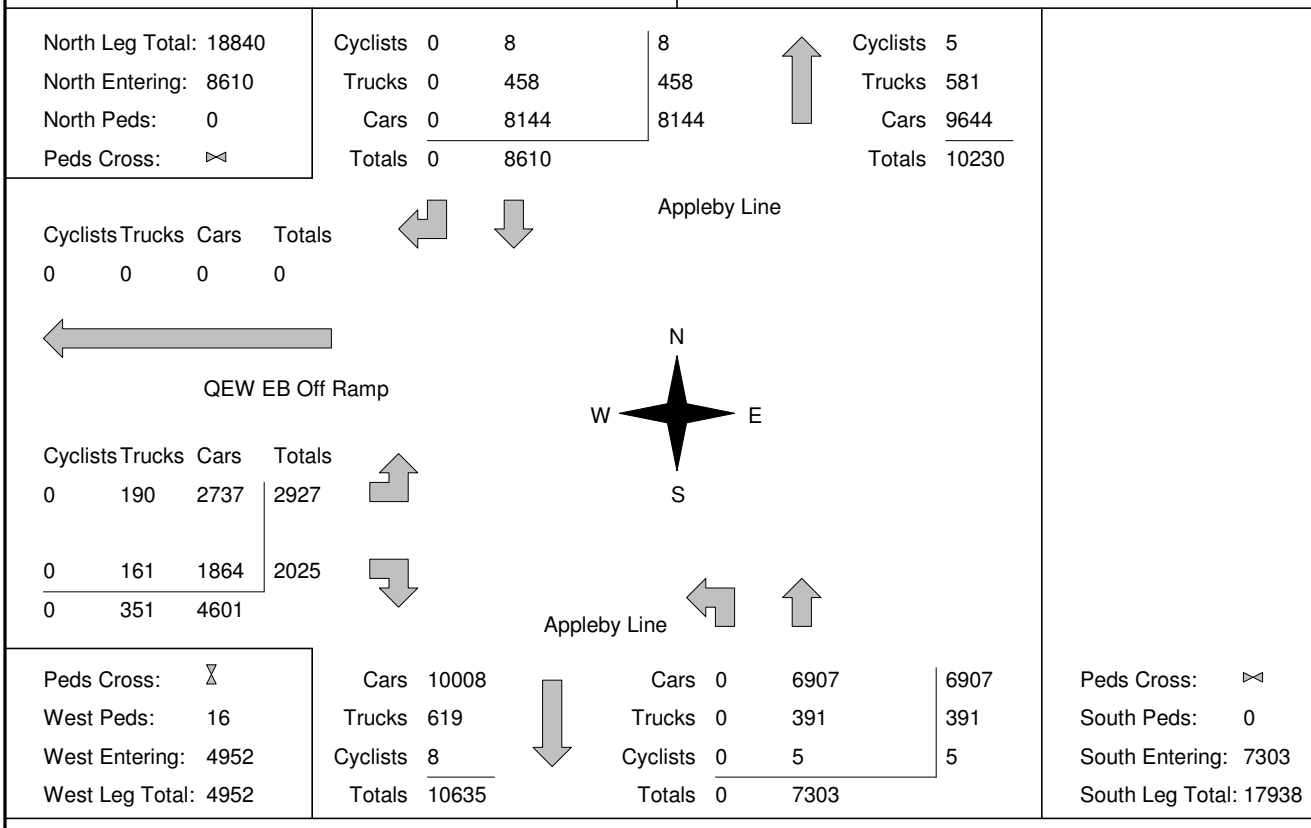
Municipality: Halton Region
Site #: 1024610100
Intersection: Appleby Line & QEW EB Off Ramp
TFR File #: 5
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S



Comments

Appleby Line @ QEW WB Off Ramp

Morning Peak Diagram

Specified Period
From: 7:00:00
To: 9:00:00

One Hour Peak
From: 7:45:00
To: 8:45:00

Municipality: Halton Region
Site #: 1024640100
Intersection: Appleby Line & QEW WB Off Ramp
TFR File #: 6
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 2464
North Entering: 959
North Peds: 0
Peds Cross: ⋈

Cyclists	0	0	0
Trucks	57	0	57
Cars	902	0	902
Totals	959	0	

Cyclists	1
Trucks	74
Cars	1430
Totals	1505

East Leg Total: 617
East Entering: 617
East Peds: 2
Peds Cross: ⋈

Appleby Line

	Cars	Trucks	Cyclists	Totals
	295	26	0	321
	267	29	0	296
	562	55	0	

N
W E
S

QEW WB Off Ramp

Cars	Trucks	Cyclists	Totals
0	0	0	0

Appleby Line

Cars	1169		
Trucks	86		
Cyclists	0		
Totals	1255		

Cars	1135	0	1135
Trucks	48	0	48
Cyclists	1	0	1
Totals	1184	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 1184
South Leg Total: 2439

Comments

Appleby Line @ QEW WB Off Ramp

Mid-day Peak Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:30:00
To: 12:30:00

Municipality: Halton Region
Site #: 1024640100
Intersection: Appleby Line & QEW WB Off Ramp
TFR File #: 6
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 2245
North Entering: 974
North Peds: 0
Peds Cross: ⋈

Cyclists	1	0	1
Trucks	64	0	64
Cars	909	0	909
Totals	974	0	

Cyclists	0
Trucks	108
Cars	1163
Totals	1271

East Leg Total: 551
East Entering: 551
East Peds: 0
Peds Cross: ⋈

Appleby Line

	Cars	Trucks	Cyclists	Totals
	225	42	0	267
	246	38	0	284
	471	80	0	

N
W E
S

QEW WB Off Ramp

Cars	Trucks	Cyclists	Totals
0	0	0	0

Appleby Line

Cars	1155		
Trucks	102		
Cyclists	1		
Totals	1258		

Cars	938	0	938
Trucks	66	0	66
Cyclists	0	0	0
Totals	1004	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 1004
South Leg Total: 2262

Comments

Appleby Line @ QEW WB Off Ramp

Afternoon Peak Diagram

Specified Period
From: 15:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Municipality: Halton Region
Site #: 1024640100
Intersection: Appleby Line & QEW WB Off Ramp
TFR File #: 6
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 3200
North Entering: 1204
North Peds: 0
Peds Cross: ⋈

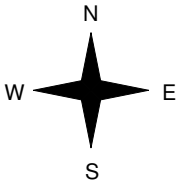
Cyclists	5	0	5
Trucks	49	0	49
Cars	1150	0	1150
Totals	1204	0	

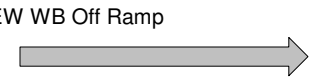
Cyclists	0
Trucks	57
Cars	1939
Totals	1996

East Leg Total: 1381
East Entering: 1381
East Peds: 2
Peds Cross: ⧖



	Cars	Trucks	Cyclists	Totals
	670	27	0	697
	664	20	0	684
	1334	47	0	





Cars	Trucks	Cyclists	Totals
0	0	0	0



Cars	1814	Cars	1269	0	1269
Trucks	69	Trucks	30	0	30
Cyclists	5	Cyclists	0	0	0
Totals	1888	Totals	1299	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 1299
South Leg Total: 3187

Comments

Appleby Line @ QEW WB Off Ramp

Total Count Diagram

Municipality: Halton Region
Site #: 1024640100
Intersection: Appleby Line & QEW WB Off Ramp
TFR File #: 6
Count date: 30-Apr-2024

Weather conditions:
Cloudy/Wet

Person(s) who counted:
Pyramid Traffic Inc

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Leg Total: 19707
North Entering: 8013
North Peds: 0
Peds Cross: ⋈

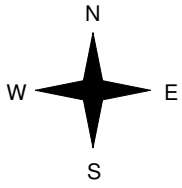
Cyclists	12	0	12
Trucks	441	0	441
Cars	7560	0	7560
Totals	8013	0	

Cyclists	6
Trucks	683
Cars	11005
Totals	11694

East Leg Total: 5960
East Entering: 5960
East Peds: 12
Peds Cross: ⋈



	Cars	Trucks	Cyclists	Totals
	2682	262	0	2944
	2805	211	0	3016
	5487	473	0	



QEW WB Off Ramp

Cars	Trucks	Cyclists	Totals
0	0	0	0



Cars	10365	8323	0	8323
Trucks	652	421	0	421
Cyclists	12	6	0	6
Totals	11029	8750	0	

Peds Cross: ⋈
South Peds: 0
South Entering: 8750
South Leg Total: 19779

Comments

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Dundas St @ Appleby Line	790	9	ACS/3	172.24.242.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		PT/SE
9	2023	11	24	Changed timings as per Region's instructions	

PHASE DESCRIPTION

Ph1	WBL - Dundas St.	Ph5	EBL - Dundas St.
Ph2	EB - Dundas St.	Ph6	WB - Dundas St.
Ph3	SBL - Appleby Line	Ph7	NBL - Appleby Line
Ph4	NB - Appleby Line	Ph8	SB - Appleby Line

PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X	X	X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

	Phase: 1	2	3	4	5	6	7	8
Minimum Green	8	15	8	15	8	15	8	15
Walk		7		7		7		7
Ped. Clearance		32		34		32		34
Pedestrian Carry Over								
Vehicle Extension	5	3	5	5	5	3	5	5
MAX 1	15	55	15	30	15	55	15	30
MAX 2	15	55	15	30	15	55	15	30
Yellow Change	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.7
Red Clearance	2.0	3.7	2.0	3.7	2.0	3.7	2.0	3.7
Phase Minimum:	14	47.4	14	49.4	14	47.4	14	49.4

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)							
					1	2	3	4	5	6	7	8
1	140	0	1	1	25	61	24	30	20	64	24	32
2	140	48	1	2	22	48	22	48	22	48	22	48
3	140	128	1	3	35	50	21	34	17	68	21	34
10	0	0	1	10	0	0	0	0	0	0	0	0

TIME BASE: ACTION PLAN, DAY PLAN * - 5 - 2, - 5 - 3, -5 - 4

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	21:30	254	1
2	2	2	09:00	2	1
2	2	10	21:00	254	1
3	3	2	9:00	2	1
3	3	10	20:00	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)
Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS * - 5 - 5

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ UMR	290	9	ACS/3	172.22.136.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		MA
1					
3	2017	2	3	Amber and All red Changed as per OTM12	

PHASE DESCRIPTION

Ph1	SBLT - Appleby Ln	Ph5	NBLT - Appleby Ln
Ph2	NB - Appleby Ln	Ph6	SB - Appleby Ln
Ph3	WBLT - UMR	Ph7	EBLT - UMR
Ph4	EB - UMR	Ph8	WB - UMR

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X	X	X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1	Phase: 1	2	3	4	5	6	7	8
Minimum Green	7	8	7	8	7	8	7	8
Walk		7		7		7		7
Ped. Clearance		21		21		21		21
Pedestrian Carry Over								
Vehicle Extension	3	3	3	5	3	3	3	5
MAX 1	10	35	10	30	20	35	10	30
MAX 2	10	35	10	30	20	35	10	30
Yellow Change	3	3.7	3	3.7	3	3.7	3	3.7
Red Clearance	1	2.8	1	2.7	2	2.8	1	2.7
Phase Minimum:	5	35.5	5	35.4	6	35.5	5	35.4

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN *** - 3 - 2, - 3 - 3**

Coordinator	Cycle	Offset (sec)	Timing Plan	Split	Phases (sec)							
					1	2	3	4	5	6	7	8
1	120	0	1	1	23	43	16	38	13	53	16	38
2	110	0	1	2	12	51	12	35	19	44	12	35
3	140	0	1	3	18	72	14	36	30	60	15	35
10	0	0	1	10	0	0	0	0	0	0	0	0

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	22:00	254	1
2	2	2	06:00	2	1
2	2	10	21:30	254	1
3	3	2	06:00	2	1
3	3	10	21:30	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

Special Programming:

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.

Sequence 13															
Ring 1	**1**	**2**	**3**	**4**	**9**	**10**	**13**	**14**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.
Sequence 14															
Ring 1	**2**	**1**	**3**	**4**	**10**	**9**	**13**	**14**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.
Sequence 15															
Ring 1	**1**	**2**	**4**	**3**	**9**	**10**	**14**	**13**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.
Sequence 16															
Ring 1	**2**	**1**	**4**	**3**	**10**	**9**	**14**	**13**	.	.	.	.	.	.	.	.
Ring 2	**6**	**5**	**8**	**7**	**12**	**11**	**16**	**15**	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Phases In Use	X	X		X		X		X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Description	WBLT	EB		NB		WB		SB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Description																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	6652
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing Phases 1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM) 1-1-4

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase 6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
Must 7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap 8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
With 9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase 10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	.				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	.				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	.				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			

10	4	P				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	1	.				-	Auto	X		
14	2	.				+	Auto	X		X
15	3	.				-	Auto	X		
16	4	.				+	Auto	X		X

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X							

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: Yes
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	**Channel 2**

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green																
Yellow																
Red																

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Communications 1 (SDLC)

Ethernet Port Configuration (MM) 1-5-1

Controller IP:	172.22.225.2
Subnet Mask:	255.255.0.0
Default Gateway IP:	172.22.0.255
Server IP:	192.168.210.120

NTCIP (MM) 1-5-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2 Priority (Port C50S for 2070):	4
Port 3A Priority (Port C21S for 2070):	2
Port 3B Priority (Port C22S for 2070):	3

Port Configuration (MM) 1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	NTCIP
Enable	No	No	No
Data Rate (BPS)	19.2K	19.2K	19.2K
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Address	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex - Half or Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
Group Address	0	0	0
Single Flag Enable	Yes	Yes	Yes
RTS to CTS Delay	n/a	n/a	0.0
RTS Turn Off Delay	n/a	n/a	0.0
Dropout Time	10	10	10
Early RTS	n/a	n/a	No
Telemetry Mode	n/a	n/a	FSK
ATCS Railroad	0	n/a	n/a
ATCS Railroad Line	0	n/a	n/a
ATCS Group	0	n/a	n/a
Wayside Device	0	n/a	n/a
ATC Device	0	n/a	n/a
Wayside Subnode	0	n/a	n/a
ATC Subnode	0	n/a	n/a

ECPIP (MM) 1-5-6

Controller Address:	0
Expanded System Detector Address:	0

System Detector Assignment

System Detector	Local Detector

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	No
Backlight Enable:	Yes
LED Mode:	Auto
Display Mode:	Basic
Screen Format:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 02.64.00
OS (Boot) Version: 01.14.03

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Logic Processor Page 1

Logic Statement Control (MM) 1-8-1

Logic #	Statement Control

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Logic Processor Page 2

Logic Statements (MM) 1-8-2

Logic #: 1

If:

	Assignment	#	State
IF	LP CIB CODE ON		169

Then:

Assignment	#	State
CTR SET TMGPLN A-C	2	On

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	WBLT	EB		NB		WB		SB								
Min Green	7	8	0	8	0	8	0	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	13	0	21	0	13	0	21	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	12	35	0	25	0	35	0	25	35	35	35	35	35	35	35	35
Max2	12	35	0	25	0	35	0	25	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	0.0	3.0	0.0	2.0	0.0	3.0	1.0	2.0	1.0	3.0	1.0	2.0	1.0	3.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	WBLT	EB		NB		WB		SB								
Min Green	7	8	0	8	0	8	0	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	13	0	21	0	13	0	21	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	12	35	0	25	0	35	0	25	35	35	35	35	35	35	35	35
Max2	12	35	0	25	0	35	0	25	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	0.0	3.0	0.0	2.0	0.0	3.0	1.0	2.0	1.0	3.0	1.0	2.0	1.0	3.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Direction	**WBLT**	**EB**		**NB**		**WB**		**SB**								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	WBLT	EB		NB		WB		SB								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Pedestrian Overlaps
Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Start / Flash Data (MM) 2-5

Start Up

Phase	Phase Setting
1	.
2	Y
3	.
4	.
5	.
6	Y
7	.
8	.
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap
A
B
C
D

Flash Thru Mon: No
Flash Time: 0
All Red: 0
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon: No
Exit Flash: W
Minimum Flash: 8
Mimimum Recall: No
Cycle Through Phase: No

City of Burlington

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I		X				X										
Non-Act II																
Dual Entry		X		X		X		X								
Cond Service																
Cond Reservice																
Ped Re-Service																
Rest In Walk		X				X										
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall																
Ped Recall		X				X										
Max Recall		X				X										
Soft Recall																
No Rest																
AI Calc																

Plan # 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall																
Ped Recall		X				X										

Max Recall		X			X										
Soft Recall															
No Rest															
AI Calc															

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	120	Std (COS)	9	Offsets In	Seconds
Offset Value	64s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Splits (Split Pat 1)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	90	Std (COS)	17	Offsets In	Seconds
Offset Value	40s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Splits (Split Pat 2)	12	42	0	36	0	54	0	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0	
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0	

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	120	Std (COS)	25	Offsets In	Seconds
Offset Value	68s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Splits (Split Pat 3)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0

Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Split (seconds)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Split (seconds)	12	42	0	36	0	54	0	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	90s	90s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Split (seconds)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing																
Dwell Veh	X	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Red	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	10	8	4.0	2.0
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	1.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	8	0.0	45	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing																
Dwell Veh	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	10	8	4.0	2.0
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**

Dwell / Cycle-Exit	8	0.0	45	4.0	2.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Preempt Preempt Filtering
Enable Preempt Filtering &
TSP/SCP (MM) 4-2

Input	Solid	Pulsing
1	...BYPASSED...	...BYPASSED...
2	...BYPASSED...	...BYPASSED...
3	PREEMPTION 3	PREEMPTION 7
4	PREEMPTION 4	PREEMPTION 8
5	PREEMPTION 5	PREEMPTION 9
6	PREEMPTION 6	PREEMPTION 10
7	...BYPASSED...	...BYPASSED...
8	...BYPASSED...	...BYPASSED...
9	...BYPASSED...	...BYPASSED...
10	...BYPASSED...	...BYPASSED...

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Preempt TSP/SCP Plan and Split

TSP / SCP Plan (MM) 4-3

TSP/SCP Plan	Enable Option	Signal Type	Det Lock	Delay Time	Max Presence	PMT Enables Reservice	No Delay in TSP	Action SF Inhibit	Reservice Cycles	Bus Heading
1	No	Solid	No	0	0	No	False	0	0	NB
2	No	Solid	No	0	0	No	False	0	0	SB
3	No	Solid	No	0	0	No	False	0	0	EB
4	No	Solid	No	0	0	No	False	0	0	WB
5	No	Solid	No	0	0	No	False	0	0	.
6	No	Solid	No	0	0	No	False	0	0	.

Mode: TSP
Free Default Pattern: 120
Headway Allowance: 0

TSP/SCP Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TSP / SCP Split Pattern (MM) 4-4

TSP/SCP Split Pattern	Max Type	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	Max Reduction	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	0:00:00
Standard Time From GMT:	0

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1

Pattern	1	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2

Pattern	2	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3

Pattern	3	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4

Pattern	4	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 8

Pattern	Auto	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 10

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	1	06:00
2	2	09:00
3	3	15:15
4	2	19:00
5	10	21:30

Day Plan #2

Event	Action Plan	Start Time
1	10	09:00

Day Plan #3

Event	Action Plan	Start Time
1	10	00:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan
1	FIXED	1	1	0	3
2	FLOAT	2	2	3	3
3	FIXED	4	19	0	3
4	FLOAT	5	2	4	3
5	FIXED	7	1	0	3
6	FLOAT	8	2	1	3
7	FLOAT	9	2	1	3
8	FLOAT	10	2	2	3
9	FIXED	12	25	0	3

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Detectors

Detectors - Pg 1

Veh Det Phase Assignment (MM) 6-1

Vehicle Detector Plan Number - 1

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3	4	S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 3

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 4

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	No	
2	S-STANDARD	No	
3	S-STANDARD	No	
4	S-STANDARD	No	
5	S-STANDARD	No	
6	S-STANDARD	No	
7	S-STANDARD	No	
8	S-STANDARD	No	
9	S-STANDARD	No	
10	S-STANDARD	No	
11	S-STANDARD	No	

12	S-STANDARD	No	
13	S-STANDARD	No	
14	S-STANDARD	No	
15	S-STANDARD	No	
16	S-STANDARD	No	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	S-STANDARD	Yes	
22	S-STANDARD	Yes	
23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	S-STANDARD	Yes	
26	S-STANDARD	Yes	
27	S-STANDARD	Yes	
28	S-STANDARD	Yes	
29	S-STANDARD	Yes	
30	S-STANDARD	Yes	
31	S-STANDARD	Yes	
32	S-STANDARD	Yes	
33	S-STANDARD	Yes	
34	S-STANDARD	Yes	
35	S-STANDARD	Yes	
36	S-STANDARD	Yes	
37	S-STANDARD	Yes	
38	S-STANDARD	Yes	
39	S-STANDARD	Yes	
40	S-STANDARD	Yes	
41	S-STANDARD	Yes	
42	S-STANDARD	Yes	
43	S-STANDARD	Yes	
44	S-STANDARD	Yes	
45	S-STANDARD	Yes	
46	S-STANDARD	Yes	
47	S-STANDARD	Yes	
48	S-STANDARD	Yes	
49	S-STANDARD	Yes	
50	S-STANDARD	Yes	
51	S-STANDARD	Yes	
52	S-STANDARD	Yes	
53	S-STANDARD	Yes	
54	S-STANDARD	Yes	
55	S-STANDARD	Yes	
56	S-STANDARD	Yes	
57	S-STANDARD	Yes	
58	S-STANDARD	Yes	
59	S-STANDARD	Yes	
60	S-STANDARD	Yes	
61	S-STANDARD	Yes	
62	S-STANDARD	Yes	

63	S-STANDARD	Yes	
64	S-STANDARD	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 3

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 4

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Ped Detector Phase Assignment (MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Detectors

Detectors - Pg 2

Log - Speed Detector Setup (MM) 6-4

NTCIP Log Period: 60 | ECPI Log Period: 0 | Length Unit: Inches

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM) 6-5

Veh Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Pedestrian Detector Diagnostics (MM) 6-6

Ped Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X		X		X		X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Description																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	6652
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM) 1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	.				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	.				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	.				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			
10	4	P				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	1	.				-	Auto	X		
14	2	.				+	Auto	X		X
15	3	.				-	Auto	X		
16	4	.				+	Auto	X		X

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X							

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: Yes
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	**Channel 2**

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green																
Yellow																
Red																

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Communications 1 (SDLC)

Ethernet Port Configuration (MM) 1-5-1

Controller IP:	172.22.225.2
Subnet Mask:	255.255.0.0
Default Gateway IP:	172.22.0.255
Server IP:	192.168.210.120

NTCIP (MM) 1-5-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2 Priority (Port C50S for 2070):	4
Port 3A Priority (Port C21S for 2070):	2
Port 3B Priority (Port C22S for 2070):	3

Port Configuration (MM) 1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	NTCIP	NTCIP	NTCIP
Enable	No	No	No
Data Rate (BPS)	19.2K	19.2K	19.2K
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Address	0	0	0
Telemetry Response Delay	0.0	0.0	0.0
Duplex - Half or Full	Full	Full	Full
Flow Control	Yes	Yes	Yes
Group Address	0	0	0
Single Flag Enable	Yes	Yes	Yes
RTS to CTS Delay	n/a	n/a	0.0
RTS Turn Off Delay	n/a	n/a	0.0
Dropout Time	10	10	10
Early RTS	n/a	n/a	No
Telemetry Mode	n/a	n/a	FSK
ATCS Railroad	0	n/a	n/a
ATCS Railroad Line	0	n/a	n/a
ATCS Group	0	n/a	n/a
Wayside Device	0	n/a	n/a
ATC Device	0	n/a	n/a
Wayside Subnode	0	n/a	n/a
ATC Subnode	0	n/a	n/a

ECPIP (MM) 1-5-6

Controller Address:	0
Expanded System Detector Address:	0

System Detector Assignment

System Detector	Local Detector

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UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	No
Backlight Enable:	Yes
LED Mode:	Auto
Display Mode:	Basic
Screen Format:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 02.64.00
OS (Boot) Version: 01.14.03

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Logic Processor Page 1
Logic Statement Control (MM) 1-8-1

Logic #	Statement Control

City of Burlington

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Logic Processor Page 2

Logic Statements (MM) 1-8-2

Logic #: 1

If:

	Assignment	#	State
IF	LP CIB CODE ON		169

Then:

Assignment	#	State
CTR SET TMGPLN A-C	2	On

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	WBLT	EB		NB		WB		SB								
Min Green	7	8	0	8	0	8	0	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	13	0	21	0	13	0	21	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	12	35	0	25	0	35	0	25	35	35	35	35	35	35	35	35
Max2	12	35	0	25	0	35	0	25	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	0.0	3.0	0.0	2.0	0.0	3.0	1.0	2.0	1.0	3.0	1.0	2.0	1.0	3.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	WBLT	EB		NB		WB		SB								
Min Green	7	8	0	8	0	8	0	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	13	0	21	0	13	0	21	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	12	35	0	25	0	35	0	25	35	35	35	35	35	35	35	35
Max2	12	35	0	25	0	35	0	25	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	4.0	0.0	4.0	0.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.0	0.0	3.0	0.0	2.0	0.0	3.0	1.0	2.0	1.0	3.0	1.0	2.0	1.0	3.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	WBLT	EB		NB		WB		SB								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	WBLT	EB		NB		WB		SB								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Pedestrian Overlaps
Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Start / Flash Data (MM) 2-5

Start Up

Phase	Phase Setting
1	.
2	Y
3	.
4	.
5	.
6	Y
7	.
8	.
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap
A
B
C
D

Flash Thru Mon: No
Flash Time: 0
All Red: 0
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon: No
Exit Flash: W
Minimum Flash: 8
Mimimum Recall: No
Cycle Through Phase: No

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I		X				X										
Non-Act II																
Dual Entry		X		X		X		X								
Cond Service																
Cond Reservice																
Ped Re-Service																
Rest In Walk		X				X										
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall																
Ped Recall		X				X										
Max Recall		X				X										
Soft Recall																
No Rest																
AI Calc																

Plan # 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall																
Ped Recall		X				X										
Max Recall		X				X										
Soft Recall																
No Rest																
AI Calc																

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	120	Std (COS)	9	Offsets In	Seconds
Offset Value	64s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Splits (Split Pat 1)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	90	Std (COS)	17	Offsets In	Seconds
Offset Value	40s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Splits (Split Pat 2)	12	42	0	36	0	54	0	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	120	Std (COS)	25	Offsets In	Seconds
Offset Value	68s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Splits (Split Pat 3)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Split (seconds)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Split (seconds)	12	42	0	36	0	54	0	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	90s	90s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	WBLT	EB		NB		WB		SB								
Split (seconds)	13	71	0	36	0	84	0	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing																
Dwell Veh	X	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Red	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	10	8	4.0	2.0
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	1.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	8	0.0	45	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing																
Dwell Veh	.	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																

Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	**1**	**2**	**3**	**4**
Free During Pmt	No	No	No	No

Timing	**Walk**	**Ped Clr**	**Min Grn**	**Yellow**	**Red**
Entrance	0	10	8	4.0	2.0
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	8	0.0	45	4.0	2.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Preempt Preempt Filtering
Enable Preempt Filtering & TSP/SCP (MM) 4-2

Input	Solid	Pulsing
1	...BYPASSED...	...BYPASSED...
2	...BYPASSED...	...BYPASSED...
3	PREEMPTION 3	PREEMPTION 7
4	PREEMPTION 4	PREEMPTION 8
5	PREEMPTION 5	PREEMPTION 9
6	PREEMPTION 6	PREEMPTION 10
7	...BYPASSED...	...BYPASSED...
8	...BYPASSED...	...BYPASSED...
9	...BYPASSED...	...BYPASSED...
10	...BYPASSED...	...BYPASSED...

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Preempt TSP/SCP Plan and Split

TSP / SCP Plan (MM) 4-3

TSP/SCP Plan	Enable Option	Signal Type	Det Lock	Delay Time	Max Presence	PMT Enables Reservice	No Delay in TSP	Action SF Inhibit	Reservice Cycles	Bus Heading
1	No	Solid	No	0	0	No	False	0	0	NB
2	No	Solid	No	0	0	No	False	0	0	SB
3	No	Solid	No	0	0	No	False	0	0	EB
4	No	Solid	No	0	0	No	False	0	0	WB
5	No	Solid	No	0	0	No	False	0	0	.
6	No	Solid	No	0	0	No	False	0	0	.

Mode: TSP
Free Default Pattern: 120
Headway Allowance: 0

TSP/SCP Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TSP / SCP Split Pattern (MM) 4-4

TSP/SCP Split Pattern	Max Type	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	Max Reduction	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Clock/Calendar
Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	0:00:00
Standard Time From GMT:	0

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MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1

Pattern	1	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2

Pattern	2	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3

Pattern	3	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4

Pattern	4	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 8

Pattern	Auto	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 10

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	1	06:00
2	2	09:00
3	3	15:15
4	2	19:00
5	10	21:30

Day Plan #2

Event	Action Plan	Start Time
1	10	09:00

Day Plan #3

Event	Action Plan	Start Time
1	10	00:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Time Base Exceptions
Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan
1	FIXED	1	1	0	3
2	FLOAT	2	2	3	3
3	FIXED	4	19	0	3
4	FLOAT	5	2	4	3
5	FIXED	7	1	0	3
6	FLOAT	8	2	1	3
7	FLOAT	9	2	1	3
8	FLOAT	10	2	2	3
9	FIXED	12	25	0	3

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Detectors

Detectors - Pg 1

Veh Det Phase Assignment (MM) 6-1

Vehicle Detector Plan Number - 1

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3	4	S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 3

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S

13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 4

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3		S
4	4		S
5	5		S
6	6		S
7	7		S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	No	
2	S-STANDARD	No	
3	S-STANDARD	No	
4	S-STANDARD	No	
5	S-STANDARD	No	
6	S-STANDARD	No	
7	S-STANDARD	No	
8	S-STANDARD	No	
9	S-STANDARD	No	
10	S-STANDARD	No	
11	S-STANDARD	No	
12	S-STANDARD	No	
13	S-STANDARD	No	
14	S-STANDARD	No	
15	S-STANDARD	No	
16	S-STANDARD	No	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	S-STANDARD	Yes	
22	S-STANDARD	Yes	
23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	S-STANDARD	Yes	
26	S-STANDARD	Yes	
27	S-STANDARD	Yes	
28	S-STANDARD	Yes	
29	S-STANDARD	Yes	
30	S-STANDARD	Yes	
31	S-STANDARD	Yes	
32	S-STANDARD	Yes	
33	S-STANDARD	Yes	
34	S-STANDARD	Yes	
35	S-STANDARD	Yes	
36	S-STANDARD	Yes	
37	S-STANDARD	Yes	
38	S-STANDARD	Yes	
39	S-STANDARD	Yes	

40	S-STANDARD	Yes	
41	S-STANDARD	Yes	
42	S-STANDARD	Yes	
43	S-STANDARD	Yes	
44	S-STANDARD	Yes	
45	S-STANDARD	Yes	
46	S-STANDARD	Yes	
47	S-STANDARD	Yes	
48	S-STANDARD	Yes	
49	S-STANDARD	Yes	
50	S-STANDARD	Yes	
51	S-STANDARD	Yes	
52	S-STANDARD	Yes	
53	S-STANDARD	Yes	
54	S-STANDARD	Yes	
55	S-STANDARD	Yes	
56	S-STANDARD	Yes	
57	S-STANDARD	Yes	
58	S-STANDARD	Yes	
59	S-STANDARD	Yes	
60	S-STANDARD	Yes	
61	S-STANDARD	Yes	
62	S-STANDARD	Yes	
63	S-STANDARD	Yes	
64	S-STANDARD	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 3

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 4

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Ped Detector Phase Assignment (MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14

Called Phase	Detector
15	15
16	16

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Corpus Christi - TS 91 - Econolite Type - ASC/3

Detectors

Detectors - Pg 2

Log - Speed Detector Setup (MM) 6-4

NTCIP Log Period: 60 ECPI Log Period: 0 Length Unit: Inches

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM) 6-5

Veh Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Pedestrian Detector Diagnostics (MM) 6-6

Ped Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.

Sequence 13
Ring 1 | 1 2 | 3 4 | 9 10 | 13 14 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 14
Ring 1 | 2 1 | 3 4 | 10 9 | 13 14 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 15
Ring 1 | 1 2 | 4 3 | 9 10 | 14 13 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .
Sequence 16
Ring 1 | 2 1 | 4 3 | 10 9 | 14 13 | . . . .
Ring 2 | 6 5 | 8 7 | 12 11 | 16 15 | . . . .

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use		X			X	X		X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		EB			EBLT	WB		SB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Description																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	0AF1
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing 1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases 2	X		.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	X		.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	X		.	.	.	.	.	.	.	.	.	.
7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
8	.	.	.	.	.	.	X		.	.	.	.	.	.	.	.
9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM) 1-1-4

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase 6	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
Must 7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap 8	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
With 9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase 10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	.				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	.				-	Auto	X		
4	4	.				-	Auto	X		X
5	5	V				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	.				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			

10	4	.				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	1	O				-	Auto	X		
14	2	O				+	Auto	X		X
15	3	O				-	Auto	X		
16	4	O				+	Auto	X		X

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X							

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: No
Enable SDLC Stop Time: Yes
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green																
Yellow									X	X	X	X				
Red																

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No

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UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Configuration Communications 1 (SDLC)

Ethernet Port Configuration (MM) 1-5-1

Controller IP:	172.22.228.2
Subnet Mask:	255.255.0.0
Default Gateway IP:	172.22.0.255
Server IP:	192.168.210.120

NTCIP (MM) 1-5-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2 Priority (Port C50S for 2070):	4
Port 3A Priority (Port C21S for 2070):	2
Port 3B Priority (Port C22S for 2070):	3

Port Configuration (MM) 1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	TERMINAL	NTCIP	ECPIP
Enable	No	No	No
Data Rate (BPS)	9600	19.2K	1200
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Address	0	0	0
Telemetry Response Delay	0.0	0.0	0.9
Duplex - Half or Full	Half	Full	Full
Flow Control	Yes	Yes	Yes
Group Address	0	0	0
Single Flag Enable	Yes	Yes	Yes
RTS to CTS Delay	n/a	n/a	14.0
RTS Turn Off Delay	n/a	n/a	2.0
Dropout Time	10	10	10
Early RTS	n/a	n/a	No
Telemetry Mode	n/a	n/a	FSK
ATCS Railroad	0	n/a	n/a
ATCS Railroad Line	0	n/a	n/a
ATCS Group	0	n/a	n/a
Wayside Device	0	n/a	n/a
ATC Device	0	n/a	n/a
Wayside Subnode	0	n/a	n/a
ATC Subnode	0	n/a	n/a

ECPIP (MM) 1-5-6

Controller Address:	0
Expanded System Detector Address:	0

System Detector Assignment

System Detector	Local Detector

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UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	No
Backlight Enable:	Yes
LED Mode:	Auto
Display Mode:	Basic
Screen Format:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: Solutions that Move the World
Sign On Message Line 2:

Software Modules (MM) 8-7

Application Version: 02.64.00
OS (Boot) Version: 01.14.03

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Logic Processor Page 1

Logic Statement Control (MM) 1-8-1

Logic #	Statement Control
1	E
2	E

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UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Logic Processor Page 2

Logic Statements (MM) 1-8-2

Logic #: 1

If:

	Assignment	#	State
IF	LP CIB CODE ON		169

Then:

Assignment	#	State
CTR SET TMGPLN A-C	2	On

Logic #: 2

If:

	Assignment	#	State
IF	VEH GREEN ON PH	7 IS	On

Then:

Assignment	#	State
CTR CALL PHASE	8	On

Logic #: 3

If:

	Assignment	#	State
IF	VEH GREEN ON PH	3 IS	On

Then:

Assignment	#	State
CTR CALL PHASE	4	On

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UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		EB			EBLT	WB		SB								
Min Green	0	8	0	0	7	8	0	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	18	0	0	0	18	0	20	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	0.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	0	35	0	0	15	35	0	25	35	35	35	35	35	35	35	35
Max2	0	35	0	0	15	35	0	25	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.0	0.0	0.0	3.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.0	2.0	0.0	0.0	1.0	2.0	0.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		EB			EBLT	WB		SB								
Min Green	0	8	0	0	7	8	0	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	18	0	0	0	18	0	20	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	0.0	3.0	0.0	0.0	3.0	3.0	0.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	0	35	0	0	15	35	0	25	35	35	35	35	35	35	35	35
Max2	0	35	0	0	15	35	0	25	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	4.0	0.0	0.0	3.0	4.0	0.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	0.0	2.0	0.0	0.0	1.0	2.0	0.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		EB			EBLT	WB		SB								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction		EB			EBLT	WB		SB								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

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UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Controller Pedestrian Overlaps
Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Controller Start / Flash Data (MM) 2-5

Start Up

Phase	Phase Setting
1	.
2	Y
3	.
4	.
5	.
6	Y
7	.
8	.
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap
A
B
C
D

Flash Thru Mon: No
Flash Time: 0
All Red: 0
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon: No
Exit Flash: W
Minimum Flash: 8
Mimimum Recall: No
Cycle Through Phase: No

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I		X				X										
Non-Act II																
Dual Entry		X		X		X		X								
Cond Service																
Cond Reservice																
Ped Re-Service																
Rest In Walk		X				X										
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector																
Vehicle Recall		X				X										
Ped Recall		X				X										
Max Recall																
Soft Recall																
No Rest																
AI Calc																

Plan # 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector									X	X	X	X	X	X	X	X
Vehicle Recall		X				X										
Ped Recall		X				X										

Max Recall															
Soft Recall															
No Rest															
AI Calc															

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	120	Std (COS)	9	Offsets In	Seconds
Offset Value	110s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		EB			EBLT	WB		SB								
Splits (Split Pat 1)	0	68	0	0	13	55	0	52	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	68s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	90	Std (COS)	17	Offsets In	Seconds
Offset Value	34s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		EB			EBLT	WB		SB								
Splits (Split Pat 2)	0	54	0	0	12	42	0	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	54s	90s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0	
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0	

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	120	Std (COS)	25	Offsets In	Seconds
Offset Value	76s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		EB			EBLT	WB		SB								
Splits (Split Pat 3)	0	83	0	0	14	69	0	37	0	0	0	0	0	0	0	0

Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	83s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

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UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		EB			EBLT	WB		SB								
Split (seconds)	0	68	0	0	13	55	0	52	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	68s	120s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		EB			EBLT	WB		SB								
Split (seconds)	0	54	0	0	12	42	0	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	54s	90s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description		EB			EBLT	WB		SB								
Split (seconds)	0	83	0	0	14	69	0	37	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	83s	120s	0s	0s

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Preempt Plan

Preempt Plan (MM) 4-1

No Enabled Preempts

City of Burlington

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Preempt Preempt Filtering
Enable Preempt Filtering & TSP/SCP (MM) 4-2

Input	Solid	Pulsing
1	...BYPASSED...	...BYPASSED...
2	...BYPASSED...	...BYPASSED...
3	PREEMPTION 3	PREEMPTION 7
4	PREEMPTION 4	PREEMPTION 8
5	PREEMPTION 5	PREEMPTION 9
6	PREEMPTION 6	PREEMPTION 10
7	...BYPASSED...	...BYPASSED...
8	...BYPASSED...	...BYPASSED...
9	...BYPASSED...	...BYPASSED...
10	...BYPASSED...	...BYPASSED...

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Preempt TSP/SCP Plan and Split

TSP / SCP Plan (MM) 4-3

TSP/SCP Plan	Enable Option	Signal Type	Det Lock	Delay Time	Max Presence	PMT Enables Reservice	No Delay in TSP	Action SF Inhibit	Reservice Cycles	Bus Heading
1	No	Solid	No	0	0	No	False	0	0	NB
2	No	Solid	No	0	0	No	False	0	0	SB
3	No	Solid	No	0	0	No	False	0	0	EB
4	No	Solid	No	0	0	No	False	0	0	WB
5	No	Solid	No	0	0	No	False	0	0	.
6	No	Solid	No	0	0	No	False	0	0	.

Mode: TSP
Free Default Pattern: 120
Headway Allowance: 0

TSP/SCP Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TSP / SCP Split Pattern (MM) 4-4

TSP/SCP Split Pattern	Max Type	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	Max Reduction	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Time Base Clock/Calendar

Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	0:00:00
Standard Time From GMT:	0

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MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1

Pattern	1	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2

Pattern	2	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3

Pattern	3	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 4

Pattern	4	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 8

Pattern	Auto	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 10

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	1	06:00
2	2	09:00
3	3	15:15
4	2	19:00
5	10	21:30

Day Plan #2

Event	Action Plan	Start Time
1	10	09:00

Day Plan #3

Event	Action Plan	Start Time
1	10	00:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
	X	X	X	X	X	X	X	X	X	X	X
	23	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**		
	X	X	X	X	X	X	X	X	X		

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Time Base Exceptions

Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan
1	FIXED	1	1	0	3
2	FLOAT	2	2	3	3
3	FIXED	3	30	0	3
4	FLOAT	5	2	3	3
5	FIXED	7	1	0	3
6	FLOAT	8	2	1	3
7	FLOAT	9	2	1	3
8	FLOAT	10	2	2	3
9	FIXED	12	25	0	3

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Detectors

Detectors - Pg 1

Veh Det Phase Assignment (MM) 6-1

Vehicle Detector Plan Number - 1

Veh Detector	Assigned Phase	Called Phase	Type
1	1		N
2	2		N
3	3		N
4	4		N
5	5		N
6	6		N
7	8		N
8	8		N
9	9		N
10	10		N
11	11		N
12	12		N
13	13		N
14	14		N
15	15		N
16	16		N

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type
1	1		N
2	2		N
3	3		N
4	4		N
5	5		N
6	6		N
7	7		N
8	8		N
9	9		N
10	10		N
11	11		N
12	12		N
13	13		N
14	14		N
15	15		N
16	16		N

Vehicle Detector Plan Number - 3

Veh Detector	Assigned Phase	Called Phase	Type
1	1		N
2	2		N
3	3		N
4	4		N
5	5		N
6	6		N
7	7		N
8	8		N
9	9		N
10	10		N
11	11		N
12	12		N
13	13		N
14	14		N
15	15		N
16	16		N

Vehicle Detector Plan Number - 4

Veh Detector	Assigned Phase	Called Phase	Type
1	1		N
2	2		N
3	3		N
4	4		N
5	5		N
6	6		N
7	7		N
8	8		N
9	9		N
10	10		N
11	11		N
12	12		N
13	13		N
14	14		N
15	15		N
16	16		N

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	N-NTCIP	No	
2	N-NTCIP	No	
3	N-NTCIP	No	
4	N-NTCIP	No	
5	N-NTCIP	No	
6	N-NTCIP	No	
7	N-NTCIP	No	
8	N-NTCIP	No	
9	N-NTCIP	No	
10	N-NTCIP	No	
11	N-NTCIP	No	

12	N-NTCIP	No	
13	N-NTCIP	No	
14	N-NTCIP	No	
15	N-NTCIP	No	
16	N-NTCIP	No	
17	N-NTCIP	Yes	
18	N-NTCIP	Yes	
19	N-NTCIP	Yes	
20	N-NTCIP	Yes	
21	N-NTCIP	Yes	
22	N-NTCIP	Yes	
23	N-NTCIP	Yes	
24	N-NTCIP	Yes	
25	N-NTCIP	Yes	
26	N-NTCIP	Yes	
27	N-NTCIP	Yes	
28	N-NTCIP	Yes	
29	N-NTCIP	Yes	
30	N-NTCIP	Yes	
31	N-NTCIP	Yes	
32	N-NTCIP	Yes	
33	N-NTCIP	Yes	
34	N-NTCIP	Yes	
35	N-NTCIP	Yes	
36	N-NTCIP	Yes	
37	N-NTCIP	Yes	
38	N-NTCIP	Yes	
39	N-NTCIP	Yes	
40	N-NTCIP	Yes	
41	N-NTCIP	Yes	
42	N-NTCIP	Yes	
43	N-NTCIP	Yes	
44	N-NTCIP	Yes	
45	N-NTCIP	Yes	
46	N-NTCIP	Yes	
47	N-NTCIP	Yes	
48	N-NTCIP	Yes	
49	N-NTCIP	Yes	
50	N-NTCIP	Yes	
51	N-NTCIP	Yes	
52	N-NTCIP	Yes	
53	N-NTCIP	Yes	
54	N-NTCIP	Yes	
55	N-NTCIP	Yes	
56	N-NTCIP	Yes	
57	N-NTCIP	Yes	
58	N-NTCIP	Yes	
59	N-NTCIP	Yes	
60	N-NTCIP	Yes	
61	N-NTCIP	Yes	
62	N-NTCIP	Yes	

63	N-NTCIP	Yes	
64	N-NTCIP	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 3

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time /	Queue Lim. /	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay

						Passage Time	Discon. Time						
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 4

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Ped Detector Phase Assignment (MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4
5	5

Called Phase	Detector
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

UMR @ Sutton Dr - TS 93 - Econolite Type - ASC/3

Detectors

Detectors - Pg 2

Log - Speed Detector Setup (MM) 6-4

NTCIP Log Period: 60 | ECPI Log Period: 0 | Length Unit: Inches

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM) 6-5

Veh Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
5	0	0	30	60	0	0
7	0	0	30	60	15	0
8	0	0	30	60	15	0

Veh Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier		

					Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay
5	0	0	30	60	0	0
7	0	0	30	60	8	30
8	0	0	30	60	8	30

Pedestrian Detector Diagnostics (MM) 6-6

Ped Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ Fairview St	303	6	ACS/3	172.24.127.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		PT
5	2022	11	4	Updated Pattern 3 Coordination Plan as per Region's request	

PHASE DESCRIPTION

Ph1	SB LT - Appleby Ln	Ph5	NB LT - Appleby Ln
Ph2	NB - Appleby Ln	Ph6	SB - Appleby Ln
Ph3	WB LT - Fairview St	Ph7	EB LT - Fairview St
Ph4	EB - Fairview St	Ph8	WB - Fairview St

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X	X	X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1	Phase: 1	2	3	4	5	6	7	8
Minimum Green	7	8	7	8	7	8	8	8
Walk		7		7		7		7
Ped. Clearance		25		24		25		24
Pedestrian Carry Over								
Vehicle Extension	3	3	3	3	3	3	3	3
MAX 1	15	55	15	30	15	55	20	30
MAX 2	15	55	15	30	15	55	20	30
Yellow Change	3	3.3	3	3.7	3	3.3	3	3.7
Red Clearance	1	3.5	1	2.8	1	3.5	2	2.8
Phase Minimum:	5	39.8	5	38.5	5	39.8	6	38.5

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall		X				X		
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)							
					1	2	3	4	5	6	7	8
1	120	56	1	1	14	45	14	47	12	47	34	27
2	110	22	1	2	12	42	11	45	12	42	24	32
3	140	71	1	3	13	58	20	49	15	56	30	39
4	90	17	1	4	11	41	11	27	11	41	15	23
10	0	0	1	10	0	0	0	0	0	0	0	0

TIME BASE: ACTION PLAN, DAY PLAN * - 5 - 2, - 5 - 3, -5 - 4

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	22:00	254	1
2	2	4	06:00	4	1
2	2	2	10:00	2	1
2	2	4	18:00	4	1
2	2	10	22:00	254	1
3	3	4	06:00	4	1
3	3	2	10:00	2	1
3	3	4	18:00	4	1
3	3	10	22:00	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ Harvester Rd	280	9	ACS/3	172.24.128.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		SE
7	2023	9	28	Modify to match Centracs	

PHASE DESCRIPTION

Ph1	SB LT - Appleby Ln	Ph5	NB LT - Appleby Ln
Ph2	NB - Appleby Ln	Ph6	SB - Appleby Ln
Ph3	WB LT - Harvester Rd	Ph7	EB LT - Harvester Rd
Ph4	EB - Harvester Rd	Ph8	WB - Harvester Rd

PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X	X	X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

Phase:	1	2	3	4	5	6	7	8
Minimum Green	7	8	7	8	7	8	7	8
Walk		7		7		7		7
Ped. Clearance		25		25		25		25
Pedestrian Carry Over								
Vehicle Extension	3	3	3	3	3	3	3	3
MAX 1	15	40	15	30	15	40	15	30
MAX 2	15	40	15	30	15	40	15	30
Yellow Change	3	3.7	3	3.7	3	3.7	3	3.7
Red Clearance	1	2.6	1	2.7	1	2.6	1	2.7
Phase Minimum:	5	39.3	5	39.4	5	39.3	5	39.4

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall		X				X		
Pedestrian Recall		X				X		
MAX Recall								
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)							
					1	2	3	4	5	6	7	8
1	120	87	1	1	24	50	11	35	15	59	18	28
2	110	65	1	2	12	44	14	40	12	44	12	42
3	140	34	1	3	20	60	35	25	11	69	24	36
4	90	64	1	4	11	40	11	28	11	40	11	28
5	90	64	1	5	11	53	11	15	11	53	11	15
10	0	0	1	10	0	0	0	0	0	0	0	0

TIME BASE: ACTION PLAN, DAY PLAN * - 5 - 2, - 5 - 3, -5 - 4

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	4	19:00	4	1
1	1	5	22:00	5	1
2	2	4	06:00	4	1
2	2	2	10:00	2	1
2	2	4	18:00	4	1
2	2	5	22:00	5	1
3	3	2	06:00	4	1
3	3	4	10:00	2	1
3	3	2	18:00	4	1
3	3	5	22:00	5	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS * - 5 - 5

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ QEW South Ramp	281	9	ACS/3	172.22.129.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		MA
1	2016	10	31	Reverted back to Rev1	

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	NB - Appleby Line	Ph6	SB - Appleby Line
Ph3		Ph7	
Ph4	EB - Off Ramp	Ph8	

PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use		X		X		X		
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

	Phase: 1	2	3	4	5	6	7	8
Minimum Green		8		8		8		
Walk		7				7		
Ped. Clearance		19				19		
Pedestrian Carry Over								
Vehicle Extension		3		3		3		
MAX 1		35		20		35		
MAX 2		35		20		35		
Yellow Change		4		4		4		
Red Clearance		2		2		2		
Phase Minimum:	1	33	1	7	1	33	1	1

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN													* - 3 - 2, - 3 - 3
Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)								
					1	2	3	4	5	6	7	8	
1	120	89	1	1		72		48		72			
2	110	73	1	2		70		40		70			
3	140	32	1	3		91		49		91			
10	0	0	1	10		0		0		0			

TIME BASE: ACTION PLAN, DAY PLAN						* - 5 - 2, - 5 - 3, -5 - 4
Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan	
1	1	1	06:00	1	1	
1	1	2	09:00	2	1	Schedule 1 = Day Plan 1
1	1	3	15:00	3	1	Schedule 2 = Day Plan 2
1	1	2	19:00	3	1	Schedule 3 = Day Plan 3
1	1	10	22:00	254	1	
2	2	2	06:00	2	1	Day Plan 1 (Weekday)
2	2	10	21:30	254	1	Day Plan 2 (Saturday)
3	3	2	06:00	2	1	Day Plan 3 (Sunday, Holidays)
3	3	10	21:30	254	1	
						Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS						* - 5 - 5
Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Line @ NSR	283	1	ACS/3	172.22.131.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		MA
6	2017	11	6	Restored the old timings	

PHASE DESCRIPTION

Ph1	SBLT - Appleby Line	Ph5	NBLT - Appleby Line
Ph2	NB - Appleby Line	Ph6	SB - Appleby Line
Ph3	WBLT - North Service Road	Ph7	
Ph4	EB - North Service Road	Ph8	WB - North Service Road

PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X		X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

	Phase: 1	2	3	4	5	6	7	8
Minimum Green	7	8	7	8	7	8		8
Walk		7		7		7		7
Ped. Clearance		19		22		19		22
Pedestrian Carry Over								
Vehicle Extension	3	3	3	3	3	3		3
MAX 1	10	35	15	25	10	35		25
MAX 2	10	35	15	25	10	35		25
Yellow Change	3	3.7	3	3.7	3	3.7		3.7
Red Clearance	1	2.9	1	2.4	1	2.9		2.4
Phase Minimum:	12	33.6	12	36.1	12	33.6	1	36.1

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN *** - 3 - 2, - 3 - 3**

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)							
					1	2	3	4	5	6	7	8
1	120	92	1	1	14	68	11	27	14	68	0	38
2	110	9	1	2	11	49	11	39	11	49	0	50
3	140	42	1	3	11	80	21	28	24	67	0	49
10	0	0	1	10	0	0	0	0	0	0	0	0

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan	
1	1	1	06:00	1	1	
1	1	2	09:00	2	1	Schedule 1 = Day Plan 1
1	1	3	15:00	3	1	Schedule 2 = Day Plan 2
1	1	2	19:00	2	1	
1	1	10	22:00	254	1	Schedule 3 = Day Plan 3
2	2	2	06:00	2	1	
2	2	10	21:30	254	1	Day Plan 1 (Weekday)
3	3	2	6:00	2	1	Day Plan 2 (Saturday)
3	3	10	21:30	254	1	Day Plan 3 (Sunday, Holidays)
						Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ Corporate Dr	285	9	ACS/3	172.22.134.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		MA
1					
6	2018	8	2	Added SBLT	

PHASE DESCRIPTION

Ph1	SBLT- Appleby Ln	Ph5	
Ph2	NB - Appleby Ln	Ph6	SB - Appleby Ln
Ph3		Ph7	
Ph4	EB - Corporate Dr	Ph8	WB - Corporate Dr

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X		X		X		X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1	Phase: 1	2	3	4	5	6	7	8
Minimum Green	7	8		8		8		8
Walk		7		7		7		7
Ped. Clearance		21		25		21		25
Pedestrian Carry Over								
Vehicle Extension	3	3		3		3		3
MAX 1	15	35		20		35		20
MAX 2	15	35		20		35		20
Yellow Change	3	3.7		3.3		3.7		3.3
Red Clearance	1	2.3		3.2		2.3		3.2
Phase Minimum:	12	35	1	39.5	1	35	1	39.5

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		

Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN *** - 3 - 2, - 3 - 3**

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)							
					1	2	3	4	5	6	7	8
1	120	5	1	1	12	66		42		78		42
2	110	61	1	2	12	59		39		71		39
3	140	106	1	3	12	89		39		101		39
4	90	0	1	4	12	39		39		51		39
10	0	0	1	10	0	0		0		0		0

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	22:00	254	1
2	2	2	06:00	2	1
2	2	10	21:30	254	1
3	3	2	06:00	2	1
3	3	10	21:30	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Sum of		Sum of		Calculated	
				Total 1-4	Total 5-8
				Actual	Actual
1&2	5&6	3&4	7&8		
78	78	42	42	0	0
71	71	39	39	0	0
101	101	39	39	0	0
51	51	39	39	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

Intersection Name:	TS ID:	Line No:	IP address:
Burloak Drive @ QEW South Ramp	783	7	172.22.149.2

Controller Make:	Model:
Econolite	ACS/3

Type of Operation: 8 Phase Semi-Actuated

No	Date Y	Date M	Date D	Description	Prepared by
2	2015	8	25	Change in Cycle length and corresponding phase adjustments (TOD 2)	MA

*- Start from Main Manu

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	NB - Burloak Drive	Ph6	SB - Burloak Drive
Ph3	EB - QEW South Ramp	Ph7	
Ph4	WBRT - Red Oak Blvd	Ph8	

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use :		X	X	X		X		
Exclusive PED :								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1 / Phase:	1	2	3	4	5	6	7	8
Minimum Green :		8	8	8		8		
Conditional Service Min. Green :								
Walk :		7		7		7		
Ped. Clearance :		15		25		15		
Pedestrian Carry Over :								
Vehicle Extension :		3	3	3		3		
MAX 1 :		35	25	20		35		
MAX 2 :		35	25	20		35		
Yellow Change :		4	4	4		4		
Red Clearance :		3	3	3		3		

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector :								
Vehicle Recall :								
Pedestrian Recall :		X				X		
MAX Recall :		X				X		
Soft Recall :								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec) 1	2	3	4	5	6	7	8
1	110	3	1	1		58	33	19		58		
2	110	43	1	2		64	30	16		64		
3	110	15	1	3		58	33	19		58		
10	0	0	1	10		0				0		

CP # 1, 2, 10 / Phase:	1	2	3	4	5	6	7	8
Coord Phase :		X				X		
Vehicle Recall :								
Pedestrian Recall *(3-3, 5-2) :		X				X		
Recall to MAX Time :								

Phase Omit	:								
Special Function Outputs	:								

Coordinator Pattern #	Prefer.	Phase							
		1	2	3	4	5	6	7	8
	1								
	2								

X - select "." deselect

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	21:30	254	1
2	2	2	09:00	2	1
2	2	10	19:00	254	1
3	3	2	09:00	2	1
3	3	10	19:00	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	IP address:
Burloak Drive @ QEW North Ramp	784	7	172.22.150.2

Controller Make:	Model:
Econolite	ACS/3

Type of Operation: 8 Phase Semi-Actuated

No	Date Y	Date M	Date D	Description	Prepared by
1	2015	5	5	Implement timings in Centracs	MA

*- Start from Main Manu

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	NB - Burloak Drive	Ph6	SB - Burloak Drive
Ph3		Ph7	
Ph4		Ph8	WB - QEW North Ramp

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

	Phase:	1	2	3	4	5	6	7	8
Phase in Use	:		X				X		X
Exclusive PED	:								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1	Phase:	1	2	3	4	5	6	7	8
Minimum Green	:		8				8		8
Walk	:		7				7		7
Ped. Clearance	:		19				19		20
Vehicle Extension	:		3				3		3
MAX 1	:		35				35		30
MAX 2	:		35				35		30
Yellow Change	:		4				4		4
Red Clearance	:		2				2		3

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

	Phase:	1	2	3	4	5	6	7	8
Lock Detector	:								
Vehicle Recall	:								
Pedestrian Recall	:		X				X		
MAX Recall	:		X				X		
Soft Recall	:								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec) 1	2	3	4	5	6	7	8
1	110	14	1	1		71				71		39
2	80	14	1	2		44				44		36
3	110	14	1	3		50				50		60
10	0	0	1	10		0				0		0

Intersection Name:	TS ID:	Line No:	IP address:
Burloak Drive @ QEW North Ramp	784	7	172.22.150.2

Controller Make:	Model:
Econolite	ACS/3

CP # 1, 2, 10	Phase:	1	2	3	4	5	6	7	8
Coord Phase	:		X				X		
Vehicle Recall	:								
Pedestrian Recall *(3-3, 5-2)	:		X				X		
Recall to MAX Time	:								
Phase Omit	:								
Special Function Outputs	:								

Coordinator Pattern #	Prefer.	Phase							
		1	2	3	4	5	6	7	8
	1								
	2								

X - select "." deselect

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	21:30	254	1
2	2	2	09:00	2	1
2	2	10	19:00	254	1
3	3	2	09:00	2	1
3	3	10	19:00	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	IP address:
Burloak Drive @ NSR	785	7	172.22.151.2

Controller Make:	Model:
Econolite	ACS/3

Type of Operation: 8 Phase Semi-Actuated

No	Date Y	M	D	Description	Prepared by
3	2016	5	16	Pattern 4 starting at 7.30 am	MA

*- Start from Main Manu

PHASE DESCRIPTION

Ph1		Ph5	NBLT - Burloak Drive
Ph2	NB - Burloak Drive	Ph6	SB - Burloak Drive
Ph3		Ph7	
Ph4	EB - NSR	Ph8	

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use :		X		X	X	X		X
Exclusive PED :								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

Phase:	1	2	3	4	5	6	7	8
Minimum Green :		8		8	7	8		8
Conditional Service Min. Green :								
Walk :		7		7		7		7
Ped. Clearance :		23		25		23		25
Pedestrian Carry Over :								
Vehicle Extension :		3		3	5	3		3
MAX 1 :		57		35	20	57		35
MAX 2 :		57		35	20	57		35
Yellow Change :		4		4	3	4		4
Red Clearance :		3		3	1	3		3

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector :								
Vehicle Recall :		X				X		
Pedestrian Recall :		X				X		
MAX Recall :								
Soft Recall :								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec) 1	2	3	4	5	6	7	8
1	110	100	1	1		87		23	20	67		23
2	80	0	1	2		54		26	14	40		26
3	110	88	1	3		78		32	12	66		32
4	110	100	1	4		84		26	20	64		26
10	0	0	1	10		0		0	0	0		0

CP # 1, 2, 10 Phase:	1	2	3	4	5	6	7	8
Coord Phase :		X				X		
Vehicle Recall :				X	For CP 4 from 8 am to 9 am			
Pedestrian Recall *(3-3, 5-2) :		X				X		
Recall to MAX Time :								

Phase Omit	:								
Special Function Outputs	:								

Coordinator Pattern #	Prefer.	Phase							
		1	2	3	4	5	6	7	8
	1								
	2								

X - select "." deselect

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	4	07:30	4	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	21:30	254	1
2	2	2	09:00	2	1
2	2	10	19:00	254	1
3	3	2	09:00	2	1
3	3	10	19:00	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Sum of 1&2 = 5&6		Sum of 3&4 = 7&8		Calculated	
				Total 1-4	Total 5-8
1&2	5&6	3&4	7&8	Actual Cycle	Actual Cycle
87	87	23	23	110	110
54	54	26	26	80	80
78	78	32	32	110	110
84	84	26	26	110	110
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

Intersection Name:	TS ID:	Line No:	IP address:
Burloak Drive @ Mainway	786	5	172.22.152.2

Controller Make:	Model:
Econolite	ACS/3

Type of Operation: 8 Phase Semi-Actuated

No	Date Y	M	D	Description	Prepared by
1	2015	5	5	Implement timings in Centracs	MA

*- Start from Main Manu

PHASE DESCRIPTION

Ph1		Ph5	NBLT - Burloak Drive
Ph2	NB - Burloak Drive	Ph6	SB - Burloak Drive
Ph3		Ph7	
Ph4	EB - Mainway	Ph8	

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use :		X		X	X	X		
Exclusive PED :								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

Phase:	1	2	3	4	5	6	7	8
Minimum Green :		8		8	7	8		
Walk :		7		7		7		
Ped. Clearance :		23		25		23		
Vehicle Extension :		3		3	3	3		
MAX 1 :		50		35	20	50		
MAX 2 :		50		35	20	50		
Yellow Change :		4		4	3	4		
Red Clearance :		3		3	1	3		

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector :								
Vehicle Recall :								
Pedestrian Recall :		X				X		
MAX Recall :		X				X		
Soft Recall :								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec) 1	2	3	4	5	6	7	8
1	110	74	1	1		80		30	14	66		
2	80	54	1	2		55		25	14	41		
3	110	75	1	3		80		30	20	60		
10	0	0	1	10		0		0	0	0		

Intersection Name:	TS ID:	Line No:	IP address:
Burloak Drive @ Mainway	786	5	172.22.152.2

Controller Make:	Model:
Econolite	ACS/3

CP # 1, 2, 10	Phase:	1	2	3	4	5	6	7	8
Coord Phase	:		X				X		
Vehicle Recall	:								
Pedestrian Recall *(3-3, 5-2)	:		X				X		
Recall to MAX Time	:								
Phase Omit	:								
Special Function Outputs	:								

Coordinator Pattern #	Prefer.	Phase							
		1	2	3	4	5	6	7	8
	1								
	2								

X - select "." deselect

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	21:30	254	1
2	2	2	09:00	2	1
2	2	10	19:00	254	1
3	3	2	09:00	2	1
3	3	10	19:00	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ QEW North ramp	282	9	ACS/3	172.22.130.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		EN
3	2016	10	31	Reverted back to Rev1	

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	SB - Appleby Ln	Ph6	NB - Appleby Ln
Ph3		Ph7	
Ph4		Ph8	WB - QEW Off Ramp

PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use		X				X		X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1

	Phase: 1	2	3	4	5	6	7	8
Minimum Green		8				8		8
Walk		7				7		0
Ped. Clearance		19				19		0
Pedestrian Carry Over								
Vehicle Extension		3				3		3
MAX 1		35				35		30
MAX 2		35				35		30
Yellow Change		4				4		4
Red Clearance		2				2		2
Phase Minimum:	**1**	**33**	**1**	**1**	**1**	**33**	**1**	**7**

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN													* - 3 - 2, - 3 - 3
Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)								
					1	2	3	4	5	6	7	8	
1	120	86	1	1		80				80		40	
2	110	2	1	2		70				70		40	
3	140	32	1	3		91				91		49	
10	0	0	1	0		0				0		0	

TIME BASE: ACTION PLAN, DAY PLAN						* - 5 - 2, - 5 - 3, -5 - 4
Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan	
1	1	1	06:00	1	1	
1	1	2	09:00	2	1	Schedule 1 = Day Plan 1
1	1	3	15:00	3	1	Schedule 2 = Day Plan 2
1	1	2	19:00	2	1	Schedule 3 = Day Plan 3
1	1	10	22:00	254	1	
2	2	2	6:00	2	1	Day Plan 1 (Weekday)
2	2	10	21:30	254	1	Day Plan 2 (Saturday)
3	3	2	06:00	2	1	Day Plan 3 (Sunday, Holidays)
3	3	10	21:30	254	1	
						Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS						* - 5 - 5
Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ Mainway	284	2	ACS/3	172.22.133.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		MA
5	17	11	6		
				Restored old timings	

PHASE DESCRIPTION

Ph1	SB LT - Appleby Ln	Ph5	NB LT - Appleby Ln
Ph2	NB - Appleby Ln	Ph6	SB - Appleby Ln
Ph3	WB LT - Mainway	Ph7	EB LT - Mainway
Ph4	EB - Mainway	Ph8	WB - Mainway

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X	X	X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1	Phase: 1	2	3	4	5	6	7	8
Minimum Green	7	8	7	8	7	8	7	8
Walk		7		7		7		7
Ped. Clearance		22		24		22		24
Pedestrian Carry Over								
Vehicle Extension	3	3	3	3	3	3	3	3
MAX 1	10	35	10	20	10	35	10	20
MAX 2	10	35	10	20	10	35	10	20
Yellow Change	3	3.7	3	3.7	3	3.7	3	3.7
Red Clearance	1	2.6	1	2.6	1	2.6	1	2.6
Phase Minimum:	5	36.3	5	38.3	5	36.3	5	38.3

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		

Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN *** - 3 - 2, - 3 - 3**

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)							
					1	2	3	4	5	6	7	8
1	120	58	1	1	27	48	11	34	11	64	11	34
2	110	46	1	2	12	46	12	40	12	46	12	40
3	140	85	1	3	11	76	20	33	21	66	13	40
10	0	0	1	10	0	0	0	0	0	0	0	0

TIME BASE: ACTION PLAN, DAY PLAN *** - 5 - 2, - 5 - 3, -5 - 4**

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	06:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	2	19:00	2	1
1	1	10	22:00	254	1
2	2	2	06:00	2	1
2	2	10	21:30	254	1
3	3	2	06:00	2	1
3	3	10	21:30	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

Special Programming:

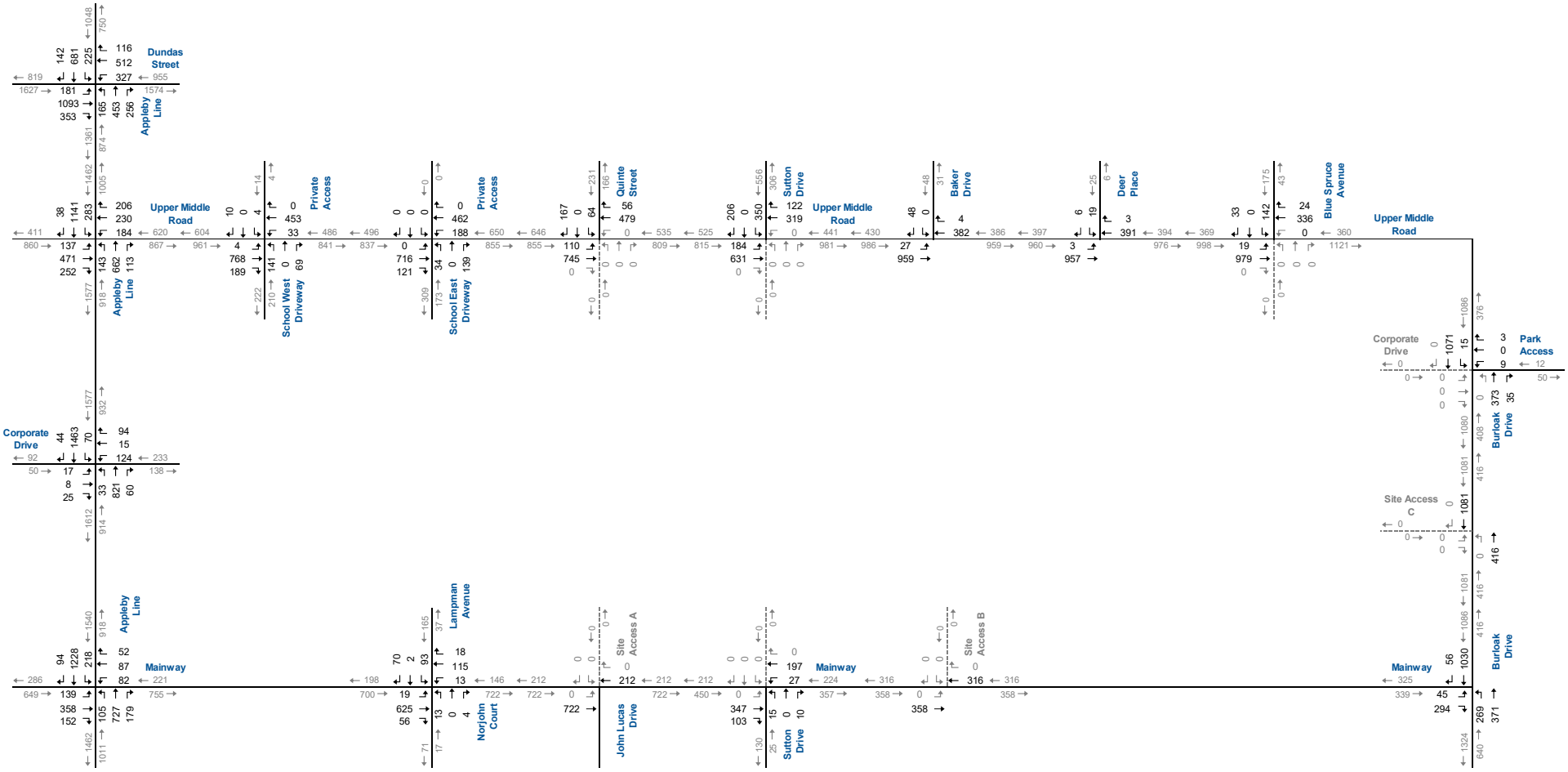
TIME BASE DATA - TIME OF YEAR EVENTS *** - 5 - 5**

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Sum of		Sum of		Calculated	
				Total 1-4	Total 5-8
				Actual	Actual
1&2	5&6	3&4	7&8		
75	75	45	45	120	120
58	58	52	52	110	110
87	87	53	53	140	140
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0
0	0	0	0	0	0

Appendix C

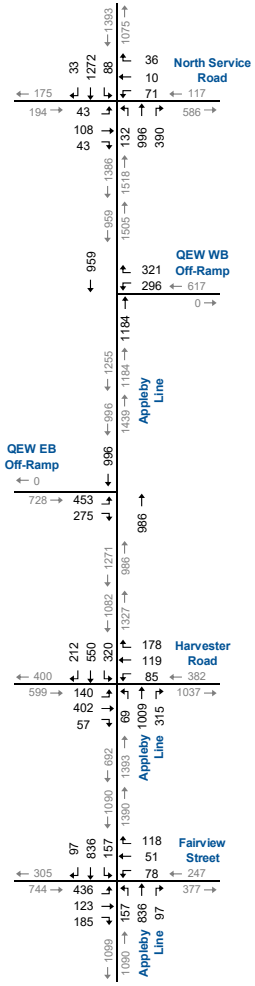
Existing Traffic Network Volumes

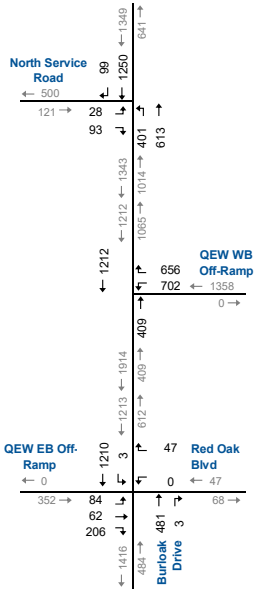


Existing Traffic Volumes
AM Peak Hour (1/2)

Appendix C

Bronte Creek Meadows, Burlington
230553



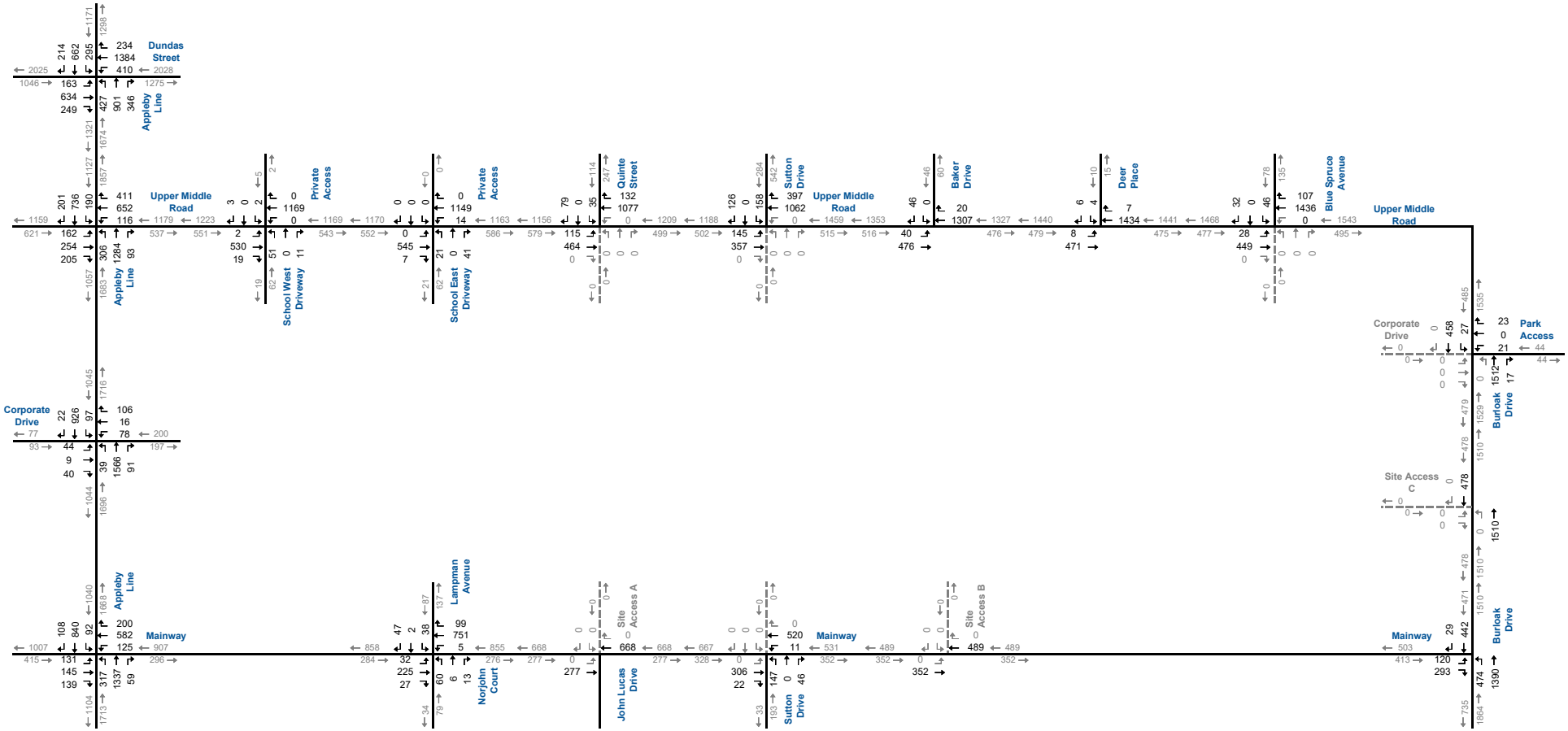


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Existing Traffic Volumes
AM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

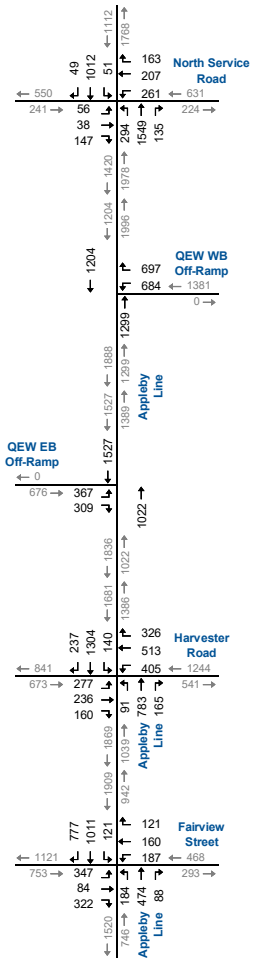
Appendix C

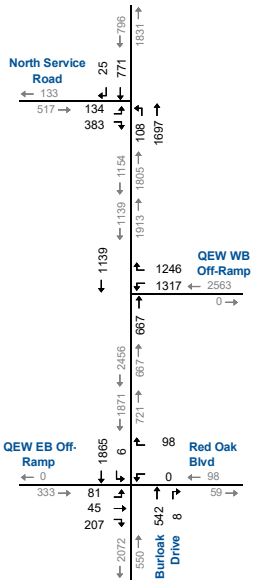


Existing Traffic Volumes
PM Peak Hour (1/2)

Appendix C

Bronte Creek Meadows, Burlington
230553



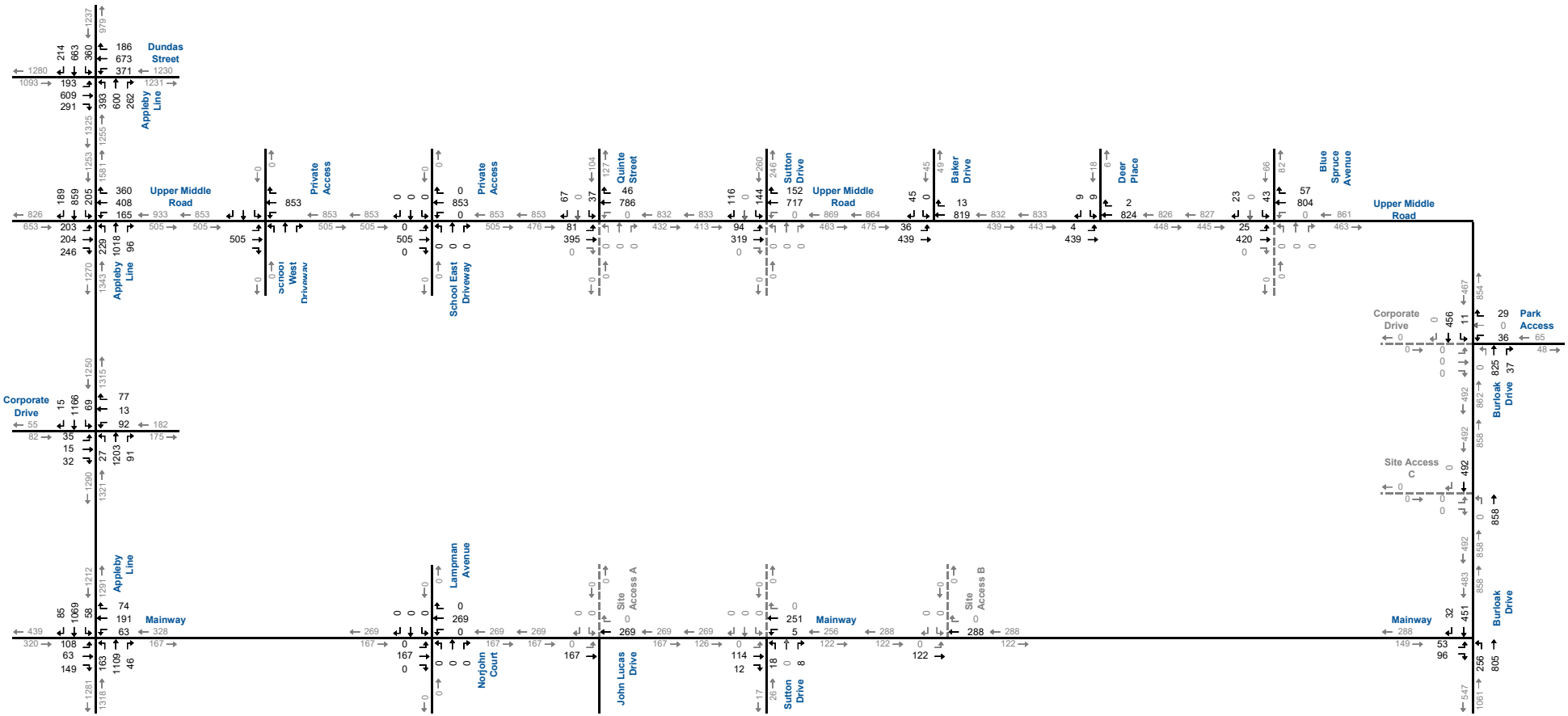


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Existing Traffic Volumes
PM Peak Hour (2/2)

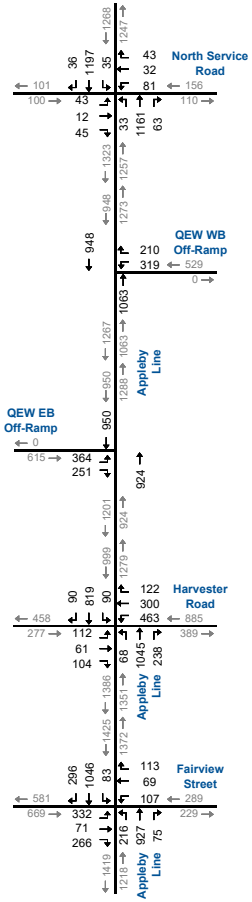
Bronte Creek Meadows, Burlington
230553

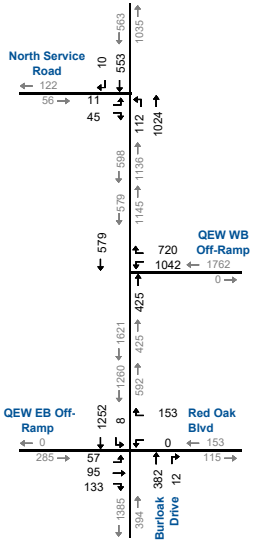
Appendix C



Existing Traffic Volumes
Saturday Peak Hour (1/2)

Appendix C





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Existing Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

Appendix C

Appendix D

Institutional Development Trip Generation Data

McMaster Innovation Park, City of Hamilton
Trip and Parking Generation Estimate

Paradigm Transportation Solutions Limited

November 2019

ptsl.com

5A-150 Pinebush Road
Cambridge ON N1R 8J8
p: 519.896.3163
905.381.2229
416.479.9684

www.ptsl.com

14 November 2019
Project: 190572

Simon Marshall, Project Coordinator, Dipl. T.
McMaster Innovation Park (MIP)
105-175 Longwood Road South
Hamilton, ON, L8P 0A1

Dear Mr. Marshall:

RE: MCMASTER INNOVATION PARK, TRIP AND PARKING GENERATION ESTIMATE

McMaster Innovation Park (MIP) retained **Paradigm Transportation Solutions Limited** to conduct this trip and parking generation study for the existing MIP lands (the park) located at 105-175 Longwood Road South in the City of Hamilton.

Project Understanding

The MIP is planning to update the master plan for the park. To assist in this update, Paradigm has prepared this letter summarizing existing trip and parking generation demand. **Figure 1** (attached) illustrates the location of the MIP lands. **Figure 2** illustrates the existing driveway accesses on site.

Existing Conditions

Currently, the MIP lands consist of three (3) buildings containing institutional, office, and commercial uses. The buildings and their general location within the lands are as follows:

- Atrium: office, laboratory, and conference building located within the northeast area of the site. Driveway access is provided to Longwood Road and Frid Street;
- CanmentMATERIALS (CMAT): a large institutional research centre immediately south of Atrium building. Driveway access is provided to Frid Street.
- McMaster Automotive Resource Centre (MARC): laboratory building located west of the driveway to Longwood Road opposite Frid Street. This building includes the Biomedical Engineering and Advanced Manufacturing (BEAM) and Commercialization Facility.

The MIP generally operates from 06:00 hr to 20:00 hr on weekdays with weekend activity limited to a small number of persons and may periodically host a special event. The daily MIP population is approximately 830 persons with a parking supply of 725 parking spaces distributed through 10 lots within the Park.

At the time of this study, portions of Lot 1 and Lot 2 were fenced off to support the construction activity associated with the Commercialization Facility. The construction activity is anticipated to end by January 2020. Lot 4 and 6 had areas which were distinguishably reserved for permit parking and visitor parking. As a result, the existing number lots have been split into smaller parking areas to capture parking activity adequately.

Figure 3 (attached) illustrates the general location of the on-site parking areas and **Figure 4** (attached) details the west area parking lots. **Table 1** summarizes the current parking supply for the MIP.

TABLE 1: EXISTING PARKING SUPPLY

Lot	Type	Parking Supply at Time of Survey
Lot 2	Permit	206
Lot 1 - North	Visitors	8
Lot 1 - A	Visitors	21
Lot 1 - B	Visitors	16
Lot 4	Permit	39
Lot 6 - North	Permit	17
Lot 1 - C	Visitors	20
Lot 6 - A	Permit	30
Lot 1 - South	Visitors	24
Lot 6 - South	Permit	37
Lot 5	Overflow/Conference	74
Lot 1 - North	Visitors	59
Lot 3	Permit	155
Lot 1 - A	Visitors	9
Lot 1 - South	Visitors	10
Subtotal Visitor Parking		**167**
Subtotal Permit Parking		**484**
Subtotal Overflow/Conference		**74**
Total Parking Supply		**725**

Existing Trip Generation

Trip generation survey counts at the MIP took place during two (2) separate weekdays in October 2019 over a 24-hour period on the following days: Wednesday, October 9th and Thursday, October 17th. The counts were undertaken at 3 driveway connections to the site:

- Location A: Longwood Road at the Atrium building driveway on the east side of the site;
- Location B: Longwood Road at the right-in/right-out driveway to the MARC building on the west side of the site; and
- Location C: Longwood Road at the Frid Street signalized intersection.

Based on the counts observed, the peak hour of the adjacent roadway (Frid Street) is occurring from 7:45 AM to 8:45 AM. Similarly, the peak hour of the site generator is from 8:00 AM to 9:00 AM. The daily trip generation for both days is in the order of 2.38-2.46 trips per person.

These results are summarized in **Table 2** below. The turning movement count data from both days is provided in **Appendix A**.

TABLE 2: EXISTING TRIP GENERATION

Date	Time Period	Peak Hour	Hour Ending	Total Generation	In	Out	% In	% Out	Rate/ Person
09 Oct 2019	Adjacent Street Peak	AM	08:45	222	186	36	84%	16%	0.27
		Mid-Day	13:15	136	71	65	52%	48%	0.16
		PM	17:00	204	42	162	21%	79%	0.25
	Peak Hour of Generator	AM	09:00	242	206	36	85%	15%	0.29
		Mid-Day	12:15	162	74	88	46%	54%	0.20
		PM	16:45	220	40	180	18%	82%	0.27
		Daily	n/a	1,974	1,014	36	51%	49%	2.38
17 Oct 2019	Adjacent Street Peak	AM	08:45	241	197	44	82%	18%	0.29
		Mid-Day	13:15	174	93	81	53%	47%	0.21
		PM	17:00	200	43	157	22%	79%	0.24
	Peak Hour of Generator	AM	09:00	248	209	39	84%	16%	0.30
		Mid-Day	13:15	174	93	81	53%	47%	0.21
		PM	17:00	206	43	163	21%	79%	0.25
		Daily	n/a	2,044	1,049	39	51%	49%	2.46

Existing Parking Generation

Weekday parking demand data was collected on two separate weekdays during October 2019 during normal operations of the MIP. The parking demand data was collected in 60-minute intervals during typical MIP operations. The survey periods assessed include:

- Day 1 – Wednesday, 09 October 2019 from 06:00 hr to 20:00 hr.; and
- Day 2 – Thursday, 17 October 2019 from 06:00 hr to 20:00 hr.

Vehicle Parking Generation

Vehicle parking demand has been summarized for each survey day based on demand by lot, demand by use, and the temporal distribution:

- Parking demand by lot - **Table 3**;
- Parking demand by use (visitor/permit/overflow) - **Table 4**; and
- Temporal distribution - **Figure 5** (attached)

The parking data is summarized in **Appendix B**. The following parking characteristics are noted:

- The MIP is operating with a parking surplus during all time periods examined;
- Peak parking demand is approximately 416-445 vehicles and typically occurs mid-day around 11:00 AM;
- Parking supply is utilized 55-60 percent;
- Average parking demand is 0.52-0.56 spaces per person; and
- Lot 2 and 3 contain approximately 50 percent of the MIP parking supply and accommodates 65-75 percent of the parking demand.

As a general comparison, the following parking characteristics are noted from the 2017 study:

- The MIP is operating with a parking surplus during all time periods examined;
- Peak parking demand for the MIP is approximately 370-410 vehicles and typically occurs mid-day around 11:00 AM;
- Parking supply is utilized 45-50 percent;
- Average parking demand per person is 0.46-0.51 spaces per person; and
- Lot 2 and 3 contain approximately 45 percent of the MIP parking supply and accommodate approximately 60-70 percent of the parking demand.

TABLE 3: PARKING DEMAND BY LOT

Date	TIME	Lot 2	Lot 1 - North	Lot 1 - A	Lot 1 - B	Lot 4	Lot 6 - North	Lot 1 - C	Lot 6 - A	Lot 1 - SOUTH	Lot 6 - SOUTH	Lot 5	Lot 1 - North	Lot 3	Lot 1 - A	Lot 1 - SOUTH	Illegal Veh	Total
9-Oct-19	SUPPLY	206	8	21	16	39	17	20	30	24	37	74	59	155	9	10		**725**
9-Oct-19	6:00	1	0	0	0	0	9	0	0	0	0	0	2	1	0	0		**13**
9-Oct-19	7:00	8	0	2	0	0	17	0	0	1	0	0	3	9	0	0		**40**
9-Oct-19	8:00	28	2	6	1	7	23	0	0	4	1	6	6	27	0	0		**111**
9-Oct-19	9:00	132	5	15	8	24	22	1	1	5	4	22	31	77	0	0		**347**
9-Oct-19	10:00	153	6	18	11	22	26	3	5	8	4	26	39	103	0	0		**424**
9-Oct-19	**11:00**	**156**	**5**	**20**	**11**	**23**	**27**	**3**	**4**	**8**	**5**	**33**	**45**	**104**	**0**	**0**	**1**	**445**
9-Oct-19	12:00	157	4	19	10	26	23	4	3	8	6	33	31	79	2	0	1	**406**
9-Oct-19	13:00	151	5	21	10	33	27	6	4	8	6	29	33	92	1	0	1	**427**
9-Oct-19	14:00	148	5	21	13	31	27	8	4	7	6	26	25	96	1	0	1	**419**
9-Oct-19	15:00	143	4	19	12	30	21	6	4	4	4	23	27	89	1	0	1	**388**
9-Oct-19	16:00	115	2	18	10	15	2	4	3	3	4	15	32	99	2	0	1	**325**
9-Oct-19	17:00	60	2	16	10	12	0	2	3	2	2	4	15	37	0	1	1	**167**
9-Oct-19	18:00	37	0	6	7	8	0	1	0	0	0	2	25	6	0	0	1	**93**
9-Oct-19	19:00	57	2	4	3	7	0	0	0	0	0	1	18	4	0	0	0	**96**
9-Oct-19	20:00	47	2	2	2	6	0	0	0	0	0	1	22	2	0	0	0	**84**
Day 1 Summary	**Peak**	**157**	**6**	**21**	**13**	**33**	**27**	**8**	**5**	**8**	**6**	**33**	**45**	**104**	**2**	**1**	**1**	**445**
	Supply	**206**	**8**	**21**	**16**	**39**	**17**	**20**	**30**	**24**	**37**	**74**	**59**	**155**	**9**	**10**	**0**	**725**
	Utilization	**76%**	**75%**	**100%**	**81%**	**85%**	**159%**	**40%**	**17%**	**33%**	**16%**	**45%**	**76%**	**67%**	**22%**	**10%**		**61%**
	RANK	**1**	**11**	**7**	**8**	**4**	**6**	**9**	**13**	**9**	**11**	**4**	**3**	**2**	**14**	**15**		
17-Oct-19	SUPPLY	206	8	21	16	39	17	20	30	24	37	74	59	155	9	10		**725**
17-Oct-19	6:00	1	0	0	0	1	10	0	0	0	0	0	1	0	0	0	1	**14**
17-Oct-19	7:00	6	0	0	0	1	26	0	0	1	0	1	2	7	0	0	1	**45**
17-Oct-19	8:00	25	1	0	0	1	28	0	0	1	4	7	20	27	1	2	1	**118**
17-Oct-19	9:00	122	1	5	5	3	28	0	0	3	8	15	30	70	2	5	11	**308**
17-Oct-19	10:00	146	1	10	6	3	31	4	3	4	4	24	50	96	1	5	11	**399**
17-Oct-19	**11:00**	**147**	**3**	**13**	**7**	**3**	**32**	**6**	**3**	**3**	**5**	**25**	**41**	**112**	**1**	**0**	**15**	**416**
17-Oct-19	12:00	140	1	12	5	3	26	6	1	4	8	26	33	108	1	0	14	**388**
17-Oct-19	13:00	153	0	10	5	6	29	4	1	4	7	23	24	89	1	0	14	**370**
17-Oct-19	14:00	151	5	11	9	5	29	4	2	5	5	23	21	95	2	1	13	**381**
17-Oct-19	15:00	142	3	10	8	3	18	4	3	4	7	19	21	86	1	0	15	**344**
17-Oct-19	16:00	136	2	1	7	6	0	3	3	3	7	13	18	65	1	0	2	**267**
17-Oct-19	17:00	65	3	8	5	3	0	3	1	0	0	7	20	29	0	0	1	**145**
17-Oct-19	18:00	22	4	7	3	3	0	2	1	0	0	2	25	9	0	0	0	**78**
17-Oct-19	19:00	13	3	5	3	2	0	1	0	0	0	0	20	3	0	0	0	**50**
17-Oct-19	20:00	4	3	2	0	2	1	0	0	0	0	0	10	2	0	0	11	**35**
Day 2 Summary	**Peak**	**153**	**5**	**13**	**9**	**6**	**32**	**6**	**3**	**5**	**8**	**26**	**50**	**112**	**2**	**5**	**15**	**416**
	Supply	**206**	**8**	**21**	**16**	**39**	**17**	**20**	**30**	**24**	**37**	**74**	**59**	**155**	**9**	**10**	**0**	**725**
	Utilization	**74%**	**63%**	**62%**	**56%**	**15%**	**188%**	**30%**	**10%**	**21%**	**22%**	**35%**	**85%**	**72%**	**22%**	**50%**		**57%**
	RANK	**1**	**11**	**6**	**7**	**9**	**4**	**9**	**14**	**11**	**8**	**5**	**3**	**2**	**15**	**11**		

TABLE 4: PARKING DEMAND BY USE

Date	Time	Supply	Capacity	Visitor	Permit	Overflow	Illegal Veh	Total	% of Peak
9-Oct-19	SUPPLY	725	616	167	484	74			
9-Oct-19	6:00	725	616	2	11	0	0	**13**	**3%**
9-Oct-19	7:00	725	616	6	34	0	0	**40**	**9%**
9-Oct-19	8:00	725	616	19	86	6	0	**111**	**25%**
9-Oct-19	9:00	725	616	65	260	22	0	**347**	**78%**
9-Oct-19	10:00	725	616	85	313	26	0	**424**	**95%**
9-Oct-19	**11:00**	**725**	**616**	**92**	**319**	**33**	**1**	**445**	**100%**
9-Oct-19	12:00	725	616	78	294	33	1	**406**	**91%**
9-Oct-19	13:00	725	616	84	313	29	1	**427**	**96%**
9-Oct-19	14:00	725	616	80	312	26	1	**419**	**94%**
9-Oct-19	15:00	725	616	73	291	23	1	**388**	**87%**
9-Oct-19	16:00	725	616	71	238	15	1	**325**	**73%**
9-Oct-19	17:00	725	616	48	114	4	1	**167**	**38%**
9-Oct-19	18:00	725	616	39	51	2	1	**93**	**21%**
9-Oct-19	19:00	725	616	27	68	1	0	**96**	**22%**
9-Oct-19	20:00	725	616	28	55	1	0	**84**	**19%**
Day 1 Summary	**Peak**			**92**	**319**	**33**		**445**	
	Supply			**167**	**484**	**74**		**725**	
	Utilization			**55%**	**66%**	**45%**		**61%**	
17-Oct-19	SUPPLY	725	616	167	484	74			
17-Oct-19	6:00	725	616	1	12	0	1	**14**	**3%**
17-Oct-19	7:00	725	616	3	40	1	1	**45**	**11%**
17-Oct-19	8:00	725	616	25	85	7	1	**118**	**28%**
17-Oct-19	9:00	725	616	51	231	15	11	**308**	**74%**
17-Oct-19	10:00	725	616	81	283	24	11	**399**	**96%**
17-Oct-19	**11:00**	**725**	**616**	**74**	**302**	**25**	**15**	**416**	**100%**
17-Oct-19	12:00	725	616	62	286	26	14	**388**	**93%**
17-Oct-19	13:00	725	616	48	285	23	14	**370**	**89%**
17-Oct-19	14:00	725	616	58	287	23	13	**381**	**92%**
17-Oct-19	15:00	725	616	51	259	19	15	**344**	**83%**
17-Oct-19	16:00	725	616	35	217	13	2	**267**	**64%**
17-Oct-19	17:00	725	616	39	98	7	1	**145**	**35%**
17-Oct-19	18:00	725	616	41	35	2	0	**78**	**19%**
17-Oct-19	19:00	725	616	32	18	0	0	**50**	**12%**
17-Oct-19	20:00	725	616	15	9	0	11	**35**	**8%**
Day 2 Summary	**Peak**			**81**	**302**	**26**		**416**	
	Supply			**167**	**484**	**74**		**725**	
	Utilization			**49%**	**62%**	**35%**		**57%**	

Bicycle Parking Demand

Bicycle parking demand data for the same survey periods was also collected. The parking data is summarized in **Appendix B**. **Table 5** summarizes the observed bicycle parking demand by area for the MIP on both October 9th and October 17, respectively.

The estimated bicycle parking supply is 80 spaces consisting of post-ring racks, bike stands, and a Sobi Bicycle hub. Bicycle parking is less structured vs. vehicular parking, as bicycles can be locked to street furniture and other objects. The following bicycle parking characteristics are noted:

- Peak bicycle parking demand for the MIP is approximately 30 bicycles and typically occurs mid-day around 12:00 PM;
- Bicycle parking supply is 35 percent utilized;
- Bicycle parking in the courtyard area appears to be greater than the rest of the MIP; and
- Average bicycle parking demand equates to 0.04 bicycle parking spaces per 10 persons. As a general comparison, the City's Transportation Demand Management (TDM) Policy for Institutional developments suggests a bicycle parking supply rate of 1 space per 10 students.

As a general comparison, the following parking characteristics are noted from the 2017 study:

- Peak bicycle parking demand for the MIP is approximately 10 bicycles and typically occurs mid-day around 11:00 AM;
- 10 percent of the site's bicycle parking supply is utilized;
- Bicycle parking for the MARC building appears to be greater than the rest of the MIP; and
- Average bicycle parking demand equates to 0.06 bicycle parking spaces per 10 persons.

TABLE 5: BICYCLE PARKING DEMAND BY AREA

Date	TIME	MARC	ATRIUM	COURTYARD	Other Areas	Total
9-Oct-19	SUPPLY	15	16	49		**80**
9-Oct-19	6:00	0	0	0	1	**1**
9-Oct-19	7:00	0	0	0	5	**5**
9-Oct-19	8:00	0	0	0	5	**5**
9-Oct-19	9:00	3	1	9	6	**19**
9-Oct-19	10:00	5	2	13	8	**28**
9-Oct-19	11:00	7	2	13	8	**30**
9-Oct-19	**12:00**	**8**	**1**	**13**	**8**	**30**
9-Oct-19	13:00	7	1	11	8	**27**
9-Oct-19	14:00	7	2	12	8	**29**
9-Oct-19	15:00	8	2	12	7	**29**
9-Oct-19	16:00	9	2	3	5	**19**
9-Oct-19	17:00	7	0	1	1	**9**
9-Oct-19	18:00	3	0	1	1	**5**
9-Oct-19	19:00	4	0	1	1	**6**
9-Oct-19	20:00	3	0	0	1	**4**
Day 1 Summary	**Peak**	**9**	**2**	**13**	**8**	**30**
	Supply	**15**	**16**	**49**	**0**	**80**
	Utilization	**60%**	**13%**	**27%**		**38%**
	RANK	**2**	**3**	**1**		
Date	**TIME**	**MARC**	**ATRIUM**	**COURTYARD**	**Other Areas**	**Total**
17-Oct-19	SUPPLY	15	16	49		**80**
17-Oct-19	6:00	0	0	0	1	**1**
17-Oct-19	7:00	0	0	2	5	**7**
17-Oct-19	8:00	0	0	4	5	**9**
17-Oct-19	9:00	1	0	13	5	**19**
17-Oct-19	10:00	1	0	14	5	**20**
17-Oct-19	11:00	1	0	17	7	**25**
17-Oct-19	**12:00**	**3**	**0**	**17**	**6**	**26**
17-Oct-19	13:00	4	0	13	6	**23**
17-Oct-19	14:00	4	0	12	6	**22**
17-Oct-19	15:00	4	0	10	5	**19**
17-Oct-19	16:00	4	0	9	5	**18**
17-Oct-19	17:00	3	0	6	7	**16**
17-Oct-19	18:00	2	0	4	1	**7**
17-Oct-19	19:00	0	0	3	1	**4**
17-Oct-19	20:00	0	0	3	1	**4**
Day 2 Summary	**Peak**	**4**	**0**	**17**	**7**	**26**
	Supply	**15**	**16**	**49**	**0**	**80**
	Utilization	**27%**	**0%**	**35%**		**33%**
	RANK	**2**	**3**	**1**		

Conclusions

Based on the parking characteristics observed between 2019 (current) and 2017, the following conclusions can be made:

- The MIP continues to operate with a parking surplus during all examined time periods.
- The existing peak parking demand has increased from a maximum of 410 vehicles in 2017 to 445 vehicles currently. Peak demand still operates during the same time of day, mid-day around 11:00 AM.
- Parking supply utilization has increased from 45-50 percent in 2017 to 55-60 percent in 2019.
- Average parking demand per person has increased from 0.46-0.51 in 2017 to 0.50-0.54 in 2019.
- Lots 2 and 3 continue to accommodate the highest parking demand on site. The demand on these lots has increased from 60-70 percent in 2017 to 65-75 percent in 2019.
- Lots 2 and 3 contain approximately 50 percent of the MIP total supply currently, versus 45 percent in 2017.
- Peak bicycle parking demand from 2017-2019 has tripled from 10 bikes to 30 bikes with peak demand remaining consistent during the mi-day; between 11:00 AM and 12 PM.
- Utilization of the site's total bicycle parking supply has increased significantly from 10 percent in 2017 to 35 percent currently.
- The courtyard parking area is utilized more now versus the MARC area 2017.
- Average bicycle parking rate is 0.04 spaces per 10 persons currently versus 0.06 spaces per 10 persons as documented in 2017.

We trust that this information adequately addresses the work completed on this file.

Yours truly,

PARADIGM TRANSPORTATION SOLUTIONS LIMITED

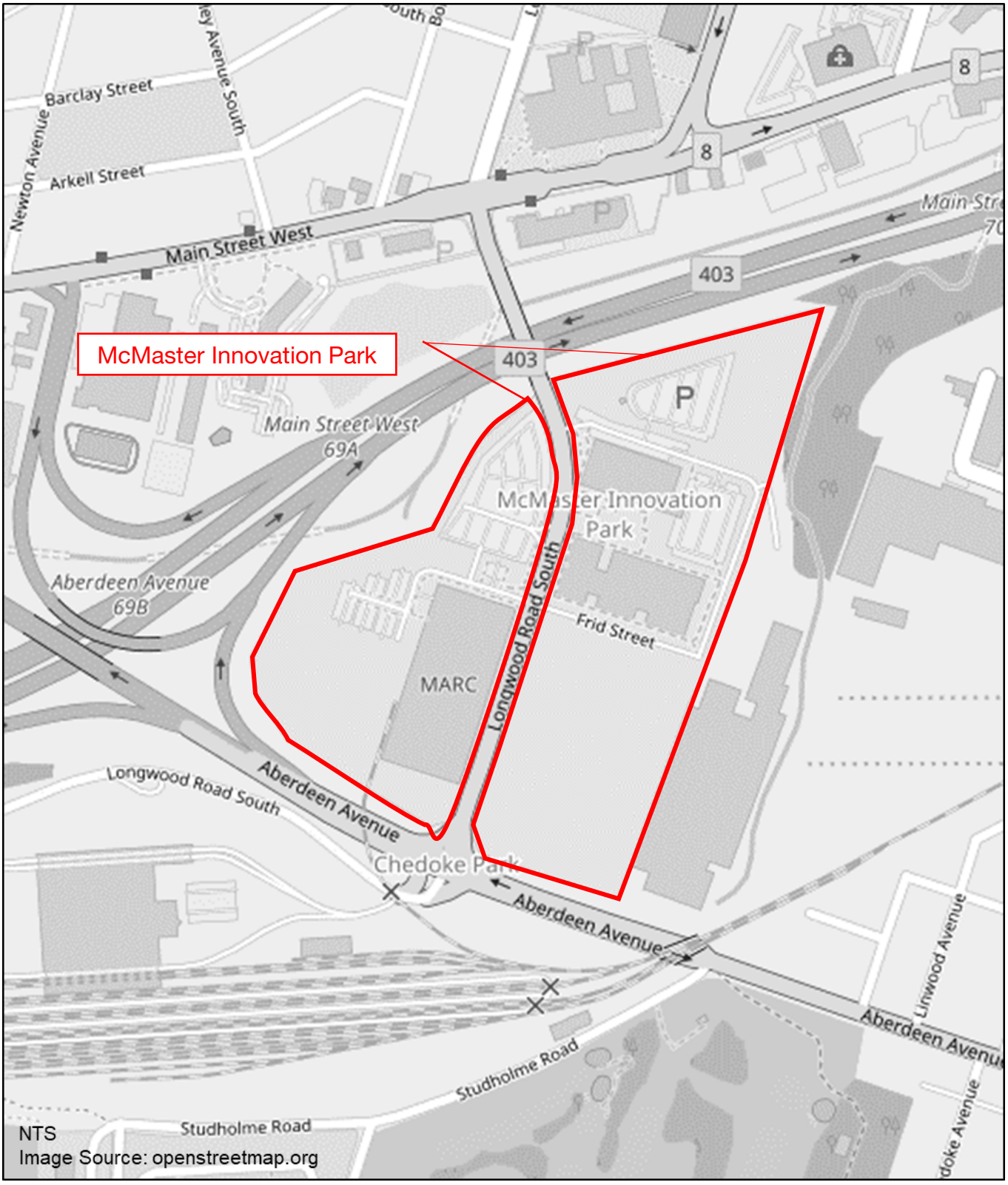


Scott Catton, C.E.T.
Senior Project Manager



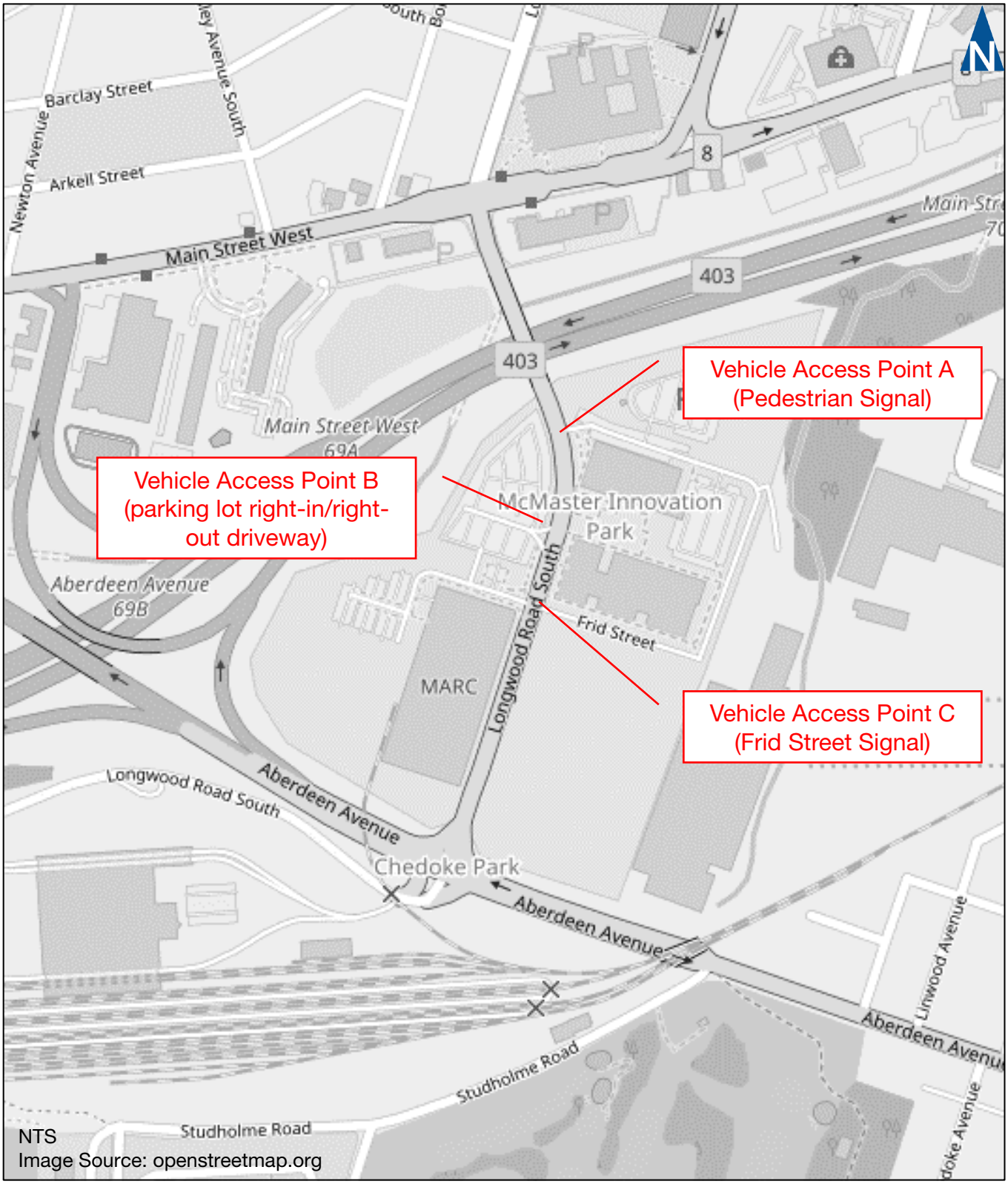
Stew Elkins, B.E.S.
Vice President

Attachments



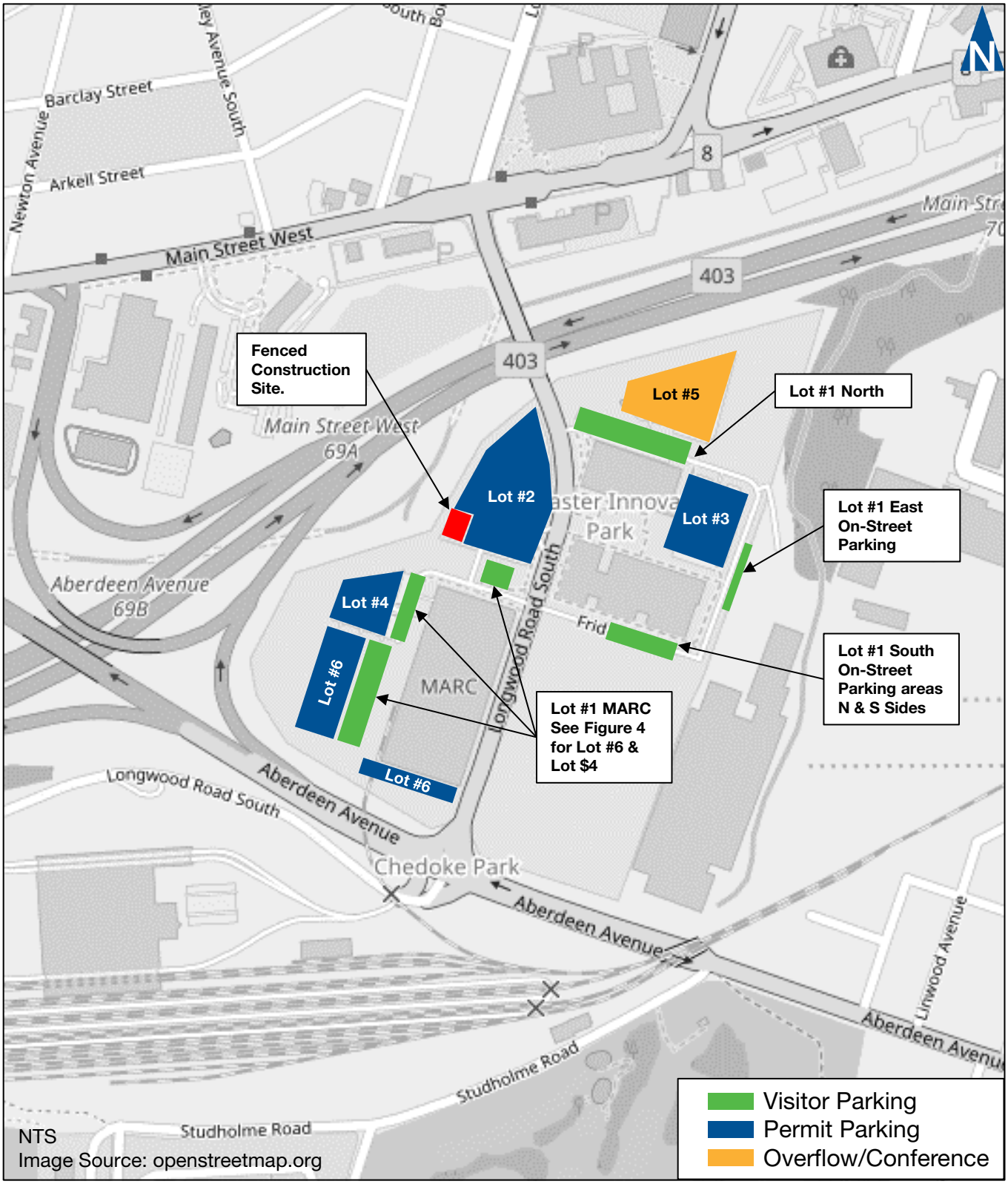
paradigm TRANSPORTATION SOLUTIONS LIMITED

Site Location

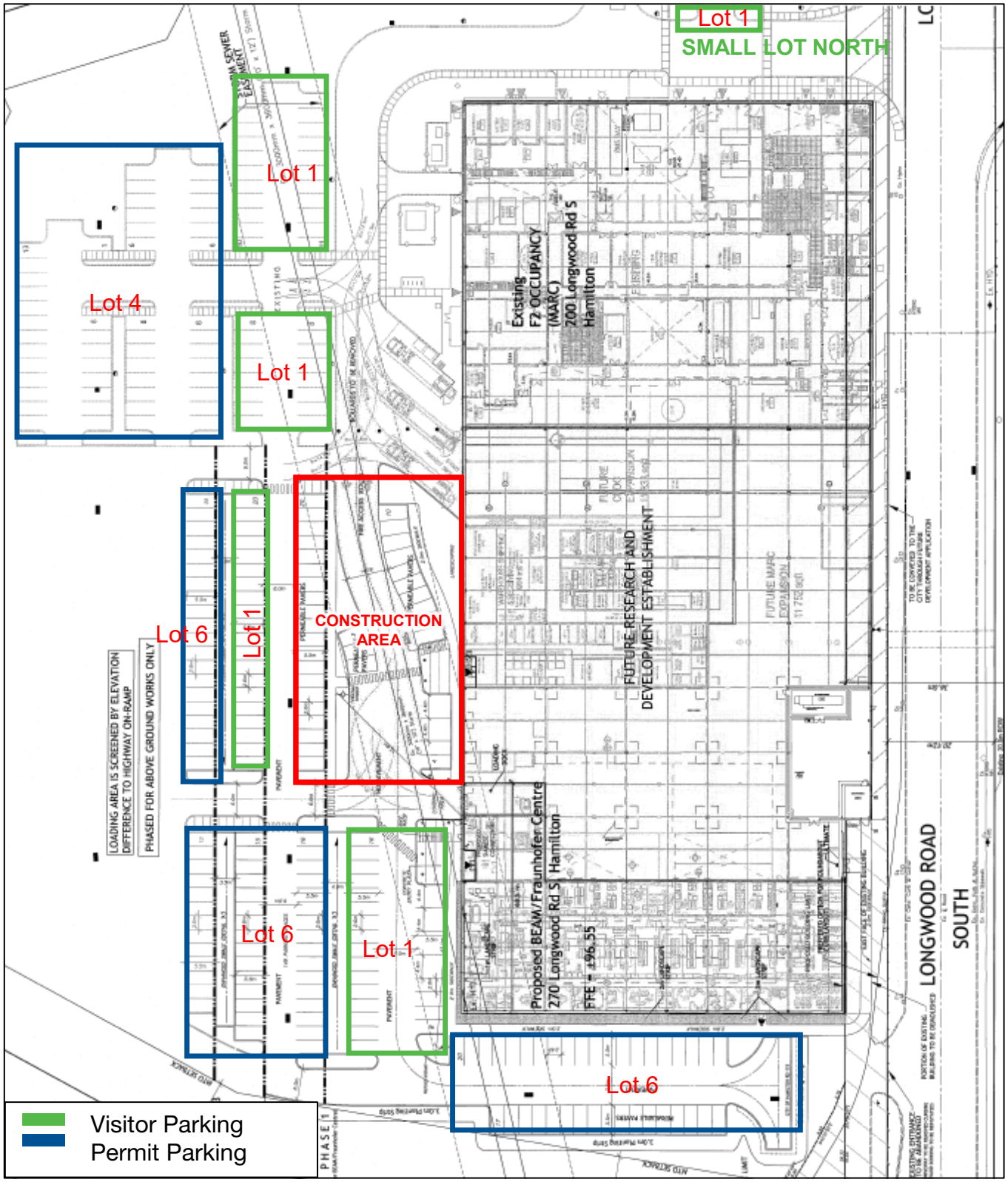


Existing Site Driveways

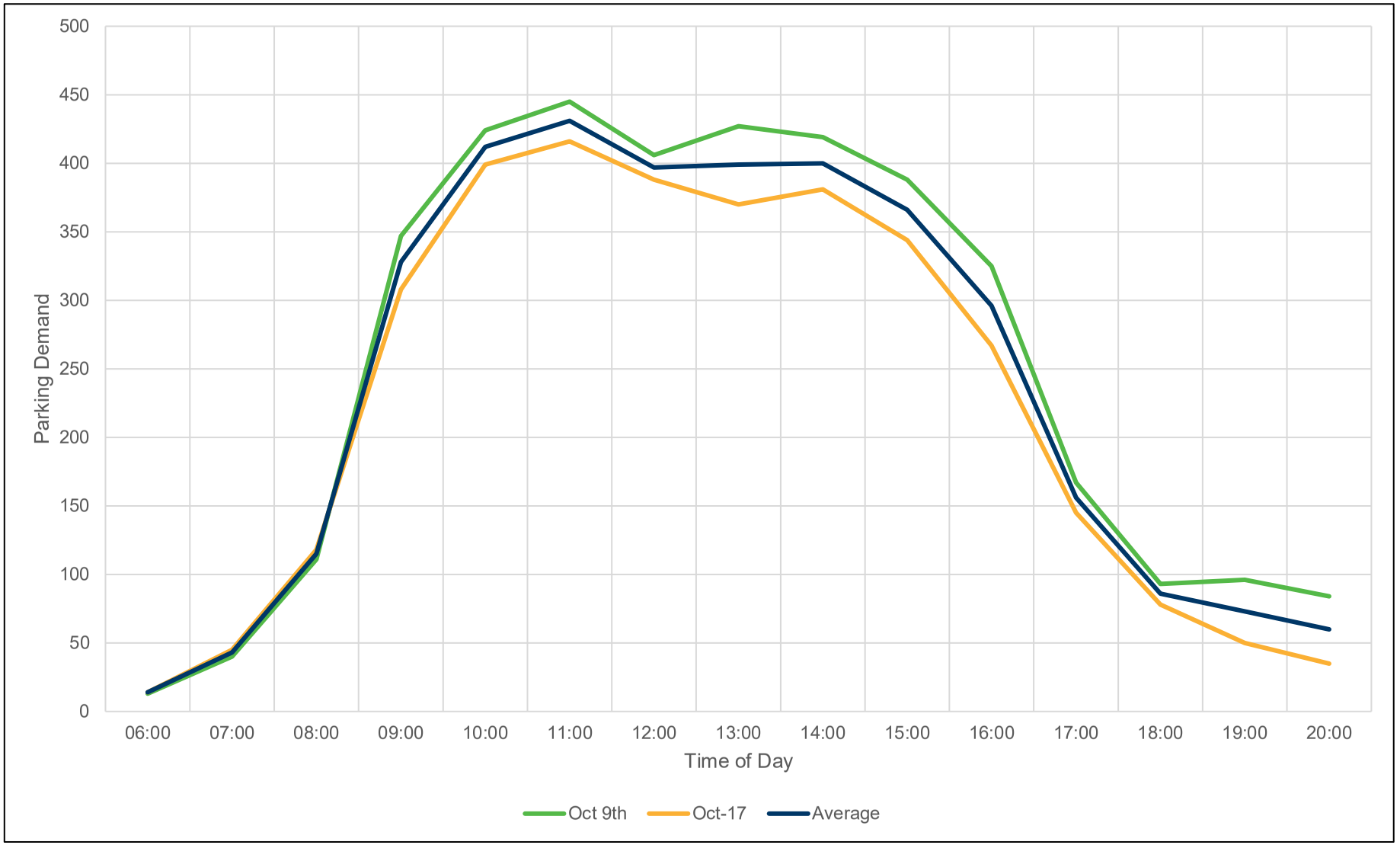
Figure 2



Layout of MIP Parking Supply and Parking Space Assignment



West Area Parking Lot Detail
Visitor and Permit Parking



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Temporal Distribution of Vehicle Parking Demand (October 9, October 17, and Average of Both Days)

Appendix A

TURNING MOVEMENT COUNT DATA SHEETS



Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & East Parking Lot
Site Code:
Start Date: 10/09/2019

Turning Movement Data

Start Time	East Parking Lot Westbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
12:00 AM	0	0	0	0	0	16	0	0	0	16	0	26	0	0	26	42
12:15 AM	0	0	0	0	0	25	0	0	0	25	0	17	0	0	17	42
12:30 AM	0	0	0	0	0	14	0	0	0	14	0	19	0	0	19	33
12:45 AM	0	0	0	0	0	7	0	0	0	7	0	11	0	0	11	18
Hourly Total	0	0	0	0	0	62	0	0	0	62	0	73	0	0	73	135
1:00 AM	0	0	0	0	0	11	0	0	0	11	0	12	0	0	12	23
1:15 AM	0	0	0	0	0	9	0	0	0	9	0	10	0	0	10	19
1:30 AM	0	0	0	0	0	5	0	0	0	5	0	8	0	0	8	13
1:45 AM	0	0	0	0	0	4	0	0	0	4	0	6	0	0	6	10
Hourly Total	0	0	0	0	0	29	0	0	0	29	0	36	0	0	36	65
2:00 AM	0	0	0	0	0	6	0	0	0	6	0	4	0	0	4	10
2:15 AM	0	0	0	1	0	7	0	0	0	7	1	10	0	0	11	18
2:30 AM	0	0	0	0	0	7	0	0	0	7	0	6	0	0	6	13
2:45 AM	0	0	0	0	0	3	0	0	0	3	0	2	0	0	2	5
Hourly Total	0	0	0	1	0	23	0	0	0	23	1	22	0	0	23	46
3:00 AM	0	0	0	0	0	5	0	0	0	5	0	5	0	0	5	10
3:15 AM	0	0	0	0	0	2	0	0	0	2	0	1	0	0	1	3
3:30 AM	0	0	0	0	0	4	0	0	0	4	0	2	0	0	2	6
3:45 AM	0	0	0	0	0	3	0	0	0	3	0	7	0	0	7	10
Hourly Total	0	0	0	0	0	14	0	0	0	14	0	15	0	0	15	29
4:00 AM	0	0	0	0	0	3	0	0	0	3	0	6	0	0	6	9
4:15 AM	0	0	0	0	0	4	0	0	0	4	0	5	0	0	5	9
4:30 AM	0	1	0	0	1	7	1	0	0	8	0	7	0	0	7	16
4:45 AM	0	0	0	0	0	6	0	0	0	6	0	7	0	0	7	13
Hourly Total	0	1	0	0	1	20	1	0	0	21	0	25	0	0	25	47
5:00 AM	0	1	0	1	1	15	0	0	0	15	2	10	0	0	12	28
5:15 AM	0	0	0	0	0	13	0	0	0	13	0	11	0	0	11	24
5:30 AM	1	0	0	1	1	30	0	0	0	30	1	10	0	0	11	42
5:45 AM	0	2	0	4	2	42	1	0	1	43	0	23	0	0	23	68
Hourly Total	1	3	0	6	4	100	1	0	1	101	3	54	0	0	57	162
6:00 AM	0	1	0	0	1	44	0	0	0	44	0	30	0	0	30	75
6:15 AM	1	0	0	3	1	49	1	0	0	50	0	32	0	0	32	83
6:30 AM	0	0	0	1	0	83	2	0	0	85	0	64	0	0	64	149
6:45 AM	0	0	0	3	0	108	2	0	2	110	0	44	0	0	44	154
Hourly Total	1	1	0	7	2	284	5	0	2	289	0	170	0	0	170	461
7:00 AM	2	1	0	5	3	111	1	0	4	112	2	76	0	0	78	193

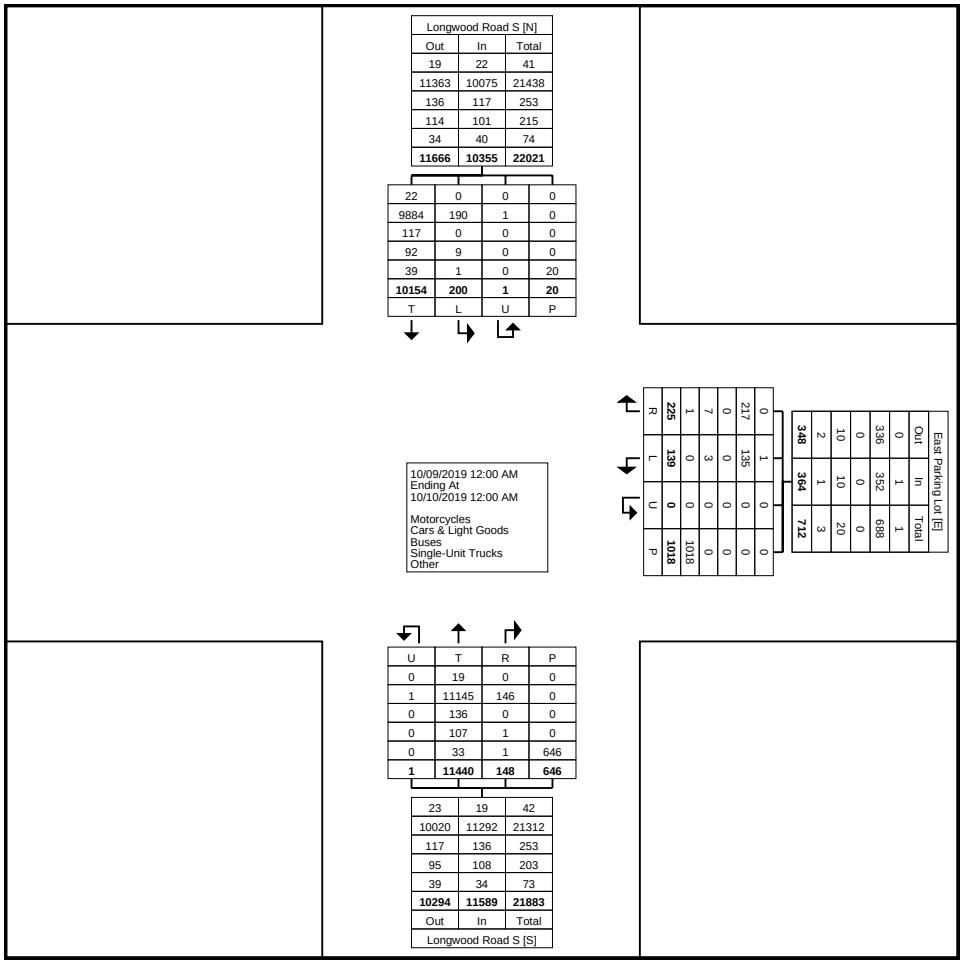
7:15 AM	1	0	0	3	1	143	2	0	2	145	5	94	0	2	99	245
7:30 AM	0	0	0	3	0	157	3	0	0	160	3	123	0	0	126	286
7:45 AM	0	1	0	21	1	221	3	0	7	224	3	126	0	1	129	354
Hourly Total	3	2	0	32	5	632	9	0	13	641	13	419	0	3	432	1078
8:00 AM	0	4	0	29	4	278	8	0	32	286	2	139	0	0	141	431
8:15 AM	0	2	0	62	2	277	8	0	30	285	7	164	0	0	171	458
8:30 AM	0	4	0	27	4	249	10	0	15	259	8	169	0	0	177	440
8:45 AM	1	6	0	16	7	248	3	0	20	251	15	157	0	0	172	430
Hourly Total	1	16	0	134	17	1052	29	0	97	1081	32	629	0	0	661	1759
9:00 AM	3	2	0	21	5	236	10	0	29	246	10	115	0	3	125	376
9:15 AM	0	1	0	13	1	195	5	0	16	200	9	114	0	2	123	324
9:30 AM	0	5	0	12	5	183	1	0	9	184	5	121	0	0	126	315
9:45 AM	1	1	0	8	2	201	1	0	4	202	11	113	0	0	124	328
Hourly Total	4	9	0	54	13	815	17	0	58	832	35	463	0	5	498	1343
10:00 AM	2	2	0	12	4	183	8	0	9	191	4	112	0	0	116	311
10:15 AM	0	2	0	14	2	201	4	0	3	205	1	141	0	0	142	349
10:30 AM	2	3	0	4	5	149	2	0	3	151	6	141	0	0	147	303
10:45 AM	3	7	0	15	10	214	6	0	7	220	4	126	0	0	130	360
Hourly Total	7	14	0	45	21	747	20	0	22	767	15	520	0	0	535	1323
11:00 AM	3	4	0	16	7	199	3	1	9	203	2	114	0	1	116	326
11:15 AM	2	3	0	31	5	193	3	0	25	196	0	116	0	0	116	317
11:30 AM	4	4	0	10	8	165	2	0	4	167	0	132	0	0	132	307
11:45 AM	4	10	0	31	14	158	0	0	12	158	3	145	0	0	148	320
Hourly Total	13	21	0	88	34	715	8	1	50	724	5	507	0	1	512	1270
12:00 PM	4	7	0	20	11	173	0	0	17	173	5	119	0	0	124	308
12:15 PM	1	6	0	24	7	173	1	0	16	174	3	158	0	0	161	342
12:30 PM	1	2	0	17	3	165	3	0	7	168	5	148	0	0	153	324
12:45 PM	6	1	0	26	7	210	5	0	14	215	7	163	0	0	170	392
Hourly Total	12	16	0	87	28	721	9	0	54	730	20	588	0	0	608	1366
1:00 PM	8	8	0	16	16	174	1	0	12	175	3	135	0	1	138	329
1:15 PM	7	3	0	18	10	170	1	0	14	171	1	137	0	0	138	319
1:30 PM	1	2	0	16	3	158	1	0	7	159	9	154	0	3	163	325
1:45 PM	1	6	0	23	7	174	3	0	14	177	2	129	1	1	132	316
Hourly Total	17	19	0	73	36	676	6	0	47	682	15	555	1	5	571	1289
2:00 PM	1	0	0	15	1	159	2	0	7	161	2	134	0	0	136	298
2:15 PM	2	4	0	14	6	192	3	0	15	195	2	159	0	1	161	362
2:30 PM	2	4	0	19	6	189	1	0	14	190	3	159	0	0	162	358
2:45 PM	0	3	0	13	3	171	1	0	9	172	3	165	0	0	168	343
Hourly Total	5	11	0	61	16	711	7	0	45	718	10	617	0	1	627	1361
3:00 PM	4	6	0	34	10	162	0	0	9	162	2	211	0	0	213	385
3:15 PM	3	4	0	46	7	184	0	0	6	184	2	206	0	1	208	399
3:30 PM	5	3	0	29	8	194	1	0	10	195	1	259	0	0	260	463
3:45 PM	1	2	0	28	3	189	0	0	21	189	4	224	0	0	228	420
Hourly Total	13	15	0	137	28	729	1	0	46	730	9	900	0	1	909	1667
4:00 PM	12	20	0	22	32	205	1	0	20	206	3	194	0	0	197	435
4:15 PM	7	7	0	16	14	220	3	0	15	223	2	280	0	0	282	519
4:30 PM	2	9	0	17	11	186	0	0	23	186	5	278	0	0	283	480
4:45 PM	1	11	0	26	12	207	6	0	22	213	3	269	0	0	272	497
Hourly Total	22	47	0	81	69	818	10	0	80	828	13	1021	0	0	1034	1931
5:00 PM	2	3	0	20	5	213	3	0	23	216	2	249	0	0	251	472
5:15 PM	4	6	0	20	10	221	3	0	13	224	1	256	0	0	257	491
5:30 PM	4	3	0	13	7	213	2	0	5	215	5	213	0	0	218	440

5:45 PM	1	6	0	32	7	173	4	0	17	177	2	220	0	0	222	406
Hourly Total	11	18	0	85	29	820	12	0	58	832	10	938	0	0	948	1809
6:00 PM	3	2	0	12	5	184	3	0	7	187	4	198	0	2	202	394
6:15 PM	2	4	0	21	6	200	1	0	11	201	2	187	0	0	189	396
6:30 PM	1	1	0	11	2	216	3	0	5	219	2	161	0	0	163	384
6:45 PM	6	3	0	2	9	164	1	0	3	165	2	136	0	2	138	312
Hourly Total	12	10	0	46	22	764	8	0	26	772	10	682	0	4	692	1486
7:00 PM	1	0	0	7	1	145	1	0	7	146	0	153	0	0	153	300
7:15 PM	2	2	0	5	4	138	0	0	4	138	0	134	0	0	134	276
7:30 PM	1	2	0	5	3	132	0	0	2	132	1	115	0	0	116	251
7:45 PM	0	0	0	5	0	133	0	0	4	133	1	161	0	0	162	295
Hourly Total	4	4	0	22	8	548	1	0	17	549	2	563	0	0	565	1122
8:00 PM	2	4	0	5	6	118	0	0	3	118	0	150	0	0	150	274
8:15 PM	3	2	0	10	5	114	0	0	6	114	0	142	0	0	142	261
8:30 PM	0	2	0	10	2	119	0	0	4	119	0	110	0	0	110	231
8:45 PM	3	1	0	6	4	100	1	0	1	101	0	103	0	0	103	208
Hourly Total	8	9	0	31	17	451	1	0	14	452	0	505	0	0	505	974
9:00 PM	0	0	0	6	0	107	0	0	2	107	2	136	0	0	138	245
9:15 PM	1	2	0	1	3	101	1	0	0	102	1	118	0	0	119	224
9:30 PM	0	2	0	1	2	93	0	0	2	93	1	94	0	0	95	190
9:45 PM	0	1	0	1	1	99	0	0	1	99	0	90	0	0	90	190
Hourly Total	1	5	0	9	6	400	1	0	5	401	4	438	0	0	442	849
10:00 PM	0	1	0	1	1	56	1	0	0	57	1	87	0	0	88	146
10:15 PM	2	0	0	8	2	51	0	0	4	51	0	72	0	0	72	125
10:30 PM	2	1	0	3	3	40	1	0	2	41	1	60	0	0	61	105
10:45 PM	0	1	0	2	1	41	0	0	0	41	0	55	0	0	55	97
Hourly Total	4	3	0	14	7	188	2	0	6	190	2	274	0	0	276	473
11:00 PM	0	0	0	3	0	29	0	0	2	29	0	45	0	0	45	74
11:15 PM	0	0	0	2	0	39	0	0	2	39	1	36	0	0	37	76
11:30 PM	0	1	0	0	1	34	0	0	1	34	0	28	0	0	28	63
11:45 PM	0	0	0	0	0	19	0	0	0	19	0	31	0	0	31	50
Hourly Total	0	1	0	5	1	121	0	0	5	121	1	140	0	0	141	263
Grand Total	139	225	0	1018	364	11440	148	1	646	11589	200	10154	1	20	10355	22308
Approach %	38.2	61.8	0.0	-	-	98.7	1.3	0.0	-	-	1.9	98.1	0.0	-	-	-
Total %	0.6	1.0	0.0	-	1.6	51.3	0.7	0.0	-	51.9	0.9	45.5	0.0	-	46.4	-
Motorcycles	1	0	0	-	1	19	0	0	-	19	0	22	0	-	22	42
% Motorcycles	0.7	0.0	-	-	0.3	0.2	0.0	0.0	-	0.2	0.0	0.2	0.0	-	0.2	0.2
Cars & Light Goods	135	217	0	-	352	11145	146	1	-	11292	190	9884	1	-	10075	21719
% Cars & Light Goods	97.1	96.4	-	-	96.7	97.4	98.6	100.0	-	97.4	95.0	97.3	100.0	-	97.3	97.4
Buses	0	0	0	-	0	136	0	0	-	136	0	117	0	-	117	253
% Buses	0.0	0.0	-	-	0.0	1.2	0.0	0.0	-	1.2	0.0	1.2	0.0	-	1.1	1.1
Single-Unit Trucks	3	7	0	-	10	107	1	0	-	108	9	92	0	-	101	219
% Single-Unit Trucks	2.2	3.1	-	-	2.7	0.9	0.7	0.0	-	0.9	4.5	0.9	0.0	-	1.0	1.0
Articulated Trucks	0	0	0	-	0	18	0	0	-	18	0	22	0	-	22	40
% Articulated Trucks	0.0	0.0	-	-	0.0	0.2	0.0	0.0	-	0.2	0.0	0.2	0.0	-	0.2	0.2
Bicycles on Road	0	1	0	-	1	15	1	0	-	16	1	17	0	-	18	35
% Bicycles on Road	0.0	0.4	-	-	0.3	0.1	0.7	0.0	-	0.1	0.5	0.2	0.0	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	24	-	-	-	-	2	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	2.4	-	-	-	-	0.3	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	994	-	-	-	-	644	-	-	-	-	20	-	-
% Pedestrians	-	-	-	97.6	-	-	-	-	99.7	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & East Parking Lot
Site Code:
Start Date: 10/09/2019



Turning Movement Data Plot

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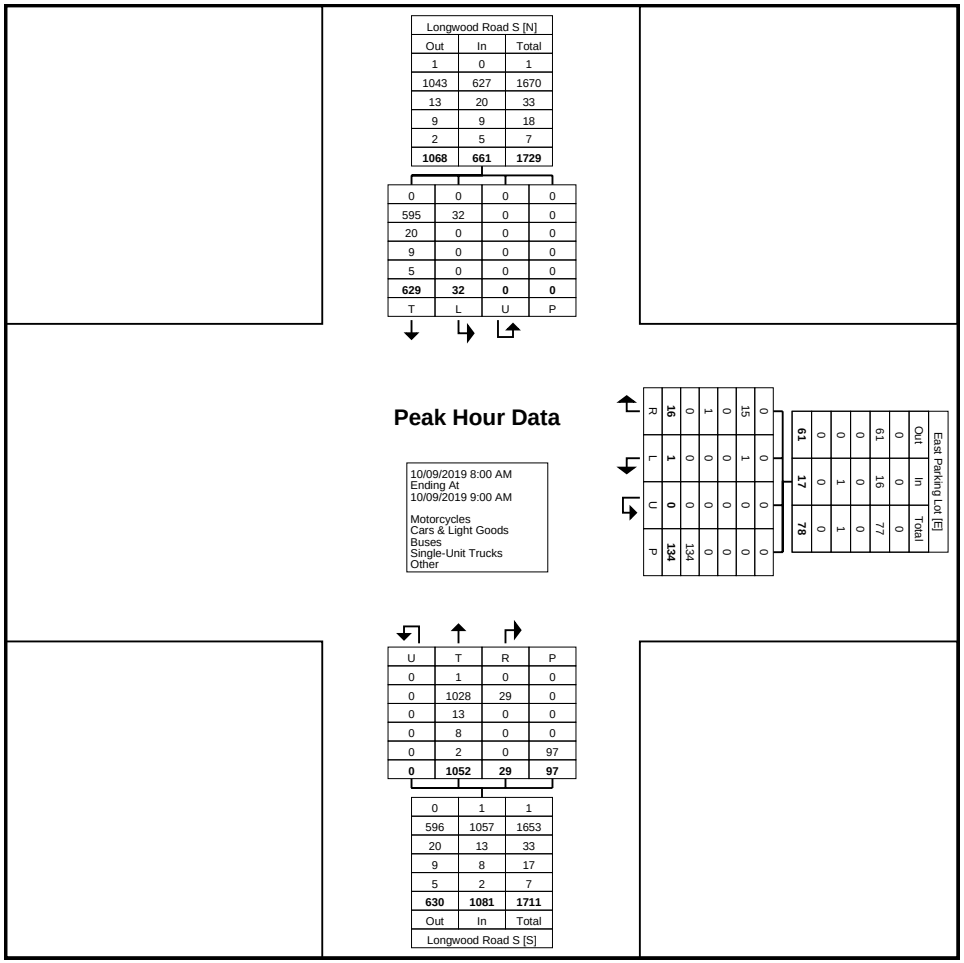
Turning Movement Peak Hour Data (8:00 AM)

Start Time	East Parking Lot Westbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
8:00 AM	0	4	0	29	4	278	8	0	32	286	2	139	0	0	141	431
8:15 AM	0	2	0	62	2	277	8	0	30	285	7	164	0	0	171	458
8:30 AM	0	4	0	27	4	249	10	0	15	259	8	169	0	0	177	440
8:45 AM	1	6	0	16	7	248	3	0	20	251	15	157	0	0	172	430
Total	1	16	0	134	17	1052	29	0	97	1081	32	629	0	0	661	1759
Approach %	5.9	94.1	0.0	-	-	97.3	2.7	0.0	-	-	4.8	95.2	0.0	-	-	-
Total %	0.1	0.9	0.0	-	1.0	59.8	1.6	0.0	-	61.5	1.8	35.8	0.0	-	37.6	-
PHF	0.250	0.667	0.000	-	0.607	0.946	0.725	0.000	-	0.945	0.533	0.930	0.000	-	0.934	0.960
Motorcycles	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	1	15	0	-	16	1028	29	0	-	1057	32	595	0	-	627	1700
% Cars & Light Goods	100.0	93.8	-	-	94.1	97.7	100.0	-	-	97.8	100.0	94.6	-	-	94.9	96.6
Buses	0	0	0	-	0	13	0	0	-	13	0	20	0	-	20	33
% Buses	0.0	0.0	-	-	0.0	1.2	0.0	-	-	1.2	0.0	3.2	-	-	3.0	1.9
Single-Unit Trucks	0	1	0	-	1	8	0	0	-	8	0	9	0	-	9	18
% Single-Unit Trucks	0.0	6.3	-	-	5.9	0.8	0.0	-	-	0.7	0.0	1.4	-	-	1.4	1.0
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	4	0	-	4	4
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.6	-	-	0.6	0.2
Bicycles on Road	0	0	0	-	0	2	0	0	-	2	0	1	0	-	1	3
% Bicycles on Road	0.0	0.0	-	-	0.0	0.2	0.0	-	-	0.2	0.0	0.2	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	4	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	3.0	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	130	-	-	-	-	97	-	-	-	-	0	-	-
% Pedestrians	-	-	-	97.0	-	-	-	-	100.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
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Turning Movement Peak Hour Data Plot (8:00 AM)

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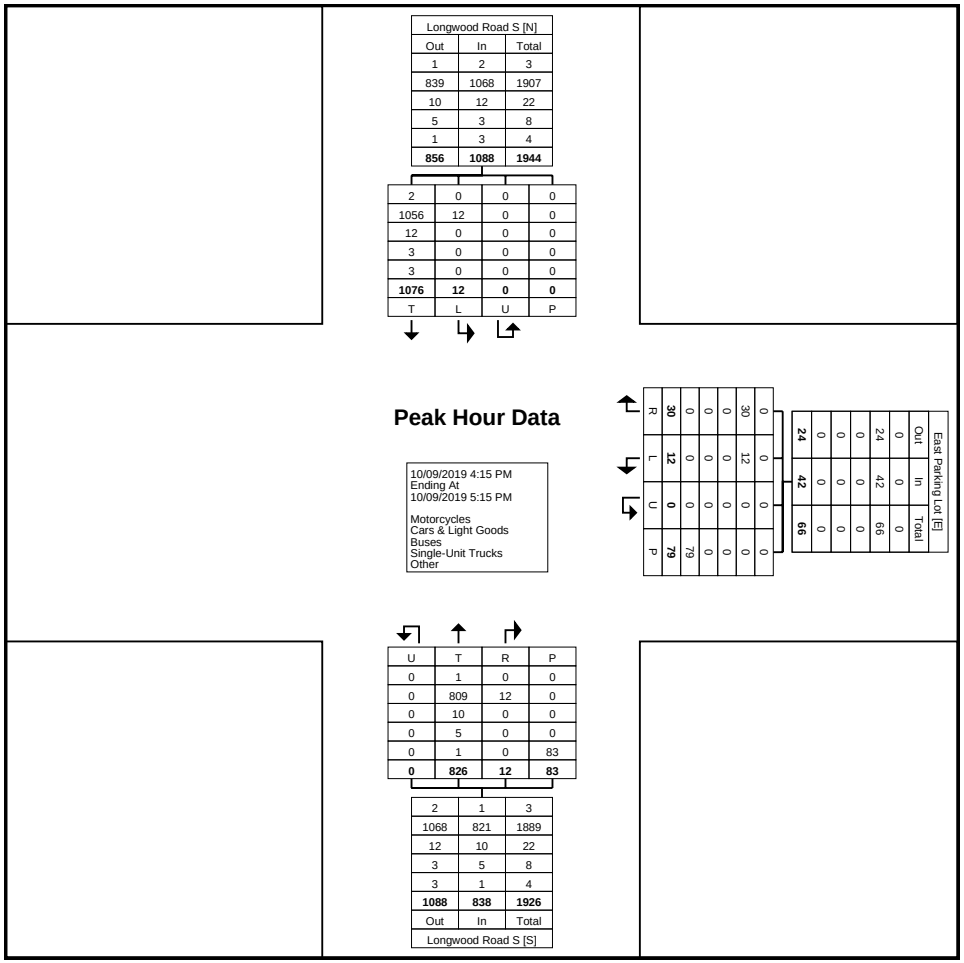
Turning Movement Peak Hour Data (4:15 PM)

Start Time	East Parking Lot Westbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
4:15 PM	7	7	0	16	14	220	3	0	15	223	2	280	0	0	282	519
4:30 PM	2	9	0	17	11	186	0	0	23	186	5	278	0	0	283	480
4:45 PM	1	11	0	26	12	207	6	0	22	213	3	269	0	0	272	497
5:00 PM	2	3	0	20	5	213	3	0	23	216	2	249	0	0	251	472
Total	12	30	0	79	42	826	12	0	83	838	12	1076	0	0	1088	1968
Approach %	28.6	71.4	0.0	-	-	98.6	1.4	0.0	-	-	1.1	98.9	0.0	-	-	-
Total %	0.6	1.5	0.0	-	2.1	42.0	0.6	0.0	-	42.6	0.6	54.7	0.0	-	55.3	-
PHF	0.429	0.682	0.000	-	0.750	0.939	0.500	0.000	-	0.939	0.600	0.961	0.000	-	0.961	0.948
Motorcycles	0	0	0	-	0	1	0	0	-	1	0	2	0	-	2	3
% Motorcycles	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.0	0.2	-	-	0.2	0.2
Cars & Light Goods	12	30	0	-	42	809	12	0	-	821	12	1056	0	-	1068	1931
% Cars & Light Goods	100.0	100.0	-	-	100.0	97.9	100.0	-	-	98.0	100.0	98.1	-	-	98.2	98.1
Buses	0	0	0	-	0	10	0	0	-	10	0	12	0	-	12	22
% Buses	0.0	0.0	-	-	0.0	1.2	0.0	-	-	1.2	0.0	1.1	-	-	1.1	1.1
Single-Unit Trucks	0	0	0	-	0	5	0	0	-	5	0	3	0	-	3	8
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.6	0.0	-	-	0.6	0.0	0.3	-	-	0.3	0.4
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	0	1	0	-	1	1
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.1
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	2	0	-	2	3
% Bicycles on Road	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.0	0.2	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	1.3	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	78	-	-	-	-	83	-	-	-	-	0	-	-
% Pedestrians	-	-	-	98.7	-	-	-	-	100.0	-	-	-	-	-	-	-

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Turning Movement Peak Hour Data Plot (4:15 PM)

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Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & Frid Street
Site Code:
Start Date: 10/09/2019

Turning Movement Data

Start Time	Driveway Eastbound						Frid Street Westbound						Longwood Road S Northbound						Longwood Road S Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
12:00 AM	1	0	0	0	0	1	0	0	0	0	1	0	1	16	0	0	0	17	0	23	0	0	0	23	41
12:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	22	0	15	0	0	0	15	37
12:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0	20	0	0	0	20	34
12:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	9	0	0	0	9	17
Hourly Total	1	0	0	0	0	1	0	0	0	0	1	0	1	60	0	0	0	61	0	67	0	0	0	67	129
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	10	0	13	0	0	0	13	23
1:15 AM	3	0	0	0	0	3	0	0	0	0	0	0	0	6	0	0	0	6	0	10	0	0	0	10	19
1:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	7	0	0	0	7	12
1:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	7	0	0	0	7	11
Hourly Total	3	0	0	0	0	3	0	0	0	0	0	0	0	25	0	0	0	25	0	37	0	0	0	37	65
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	4	0	0	0	4	11
2:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	6	0	0	0	6	0	11	0	0	0	11	17
2:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	7	0	0	0	7	0	4	0	0	0	4	11
2:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	3	0	0	0	3	8
Hourly Total	0	0	0	0	1	0	0	0	0	0	1	0	0	25	0	0	0	25	0	22	0	0	0	22	47
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	4	0	0	0	4	7
3:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	1	2
3:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	4	0	0	0	4	8
3:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	8	0	0	0	8	11
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11	0	17	0	0	0	17	28
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	3	0	0	0	3	7
4:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	5	0	0	0	5	9
4:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	7	0	0	0	7	14
4:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	9	0	0	0	9	16
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	22	0	24	0	0	0	24	46
5:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	15	0	0	0	15	0	8	0	0	0	8	23
5:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	17	1	0	0	18	0	11	0	0	0	11	29
5:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	2	28	0	0	0	30	0	12	1	0	0	13	43
5:45 AM	0	0	0	0	0	0	0	0	0	0	3	0	4	47	0	0	0	51	0	22	2	0	0	24	75
Hourly Total	0	0	0	0	0	0	0	0	0	0	6	0	6	107	1	0	0	114	0	53	3	0	0	56	170
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	7	47	0	0	0	54	0	29	3	0	0	32	86
6:15 AM	0	1	0	0	0	1	0	0	0	0	4	0	2	56	0	0	0	58	0	34	2	0	0	36	95
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	84	1	0	0	87	0	55	1	0	0	56	143
6:45 AM	1	0	0	0	0	1	0	0	0	0	1	0	6	104	2	0	0	112	0	46	1	0	0	47	160
Hourly Total	1	1	0	0	0	2	0	0	0	0	5	0	17	291	3	0	0	311	0	164	7	0	0	171	484

7:00 AM	0	0	1	0	0	1	0	0	0	0	0	0	5	124	1	0	1	130	0	68	0	0	0	68	199
7:15 AM	1	0	0	0	1	1	0	0	0	0	1	0	4	144	0	0	0	148	0	93	2	0	0	95	244
7:30 AM	1	0	0	0	1	1	0	0	0	0	5	0	8	174	3	0	1	185	0	118	9	0	0	127	313
7:45 AM	0	0	0	0	6	0	5	1	1	0	7	7	15	248	7	0	0	270	0	115	3	0	0	118	395
Hourly Total	2	0	1	0	8	3	5	1	1	0	13	7	32	690	11	0	2	733	0	394	14	0	0	408	1151
8:00 AM	3	1	3	0	17	7	1	0	1	0	19	2	19	286	3	0	0	308	0	115	9	0	3	124	441
8:15 AM	1	1	1	0	12	3	0	0	0	0	51	0	14	292	11	0	1	317	0	120	11	0	5	131	451
8:30 AM	0	0	2	0	7	2	1	0	0	0	7	1	20	234	10	0	1	264	1	153	4	0	6	158	425
8:45 AM	3	1	0	0	3	4	0	0	0	0	8	0	17	261	2	0	0	280	0	115	4	0	0	119	403
Hourly Total	7	3	6	0	39	16	2	0	1	0	85	3	70	1073	26	0	2	1169	1	503	28	0	14	532	1720
9:00 AM	3	1	1	0	7	5	1	1	1	0	11	3	22	263	14	0	2	299	1	109	4	0	2	114	421
9:15 AM	2	0	1	0	11	3	0	0	0	0	7	0	8	186	9	0	5	203	0	99	6	0	2	105	311
9:30 AM	3	0	4	0	7	7	0	0	1	0	6	1	10	185	2	1	3	198	1	114	2	0	0	117	323
9:45 AM	1	0	2	0	4	3	2	0	1	0	1	3	2	211	2	0	1	215	0	99	3	0	0	102	323
Hourly Total	9	1	8	0	29	18	3	1	3	0	25	7	42	845	27	1	11	915	2	421	15	0	4	438	1378
10:00 AM	5	0	1	0	10	6	1	0	0	0	3	1	5	205	0	0	0	210	1	107	4	0	0	112	329
10:15 AM	12	1	7	0	8	20	0	1	2	0	8	3	6	180	3	0	0	189	0	130	7	0	5	137	349
10:30 AM	3	1	3	0	2	7	0	1	0	0	1	1	1	156	3	0	0	160	0	132	5	0	0	137	305
10:45 AM	4	0	1	0	7	5	1	0	0	0	2	1	4	214	1	0	2	219	0	113	3	0	3	116	341
Hourly Total	24	2	12	0	27	38	2	2	2	0	14	6	16	755	7	0	2	778	1	482	19	0	8	502	1324
11:00 AM	5	0	0	0	9	5	1	0	0	0	5	1	2	181	0	0	1	183	0	106	8	0	0	114	303
11:15 AM	12	0	4	0	27	16	2	0	0	0	21	2	0	186	1	1	4	188	0	108	2	0	6	110	316
11:30 AM	4	0	2	0	7	6	2	0	1	0	3	3	7	160	6	1	3	174	0	138	4	0	1	142	325
11:45 AM	13	0	4	0	8	17	0	0	0	0	3	0	3	158	3	1	0	165	1	115	5	0	6	121	303
Hourly Total	34	0	10	0	51	44	5	0	1	0	32	6	12	685	10	3	8	710	1	467	19	0	13	487	1247
12:00 PM	8	0	6	0	7	14	3	0	0	0	4	3	9	176	3	0	1	188	0	124	5	0	6	129	334
12:15 PM	3	0	0	0	9	3	2	0	0	0	4	2	3	157	2	0	2	162	0	129	9	0	2	138	305
12:30 PM	4	0	1	0	6	5	2	0	0	0	6	2	1	185	0	0	2	186	2	147	3	0	1	152	345
12:45 PM	6	0	2	0	5	8	1	0	0	0	3	1	10	204	4	0	1	218	0	150	3	0	1	153	380
Hourly Total	21	0	9	0	27	30	8	0	0	0	17	8	23	722	9	0	6	754	2	550	20	0	10	572	1364
1:00 PM	2	0	3	0	2	5	2	1	0	0	8	3	6	183	1	0	1	190	0	132	3	0	1	135	333
1:15 PM	4	0	0	0	13	4	1	0	0	0	1	1	2	168	4	0	0	174	2	144	4	0	4	150	329
1:30 PM	3	1	4	0	13	8	0	0	2	0	5	2	2	165	2	0	2	169	2	149	2	0	6	153	332
1:45 PM	7	0	5	0	11	12	3	0	1	0	4	4	1	186	2	0	0	189	1	117	3	0	1	121	326
Hourly Total	16	1	12	0	39	29	6	1	3	0	18	10	11	702	9	0	3	722	5	542	12	0	12	559	1320
2:00 PM	3	0	1	0	6	4	0	0	0	0	6	0	3	158	2	0	0	163	0	124	7	1	4	132	299
2:15 PM	4	0	4	0	8	8	2	2	3	0	5	7	5	177	1	0	5	183	1	150	4	0	4	155	353
2:30 PM	12	0	11	0	9	23	0	1	0	0	3	1	2	178	0	0	0	180	0	161	1	0	0	162	366
2:45 PM	4	1	1	0	2	6	3	0	0	0	6	3	3	171	1	0	1	175	0	168	0	0	0	168	352
Hourly Total	23	1	17	0	25	41	5	3	3	0	20	11	13	684	4	0	6	701	1	603	12	1	8	617	1370
3:00 PM	4	0	2	0	2	6	5	0	0	0	24	5	0	159	1	0	5	160	0	206	0	0	0	206	377
3:15 PM	12	0	19	0	12	31	2	0	1	0	35	3	0	182	0	0	1	182	0	209	4	0	4	213	429
3:30 PM	12	0	14	0	11	26	2	0	0	0	12	2	3	176	1	0	0	180	0	258	1	0	7	259	467
3:45 PM	4	0	5	0	13	9	3	0	1	0	8	4	3	185	2	0	0	190	0	203	5	0	4	208	411
Hourly Total	32	0	40	0	38	72	12	0	2	0	79	14	6	702	4	0	6	712	0	876	10	0	15	886	1684
4:00 PM	6	0	8	0	8	14	8	0	0	0	8	8	0	191	2	0	1	193	1	202	0	0	5	203	418
4:15 PM	6	0	10	0	0	16	9	0	0	0	4	9	2	206	2	0	0	210	0	266	0	0	1	266	501
4:30 PM	10	0	12	0	4	22	10	0	0	0	11	10	2	189	1	0	1	192	1	266	0	0	6	267	491
4:45 PM	14	1	7	0	4	22	9	0	1	0	20	10	4	184	1	0	1	189	0	260	1	0	2	261	482
Hourly Total	36	1	37	0	16	74	36	0	1	0	43	37	8	770	6	0	3	784	2	994	1	0	14	997	1892
5:00 PM	8	1	11	0	13	20	10	1	0	0	7	11	1	195	1	0	0	197	0	251	2	0	4	253	481
5:15 PM	8	0	10	0	9	18	6	0	1	0	5	7	3	215	1	0	0	219	1	242	2	0	1	245	489

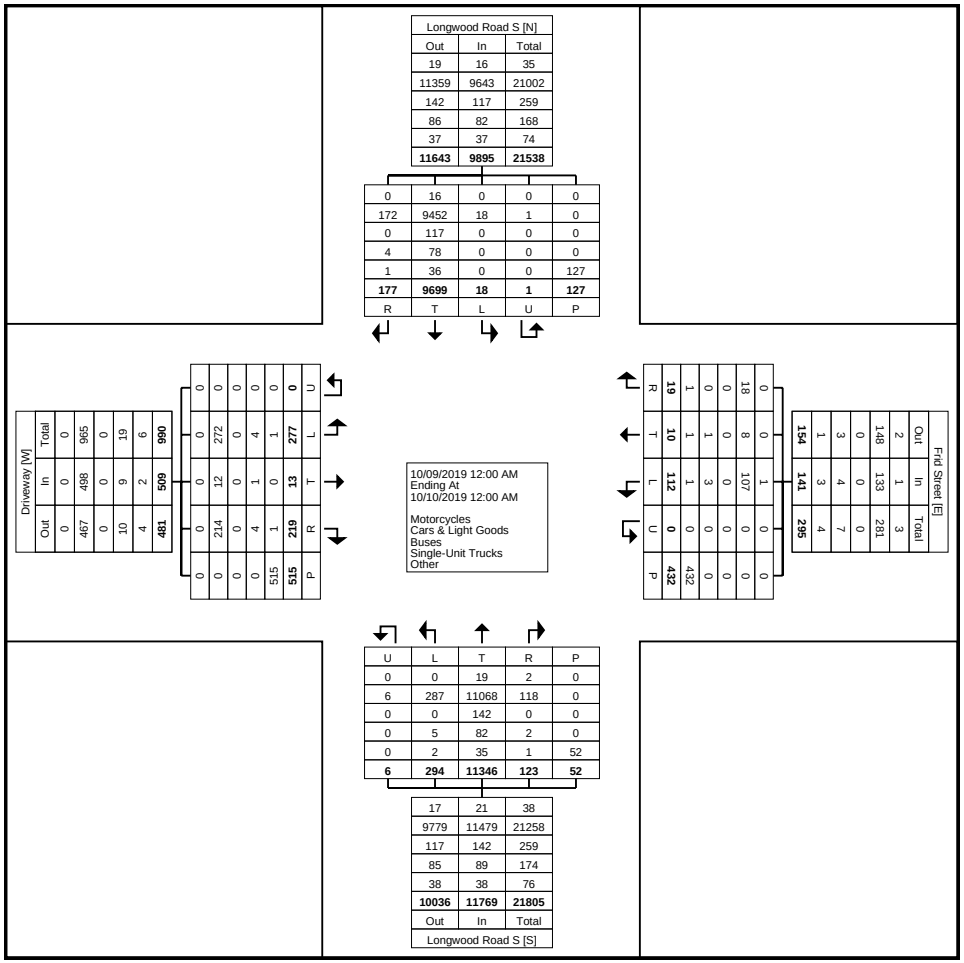
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5:45 PM	4	0	1	0	14	5	1	0	0	0	14	1	0	183	0	0	1	183	0	206	2	0	0	208	397
Hourly Total	25	1	30	0	70	56	18	1	1	0	28	20	7	794	2	0	1	803	1	909	6	0	16	916	1795
6:00 PM	0	0	4	0	14	4	0	0	0	0	8	0	10	174	0	0	1	184	0	185	1	0	1	186	374
6:15 PM	2	0	2	0	10	4	1	0	0	0	5	1	2	204	0	0	0	206	0	184	1	0	1	185	396
6:30 PM	1	0	2	0	5	3	2	0	0	0	5	2	4	218	1	0	0	223	0	155	1	0	3	156	384
6:45 PM	1	0	0	0	3	1	0	0	0	0	1	0	1	161	0	0	0	162	0	137	0	0	0	137	300
Hourly Total	4	0	8	0	32	12	3	0	0	0	19	3	17	757	1	0	1	775	0	661	3	0	5	664	1454
7:00 PM	0	0	1	0	10	1	1	0	0	0	2	1	0	135	0	0	0	135	0	150	2	0	0	152	289
7:15 PM	4	0	3	0	5	7	0	0	0	0	2	0	0	132	0	0	0	132	0	123	0	0	0	123	262
7:30 PM	1	0	0	0	10	1	1	0	0	0	3	1	0	135	0	0	0	135	0	124	2	0	0	126	263
7:45 PM	1	0	0	0	7	1	0	0	0	0	0	0	0	127	0	0	0	127	1	157	1	0	0	159	287
Hourly Total	6	0	4	0	32	10	2	0	0	0	7	2	0	529	0	0	0	529	1	554	5	0	0	560	1101
8:00 PM	3	0	1	0	1	4	0	0	0	0	0	0	3	116	0	0	0	119	0	153	1	0	0	154	277
8:15 PM	0	1	4	0	3	5	1	0	0	0	5	1	0	107	0	0	0	107	1	145	1	0	1	147	260
8:30 PM	10	0	10	0	63	20	2	0	0	0	2	2	1	99	0	0	1	100	0	117	0	0	4	117	239
8:45 PM	8	0	2	0	9	10	0	1	0	0	0	1	1	95	0	0	0	96	0	100	1	0	1	101	208
Hourly Total	21	1	17	0	76	39	3	1	0	0	7	4	5	417	0	0	1	422	1	515	3	0	6	519	984
9:00 PM	2	1	0	0	1	3	1	0	0	0	5	1	2	104	1	1	0	108	0	144	0	0	0	144	256
9:15 PM	2	0	0	0	0	2	0	0	1	0	0	1	0	103	1	1	0	105	0	108	0	0	0	108	216
9:30 PM	0	0	2	0	0	2	0	0	0	0	1	0	0	86	0	0	0	86	0	94	0	0	0	94	182
9:45 PM	2	0	1	0	2	3	0	0	0	0	2	0	0	95	0	0	0	95	0	88	0	0	0	88	186
Hourly Total	6	1	3	0	3	10	1	0	1	0	8	2	2	388	2	2	0	394	0	434	0	0	0	434	840
10:00 PM	1	0	1	0	1	2	0	0	0	0	0	0	2	47	0	0	0	49	0	87	0	0	1	87	138
10:15 PM	2	0	2	0	0	4	0	0	0	0	2	0	1	50	0	0	0	51	0	79	0	0	0	79	134
10:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	1	43	0	0	0	44	0	54	0	0	0	54	98
10:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	37	0	0	0	37	0	54	0	0	0	54	91
Hourly Total	3	0	3	0	2	6	0	0	0	0	3	0	4	177	0	0	0	181	0	274	0	0	1	274	461
11:00 PM	0	0	1	0	0	1	0	0	0	0	1	0	2	31	1	0	0	34	0	48	0	0	0	48	83
11:15 PM	3	0	1	0	0	4	1	0	0	0	0	1	0	36	0	0	0	36	0	29	0	0	1	29	70
11:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	0	29	0	32	0	0	0	32	61
11:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	19	0	27	0	0	0	27	46
Hourly Total	3	0	2	0	0	5	1	0	0	0	1	1	2	115	1	0	0	118	0	136	0	0	1	136	260
Grand Total	277	13	219	0	515	509	112	10	19	0	432	141	294	11346	123	6	52	11769	18	9699	177	1	127	9895	22314
Approach %	54.4	2.6	43.0	0.0	-	-	79.4	7.1	13.5	0.0	-	-	2.5	96.4	1.0	0.1	-	-	0.2	98.0	1.8	0.0	-	-	-
Total %	1.2	0.1	1.0	0.0	-	2.3	0.5	0.0	0.1	0.0	-	0.6	1.3	50.8	0.6	0.0	-	52.7	0.1	43.5	0.8	0.0	-	44.3	-
Motorcycles	0	0	0	0	-	0	1	0	0	0	-	1	0	19	2	0	-	21	0	16	0	0	-	16	38
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.9	0.0	0.0	-	-	0.7	0.0	0.2	1.6	0.0	-	0.2	0.0	0.2	0.0	0.0	-	0.2	0.2
Cars & Light Goods	272	12	214	0	-	498	107	8	18	0	-	133	287	11068	118	6	-	11479	18	9452	172	1	-	9643	21753
% Cars & Light Goods	98.2	92.3	97.7	-	-	97.8	95.5	80.0	94.7	-	-	94.3	97.6	97.5	95.9	100.0	-	97.5	100.0	97.5	97.2	100.0	-	97.5	97.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	142	0	0	-	142	0	117	0	0	-	117	259
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.3	0.0	0.0	-	1.2	0.0	1.2	0.0	0.0	-	1.2	1.2
Single-Unit Trucks	4	1	4	0	-	9	3	1	0	0	-	4	5	82	2	0	-	89	0	78	4	0	-	82	184
% Single-Unit Trucks	1.4	7.7	1.8	-	-	1.8	2.7	10.0	0.0	-	-	2.8	1.7	0.7	1.6	0.0	-	0.8	0.0	0.8	2.3	0.0	-	0.8	0.8
Articulated Trucks	0	0	1	0	-	1	0	0	0	0	-	0	2	17	0	0	-	19	0	21	0	0	-	21	41
% Articulated Trucks	0.0	0.0	0.5	-	-	0.2	0.0	0.0	0.0	-	-	0.0	0.7	0.1	0.0	0.0	-	0.2	0.0	0.2	0.0	0.0	-	0.2	0.2
Bicycles on Road	1	0	0	0	-	1	1	1	1	0	-	3	0	18	1	0	-	19	0	15	1	0	-	16	39
% Bicycles on Road	0.4	0.0	0.0	-	-	0.2	0.9	10.0	5.3	-	-	2.1	0.0	0.2	0.8	0.0	-	0.2	0.0	0.2	0.6	0.0	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	41	-	-	-	-	-	10	-	-	-	-	-	6	-	-

% Bicycles on Crosswalk	-	-	-	-	0.4	-	-	-	-	-	9.5	-	-	-	-	-	19.2	-	-	-	-	-	4.7	-	-
Pedestrians	-	-	-	-	513	-	-	-	-	-	391	-	-	-	-	-	42	-	-	-	-	-	121	-	-
% Pedestrians	-	-	-	-	99.6	-	-	-	-	-	90.5	-	-	-	-	-	80.8	-	-	-	-	-	95.3	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & Frid Street
Site Code:
Start Date: 10/09/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & Frid Street
Site Code:
Start Date: 10/09/2019

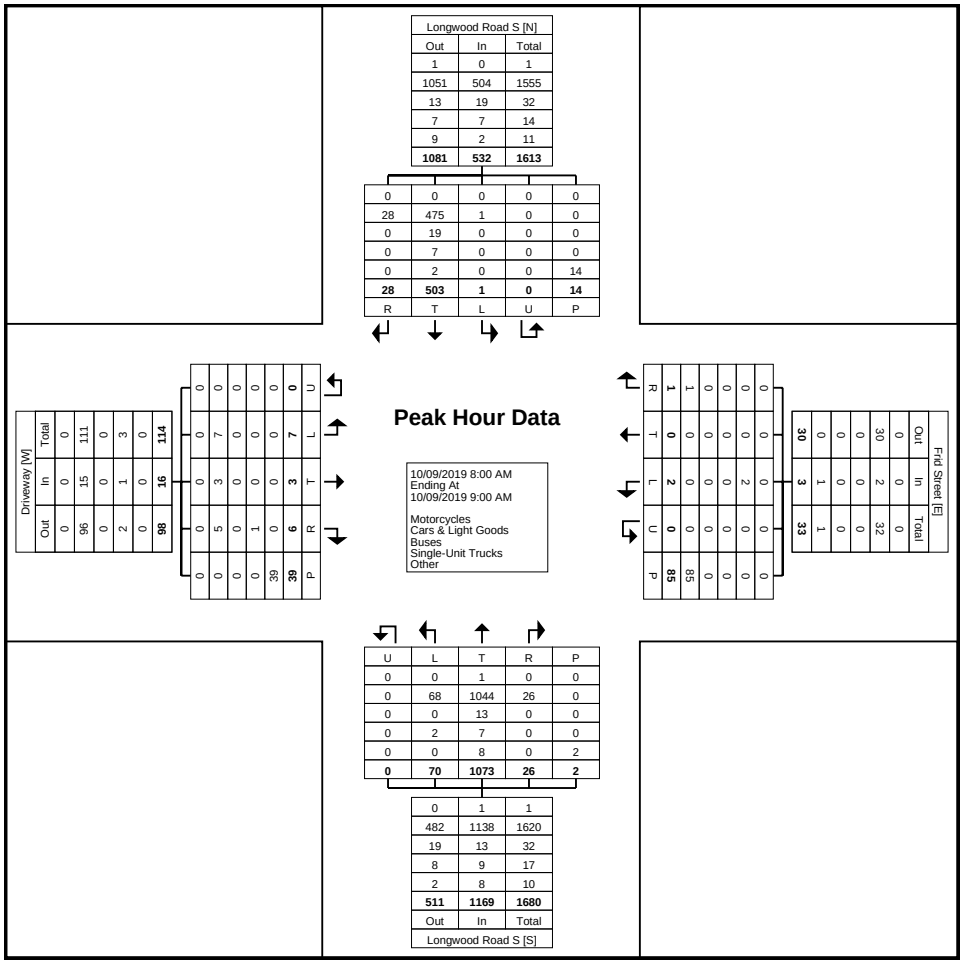
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Driveway Eastbound						Frid Street Westbound						Longwood Road S Northbound						Longwood Road S Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
8:00 AM	3	1	3	0	17	7	1	0	1	0	19	2	19	286	3	0	0	308	0	115	9	0	3	124	441
8:15 AM	1	1	1	0	12	3	0	0	0	0	51	0	14	292	11	0	1	317	0	120	11	0	5	131	451
8:30 AM	0	0	2	0	7	2	1	0	0	0	7	1	20	234	10	0	1	264	1	153	4	0	6	158	425
8:45 AM	3	1	0	0	3	4	0	0	0	0	8	0	17	261	2	0	0	280	0	115	4	0	0	119	403
Total	7	3	6	0	39	16	2	0	1	0	85	3	70	1073	26	0	2	1169	1	503	28	0	14	532	1720
Approach %	43.8	18.8	37.5	0.0	-	-	66.7	0.0	33.3	0.0	-	-	6.0	91.8	2.2	0.0	-	-	0.2	94.5	5.3	0.0	-	-	-
Total %	0.4	0.2	0.3	0.0	-	0.9	0.1	0.0	0.1	0.0	-	0.2	4.1	62.4	1.5	0.0	-	68.0	0.1	29.2	1.6	0.0	-	30.9	-
PHF	0.583	0.750	0.500	0.000	-	0.571	0.500	0.000	0.250	0.000	-	0.375	0.875	0.919	0.591	0.000	-	0.922	0.250	0.822	0.636	0.000	-	0.842	0.953
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Motorcycles	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.0	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	7	3	5	0	-	15	2	0	0	0	-	2	68	1044	26	0	-	1138	1	475	28	0	-	504	1659
% Cars & Light Goods	100.0	100.0	83.3	-	-	93.8	100.0	-	0.0	-	-	66.7	97.1	97.3	100.0	-	-	97.3	100.0	94.4	100.0	-	-	94.7	96.5
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	13	0	0	-	13	0	19	0	0	-	19	32
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	1.2	0.0	-	-	1.1	0.0	3.8	0.0	-	-	3.6	1.9
Single-Unit Trucks	0	0	1	0	-	1	0	0	0	0	-	0	2	7	0	0	-	9	0	7	0	0	-	7	17
% Single-Unit Trucks	0.0	0.0	16.7	-	-	6.3	0.0	-	0.0	-	-	0.0	2.9	0.7	0.0	-	-	0.8	0.0	1.4	0.0	-	-	1.3	1.0
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	2
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.4	0.0	-	-	0.4	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	1	0	-	1	0	8	0	0	-	8	0	0	0	0	-	0	9
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	-	100.0	-	-	33.3	0.0	0.7	0.0	-	-	0.7	0.0	0.0	0.0	-	-	0.0	0.5
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	0	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	9.4	-	-	-	-	-	0.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	39	-	-	-	-	-	77	-	-	-	-	-	2	-	-	-	-	-	14	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	90.6	-	-	-	-	-	100.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & Frid Street
Site Code:
Start Date: 10/09/2019



Turning Movement Peak Hour Data Plot (8:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & Frid Street
Site Code:
Start Date: 10/09/2019

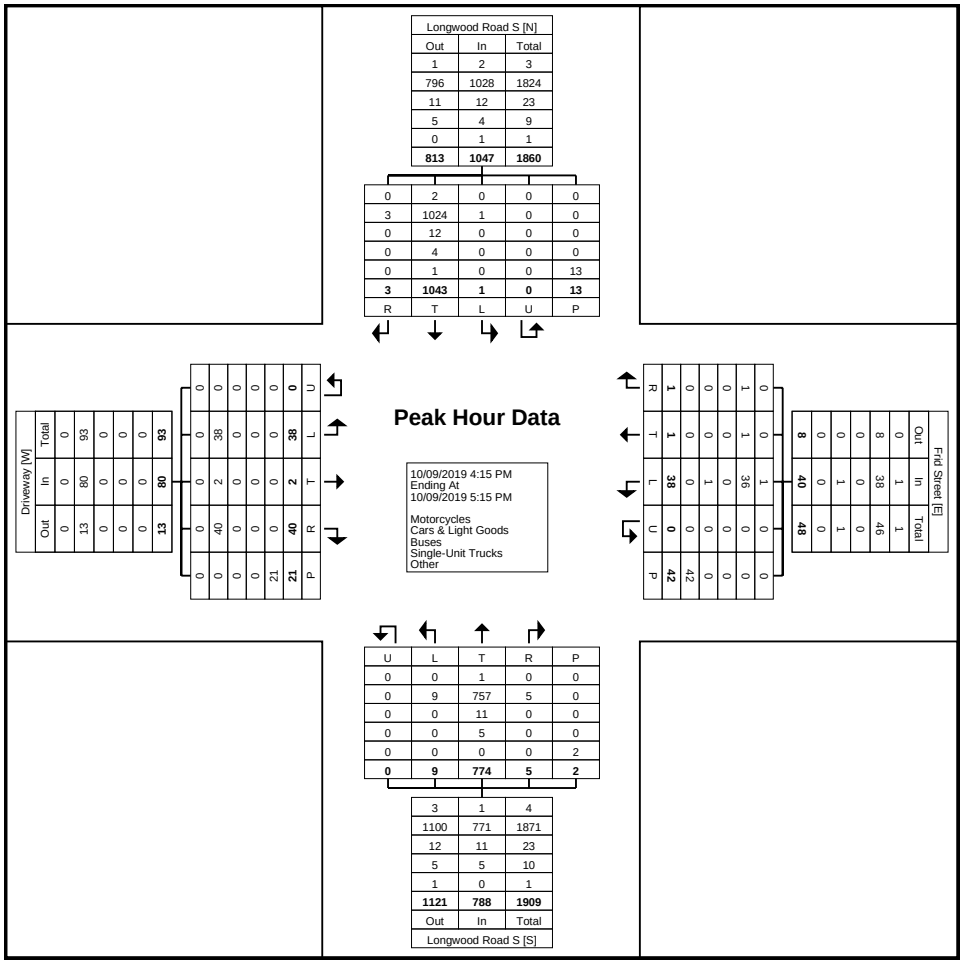
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Driveway Eastbound						Frid Street Westbound						Longwood Road S Northbound						Longwood Road S Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
4:15 PM	6	0	10	0	0	16	9	0	0	0	4	9	2	206	2	0	0	210	0	266	0	0	1	266	501
4:30 PM	10	0	12	0	4	22	10	0	0	0	11	10	2	189	1	0	1	192	1	266	0	0	6	267	491
4:45 PM	14	1	7	0	4	22	9	0	1	0	20	10	4	184	1	0	1	189	0	260	1	0	2	261	482
5:00 PM	8	1	11	0	13	20	10	1	0	0	7	11	1	195	1	0	0	197	0	251	2	0	4	253	481
Total	38	2	40	0	21	80	38	1	1	0	42	40	9	774	5	0	2	788	1	1043	3	0	13	1047	1955
Approach %	47.5	2.5	50.0	0.0	-	-	95.0	2.5	2.5	0.0	-	-	1.1	98.2	0.6	0.0	-	-	0.1	99.6	0.3	0.0	-	-	-
Total %	1.9	0.1	2.0	0.0	-	4.1	1.9	0.1	0.1	0.0	-	2.0	0.5	39.6	0.3	0.0	-	40.3	0.1	53.4	0.2	0.0	-	53.6	-
PHF	0.679	0.500	0.833	0.000	-	0.909	0.950	0.250	0.250	0.000	-	0.909	0.563	0.939	0.625	0.000	-	0.938	0.250	0.980	0.375	0.000	-	0.980	0.976
Motorcycles	0	0	0	0	-	0	1	0	0	0	-	1	0	1	0	0	-	1	0	2	0	0	-	2	4
% Motorcycles	0.0	0.0	0.0	-	-	0.0	2.6	0.0	0.0	-	-	2.5	0.0	0.1	0.0	-	-	0.1	0.0	0.2	0.0	-	-	0.2	0.2
Cars & Light Goods	38	2	40	0	-	80	36	1	1	0	-	38	9	757	5	0	-	771	1	1024	3	0	-	1028	1917
% Cars & Light Goods	100.0	100.0	100.0	-	-	100.0	94.7	100.0	100.0	-	-	95.0	100.0	97.8	100.0	-	-	97.8	100.0	98.2	100.0	-	-	98.2	98.1
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	11	0	0	-	11	0	12	0	0	-	12	23
% Buses	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.4	0.0	-	-	1.4	0.0	1.2	0.0	-	-	1.1	1.2
Single-Unit Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	5	0	0	-	5	0	4	0	0	-	4	10
% Single-Unit Trucks	0.0	0.0	0.0	-	-	0.0	2.6	0.0	0.0	-	-	2.5	0.0	0.6	0.0	-	-	0.6	0.0	0.4	0.0	-	-	0.4	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Articulated Trucks	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	1
% Bicycles on Road	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	-	0.1	0.1
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	0	-	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	16.7	-	-	-	-	-	0.0	-	-	-	-	-	7.7	-	-
Pedestrians	-	-	-	-	21	-	-	-	-	-	35	-	-	-	-	-	2	-	-	-	-	-	12	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	83.3	-	-	-	-	-	100.0	-	-	-	-	-	92.3	-	-

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Count Name: Longwood Road S & Frid Street
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Start Date: 10/09/2019



Turning Movement Peak Hour Data Plot (4:15 PM)

Paradigm Transportation Solutions Limited
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Count Name: Longwood Road S & Frid Street
Site Code:
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Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 10/09/2019

Turning Movement Data

Start Time	Parking Lot West Eastbound					Longwood Road S Northbound					Longwood Road S Southbound					Int. Total
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	
12:00 AM	0	0	0	0	0	0	16	0	0	16	26	0	0	0	26	42
12:15 AM	0	0	0	0	0	0	22	0	0	22	15	0	0	0	15	37
12:30 AM	0	0	0	0	0	0	14	0	0	14	21	0	0	0	21	35
12:45 AM	0	0	0	0	0	0	8	0	0	8	8	0	0	0	8	16
Hourly Total	0	0	0	0	0	0	60	0	0	60	70	0	0	0	70	130
1:00 AM	0	0	0	0	0	0	10	0	0	10	12	0	0	0	12	22
1:15 AM	0	0	0	0	0	0	9	0	0	9	11	0	0	0	11	20
1:30 AM	0	0	0	0	0	0	5	0	0	5	7	0	0	0	7	12
1:45 AM	0	0	0	0	0	0	4	0	0	4	7	0	0	0	7	11
Hourly Total	0	0	0	0	0	0	28	0	0	28	37	0	0	0	37	65
2:00 AM	0	0	0	0	0	0	7	0	0	7	4	0	0	0	4	11
2:15 AM	0	0	0	0	0	0	6	0	0	6	10	0	0	0	10	16
2:30 AM	0	0	0	0	0	0	7	0	0	7	5	0	0	0	5	12
2:45 AM	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	7
Hourly Total	0	0	0	0	0	0	24	0	0	24	22	0	0	0	22	46
3:00 AM	0	0	0	0	0	0	4	0	0	4	4	0	0	0	4	8
3:15 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	3
3:30 AM	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	7
3:45 AM	0	0	0	0	0	0	3	0	0	3	8	0	0	0	8	11
Hourly Total	0	0	0	0	0	0	13	0	0	13	16	0	0	0	16	29
4:00 AM	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	7
4:15 AM	0	0	0	0	0	0	4	0	0	4	5	0	0	0	5	9
4:30 AM	0	0	0	0	0	0	7	0	0	7	7	0	0	0	7	14
4:45 AM	0	0	0	0	0	0	7	0	0	7	8	0	0	0	8	15
Hourly Total	0	0	0	0	0	0	22	0	0	22	23	0	0	0	23	45
5:00 AM	0	0	0	0	0	0	15	0	0	15	9	0	0	0	9	24
5:15 AM	0	0	0	0	0	0	17	0	0	17	12	0	0	0	12	29
5:30 AM	0	0	0	0	0	0	27	0	0	27	13	0	0	0	13	40
5:45 AM	0	0	0	0	0	0	47	0	0	47	24	0	0	0	24	71
Hourly Total	0	0	0	0	0	0	106	0	0	106	58	0	0	0	58	164
6:00 AM	0	0	0	0	0	0	47	0	0	47	28	0	0	0	28	75
6:15 AM	0	0	0	0	0	0	49	0	0	49	39	0	0	0	39	88
6:30 AM	0	0	0	0	0	0	90	0	0	90	57	3	0	0	60	150
6:45 AM	0	0	0	0	0	0	107	0	0	107	46	1	0	0	47	154
Hourly Total	0	0	0	0	0	0	293	0	0	293	170	4	0	0	174	467
7:00 AM	0	0	0	1	0	0	121	0	3	121	75	1	0	0	76	197

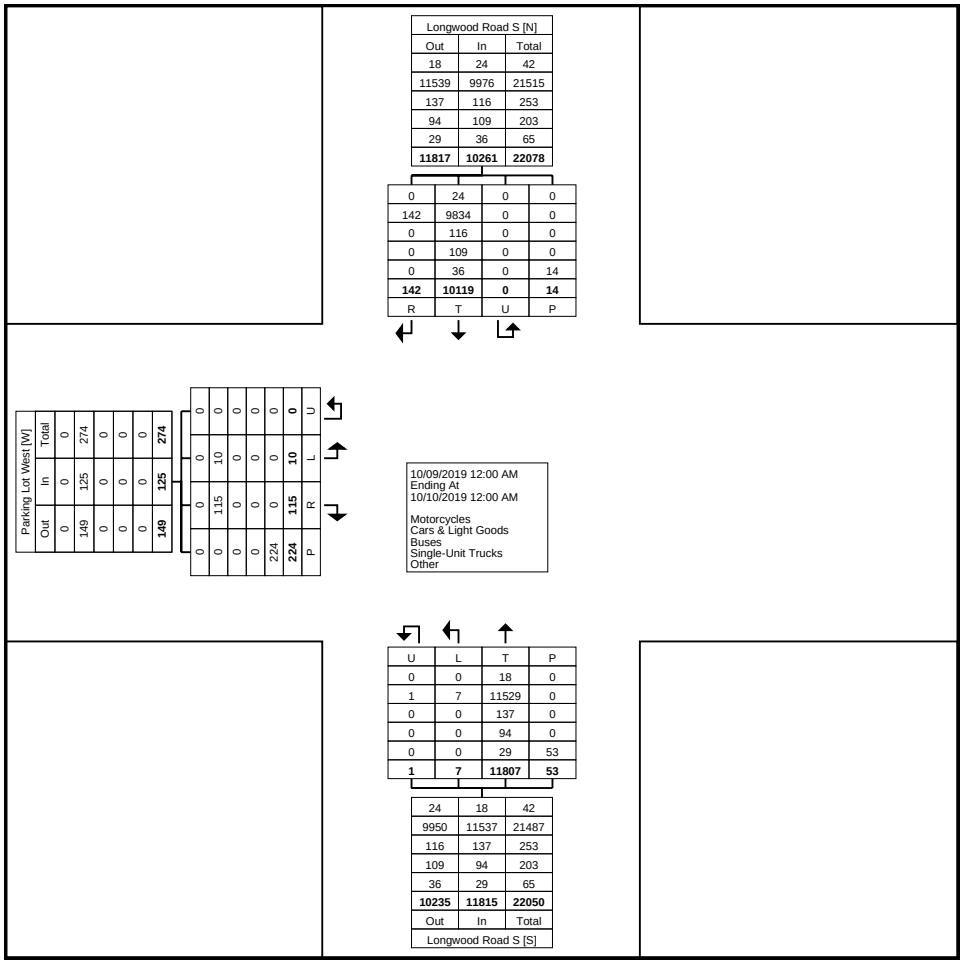
7:15 AM	0	0	0	0	0	0	146	0	2	146	94	2	0	0	96	242
7:30 AM	1	1	0	0	2	1	177	0	2	178	128	1	0	0	129	309
7:45 AM	0	0	0	1	0	0	251	0	4	251	122	5	0	0	127	378
Hourly Total	1	1	0	2	2	1	695	0	11	696	419	9	0	0	428	1126
8:00 AM	0	0	0	12	0	1	291	0	4	292	129	8	0	0	137	429
8:15 AM	0	0	0	10	0	0	293	0	1	293	140	12	0	0	152	445
8:30 AM	0	1	0	5	1	1	244	0	1	245	165	9	0	0	174	420
8:45 AM	0	0	0	2	0	0	282	0	0	282	126	12	0	0	138	420
Hourly Total	0	1	0	29	1	2	1110	0	6	1112	560	41	0	0	601	1714
9:00 AM	0	0	0	2	0	1	269	0	0	270	118	7	0	0	125	395
9:15 AM	0	2	0	4	2	0	190	0	3	190	98	4	0	0	102	294
9:30 AM	0	0	0	3	0	0	191	0	1	191	121	6	0	0	127	318
9:45 AM	0	0	0	1	0	0	209	0	2	209	109	0	0	0	109	318
Hourly Total	0	2	0	10	2	1	859	0	6	860	446	17	0	0	463	1325
10:00 AM	0	2	0	4	2	0	217	0	1	217	111	2	0	0	113	332
10:15 AM	0	0	0	2	0	0	207	0	2	207	141	0	0	0	141	348
10:30 AM	0	0	0	3	0	0	165	0	0	165	136	4	0	0	140	305
10:45 AM	0	0	0	3	0	0	226	0	2	226	119	0	0	0	119	345
Hourly Total	0	2	0	12	2	0	815	0	5	815	507	6	0	0	513	1330
11:00 AM	0	1	0	3	1	0	201	0	1	201	118	1	0	0	119	321
11:15 AM	0	0	0	16	0	0	189	0	1	189	116	2	0	0	118	307
11:30 AM	0	0	0	3	0	0	171	0	0	171	144	1	0	0	145	316
11:45 AM	0	1	0	5	1	0	159	0	3	159	139	2	0	0	141	301
Hourly Total	0	2	0	27	2	0	720	0	5	720	517	6	0	0	523	1245
12:00 PM	0	4	0	2	4	0	188	0	3	188	134	5	0	2	139	331
12:15 PM	1	3	0	6	4	0	158	0	1	158	138	3	0	0	141	303
12:30 PM	0	0	0	6	0	0	193	0	0	193	155	3	0	0	158	351
12:45 PM	0	2	0	5	2	1	211	0	3	212	157	2	0	1	159	373
Hourly Total	1	9	0	19	10	1	750	0	7	751	584	13	0	3	597	1358
1:00 PM	0	0	0	0	0	0	182	0	3	182	137	5	0	0	142	324
1:15 PM	0	1	0	5	1	0	170	0	0	170	148	0	0	0	148	319
1:30 PM	0	3	0	4	3	0	166	0	0	166	148	2	0	0	150	319
1:45 PM	0	0	0	14	0	0	199	0	0	199	126	1	0	0	127	326
Hourly Total	0	4	0	23	4	0	717	0	3	717	559	8	0	0	567	1288
2:00 PM	0	0	0	3	0	0	157	0	0	157	132	1	0	0	133	290
2:15 PM	2	0	0	7	2	0	192	0	0	192	157	4	0	0	161	355
2:30 PM	1	0	0	17	1	0	182	0	0	182	163	0	0	0	163	346
2:45 PM	0	4	0	0	4	0	180	0	0	180	166	1	0	0	167	351
Hourly Total	3	4	0	27	7	0	711	0	0	711	618	6	0	0	624	1342
3:00 PM	0	5	0	2	5	0	157	0	1	157	215	0	0	1	215	377
3:15 PM	0	2	0	6	2	0	195	0	2	195	215	1	0	2	216	413
3:30 PM	0	7	0	8	7	0	198	0	1	198	257	1	0	2	258	463
3:45 PM	0	6	0	12	6	0	198	0	1	198	220	0	0	0	220	424
Hourly Total	0	20	0	28	20	0	748	0	5	748	907	2	0	5	909	1677
4:00 PM	1	12	0	2	13	0	192	0	4	192	208	1	0	0	209	414
4:15 PM	0	3	0	3	3	0	216	0	0	216	288	1	0	0	289	508
4:30 PM	0	5	0	6	5	0	196	0	0	196	286	1	0	3	287	488
4:45 PM	0	7	0	2	7	0	211	0	0	211	265	1	0	1	266	484
Hourly Total	1	27	0	13	28	0	815	0	4	815	1047	4	0	4	1051	1894
5:00 PM	0	10	0	4	10	0	227	0	0	227	263	2	0	0	265	502
5:15 PM	0	3	0	2	3	0	222	0	0	222	257	3	0	1	260	485
5:30 PM	0	2	0	13	2	0	219	0	1	219	219	1	0	1	220	441

5:45 PM	0	2	0	0	2	0	184	0	0	184	213	6	0	0	219	405
Hourly Total	0	17	0	19	17	0	852	0	1	852	952	12	0	2	964	1833
6:00 PM	0	0	0	0	0	0	185	1	0	186	195	5	0	0	200	386
6:15 PM	1	0	0	0	1	1	206	0	0	207	187	2	0	0	189	397
6:30 PM	0	0	0	1	0	0	214	0	0	214	168	2	0	0	170	384
6:45 PM	0	0	0	0	0	0	162	0	0	162	134	0	0	0	134	296
Hourly Total	1	0	0	1	1	1	767	1	0	769	684	9	0	0	693	1463
7:00 PM	0	1	0	5	1	0	148	0	0	148	154	2	0	0	156	305
7:15 PM	0	1	0	2	1	0	135	0	0	135	126	0	0	0	126	262
7:30 PM	1	2	0	0	3	1	135	0	0	136	120	0	0	0	120	259
7:45 PM	0	1	0	4	1	0	129	0	0	129	161	0	0	0	161	291
Hourly Total	1	5	0	11	6	1	547	0	0	548	561	2	0	0	563	1117
8:00 PM	0	0	0	0	0	0	124	0	0	124	160	1	0	0	161	285
8:15 PM	0	2	0	1	2	0	107	0	0	107	146	1	0	0	147	256
8:30 PM	0	14	0	1	14	0	112	0	0	112	107	0	0	0	107	233
8:45 PM	0	1	0	1	1	0	105	0	0	105	104	0	0	0	104	210
Hourly Total	0	17	0	3	17	0	448	0	0	448	517	2	0	0	519	984
9:00 PM	0	1	0	0	1	0	105	0	0	105	136	0	0	0	136	242
9:15 PM	0	0	0	0	0	0	111	0	0	111	114	0	0	0	114	225
9:30 PM	0	1	0	0	1	0	82	0	0	82	94	0	0	0	94	177
9:45 PM	2	1	0	0	3	0	105	0	0	105	87	0	0	0	87	195
Hourly Total	2	3	0	0	5	0	403	0	0	403	431	0	0	0	431	839
10:00 PM	0	0	0	0	0	0	49	0	0	49	89	0	0	0	89	138
10:15 PM	0	0	0	0	0	0	53	0	0	53	76	1	0	0	77	130
10:30 PM	0	0	0	0	0	0	41	0	0	41	57	0	0	0	57	98
10:45 PM	0	0	0	0	0	0	40	0	0	40	53	0	0	0	53	93
Hourly Total	0	0	0	0	0	0	183	0	0	183	275	1	0	0	276	459
11:00 PM	0	1	0	0	1	0	32	0	0	32	49	0	0	0	49	82
11:15 PM	0	0	0	0	0	0	42	0	0	42	31	0	0	0	31	73
11:30 PM	0	0	0	0	0	0	28	0	0	28	33	0	0	0	33	61
11:45 PM	0	0	0	0	0	0	19	0	0	19	26	0	0	0	26	45
Hourly Total	0	1	0	0	1	0	121	0	0	121	139	0	0	0	139	261
Grand Total	10	115	0	224	125	7	11807	1	53	11815	10119	142	0	14	10261	22201
Approach %	8.0	92.0	0.0	-	-	0.1	99.9	0.0	-	-	98.6	1.4	0.0	-	-	-
Total %	0.0	0.5	0.0	-	0.6	0.0	53.2	0.0	-	53.2	45.6	0.6	0.0	-	46.2	-
Motorcycles	0	0	0	-	0	0	18	0	-	18	24	0	0	-	24	42
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	0.2	0.2	0.0	-	-	0.2	0.2
Cars & Light Goods	10	115	0	-	125	7	11529	1	-	11537	9834	142	0	-	9976	21638
% Cars & Light Goods	100.0	100.0	-	-	100.0	100.0	97.6	100.0	-	97.6	97.2	100.0	-	-	97.2	97.5
Buses	0	0	0	-	0	0	137	0	-	137	116	0	0	-	116	253
% Buses	0.0	0.0	-	-	0.0	0.0	1.2	0.0	-	1.2	1.1	0.0	-	-	1.1	1.1
Single-Unit Trucks	0	0	0	-	0	0	94	0	-	94	109	0	0	-	109	203
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.0	0.8	0.0	-	0.8	1.1	0.0	-	-	1.1	0.9
Articulated Trucks	0	0	0	-	0	0	18	0	-	18	18	0	0	-	18	36
% Articulated Trucks	0.0	0.0	-	-	0.0	0.0	0.2	0.0	-	0.2	0.2	0.0	-	-	0.2	0.2
Bicycles on Road	0	0	0	-	0	0	11	0	-	11	18	0	0	-	18	29
% Bicycles on Road	0.0	0.0	-	-	0.0	0.0	0.1	0.0	-	0.1	0.2	0.0	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	9	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	4.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	215	-	-	-	-	53	-	-	-	-	14	-	-
% Pedestrians	-	-	-	96.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 10/09/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & West Parking Lot
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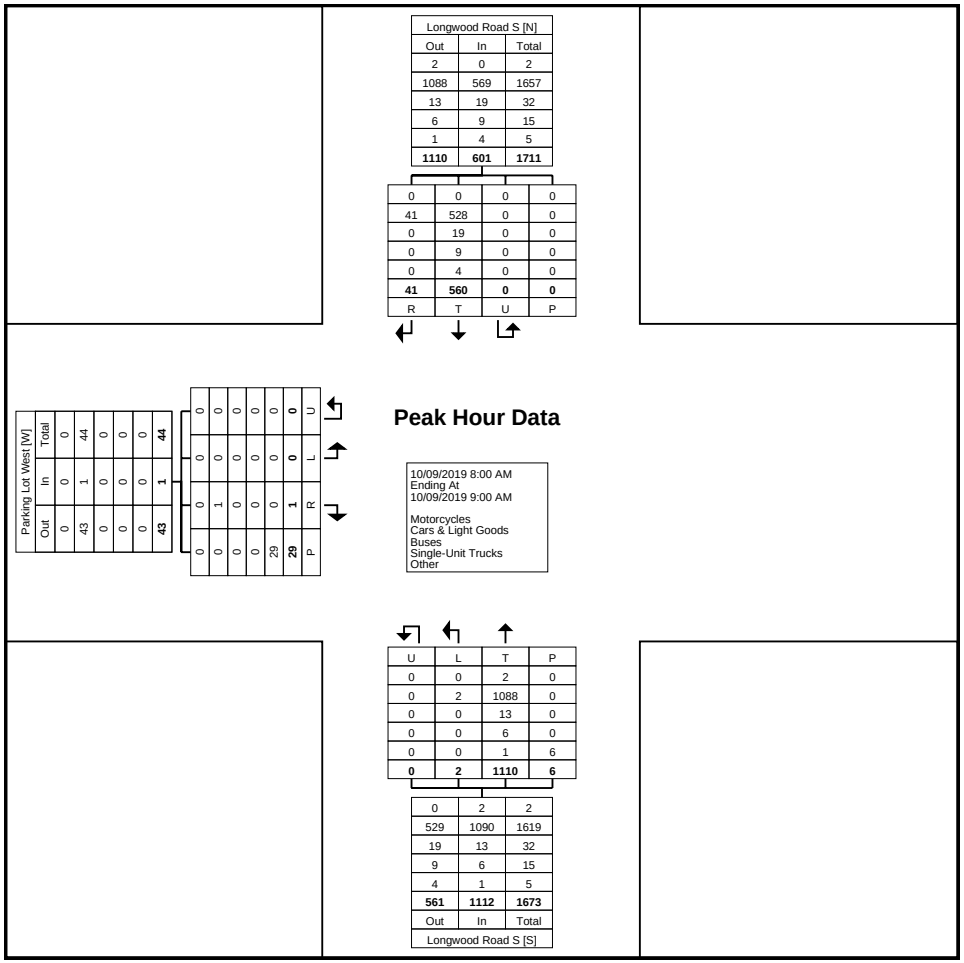
Turning Movement Peak Hour Data (8:00 AM)

Start Time	Parking Lot West Eastbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
8:00 AM	0	0	0	12	0	1	291	0	4	292	129	8	0	0	137	429
8:15 AM	0	0	0	10	0	0	293	0	1	293	140	12	0	0	152	445
8:30 AM	0	1	0	5	1	1	244	0	1	245	165	9	0	0	174	420
8:45 AM	0	0	0	2	0	0	282	0	0	282	126	12	0	0	138	420
Total	0	1	0	29	1	2	1110	0	6	1112	560	41	0	0	601	1714
Approach %	0.0	100.0	0.0	-	-	0.2	99.8	0.0	-	-	93.2	6.8	0.0	-	-	-
Total %	0.0	0.1	0.0	-	0.1	0.1	64.8	0.0	-	64.9	32.7	2.4	0.0	-	35.1	-
PHF	0.000	0.250	0.000	-	0.250	0.500	0.947	0.000	-	0.949	0.848	0.854	0.000	-	0.864	0.963
Motorcycles	0	0	0	-	0	0	2	0	-	2	0	0	0	-	0	2
% Motorcycles	-	0.0	-	-	0.0	0.0	0.2	-	-	0.2	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	0	1	0	-	1	2	1088	0	-	1090	528	41	0	-	569	1660
% Cars & Light Goods	-	100.0	-	-	100.0	100.0	98.0	-	-	98.0	94.3	100.0	-	-	94.7	96.8
Buses	0	0	0	-	0	0	13	0	-	13	19	0	0	-	19	32
% Buses	-	0.0	-	-	0.0	0.0	1.2	-	-	1.2	3.4	0.0	-	-	3.2	1.9
Single-Unit Trucks	0	0	0	-	0	0	6	0	-	6	9	0	0	-	9	15
% Single-Unit Trucks	-	0.0	-	-	0.0	0.0	0.5	-	-	0.5	1.6	0.0	-	-	1.5	0.9
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	3	0	0	-	3	4
% Articulated Trucks	-	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.5	0.0	-	-	0.5	0.2
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.2	0.0	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	3.4	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	28	-	-	-	-	6	-	-	-	-	0	-	-
% Pedestrians	-	-	-	96.6	-	-	-	-	100.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 10/09/2019



Turning Movement Peak Hour Data Plot (8:00 AM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & West Parking Lot
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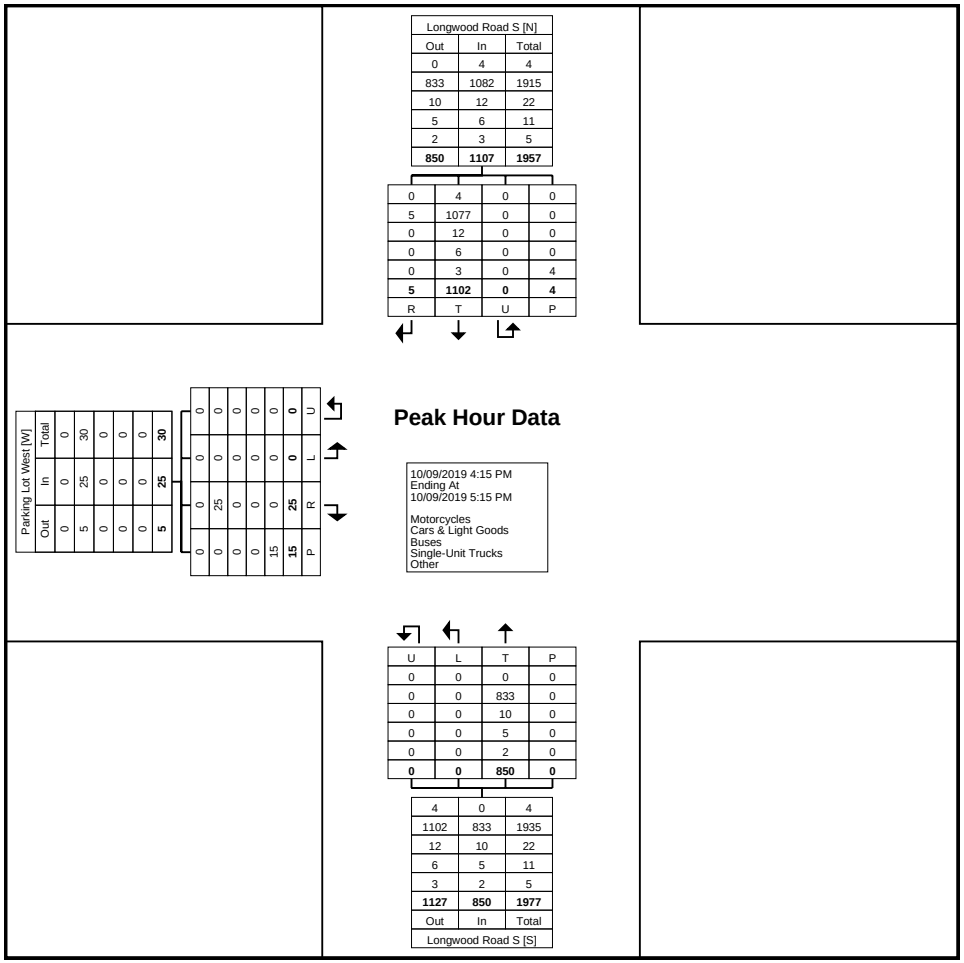
Turning Movement Peak Hour Data (4:15 PM)

Start Time	Parking Lot West Eastbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
4:15 PM	0	3	0	3	3	0	216	0	0	216	288	1	0	0	289	508
4:30 PM	0	5	0	6	5	0	196	0	0	196	286	1	0	3	287	488
4:45 PM	0	7	0	2	7	0	211	0	0	211	265	1	0	1	266	484
5:00 PM	0	10	0	4	10	0	227	0	0	227	263	2	0	0	265	502
Total	0	25	0	15	25	0	850	0	0	850	1102	5	0	4	1107	1982
Approach %	0.0	100.0	0.0	-	-	0.0	100.0	0.0	-	-	99.5	0.5	0.0	-	-	-
Total %	0.0	1.3	0.0	-	1.3	0.0	42.9	0.0	-	42.9	55.6	0.3	0.0	-	55.9	-
PHF	0.000	0.625	0.000	-	0.625	0.000	0.936	0.000	-	0.936	0.957	0.625	0.000	-	0.958	0.975
Motorcycles	0	0	0	-	0	0	0	0	-	0	4	0	0	-	4	4
% Motorcycles	-	0.0	-	-	0.0	-	0.0	-	-	0.0	0.4	0.0	-	-	0.4	0.2
Cars & Light Goods	0	25	0	-	25	0	833	0	-	833	1077	5	0	-	1082	1940
% Cars & Light Goods	-	100.0	-	-	100.0	-	98.0	-	-	98.0	97.7	100.0	-	-	97.7	97.9
Buses	0	0	0	-	0	0	10	0	-	10	12	0	0	-	12	22
% Buses	-	0.0	-	-	0.0	-	1.2	-	-	1.2	1.1	0.0	-	-	1.1	1.1
Single-Unit Trucks	0	0	0	-	0	0	5	0	-	5	6	0	0	-	6	11
% Single-Unit Trucks	-	0.0	-	-	0.0	-	0.6	-	-	0.6	0.5	0.0	-	-	0.5	0.6
Articulated Trucks	0	0	0	-	0	0	0	0	-	0	1	0	0	-	1	1
% Articulated Trucks	-	0.0	-	-	0.0	-	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.1
Bicycles on Road	0	0	0	-	0	0	2	0	-	2	2	0	0	-	2	4
% Bicycles on Road	-	0.0	-	-	0.0	-	0.2	-	-	0.2	0.2	0.0	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	6.7	-	-	-	-	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	14	-	-	-	-	0	-	-	-	-	4	-	-
% Pedestrians	-	-	-	93.3	-	-	-	-	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 10/09/2019



Turning Movement Peak Hour Data Plot (4:15 PM)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 cbowness@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 10/09/2019

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & East Parking Lot - Day 2
Site Code:
Start Date: 17/10/2019

Turning Movement Data

Start Time	East Parking Lot Westbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
00:00	0	0	0	1	0	13	0	0	0	13	0	20	0	0	20	33
00:15	0	1	0	0	1	15	0	0	0	15	0	10	0	0	10	26
00:30	0	0	0	3	0	16	0	0	0	16	0	12	0	0	12	28
00:45	0	0	0	2	0	13	0	0	2	13	0	16	0	0	16	29
Hourly Total	0	1	0	6	1	57	0	0	2	57	0	58	0	0	58	116
01:00	0	0	0	2	0	8	0	0	1	8	0	14	0	0	14	22
01:15	0	0	0	1	0	5	0	0	0	5	0	13	0	0	13	18
01:30	0	0	0	1	0	3	0	0	0	3	0	9	0	0	9	12
01:45	0	0	0	0	0	6	0	0	0	6	0	10	0	0	10	16
Hourly Total	0	0	0	4	0	22	0	0	1	22	0	46	0	0	46	68
02:00	0	0	0	0	0	5	0	0	0	5	0	2	0	0	2	7
02:15	0	0	0	0	0	9	0	0	0	9	0	3	0	0	3	12
02:30	0	0	0	0	0	4	0	0	0	4	0	6	1	0	7	11
02:45	0	0	0	0	0	6	0	0	0	6	0	2	0	0	2	8
Hourly Total	0	0	0	0	0	24	0	0	0	24	0	13	1	0	14	38
03:00	0	0	0	0	0	2	0	0	0	2	1	5	0	0	6	8
03:15	0	0	0	0	0	4	0	0	0	4	0	5	0	0	5	9
03:30	0	0	0	0	0	3	0	0	0	3	0	3	0	0	3	6
03:45	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	9
Hourly Total	0	0	0	0	0	18	0	0	0	18	1	13	0	0	14	32
04:00	0	0	0	0	0	4	0	0	0	4	0	2	0	0	2	6
04:15	0	0	0	0	0	6	0	0	0	6	0	6	0	0	6	12
04:30	0	0	0	0	0	1	0	0	0	1	0	9	0	0	9	10
04:45	0	1	0	0	1	10	0	0	0	10	0	5	0	0	5	16
Hourly Total	0	1	0	0	1	21	0	0	0	21	0	22	0	0	22	44
05:00	0	0	0	1	0	16	0	0	0	16	0	6	0	0	6	22
05:15	0	0	0	1	0	15	0	0	0	15	1	12	0	0	13	28
05:30	0	0	0	2	0	29	0	0	0	29	0	21	0	0	21	50
05:45	0	0	0	1	0	40	0	0	0	40	0	16	0	0	16	56
Hourly Total	0	0	0	5	0	100	0	0	0	100	1	55	0	0	56	156
06:00	0	0	0	1	0	40	0	0	0	40	0	34	0	0	34	74
06:15	0	1	0	3	1	65	0	0	1	65	1	34	0	0	35	101
06:30	0	1	0	2	1	102	1	0	2	103	3	52	0	0	55	159
06:45	1	3	0	2	4	131	4	0	2	135	2	52	0	0	54	193
Hourly Total	1	5	0	8	6	338	5	0	5	343	6	172	0	0	178	527
07:00	1	0	0	7	1	161	2	1	2	164	2	79	0	0	81	246

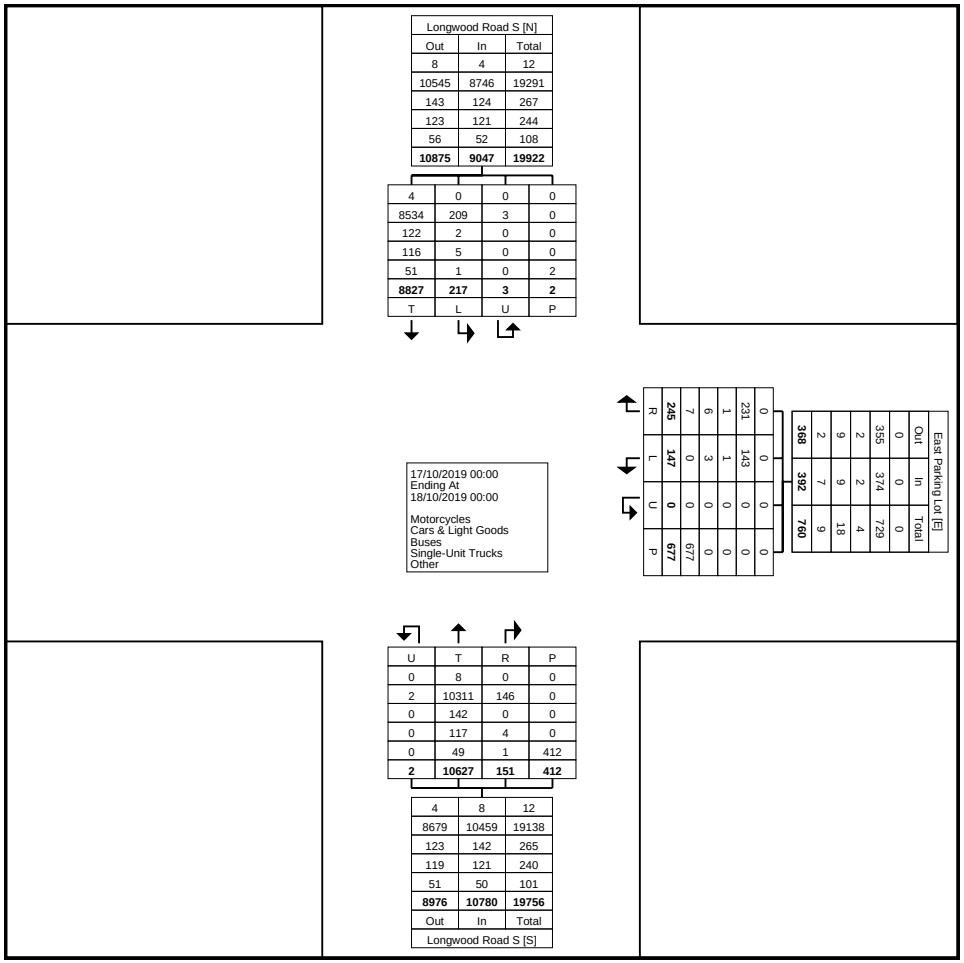
07:15	0	1	0	7	1	225	2	0	4	227	4	90	0	0	94	322
07:30	0	2	0	5	2	221	6	0	1	227	7	128	0	0	135	364
07:45	2	0	0	9	2	250	6	0	7	256	6	107	0	0	113	371
Hourly Total	3	3	0	28	6	857	16	1	14	874	19	404	0	0	423	1303
08:00	3	4	0	16	7	276	5	0	10	281	5	129	0	0	134	422
08:15	0	4	0	57	4	284	4	0	18	288	10	123	0	0	133	425
08:30	3	2	0	21	5	250	5	0	11	255	7	157	0	0	164	424
08:45	0	3	0	16	3	223	2	0	24	225	7	146	0	0	153	381
Hourly Total	6	13	0	110	19	1033	16	0	63	1049	29	555	0	0	584	1652
09:00	1	0	0	18	1	175	8	0	25	183	13	106	0	0	119	303
09:15	0	2	0	5	2	192	3	0	7	195	7	92	0	0	99	296
09:30	5	1	0	6	6	183	8	0	9	191	3	106	0	0	109	306
09:45	3	0	0	14	3	195	10	0	5	205	5	79	0	0	84	292
Hourly Total	9	3	0	43	12	745	29	0	46	774	28	383	0	0	411	1197
10:00	2	2	0	7	4	145	2	0	5	147	3	81	0	0	84	235
10:15	6	8	0	5	14	130	2	0	2	132	5	98	0	0	103	249
10:30	2	8	0	4	10	136	3	0	3	139	3	107	0	0	110	259
10:45	0	1	0	6	1	166	2	0	3	168	3	99	0	0	102	271
Hourly Total	10	19	0	22	29	577	9	0	13	586	14	385	0	0	399	1014
11:00	1	5	0	8	6	133	1	0	5	134	4	112	0	0	116	256
11:15	2	8	0	10	10	142	2	0	7	144	1	120	0	0	121	275
11:30	9	4	0	6	13	156	2	0	9	158	2	121	0	0	123	294
11:45	1	4	0	5	5	152	2	0	5	154	2	124	0	0	126	285
Hourly Total	13	21	0	29	34	583	7	0	26	590	9	477	0	0	486	1110
12:00	2	8	0	12	10	178	3	0	20	181	6	127	0	0	133	324
12:15	3	8	0	15	11	159	2	0	6	161	4	116	0	1	120	292
12:30	3	9	0	16	12	150	2	0	7	152	3	125	0	1	128	292
12:45	3	6	0	13	9	161	2	0	6	163	11	121	0	0	132	304
Hourly Total	11	31	0	56	42	648	9	0	39	657	24	489	0	2	513	1212
13:00	3	7	0	10	10	144	1	0	11	145	3	137	0	0	140	295
13:15	5	2	0	9	7	155	7	0	2	162	8	120	0	0	128	297
13:30	3	11	0	10	14	157	3	0	10	160	3	99	0	0	102	276
13:45	1	3	0	10	4	187	1	0	3	188	3	133	0	0	136	328
Hourly Total	12	23	0	39	35	643	12	0	26	655	17	489	0	0	506	1196
14:00	2	8	0	1	10	160	2	0	1	162	8	137	0	0	145	317
14:15	2	2	0	9	4	145	4	0	4	149	2	136	0	0	138	291
14:30	4	6	0	8	10	179	2	0	5	181	2	161	0	0	163	354
14:45	4	8	0	5	12	180	5	0	6	185	4	180	0	0	184	381
Hourly Total	12	24	0	23	36	664	13	0	16	677	16	614	0	0	630	1343
15:00	3	2	0	39	5	183	1	0	5	184	3	185	0	0	188	377
15:15	6	6	0	64	12	161	1	0	3	162	3	203	0	0	206	380
15:30	5	4	0	32	9	170	3	0	6	173	2	187	0	0	189	371
15:45	1	7	0	5	8	174	1	0	4	175	4	200	0	0	204	387
Hourly Total	15	19	0	140	34	688	6	0	18	694	12	775	0	0	787	1515
16:00	3	12	0	10	15	178	2	0	11	180	4	220	0	0	224	419
16:15	4	8	0	13	12	181	2	0	15	183	1	268	0	0	269	464
16:30	2	4	0	19	6	201	0	0	17	201	4	232	0	0	236	443
16:45	3	5	0	10	8	191	4	0	15	195	3	258	0	0	261	464
Hourly Total	12	29	0	52	41	751	8	0	58	759	12	978	0	0	990	1790
17:00	3	10	0	14	13	189	3	0	22	192	4	244	0	0	248	453
17:15	4	3	0	10	7	182	2	0	13	184	3	204	0	0	207	398
17:30	1	6	0	10	7	209	2	0	5	211	0	200	0	0	200	418

17:45	1	3	0	8	4	200	2	0	7	202	4	149	0	0	153	359
Hourly Total	9	22	0	42	31	780	9	0	47	789	11	797	0	0	808	1628
18:00	4	2	0	7	6	146	0	0	5	146	2	156	0	0	158	310
18:15	1	1	0	4	2	132	1	0	1	133	0	142	0	0	142	277
18:30	1	5	0	2	6	161	0	0	4	161	1	132	1	0	134	301
18:45	3	3	0	5	6	172	2	0	4	174	3	129	0	0	132	312
Hourly Total	9	11	0	18	20	611	3	0	14	614	6	559	1	0	566	1200
19:00	11	5	0	3	16	145	2	0	1	147	1	165	0	0	166	329
19:15	2	2	0	2	4	141	2	0	3	143	3	167	0	0	170	317
19:30	0	3	0	2	3	134	0	0	1	134	1	109	0	0	110	247
19:45	1	0	0	5	1	92	2	1	4	95	1	130	1	0	132	228
Hourly Total	14	10	0	12	24	512	6	1	9	519	6	571	1	0	578	1121
20:00	2	0	0	4	2	91	0	0	0	91	0	86	0	0	86	179
20:15	1	0	0	8	1	98	2	0	2	100	1	82	0	0	83	184
20:30	0	1	0	4	1	107	0	0	0	107	0	86	0	0	86	194
20:45	0	1	0	1	1	69	0	0	0	69	0	73	0	0	73	143
Hourly Total	3	2	0	17	5	365	2	0	2	367	1	327	0	0	328	700
21:00	3	2	0	2	5	95	0	0	3	95	1	82	0	0	83	183
21:15	0	0	0	1	0	72	0	0	2	72	0	79	0	0	79	151
21:30	0	1	0	2	1	83	0	0	1	83	1	75	0	0	76	160
21:45	0	0	0	5	0	64	0	0	3	64	1	69	0	0	70	134
Hourly Total	3	3	0	10	6	314	0	0	9	314	3	305	0	0	308	628
22:00	0	1	0	2	1	51	0	0	1	51	0	64	0	0	64	116
22:15	0	1	0	2	1	52	1	0	2	53	2	51	0	0	53	107
22:30	4	1	0	1	5	40	0	0	1	40	0	39	0	0	39	84
22:45	0	0	0	4	0	40	0	0	0	40	0	51	0	0	51	91
Hourly Total	4	3	0	9	7	183	1	0	4	184	2	205	0	0	207	398
23:00	0	1	0	1	1	29	0	0	0	29	0	44	0	0	44	74
23:15	0	0	0	1	0	29	0	0	0	29	0	40	0	0	40	69
23:30	1	0	0	2	1	17	0	0	0	17	0	23	0	0	23	41
23:45	0	1	0	0	1	18	0	0	0	18	0	28	0	0	28	47
Hourly Total	1	2	0	4	3	93	0	0	0	93	0	135	0	0	135	231
Grand Total	147	245	0	677	392	10627	151	2	412	10780	217	8827	3	2	9047	20219
Approach %	37.5	62.5	0.0	-	-	98.6	1.4	0.0	-	-	2.4	97.6	0.0	-	-	-
Total %	0.7	1.2	0.0	-	1.9	52.6	0.7	0.0	-	53.3	1.1	43.7	0.0	-	44.7	-
Motorcycles	0	0	0	-	0	8	0	0	-	8	0	4	0	-	4	12
% Motorcycles	0.0	0.0	-	-	0.0	0.1	0.0	0.0	-	0.1	0.0	0.0	0.0	-	0.0	0.1
Cars & Light Goods	143	231	0	-	374	10311	146	2	-	10459	209	8534	3	-	8746	19579
% Cars & Light Goods	97.3	94.3	-	-	95.4	97.0	96.7	100.0	-	97.0	96.3	96.7	100.0	-	96.7	96.8
Buses	1	1	0	-	2	142	0	0	-	142	2	122	0	-	124	268
% Buses	0.7	0.4	-	-	0.5	1.3	0.0	0.0	-	1.3	0.9	1.4	0.0	-	1.4	1.3
Single-Unit Trucks	3	6	0	-	9	117	4	0	-	121	5	116	0	-	121	251
% Single-Unit Trucks	2.0	2.4	-	-	2.3	1.1	2.6	0.0	-	1.1	2.3	1.3	0.0	-	1.3	1.2
Articulated Trucks	0	0	0	-	0	30	0	0	-	30	0	39	0	-	39	69
% Articulated Trucks	0.0	0.0	-	-	0.0	0.3	0.0	0.0	-	0.3	0.0	0.4	0.0	-	0.4	0.3
Bicycles on Road	0	7	0	-	7	19	1	0	-	20	1	12	0	-	13	40
% Bicycles on Road	0.0	2.9	-	-	1.8	0.2	0.7	0.0	-	0.2	0.5	0.1	0.0	-	0.1	0.2
Bicycles on Crosswalk	-	-	-	28	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	4.1	-	-	-	-	0.2	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	649	-	-	-	-	411	-	-	-	-	2	-	-
% Pedestrians	-	-	-	95.9	-	-	-	-	99.8	-	-	-	-	100.0	-	-

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Count Name: Longwood Road S & East Parking Lot - Day 2
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Start Date: 17/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
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Count Name: Longwood Road S & East Parking Lot - Day 2
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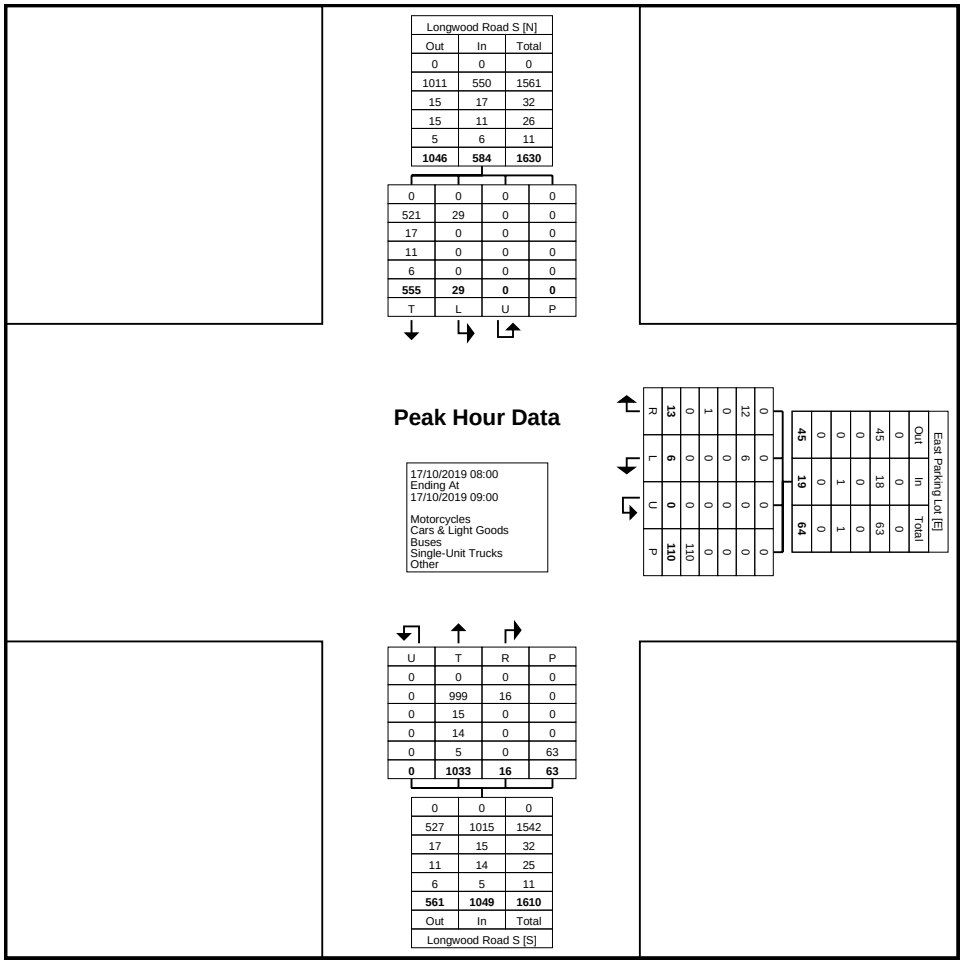
Turning Movement Peak Hour Data (08:00)

Start Time	East Parking Lot Westbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
08:00	3	4	0	16	7	276	5	0	10	281	5	129	0	0	134	422
08:15	0	4	0	57	4	284	4	0	18	288	10	123	0	0	133	425
08:30	3	2	0	21	5	250	5	0	11	255	7	157	0	0	164	424
08:45	0	3	0	16	3	223	2	0	24	225	7	146	0	0	153	381
Total	6	13	0	110	19	1033	16	0	63	1049	29	555	0	0	584	1652
Approach %	31.6	68.4	0.0	-	-	98.5	1.5	0.0	-	-	5.0	95.0	0.0	-	-	-
Total %	0.4	0.8	0.0	-	1.2	62.5	1.0	0.0	-	63.5	1.8	33.6	0.0	-	35.4	-
PHF	0.500	0.813	0.000	-	0.679	0.909	0.800	0.000	-	0.911	0.725	0.884	0.000	-	0.890	0.972
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	6	12	0	-	18	999	16	0	-	1015	29	521	0	-	550	1583
% Cars & Light Goods	100.0	92.3	-	-	94.7	96.7	100.0	-	-	96.8	100.0	93.9	-	-	94.2	95.8
Buses	0	0	0	-	0	15	0	0	-	15	0	17	0	-	17	32
% Buses	0.0	0.0	-	-	0.0	1.5	0.0	-	-	1.4	0.0	3.1	-	-	2.9	1.9
Single-Unit Trucks	0	1	0	-	1	14	0	0	-	14	0	11	0	-	11	26
% Single-Unit Trucks	0.0	7.7	-	-	5.3	1.4	0.0	-	-	1.3	0.0	2.0	-	-	1.9	1.6
Articulated Trucks	0	0	0	-	0	4	0	0	-	4	0	4	0	-	4	8
% Articulated Trucks	0.0	0.0	-	-	0.0	0.4	0.0	-	-	0.4	0.0	0.7	-	-	0.7	0.5
Bicycles on Road	0	0	0	-	0	1	0	0	-	1	0	2	0	-	2	3
% Bicycles on Road	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.0	0.4	-	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	7	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	6.4	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	103	-	-	-	-	63	-	-	-	-	0	-	-
% Pedestrians	-	-	-	93.6	-	-	-	-	100.0	-	-	-	-	-	-	-

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Count Name: Longwood Road S & East Parking Lot - Day 2
Site Code:
Start Date: 17/10/2019



Turning Movement Peak Hour Data Plot (08:00)

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Count Name: Longwood Road S & East Parking Lot - Day 2
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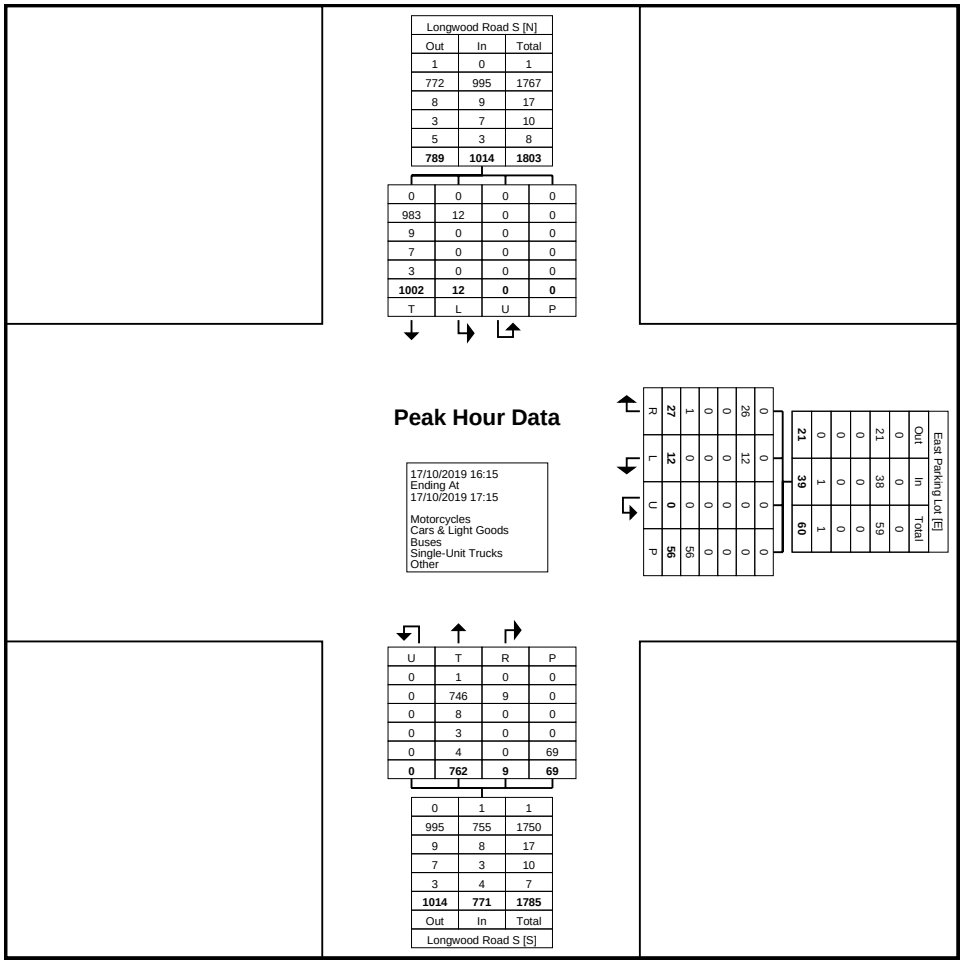
Turning Movement Peak Hour Data (16:15)

Start Time	East Parking Lot Westbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Int. Total
16:15	4	8	0	13	12	181	2	0	15	183	1	268	0	0	269	464
16:30	2	4	0	19	6	201	0	0	17	201	4	232	0	0	236	443
16:45	3	5	0	10	8	191	4	0	15	195	3	258	0	0	261	464
17:00	3	10	0	14	13	189	3	0	22	192	4	244	0	0	248	453
Total	12	27	0	56	39	762	9	0	69	771	12	1002	0	0	1014	1824
Approach %	30.8	69.2	0.0	-	-	98.8	1.2	0.0	-	-	1.2	98.8	0.0	-	-	-
Total %	0.7	1.5	0.0	-	2.1	41.8	0.5	0.0	-	42.3	0.7	54.9	0.0	-	55.6	-
PHF	0.750	0.675	0.000	-	0.750	0.948	0.563	0.000	-	0.959	0.750	0.935	0.000	-	0.942	0.983
Motorcycles	0	0	0	-	0	1	0	0	-	1	0	0	0	-	0	1
% Motorcycles	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	12	26	0	-	38	746	9	0	-	755	12	983	0	-	995	1788
% Cars & Light Goods	100.0	96.3	-	-	97.4	97.9	100.0	-	-	97.9	100.0	98.1	-	-	98.1	98.0
Buses	0	0	0	-	0	8	0	0	-	8	0	9	0	-	9	17
% Buses	0.0	0.0	-	-	0.0	1.0	0.0	-	-	1.0	0.0	0.9	-	-	0.9	0.9
Single-Unit Trucks	0	0	0	-	0	3	0	0	-	3	0	7	0	-	7	10
% Single-Unit Trucks	0.0	0.0	-	-	0.0	0.4	0.0	-	-	0.4	0.0	0.7	-	-	0.7	0.5
Articulated Trucks	0	0	0	-	0	1	0	0	-	1	0	1	0	-	1	2
% Articulated Trucks	0.0	0.0	-	-	0.0	0.1	0.0	-	-	0.1	0.0	0.1	-	-	0.1	0.1
Bicycles on Road	0	1	0	-	1	3	0	0	-	3	0	2	0	-	2	6
% Bicycles on Road	0.0	3.7	-	-	2.6	0.4	0.0	-	-	0.4	0.0	0.2	-	-	0.2	0.3
Bicycles on Crosswalk	-	-	-	3	-	-	-	-	1	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	5.4	-	-	-	-	1.4	-	-	-	-	-	-	-
Pedestrians	-	-	-	53	-	-	-	-	68	-	-	-	-	0	-	-
% Pedestrians	-	-	-	94.6	-	-	-	-	98.6	-	-	-	-	-	-	-

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Start Date: 17/10/2019



Turning Movement Peak Hour Data Plot (16:15)

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5A-150 Pinebush Rd

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519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & Frid Street - Day 2
Site Code:
Start Date: 17/10/2019

Turning Movement Data

Start Time	Parking Lot Eastbound						Frid Street Westbound						Longwood Road S Northbound						Longwood Road S Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
00:00	0	0	0	0	0	0	0	0	0	0	1	0	0	13	0	0	0	13	0	21	0	0	0	21	34
00:15	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18	1	9	0	0	0	10	28
00:30	0	0	0	0	0	0	0	0	0	0	2	0	0	13	0	0	0	13	0	11	0	0	0	11	24
00:45	1	0	0	0	1	1	0	0	0	0	0	0	0	12	0	0	0	12	0	16	0	0	0	16	29
Hourly Total	1	0	0	0	1	1	0	0	0	0	3	0	0	56	0	0	0	56	1	57	0	0	0	58	115
01:00	0	0	0	0	1	0	0	0	0	0	1	0	0	8	0	1	0	9	0	14	0	0	0	14	23
01:15	0	0	0	0	0	0	0	0	0	0	1	0	0	5	0	0	0	5	0	13	0	0	0	13	18
01:30	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	8	0	0	0	8	11
01:45	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	9	0	0	0	9	14
Hourly Total	0	0	0	0	1	0	0	0	0	0	2	0	0	21	0	1	0	22	0	44	0	0	0	44	66
02:00	0	0	1	0	0	1	0	0	0	0	0	0	0	6	0	0	0	6	0	2	0	0	0	2	9
02:15	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	8	0	3	0	0	0	3	11
02:30	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	6	0	0	0	6	10
02:45	1	0	0	0	0	1	0	0	0	0	0	0	0	6	0	0	0	6	0	2	1	0	0	3	10
Hourly Total	1	0	1	0	0	2	0	0	0	0	0	0	0	24	0	0	0	24	0	13	1	0	0	14	40
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	5	0	0	0	5	7
03:15	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	5	0	0	0	5	9
03:30	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	3	0	0	0	3	6
03:45	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	9
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18	0	13	0	0	0	13	31
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	2	0	0	0	2	6
04:15	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	6	0	0	0	6	12
04:30	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	9	0	0	0	9	10
04:45	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	11	0	5	0	0	0	5	16
Hourly Total	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	22	0	22	0	0	0	22	44
05:00	0	0	0	0	0	0	0	0	1	0	1	1	0	16	1	0	0	17	0	6	0	0	0	6	24
05:15	0	0	0	0	0	0	0	0	0	0	1	0	0	13	0	0	0	13	0	12	0	0	0	12	25
05:30	0	0	0	0	0	0	0	0	0	0	2	0	3	29	0	0	0	32	0	20	1	0	0	21	53
05:45	0	0	0	0	0	0	0	0	0	0	1	0	4	45	0	0	0	49	0	14	3	0	0	17	66
Hourly Total	0	0	0	0	0	0	0	0	1	0	5	1	7	103	1	0	0	111	0	52	4	0	0	56	168
06:00	0	1	1	0	0	2	0	0	0	0	1	0	2	34	0	0	0	36	0	31	1	0	0	32	70
06:15	0	0	1	0	0	1	0	0	0	0	1	0	7	65	0	0	0	72	0	31	2	0	0	33	106
06:30	0	0	0	0	0	0	0	0	0	0	0	0	2	103	1	0	0	106	0	52	2	0	0	54	160
06:45	1	0	0	0	0	1	1	0	0	0	0	1	8	133	2	0	0	143	0	45	4	0	0	49	194
Hourly Total	1	1	2	0	0	4	1	0	0	0	2	1	19	335	3	0	0	357	0	159	9	0	0	168	530

07:00	0	2	1	0	0	3	0	0	0	0	5	0	9	186	1	0	0	196	0	74	2	0	2	76	275
07:15	2	0	1	0	1	3	0	0	1	0	2	1	8	222	2	0	0	232	0	83	2	0	2	85	321
07:30	1	0	1	0	1	2	0	0	2	0	3	2	4	213	7	0	0	224	4	118	1	0	4	123	351
07:45	1	0	1	0	4	2	1	1	0	0	6	2	9	258	3	0	0	270	2	101	2	0	3	105	379
Hourly Total	4	2	4	0	6	10	1	1	3	0	16	5	30	879	13	0	0	922	6	376	7	0	11	389	1326
08:00	1	1	0	0	1	2	2	1	1	0	8	4	13	284	6	0	0	303	3	111	7	0	3	121	430
08:15	2	2	0	0	3	4	4	0	1	1	50	6	15	269	10	0	0	294	2	109	2	0	3	113	417
08:30	3	1	1	1	0	6	0	1	0	0	10	1	10	256	6	0	1	272	2	138	3	0	2	143	422
08:45	1	0	1	0	1	2	0	0	0	0	7	0	23	222	12	0	2	257	0	132	1	0	0	133	392
Hourly Total	7	4	2	1	5	14	6	2	2	1	75	11	61	1031	34	0	3	1126	7	490	13	0	8	510	1661
09:00	3	1	1	0	2	5	0	0	0	0	4	0	13	185	10	0	1	208	0	95	4	0	1	99	312
09:15	2	0	2	0	2	4	0	1	1	0	5	2	8	185	6	1	1	200	2	87	3	0	0	92	298
09:30	3	1	0	0	5	4	1	1	1	0	1	3	8	206	2	0	0	216	1	101	5	0	1	107	330
09:45	3	0	0	0	2	3	0	0	1	0	8	1	5	180	4	0	0	189	0	79	2	0	1	81	274
Hourly Total	11	2	3	0	11	16	1	2	3	0	18	6	34	756	22	1	2	813	3	362	14	0	3	379	1214
10:00	3	0	2	0	2	5	2	0	0	0	2	2	3	147	3	0	1	153	0	73	3	0	0	76	236
10:15	0	0	1	0	3	1	3	0	2	0	2	5	4	132	3	0	3	139	0	106	2	0	2	108	253
10:30	0	1	2	0	1	3	5	0	1	0	3	6	3	134	2	0	1	139	0	104	1	0	0	105	253
10:45	1	0	2	0	4	3	1	1	2	0	1	4	1	158	5	0	0	164	0	93	2	0	1	95	266
Hourly Total	4	1	7	0	10	12	11	1	5	0	8	17	11	571	13	0	5	595	0	376	8	0	3	384	1008
11:00	1	1	1	0	3	3	1	0	0	0	1	1	0	133	1	0	0	134	1	108	2	0	2	111	249
11:15	2	1	0	0	8	3	1	0	1	0	6	2	1	152	2	0	0	155	1	117	0	0	0	118	278
11:30	5	0	2	0	4	7	2	0	0	0	2	2	1	148	2	0	0	151	0	127	0	0	0	127	287
11:45	5	2	2	0	6	9	2	0	1	0	2	3	3	152	0	1	2	156	1	122	3	0	1	126	294
Hourly Total	13	4	5	0	21	22	6	0	2	0	11	8	5	585	5	1	2	596	3	474	5	0	3	482	1108
12:00	15	0	2	0	4	17	0	0	0	0	1	0	5	166	1	0	0	172	0	120	5	1	0	126	315
12:15	6	0	1	0	9	7	2	1	1	0	0	4	0	147	0	0	2	147	1	118	2	0	4	121	279
12:30	7	0	1	0	5	8	0	1	1	0	5	2	4	142	3	1	1	150	0	125	2	0	0	127	287
12:45	4	0	1	0	4	5	0	0	0	0	2	0	5	153	3	0	0	161	0	114	4	0	2	118	284
Hourly Total	32	0	5	0	22	37	2	2	2	0	8	6	14	608	7	1	3	630	1	477	13	1	6	492	1165
13:00	5	0	5	0	5	10	2	3	0	0	2	5	6	147	1	0	0	154	1	138	0	0	4	139	308
13:15	1	1	2	0	6	4	1	1	0	0	0	2	3	160	2	0	0	165	0	114	6	0	2	120	291
13:30	3	1	4	0	6	8	1	0	0	0	3	1	2	168	0	0	0	170	0	100	1	0	2	101	280
13:45	1	0	4	0	8	5	0	1	0	0	5	1	1	180	3	0	0	184	0	124	2	0	1	126	316
Hourly Total	10	2	15	0	25	27	4	5	0	0	10	9	12	655	6	0	0	673	1	476	9	0	9	486	1195
14:00	0	1	0	0	1	1	3	2	0	0	0	5	4	151	0	0	0	155	0	130	1	0	1	131	292
14:15	2	2	4	0	5	8	0	0	0	0	4	0	1	151	0	0	0	152	0	139	1	0	1	140	300
14:30	5	2	5	0	5	12	2	1	0	0	3	3	3	176	1	0	0	180	1	160	0	0	0	161	356
14:45	8	0	6	0	5	14	1	0	0	0	1	1	0	184	1	1	0	186	0	192	1	0	0	193	394
Hourly Total	15	5	15	0	16	35	6	3	0	0	8	9	8	662	2	1	0	673	1	621	3	0	2	625	1342
15:00	2	0	9	0	3	11	6	0	2	0	26	8	0	175	0	0	0	175	0	182	2	0	3	184	378
15:15	5	0	8	0	4	13	5	0	0	0	63	5	1	152	1	0	1	154	0	207	2	0	3	209	381
15:30	4	0	10	0	3	14	9	0	0	0	16	9	3	174	2	0	0	179	0	186	4	0	2	190	392
15:45	8	0	6	0	6	14	3	0	0	0	6	3	1	163	1	0	0	165	0	196	1	0	2	197	379
Hourly Total	19	0	33	0	16	52	23	0	2	0	111	25	5	664	4	0	1	673	0	771	9	0	10	780	1530
16:00	8	2	6	0	4	16	6	0	1	0	3	7	0	174	1	0	0	175	1	227	1	0	3	229	427
16:15	6	0	6	0	4	12	6	0	0	0	6	6	4	180	1	0	0	185	1	272	1	0	1	274	477
16:30	8	0	13	0	5	21	10	0	1	0	7	11	1	192	1	0	0	194	0	241	2	0	3	243	469
16:45	4	0	10	0	8	14	4	0	0	0	3	4	1	190	1	1	0	193	0	260	2	0	4	262	473
Hourly Total	26	2	35	0	21	63	26	0	2	0	19	28	6	736	4	1	0	747	2	1000	6	0	11	1008	1846
17:00	5	0	6	0	5	11	7	1	0	0	10	8	1	187	0	0	2	188	0	258	1	0	1	259	466
17:15	1	0	4	0	6	5	4	0	0	0	9	4	2	182	0	1	2	185	0	210	1	1	1	212	406

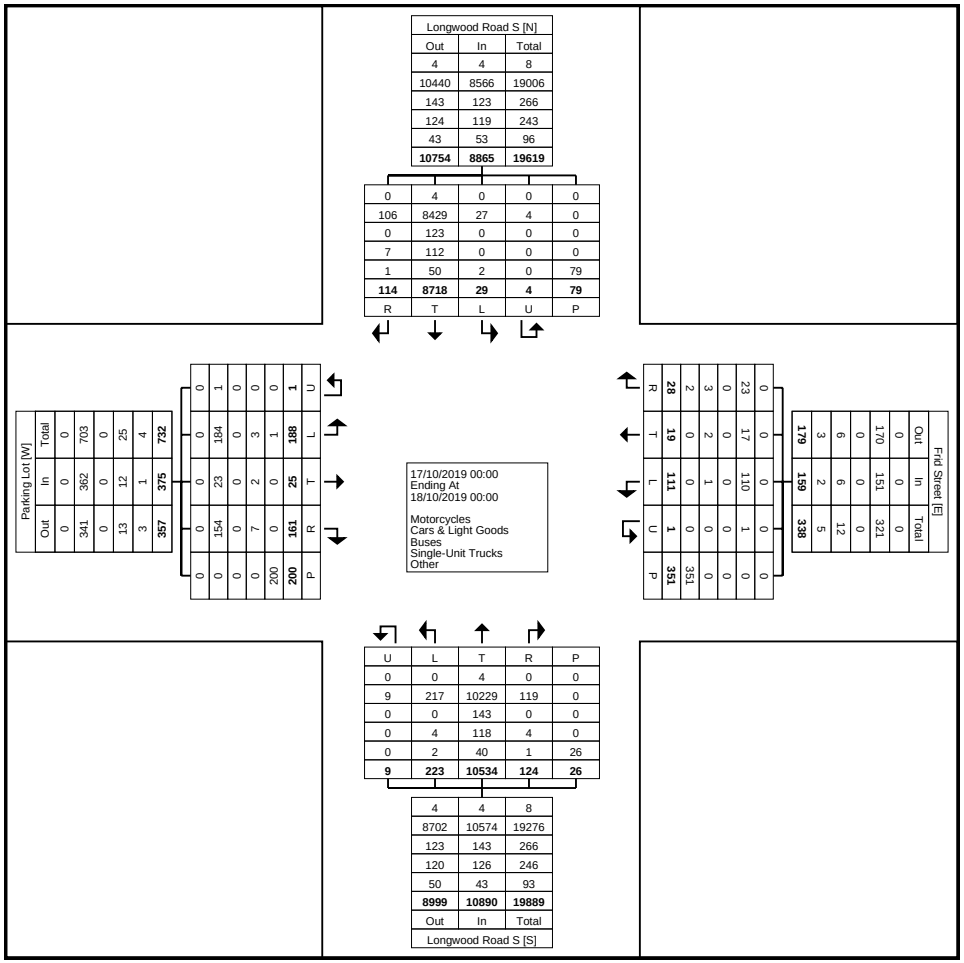
17:30	4	0	2	0	2	6	1	0	1	0	3	2	0	206	1	1	0	208	0	202	2	0	1	204	420
17:45	7	0	1	0	4	8	1	0	0	0	3	1	0	190	0	0	1	190	0	155	0	0	1	155	354
Hourly Total	17	0	13	0	17	30	13	1	1	0	25	15	3	765	1	2	5	771	0	825	4	1	4	830	1646
18:00	2	0	4	0	3	6	3	0	1	0	2	4	2	142	3	0	0	147	1	160	0	1	1	162	319
18:15	0	0	1	0	3	1	1	0	1	0	2	2	0	133	0	0	1	133	0	144	1	0	2	145	281
18:30	3	0	3	0	6	6	1	0	0	0	2	1	0	165	0	0	1	165	0	126	3	0	2	129	301
18:45	4	0	2	0	2	6	1	0	0	0	4	1	0	162	2	0	2	164	0	131	0	0	0	131	302
Hourly Total	9	0	10	0	14	19	6	0	2	0	10	8	2	602	5	0	4	609	1	561	4	1	5	567	1203
19:00	4	0	2	0	2	6	0	1	0	0	1	1	0	147	0	0	1	147	1	171	1	1	0	174	328
19:15	3	0	3	0	0	6	4	0	0	0	2	4	2	143	2	0	0	147	0	169	0	0	0	169	326
19:30	0	0	2	0	0	2	0	1	0	0	1	1	0	129	0	0	0	129	0	110	0	0	1	110	242
19:45	1	0	0	0	2	1	0	0	0	0	2	0	0	91	0	0	0	91	0	127	1	0	0	128	220
Hourly Total	8	0	7	0	4	15	4	2	0	0	6	6	2	510	2	0	1	514	1	577	2	1	1	581	1116
20:00	1	2	1	0	0	4	0	0	0	0	2	0	0	89	0	0	0	89	0	84	0	0	0	84	177
20:15	1	0	0	0	1	1	0	0	1	0	2	1	0	96	0	0	0	96	1	83	0	0	1	84	182
20:30	1	0	1	0	1	2	1	0	1	0	0	2	1	105	1	0	0	107	0	84	1	0	0	85	196
20:45	0	0	0	0	0	0	0	0	0	0	1	0	1	68	0	0	0	69	0	73	1	0	0	74	143
Hourly Total	3	2	2	0	2	7	1	0	2	0	5	3	2	358	1	0	0	361	1	324	2	0	1	327	698
21:00	1	0	0	0	1	1	0	0	0	0	0	0	1	93	0	0	0	94	1	79	0	0	0	80	175
21:15	2	0	0	0	0	2	0	0	0	0	1	0	0	66	0	0	0	66	0	78	0	0	0	78	146
21:30	0	0	0	0	2	0	0	0	0	0	2	0	0	87	0	0	0	87	0	75	0	0	0	75	162
21:45	0	0	1	0	0	1	0	0	0	0	0	0	0	59	0	1	0	60	0	68	0	0	1	68	129
Hourly Total	3	0	1	0	3	4	0	0	0	0	3	0	1	305	0	1	0	307	1	300	0	0	1	301	612
22:00	2	0	0	0	2	2	0	0	1	0	1	1	0	52	1	0	0	53	0	66	0	0	0	66	122
22:15	0	0	0	0	1	0	0	0	0	0	0	0	0	50	0	0	0	50	0	50	0	0	0	50	100
22:30	1	0	0	0	1	1	0	0	0	0	1	0	0	39	0	0	0	39	0	42	0	0	0	42	82
22:45	0	0	0	0	0	0	0	0	0	0	3	0	0	40	0	0	0	40	0	55	0	0	0	55	95
Hourly Total	3	0	0	0	4	3	0	0	1	0	5	1	0	181	1	0	0	182	0	213	0	0	0	213	399
23:00	1	0	0	0	1	1	0	0	0	0	0	0	0	26	0	0	0	26	0	43	0	0	1	43	70
23:15	0	0	0	0	0	0	0	0	0	0	0	0	0	26	0	0	0	26	0	40	0	0	0	40	66
23:30	0	0	1	0	0	1	0	0	0	0	1	0	0	17	0	0	0	17	0	22	1	0	0	23	41
23:45	0	0	0	0	0	0	0	0	0	0	0	0	1	18	0	0	0	19	0	30	0	0	0	30	49
Hourly Total	1	0	1	0	1	2	0	0	0	0	1	0	1	87	0	0	0	88	0	135	1	0	1	136	226
Grand Total	188	25	161	1	200	375	111	19	28	1	351	159	223	10534	124	9	26	10890	29	8718	114	4	79	8865	20289
Approach %	50.1	6.7	42.9	0.3	-	-	69.8	11.9	17.6	0.6	-	-	2.0	96.7	1.1	0.1	-	-	0.3	98.3	1.3	0.0	-	-	-
Total %	0.9	0.1	0.8	0.0	-	1.8	0.5	0.1	0.1	0.0	-	0.8	1.1	51.9	0.6	0.0	-	53.7	0.1	43.0	0.6	0.0	-	43.7	-
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	4	0	0	-	4	0	4	0	0	-	4	8
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
Cars & Light Goods	184	23	154	1	-	362	110	17	23	1	-	151	217	10229	119	9	-	10574	27	8429	106	4	-	8566	19653
% Cars & Light Goods	97.9	92.0	95.7	100.0	-	96.5	99.1	89.5	82.1	100.0	-	95.0	97.3	97.1	96.0	100.0	-	97.1	93.1	96.7	93.0	100.0	-	96.6	96.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	143	0	0	-	143	0	123	0	0	-	123	266
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	1.4	0.0	0.0	-	1.3	0.0	1.4	0.0	0.0	-	1.4	1.3
Single-Unit Trucks	3	2	7	0	-	12	1	2	3	0	-	6	4	118	4	0	-	126	0	112	7	0	-	119	263
% Single-Unit Trucks	1.6	8.0	4.3	0.0	-	3.2	0.9	10.5	10.7	0.0	-	3.8	1.8	1.1	3.2	0.0	-	1.2	0.0	1.3	6.1	0.0	-	1.3	1.3
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	28	0	0	-	28	0	39	0	0	-	39	67
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	0.0	-	0.3	0.0	0.4	0.0	0.0	-	0.4	0.3
Bicycles on Road	1	0	0	0	-	1	0	0	2	0	-	2	2	12	1	0	-	15	2	11	1	0	-	14	32
% Bicycles on Road	0.5	0.0	0.0	0.0	-	0.3	0.0	0.0	7.1	0.0	-	1.3	0.9	0.1	0.8	0.0	-	0.1	6.9	0.1	0.9	0.0	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	38	-	-	-	-	-	10	-	-	-	-	-	1	-	-

% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	10.8	-	-	-	-	-	38.5	-	-	-	-	-	1.3	-	-
Pedestrians	-	-	-	-	200	-	-	-	-	-	313	-	-	-	-	-	16	-	-	-	-	-	78	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	89.2	-	-	-	-	-	61.5	-	-	-	-	-	98.7	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & Frid Street - Day 2
Site Code:
Start Date: 17/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & Frid Street - Day 2
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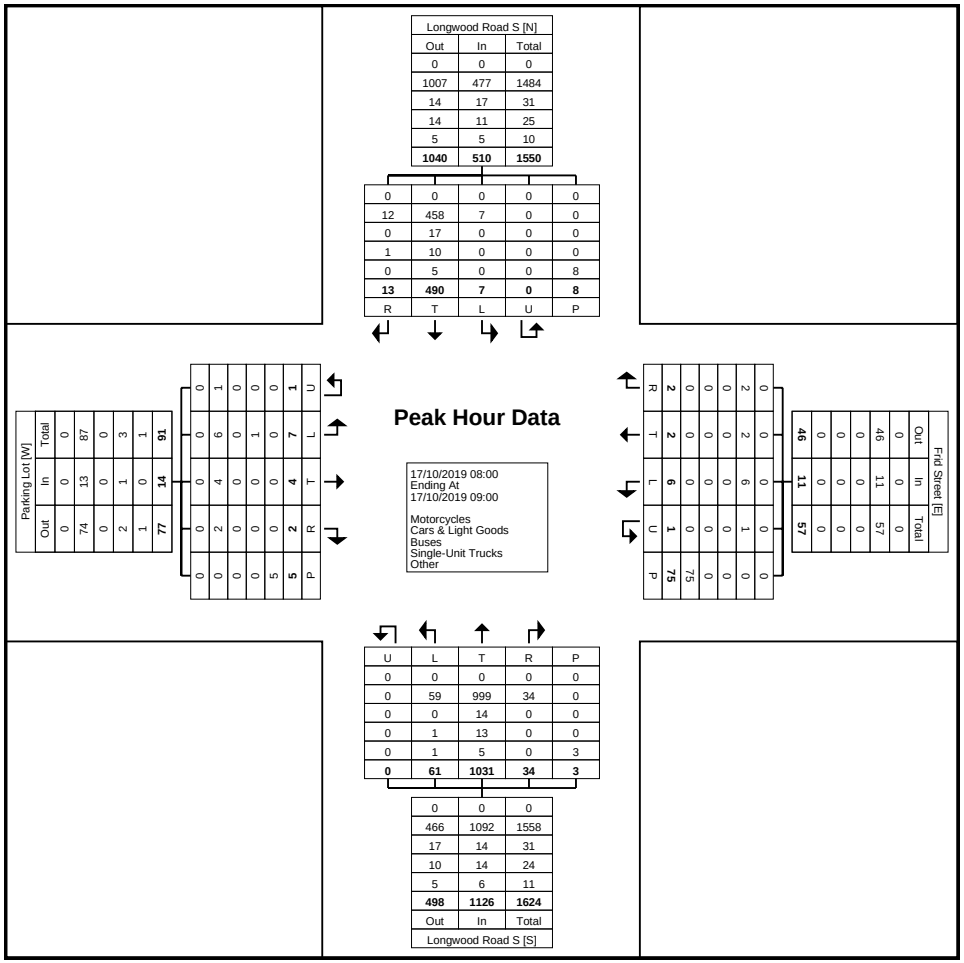
Turning Movement Peak Hour Data (08:00)

Start Time	Parking Lot Eastbound						Frid Street Westbound						Longwood Road S Northbound						Longwood Road S Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
08:00	1	1	0	0	1	2	2	1	1	0	8	4	13	284	6	0	0	303	3	111	7	0	3	121	430
08:15	2	2	0	0	3	4	4	0	1	1	50	6	15	269	10	0	0	294	2	109	2	0	3	113	417
08:30	3	1	1	1	0	6	0	1	0	0	10	1	10	256	6	0	1	272	2	138	3	0	2	143	422
08:45	1	0	1	0	1	2	0	0	0	0	7	0	23	222	12	0	2	257	0	132	1	0	0	133	392
Total	7	4	2	1	5	14	6	2	2	1	75	11	61	1031	34	0	3	1126	7	490	13	0	8	510	1661
Approach %	50.0	28.6	14.3	7.1	-	-	54.5	18.2	18.2	9.1	-	-	5.4	91.6	3.0	0.0	-	-	1.4	96.1	2.5	0.0	-	-	-
Total %	0.4	0.2	0.1	0.1	-	0.8	0.4	0.1	0.1	0.1	-	0.7	3.7	62.1	2.0	0.0	-	67.8	0.4	29.5	0.8	0.0	-	30.7	-
PHF	0.583	0.500	0.500	0.250	-	0.583	0.375	0.500	0.500	0.250	-	0.458	0.663	0.908	0.708	0.000	-	0.929	0.583	0.888	0.464	0.000	-	0.892	0.966
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	6	4	2	1	-	13	6	2	2	1	-	11	59	999	34	0	-	1092	7	458	12	0	-	477	1593
% Cars & Light Goods	85.7	100.0	100.0	100.0	-	92.9	100.0	100.0	100.0	100.0	-	100.0	96.7	96.9	100.0	-	-	97.0	100.0	93.5	92.3	-	-	93.5	95.9
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	14	0	0	-	14	0	17	0	0	-	17	31
% Buses	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	1.4	0.0	-	-	1.2	0.0	3.5	0.0	-	-	3.3	1.9
Single-Unit Trucks	1	0	0	0	-	1	0	0	0	0	-	0	1	13	0	0	-	14	0	10	1	0	-	11	26
% Single-Unit Trucks	14.3	0.0	0.0	0.0	-	7.1	0.0	0.0	0.0	0.0	-	0.0	1.6	1.3	0.0	-	-	1.2	0.0	2.0	7.7	-	-	2.2	1.6
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	4	0	0	-	4	0	4	0	0	-	4	8
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	-	0.4	0.0	0.8	0.0	-	-	0.8	0.5
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	1	1	0	0	-	2	0	1	0	0	-	1	3
% Bicycles on Road	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	1.6	0.1	0.0	-	-	0.2	0.0	0.2	0.0	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	12	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	16.0	-	-	-	-	-	33.3	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	5	-	-	-	-	-	63	-	-	-	-	-	2	-	-	-	-	-	8	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	84.0	-	-	-	-	-	66.7	-	-	-	-	-	100.0	-	-

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Turning Movement Peak Hour Data Plot (08:00)

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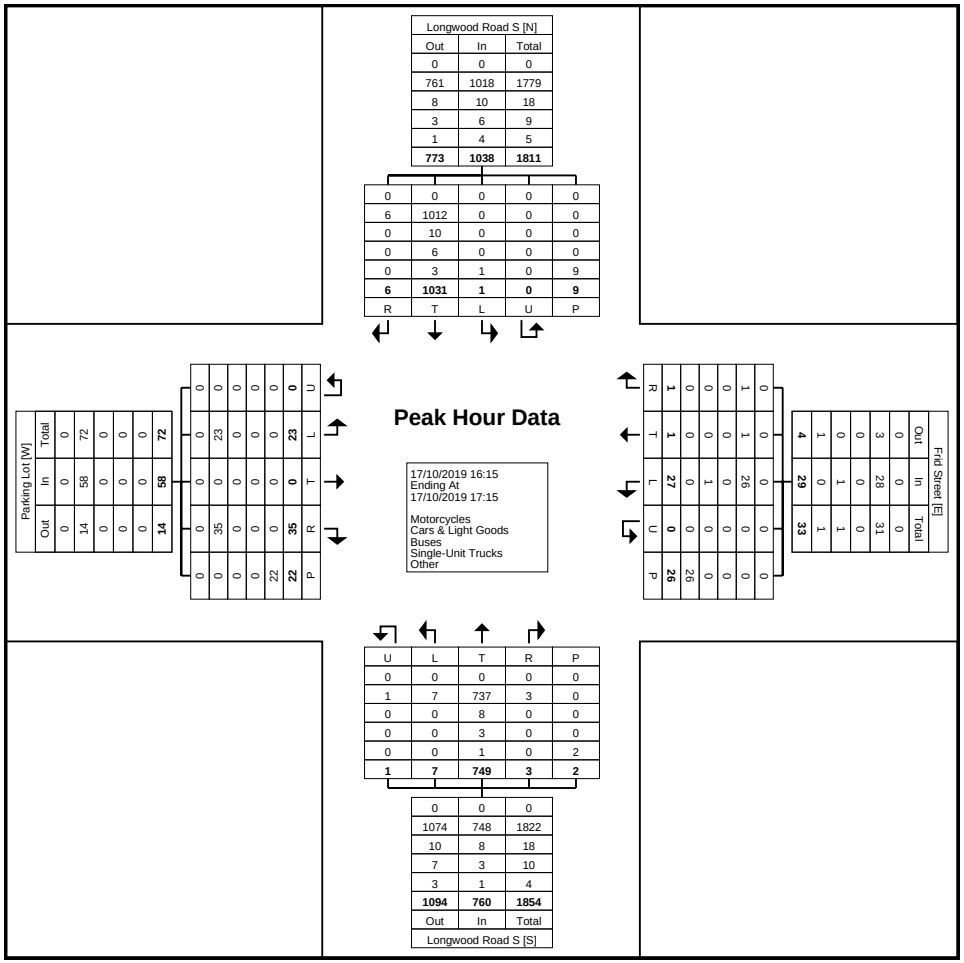
Turning Movement Peak Hour Data (16:15)

Start Time	Parking Lot Eastbound						Frid Street Westbound						Longwood Road S Northbound						Longwood Road S Southbound						Int. Total
	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	Left	Thru	Right	U-Turn	Peds	App. Total	
16:15	6	0	6	0	4	12	6	0	0	0	6	6	4	180	1	0	0	185	1	272	1	0	1	274	477
16:30	8	0	13	0	5	21	10	0	1	0	7	11	1	192	1	0	0	194	0	241	2	0	3	243	469
16:45	4	0	10	0	8	14	4	0	0	0	3	4	1	190	1	1	0	193	0	260	2	0	4	262	473
17:00	5	0	6	0	5	11	7	1	0	0	10	8	1	187	0	0	2	188	0	258	1	0	1	259	466
Total	23	0	35	0	22	58	27	1	1	0	26	29	7	749	3	1	2	760	1	1031	6	0	9	1038	1885
Approach %	39.7	0.0	60.3	0.0	-	-	93.1	3.4	3.4	0.0	-	-	0.9	98.6	0.4	0.1	-	-	0.1	99.3	0.6	0.0	-	-	-
Total %	1.2	0.0	1.9	0.0	-	3.1	1.4	0.1	0.1	0.0	-	1.5	0.4	39.7	0.2	0.1	-	40.3	0.1	54.7	0.3	0.0	-	55.1	-
PHF	0.719	0.000	0.673	0.000	-	0.690	0.675	0.250	0.250	0.000	-	0.659	0.438	0.975	0.750	0.250	-	0.979	0.250	0.948	0.750	0.000	-	0.947	0.988
Motorcycles	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Motorcycles	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	23	0	35	0	-	58	26	1	1	0	-	28	7	737	3	1	-	748	0	1012	6	0	-	1018	1852
% Cars & Light Goods	100.0	-	100.0	-	-	100.0	96.3	100.0	100.0	-	-	96.6	100.0	98.4	100.0	100.0	-	98.4	0.0	98.2	100.0	-	-	98.1	98.2
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	8	0	0	-	8	0	10	0	0	-	10	18
% Buses	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	1.1	0.0	0.0	-	1.1	0.0	1.0	0.0	-	-	1.0	1.0
Single-Unit Trucks	0	0	0	0	-	0	1	0	0	0	-	1	0	3	0	0	-	3	0	6	0	0	-	6	10
% Single-Unit Trucks	0.0	-	0.0	-	-	0.0	3.7	0.0	0.0	-	-	3.4	0.0	0.4	0.0	0.0	-	0.4	0.0	0.6	0.0	-	-	0.6	0.5
Articulated Trucks	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	1	0	0	-	1	2
% Articulated Trucks	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.1	0.0	0.0	-	0.1	0.0	0.1	0.0	-	-	0.1	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	2	0	0	-	3	3
% Bicycles on Road	0.0	-	0.0	-	-	0.0	0.0	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	-	0.0	100.0	0.2	0.0	-	-	0.3	0.2
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	6	-	-	-	-	-	1	-	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	-	0.0	-	-	-	-	-	23.1	-	-	-	-	-	50.0	-	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	-	22	-	-	-	-	-	20	-	-	-	-	-	1	-	-	-	-	-	9	-	-
% Pedestrians	-	-	-	-	100.0	-	-	-	-	-	76.9	-	-	-	-	-	50.0	-	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & Frid Street - Day 2
Site Code:
Start Date: 17/10/2019



Turning Movement Peak Hour Data Plot (16:15)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & Frid Street - Day 2
Site Code:
Start Date: 17/10/2019

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 17/10/2019

Turning Movement Data

Start Time	West Parking Lot Eastbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
00:00	0	1	0	0	1	0	13	0	0	13	19	1	0	0	20	34
00:15	0	0	0	0	0	0	15	0	0	15	10	0	0	0	10	25
00:30	0	0	0	0	0	0	16	0	0	16	12	0	0	0	12	28
00:45	0	0	0	2	0	0	13	0	0	13	16	0	0	0	16	29
Hourly Total	0	1	0	2	1	0	57	0	0	57	57	1	0	0	58	116
01:00	0	0	0	1	0	0	8	0	0	8	14	0	0	0	14	22
01:15	0	0	0	0	0	0	5	0	0	5	13	0	0	0	13	18
01:30	0	0	0	0	0	0	3	0	0	3	9	0	0	0	9	12
01:45	0	0	0	0	0	0	5	0	0	5	8	0	1	0	9	14
Hourly Total	0	0	0	1	0	0	21	0	0	21	44	0	1	0	45	66
02:00	0	0	0	0	0	0	5	0	0	5	2	0	0	0	2	7
02:15	0	0	0	0	0	0	9	0	0	9	3	0	0	0	3	12
02:30	0	0	0	0	0	0	4	0	0	4	6	0	0	0	6	10
02:45	0	0	0	0	0	0	6	1	0	7	2	0	0	0	2	9
Hourly Total	0	0	0	0	0	0	24	1	0	25	13	0	0	0	13	38
03:00	0	0	0	0	0	0	2	0	0	2	5	0	0	0	5	7
03:15	0	0	0	0	0	0	4	0	0	4	5	0	0	0	5	9
03:30	0	0	0	0	0	0	3	0	0	3	3	0	0	0	3	6
03:45	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	9
Hourly Total	0	0	0	0	0	0	18	0	0	18	13	0	0	0	13	31
04:00	0	0	0	0	0	0	4	0	0	4	2	0	0	0	2	6
04:15	0	0	0	0	0	0	6	0	0	6	6	0	0	0	6	12
04:30	0	0	0	0	0	0	1	0	0	1	9	0	0	0	9	10
04:45	0	0	0	0	0	0	10	0	0	10	5	0	0	0	5	15
Hourly Total	0	0	0	0	0	0	21	0	0	21	22	0	0	0	22	43
05:00	0	0	0	0	0	0	17	0	0	17	5	0	0	0	5	22
05:15	0	0	0	0	0	0	14	0	0	14	13	0	0	0	13	27
05:30	0	0	0	0	0	0	29	0	0	29	21	0	0	0	21	50
05:45	0	0	0	0	0	0	45	0	0	45	16	0	0	0	16	61
Hourly Total	0	0	0	0	0	0	105	0	0	105	55	0	0	0	55	160
06:00	0	0	0	0	0	0	37	0	0	37	33	2	0	0	35	72
06:15	0	0	0	0	0	0	67	0	0	67	33	0	0	0	33	100
06:30	0	0	0	0	0	1	103	0	0	104	50	2	0	0	52	156
06:45	0	1	0	0	1	0	139	0	1	139	51	2	0	0	53	193
Hourly Total	0	1	0	0	1	1	346	0	1	347	167	6	0	0	173	521
07:00	0	0	0	1	0	0	171	0	3	171	81	1	0	0	82	253

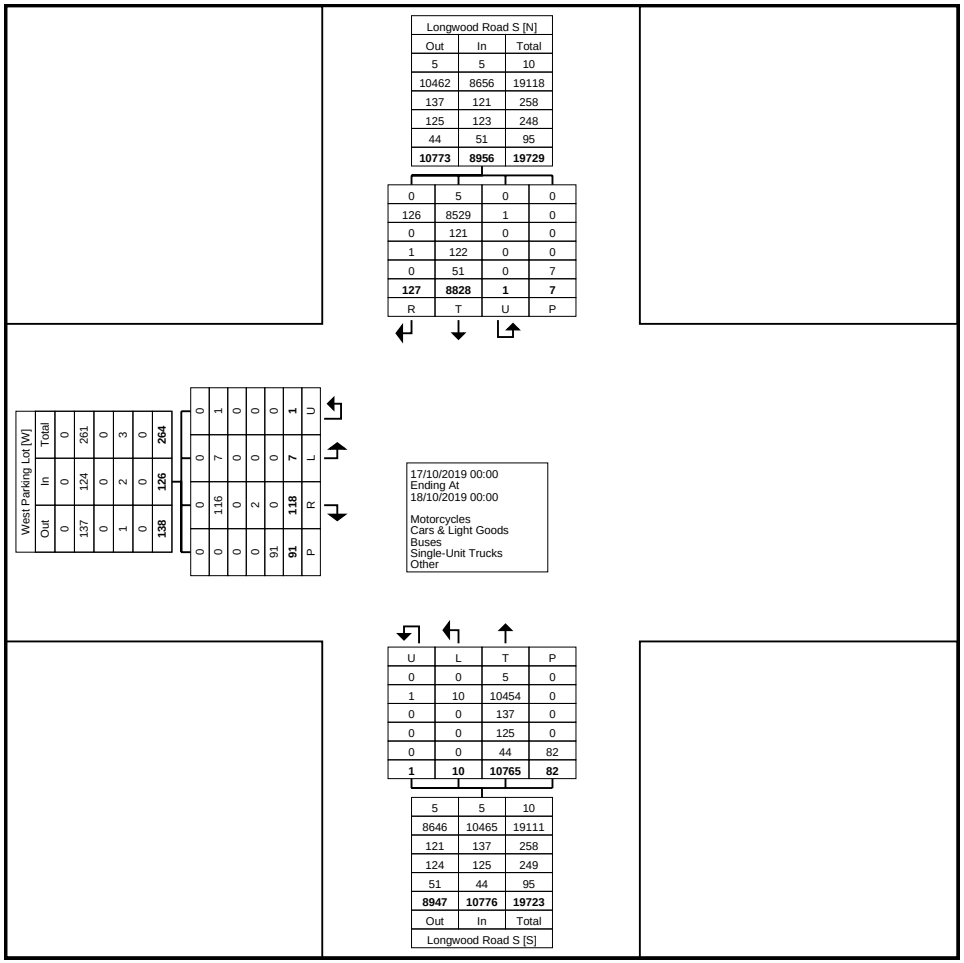
07:15	0	2	0	2	2	1	224	0	4	225	87	4	0	0	91	318
07:30	0	0	1	1	1	0	228	0	3	228	124	1	0	0	125	354
07:45	0	0	0	0	0	0	257	0	3	257	103	4	0	0	107	364
Hourly Total	0	2	1	4	3	1	880	0	13	881	395	10	0	0	405	1289
08:00	0	0	0	2	0	0	279	0	3	279	130	4	0	0	134	413
08:15	0	0	0	2	0	1	282	0	1	283	109	9	0	0	118	401
08:30	0	2	0	0	2	1	253	0	4	254	149	12	0	0	161	417
08:45	0	0	0	1	0	1	225	0	1	226	133	9	0	0	142	368
Hourly Total	0	2	0	5	2	3	1039	0	9	1042	521	34	0	0	555	1599
09:00	0	2	0	2	2	0	180	0	2	180	104	7	0	0	111	293
09:15	0	1	0	2	1	1	199	0	1	200	91	1	0	0	92	293
09:30	0	0	0	2	0	0	204	0	0	204	108	4	0	0	112	316
09:45	0	0	0	0	0	0	191	0	0	191	77	6	0	0	83	274
Hourly Total	0	3	0	6	3	1	774	0	3	775	380	18	0	0	398	1176
10:00	0	1	0	1	1	0	152	0	1	152	82	1	0	0	83	236
10:15	0	2	0	0	2	0	126	0	1	126	105	0	0	0	105	233
10:30	0	1	0	0	1	0	136	0	0	136	109	0	0	0	109	246
10:45	0	1	0	3	1	0	170	0	1	170	97	2	0	0	99	270
Hourly Total	0	5	0	4	5	0	584	0	3	584	393	3	0	0	396	985
11:00	0	0	0	3	0	0	135	0	0	135	111	2	0	0	113	248
11:15	0	0	0	4	0	0	144	0	0	144	115	6	0	0	121	265
11:30	0	0	0	2	0	0	161	0	0	161	130	1	0	0	131	292
11:45	0	2	0	2	2	0	157	0	2	157	120	3	0	0	123	282
Hourly Total	0	2	0	11	2	0	597	0	2	597	476	12	0	0	488	1087
12:00	0	1	0	3	1	0	187	0	2	187	129	2	0	2	131	319
12:15	0	4	0	3	4	0	147	0	2	147	117	2	0	0	119	270
12:30	0	0	0	3	0	0	150	0	5	150	120	6	0	0	126	276
12:45	1	1	0	4	2	0	162	0	7	162	117	2	0	0	119	283
Hourly Total	1	6	0	13	7	0	646	0	16	646	483	12	0	2	495	1148
13:00	1	2	0	1	3	1	146	0	5	147	139	3	0	0	142	292
13:15	1	1	0	1	2	1	161	0	2	162	122	3	0	0	125	289
13:30	0	1	0	2	1	0	158	0	1	158	99	3	0	0	102	261
13:45	0	0	0	1	0	0	189	0	2	189	130	2	0	0	132	321
Hourly Total	2	4	0	5	6	2	654	0	10	656	490	11	0	0	501	1163
14:00	0	0	0	0	0	0	160	0	0	160	137	2	0	0	139	299
14:15	0	3	0	2	3	0	152	0	0	152	138	0	0	0	138	293
14:30	0	0	0	2	0	0	177	0	1	177	159	1	0	0	160	337
14:45	0	4	0	0	4	0	189	0	1	189	187	1	0	1	188	381
Hourly Total	0	7	0	4	7	0	678	0	2	678	621	4	0	1	625	1310
15:00	0	2	0	3	2	0	180	0	2	180	187	1	0	1	188	370
15:15	0	3	0	3	3	0	161	0	1	161	207	1	0	0	208	372
15:30	1	2	0	4	3	0	182	0	2	182	191	0	0	0	191	376
15:45	0	4	0	1	4	0	167	0	1	167	196	4	0	1	200	371
Hourly Total	1	11	0	11	12	0	690	0	6	690	781	6	0	2	787	1489
16:00	0	11	0	1	11	0	181	0	4	181	219	1	0	0	220	412
16:15	0	8	0	3	8	0	183	0	4	183	268	2	0	2	270	461
16:30	0	6	0	2	6	0	208	0	1	208	239	2	0	0	241	455
16:45	0	6	0	3	6	0	191	0	0	191	259	0	0	0	259	456
Hourly Total	0	31	0	9	31	0	763	0	9	763	985	5	0	2	990	1784
17:00	0	11	0	2	11	0	191	0	1	191	251	1	0	0	252	454
17:15	2	5	0	3	7	1	190	0	0	191	207	0	0	0	207	405
17:30	0	10	0	1	10	0	208	0	2	208	198	0	0	0	198	416

17:45	0	4	0	2	4	0	199	0	2	199	149	0	0	0	149	352
Hourly Total	2	30	0	8	32	1	788	0	5	789	805	1	0	0	806	1627
18:00	0	2	0	0	2	0	145	0	0	145	161	0	0	0	161	308
18:15	0	1	0	0	1	0	132	0	1	132	141	0	0	0	141	274
18:30	0	2	0	1	2	0	166	0	0	166	131	2	0	0	133	301
18:45	0	0	0	1	0	0	169	0	1	169	133	0	0	0	133	302
Hourly Total	0	5	0	2	5	0	612	0	2	612	566	2	0	0	568	1185
19:00	0	1	0	0	1	0	149	0	0	149	172	0	0	0	172	322
19:15	0	2	0	0	2	0	138	0	0	138	169	1	0	0	170	310
19:30	0	1	0	0	1	1	135	0	1	136	108	0	0	0	108	245
19:45	0	0	0	2	0	0	95	0	0	95	131	0	0	0	131	226
Hourly Total	0	4	0	2	4	1	517	0	1	518	580	1	0	0	581	1103
20:00	0	0	0	0	0	0	90	0	0	90	87	1	0	0	88	178
20:15	1	2	0	0	3	0	96	0	0	96	83	0	0	0	83	182
20:30	0	0	0	1	0	0	107	0	0	107	86	0	0	0	86	193
20:45	0	0	0	0	0	0	69	0	0	69	73	0	0	0	73	142
Hourly Total	1	2	0	1	3	0	362	0	0	362	329	1	0	0	330	695
21:00	0	0	0	1	0	0	94	0	0	94	85	0	0	0	85	179
21:15	0	0	0	0	0	0	72	0	0	72	79	0	0	0	79	151
21:30	0	1	0	1	1	0	86	0	0	86	75	0	0	0	75	162
21:45	0	0	0	0	0	0	60	0	0	60	69	0	0	0	69	129
Hourly Total	0	1	0	2	1	0	312	0	0	312	308	0	0	0	308	621
22:00	0	0	0	0	0	0	52	0	0	52	64	0	0	0	64	116
22:15	0	0	0	0	0	0	53	0	0	53	50	0	0	0	50	103
22:30	0	0	0	1	0	0	40	0	0	40	43	0	0	0	43	83
22:45	0	0	0	0	0	0	39	0	0	39	50	0	0	0	50	89
Hourly Total	0	0	0	1	0	0	184	0	0	184	207	0	0	0	207	391
23:00	0	0	0	0	0	0	29	0	0	29	45	0	0	0	45	74
23:15	0	0	0	0	0	0	29	0	0	29	40	0	0	0	40	69
23:30	0	0	0	0	0	0	17	0	0	17	24	0	0	0	24	41
23:45	0	1	0	0	1	0	18	0	0	18	28	0	0	0	28	47
Hourly Total	0	1	0	0	1	0	93	0	0	93	137	0	0	0	137	231
Grand Total	7	118	1	91	126	10	10765	1	82	10776	8828	127	1	7	8956	19858
Approach %	5.6	93.7	0.8	-	-	0.1	99.9	0.0	-	-	98.6	1.4	0.0	-	-	-
Total %	0.0	0.6	0.0	-	0.6	0.1	54.2	0.0	-	54.3	44.5	0.6	0.0	-	45.1	-
Motorcycles	0	0	0	-	0	0	5	0	-	5	5	0	0	-	5	10
% Motorcycles	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.1	0.0	0.0	-	0.1	0.1
Cars & Light Goods	7	116	1	-	124	10	10454	1	-	10465	8529	126	1	-	8656	19245
% Cars & Light Goods	100.0	98.3	100.0	-	98.4	100.0	97.1	100.0	-	97.1	96.6	99.2	100.0	-	96.7	96.9
Buses	0	0	0	-	0	0	137	0	-	137	121	0	0	-	121	258
% Buses	0.0	0.0	0.0	-	0.0	0.0	1.3	0.0	-	1.3	1.4	0.0	0.0	-	1.4	1.3
Single-Unit Trucks	0	2	0	-	2	0	125	0	-	125	122	1	0	-	123	250
% Single-Unit Trucks	0.0	1.7	0.0	-	1.6	0.0	1.2	0.0	-	1.2	1.4	0.8	0.0	-	1.4	1.3
Articulated Trucks	0	0	0	-	0	0	26	0	-	26	39	0	0	-	39	65
% Articulated Trucks	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	-	0.2	0.4	0.0	0.0	-	0.4	0.3
Bicycles on Road	0	0	0	-	0	0	18	0	-	18	12	0	0	-	12	30
% Bicycles on Road	0.0	0.0	0.0	-	0.0	0.0	0.2	0.0	-	0.2	0.1	0.0	0.0	-	0.1	0.2
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	1.1	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	90	-	-	-	-	82	-	-	-	-	7	-	-
% Pedestrians	-	-	-	98.9	-	-	-	-	100.0	-	-	-	-	100.0	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 17/10/2019



Turning Movement Data Plot

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 17/10/2019

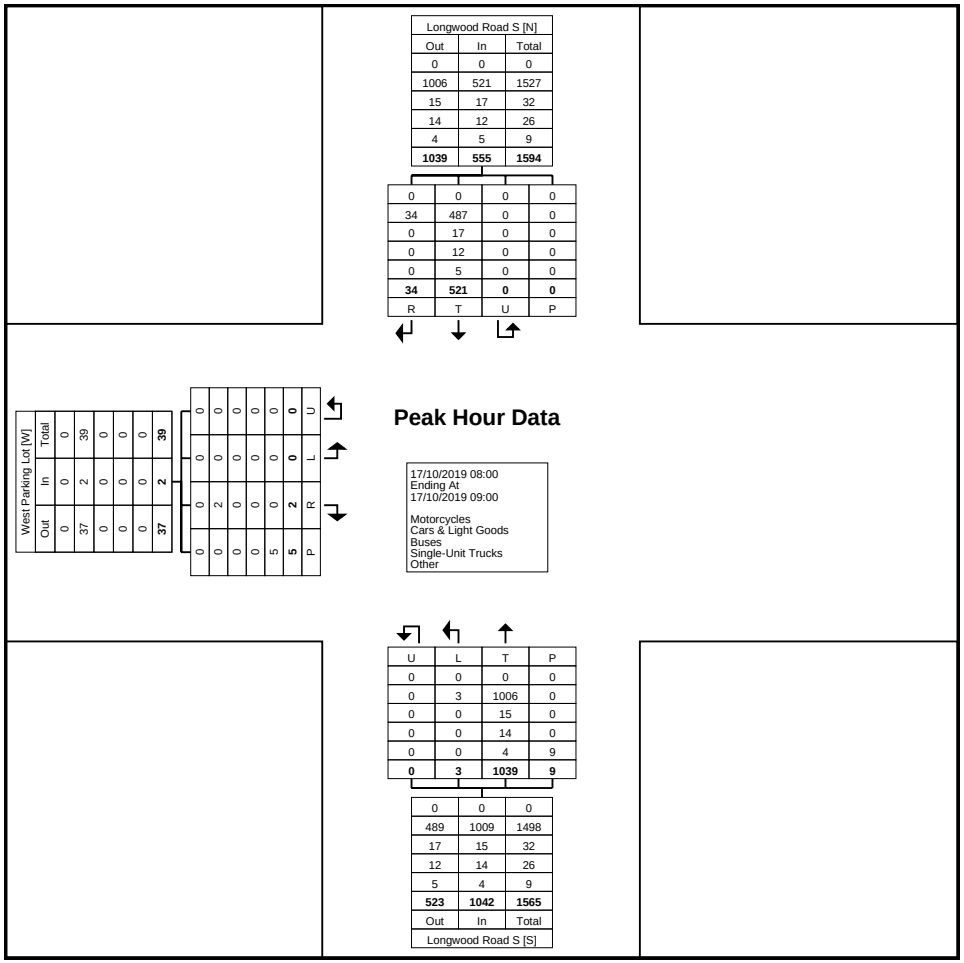
Turning Movement Peak Hour Data (08:00)

Start Time	West Parking Lot Eastbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
08:00	0	0	0	2	0	0	279	0	3	279	130	4	0	0	134	413
08:15	0	0	0	2	0	1	282	0	1	283	109	9	0	0	118	401
08:30	0	2	0	0	2	1	253	0	4	254	149	12	0	0	161	417
08:45	0	0	0	1	0	1	225	0	1	226	133	9	0	0	142	368
Total	0	2	0	5	2	3	1039	0	9	1042	521	34	0	0	555	1599
Approach %	0.0	100.0	0.0	-	-	0.3	99.7	0.0	-	-	93.9	6.1	0.0	-	-	-
Total %	0.0	0.1	0.0	-	0.1	0.2	65.0	0.0	-	65.2	32.6	2.1	0.0	-	34.7	-
PHF	0.000	0.250	0.000	-	0.250	0.750	0.921	0.000	-	0.920	0.874	0.708	0.000	-	0.862	0.959
Motorcycles	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Motorcycles	-	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0	0.0	-	-	0.0	0.0
Cars & Light Goods	0	2	0	-	2	3	1006	0	-	1009	487	34	0	-	521	1532
% Cars & Light Goods	-	100.0	-	-	100.0	100.0	96.8	-	-	96.8	93.5	100.0	-	-	93.9	95.8
Buses	0	0	0	-	0	0	15	0	-	15	17	0	0	-	17	32
% Buses	-	0.0	-	-	0.0	0.0	1.4	-	-	1.4	3.3	0.0	-	-	3.1	2.0
Single-Unit Trucks	0	0	0	-	0	0	14	0	-	14	12	0	0	-	12	26
% Single-Unit Trucks	-	0.0	-	-	0.0	0.0	1.3	-	-	1.3	2.3	0.0	-	-	2.2	1.6
Articulated Trucks	0	0	0	-	0	0	3	0	-	3	4	0	0	-	4	7
% Articulated Trucks	-	0.0	-	-	0.0	0.0	0.3	-	-	0.3	0.8	0.0	-	-	0.7	0.4
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	1	0	0	-	1	2
% Bicycles on Road	-	0.0	-	-	0.0	0.0	0.1	-	-	0.1	0.2	0.0	-	-	0.2	0.1
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-
Pedestrians	-	-	-	5	-	-	-	-	9	-	-	-	-	0	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	-	-	-

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 17/10/2019



Turning Movement Peak Hour Data Plot (08:00)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

Cambridge, Ontario, Canada N1R 8J8
519-896-3163 scatton@ptsl.com

Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 17/10/2019

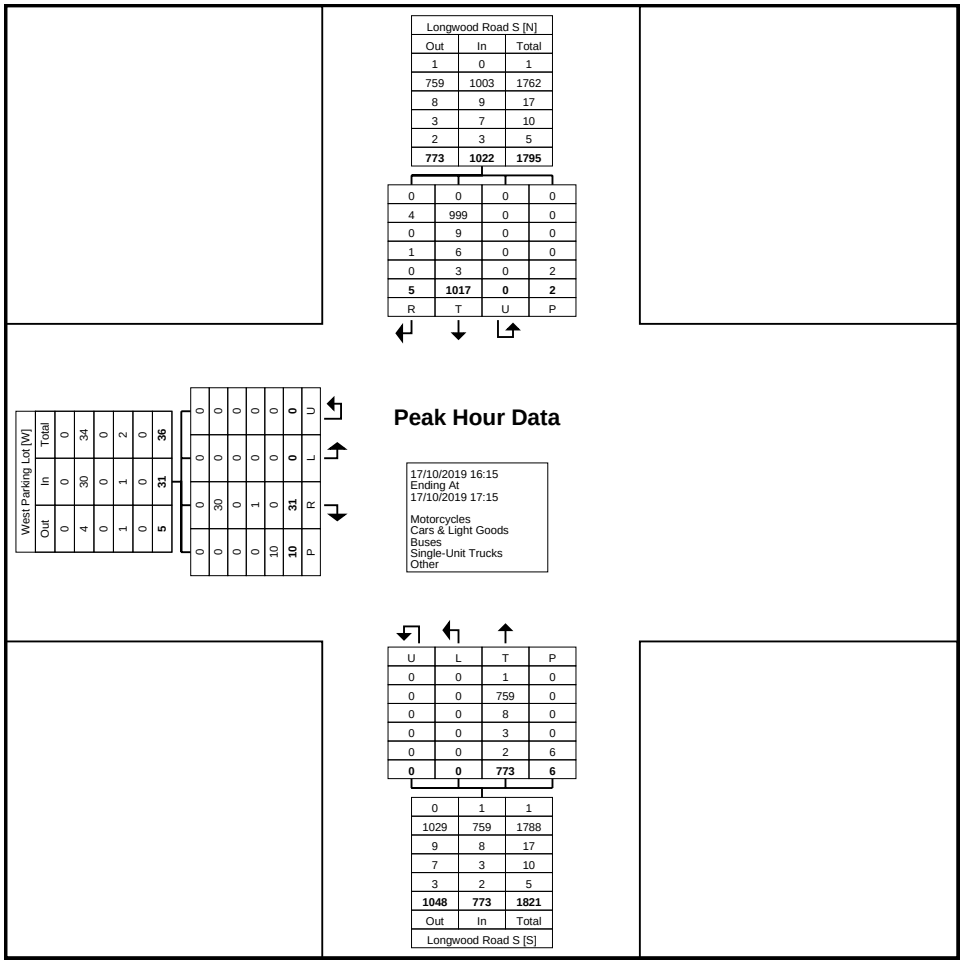
Turning Movement Peak Hour Data (16:15)

Start Time	West Parking Lot Eastbound					Longwood Road S Northbound					Longwood Road S Southbound					
	Left	Right	U-Turn	Peds	App. Total	Left	Thru	U-Turn	Peds	App. Total	Thru	Right	U-Turn	Peds	App. Total	Int. Total
16:15	0	8	0	3	8	0	183	0	4	183	268	2	0	2	270	461
16:30	0	6	0	2	6	0	208	0	1	208	239	2	0	0	241	455
16:45	0	6	0	3	6	0	191	0	0	191	259	0	0	0	259	456
17:00	0	11	0	2	11	0	191	0	1	191	251	1	0	0	252	454
Total	0	31	0	10	31	0	773	0	6	773	1017	5	0	2	1022	1826
Approach %	0.0	100.0	0.0	-	-	0.0	100.0	0.0	-	-	99.5	0.5	0.0	-	-	-
Total %	0.0	1.7	0.0	-	1.7	0.0	42.3	0.0	-	42.3	55.7	0.3	0.0	-	56.0	-
PHF	0.000	0.705	0.000	-	0.705	0.000	0.929	0.000	-	0.929	0.949	0.625	0.000	-	0.946	0.990
Motorcycles	0	0	0	-	0	0	1	0	-	1	0	0	0	-	0	1
% Motorcycles	-	0.0	-	-	0.0	-	0.1	-	-	0.1	0.0	0.0	-	-	0.0	0.1
Cars & Light Goods	0	30	0	-	30	0	759	0	-	759	999	4	0	-	1003	1792
% Cars & Light Goods	-	96.8	-	-	96.8	-	98.2	-	-	98.2	98.2	80.0	-	-	98.1	98.1
Buses	0	0	0	-	0	0	8	0	-	8	9	0	0	-	9	17
% Buses	-	0.0	-	-	0.0	-	1.0	-	-	1.0	0.9	0.0	-	-	0.9	0.9
Single-Unit Trucks	0	1	0	-	1	0	3	0	-	3	6	1	0	-	7	11
% Single-Unit Trucks	-	3.2	-	-	3.2	-	0.4	-	-	0.4	0.6	20.0	-	-	0.7	0.6
Articulated Trucks	0	0	0	-	0	0	1	0	-	1	1	0	0	-	1	2
% Articulated Trucks	-	0.0	-	-	0.0	-	0.1	-	-	0.1	0.1	0.0	-	-	0.1	0.1
Bicycles on Road	0	0	0	-	0	0	1	0	-	1	2	0	0	-	2	3
% Bicycles on Road	-	0.0	-	-	0.0	-	0.1	-	-	0.1	0.2	0.0	-	-	0.2	0.2
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	0.0	-	-	-	-	0.0	-	-
Pedestrians	-	-	-	10	-	-	-	-	6	-	-	-	-	2	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	100.0	-	-	-	-	100.0	-	-

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5A-150 Pinebush Rd

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Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 17/10/2019



Turning Movement Peak Hour Data Plot (16:15)

Paradigm Transportation Solutions Limited
5A-150 Pinebush Rd

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Count Name: Longwood Road S & West Parking Lot
Site Code:
Start Date: 17/10/2019

Appendix B

VEHICLE AND BICYCLE PARKING DATA SHEETS



McMaster Innovation Park - West BICYCLE PARKING
Parking Demand Survey

Date:	**October 9, 2019**
Weather:	**Clear**
Survyor:	**Dan**

	MARC	Other Areas (highlight on map)
PARKING SUPPLY:		
TIME		
6:00	0	1
7:00	0	5
8:00	0	5
9:00	3	5
10:00	5	7
11:00	7	7
12:00	8	7
13:00	7	7
14:00	7	7
15:00	8	7
16:00	9	5
17:00	7	1
18:00	3	1
19:00	4	1
20:00	3	1

McMaster Innovation Park - East BICYCLE PARKING
Parking Demand Survey

Date:	**October 9, 2019**
Weather:	**Clear**
Survyor:	**Sue**

	ATRIUM (PEARSON CENTRE)	COURTYARD	Other Areas (highlight on map)
PARKING SUPPLY:			
TIME			
6:00	0	0	0
7:00	0	0	0
8:00	0	0	0
9:00	1	9	1
10:00	2	13	1
11:00	2	13	1
12:00	1	13	1
13:00	1	11	1
14:00	2	12	1
15:00	2	12	0
16:00	2	3	0
17:00	0	1	0
18:00	0	1	0
19:00	0	1	0
20:00	0	0	0

McMaster Innovation Park - West BICYCLE PARKING
Parking Demand Survey

Date:	**October 17, 2019**
Weather:	**Clear**
Survyor:	**Dan**

	MARC	Other Areas (highlight on map)
PARKING SUPPLY:		
TIME		
6:00	0	1
7:00	0	5
8:00	0	5
9:00	1	5
10:00	1	5
11:00	1	6
12:00	3	6
13:00	4	6
14:00	4	6
15:00	4	5
16:00	4	5
17:00	3	7
18:00	2	1
19:00	0	1
20:00	0	1

McMaster Innovation Park - East BICYCLE PARKING
Parking Demand Survey

Date:	**October 17, 2019**
Weather:	**Clear**
Survyor:	**Sue**

	ATRIUM (PEARSON CENTRE)	COURTYARD	Other Areas (highlight on map)
PARKING SUPPLY:			
TIME			
6:00	0	0	
7:00	0	2	
8:00	0	4	
9:00	0	13	
10:00	0	14	
11:00	0	17	1
12:00	0	17	
13:00	0	13	
14:00	0	12	
15:00	0	10	
16:00	0	9	
17:00	0	6	
18:00	0	4	
19:00	0	3	
20:00	0	3	

McMaster Innovation Park - West Parking Area (MARC)
Parking Demand Survey
Date: October 9, 2019
Weather: Clear
Survyor: Dan

	LOT 2	LOT 1 - NORTH	LOT 1 - A	LOT 1 - B	LOT 4	LOT 6 - NORTH	LOT 1 - C	LOT 6 - A	LOT 1 - SOUTH	LOT 6 - SOUTH
PARKING SUPPLY:	206	8	21	16	39	17	20	30	24	37
TIME										
6:00	1	0	0	0	0	9	0	0	0	0
7:00	8	0	2	0	0	17	0	0	1	0
8:00	28	2	6	1	7	23	0	0	4	1
9:00	132	5	15	8	24	22	1	1	5	4
10:00	153	6	18	11	22	26	3	5	8	4
11:00	156	5	20	11	23	27	3	4	8	5
12:00	157	4	19	10	26	23	4	3	8	6
13:00	151	5	21	10	33	27	6	4	8	6
14:00	148	5	21	13	31	27	8	4	7	6
15:00	143	4	19	12	30	21	6	4	4	4
16:00	115	2	18	10	15	2	4	3	3	4
17:00	60	2	16	10	12	0	2	3	2	2
18:00	37	0	6	7	8	0	1	0	0	0
19:00	57	2	4	3	7	0	0	0	0	0
20:00	47	2	2	2	6	0	0	0	0	0

McMaster Innovation Park - East Parking Area
Parking Demand Survey
Date: October 9, 2019
Weather: Clear
Survyor: Sue

	LOT 5	LOT 1 - NORTH	LOT 3	LOT 1 - A	LOT 1 - SOUTH	Illegal Veh
PARKING SUPPLY:	74	59	155	9	10	
TIME						
6:00	0	2	1	0	0	
7:00	0	3	9	0	0	
8:00	6	6	27	0	0	
9:00	22	31	77	0	0	
10:00	26	39	103	0	0	
11:00	33	45	104	0	0	1
12:00	33	31	79	2	0	1
13:00	29	33	92	1	0	1
14:00	26	25	96	1	0	1
15:00	23	27	89	1	0	1
16:00	15	32	99	2	0	1
17:00	4	15	37	0	1	1
18:00	2	25	6	0	0	1
19:00	1	18	4	0	0	0
20:00	1	22	2	0	0	0

McMaster Innovation Park - West Parking Area (MARC)
Parking Demand Survey
Date: October 17, 2019
Weather: Clear
Survyor: Dan

	LOT 2	LOT 1 - NORTH	LOT 1 - A	LOT 1 - B	LOT 4	LOT 6 - NORTH	LOT 1 - C	LOT 6 - A	LOT 1 - SOUTH	LOT 6 - SOUTH	Illegal Veh
PARKING SUPPLY:											
TIME											
6:00	1	0	0	0	1	10	0	0	0	0	1
7:00	6	0	0	0	1	26	0	0	1	0	1
8:00	25	1	0	0	1	28	0	0	1	4	1
9:00	122	1	5	5	3	28	0	0	3	8	11
10:00	146	1	10	6	3	31	4	3	4	4	11
11:00	147	3	13	7	3	32	6	3	3	5	11
12:00	140	1	12	5	3	26	6	1	4	8	11
13:00	153	0	10	5	6	29	4	1	4	7	11
14:00	151	5	11	9	5	29	4	2	5	5	11
15:00	142	3	10	8	3	18	4	3	4	7	11
16:00	136	2	1	7	6	0	3	3	3	7	0
17:00	65	3	8	5	3	0	3	1	0	0	0
18:00	22	4	7	3	3	0	2	1	0	0	0
19:00	13	3	5	3	2	0	1	0	0	0	0
20:00	4	3	2	0	2	1	0	0	0	0	11

McMaster Innovation Park - East Parking Area
Parking Demand Survey
Date: October 17, 2019
Weather: **Clear**
Survyor: **Sue**

	LOT 5	LOT 1 - NORTH	LOT 3	LOT 1 - A	LOT 1 - SOUTH	Illegal Veh
PARKING SUPPLY:						
TIME						
6:00	0	1	0	0	0	
7:00	1	2	7	0	0	
8:00	7	20	27	1	2	
9:00	15	30	70	2	5	
10:00	24	50	96	1	5	
11:00	25	41	112	1	0	4
12:00	26	33	108	1	0	3
13:00	23	24	89	1	0	3
14:00	23	21	95	2	1	2
15:00	19	21	86	1	0	4
16:00	13	18	65	1	0	2
17:00	7	20	29	0	0	1
18:00	2	25	9	0	0	0
19:00	0	20	3	0	0	0
20:00	0	10	2	0	0	0

Appendix E

ITE Internal Capture

Project Name:	230533 - Bronte Creek Meadows
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	17	17	1.00	14	14
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	90	90	1.00	276	276
Hotel	1.00	0	0	1.00	0	0

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	4		2	0	2	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	6	3	55	0		0
Hotel	0	0	0	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	0	0
Retail	0		0	0	2	0
Restaurant	0	1		0	5	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	3	0	0		0
Hotel	0	1	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	3	14	17	14	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	2	88	90	88	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	554	554	554	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	2	12	14	12	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	273	276	273	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	113	113	113	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	230533 - Bronte Creek Meadows
Analysis Period:	**PM Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	25	25	1.00	25	25
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	275	275	1.00	166	166
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		7	1	7	1
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	7	70	35	0		5
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	0	0	11	0
Retail	0		0	0	127	0
Restaurant	0	13		0	44	0
Cinema/Entertainment	0	1	0		11	0
Residential	0	3	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	3	22	25	22	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7	268	275	268	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	125	125	125	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	7	18	25	18	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	163	166	163	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	471	471	471	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	230533 - Bronte Creek Meadows
Analysis Period:	**SAT Street Peak Hour**

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	0	0	1.00	0	0
Retail	1.00	27	27	1.00	26	26
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	208	208	1.00	234	234
Hotel	1.00	0	0	1.00	0	0

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	1		8	1	7	1
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	9	98	49	0		7
Hotel	0	0	0	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		2	0	0	8	0
Retail	0		0	0	96	0
Restaurant	0	14		0	33	0
Cinema/Entertainment	0	1	0		8	0
Residential	0	3	0	0		0
Hotel	0	1	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	3	24	27	24	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7	201	208	201	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	103	103	103	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	0	0	0	0	0	0
Retail	7	19	26	19	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	3	231	234	231	0	0
Hotel	0	0	0	0	0	0
All Other Land Uses[3]	0	87	87	87	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

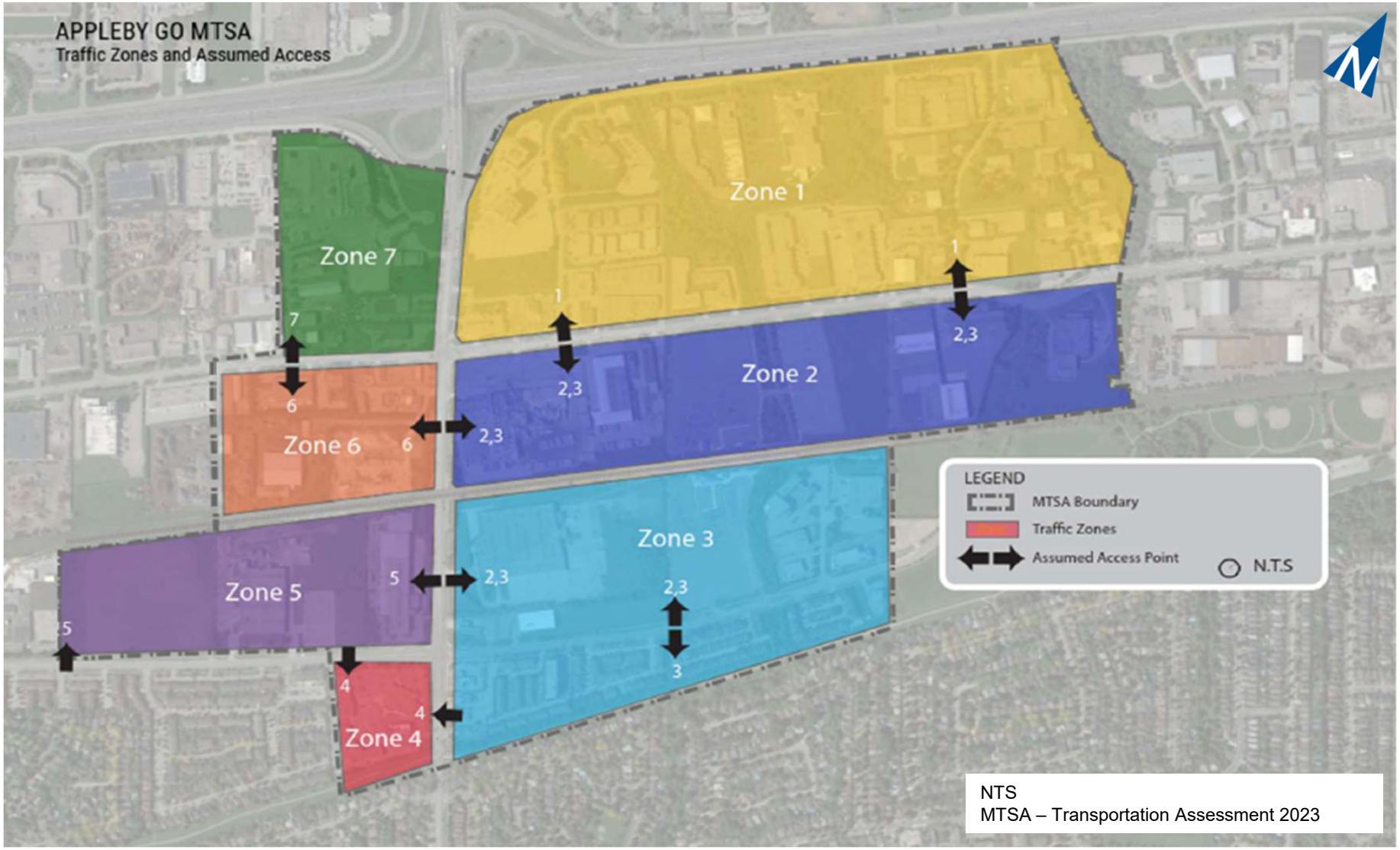
[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site-not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

Appendix F

MTSA Trip Distribution



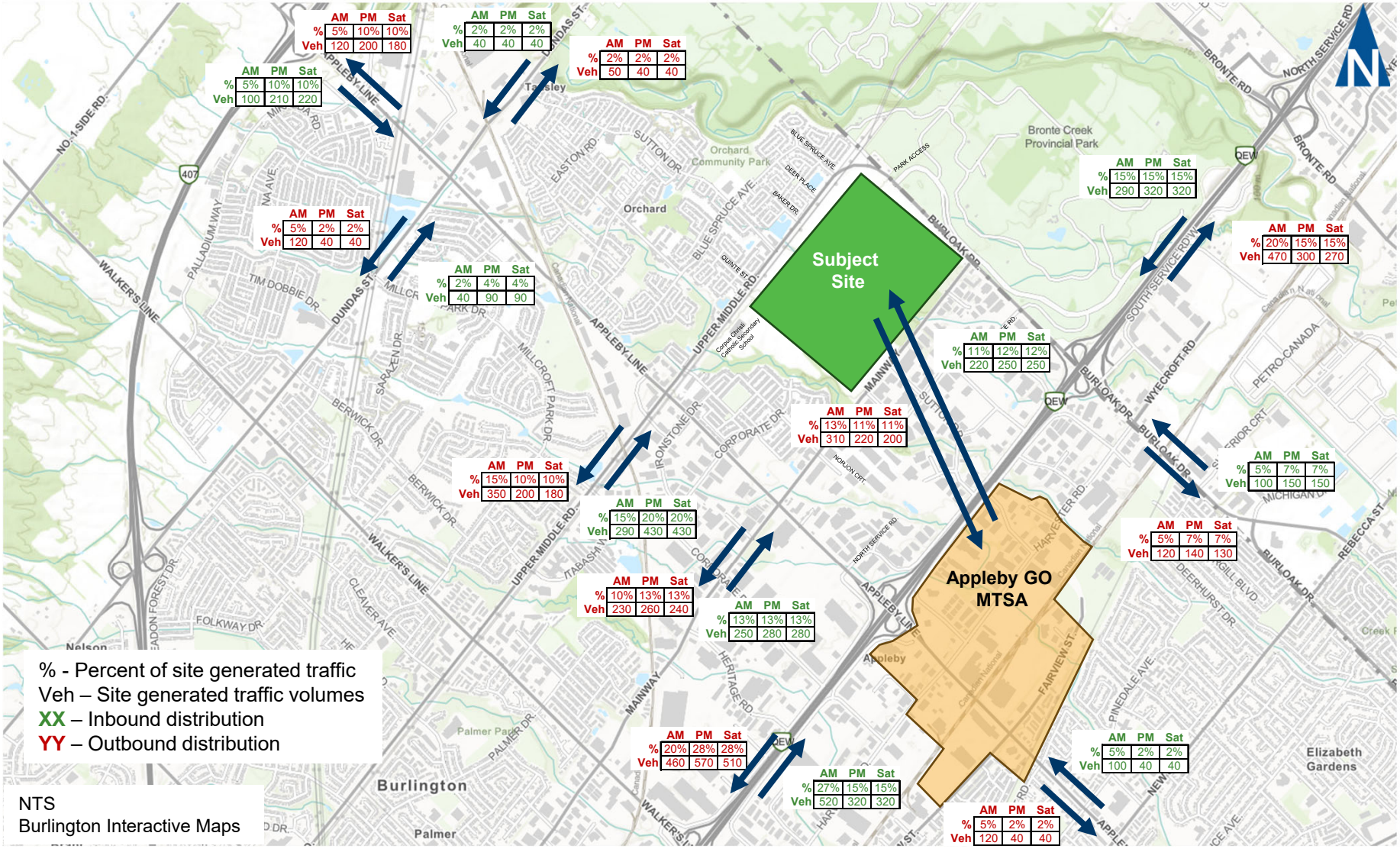
NTS
MTSA – Transportation Assessment 2023

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Trip Distribution and Site Traffic Volumes

Bronte Creek Meadows, Burlington
230553

Appendix F



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Trip Distribution and Site Traffic Volumes

Appendix G

TTS Data

AM IN

Tue+G1:H220 Feb 20 2024 15:45:10 GMT-0500 (Eastern Standard Time) - Run Time: 9478ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest
Table: No. of trips made by person - n_pers_trip

RowG:
ColG:(4078,4079,4080,4081,4190)
TblG:(0-99)

Filters:
Start time of trip - start_time In 700-900

Trip 2016
Table: 1

	1
15	10
56	35
57	34
89	4
173	37
175	30
252	11
271	10
279	21
292	12
301	36
302	25
307	14
316	12
324	20
343	28
344	11
370	4
437	45
1185	9
2080	16
2666	19
3192	20
3346	13
3354	18
3355	79
3364	4
3366	22
3368	30
3436	18
3602	43
3606	11
3607	45
3610	24
3632	36
3640	46
3645	71
3648	10
3653	40
3662	66
3665	7
3678	18
3680	21
3682	24
3683	10
3688	18
3697	17
3716	42
3719	12
3810	13
3812	32
3853	19
3854	9
3864	17
3867	12
3870	33
3872	47
4,001	202
4003	44
4004	71
4005	13
4007	34
4008	11
4013	16
4015	8
4018	7
4023	16
4026	43
4032	15
4033	25
4035	6
4036	9
4038	19
4039	56
4040	29

AM OUT

Tue Feb 20 2024 15:49:33 GMT-0500 (Eastern Standard Time) - Run Time: 8233ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig
Table: No. of trips made by person - n_pers_trip

RowG:
ColG:(4078 4079 4080 4081 4190)
TblG:(0-99)

Filters:
Start time of trip - start_time In 700-900

Trip 2016
Table: 1

	1
25	22
35	16
37	13
49	32
52	82
54	26
55	60
56	20
57	109
60	29
63	10
64	11
65	6
66	12
67	16
68	26
69	16
71	8
89	51
90	21
211	23
218	14
227	8
228	35
271	60
290	79
296	16
298	11
299	9
309	40
310	23
332	72
350	18
357	73
493	25
589	14
2054	17
2140	11
2253	9
2394	25
2609	17
3325	23
3335	26
3337	41
3372	13
3480	28
3518	44
3605	59
3611	8
3612	50
3613	37
3618	31
3621	61
3626	15
3631	41
3632	40
3633	76
3634	79
3635	20
3639	21
3644	12
3654	15
3659	26
3661	18
3662	25
3683	28
3691	18
3693	13
3696	27
3699	95
3701	23
3705	60
3709	50
3710	55
3721	30

4,041	113
4,045	144
4051	78
4052	42
4054	30
4,055	267
4,057	197
4058	22
4,059	266
4,060	143
4,062	152
4063	23
4,064	141
4065	74
4066	59
4067	15
4068	23
4069	32
4070	42
4,071	242
4,072	104
4073	58
4074	68
4075	68
4,076	277
4,077	177
4,079	2292
4,080	978
4081	18
4082	33
4,083	448
4,084	448
4,085	215
4086	42
4088	92
4,089	368
4090	13
4091	35
4093	17
4094	5
4097	8
4098	17
4103	82
4108	30
4110	24
4119	20
4120	67
4125	16
4127	28
4183	25
4,186	150
4188	55
4,189	916
4,190	458
4191	19
5020	18
5030	22
5,044	113
5045	26
5060	40
5066	34
5071	18
5075	55
5076	26
5089	59
5090	68
5093	65
5,098	172
5100	45
5105	45
5109	22
5111	46
5115	29
5118	24
5120	15
5121	33
5139	12
5143	61
5144	46
5150	11
5154	18
5155	41
5158	36
5163	43
5166	48
5170	31
5172	9
5174	96
5180	44
5181	66
5182	59
5183	38
5187	13
5194	70
5203	49
3724	46
3816	45
3822	23
3835	42
3854	20
3862	17
3864	63
4001	18
4002	124
4003	40
4005	54
4006	17
4008	41
4009	64
4011	113
4012	60
4014	20
4015	8
4016	30
4018	27
4022	61
4023	14
4024	106
4027	72
4029	99
4030	34
4032	9
4033	35
4038	13
4040	27
4041	168
4042	61
4045	27
4051	8
4053	118
4055	68
4056	72
4057	82
4058	16
4059	64
4060	67
4061	60
4062	56
4063	107
4065	70
4067	23
4068	88
4069	155
4071	165
4074	4
4075	15
4076	97
4077	278
4079	1478
4080	992
4081	203
4082	252
4083	239
4084	379
4085	169
4087	48
4088	145
4089	98
4091	141
4094	33
4099	15
4109	38
4110	51
4116	13
4119	24
4120	9
4124	22
4125	28
4144	36
4185	64
4186	118
4188	76
4189	1279
4190	429
5012	5
5016	11
5020	15
5032	21
5036	43
5044	36
5048	27
5059	13
5087	25
5093	115
5105	12
5108	20
5135	27
5136	19
5142	76
5159	31

5205	21
5207	22
5212	41
5219	39
5223	30
5229	22
5230	76
5231	15
5,232	186
5233	69
5234	17
5237	29
5238	28
5239	46
5241	84
5244	63
5248	30
5249	26
6008	36
6012	29
6023	21
6029	31
6090	55
6091	48
6,235	107
6343	30
6351	18
6360	18
7221	33
7389	40
7458	31
8063	11
8072	25
8080	17
8315	44
8817	37
8904	11
8905	39
9998	44

PM IN

Tue Feb 20 2024 15:48:03 GMT-0500 (Eastern Standard Time) - Run Time: 3778ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest
Table: No. of trips made by person - n_pers_trip

RowG:
ColG:(4078 4079 4080 4081 4190)
TblG:(0-99)

Filters:
Start time of trip - start_time In 1500-1800

Trip 2016
Table: 1

	1
16	19
17	13
21	8
25	32
36	6
37	7
38	7
39	40
40	4
42	15
43	17
45	31
49	32
50	12
52	42
53	64
54	26
55	66
56	32
57	160
60	124
62	27
63	10
65	73
66	12
67	16
68	38
69	23
77	12
84	23
89	38
90	21
113	13
120	37
122	27

5161	69
5168	8
5174	39
5184	9
5185	10
5187	13
5193	32
5194	57
5197	39
5198	268
5224	16
5231	8
5232	17
5233	14
5241	14
6090	48
6096	14
6116	43
6131	20
6174	35
6217	24
6362	38
7041	38
7117	11
7135	25
7311	9
8086	37
8117	23
8907	27
8915	17
9998	22

PM OUT

Tue Feb 20 2024 15:49:01 GMT-0500 (Eastern Standard Time) - Run Time: 3537ms

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of destination - gta06_dest
Column: 2006 GTA zone of origin - gta06_orig
Table: No. of trips made by person - n_pers_trip

RowG:
ColG:(4078 4079 4080 4081 4190)
TblG:(0-99)

Filters:
Start time of trip - start_time In 1500-1800

Trip 2016
Table: 1

	1
1	9
17	13
37	21
55	8
69	74
77	63
78	22
89	4
122	28
173	13
177	25
210	18
216	11
252	11
290	6
292	12
295	11
300	26
302	25
307	14
317	47
335	12
343	28
374	14
437	45
452	11
490	16
509	50
530	38
1185	9
2424	41
2666	19
3101	25
3192	20
3337	15

204	19
211	23
250	11
290	64
296	16
300	20
308	12
309	20
332	26
350	18
357	73
371	11
378	14
436	38
473	32
525	20
603	12
2027	17
2054	17
2064	12
2076	5
2096	38
2111	15
2371	24
2374	39
2394	25
3325	23
3331	54
3335	26
3357	12
3428	11
3507	9
3605	30
3611	8
3612	72
3613	63
3614	38
3615	12
3618	8
3621	61
3626	15
3627	29
3631	41
3632	26
3633	138
3634	67
3635	63
3639	21
3644	12
3653	27
3654	34
3659	26
3660	48
3662	66
3670	32
3671	45
3683	28
3691	18
3692	12
3693	13
3696	23
3699	113
3701	42
3705	14
3709	36
3710	34
3711	44
3713	35
3812	27
3816	45
3818	8
3822	23
3825	33
3835	125
3854	38
3863	51
3864	39
3866	10
3873	105
3879	41
4001	43
4002	179
4003	119
4004	20
4005	131
4006	3
4007	40
4008	18
4009	140
4011	34
4012	104
4014	20
4016	140
4019	114
4022	77
3354	18
3355	79
3364	4
3366	27
3367	112
3431	7
3436	18
3456	15
3483	35
3499	10
3606	11
3607	84
3610	24
3615	33
3617	19
3633	31
3634	10
3635	12
3639	39
3640	7
3642	16
3650	10
3653	40
3662	66
3664	25
3665	7
3678	32
3683	10
3684	10
3685	11
3687	25
3688	18
3709	15
3714	33
3716	42
3719	12
3810	32
3825	9
3864	71
3870	58
3873	105
3879	15
4001	211
4002	21
4003	63
4004	25
4005	45
4007	34
4012	18
4013	33
4014	29
4015	8
4023	36
4026	33
4029	35
4032	43
4035	6
4036	9
4038	54
4039	92
4040	79
4041	24
4042	49
4044	10
4045	259
4050	13
4051	72
4052	12
4053	71
4054	88
4055	224
4057	139
4058	23
4059	400
4060	117
4061	49
4062	122
4063	102
4064	146
4065	95
4066	14
4067	71
4068	129
4069	142
4070	113
4071	165
4072	108
4073	86
4074	223
4075	100
4076	334
4077	241
4079	2116
4080	1218
4081	140

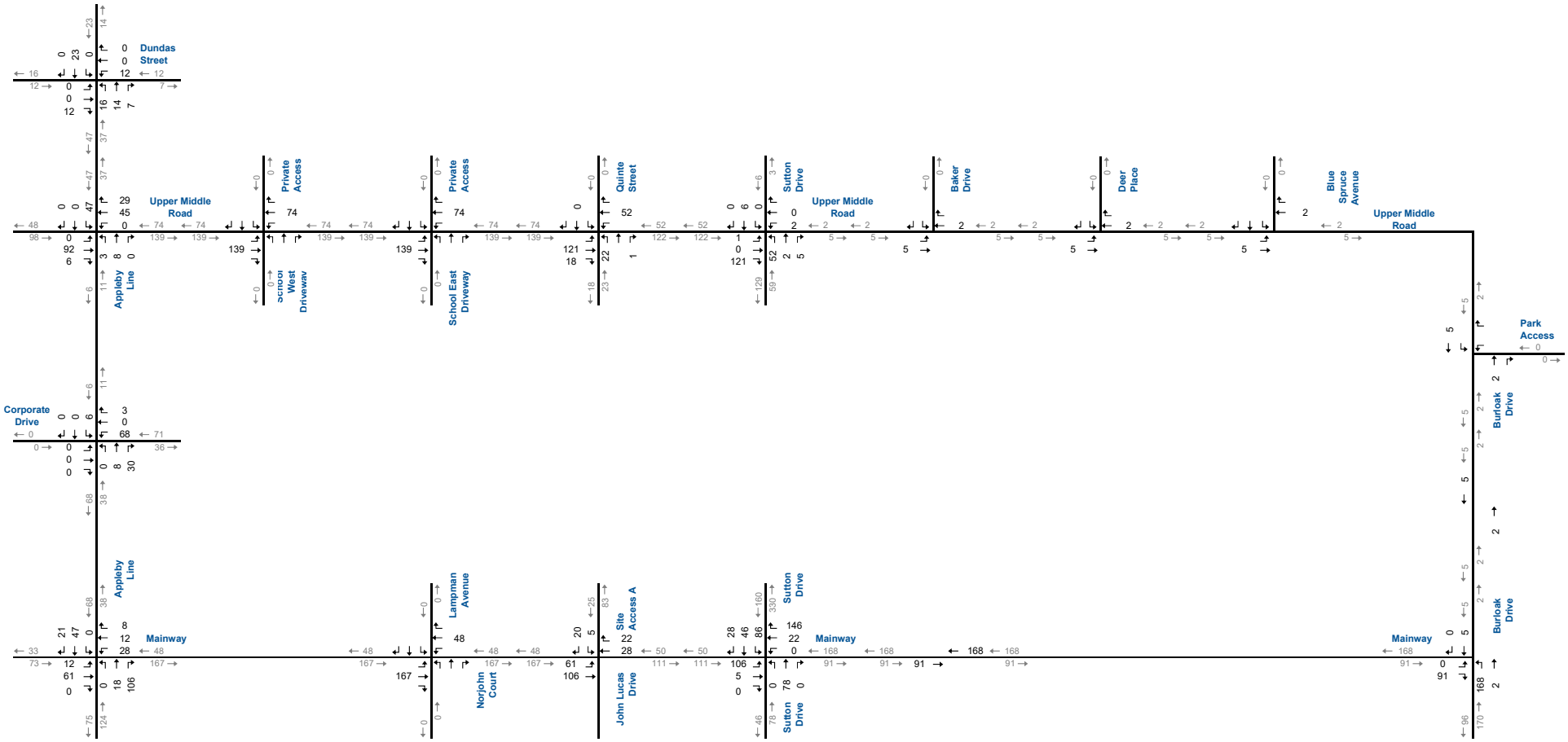
4023	28
4024	56
4027	63
4029	25
4030	19
4032	29
4033	35
4036	18
4037	21
4038	13
4039	37
4040	27
4041	97
4042	116
4044	24
4045	80
4053	163
4054	16
4055	41
4056	72
4057	207
4058	16
4059	101
4060	137
4061	60
4062	65
4063	178
4065	50
4066	46
4067	47
4068	116
4069	341
4070	22
4071	106
4072	107
4073	28
4074	65
4075	64
4076	68
4077	262
4079	1738
4080	1373
4081	254
4082	410
4083	311
4084	574
4085	216
4086	19
4087	31
4088	132
4089	193
4090	44
4091	76
4094	46
4109	38
4110	73
4120	9
4125	41
4126	54
4136	9
4144	19
4147	9
4184	52
4185	52
4186	103
4187	12
4188	218
4189	1550
4190	280
5008	19
5036	43
5044	36
5048	27
5052	23
5059	13
5075	52
5093	23
5105	12
5108	32
5119	12
5126	10
5136	19
5139	28
5142	38
5143	83
5145	45
5159	41
5168	38
5180	17
5184	9
5185	10
5188	23
5193	24
5194	48
5197	28
4082	203
4083	370
4084	607
4085	106
4086	144
4087	134
4088	170
4089	429
4090	13
4091	45
4092	30
4093	36
4094	13
4095	29
4096	33
4098	24
4103	64
4108	64
4110	75
4119	20
4120	47
4124	11
4127	28
4135	12
4136	17
4183	25
4186	177
4188	244
4189	1131
4190	522
4191	19
5005	33
5020	18
5030	35
5032	18
5036	64
5044	184
5045	52
5053	11
5058	6
5061	17
5065	45
5066	98
5067	125
5069	56
5071	18
5072	16
5074	138
5075	55
5081	22
5084	73
5089	67
5090	68
5093	19
5094	43
5096	24
5098	71
5100	78
5111	62
5118	24
5119	23
5121	45
5139	12
5140	21
5142	42
5143	145
5144	106
5148	24
5149	15
5150	19
5151	35
5153	29
5154	18
5158	36
5161	55
5163	43
5166	48
5170	31
5172	9
5179	47
5180	82
5181	66
5182	59
5183	38
5190	41
5194	82
5198	106
5200	34
5203	64
5205	21
5207	44
5212	26
5219	15
5223	12
5229	13

5198	351
5200	27
5206	21
5211	19
5223	24
5224	16
5226	25
5233	14
5234	14
5246	13
5248	23
6002	20
6052	22
6096	14
6116	43
6126	11
6131	20
6163	99
6191	28
6217	24
6312	38
7013	31
7041	38
7117	11
7237	13
7311	9
7353	24
8086	37
8117	23
8129	15
8907	27
8915	17
9030	37
9065	26
9998	34

5230	89
5231	57
5232	294
5237	15
5239	46
5241	125
5244	147
5249	26
5250	43
6004	24
6008	36
6012	29
6023	21
6029	6
6031	12
6040	29
6060	21
6071	30
6090	55
6091	48
6139	45
6150	15
6176	17
6198	3
6216	19
6228	44
6235	107
6360	18
7101	19
7192	33
7221	33
7262	18
7339	24
7361	75
7394	16
7442	11
7458	31
8010	28
8063	11
8072	25
8080	17
8351	7
8401	15
8402	25
8415	25
8653	12
8904	11
8950	42
9065	14
9068	11

Appendix H

Site Generated Traffic Network Volumes

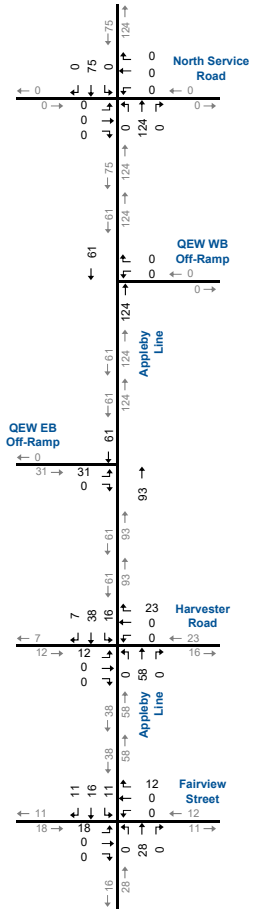


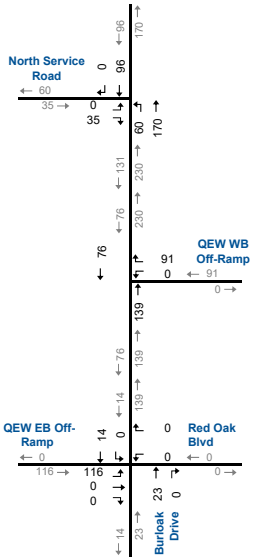
paradigm TRANSPORTATION SOLUTIONS LIMITED

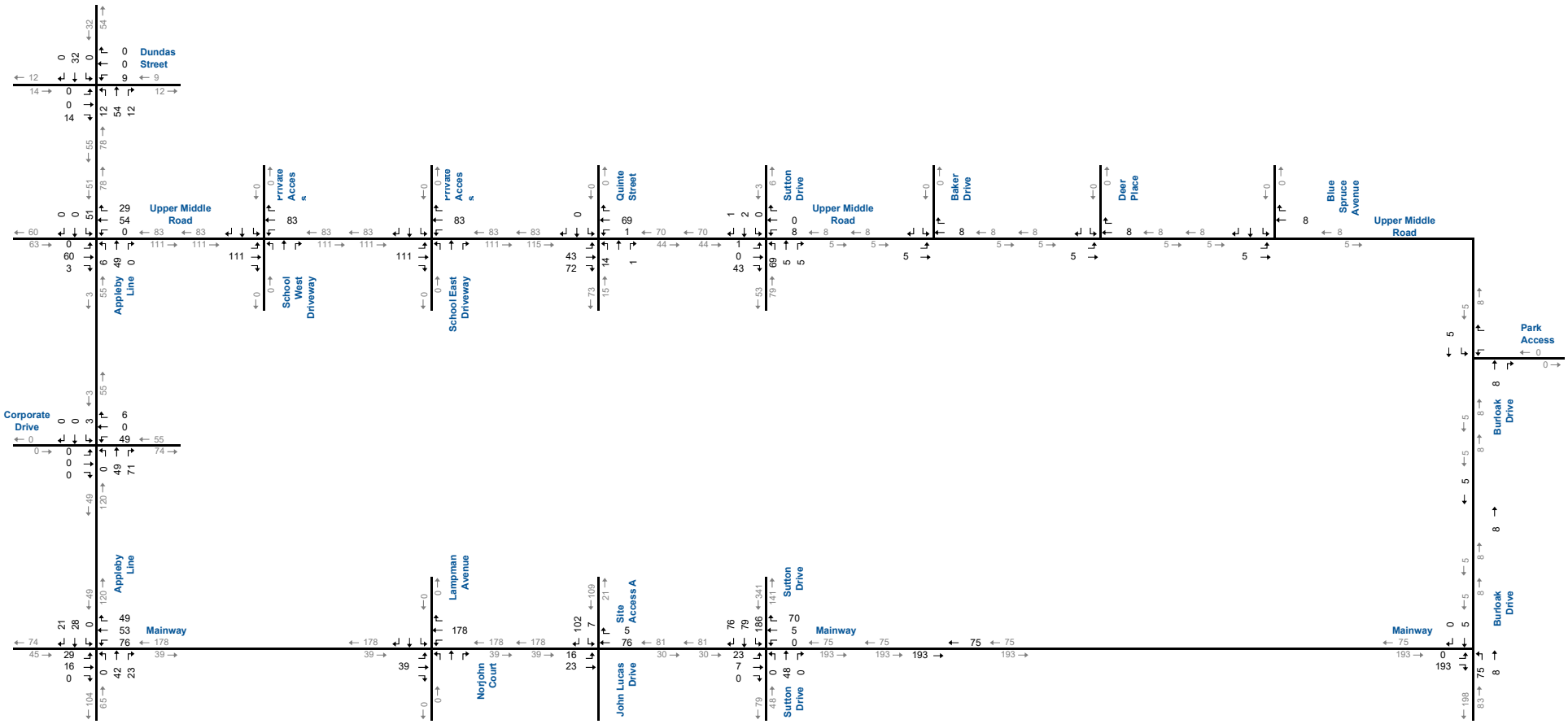
Phase 1 - Site Generated Traffic Volumes
AM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

Appendix H


North Service Road
QEW WB Off-Ramp
QEW EB Off-Ramp
Appleby Line
Harvester Road
Appleby Line
Fairview Street

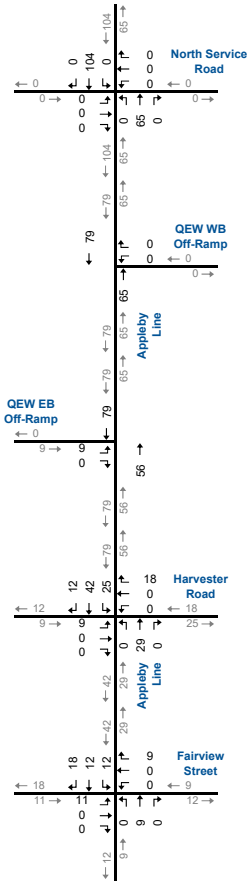

North Service Road
QEW WB Off-Ramp
QEW EB Off-Ramp
Red Oak Blvd
Burloak Drive

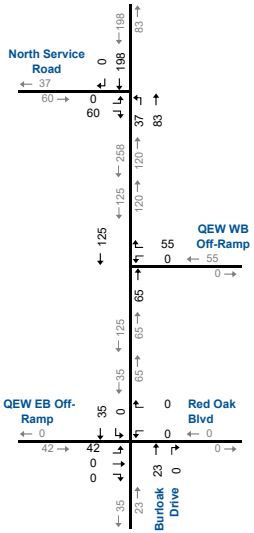


Phase 1 - Site Generated Traffic Volumes
PM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

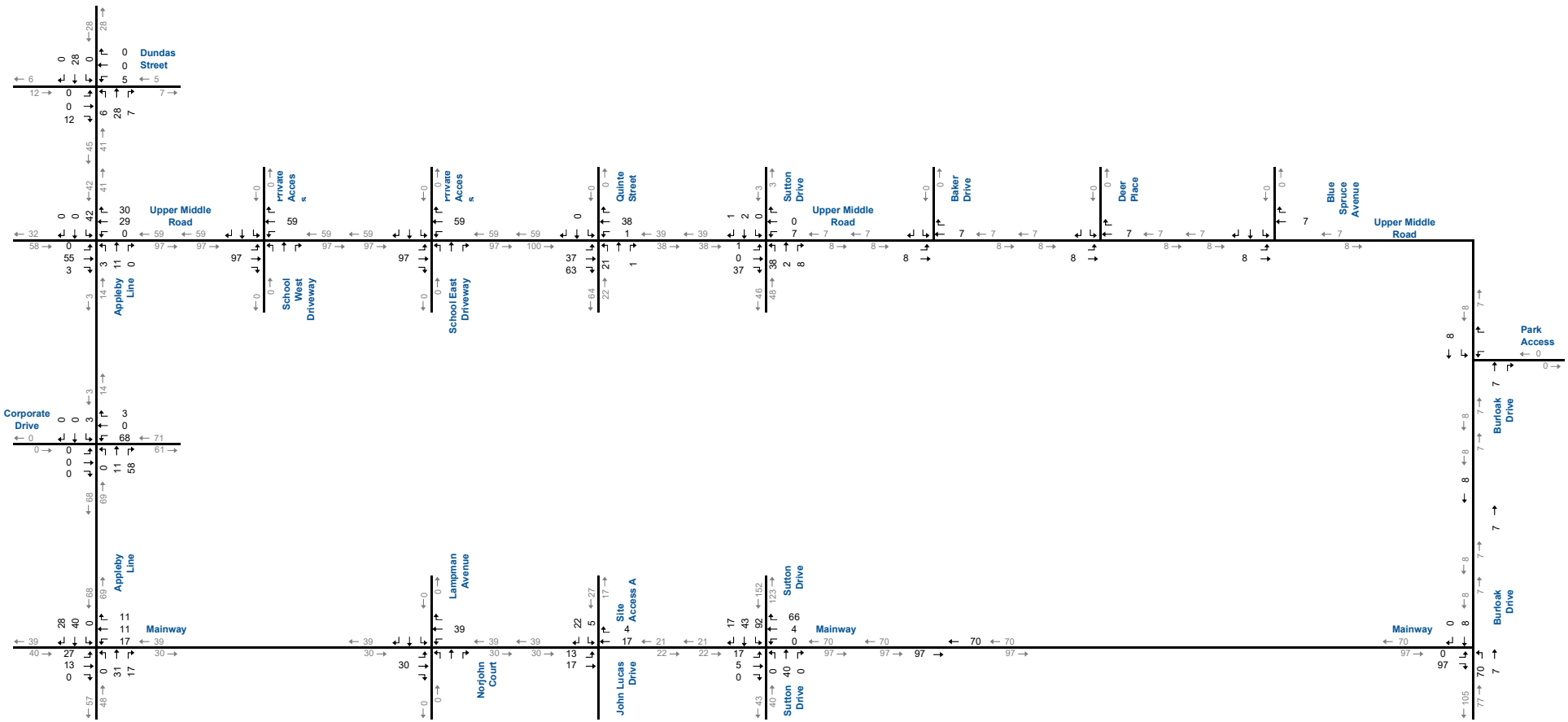
Appendix H





paradigm TRANSPORTATION SOLUTIONS LIMITED

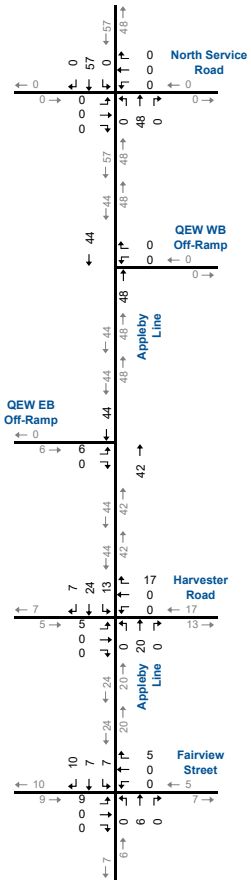
Phase 1 - Site Generated Traffic Volumes
PM Peak Hour (2/2)

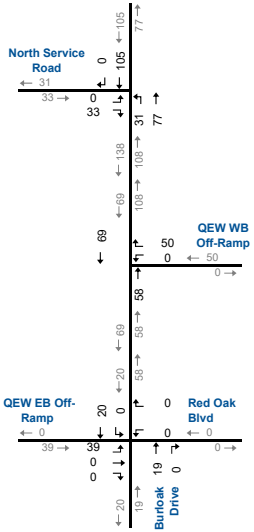


Phase 1 - Site Generated Traffic Volumes
Saturday Peak Hour (1/2)

Bronte Creek Meadows, Burlington
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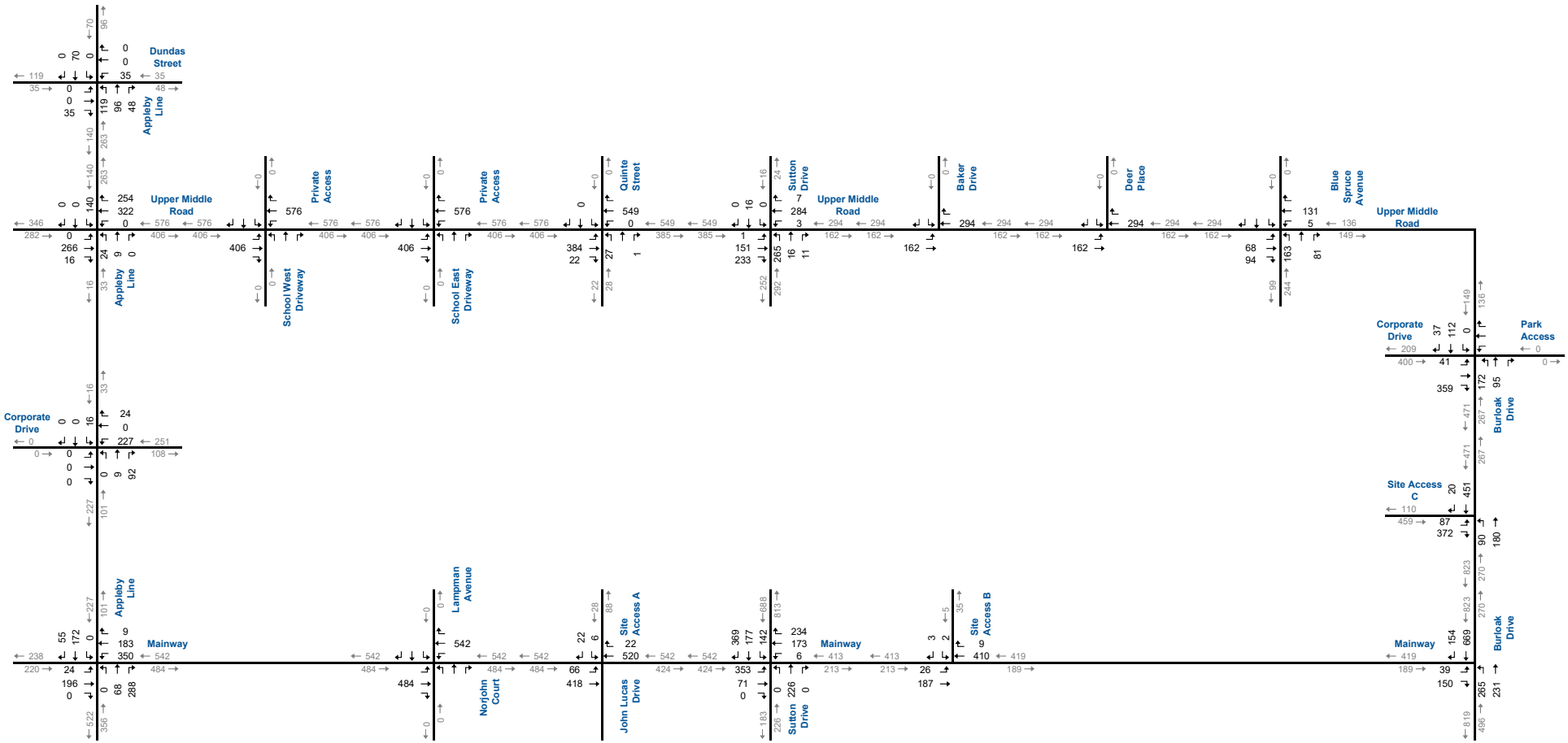




Phase 1 - Site Generated Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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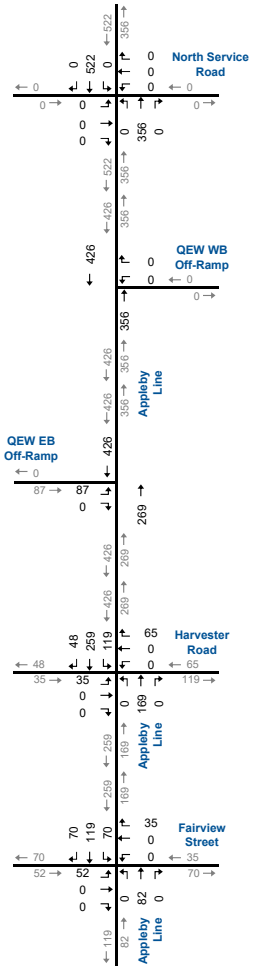
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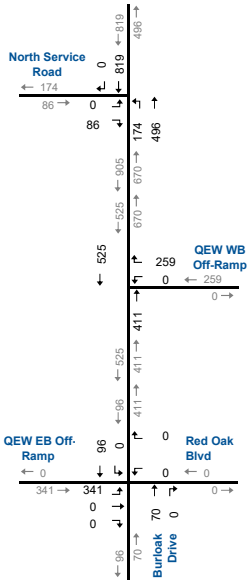


Full Build - Site Generated Traffic Volumes
AM Peak Hour (1/2)

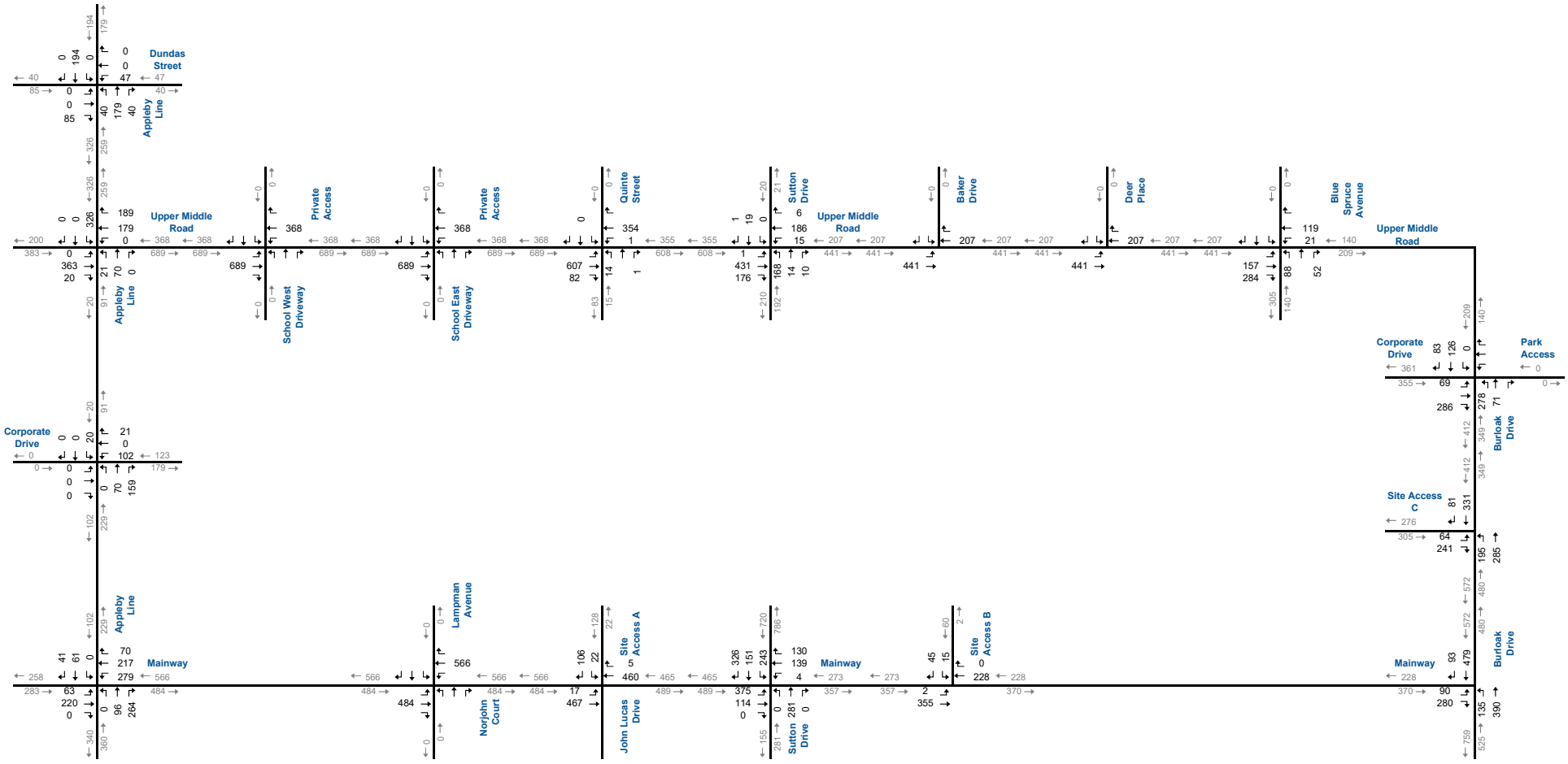
Bronte Creek Meadows, Burlington
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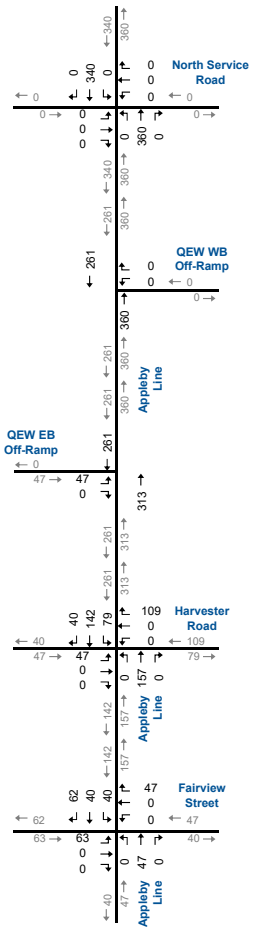
Full Build - Site Generated Traffic Volumes
AM Peak Hour (2/2)

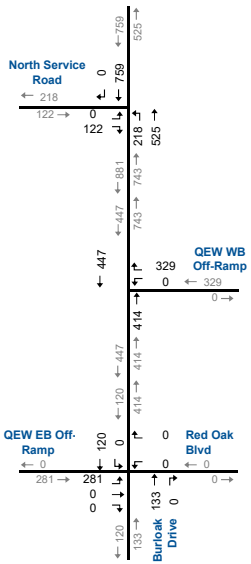


Full Build - Site Generated Traffic Volumes
PM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
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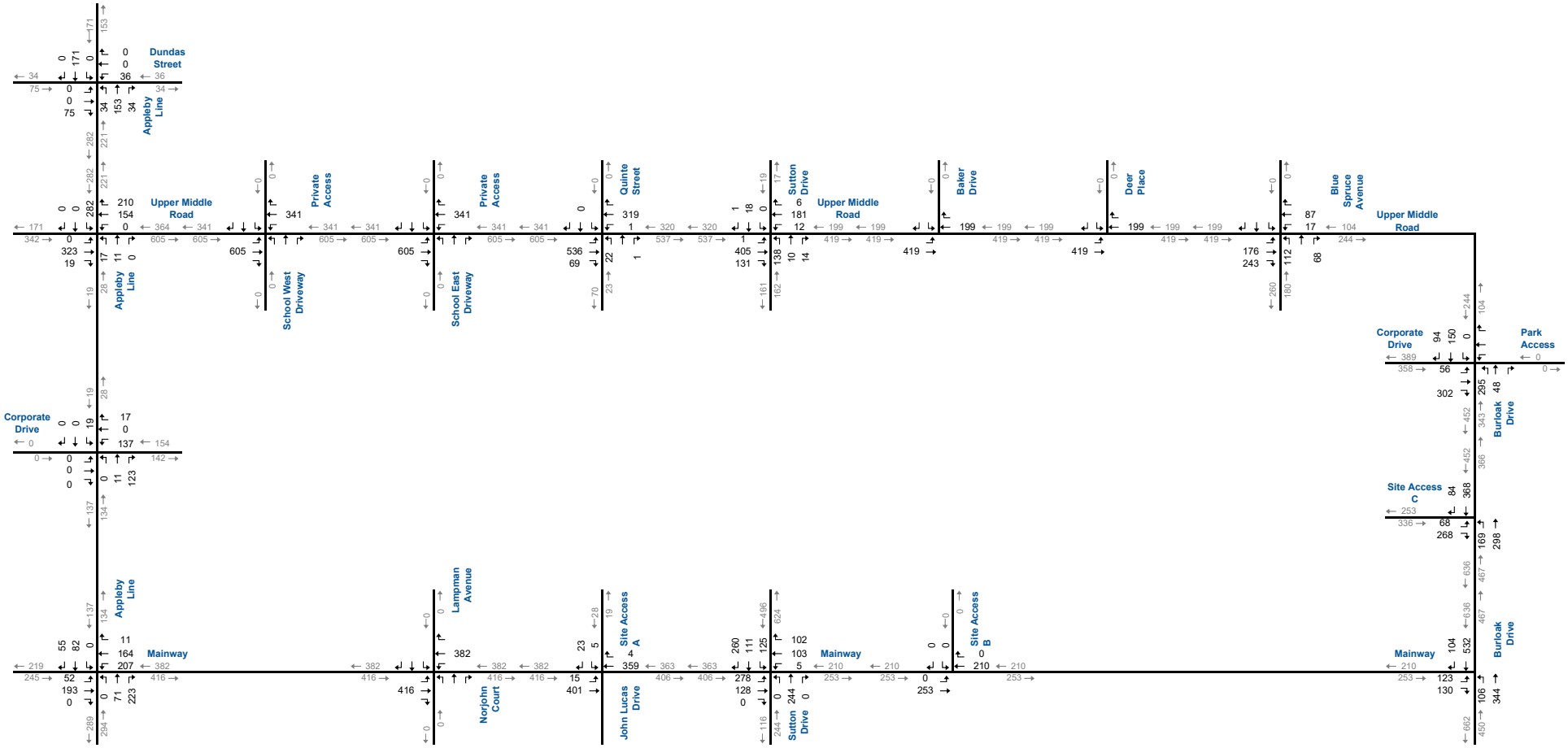


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Full Build - Site Generated Traffic Volumes
PM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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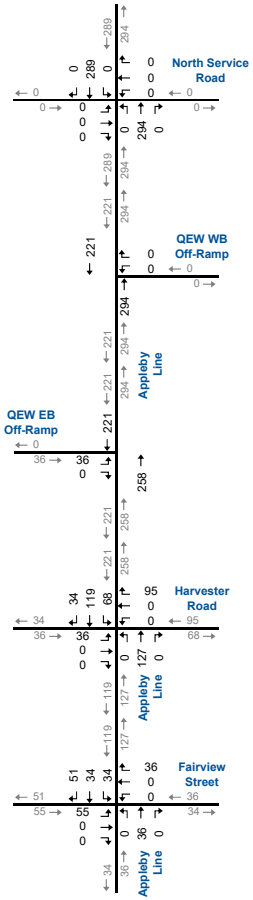
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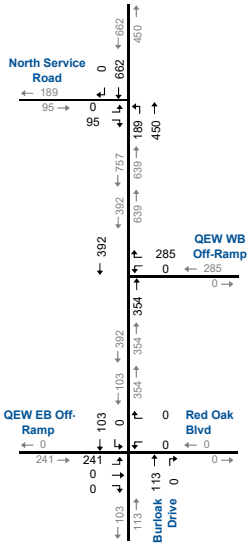


Full Build - Site Generated Traffic Volumes
Saturday Peak Hour (1/2)

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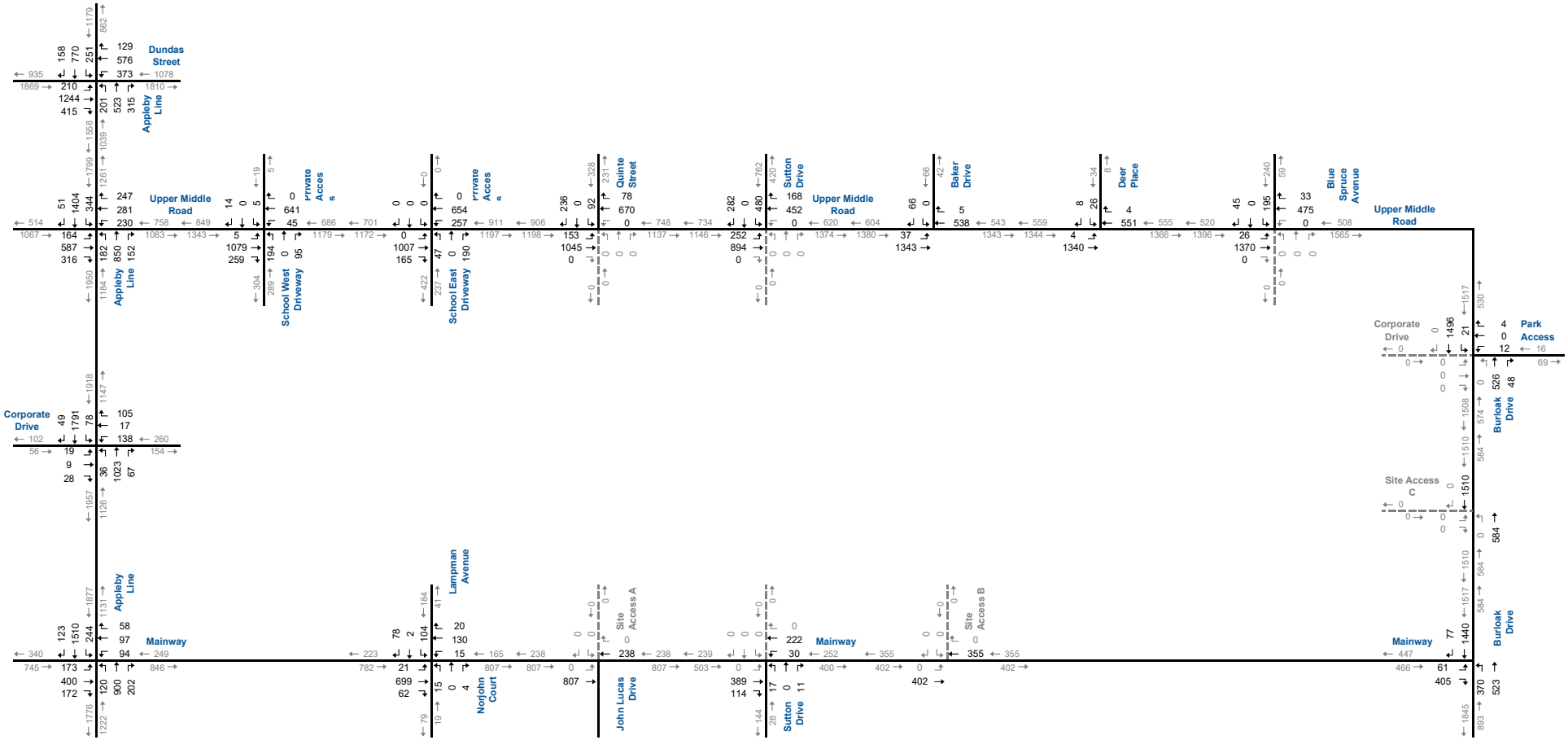
Full Build - Site Generated Traffic Volumes
Saturday Peak Hour (2/2)

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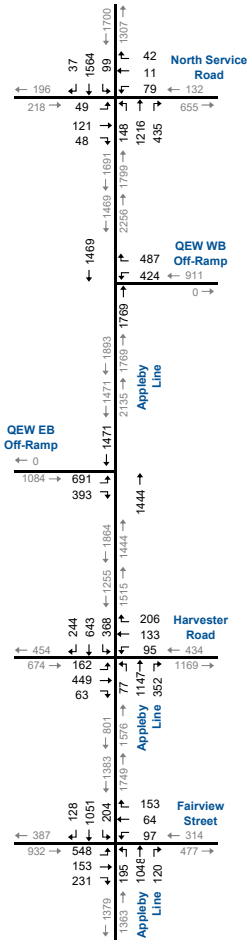
Future Traffic Network Volumes

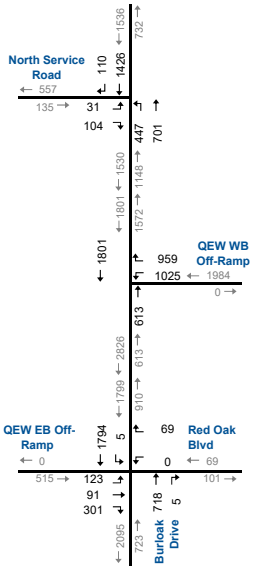


2035 Background Traffic Volumes
AM Peak Hour (1/2)

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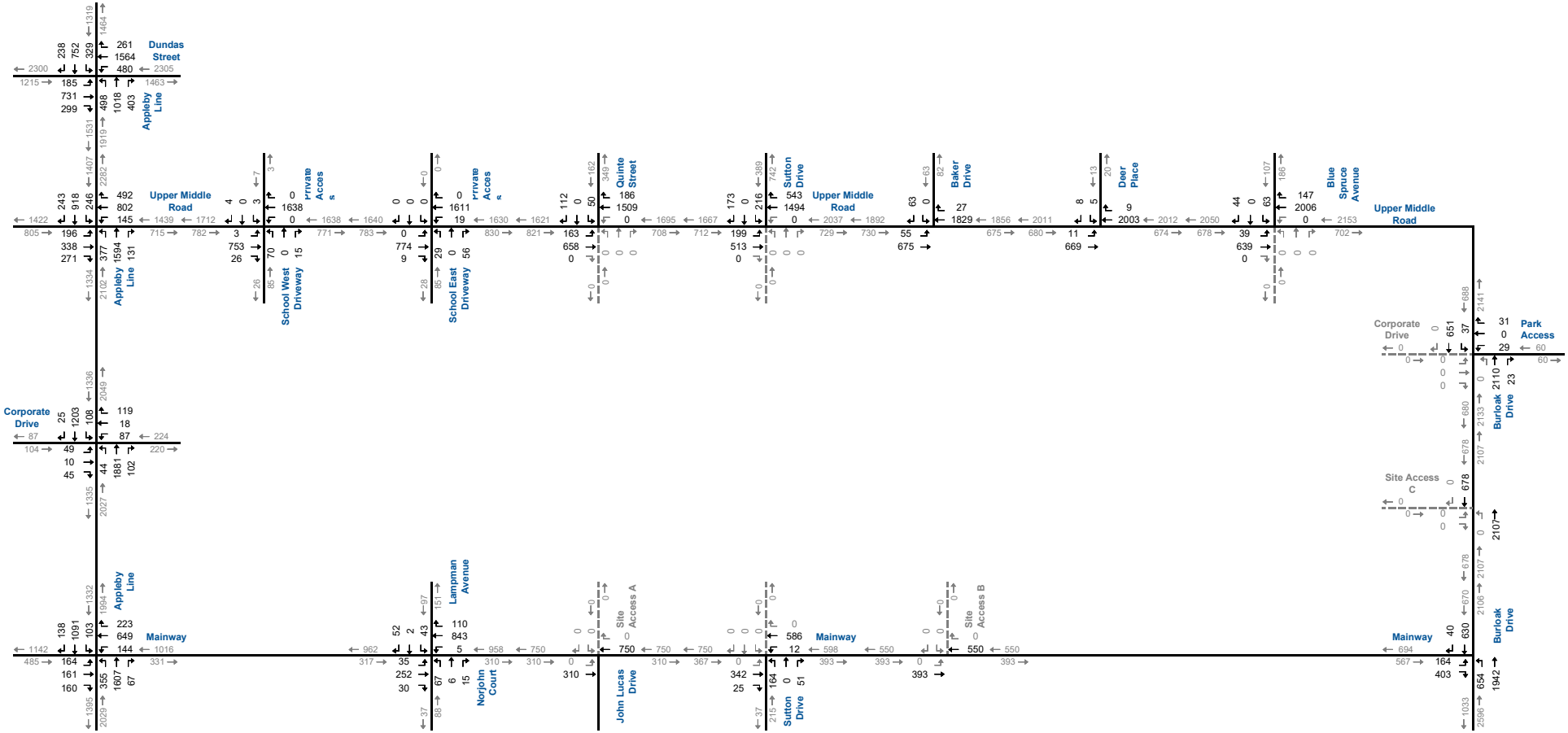
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2035 Background Traffic Volumes
AM Peak Hour (2/2)

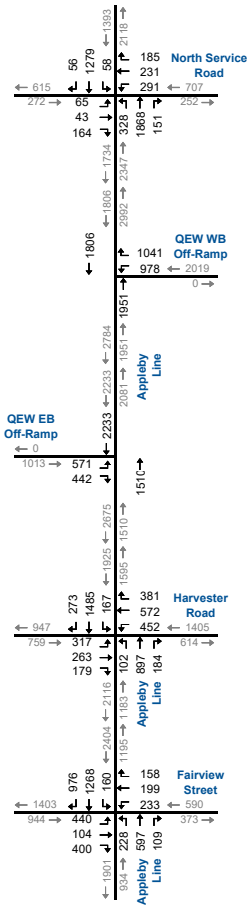


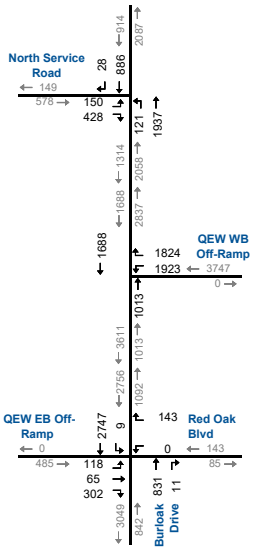
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2035 Background Traffic Volumes
PM Peak Hour (1/2)

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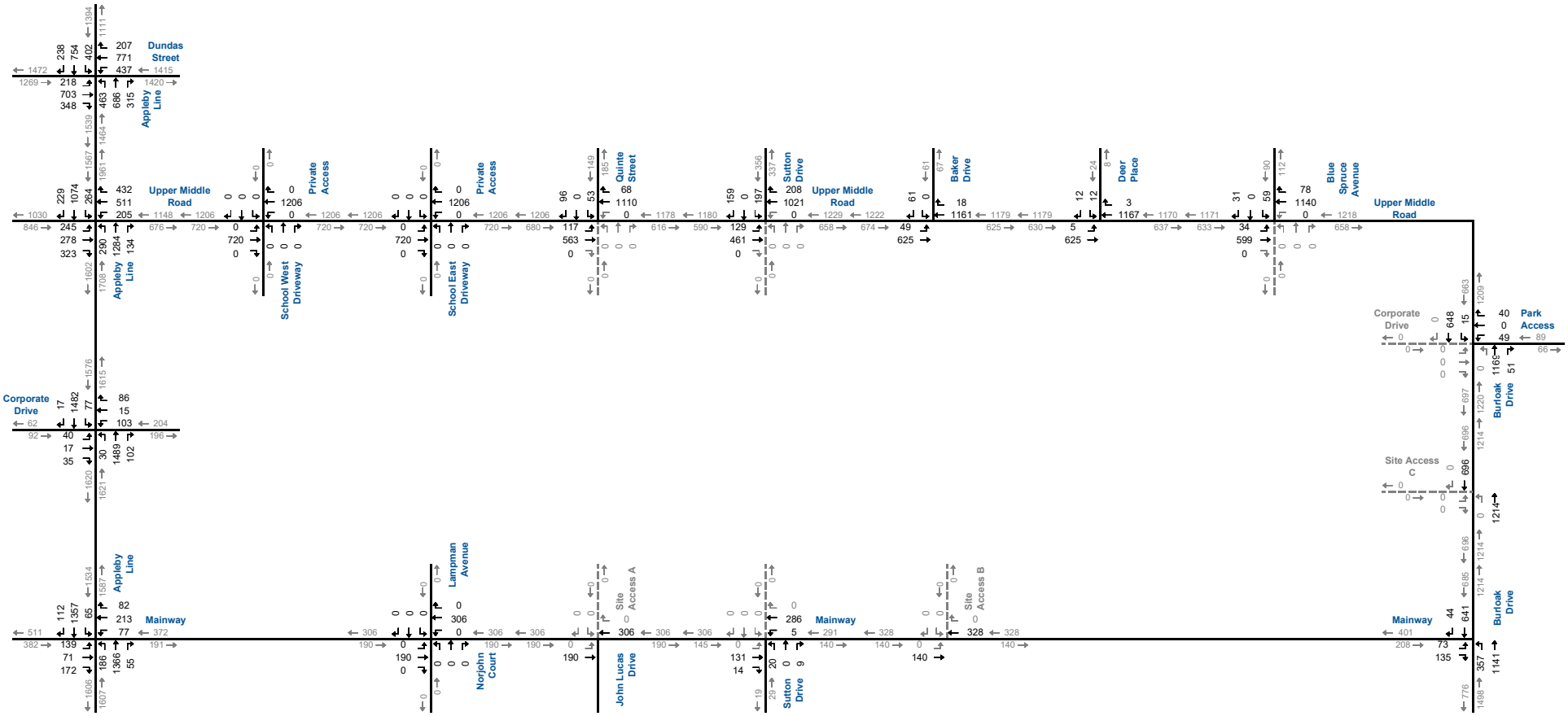




2035 Background Traffic Volumes
PM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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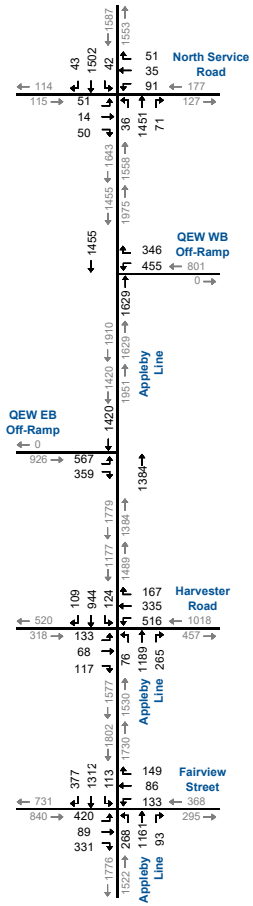
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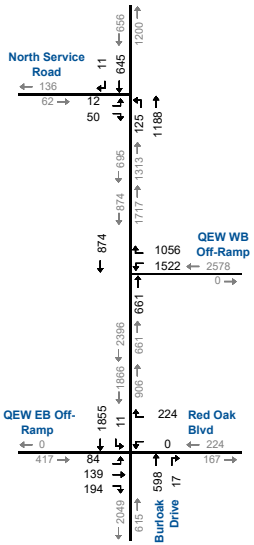


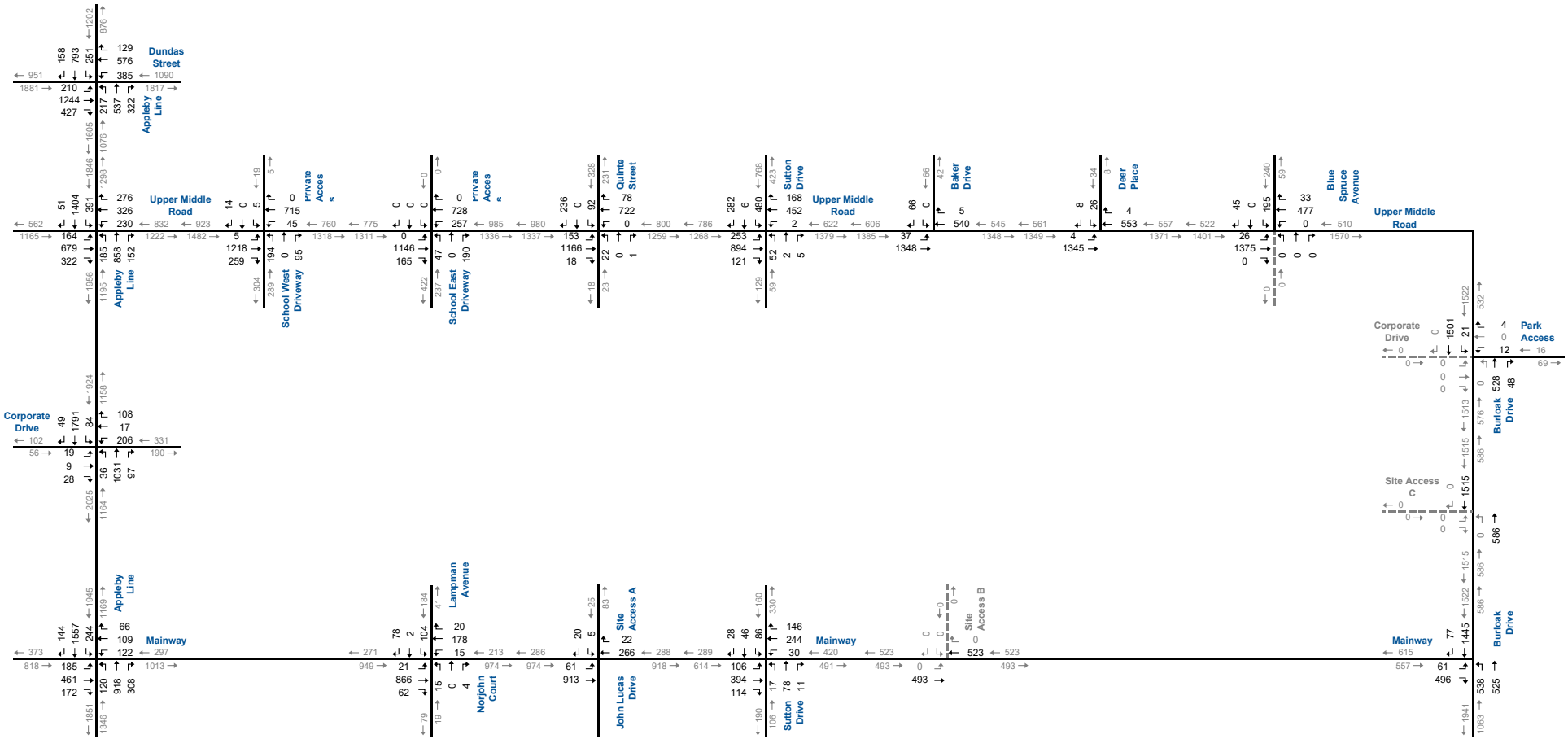
2035 Background Traffic Volumes
Saturday Peak Hour (1/2)

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Appendix I


North Service Road
QEW WB Off-Ramp
QEW EB Off-Ramp
Appleby Line
Harvester Road
Fairview Street
Appleby Line

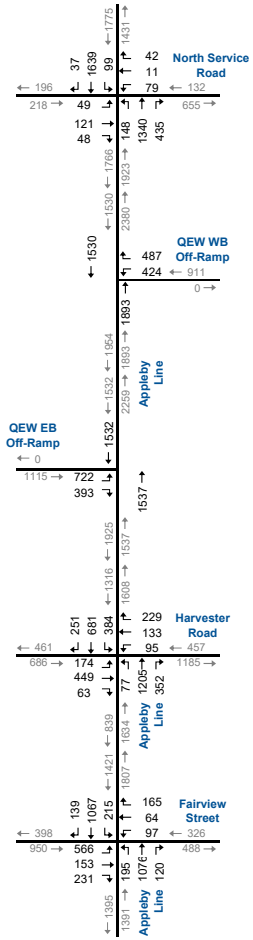

North Service Road
QEW WB Off-Ramp
QEW EB Off-Ramp
Red Oak Blvd
Burloak Drive

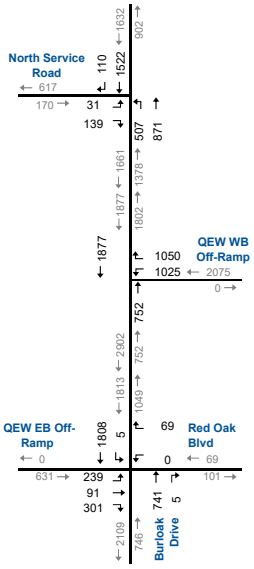


Phase 1 - 2035 Total Traffic Volumes
AM Peak Hour (1/2)

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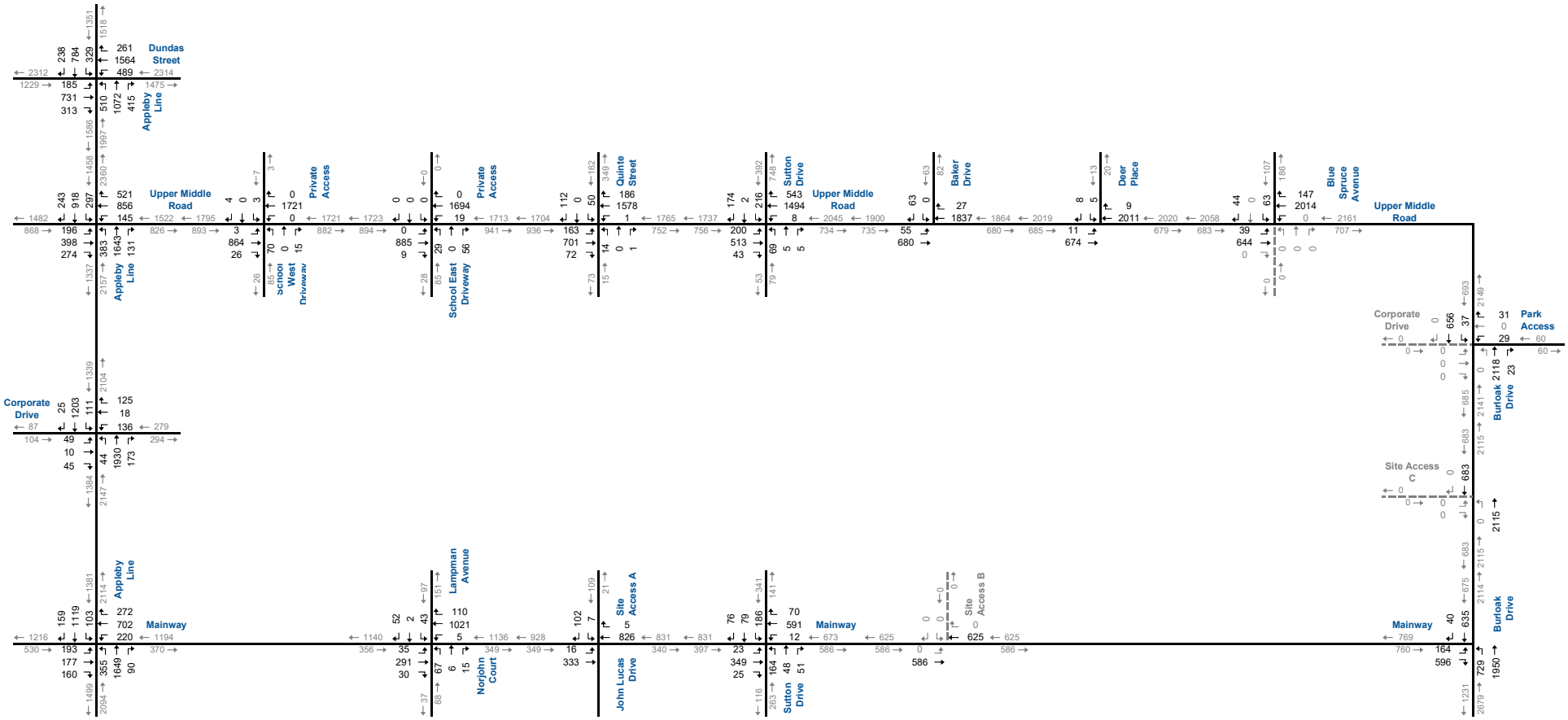




Phase 1 - 2035 Total Traffic Volumes
AM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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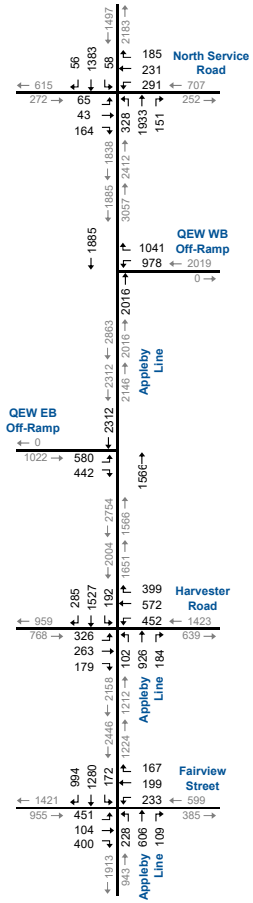
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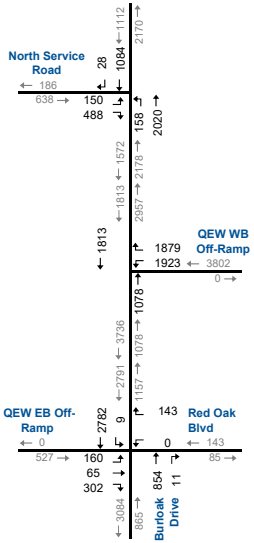


Phase 1 - 2035 Total Traffic Volumes
PM Peak Hour (1/2)

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Appendix I

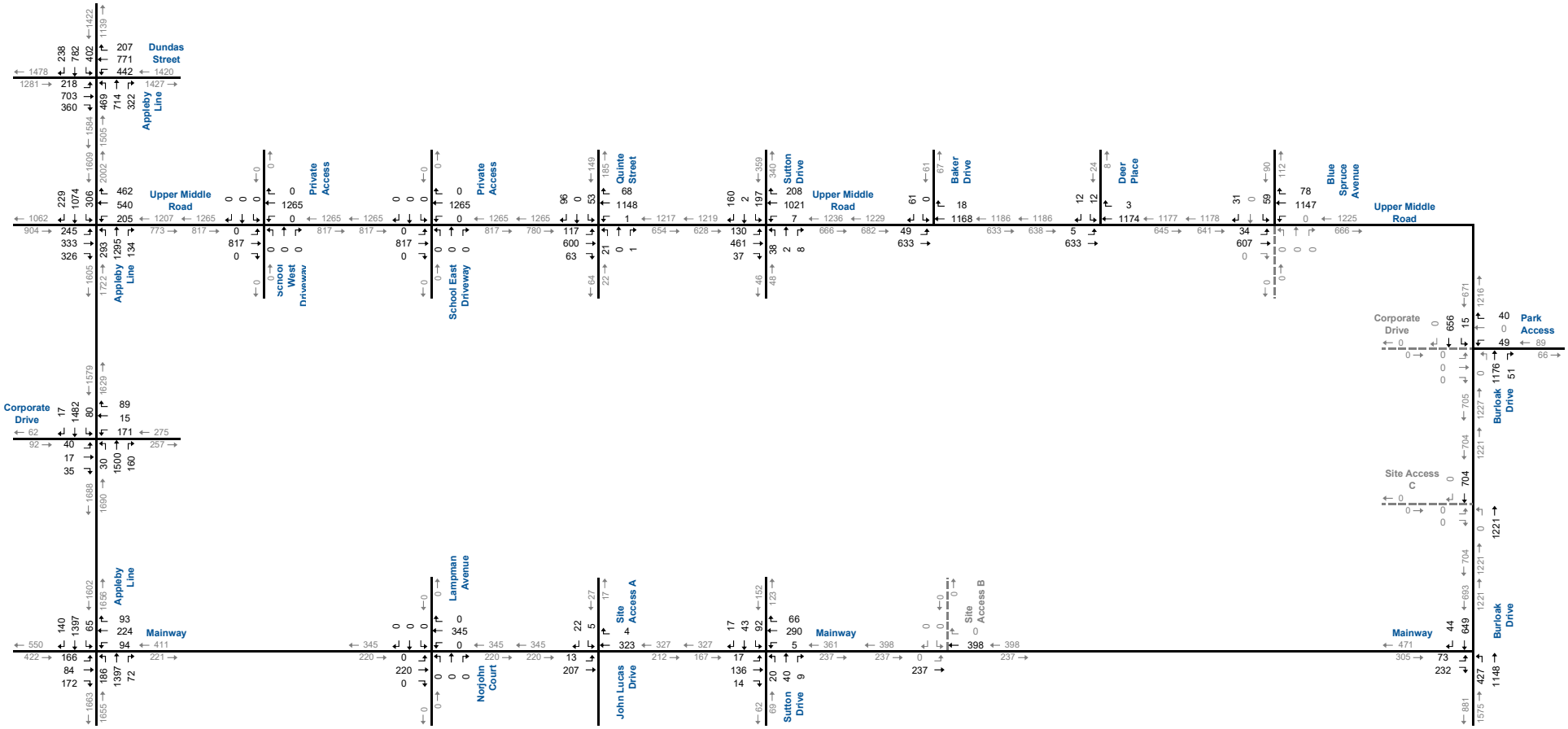




Phase 1 - 2035 Total Traffic Volumes
PM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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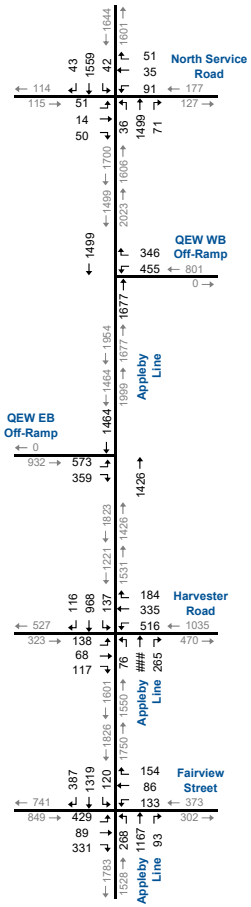
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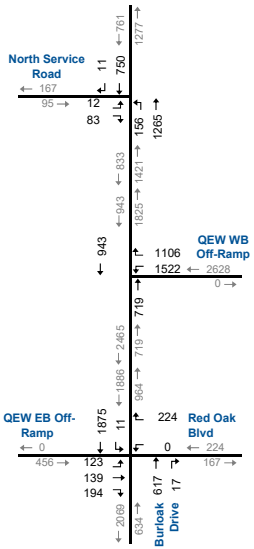


Phase 1 - 2035 Total Traffic Volumes
Saturday Peak Hour (1/2)

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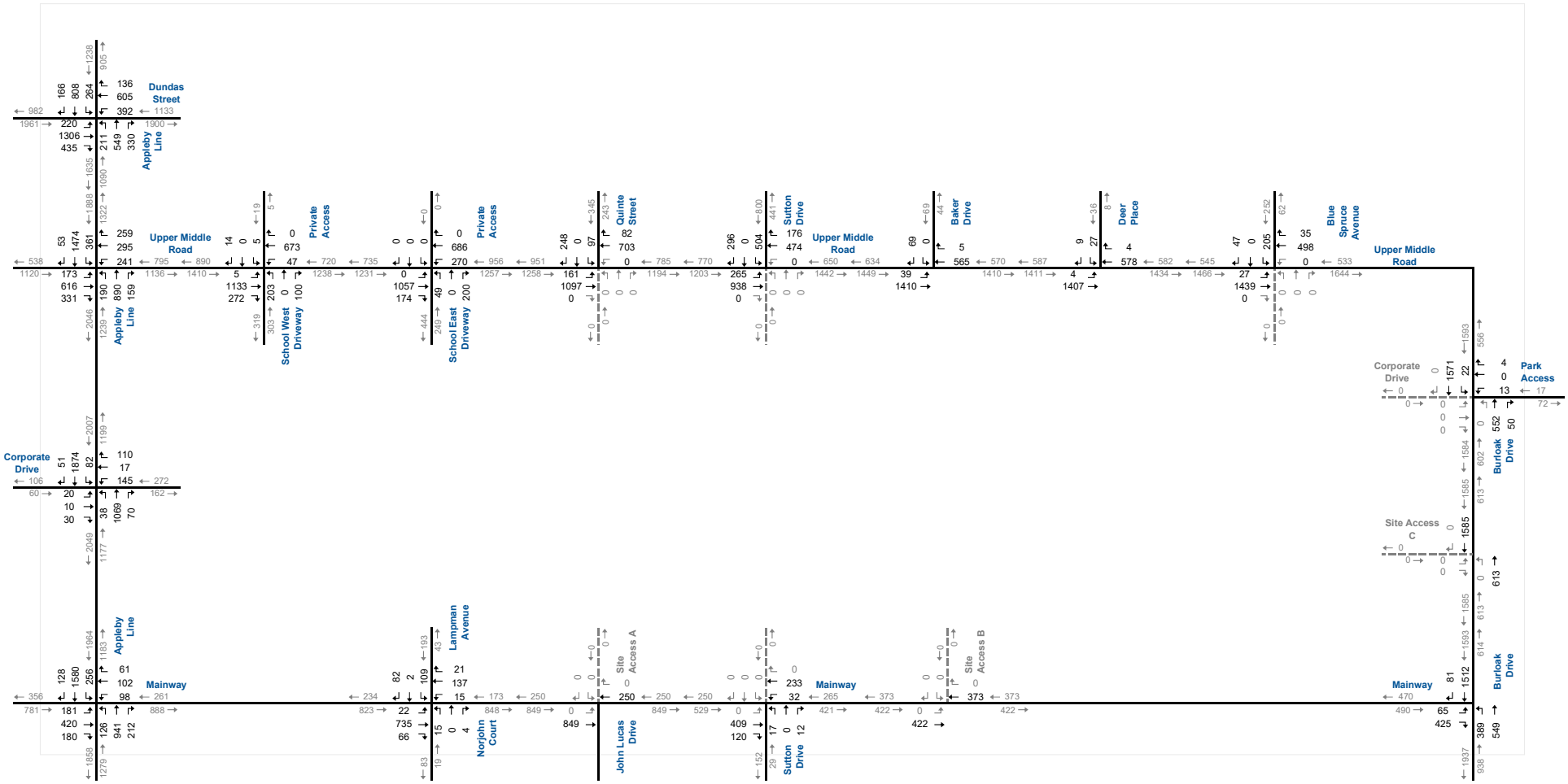


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Phase 1 - 2035 Total Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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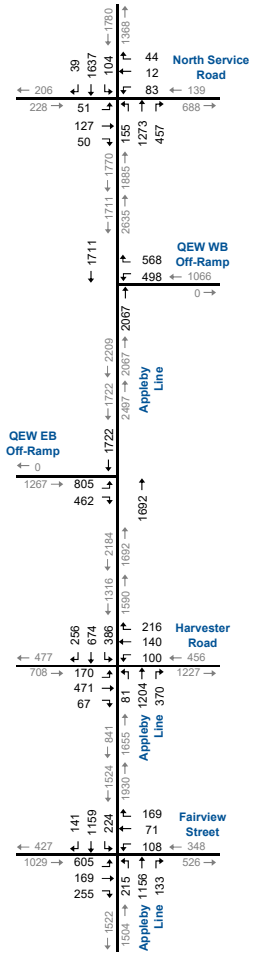
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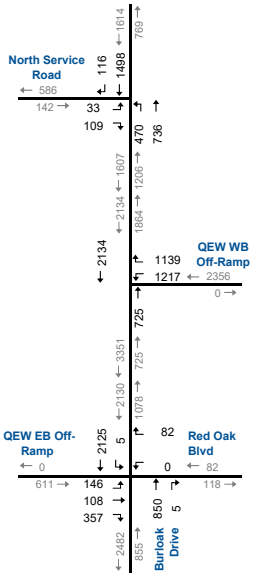


2040 Background Traffic Volumes
AM Peak Hour (1/2)

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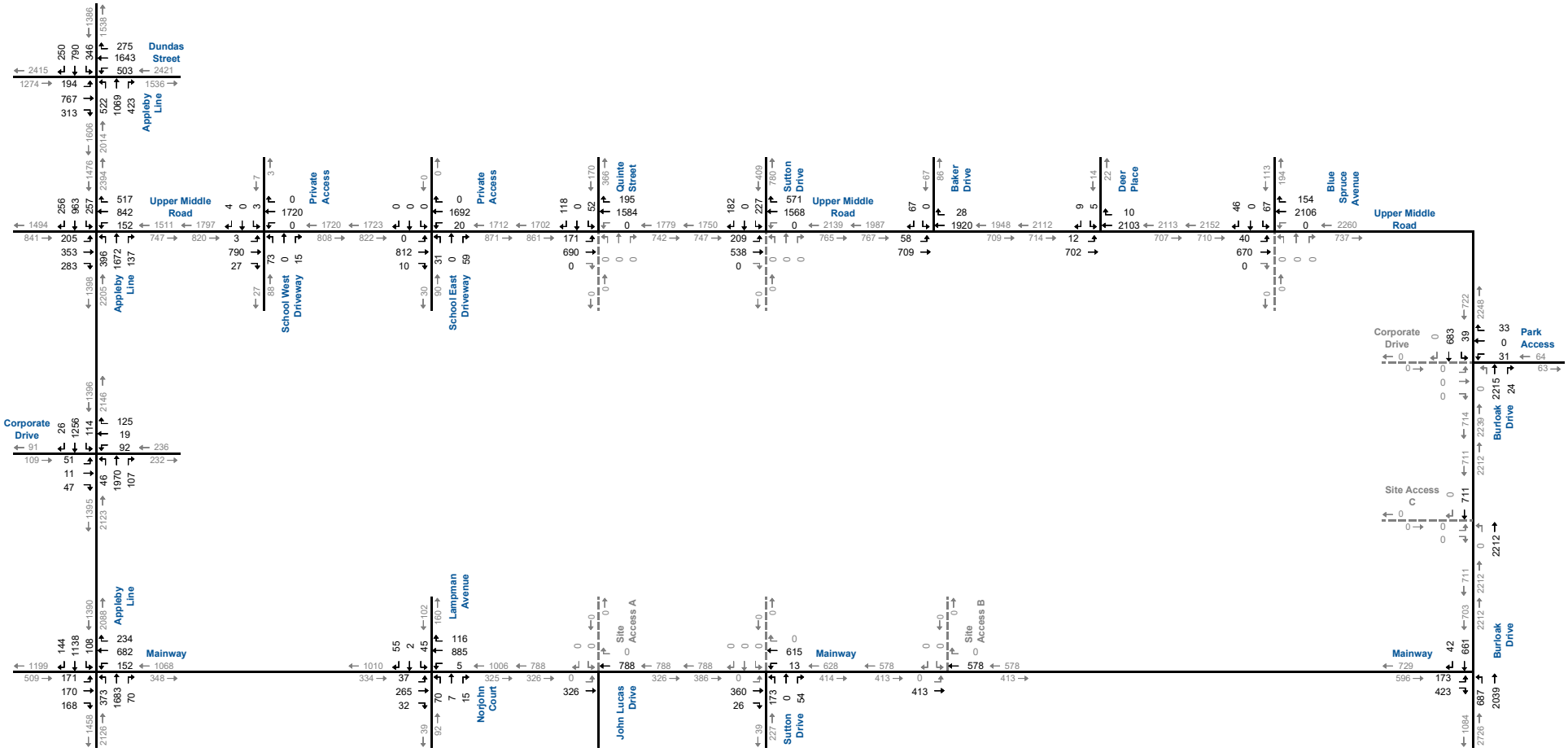


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2040 Background Traffic Volumes
AM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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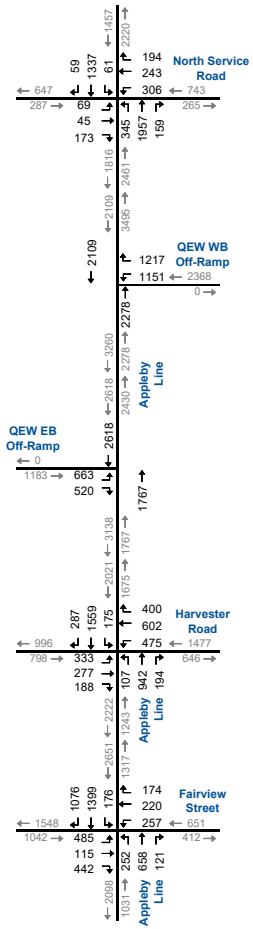
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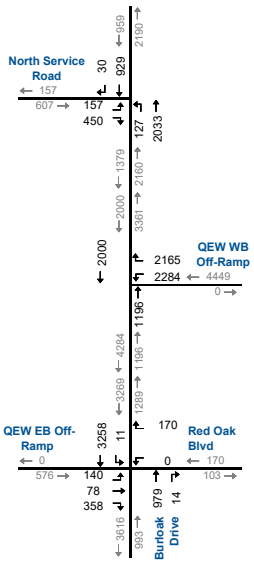


2040 Background Traffic Volumes
PM Peak Hour (1/2)

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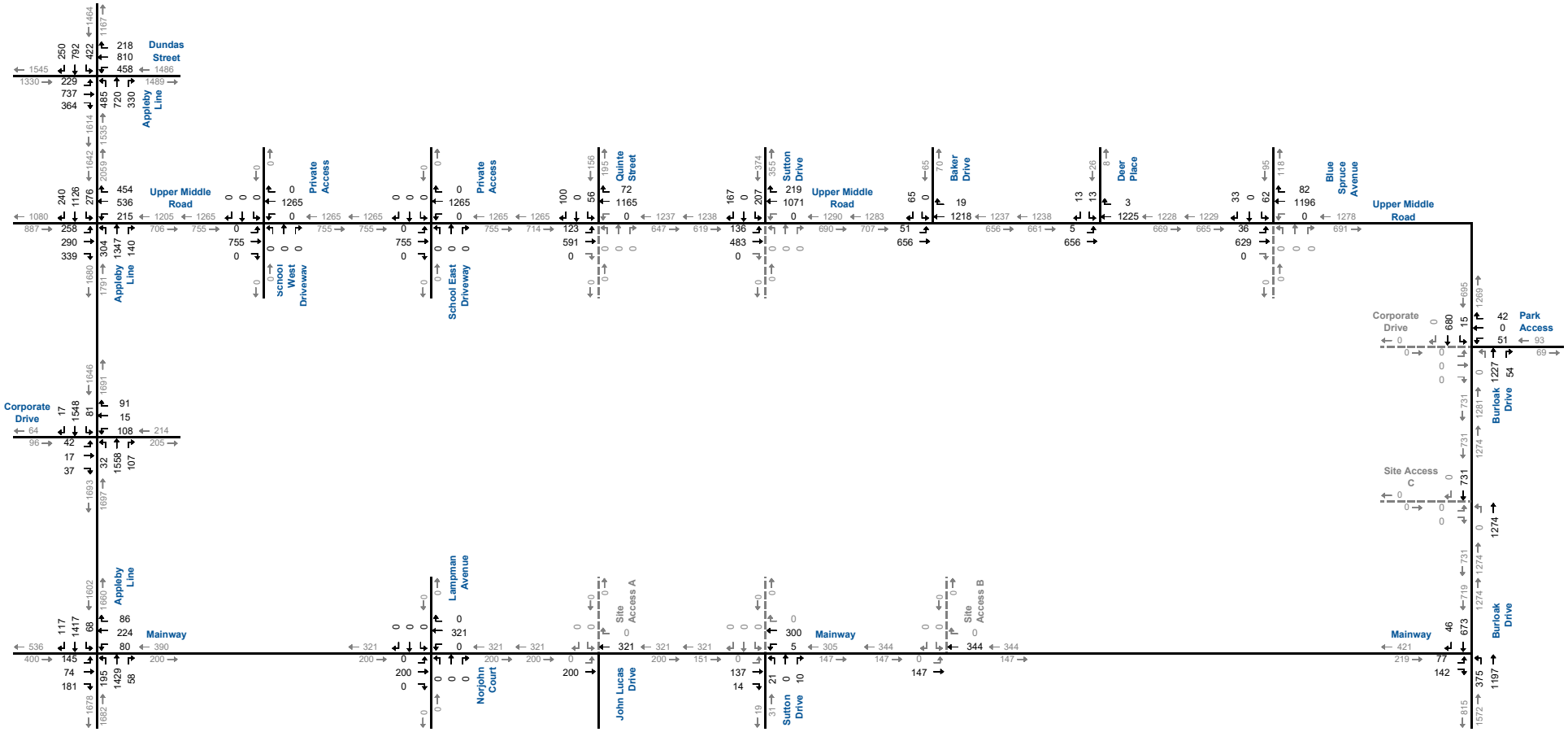


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2040 Background Traffic Volumes
PM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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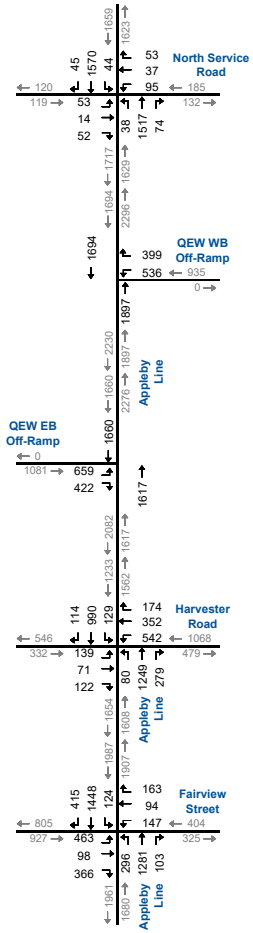
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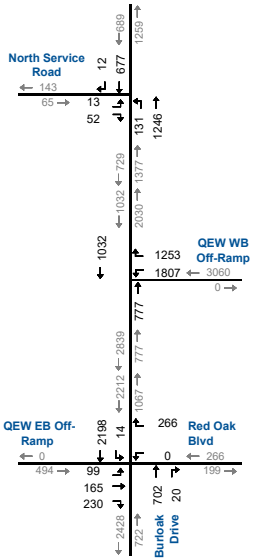


2035 Background Traffic Volumes
Saturday Peak Hour (1/2)

Bronte Creek Meadows, Burlington
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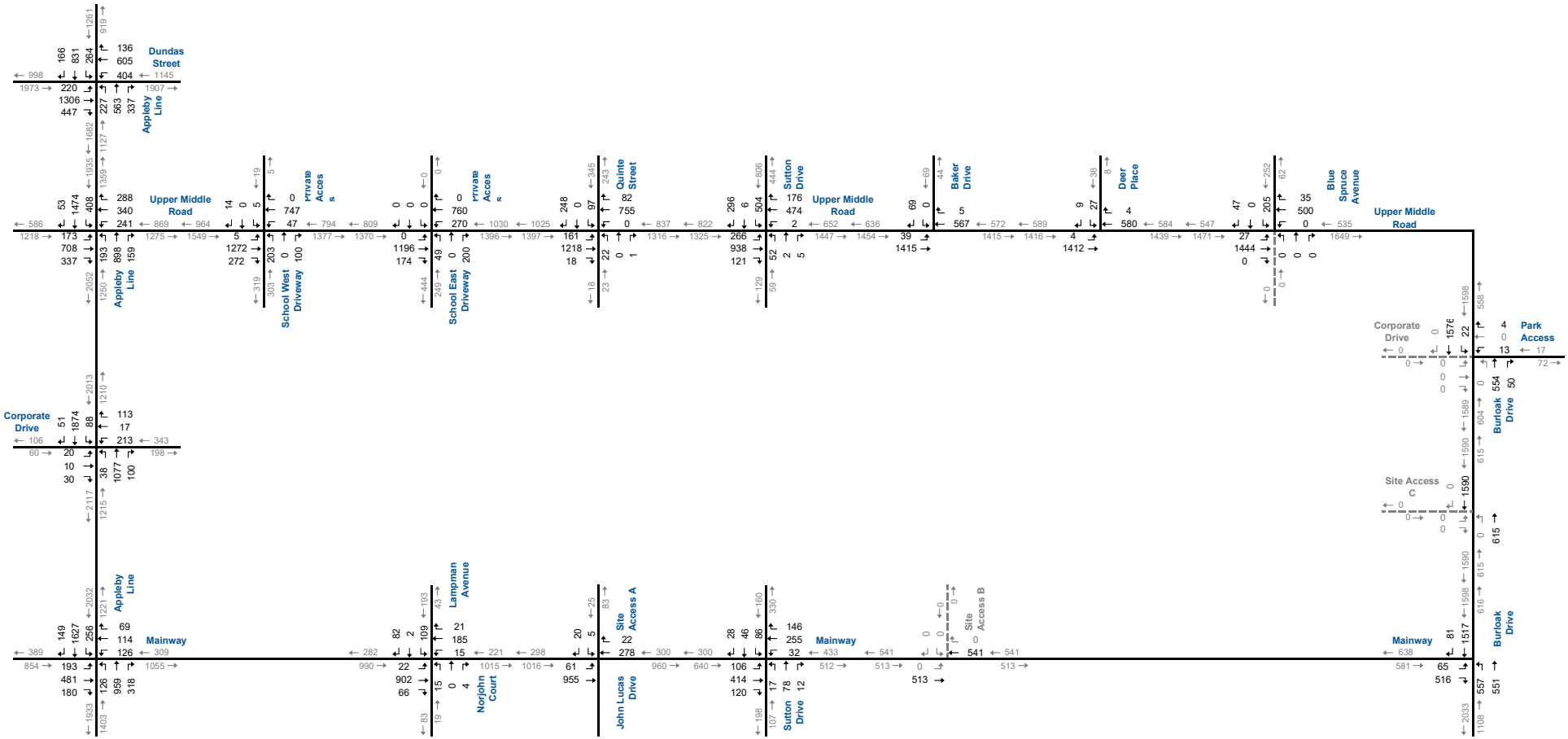


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2035 Background Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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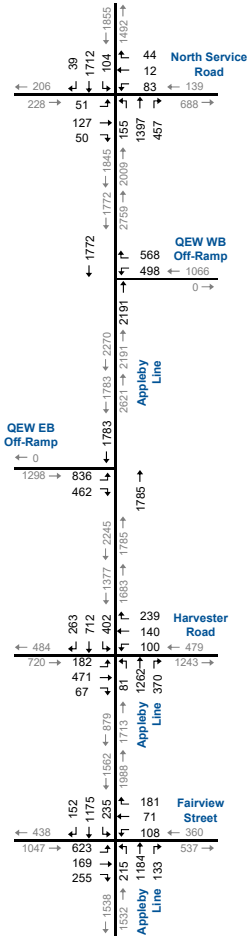
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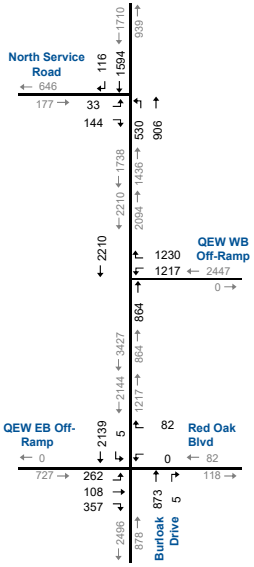


Phase 1 - 2040 Total Traffic Volumes
AM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
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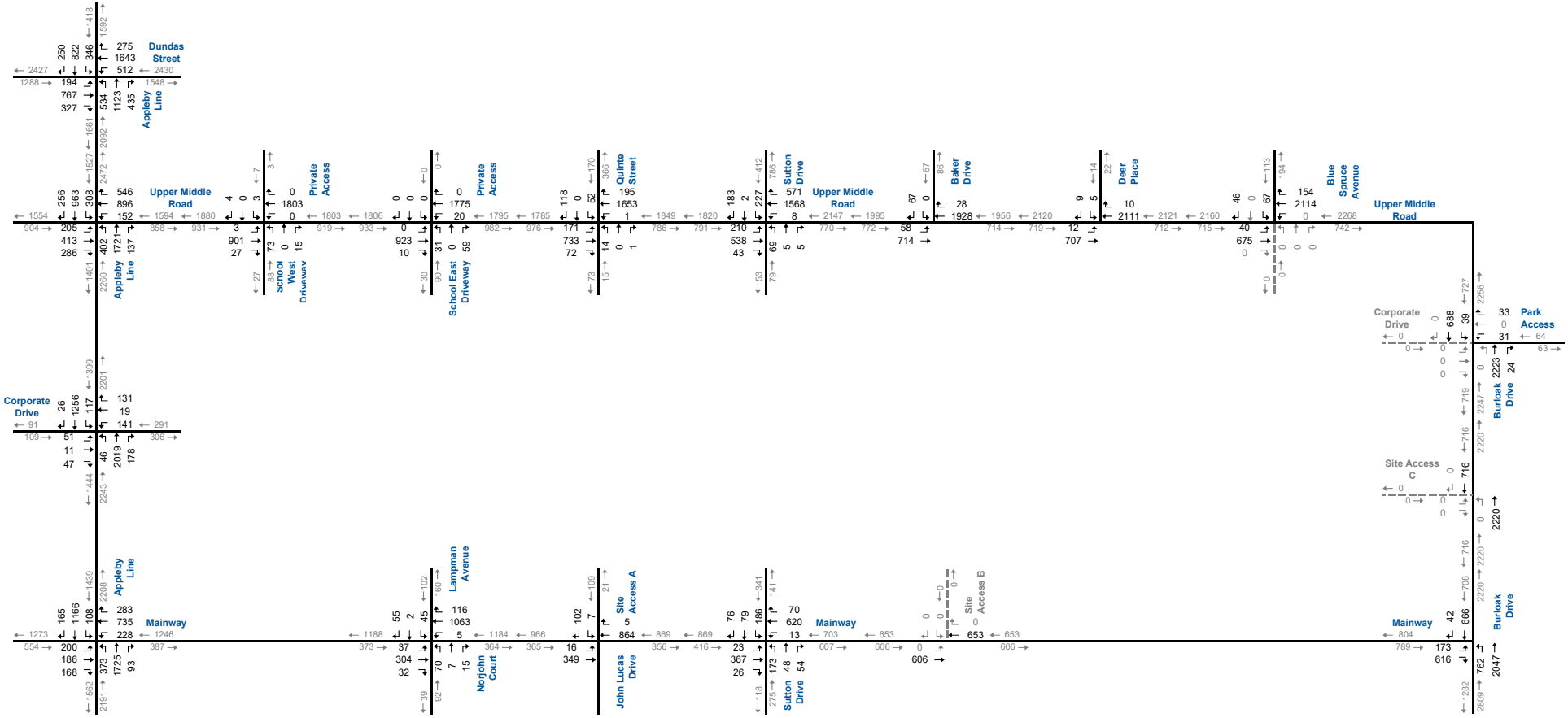


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Phase 1 - 2040 Total Traffic Volumes
AM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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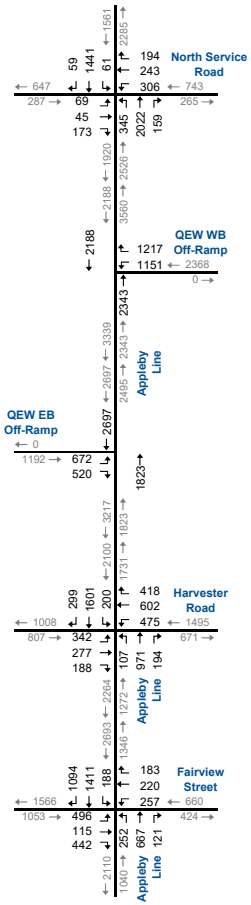
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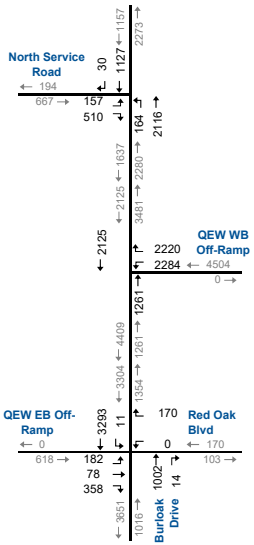


Phase 1 - 2040 Total Traffic Volumes
PM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
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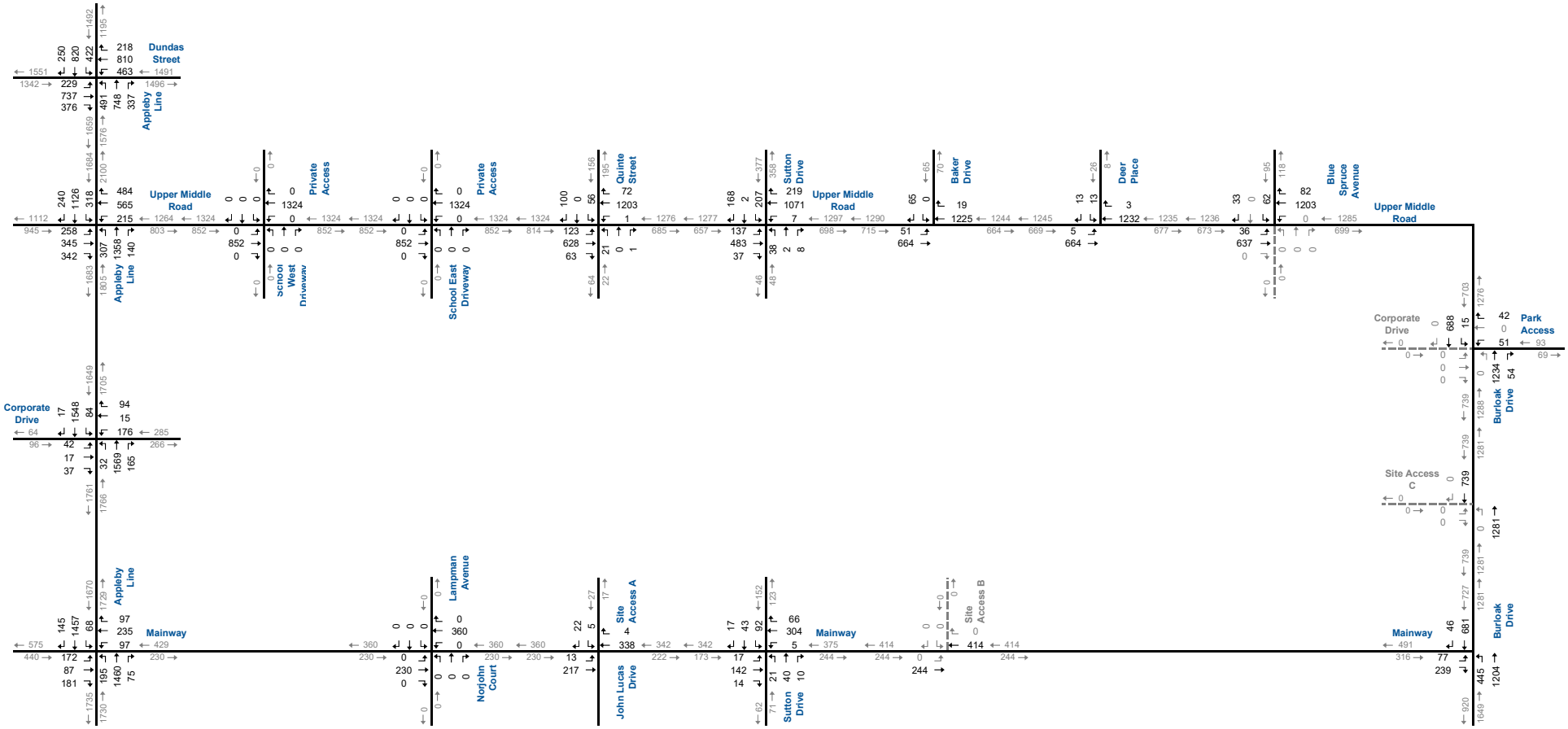




Phase 1 - 2040 Total Traffic Volumes
PM Peak Hour (2/2)

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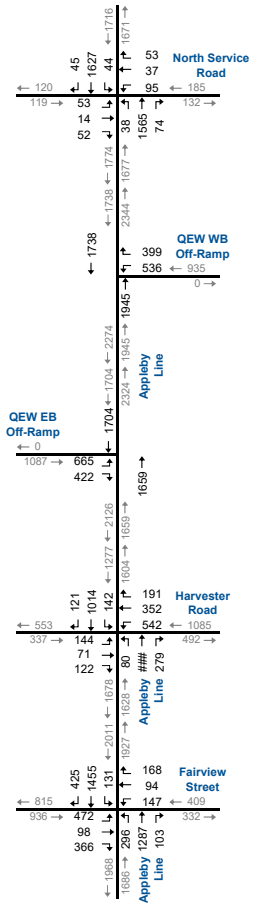
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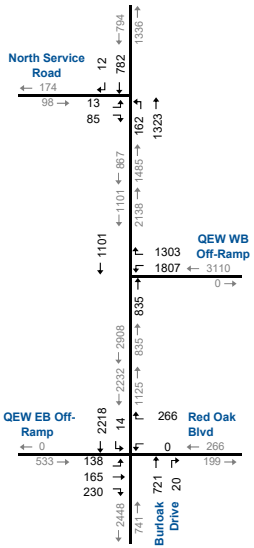


Phase 1 - 2040 Total Traffic Volumes
Saturday Peak Hour (1/2)

Bronte Creek Meadows, Burlington
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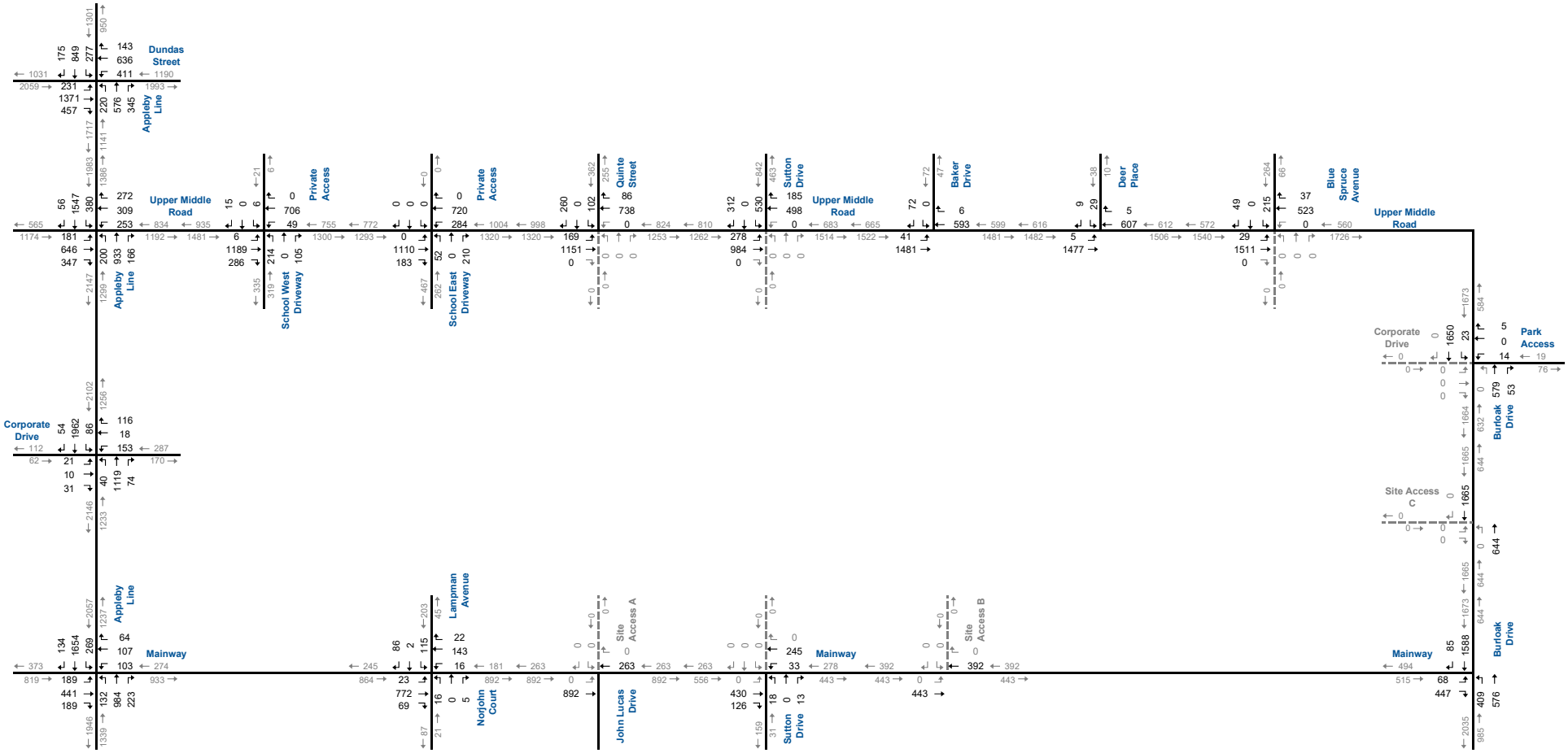


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Phase 1 - 2040 Total Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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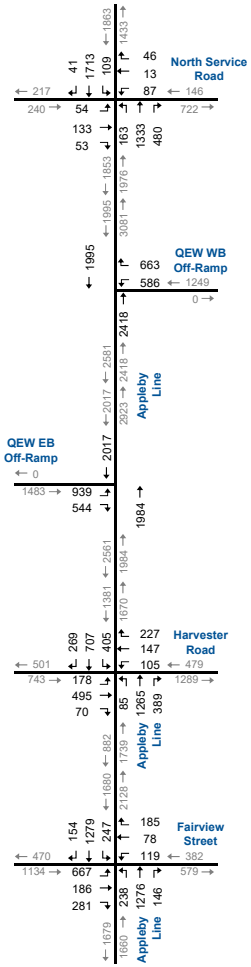
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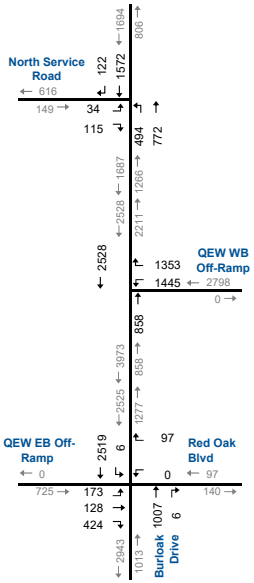


2045 Background Traffic Volumes
AM Peak Hour (1/2)

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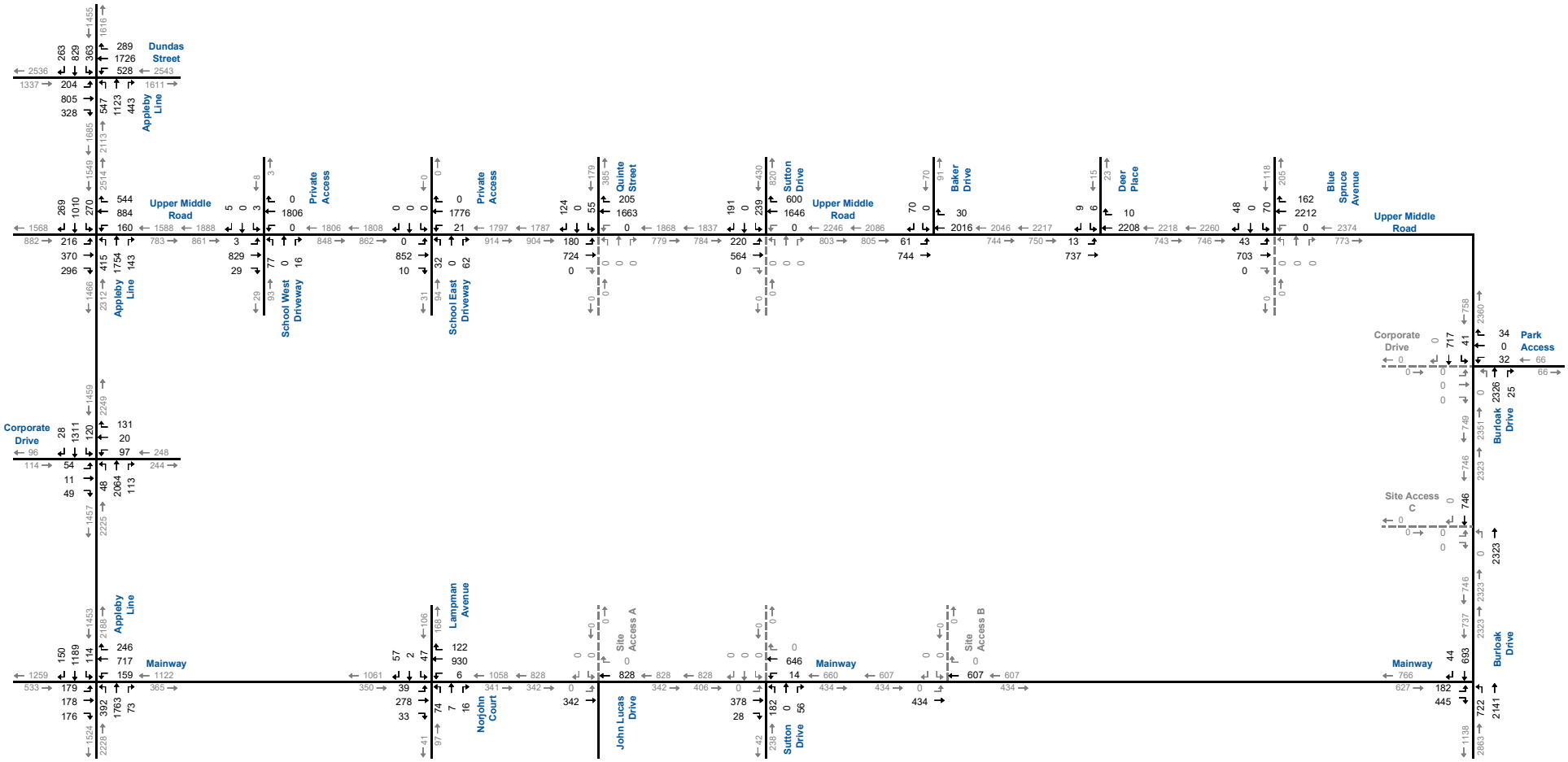




2045 Background Traffic Volumes
AM Peak Hour (2/2)

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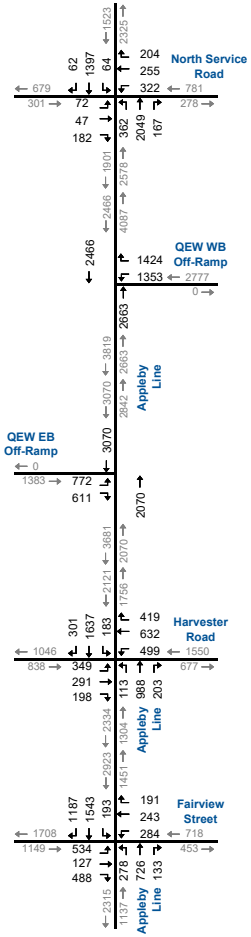
Appendix I

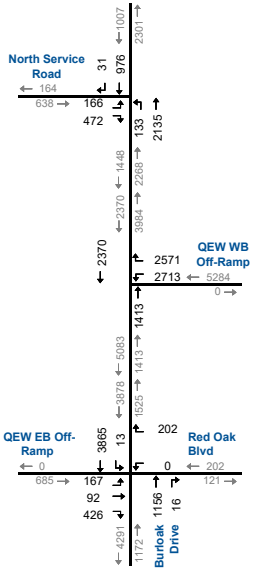


2045 Background Traffic Volumes
PM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

Appendix I



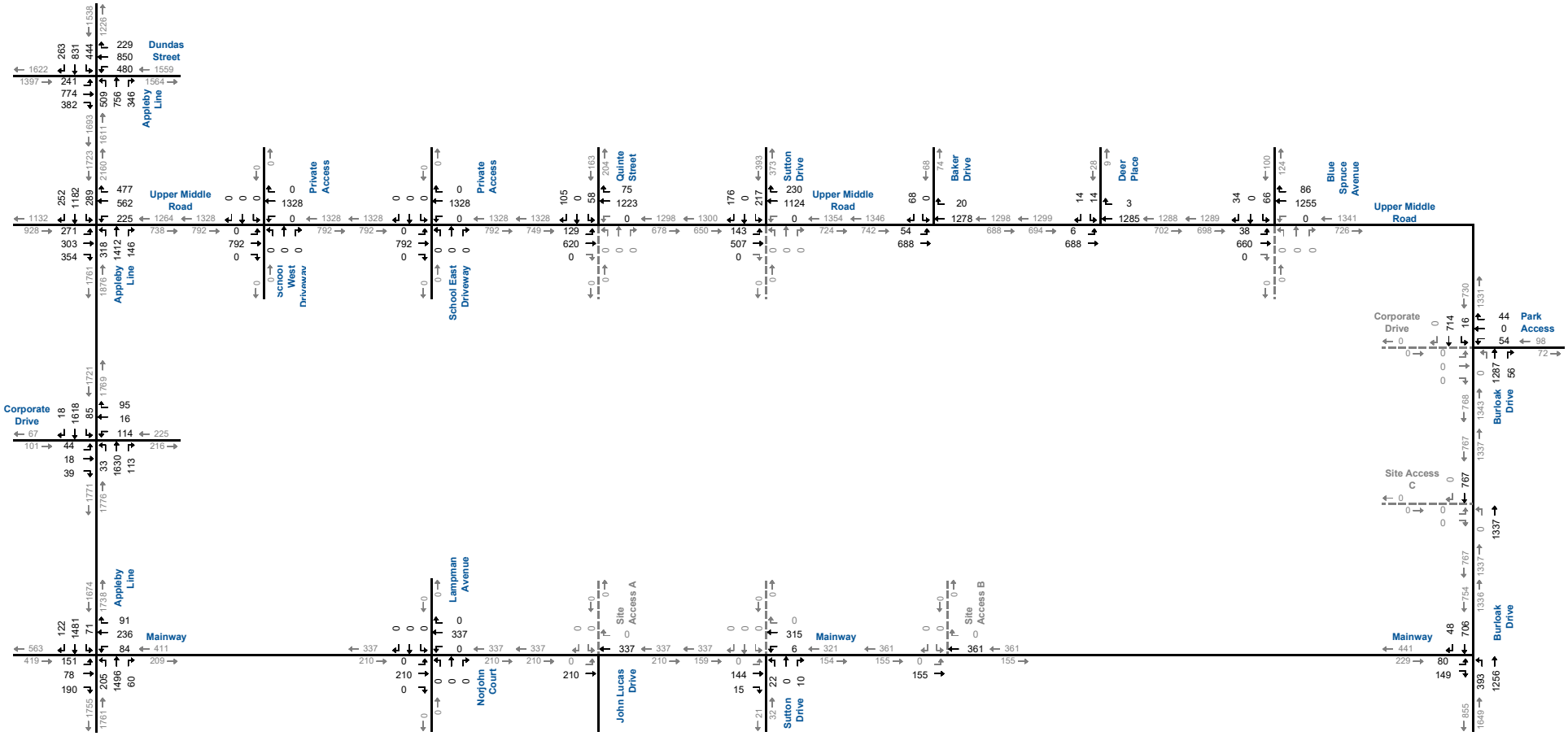


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2045 Background Traffic Volumes
PM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

Appendix I

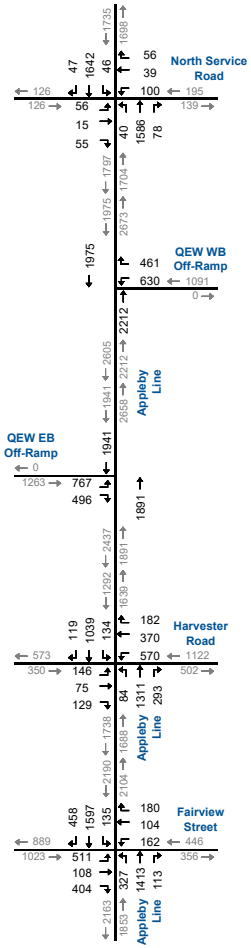


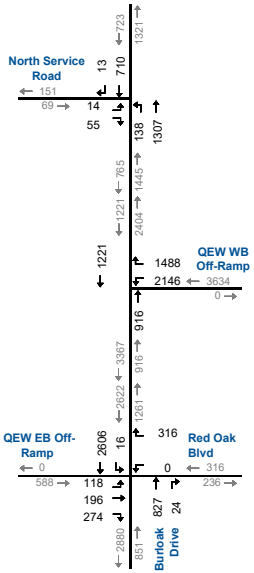
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2045 Background Traffic Volumes
Saturday Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

Appendix I

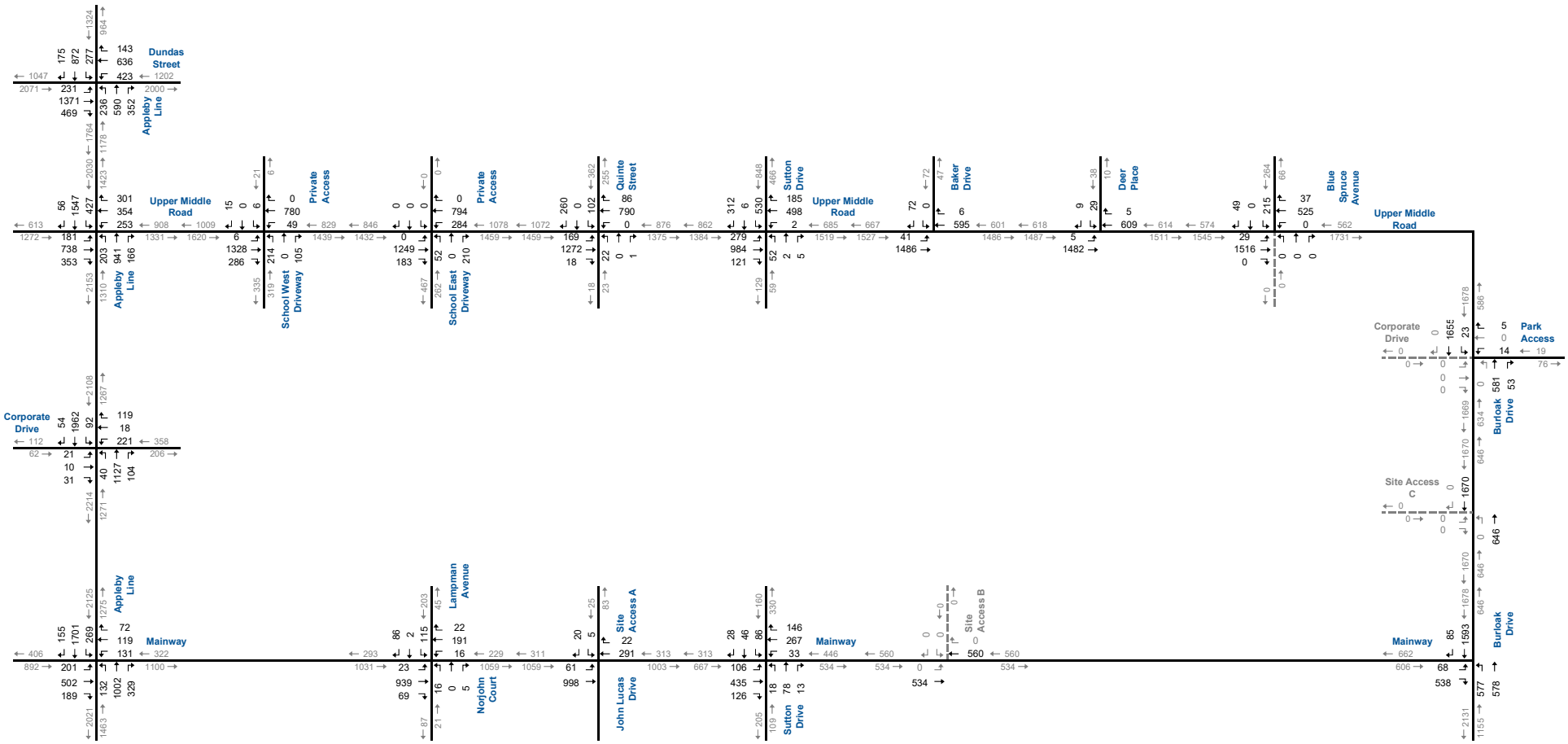




2045 Background Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

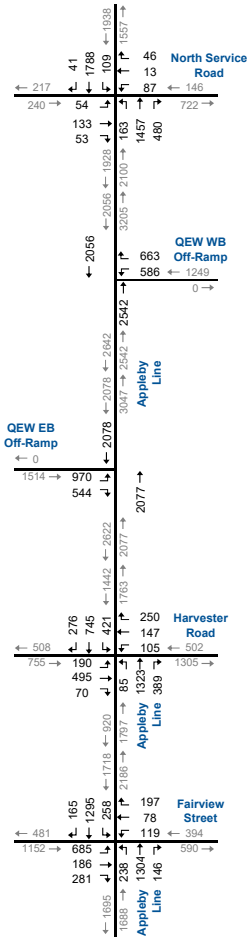
Appendix I

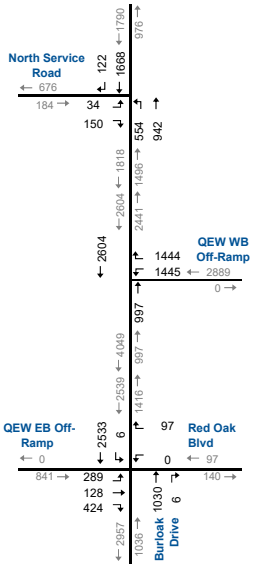


Phase 1 - 2045 Total Traffic Volumes
AM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

Appendix I

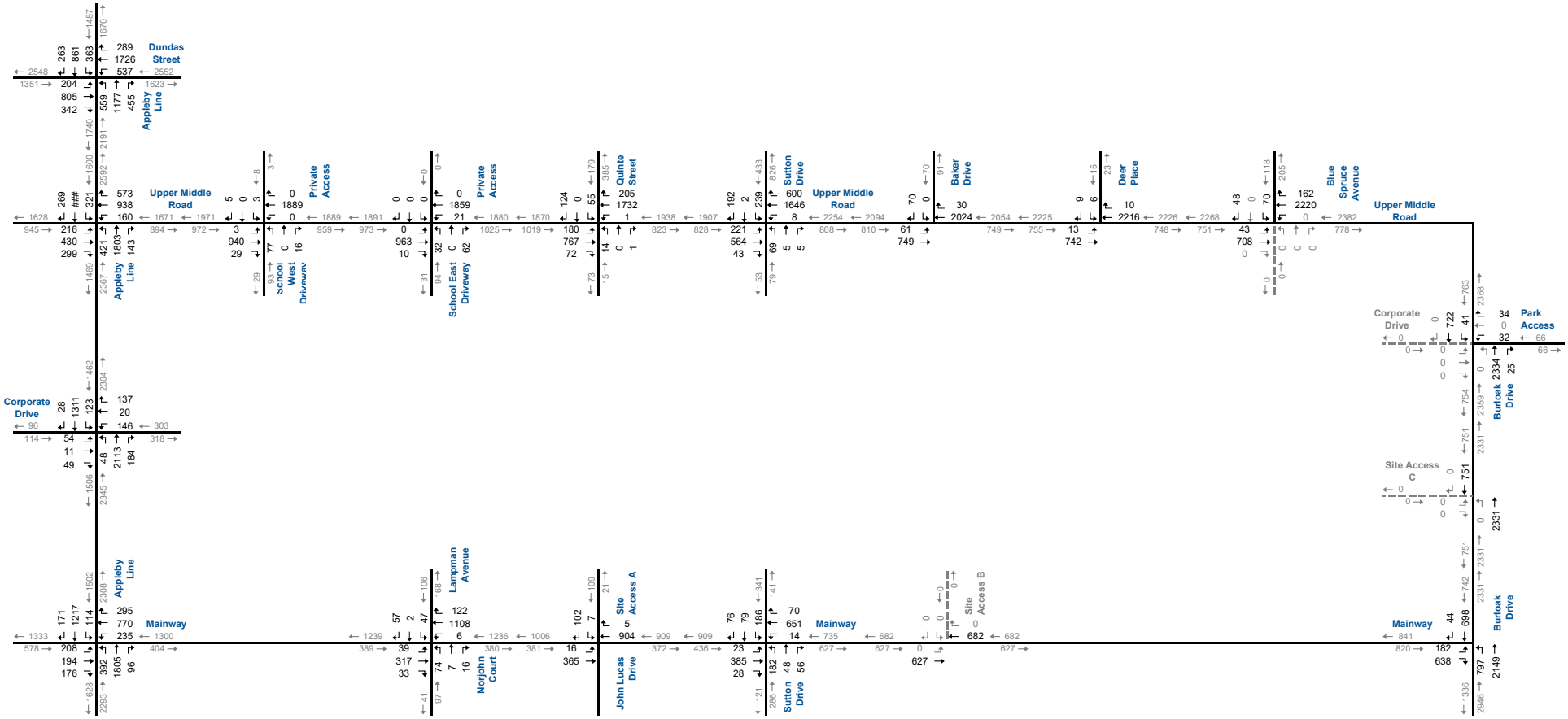




Phase 1 - 2045 Total Traffic Volumes
AM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

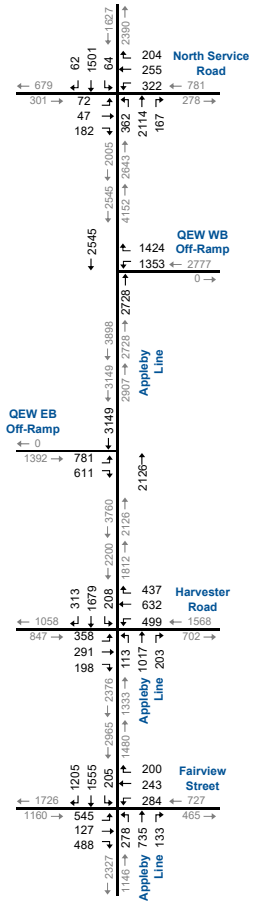
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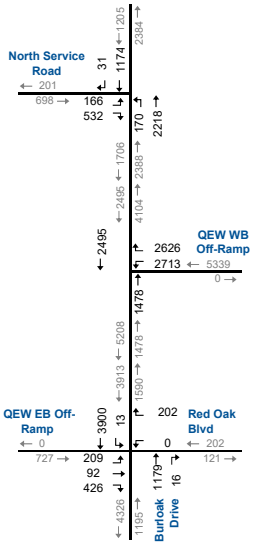


Phase 1 - 2045 Total Traffic Volumes
PM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

Appendix I



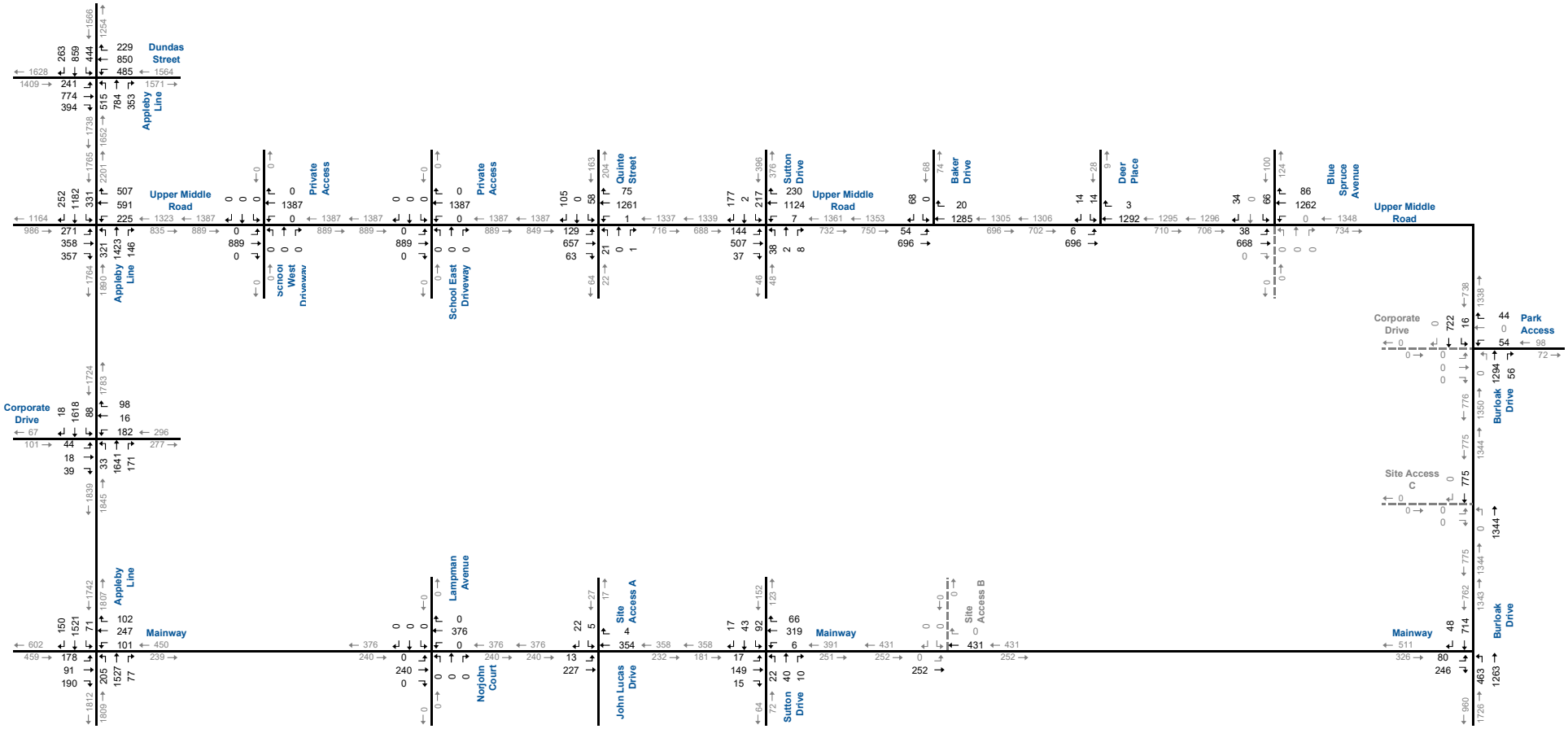


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Phase 1 - 2045 Total Traffic Volumes
PM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
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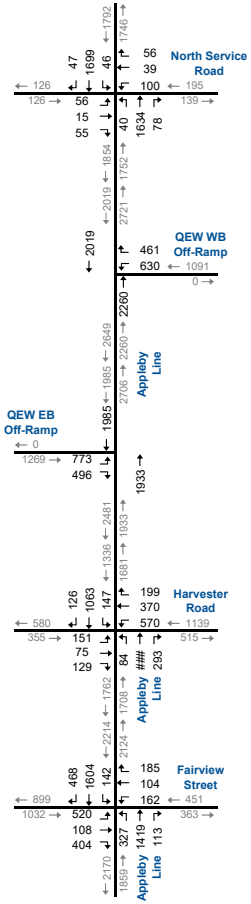
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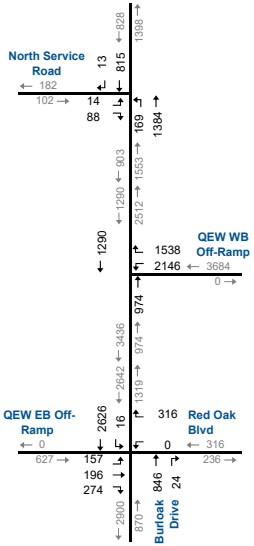


Phase 1 - 2045 Total Traffic Volumes
Saturday Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

Appendix I



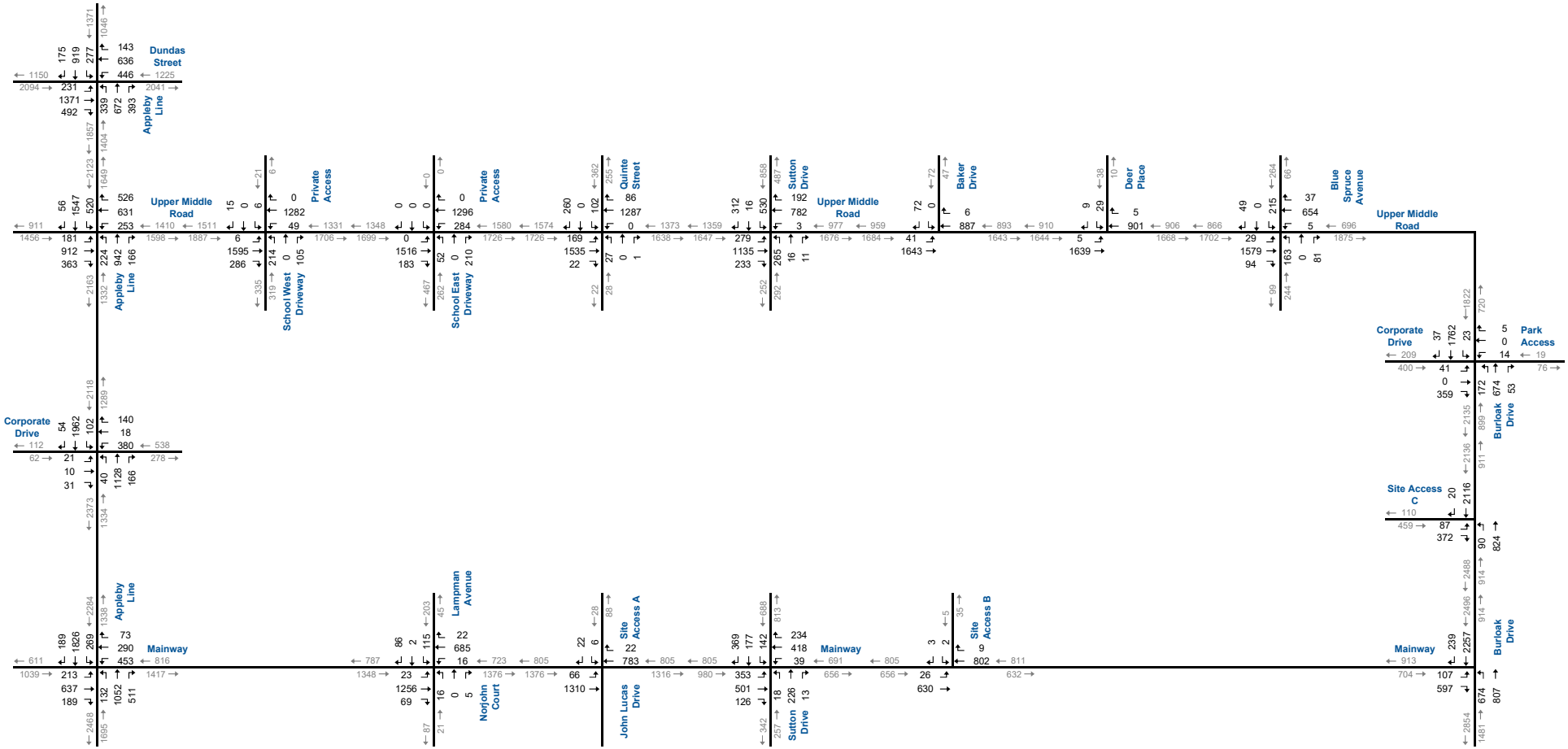


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Phase 1 - 2045 Total Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

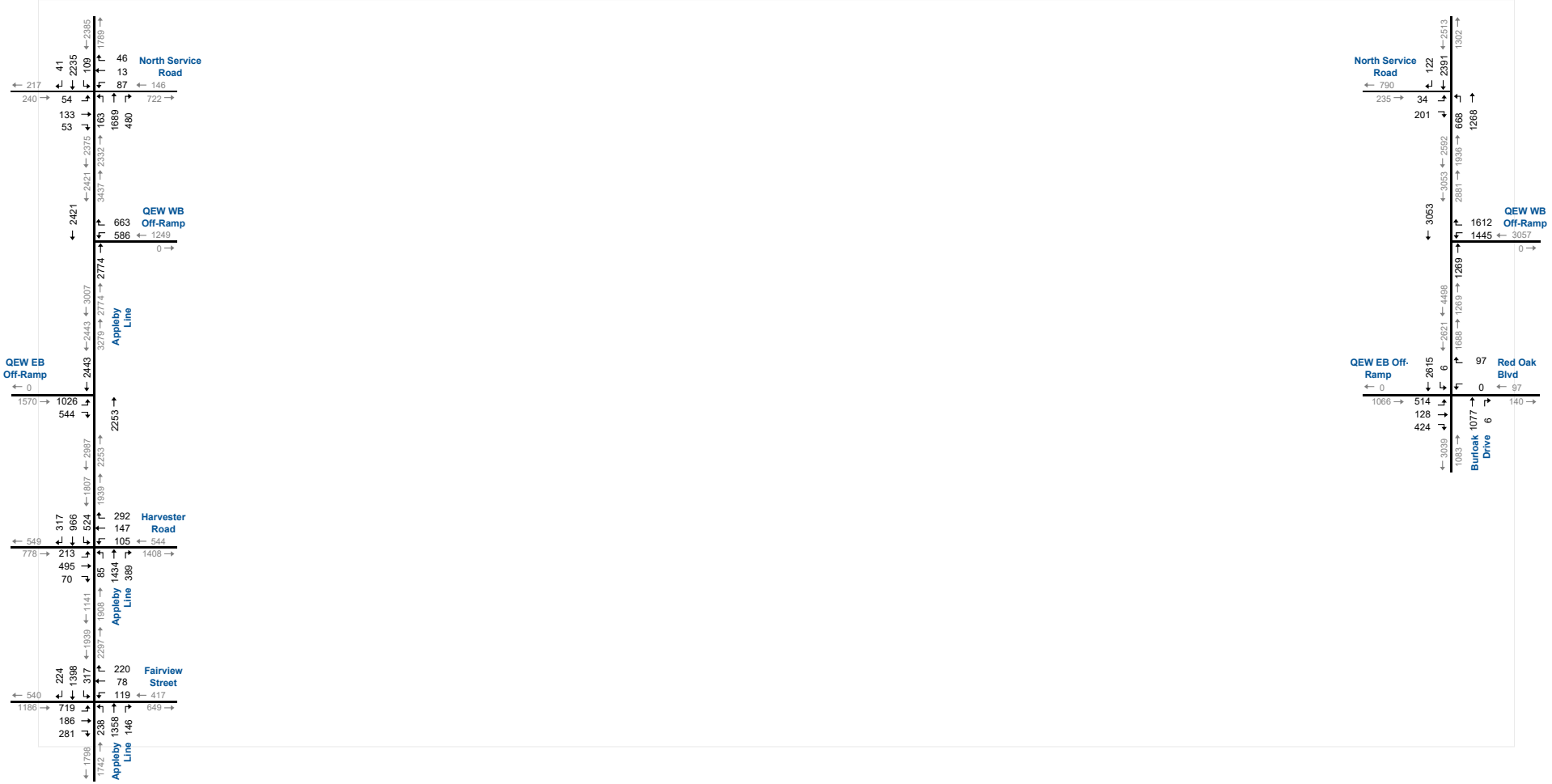
Appendix I



Full Build - 2045 Total Traffic Volumes
AM Peak Hour (1/2)

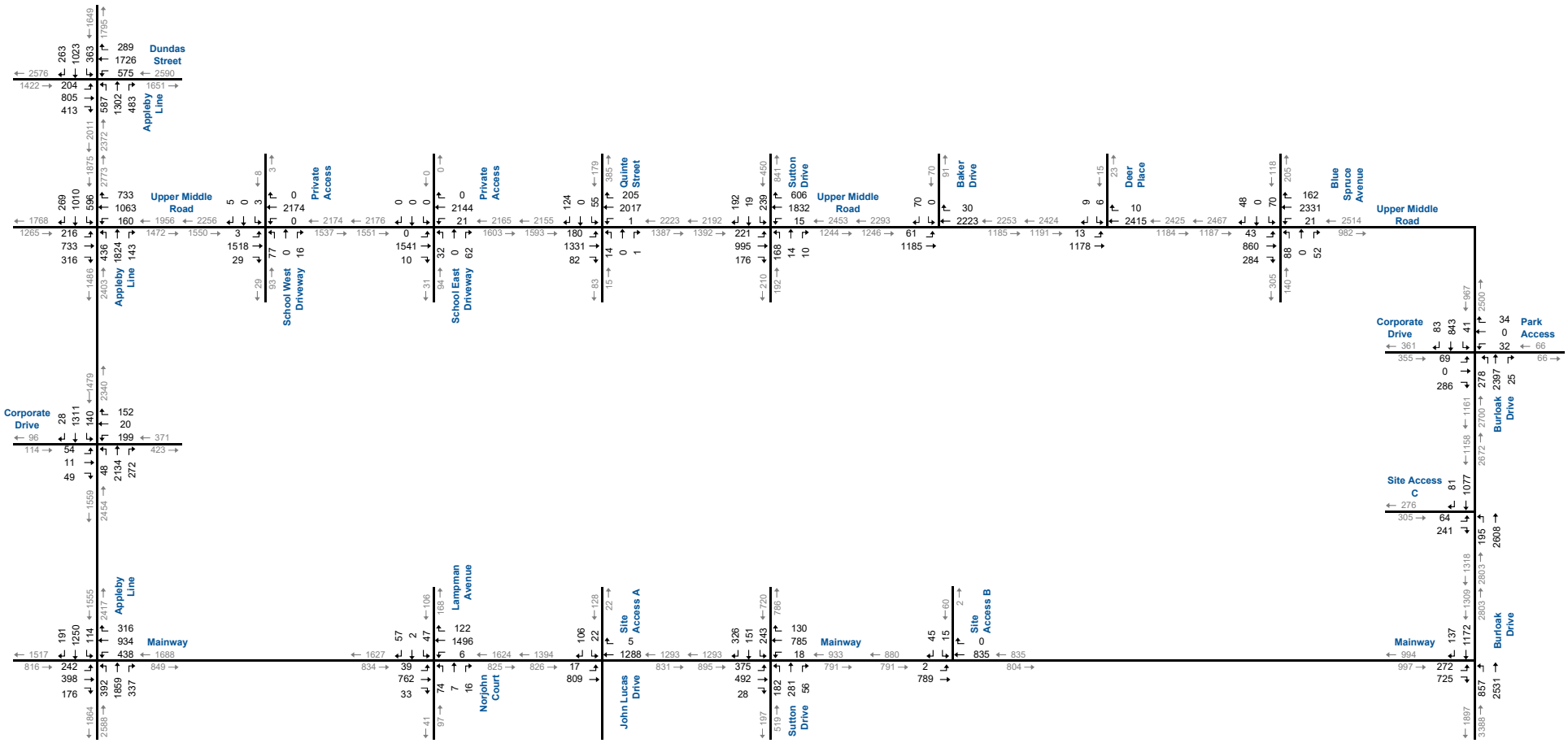
Bronte Creek Meadows, Burlington
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Appendix I



Full Build - 2045 Total Traffic Volumes
AM Peak Hour (2/2)

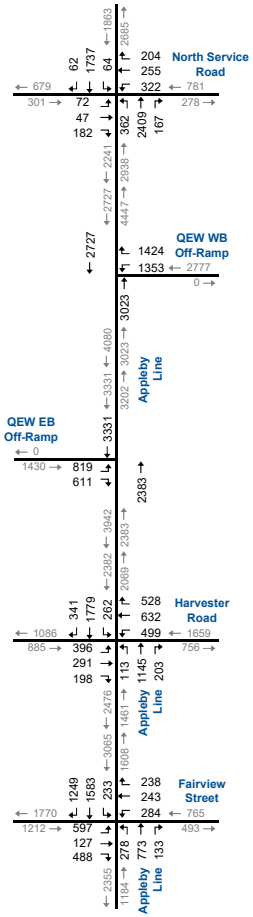
Appendix I

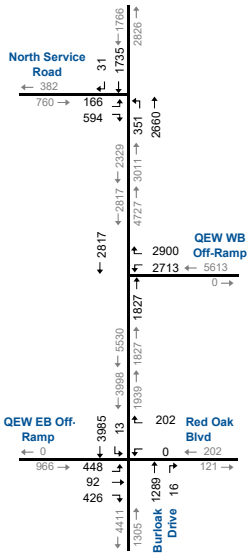


Full Build - 2045 Total Traffic Volumes
PM Peak Hour (1/2)

Bronte Creek Meadows, Burlington
230553

Appendix I

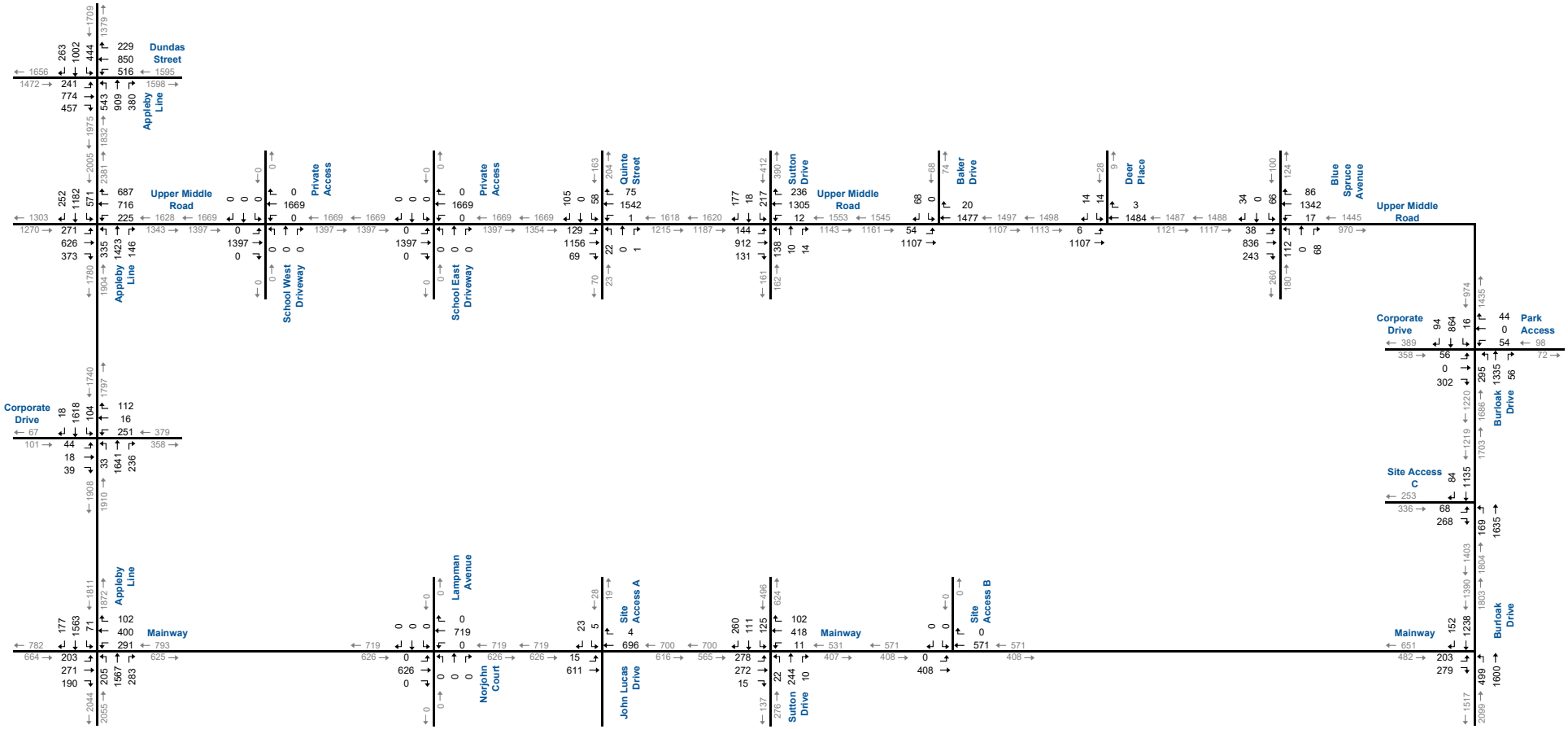




Full Build - 2045 Total Traffic Volumes
PM Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

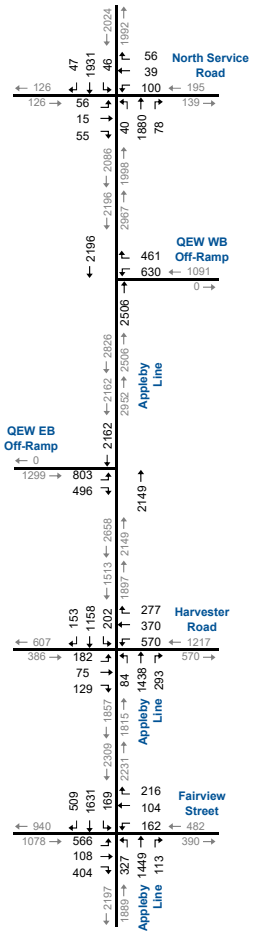
Appendix I

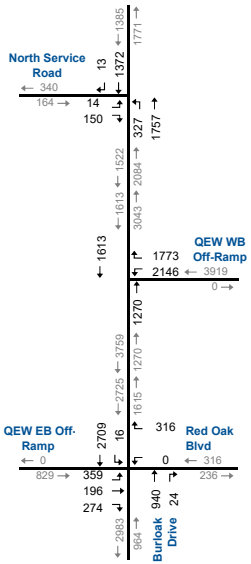


Full Build - 2045 Total Traffic Volumes
Saturday Peak Hour (1/2)

Bronte Creek Meadows, Burlington
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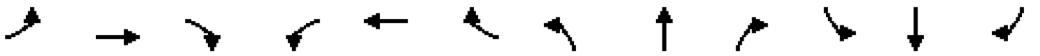
Full Build - 2045 Total Traffic Volumes
Saturday Peak Hour (2/2)

Bronte Creek Meadows, Burlington
230553

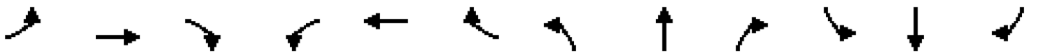
Appendix I

Appendix J

Traffic Operation Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	1093	353	327	512	116	165	453	256	225	681	142
Future Volume (vph)	181	1093	353	327	512	116	165	453	256	225	681	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3360	5085	1533	3211	4803	1458	3364	4848	1485	3360	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			365			123			219			151
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	193	1163	376	348	545	123	176	482	272	239	724	151
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	1163	376	348	545	123	176	482	272	239	724	151
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	20.0	61.0	61.0	25.0	64.0	64.0	24.0	30.0	30.0	24.0	32.0	32.0
Total Split (%)	14.1%	43.0%	43.0%	17.6%	45.1%	45.1%	16.9%	21.1%	21.1%	16.9%	22.5%	22.5%
Maximum Green (s)	15.0	53.6	53.6	20.0	56.6	56.6	19.0	22.6	22.6	19.0	24.6	24.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.1	42.1	42.1	19.5	47.5	47.5	14.6	38.5	38.5	17.2	41.0	41.0
Actuated g/C Ratio	0.10	0.30	0.30	0.14	0.33	0.33	0.10	0.27	0.27	0.12	0.29	0.29
v/c Ratio	0.58	0.77	0.53	0.79	0.34	0.22	0.51	0.37	0.48	0.59	0.50	0.28
Control Delay (s/veh)	68.3	49.1	6.7	72.9	35.6	5.7	65.1	44.7	14.2	64.8	45.0	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.3	49.1	6.7	72.9	35.6	5.7	65.1	44.7	14.2	64.8	45.0	7.9
LOS	E	D	A	E	D	A	E	D	B	E	D	A
Approach Delay (s/veh)		42.1			44.8			39.6			44.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	29.1	116.7	2.4	55.2	46.9	0.0	26.5	44.9	12.6	36.0	67.8	0.0
Queue Length 95th (m)	43.0	125.4	27.0	#74.6	54.3	14.5	38.6	63.5	46.4	49.5	91.2	19.7
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	355	1919	805	452	1982	673	450	1313	562	460	1441	549
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.61	0.47	0.77	0.27	0.18	0.39	0.37	0.48	0.52	0.50	0.28

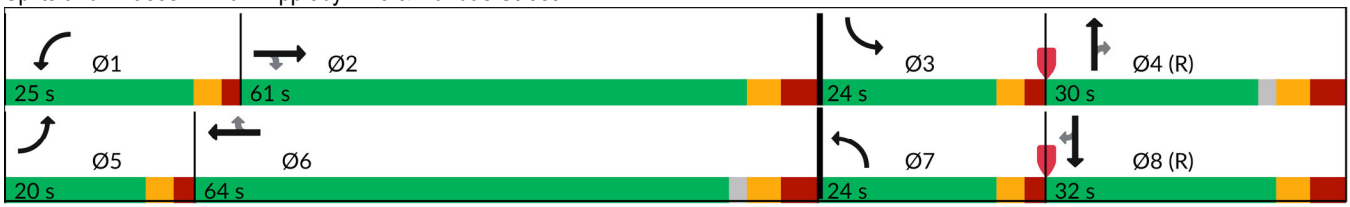
Intersection Summary	
Area Type:	Other
Cycle Length: 142	
Actuated Cycle Length: 142	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 42.7	Intersection LOS: D

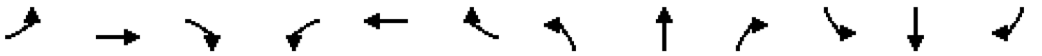
Intersection Capacity Utilization 92.3% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

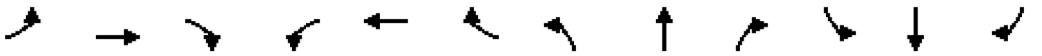




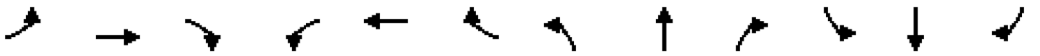
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	1093	353	327	512	116	165	453	256	225	681	142
Future Volume (vph)	181	1093	353	327	512	116	165	453	256	225	681	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	193	1163	376	348	545	123	176	482	272	239	724	151
RTOR Reduction (vph)	0	0	257	0	0	82	0	0	160	0	0	107
Lane Group Flow (vph)	193	1163	119	348	545	41	176	482	112	239	724	44
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.1	42.1	42.1	19.5	47.5	47.5	14.6	38.4	38.4	17.2	41.0	41.0
Effective Green, g (s)	14.1	42.1	42.1	19.5	47.5	47.5	14.6	38.4	38.4	17.2	41.0	41.0
Actuated g/C Ratio	0.10	0.30	0.30	0.14	0.33	0.33	0.10	0.27	0.27	0.12	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	334	1507	454	441	1606	487	346	1311	401	407	1440	442
v/s Ratio Prot	0.06	c0.23		c0.11	0.11		0.05	0.10		c0.07	c0.15	
v/s Ratio Perm			0.08			0.03			0.08			0.03
v/c Ratio	0.58	0.77	0.26	0.79	0.34	0.08	0.51	0.37	0.28	0.59	0.50	0.10
Uniform Delay, d1	61.1	45.6	38.1	59.3	35.5	32.4	60.3	42.0	40.9	59.0	42.0	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	2.5	0.3	10.5	0.1	0.1	2.5	0.8	1.7	3.3	1.3	0.4
Delay (s)	64.9	48.1	38.4	69.7	35.6	32.4	62.8	42.8	42.6	62.4	43.3	37.4
Level of Service	E	D	D	E	D	C	E	D	D	E	D	D
Approach Delay (s/veh)		47.9			46.9			46.5			46.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	92.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	471	252	184	230	206	143	662	113	283	1141	38
Future Volume (vph)	137	471	252	184	230	206	143	662	113	283	1141	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.98		0.99		0.98	1.00	1.00		1.00	1.00	
Frt		0.948				0.850		0.978			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3323	0	1736	3539	1553	3400	3242	0	1752	3449	0
Flt Permitted	0.593			0.129			0.950			0.138		
Satd. Flow (perm)	1066	3323	0	234	3539	1521	3387	3242	0	254	3449	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		80				229		17			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	152	523	280	204	256	229	159	736	126	314	1268	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	803	0	204	256	229	159	862	0	314	1310	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	38.0		16.0	38.0	38.0	13.0	43.0		23.0	53.0	
Total Split (%)	13.3%	31.7%		13.3%	31.7%	31.7%	10.8%	35.8%		19.2%	44.2%	
Maximum Green (s)	12.0	31.6		12.0	31.6	31.6	8.0	36.5		19.0	46.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	43.5	30.1		45.4	31.0	31.0	8.3	39.0		63.5	47.7	
Actuated g/C Ratio	0.36	0.25		0.38	0.26	0.26	0.07	0.33		0.53	0.40	
v/c Ratio	0.34	0.90		0.86	0.28	0.41	0.68	0.81		0.87	0.95	
Control Delay (s/veh)	25.4	53.1		69.6	33.1	5.8	70.0	55.2		49.2	51.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	25.4	53.1		69.6	33.1	5.8	70.0	55.2		49.2	51.2	
LOS	C	D		E	C	A	E	E		D	D	
Approach Delay (s/veh)		48.7			34.8			57.5			50.8	
Approach LOS		D			C			E			D	
Queue Length 50th (m)	24.6	91.7		36.9	23.1	3.1	21.9	87.0		52.3	171.1	
Queue Length 95th (m)	40.5	#124.3		#77.5	34.2	9.8	#37.1	#150.5		#103.7	#224.5	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	459	933		238	931	569	235	1064		372	1374	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.33	0.86		0.86	0.27	0.40	0.68	0.81		0.84	0.95	

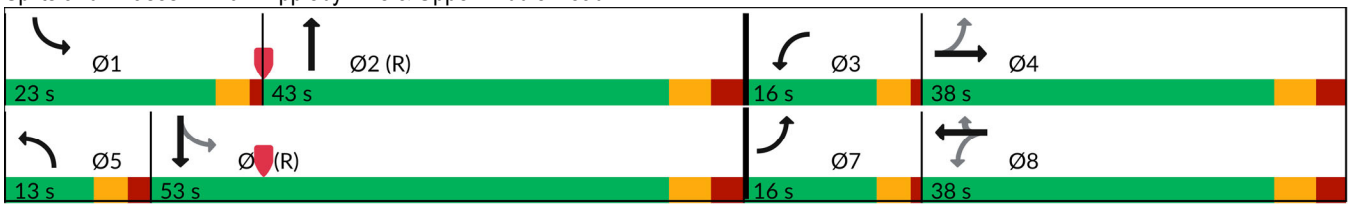
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 49.4		Intersection LOS: D	

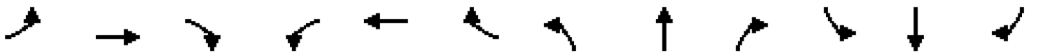
Intersection Capacity Utilization 89.8% ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road



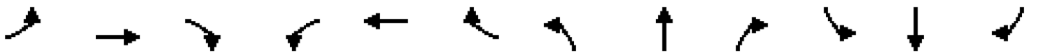


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	471	252	184	230	206	143	662	113	283	1141	38
Future Volume (vph)	137	471	252	184	230	206	143	662	113	283	1141	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1713	3321		1735	3539	1521	3400	3242		1752	3449	
Flt Permitted	0.59	1.00		0.13	1.00	1.00	0.95	1.00		0.14	1.00	
Satd. Flow (perm)	1070	3321		235	3539	1521	3400	3242		255	3449	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	152	523	280	204	256	229	159	736	126	314	1268	42
RTOR Reduction (vph)	0	60	0	0	0	170	0	11	0	0	2	0
Lane Group Flow (vph)	152	743	0	204	256	59	159	851	0	314	1308	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	41.1	30.1		43.1	31.1	31.1	8.3	38.9		61.0	47.7	
Effective Green, g (s)	41.1	30.1		43.1	31.1	31.1	8.3	38.9		61.0	47.7	
Actuated g/C Ratio	0.34	0.25		0.36	0.26	0.26	0.07	0.32		0.51	0.40	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	425	833		234	917	394	235	1050		355	1370	
v/s Ratio Prot	0.03	0.22		c0.09	0.07		0.05	0.26		c0.13	c0.38	
v/s Ratio Perm	0.09			c0.23		0.04				0.32		
v/c Ratio	0.36	0.89		0.87	0.28	0.15	0.68	0.81		0.88	0.95	
Uniform Delay, d1	28.5	43.4		30.7	35.5	34.3	54.5	37.2		27.6	35.1	
Progression Factor	1.00	1.00		1.46	0.91	0.81	1.03	1.31		1.00	1.00	
Incremental Delay, d2	0.5	11.8		27.1	0.2	0.2	7.0	6.3		22.0	15.7	
Delay (s)	29.0	55.2		72.0	32.4	28.1	62.9	55.1		49.6	50.8	
Level of Service	C	E		E	C	C	E	E		D	D	
Approach Delay (s/veh)		51.0			42.7			56.3			50.6	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	768	189	33	453	0	141	0	69	4	0	10
Future Volume (vph)	4	768	189	33	453	0	141	0	69	4	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99						0.99	0.98		0.99	
Frt		0.970							0.850		0.902	
Flt Protected	0.950			0.950				0.950			0.986	
Satd. Flow (prot)	1805	3377	0	1805	3471	0	0	1752	1615	0	1557	0
Flt Permitted	0.430			0.139				0.746			0.924	
Satd. Flow (perm)	803	3377	0	264	3471	0	0	1369	1585	0	1457	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		39							90		64	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	5	997	245	43	588	0	183	0	90	5	0	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	5	1242	0	43	588	0	0	183	90	0	18	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

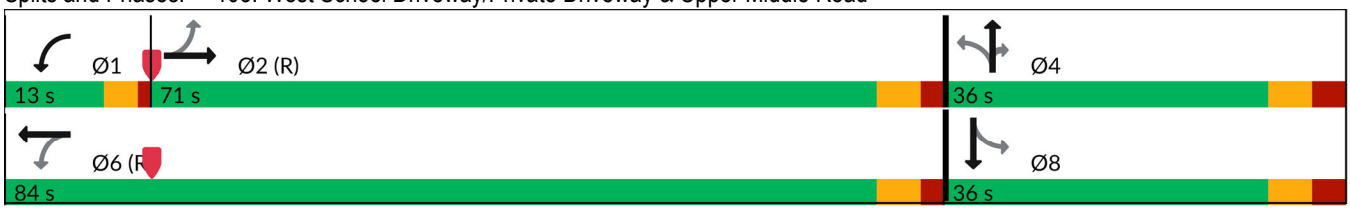


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	65.0	65.0		9.0	78.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	69.1	69.1		80.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.58	0.58		0.67	0.65			0.24	0.24		0.24	
v/c Ratio	0.01	0.63		0.16	0.26			0.55	0.20		0.05	
Control Delay (s/veh)	14.3	17.4		7.9	9.2			47.3	8.5		0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	14.3	17.4		7.9	9.2			47.3	8.5		0.2	
LOS	B	B		A	A			D	A		A	
Approach Delay (s/veh)		17.4			9.1			34.5			0.2	
Approach LOS		B			A			C			A	
Queue Length 50th (m)	0.5	85.5		4.2	36.1			39.9	0.0		0.0	
Queue Length 95th (m)	m0.9	81.9		m6.9	m38.2			53.6	8.8		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	462	1960		291	2256			330	451		400	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.01	0.63		0.15	0.26			0.55	0.20		0.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 17.0	Intersection LOS: B

Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	768	189	33	453	0	141	0	69	4	0	10
Future Volume (vph)	4	768	189	33	453	0	141	0	69	4	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.98	1.00		1.00	1.00			0.99	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1774	3379		1805	3471			1744	1585		1556	
Flt Permitted	0.43	1.00		0.14	1.00			0.75	1.00		0.92	
Satd. Flow (perm)	803	3379		265	3471			1369	1585		1458	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	5	997	245	43	588	0	183	0	90	5	0	13
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	68	0	14	0
Lane Group Flow (vph)	5	1225	0	43	588	0	0	183	22	0	4	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	68.3	68.3		78.0	78.0			29.0	29.0		29.0	
Effective Green, g (s)	68.3	68.3		78.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.65	0.65			0.24	0.24		0.24	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	457	1923		245	2256			330	383		352	
v/s Ratio Prot		c0.36		0.01	c0.17							
v/s Ratio Perm	0.01			0.11				c0.13	0.01		0.00	
v/c Ratio	0.01	0.64		0.18	0.26			0.55	0.06		0.01	
Uniform Delay, d1	11.2	17.5		11.0	8.8			39.8	35.0		34.6	
Progression Factor	1.17	0.94		0.97	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.0	1.2		0.3	0.3			6.6	0.3		0.1	
Delay (s)	13.2	17.7		11.0	9.1			46.4	35.3		34.7	
Level of Service	B	B		B	A			D	D		C	
Approach Delay (s/veh)		17.7			9.3			42.7			34.7	
Approach LOS		B			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	716	121	188	462	34	139
Future Volume (vph)	716	121	188	462	34	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.978					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3437	0	1787	3471	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3437	0	1787	3471	1805	1615
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	1008	170	265	651	48	196
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1178	0	265	651	48	196
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

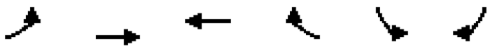
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	716	121	188	462	34	139
Future Volume (Veh/h)	716	121	188	462	34	139
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1008	170	265	651	48	196
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.78		0.78	0.78
vC, conflicting volume			1190		1961	601
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			678		1666	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			63		0	77
cM capacity (veh/h)			707		43	842

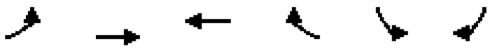
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	672	506	265	326	326	48	196
Volume Left	0	0	265	0	0	48	0
Volume Right	0	170	0	0	0	0	196
cSH	1700	1700	707	1700	1700	43	842
Volume to Capacity	0.40	0.30	0.37	0.19	0.19	1.11	0.23
Queue Length 95th (m)	0.0	0.0	13.9	0.0	0.0	36.5	7.2
Control Delay (s/veh)	0.0	0.0	13.1	0.0	0.0	320.7	10.6
Lane LOS			B			F	B
Approach Delay (s/veh)	0.0		3.8			71.6	
Approach LOS						F	

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	110	745	479	56	64	167
Future Volume (vph)	110	745	479	56	64	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.902	
Flt Protected	0.950				0.986	
Satd. Flow (prot)	1752	3539	3445	0	1666	0
Flt Permitted	0.950				0.986	
Satd. Flow (perm)	1752	3539	3445	0	1666	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	29			29		1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	3%	4%	0%	2%
Adj. Flow (vph)	145	980	630	74	84	220
Shared Lane Traffic (%)						
Lane Group Flow (vph)	145	980	704	0	304	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

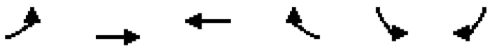
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.3%		ICU Level of Service A	
Analysis Period (min) 15			



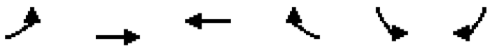
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	110	745	479	56	64	167
Future Volume (Veh/h)	110	745	479	56	64	167
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	145	980	630	74	84	220
Pedestrians		1			29	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	733				1476	382
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	636				1411	270
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				18	68
cM capacity (veh/h)	877				103	681

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	145	490	490	420	284	304
Volume Left	145	0	0	0	0	84
Volume Right	0	0	0	0	74	220
cSH	877	1700	1700	1700	1700	267
Volume to Capacity	0.17	0.29	0.29	0.25	0.17	1.14
Queue Length 95th (m)	4.7	0.0	0.0	0.0	0.0	106.2
Control Delay (s/veh)	9.9	0.0	0.0	0.0	0.0	139.1
Lane LOS	A					F
Approach Delay (s/veh)	1.3			0.0		139.1
Approach LOS						F

Intersection Summary			
Average Delay	20.5		
Intersection Capacity Utilization	45.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	184	631	319	122	350	206
Future Volume (vph)	184	631	319	122	350	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	0.98		0.98		0.98	
Frt			0.959		0.950	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1703	3574	3281	0	1711	0
Flt Permitted	0.364				0.969	
Satd. Flow (perm)	638	3574	3281	0	1688	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			56		28	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	24			24	16	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Adj. Flow (vph)	219	751	380	145	417	245
Shared Lane Traffic (%)						
Lane Group Flow (vph)	219	751	525	0	662	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	13.0	68.0	55.0		52.0	
Total Split (%)	10.8%	56.7%	45.8%		43.3%	
Maximum Green (s)	9.0	62.0	49.0		45.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	64.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.53	0.52	0.41		0.38	
v/c Ratio	0.52	0.41	0.38		1.02	
Control Delay (s/veh)	11.2	9.1	23.0		76.1	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	11.2	9.1	23.0		76.1	
LOS	B	A	C		E	
Approach Delay (s/veh)		9.6	23.0		76.1	
Approach LOS		A	C		E	
Queue Length 50th (m)	10.8	21.1	42.8		~164.6	
Queue Length 95th (m)	16.3	27.2	52.7		#215.8	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	420	1846	1372		650	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.52	0.41	0.38		1.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 33.3	Intersection LOS: C

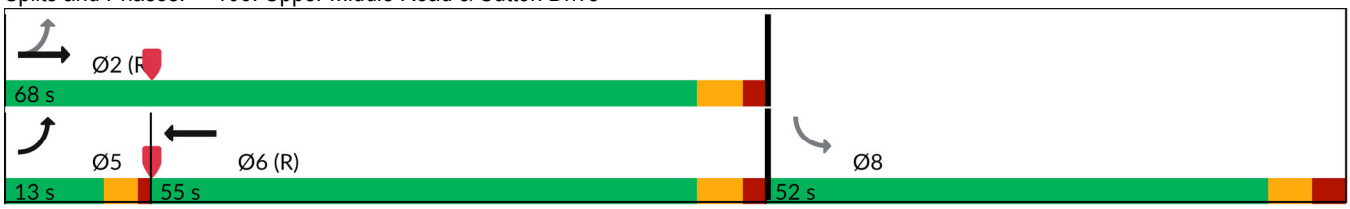
Intersection Capacity Utilization 77.4% ICU Level of Service D

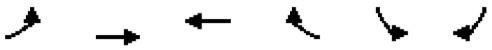
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 106: Upper Middle Road & Sutton Drive

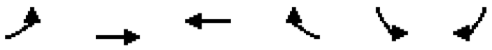




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	184	631	319	122	350	206
Future Volume (vph)	184	631	319	122	350	206
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frpb, ped/bikes	1.00	1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00	1.00		0.99	
Frt	1.00	1.00	0.96		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1691	3574	3280		1689	
Flt Permitted	0.36	1.00	1.00		0.97	
Satd. Flow (perm)	647	3574	3280		1689	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	219	751	380	145	417	245
RTOR Reduction (vph)	0	0	33	0	18	0
Lane Group Flow (vph)	219	751	492	0	645	0
Confl. Peds. (#/hr)	24			24	16	6
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	62.0	62.0	49.0		45.0	
Effective Green, g (s)	62.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.52	0.52	0.41		0.38	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	412	1846	1339		633	
v/s Ratio Prot	c0.04	0.21	0.15			
v/s Ratio Perm	c0.23				c0.38	
v/c Ratio	0.53	0.41	0.37		1.02	
Uniform Delay, d1	16.8	17.7	24.7		37.5	
Progression Factor	0.45	0.47	1.00		1.00	
Incremental Delay, d2	1.2	0.6	0.8		40.4	
Delay (s)	8.7	9.0	25.5		77.9	
Level of Service	A	A	C		E	
Approach Delay (s/veh)		8.9	25.5		77.9	
Approach LOS		A	C		E	

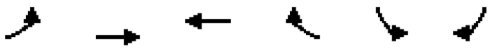
Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	959	382	4	0	48
Future Volume (vph)	27	959	382	4	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	3574	3469	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	3574	3469	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	30	1078	429	4	0	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	1078	433	0	0	54
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

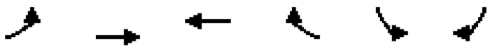
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	959	382	4	0	48
Future Volume (Veh/h)	27	959	382	4	0	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	1078	429	4	0	54
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.88	
vC, conflicting volume	451				1048	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	451				785	235
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	97				100	93
cM capacity (veh/h)	1049				281	756

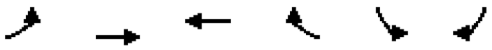
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	30	539	539	286	147	54
Volume Left	30	0	0	0	0	0
Volume Right	0	0	0	0	4	54
cSH	1049	1700	1700	1700	1700	756
Volume to Capacity	0.03	0.32	0.32	0.17	0.09	0.07
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0	1.8
Control Delay (s/veh)	8.5	0.0	0.0	0.0	0.0	10.1
Lane LOS	A					B
Approach Delay (s/veh)	0.2			0.0		10.1
Approach LOS						B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	3	957	391	3	19	6
Future Volume (vph)	3	957	391	3	19	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.966	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1805	3574	3494	0	1627	0
Flt Permitted	0.950				0.964	
Satd. Flow (perm)	1805	3574	3494	0	1627	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	3	1040	425	3	21	7
Shared Lane Traffic (%)						
Lane Group Flow (vph)	3	1040	428	0	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.5%		ICU Level of Service A	
Analysis Period (min) 15			

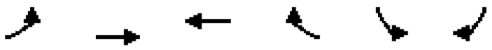


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	957	391	3	19	6
Future Volume (Veh/h)	3	957	391	3	19	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1040	425	3	21	7
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	442				967	228
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	442				967	228
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	100				91	99
cM capacity (veh/h)	1116				241	722

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	3	520	520	283	145	28
Volume Left	3	0	0	0	0	21
Volume Right	0	0	0	0	3	7
cSH	1116	1700	1700	1700	1700	290
Volume to Capacity	0.00*	0.31	0.31	0.17	0.09	0.10
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	2.5
Control Delay (s/veh)	8.2	0.0	0.0	0.0	0.0	18.8
Lane LOS	A					C
Approach Delay (s/veh)	0.0			0.0		18.8
Approach LOS						C

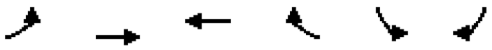
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	979	336	24	142	33
Future Volume (vph)	19	979	336	24	142	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.974	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	3574	3436	0	1735	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1703	3574	3436	0	1735	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	21	1088	373	27	158	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	1088	400	0	195	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	979	336	24	142	33
Future Volume (Veh/h)	19	979	336	24	142	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	21	1088	373	27	158	37
Pedestrians					10	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	410				983	210
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	410				983	210
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	98				34	95
cM capacity (veh/h)	1108				241	768

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	21	544	544	249	151	195
Volume Left	21	0	0	0	0	158
Volume Right	0	0	0	0	27	37
cSH	1108	1700	1700	1700	1700	277
Volume to Capacity	0.02	0.32	0.32	0.15	0.09	0.70
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	38.7
Control Delay (s/veh)	8.3	0.0	0.0	0.0	0.0	43.8
Lane LOS	A					E
Approach Delay (s/veh)	0.2			0.0		43.8
Approach LOS						E

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	3	373	35	15	1071
Future Volume (vph)	9	3	373	35	15	1071
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.969		0.987			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1773	0	3468	0	1805	3574
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	1773	0	3468	0	1805	3574
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	10	3	414	39	17	1190
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	0	453	0	17	1190
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

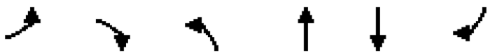
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.6%		ICU Level of Service A	
Analysis Period (min) 15			



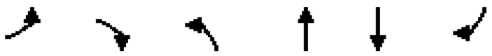
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	9	3	373	35	15	1071
Future Volume (Veh/h)	9	3	373	35	15	1071
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	10	3	414	39	17	1190
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1064	228			454	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1064	228			454	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	100			98	
cM capacity (veh/h)	218	781			1116	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	13	276	177	17	595	595
Volume Left	10	0	0	17	0	0
Volume Right	3	0	39	0	0	0
cSH	261	1700	1700	1116	1700	1700
Volume to Capacity	0.05	0.16	0.10	0.02	0.35	0.35
Queue Length 95th (m)	1.3	0.0	0.0	0.4	0.0	0.0
Control Delay (s/veh)	19.5	0.0	0.0	8.3	0.0	0.0
Lane LOS	C			A		
Approach Delay (s/veh)	19.5	0.0		0.1		
Approach LOS	C					

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	45	294	269	371	1030	56
Future Volume (vph)	45	294	269	371	1030	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	1736	3505	3544	0
Flt Permitted	0.950		0.161			
Satd. Flow (perm)	1805	1524	294	3505	3544	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		211			8	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	49	323	296	408	1132	62
Shared Lane Traffic (%)						
Lane Group Flow (vph)	49	323	296	408	1194	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	14.0	80.0	66.0	
Total Split (%)	27.3%	27.3%	12.7%	72.7%	60.0%	
Maximum Green (s)	23.0	23.0	10.0	73.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	15.0	15.0	84.0	81.0	64.1	
Actuated g/C Ratio	0.14	0.14	0.76	0.74	0.58	
v/c Ratio	0.20	0.83	0.75	0.16	0.58	
Control Delay (s/veh)	41.2	33.8	25.5	6.0	16.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	41.2	33.8	25.5	6.0	16.6	
LOS	D	C	C	A	B	
Approach Delay (s/veh)	34.8			14.2	16.6	
Approach LOS	C			B	B	
Queue Length 50th (m)	10.0	25.7	19.4	13.7	89.4	
Queue Length 95th (m)	19.9	57.3	#83.6	29.0	117.3	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	377	485	394	2581	2067	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.67	0.75	0.16	0.58	

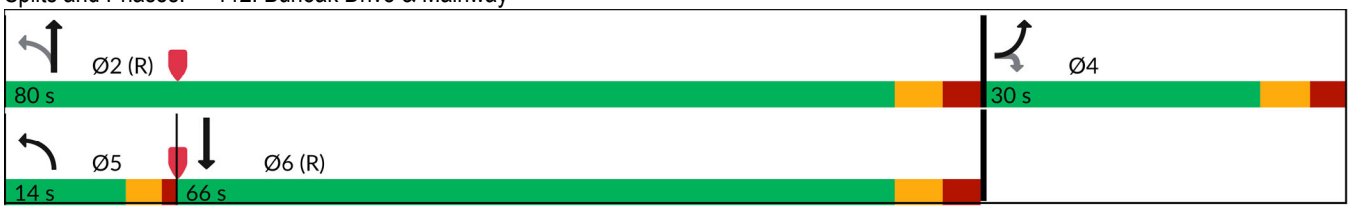
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 18.8		Intersection LOS: B	

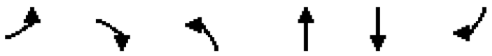
Intersection Capacity Utilization 66.9% ICU Level of Service C

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	45	294	269	371	1030	56
Future Volume (vph)	45	294	269	371	1030	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	1735	3505	3544	
Flt Permitted	0.95	1.00	0.16	1.00	1.00	
Satd. Flow (perm)	1805	1524	294	3505	3544	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	49	323	296	408	1132	62
RTOR Reduction (vph)	0	182	0	0	3	0
Lane Group Flow (vph)	49	141	296	408	1191	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	15.0	15.0	81.0	81.0	64.1	
Effective Green, g (s)	15.0	15.0	81.0	81.0	64.1	
Actuated g/C Ratio	0.14	0.14	0.74	0.74	0.58	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	246	207	385	2580	2065	
v/s Ratio Prot	0.03		c0.09	0.12	0.34	
v/s Ratio Perm		c0.09	c0.47			
v/c Ratio	0.20	0.68	0.77	0.16	0.58	
Uniform Delay, d1	42.2	45.2	11.5	4.3	14.4	
Progression Factor	1.00	1.00	1.39	1.18	1.00	
Incremental Delay, d2	0.4	8.8	8.9	0.1	1.2	
Delay (s)	42.6	54.1	24.9	5.2	15.6	
Level of Service	D	D	C	A	B	
Approach Delay (s/veh)	52.5			13.5	15.6	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



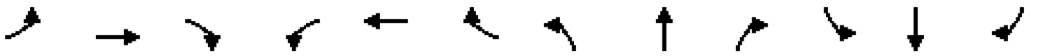
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	347	103	27	197	15	10
Future Volume (vph)	347	103	27	197	15	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.966				0.947	
Flt Protected				0.994	0.971	
Satd. Flow (prot)	3336	0	0	3408	1558	0
Flt Permitted				0.994	0.971	
Satd. Flow (perm)	3336	0	0	3408	1558	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	3%	0%	6%	20%	0%
Adj. Flow (vph)	390	116	30	221	17	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	506	0	0	251	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	347	103	27	197	15	10
Future Volume (Veh/h)	347	103	27	197	15	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	390	116	30	221	17	11
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			508		621	255
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			508		621	255
tC, single (s)			4.1		7.2	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			97		95	99
cM capacity (veh/h)			1066		369	749

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	260	246	104	147	28
Volume Left	0	0	30	0	17
Volume Right	0	116	0	0	11
cSH	1700	1700	1066	1700	461
Volume to Capacity	0.15	0.14	0.03	0.09	0.06
Queue Length 95th (m)	0.0	0.0	0.7	0.0	1.5
Control Delay (s/veh)	0.0	0.0	2.6	0.0	13.3
Lane LOS			A		B
Approach Delay (s/veh)	0.0		1.1		13.3
Approach LOS					B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	625	56	13	115	18	13	0	4	93	2	70
Future Volume (vph)	19	625	56	13	115	18	13	0	4	93	2	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.982			0.966			0.943	
Flt Protected		0.999			0.996			0.964			0.973	
Satd. Flow (prot)	0	3450	0	0	3210	0	0	1509	0	0	1734	0
Flt Permitted		0.999			0.996			0.964			0.973	
Satd. Flow (perm)	0	3450	0	0	3210	0	0	1509	0	0	1734	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	22	735	66	15	135	21	15	0	5	109	2	82
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	823	0	0	171	0	0	20	0	0	193	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

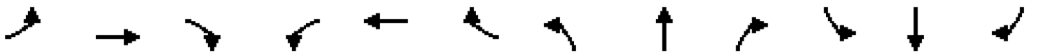
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.1%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	19	625	56	13	115	18	13	0	4	93	2	70
Future Volume (Veh/h)	19	625	56	13	115	18	13	0	4	93	2	70
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	22	735	66	15	135	21	15	0	5	109	2	82
Pedestrians								9			5	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	161			810			1002	1012	410	597	1035	83
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	161			810			1002	1012	410	597	1035	83
tC, single (s)	4.4			4.4			8.0	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.4			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			98			90	100	99	71	99	91
cM capacity (veh/h)	1314			727			147	229	592	370	223	962

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	390	434	83	89	20	193
Volume Left	22	0	15	0	15	109
Volume Right	0	66	0	21	5	82
cSH	1314	1700	727	1700	181	496
Volume to Capacity	0.02	0.26	0.02	0.05	0.11	0.39
Queue Length 95th (m)	0.4	0.0	0.5	0.0	2.9	14.6
Control Delay (s/veh)	0.6	0.0	2.0	0.0	27.3	16.8
Lane LOS	A		A		D	C
Approach Delay (s/veh)	0.3		1.0		27.3	16.8
Approach LOS					D	C

Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	45.1%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	358	152	82	87	52	105	727	179	218	1228	94
Future Volume (vph)	139	358	152	82	87	52	105	727	179	218	1228	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Frt		0.955			0.944			0.970			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3170	0	1492	3052	0	1597	3284	0	1770	3401	0
Flt Permitted	0.621			0.248			0.103			0.195		
Satd. Flow (perm)	1044	3170	0	388	3052	0	173	3284	0	363	3401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51			54			28			9	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	145	373	158	85	91	54	109	757	186	227	1279	98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	531	0	85	145	0	109	943	0	227	1377	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	34.0		11.0	34.0		11.0	48.0		27.0	64.0	
Total Split (%)	9.2%	28.3%		9.2%	28.3%		9.2%	40.0%		22.5%	53.3%	
Maximum Green (s)	7.0	27.7		7.0	27.7		7.0	41.7		23.0	57.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	31.4	23.5		30.6	21.3		67.9	57.6		76.3	63.1	
Actuated g/C Ratio	0.26	0.20		0.26	0.18		0.57	0.48		0.64	0.53	
v/c Ratio	0.47	0.80		0.52	0.25		0.56	0.59		0.58	0.77	
Control Delay (s/veh)	38.4	51.3		42.4	25.5		25.3	28.3		16.5	16.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	38.4	51.3		42.4	25.5		25.3	28.3		16.5	16.3	
LOS	D	D		D	C		C	C		B	B	
Approach Delay (s/veh)		48.5			31.7			28.0			16.3	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	29.7	63.1		17.8	10.6		12.9	123.5		20.0	75.0	
Queue Length 95th (m)	46.8	81.3		31.4	19.9		m19.1	151.2		39.5	154.1	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	306	770		163	746		193	1590		503	1792	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.47	0.69		0.52	0.19		0.56	0.59		0.45	0.77	

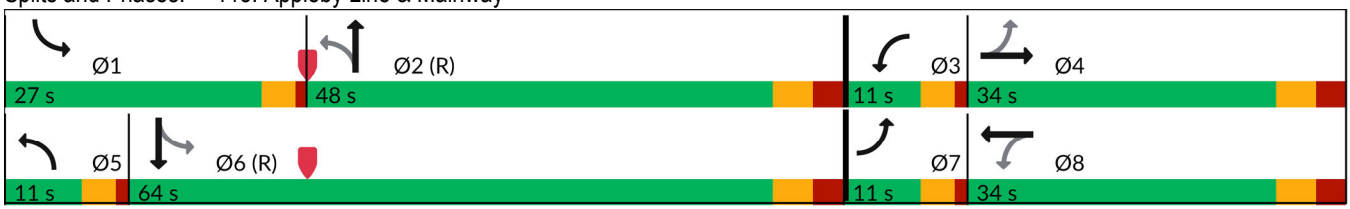
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 58 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay (s/veh): 26.9	Intersection LOS: C

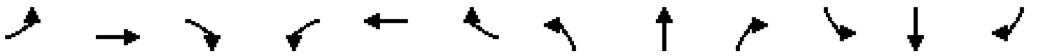
Intersection Capacity Utilization 83.3% ICU Level of Service E

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	358	152	82	87	52	105	727	179	218	1228	94
Future Volume (vph)	139	358	152	82	87	52	105	727	179	218	1228	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1604	3171		1491	3052		1597	3285		1769	3402	
Flt Permitted	0.62	1.00		0.25	1.00		0.10	1.00		0.19	1.00	
Satd. Flow (perm)	1048	3171		389	3052		173	3285		363	3402	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	145	373	158	85	91	54	109	757	186	227	1279	98
RTOR Reduction (vph)	0	41	0	0	44	0	0	15	0	0	4	0
Lane Group Flow (vph)	145	490	0	85	101	0	109	928	0	227	1373	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.5	23.5		27.7	22.1		64.8	56.8		74.3	62.3	
Effective Green, g (s)	30.5	23.5		27.7	22.1		64.8	56.8		74.3	62.3	
Actuated g/C Ratio	0.25	0.20		0.23	0.18		0.54	0.47		0.62	0.52	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	298	620		141	562		188	1554		382	1766	
v/s Ratio Prot	c0.03	c0.15		0.03	0.03		0.04	0.28		c0.07	c0.40	
v/s Ratio Perm	0.10			0.11			0.27			0.30		
v/c Ratio	0.49	0.79		0.60	0.18		0.58	0.60		0.59	0.78	
Uniform Delay, d1	37.0	45.9		38.1	41.3		18.2	23.2		13.3	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.05	1.10		1.16	0.57	
Incremental Delay, d2	1.3	6.8		7.1	0.2		3.0	1.2		1.9	2.7	
Delay (s)	38.3	52.7		45.2	41.5		22.2	26.8		17.4	15.9	
Level of Service	D	D		D	D		C	C		B	B	
Approach Delay (s/veh)		49.6			42.8			26.4			16.1	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	8	25	124	15	94	33	821	60	70	1463	44
Future Volume (vph)	17	8	25	124	15	94	33	821	60	70	1463	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.946			0.990			0.996	
Flt Protected		0.984			0.974		0.950			0.950		
Satd. Flow (prot)	0	1321	0	0	1693	0	1530	3332	0	1736	3453	0
Flt Permitted		0.857			0.806		0.136			0.258		
Satd. Flow (perm)	0	1149	0	0	1395	0	219	3332	0	470	3453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			29			9			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	17	8	26	127	15	96	34	838	61	71	1493	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	51	0	0	238	0	34	899	0	71	1538	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	42.0	42.0		42.0	42.0		66.0	66.0		12.0	78.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		55.0%	55.0%		10.0%	65.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		60.0	60.0		8.0	72.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.7			23.7		74.5	74.5		85.8	83.8	
Actuated g/C Ratio		0.20			0.20		0.62	0.62		0.72	0.70	
v/c Ratio		0.21			0.80		0.25	0.43		0.17	0.64	
Control Delay (s/veh)		23.1			58.8		29.2	24.7		4.2	6.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		23.1			58.8		29.2	24.7		4.2	6.5	
LOS		C			E		C	C		A	A	
Approach Delay (s/veh)		23.1			58.8			24.9			6.4	
Approach LOS		C			E			C			A	
Queue Length 50th (m)		5.6			50.1		7.9	104.6		2.8	56.2	
Queue Length 95th (m)		16.5			73.3		m15.5	141.8		m4.2	m78.3	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		358			433		135	2071		422	2413	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.14			0.55		0.25	0.43		0.17	0.64	

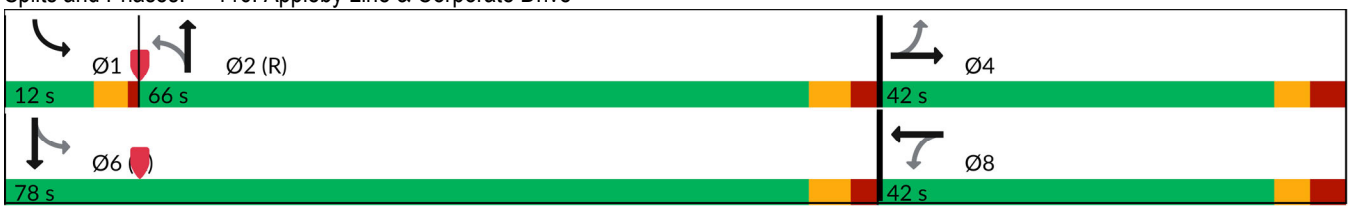
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay (s/veh): 17.2	Intersection LOS: B

Intersection Capacity Utilization 85.2% ICU Level of Service E

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

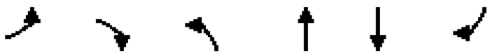
Splits and Phases: 116: Appleby Line & Corporate Drive



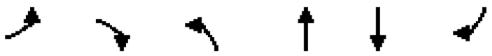
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	8	25	124	15	94	33	821	60	70	1463	44
Future Volume (vph)	17	8	25	124	15	94	33	821	60	70	1463	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.95		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1319			1686		1528	3331		1734	3452	
Flt Permitted		0.86			0.81		0.14	1.00		0.26	1.00	
Satd. Flow (perm)		1149			1394		219	3331		470	3452	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	17	8	26	127	15	96	34	838	61	71	1493	45
RTOR Reduction (vph)	0	21	0	0	23	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	30	0	0	215	0	34	896	0	71	1537	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.7			23.7		73.7	73.7		83.8	83.8	
Effective Green, g (s)		23.7			23.7		73.7	73.7		83.8	83.8	
Actuated g/C Ratio		0.20			0.20		0.61	0.61		0.70	0.70	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		226			275		134	2045		392	2410	
v/s Ratio Prot								0.27		0.01	c0.45	
v/s Ratio Perm		0.03			c0.15		0.16			0.12		
v/c Ratio		0.13			0.78		0.25	0.44		0.18	0.64	
Uniform Delay, d1		39.7			45.7		10.6	12.2		6.7	9.8	
Progression Factor		1.00			1.00		1.56	1.78		0.61	0.54	
Incremental Delay, d2		0.3			13.4		3.8	0.6		0.1	0.5	
Delay (s)		40.0			59.1		20.4	22.3		4.2	5.8	
Level of Service		D			E		C	C		A	A	
Approach Delay (s/veh)		40.0			59.1			22.3			5.7	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	93	401	613	1250	99
Future Volume (vph)	28	93	401	613	1250	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt		0.850			0.989	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	1719	3505	3497	0
Flt Permitted	0.950		0.104			
Satd. Flow (perm)	1805	1313	188	3505	3497	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		94			12	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	28	94	405	619	1263	100
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	94	405	619	1363	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	23.0	23.0	20.0	87.0	67.0	
Total Split (%)	20.9%	20.9%	18.2%	79.1%	60.9%	
Maximum Green (s)	16.0	16.0	16.0	80.0	60.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.8	8.8	93.2	91.6	61.0	
Actuated g/C Ratio	0.08	0.08	0.85	0.83	0.55	
v/c Ratio	0.20	0.49	0.79	0.21	0.70	
Control Delay (s/veh)	50.0	18.9	37.8	1.8	10.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	50.0	18.9	37.8	1.8	10.8	
LOS	D	B	D	A	B	
Approach Delay (s/veh)	26.0			16.0	10.8	
Approach LOS	C			B	B	
Queue Length 50th (m)	6.1	0.0	65.5	9.6	122.8	
Queue Length 95th (m)	14.9	18.5	m#106.9	m12.1	64.2	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	262	271	510	2920	1943	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.11	0.35	0.79	0.21	0.70	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 13.7	Intersection LOS: B

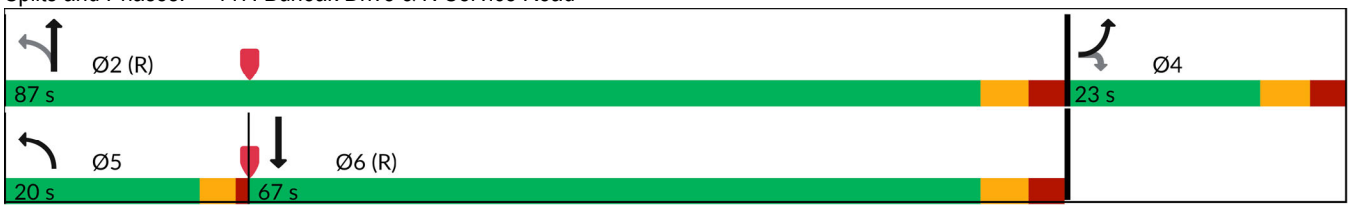
Intersection Capacity Utilization 81.6% ICU Level of Service D

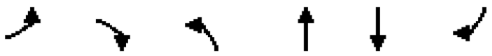
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	28	93	401	613	1250	99
Future Volume (vph)	28	93	401	613	1250	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	1719	3505	3497	
Flt Permitted	0.95	1.00	0.10	1.00	1.00	
Satd. Flow (perm)	1805	1313	188	3505	3497	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	28	94	405	619	1263	100
RTOR Reduction (vph)	0	88	0	0	6	0
Lane Group Flow (vph)	28	6	405	619	1357	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	7.2	7.2	88.8	88.8	59.5	
Effective Green, g (s)	7.2	7.2	88.8	88.8	59.5	
Actuated g/C Ratio	0.07	0.07	0.81	0.81	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	118	85	503	2829	1891	
v/s Ratio Prot	c0.02		c0.18	0.18	0.39	
v/s Ratio Perm		0.00	c0.47			
v/c Ratio	0.24	0.07	0.81	0.22	0.72	
Uniform Delay, d1	48.8	48.3	26.8	2.5	19.0	
Progression Factor	1.00	1.00	1.16	0.62	0.50	
Incremental Delay, d2	1.0	0.4	8.8	0.1	1.9	
Delay (s)	49.8	48.6	39.8	1.7	11.4	
Level of Service	D	D	D	A	B	
Approach Delay (s/veh)	48.9			16.8	11.4	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	702	656	409	0	0	1212
Future Volume (vph)	702	656	409	0	0	1212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.91
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3251	1427	3505	0	0	5036
Flt Permitted	0.964					
Satd. Flow (perm)	3251	1427	3505	0	0	5036
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	42	417				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	755	705	440	0	0	1303
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	1002	458	440	0	0	1303
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6



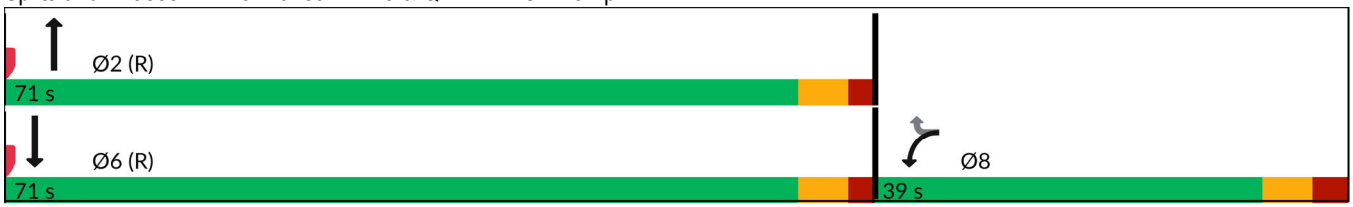
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	39.0	39.0	71.0			71.0
Total Split (%)	35.5%	35.5%	64.5%			64.5%
Maximum Green (s)	32.0	32.0	65.0			65.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
v/c Ratio	1.03	0.65	0.21			0.44
Control Delay (s/veh)	73.5	9.4	12.0			1.6
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	73.5	9.4	12.0			1.6
LOS	E	A	B			A
Approach Delay (s/veh)	53.4		12.0			1.6
Approach LOS	D		B			A
Queue Length 50th (m)	~126.4	7.5	31.5			3.3
Queue Length 95th (m)	#169.8	43.5	42.5			6.3
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	975	710	2071			2975
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.03	0.65	0.21			0.44

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay (s/veh): 26.6		Intersection LOS: C	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

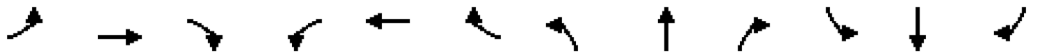
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



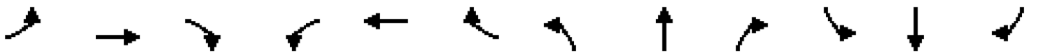


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	702	656	409	0	0	1212
Future Volume (vph)	702	656	409	0	0	1212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	0.95			0.91
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3250	1427	3505			5036
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3250	1427	3505			5036
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	755	705	440	0	0	1303
RTOR Reduction (vph)	30	296	0	0	0	0
Lane Group Flow (vph)	972	162	440	0	0	1303
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0	65.0			65.0
Effective Green, g (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	945	415	2071			2975
v/s Ratio Prot	c0.30		0.13			c0.26
v/s Ratio Perm		0.11				
v/c Ratio	1.03	0.39	0.21			0.44
Uniform Delay, d1	39.0	31.2	10.5			12.4
Progression Factor	1.00	1.00	1.11			0.10
Incremental Delay, d2	36.9	0.6	0.2			0.3
Delay (s)	75.9	31.8	11.9			1.6
Level of Service	E	C	B			A
Approach Delay (s/veh)	62.1		11.9			1.6
Approach LOS	E		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	62	206	0	0	47	0	481	3	3	1210	0
Future Volume (vph)	84	62	206	0	0	47	0	481	3	3	1210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.906	0.850			0.865		0.999				
Flt Protected	0.950											
Satd. Flow (prot)	1770	2844	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950										0.939	
Satd. Flow (perm)	1770	2844	1318	0	0	1417	0	5032	0	0	4639	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		111	111			396		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	90	67	222	0	0	51	0	517	3	3	1301	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	90	178	111	0	0	51	0	520	0	0	1304	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

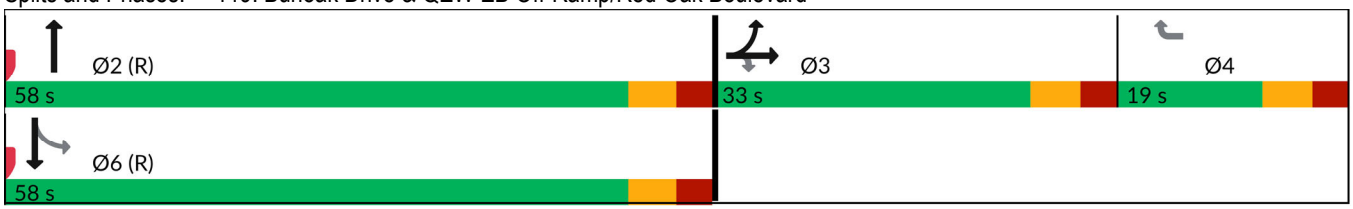


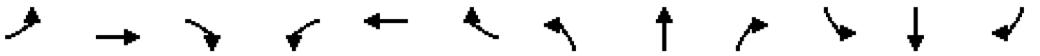
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		29.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	11.2	11.2	11.2			8.0		72.8			72.8	
Actuated g/C Ratio	0.10	0.10	0.10			0.07		0.66			0.66	
v/c Ratio	0.50	0.46	0.48			0.11		0.16			0.42	
Control Delay (s/veh)	55.8	22.1	15.4			0.5		8.0			9.4	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	55.8	22.1	15.4			0.5		8.0			9.4	
LOS	E	C	B			A		A			A	
Approach Delay (s/veh)		28.2			0.5			8.0			9.4	
Approach LOS		C			A			A			A	
Queue Length 50th (m)	19.9	8.2	0.0			0.0		16.3			38.6	
Queue Length 95th (m)	35.4	19.8	19.2			0.0		24.1			m48.1	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	418	756	396			507		3330			3070	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.22	0.24	0.28			0.10		0.16			0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 3 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay (s/veh): 12.1	Intersection LOS: B

Intersection Capacity Utilization 43.8% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

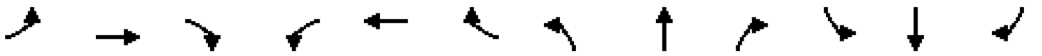




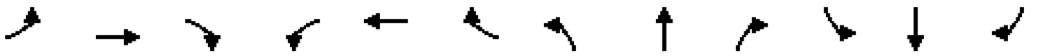
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	62	206	0	0	47	0	481	3	3	1210	0
Future Volume (vph)	84	62	206	0	0	47	0	481	3	3	1210	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1770	2843	1316			1417		5032			4940	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1770	2843	1316			1417		5032			4640	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	90	67	222	0	0	51	0	517	3	3	1301	0
RTOR Reduction (vph)	0	100	100	0	0	48	0	0	0	0	0	0
Lane Group Flow (vph)	90	78	11	0	0	3	0	520	0	0	1304	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	11.2	11.2	11.2			6.4		71.4			71.4	
Effective Green, g (s)	11.2	11.2	11.2			6.4		71.4			71.4	
Actuated g/C Ratio	0.10	0.10	0.10			0.06		0.65			0.65	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	180	289	133			82		3266			3011	
v/s Ratio Prot	c0.05	0.03						0.10				
v/s Ratio Perm			0.01			c0.00					c0.28	
v/c Ratio	0.50	0.27	0.08			0.04		0.16			0.43	
Uniform Delay, d1	46.8	45.6	44.8			48.9		7.6			9.4	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.93	
Incremental Delay, d2	2.2	0.5	0.3			0.2		0.1			0.3	
Delay (s)	48.9	46.1	45.0			49.1		7.7			9.1	
Level of Service	D	D	D			D		A			A	
Approach Delay (s/veh)		46.5			49.1			7.7			9.1	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	108	43	71	10	36	132	996	390	88	1272	33
Future Volume (vph)	43	108	43	71	10	36	132	996	390	88	1272	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor								0.99			1.00	
Frt		0.958			0.884			0.958			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1684	0	1504	1571	0	1719	3291	0	1752	3424	0
Flt Permitted	0.725			0.386			0.118			0.104		
Satd. Flow (perm)	1208	1684	0	611	1571	0	214	3291	0	192	3424	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			38			71			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			155.9			629.4	
Travel Time (s)		22.0			10.1			9.4			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	45	114	45	75	11	38	139	1048	411	93	1339	35
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	159	0	75	49	0	139	1459	0	93	1374	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	27.0	27.0		11.0	38.0		14.0	68.0		14.0	68.0	
Total Split (%)	22.5%	22.5%		9.2%	31.7%		11.7%	56.7%		11.7%	56.7%	
Maximum Green (s)	20.9	20.9		7.0	31.9		10.0	61.4		10.0	61.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	15.5	15.5		26.4	24.3		82.4	71.0		80.9	70.2	
Actuated g/C Ratio	0.13	0.13		0.22	0.20		0.69	0.59		0.67	0.59	
v/c Ratio	0.29	0.69		0.40	0.14		0.54	0.74		0.40	0.69	
Control Delay (s/veh)	50.3	60.9		42.3	15.1		20.3	20.2		15.2	13.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.3	60.9		42.3	15.1		20.3	20.2		15.2	13.4	
LOS	D	E		D	B		C	C		B	B	
Approach Delay (s/veh)		58.5			31.6			20.2			13.5	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	11.2	35.5		17.1	2.3		11.3	181.3		2.7	145.3	
Queue Length 95th (m)	23.5	57.2		30.9	12.8		m26.5	208.4		m4.5	215.7	
Internal Link Dist (m)		342.3			144.7			131.9			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	210	304		186	445		276	1976		262	2005	
Starvation Cap Reductn	0	0		0	0		0	13		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.52		0.40	0.11		0.50	0.74		0.35	0.69	

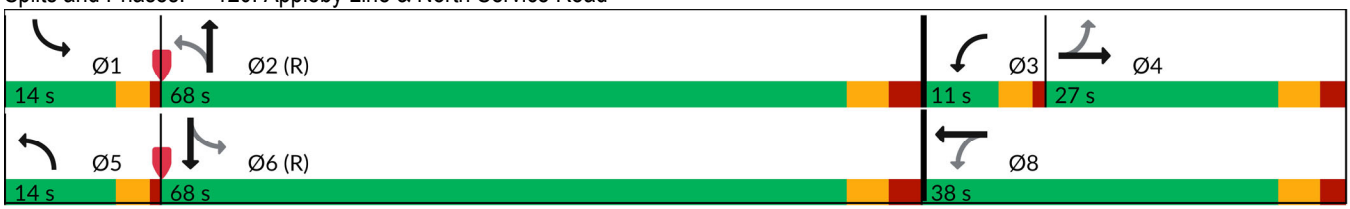
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 20.0		Intersection LOS: C	

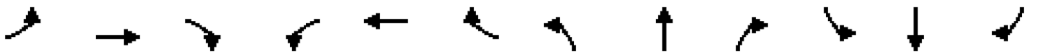
Intersection Capacity Utilization 78.2% ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	108	43	71	10	36	132	996	390	88	1272	33
Future Volume (vph)	43	108	43	71	10	36	132	996	390	88	1272	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1683		1504	1571		1719	3290		1752	3424	
Flt Permitted	0.73	1.00		0.39	1.00		0.12	1.00		0.10	1.00	
Satd. Flow (perm)	1208	1683		611	1571		213	3290		191	3424	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	45	114	45	75	11	38	139	1048	411	93	1339	35
RTOR Reduction (vph)	0	12	0	0	30	0	0	29	0	0	1	0
Lane Group Flow (vph)	45	147	0	75	19	0	139	1430	0	93	1373	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.5	15.5		25.1	25.1		79.0	70.2		77.4	69.4	
Effective Green, g (s)	15.5	15.5		25.1	25.1		79.0	70.2		77.4	69.4	
Actuated g/C Ratio	0.13	0.13		0.21	0.21		0.66	0.59		0.65	0.58	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	156	217		169	328		250	1924		227	1980	
v/s Ratio Prot		c0.09		c0.02	0.01		c0.04	c0.43		0.03	0.40	
v/s Ratio Perm	0.04			0.07			0.32			0.24		
v/c Ratio	0.29	0.68		0.44	0.06		0.56	0.74		0.41	0.69	
Uniform Delay, d1	47.3	49.9		39.8	38.0		13.0	18.3		13.1	17.8	
Progression Factor	1.00	1.00		1.00	1.00		1.65	0.96		1.73	0.63	
Incremental Delay, d2	1.0	8.1		1.9	0.1		2.1	2.1		0.8	1.3	
Delay (s)	48.3	57.9		41.6	38.1		23.7	19.7		23.4	12.5	
Level of Service	D	E		D	D		C	B		C	B	
Approach Delay (s/veh)		55.8			40.2			20.1			13.2	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



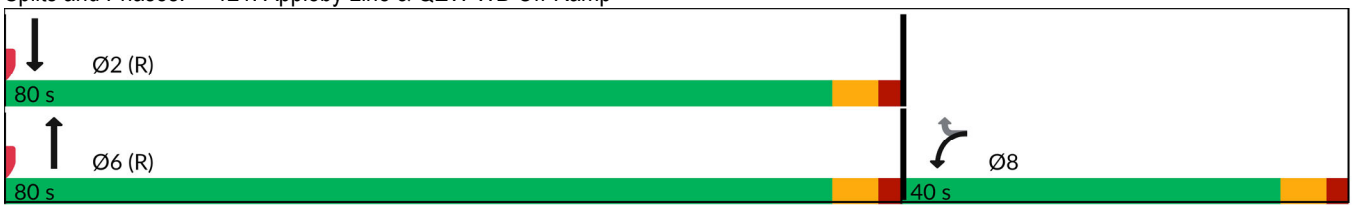
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	296	321	1184	0	0	959
Future Volume (vph)	296	321	1184	0	0	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	1495	3471	0	0	4893
Flt Permitted	0.950					
Satd. Flow (perm)	3183	1495	3471	0	0	4893
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		65				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		177.3			43.5
Travel Time (s)	20.9		10.6			2.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	325	353	1301	0	0	1054
Shared Lane Traffic (%)						
Lane Group Flow (vph)	325	353	1301	0	0	1054
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	28.3	28.3	79.7			79.7
Actuated g/C Ratio	0.24	0.24	0.66			0.66
v/c Ratio	0.43	0.88	0.56			0.32
Control Delay (s/veh)	39.9	58.2	12.6			4.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	39.9	58.2	12.6			4.2
LOS	D	E	B			A
Approach Delay (s/veh)	49.4		12.6			4.2
Approach LOS	D		B			A
Queue Length 50th (m)	37.4	73.6	97.1			12.6
Queue Length 95th (m)	49.8	109.7	129.4			21.9
Internal Link Dist (m)	323.7		153.3			19.5
Turn Bay Length (m)	210.0					
Base Capacity (vph)	901	470	2305			3249
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	25			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.36	0.75	0.57			0.32

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 17.9		Intersection LOS: B	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

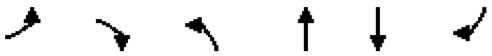
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



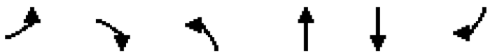


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	296	321	1184	0	0	959
Future Volume (vph)	296	321	1184	0	0	959
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	1495	3471			4893
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	1495	3471			4893
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	325	353	1301	0	0	1054
RTOR Reduction (vph)	0	50	0	0	0	0
Lane Group Flow (vph)	325	303	1301	0	0	1054
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	28.3	28.3	79.7			79.7
Effective Green, g (s)	28.3	28.3	79.7			79.7
Actuated g/C Ratio	0.24	0.24	0.66			0.66
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	750	352	2305			3249
v/s Ratio Prot	0.10		c0.37			0.22
v/s Ratio Perm		c0.20				
v/c Ratio	0.43	0.86	0.56			0.32
Uniform Delay, d1	39.0	44.0	10.8			8.6
Progression Factor	1.00	1.00	0.99			0.43
Incremental Delay, d2	0.4	19.0	0.9			0.2
Delay (s)	39.4	62.9	11.6			3.9
Level of Service	D	E	B			A
Approach Delay (s/veh)	51.7		11.6			3.9
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



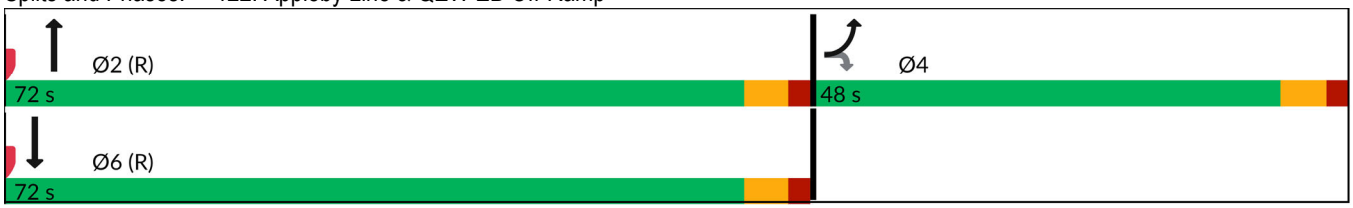
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	453	275	0	986	996	0
Future Volume (vph)	453	275	0	986	996	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		131				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	142.5	
Travel Time (s)	16.4			21.0	8.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	503	306	0	1096	1107	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	503	306	0	1096	1107	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

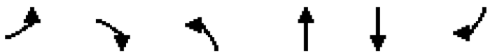


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	24.2	24.2		83.8	83.8	
Actuated g/C Ratio	0.20	0.20		0.70	0.70	
v/c Ratio	0.75	0.47		0.46	0.47	
Control Delay (s/veh)	52.1	25.3		4.9	10.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	52.1	25.3		4.9	10.9	
LOS	D	C		A	B	
Approach Delay (s/veh)	42.0			4.9	10.9	
Approach LOS	D			A	B	
Queue Length 50th (m)	62.9	21.9		29.3	68.7	
Queue Length 95th (m)	77.9	35.9		37.4	101.6	
Internal Link Dist (m)	249.0			325.5	118.5	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1167	1032		2379	2379	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.43	0.30		0.46	0.47	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 17.0		Intersection LOS: B	
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

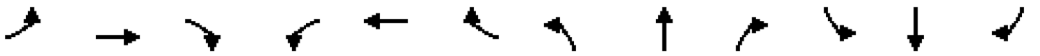




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	453	275	0	986	996	0
Future Volume (vph)	453	275	0	986	996	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		3406	3406	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	503	306	0	1096	1107	0
RTOR Reduction (vph)	0	105	0	0	0	0
Lane Group Flow (vph)	503	201	0	1096	1107	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.2	24.2		83.8	83.8	
Effective Green, g (s)	24.2	24.2		83.8	83.8	
Actuated g/C Ratio	0.20	0.20		0.70	0.70	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	672	545		2378	2378	
v/s Ratio Prot	c0.15			0.32	c0.33	
v/s Ratio Perm		0.07				
v/c Ratio	0.75	0.37		0.46	0.47	
Uniform Delay, d1	45.0	41.3		8.1	8.1	
Progression Factor	1.00	1.00		0.51	1.17	
Incremental Delay, d2	4.6	0.4		0.4	0.6	
Delay (s)	49.6	41.7		4.6	10.1	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	46.6			4.6	10.1	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	402	57	85	119	178	69	1009	315	320	550	212
Future Volume (vph)	140	402	57	85	119	178	69	1009	315	320	550	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99			0.98
Frt		0.981			0.910				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3259	0	1656	2917	0	1687	3505	1568	1770	3406	1417
Flt Permitted	0.346			0.360			0.431			0.105		
Satd. Flow (perm)	555	3259	0	627	2917	0	764	3505	1547	196	3406	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			189				203			226
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	149	428	61	90	127	189	73	1073	335	340	585	226
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	489	0	90	316	0	73	1073	335	340	585	226
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

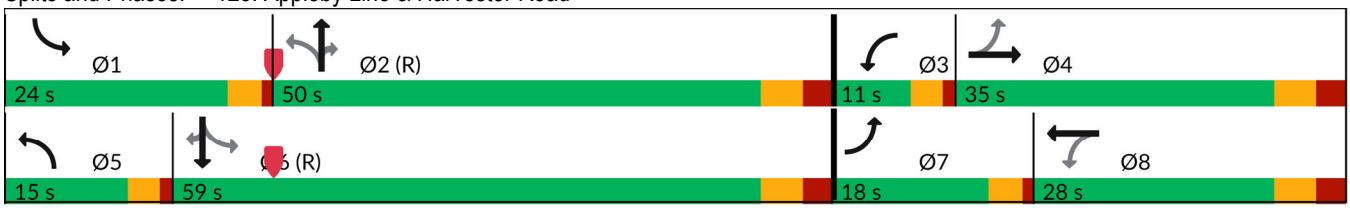


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.6		7.0	21.6		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	35.8	22.8		26.4	17.0		57.3	47.1	47.1	75.8	63.8	63.8
Actuated g/C Ratio	0.30	0.19		0.22	0.14		0.48	0.39	0.39	0.63	0.53	0.53
v/c Ratio	0.55	0.78		0.45	0.55		0.17	0.78	0.46	0.82	0.32	0.27
Control Delay (s/veh)	39.8	53.9		38.5	22.2		13.3	35.5	12.4	50.0	15.5	3.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	39.8	53.9		38.5	22.2		13.3	35.5	12.4	50.0	15.5	3.9
LOS	D	D		D	C		B	D	B	D	B	A
Approach Delay (s/veh)		50.6			25.8			29.2			23.4	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	32.2	62.3		17.5	15.8		7.0	140.0	22.9	70.8	44.3	7.0
Queue Length 95th (m)	49.9	78.2		29.9	30.0		m13.3	138.2	29.1	#120.1	51.3	10.2
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	281	785		198	680		469	1376	730	421	1812	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.62		0.45	0.46		0.16	0.78	0.46	0.81	0.32	0.27

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 30.7	Intersection LOS: C

Intersection Capacity Utilization 83.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

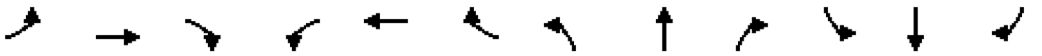
Splits and Phases: 123: Appleby Line & Harvester Road



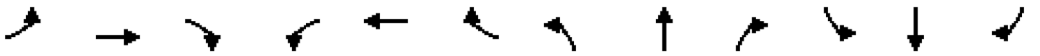
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	402	57	85	119	178	69	1009	315	320	550	212
Future Volume (vph)	140	402	57	85	119	178	69	1009	315	320	550	212
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3260		1656	2917		1686	3505	1547	1770	3406	1395
Flt Permitted	0.35	1.00		0.36	1.00		0.43	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	556	3260		627	2917		766	3505	1547	195	3406	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	149	428	61	90	127	189	73	1073	335	340	585	226
RTOR Reduction (vph)	0	10	0	0	162	0	0	0	123	0	0	107
Lane Group Flow (vph)	149	479	0	90	154	0	73	1073	212	340	585	119
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	33.8	22.8		24.1	17.1		53.6	47.1	47.1	73.5	63.0	63.0
Effective Green, g (s)	33.8	22.8		24.1	17.1		53.6	47.1	47.1	73.5	63.0	63.0
Actuated g/C Ratio	0.28	0.19		0.20	0.14		0.45	0.39	0.39	0.61	0.53	0.53
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	259	619		185	415		391	1375	607	413	1788	732
v/s Ratio Prot	c0.06	c0.15		0.03	0.05		0.01	0.31		c0.15	0.17	
v/s Ratio Perm	0.10			0.07			0.07		0.14	c0.35		0.09
v/c Ratio	0.58	0.77		0.49	0.37		0.19	0.78	0.35	0.82	0.33	0.16
Uniform Delay, d1	34.6	46.2		40.6	46.6		19.2	31.9	25.7	30.5	16.3	14.8
Progression Factor	1.00	1.00		1.00	1.00		1.13	0.95	0.97	1.36	0.87	1.29
Incremental Delay, d2	3.1	6.0		2.0	0.6		0.2	3.8	1.4	11.6	0.4	0.4
Delay (s)	37.7	52.2		42.6	47.1		21.8	34.3	26.2	53.1	14.6	19.5
Level of Service	D	D		D	D		C	C	C	D	B	B
Approach Delay (s/veh)		48.8			46.1			31.8			26.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	123	185	78	51	118	157	836	97	157	836	97
Future Volume (vph)	436	123	185	78	51	118	157	836	97	157	836	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99		0.98	1.00		0.98	1.00		0.98	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	3539	1538
Flt Permitted	0.950			0.674			0.238			0.214		
Satd. Flow (perm)	3381	1776	1513	1129	1610	1395	447	3539	1403	356	3539	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			195			153			150			150
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	459	129	195	82	54	124	165	880	102	165	880	102
Shared Lane Traffic (%)												
Lane Group Flow (vph)	459	129	195	82	54	124	165	880	102	165	880	102
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	34.0	47.0	47.0	14.0	27.0	27.0	12.0	45.0	45.0	14.0	47.0	47.0
Total Split (%)	28.3%	39.2%	39.2%	11.7%	22.5%	22.5%	10.0%	37.5%	37.5%	11.7%	39.2%	39.2%
Maximum Green (s)	29.0	40.5	40.5	10.0	20.5	20.5	8.0	38.2	38.2	10.0	40.2	40.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	21.4	25.4	25.4	21.5	9.9	9.9	67.3	53.6	53.6	71.1	55.5	55.5
Actuated g/C Ratio	0.18	0.21	0.21	0.18	0.08	0.08	0.56	0.45	0.45	0.59	0.46	0.46
v/c Ratio	0.76	0.34	0.41	0.34	0.41	0.49	0.44	0.56	0.14	0.48	0.54	0.13
Control Delay (s/veh)	55.0	42.9	7.8	33.0	60.9	10.7	15.4	28.0	1.6	20.7	32.4	7.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.0	42.9	7.8	33.0	60.9	10.7	15.4	28.0	1.6	20.7	32.4	7.5
LOS	E	D	A	C	E	B	B	C	A	C	C	A
Approach Delay (s/veh)		41.3			28.1			23.8			28.5	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	57.4	29.9	0.0	15.9	14.7	0.0	16.4	82.6	0.0	28.5	98.3	2.5
Queue Length 95th (m)	72.6	45.8	19.2	26.5	29.3	12.5	32.5	127.7	4.4	49.1	133.6	m12.5
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	821	599	639	249	275	365	374	1580	709	346	1635	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.22	0.31	0.33	0.20	0.34	0.44	0.56	0.14	0.48	0.54	0.13

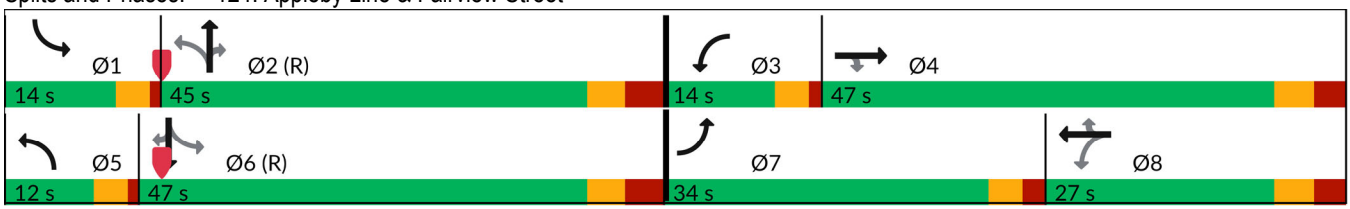
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay (s/veh): 29.9	Intersection LOS: C

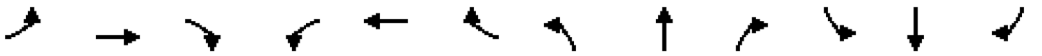
Intersection Capacity Utilization 74.9% ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street

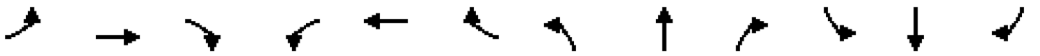




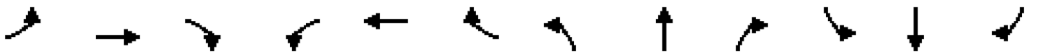
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	436	123	185	78	51	118	157	836	97	157	836	97
Future Volume (vph)	436	123	185	78	51	118	157	836	97	157	836	97
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1593	1610	1395	1787	3539	1403	1583	3539	1513
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	0.24	1.00	1.00	0.21	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1131	1610	1395	447	3539	1403	357	3539	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	459	129	195	82	54	124	165	880	102	165	880	102
RTOR Reduction (vph)	0	0	154	0	0	113	0	0	57	0	0	56
Lane Group Flow (vph)	459	129	41	82	54	11	165	880	45	165	880	46
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	21.4	25.4	25.4	18.4	10.7	10.7	63.7	52.8	52.8	67.5	54.7	54.7
Effective Green, g (s)	21.4	25.4	25.4	18.4	10.7	10.7	63.7	52.8	52.8	67.5	54.7	54.7
Actuated g/C Ratio	0.18	0.21	0.21	0.15	0.09	0.09	0.53	0.44	0.44	0.56	0.46	0.46
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	606	375	320	203	143	124	358	1557	617	331	1613	689
v/s Ratio Prot	c0.14	c0.07		0.03	0.03		0.04	c0.25		c0.05	0.25	
v/s Ratio Perm			0.03	0.04		0.01	0.20		0.03	0.23		0.03
v/c Ratio	0.76	0.34	0.13	0.40	0.38	0.09	0.46	0.57	0.07	0.50	0.55	0.07
Uniform Delay, d1	46.8	40.2	38.3	45.3	51.5	50.2	15.7	25.0	19.4	14.9	23.6	18.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.38	1.25	6.37
Incremental Delay, d2	5.4	0.6	0.2	1.3	1.7	0.3	0.9	1.5	0.2	1.2	1.3	0.2
Delay (s)	52.2	40.8	38.5	46.7	53.2	50.5	16.6	26.5	19.7	21.7	30.9	116.9
Level of Service	D	D	D	D	D	D	B	C	B	C	C	F
Approach Delay (s/veh)		46.9			49.8			24.5			37.2	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	74.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	1244	415	373	576	129	201	523	315	251	770	158
Future Volume (vph)	210	1244	415	373	576	129	201	523	315	251	770	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3361	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			360			137			209			168
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	223	1323	441	397	613	137	214	556	335	267	819	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	1323	441	397	613	137	214	556	335	267	819	168
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	20.0	61.0	61.0	25.0	64.0	64.0	24.0	30.0	30.0	24.0	32.0	32.0
Total Split (%)	14.1%	43.0%	43.0%	17.6%	45.1%	45.1%	16.9%	21.1%	21.1%	16.9%	22.5%	22.5%
Maximum Green (s)	15.0	53.6	53.6	20.0	56.6	56.6	19.0	22.6	22.6	19.0	24.6	24.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.5	46.9	46.9	20.0	52.4	52.4	16.0	32.7	32.7	17.6	34.3	34.3
Actuated g/C Ratio	0.10	0.33	0.33	0.14	0.37	0.37	0.11	0.23	0.23	0.12	0.24	0.24
v/c Ratio	0.65	0.79	0.59	0.88	0.35	0.22	0.56	0.50	0.67	0.64	0.68	0.34
Control Delay (s/veh)	70.7	46.5	10.4	80.7	32.5	4.9	65.4	50.8	26.7	66.4	53.2	8.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.7	46.5	10.4	80.7	32.5	4.9	65.4	50.8	26.7	66.4	53.2	8.9
LOS	E	D	B	F	C	A	E	D	C	E	D	A
Approach Delay (s/veh)		41.2			45.9			46.3			50.1	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	34.0	131.4	17.4	64.0	50.7	0.0	32.2	55.8	35.8	40.2	83.6	0.0
Queue Length 95th (m)	49.0	139.5	49.5	#94.1	57.8	14.3	45.7	74.7	#86.5	55.9	#119.7	21.6
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	355	1919	802	452	1982	682	450	1115	502	455	1205	497
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.69	0.55	0.88	0.31	0.20	0.48	0.50	0.67	0.59	0.68	0.34

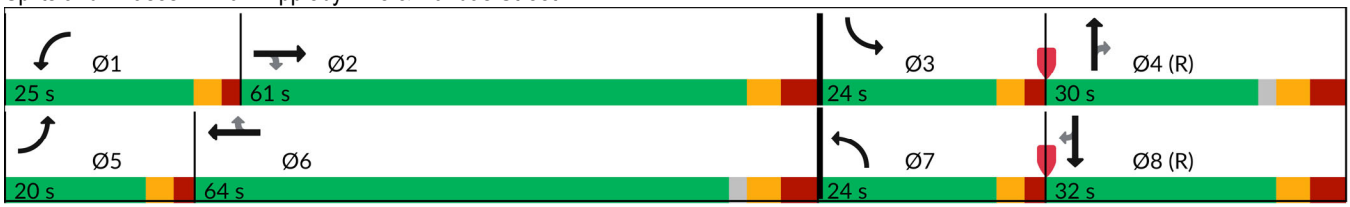
Intersection Summary			
Area Type:	Other		
Cycle Length: 142			
Actuated Cycle Length: 142			
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 45.2		Intersection LOS: D	

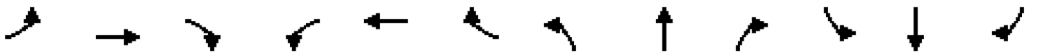
Intersection Capacity Utilization 96.9% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

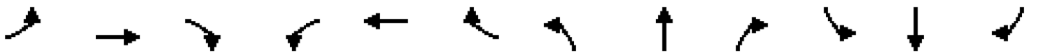




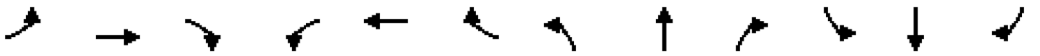
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	1244	415	373	576	129	201	523	315	251	770	158
Future Volume (vph)	210	1244	415	373	576	129	201	523	315	251	770	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	223	1323	441	397	613	137	214	556	335	267	819	168
RTOR Reduction (vph)	0	0	241	0	0	86	0	0	161	0	0	127
Lane Group Flow (vph)	223	1323	200	397	613	51	214	556	174	267	819	41
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.5	46.9	46.9	20.0	52.4	52.4	16.0	32.7	32.7	17.6	34.3	34.3
Effective Green, g (s)	14.5	46.9	46.9	20.0	52.4	52.4	16.0	32.7	32.7	17.6	34.3	34.3
Actuated g/C Ratio	0.10	0.33	0.33	0.14	0.37	0.37	0.11	0.23	0.23	0.12	0.24	0.24
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	343	1679	506	452	1772	538	379	1116	341	417	1204	369
v/s Ratio Prot	0.07	c0.26		c0.12	0.13		0.06	0.11		c0.08	c0.16	
v/s Ratio Perm			0.13			0.03			0.12			0.03
v/c Ratio	0.65	0.79	0.40	0.88	0.35	0.09	0.56	0.50	0.51	0.64	0.68	0.11
Uniform Delay, d1	61.3	43.0	36.6	59.8	32.4	29.3	59.7	47.5	47.7	59.2	48.9	42.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	2.5	0.5	18.6	0.1	0.1	3.2	1.6	5.4	4.5	3.1	0.6
Delay (s)	67.1	45.6	37.1	78.4	32.5	29.4	62.9	49.1	53.0	63.7	52.0	42.6
Level of Service	E	D	D	E	C	C	E	D	D	E	D	D
Approach Delay (s/veh)		46.1			48.0			53.0			53.2	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	587	316	230	281	247	182	850	152	344	1404	51
Future Volume (vph)	164	587	316	230	281	247	182	850	152	344	1404	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.98				0.98	1.00	1.00		1.00	1.00	
Frt		0.948				0.850		0.977			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3322	0	1736	4471	1553	3400	4091	0	1752	4356	0
Flt Permitted	0.531			0.124			0.950			0.099		
Satd. Flow (perm)	955	3322	0	227	4471	1521	3395	4091	0	182	4356	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81				274		25			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	182	652	351	256	312	274	202	944	169	382	1560	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	1003	0	256	312	274	202	1113	0	382	1617	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	38.0		16.0	38.0	38.0	13.0	43.0		23.0	53.0	
Total Split (%)	13.3%	31.7%		13.3%	31.7%	31.7%	10.8%	35.8%		19.2%	44.2%	
Maximum Green (s)	12.0	31.6		12.0	31.6	31.6	8.0	36.5		19.0	46.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	45.4	31.6		46.6	32.2	32.2	8.0	36.5		62.0	46.5	
Actuated g/C Ratio	0.38	0.26		0.39	0.27	0.27	0.07	0.30		0.52	0.39	
v/c Ratio	0.42	1.07		1.08	0.26	0.45	0.89	0.88		1.12	0.96	
Control Delay (s/veh)	26.4	90.3		116.7	31.3	6.2	94.2	59.5		116.8	49.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	26.4	90.3		116.7	31.3	6.2	94.2	59.5		116.8	49.7	
LOS	C	F		F	C	A	F	E		F	D	
Approach Delay (s/veh)		80.5			49.1			64.9			62.5	
Approach LOS		F			D			E			E	
Queue Length 50th (m)	30.0	~138.3		~54.6	21.5	1.1	27.9	97.7		~93.6	164.7	
Queue Length 95th (m)	48.0	#181.7		m#109.0	m31.1	m11.6	#51.4	#149.2		#157.9	#206.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	442	934		238	1199	608	226	1261		342	1691	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.41	1.07		1.08	0.26	0.45	0.89	0.88		1.12	0.96	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay (s/veh): 65.0	Intersection LOS: E

Intersection Capacity Utilization 99.8% ICU Level of Service F

Analysis Period (min) 15

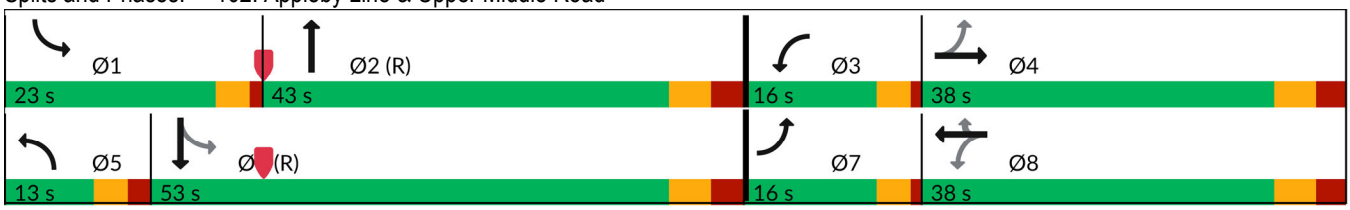
* User Entered Value

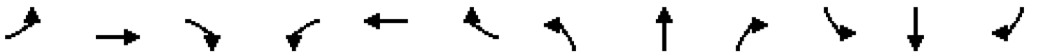
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	587	316	230	281	247	182	850	152	344	1404	51
Future Volume (vph)	164	587	316	230	281	247	182	850	152	344	1404	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1714	3321		1736	4471	1521	3400	4092		1752	4355	
Flt Permitted	0.53	1.00		0.12	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	959	3321		227	4471	1521	3400	4092		182	4355	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	652	351	256	312	274	202	944	169	382	1560	57
RTOR Reduction (vph)	0	60	0	0	0	200	0	17	0	0	3	0
Lane Group Flow (vph)	182	943	0	256	312	74	202	1096	0	382	1614	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	43.0	31.6		44.2	32.2	32.2	8.0	36.5		59.5	46.5	
Effective Green, g (s)	43.0	31.6		44.2	32.2	32.2	8.0	36.5		59.5	46.5	
Actuated g/C Ratio	0.36	0.26		0.37	0.27	0.27	0.07	0.30		0.50	0.39	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	415	874		234	1199	408	226	1244		338	1687	
v/s Ratio Prot	0.04	0.28		c0.11	0.07		0.06	0.27		c0.18	0.37	
v/s Ratio Perm	0.12			c0.29		0.05				c0.38		
v/c Ratio	0.44	1.08		1.09	0.26	0.18	0.89	0.88		1.13	0.96	
Uniform Delay, d1	27.6	44.2		32.2	34.5	33.8	55.6	39.7		36.5	35.8	
Progression Factor	1.00	1.00		1.43	0.88	0.94	1.05	1.31		1.00	1.00	
Incremental Delay, d2	0.7	54.2		84.3	0.1	0.2	31.2	8.6		89.0	13.8	
Delay (s)	28.4	98.4		130.3	30.6	31.8	89.6	60.5		125.5	49.6	
Level of Service	C	F		F	C	C	F	E		F	D	
Approach Delay (s/veh)		87.6			61.3			65.0			64.1	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	69.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	99.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1079	259	45	641	0	194	0	95	5	0	14
Future Volume (vph)	5	1079	259	45	641	0	194	0	95	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.971							0.850		0.899	
Flt Protected	0.950			0.950				0.950			0.988	
Satd. Flow (prot)	1805	4272	0	1805	4385	0	0	1752	1615	0	1550	0
Flt Permitted	0.290			0.055				0.742			0.916	
Satd. Flow (perm)	544	4272	0	104	4385	0	0	1362	1585	0	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57							123		64	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	6	1401	336	58	832	0	252	0	123	6	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1737	0	58	832	0	0	252	123	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	65.0	65.0		9.0	78.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	68.9	68.9		80.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.67	0.65			0.24	0.24		0.24	
v/c Ratio	0.02	0.70		0.34	0.29			0.77	0.26		0.06	
Control Delay (s/veh)	14.6	19.2		12.3	9.4			58.9	7.8		0.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	14.6	19.2		12.3	9.4			58.9	7.8		0.3	
LOS	B	B		B	A			E	A		A	
Approach Delay (s/veh)		19.2			9.6			42.2			0.3	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.7	97.4		5.7	41.3			58.4	0.0		0.0	
Queue Length 95th (m)	m1.1	m89.6		m8.2	m39.0			74.0	9.6		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	312	2477		196	2850			329	476		395	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.02	0.70		0.30	0.29			0.77	0.26		0.06	

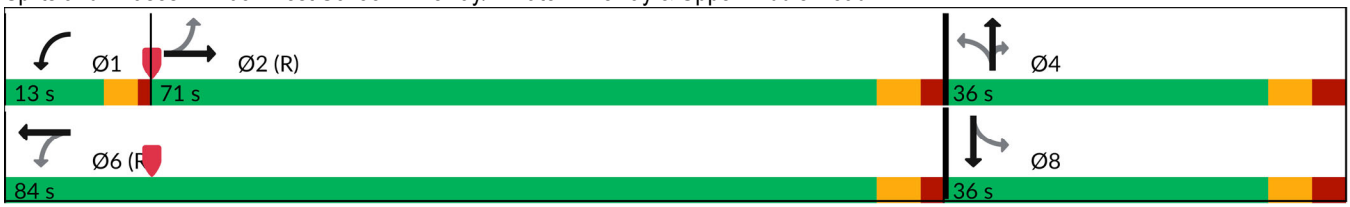
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 19.1	Intersection LOS: B

Intersection Capacity Utilization 90.3%	ICU Level of Service E
Analysis Period (min) 15	

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1079	259	45	641	0	194	0	95	5	0	14
Future Volume (vph)	5	1079	259	45	641	0	194	0	95	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1783	4272		1805	4385			1744	1585		1547	
Flt Permitted	0.29	1.00		0.06	1.00			0.74	1.00		0.92	
Satd. Flow (perm)	544	4272		105	4385			1361	1585		1435	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	6	1401	336	58	832	0	252	0	123	6	0	18
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	93	0	18	0
Lane Group Flow (vph)	6	1712	0	58	832	0	0	252	30	0	6	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	68.1	68.1		78.0	78.0			29.0	29.0		29.0	
Effective Green, g (s)	68.1	68.1		78.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.65	0.65			0.24	0.24		0.24	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	308	2424		151	2850			328	383		346	
v/s Ratio Prot		c0.40		c0.02	0.19							
v/s Ratio Perm	0.01			0.23				c0.19	0.02		0.00	
v/c Ratio	0.02	0.71		0.38	0.29			0.77	0.08		0.02	
Uniform Delay, d1	11.3	18.7		14.0	9.1			42.4	35.2		34.6	
Progression Factor	1.17	0.99		0.94	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.1	1.2		1.5	0.2			15.8	0.4		0.1	
Delay (s)	13.4	19.7		14.6	9.3			58.2	35.6		34.7	
Level of Service	B	B		B	A			E	D		C	
Approach Delay (s/veh)		19.7			9.7			50.8			34.7	
Approach LOS		B			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1007	165	257	654	47	190
Future Volume (vph)	1007	165	257	654	47	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.979					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4346	0	1787	4385	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4346	0	1787	4385	1805	1615
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	1418	232	362	921	66	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1650	0	362	921	66	268
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

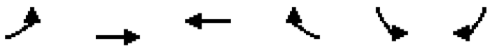
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1007	165	257	654	47	190
Future Volume (Veh/h)	1007	165	257	654	47	190
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1418	232	362	921	66	268
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.77		0.77	0.77
vC, conflicting volume			1662		2577	601
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			818		2005	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			42		0	68
cM capacity (veh/h)			620		17	832

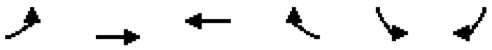
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	567	567	516	362	307	307	307	66	268
Volume Left	0	0	0	362	0	0	0	66	0
Volume Right	0	0	232	0	0	0	0	0	268
cSH	1700	1700	1700	620	1700	1700	1700	17	832
Volume to Capacity	0.33	0.33	0.30	0.58	0.18	0.18	0.18	3.92	0.32
Queue Length 95th (m)	0.0	0.0	0.0	30.1	0.0	0.0	0.0	Err	11.2
Control Delay (s/veh)	0.0	0.0	0.0	18.6	0.0	0.0	0.0	Err	11.4
Lane LOS				C				F	B
Approach Delay (s/veh)	0.0			5.3				1985.0	
Approach LOS								F	

Intersection Summary			
Average Delay	205.0		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	153	1045	670	78	92	236
Future Volume (vph)	153	1045	670	78	92	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.903	
Flt Protected	0.950				0.986	
Satd. Flow (prot)	1752	4471	4352	0	1668	0
Flt Permitted	0.950				0.986	
Satd. Flow (perm)	1752	4471	4352	0	1668	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	29			29		1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	3%	4%	0%	2%
Adj. Flow (vph)	201	1375	882	103	121	311
Shared Lane Traffic (%)						
Lane Group Flow (vph)	201	1375	985	0	432	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

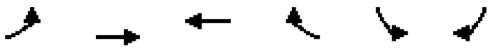
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



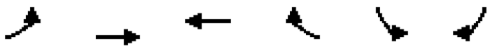
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	153	1045	670	78	92	236
Future Volume (Veh/h)	153	1045	670	78	92	236
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	201	1375	882	103	121	311
Pedestrians		1			29	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked						
vC, conflicting volume	1014				1823	376
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1014				1823	376
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	69				0	49
cM capacity (veh/h)	657				48	606

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	201	458	458	458	353	353	279	432
Volume Left	201	0	0	0	0	0	0	121
Volume Right	0	0	0	0	0	0	103	311
cSH	657	1700	1700	1700	1700	1700	1700	141
Volume to Capacity	0.31	0.27	0.27	0.27	0.21	0.21	0.16	3.06
Queue Length 95th (m)	10.3	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	12.9	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	B							F
Approach Delay (s/veh)	1.6				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	1444.1		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	252	894	452	168	480	282
Future Volume (vph)	252	894	452	168	480	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor	0.98		0.98		0.98	
Frt			0.959		0.950	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1703	4515	4147	0	1711	0
Flt Permitted	0.247				0.969	
Satd. Flow (perm)	436	4515	4147	0	1688	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			94		28	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	24			24	16	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Adj. Flow (vph)	300	1064	538	200	571	336
Shared Lane Traffic (%)						
Lane Group Flow (vph)	300	1064	738	0	907	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

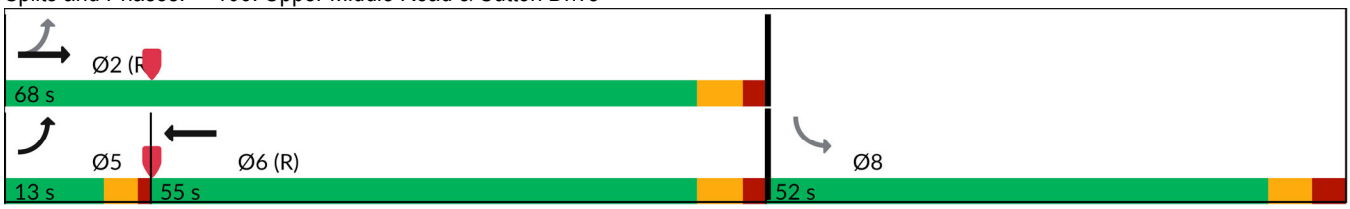


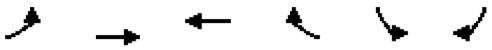
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	13.0	68.0	55.0		52.0	
Total Split (%)	10.8%	56.7%	45.8%		43.3%	
Maximum Green (s)	9.0	62.0	49.0		45.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	64.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.53	0.52	0.41		0.38	
v/c Ratio	0.92	0.46	0.42		1.40	
Control Delay (s/veh)	47.7	9.0	22.7		217.8	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	47.7	9.0	22.7		217.8	
LOS	D	A	C		F	
Approach Delay (s/veh)		17.5	22.7		217.8	
Approach LOS		B	C		F	
Queue Length 50th (m)	20.8	25.8	47.5		~297.6	
Queue Length 95th (m)	#38.6	29.3	55.5		#341.2	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	327	2332	1748		650	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.92	0.46	0.42		1.40	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.40	
Intersection Signal Delay (s/veh): 79.2	Intersection LOS: E

Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Upper Middle Road & Sutton Drive

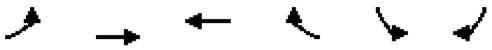




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	252	894	452	168	480	282
Future Volume (vph)	252	894	452	168	480	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		0.99	
Frt	1.00	1.00	0.96		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1697	4515	4148		1689	
Flt Permitted	0.25	1.00	1.00		0.97	
Satd. Flow (perm)	441	4515	4148		1689	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	300	1064	538	200	571	336
RTOR Reduction (vph)	0	0	56	0	18	0
Lane Group Flow (vph)	300	1064	682	0	890	0
Confl. Peds. (#/hr)	24			24	16	6
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	62.0	62.0	49.0		45.0	
Effective Green, g (s)	62.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.52	0.52	0.41		0.38	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	322	2332	1693		633	
v/s Ratio Prot	c0.07	0.24	0.16			
v/s Ratio Perm	c0.41				c0.53	
v/c Ratio	0.93	0.46	0.40		1.41	
Uniform Delay, d1	22.8	18.3	25.1		37.5	
Progression Factor	0.78	0.45	1.00		1.00	
Incremental Delay, d2	30.4	0.6	0.7		191.7	
Delay (s)	48.2	8.9	25.9		229.2	
Level of Service	D	A	C		F	
Approach Delay (s/veh)		17.6	25.9		229.2	
Approach LOS		B	C		F	

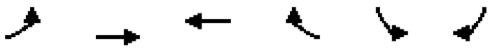
Intersection Summary			
HCM 2000 Control Delay (s/veh)	83.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	37	1343	538	5	0	66
Future Volume (vph)	37	1343	538	5	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	4515	4382	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	4515	4382	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	42	1509	604	6	0	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	1509	610	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

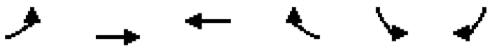
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.3%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	1343	538	5	0	66
Future Volume (Veh/h)	37	1343	538	5	0	66
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	42	1509	604	6	0	74
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.88	
vC, conflicting volume	628				1212	222
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	628				767	222
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	95				100	90
cM capacity (veh/h)	897				283	770

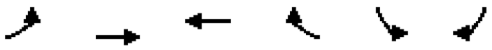
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	42	503	503	503	242	242	127	74
Volume Left	42	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	6	74
cSH	897	1700	1700	1700	1700	1700	1700	770
Volume to Capacity	0.05	0.30	0.30	0.30	0.14	0.14	0.07	0.10
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Control Delay (s/veh)	9.2	0.0	0.0	0.0	0.0	0.0	0.0	10.2
Lane LOS	A							B
Approach Delay (s/veh)	0.2				0.0			10.2
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	1340	551	4	26	8
Future Volume (vph)	4	1340	551	4	26	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.967	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1805	4515	4414	0	1630	0
Flt Permitted	0.950				0.964	
Satd. Flow (perm)	1805	4515	4414	0	1630	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	4	1457	599	4	28	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	1457	603	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

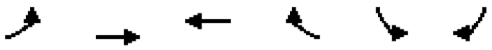


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1340	551	4	26	8
Future Volume (Veh/h)	4	1340	551	4	26	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1457	599	4	28	9
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	617				1109	216
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	617				1109	216
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	100				86	99
cM capacity (veh/h)	961				195	736

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	4	486	486	486	240	240	124	37
Volume Left	4	0	0	0	0	0	0	28
Volume Right	0	0	0	0	0	0	4	9
cSH	961	1700	1700	1700	1700	1700	1700	237
Volume to Capacity	0.00*	0.29	0.29	0.29	0.14	0.14	0.07	0.16
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	4.3
Control Delay (s/veh)	8.8	0.0	0.0	0.0	0.0	0.0	0.0	23.0
Lane LOS	A							C
Approach Delay (s/veh)	0.0				0.0			23.0
Approach LOS								C

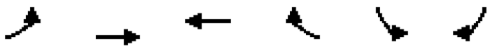
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	1370	475	33	195	45
Future Volume (vph)	26	1370	475	33	195	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	4515	4341	0	1737	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1703	4515	4341	0	1737	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	29	1522	528	37	217	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	1522	565	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	1370	475	33	195	45
Future Volume (Veh/h)	26	1370	475	33	195	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	29	1522	528	37	217	50
Pedestrians					10	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	575				1122	205
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	575				1122	205
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	97				0	94
cM capacity (veh/h)	959				194	774

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	29	507	507	507	211	211	143	267
Volume Left	29	0	0	0	0	0	0	217
Volume Right	0	0	0	0	0	0	37	50
cSH	959	1700	1700	1700	1700	1700	1700	225
Volume to Capacity	0.03	0.30	0.30	0.30	0.12	0.12	0.08	1.18
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0	0.0	0.0	103.5
Control Delay (s/veh)	8.9	0.0	0.0	0.0	0.0	0.0	0.0	163.8
Lane LOS	A							F
Approach Delay (s/veh)	0.2				0.0			163.8
Approach LOS								F

Intersection Summary			
Average Delay	18.5		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	4	526	48	21	1496
Future Volume (vph)	12	4	526	48	21	1496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.968		0.988			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1771	0	4385	0	1805	4515
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	1771	0	4385	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	13	4	584	53	23	1662
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	637	0	23	1662
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

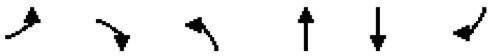
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



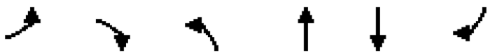
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	4	526	48	21	1496
Future Volume (Veh/h)	12	4	526	48	21	1496
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	4	584	53	23	1662
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1212	222			638	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1212	222			638	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	99			98	
cM capacity (veh/h)	173	787			955	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	17	234	234	170	23	554	554	554
Volume Left	13	0	0	0	23	0	0	0
Volume Right	4	0	0	53	0	0	0	0
cSH	212	1700	1700	1700	955	1700	1700	1700
Volume to Capacity	0.08	0.14	0.14	0.10	0.02	0.33	0.33	0.33
Queue Length 95th (m)	2.1	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Control Delay (s/veh)	23.5	0.0	0.0	0.0	8.9	0.0	0.0	0.0
Lane LOS	C				A			
Approach Delay (s/veh)	23.5	0.0			0.1			
Approach LOS	C							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	405	370	523	1440	77
Future Volume (vph)	61	405	370	523	1440	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	1736	4427	4476	0
Flt Permitted	0.950		0.063			
Satd. Flow (perm)	1805	1524	115	4427	4476	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		174			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	67	445	407	575	1582	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	445	407	575	1667	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	14.0	80.0	66.0	
Total Split (%)	27.3%	27.3%	12.7%	72.7%	60.0%	
Maximum Green (s)	23.0	23.0	10.0	73.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.54	
v/c Ratio	0.18	0.98	1.80	0.20	0.69	
Control Delay (s/veh)	37.3	63.9	399.2	9.7	20.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.3	63.9	399.2	9.7	20.6	
LOS	D	E	F	A	C	
Approach Delay (s/veh)	60.4			171.1	20.6	
Approach LOS	E			F	C	
Queue Length 50th (m)	12.5	68.4	~122.3	26.3	110.7	
Queue Length 95th (m)	25.2	#139.0	#187.0	33.3	131.1	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	377	456	226	2937	2405	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.18	0.98	1.80	0.20	0.69	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 74 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.80	
Intersection Signal Delay (s/veh): 73.8	Intersection LOS: E

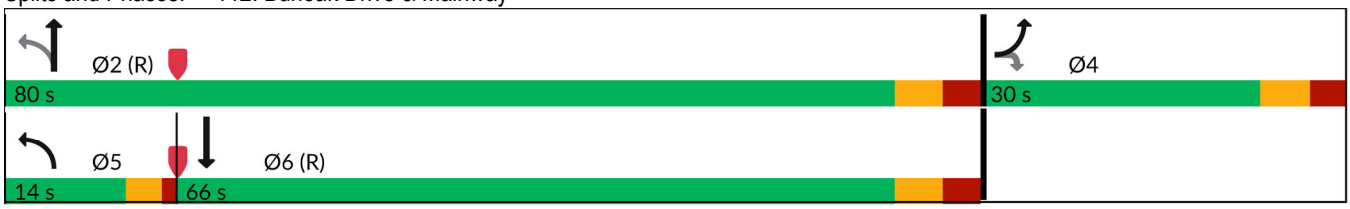
Intersection Capacity Utilization 71.7%	ICU Level of Service C
Analysis Period (min) 15	

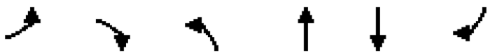
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	405	370	523	1440	77
Future Volume (vph)	61	405	370	523	1440	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	1736	4427	4478	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1524	116	4427	4478	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	67	445	407	575	1582	85
RTOR Reduction (vph)	0	138	0	0	5	0
Lane Group Flow (vph)	67	307	407	575	1662	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	59.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	318	224	2937	2401	
v/s Ratio Prot	0.04		c0.17	0.13	0.37	
v/s Ratio Perm		c0.20	c1.04			
v/c Ratio	0.18	0.97	1.82	0.20	0.69	
Uniform Delay, d1	35.7	43.1	32.5	7.2	18.8	
Progression Factor	1.00	1.00	0.80	1.32	1.00	
Incremental Delay, d2	0.2	41.1	384.6	0.1	1.7	
Delay (s)	36.0	84.2	410.8	9.6	20.5	
Level of Service	D	F	F	A	C	
Approach Delay (s/veh)	77.9			175.9	20.5	
Approach LOS	E			F	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	78.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.65		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	389	114	30	222	17	11
Future Volume (vph)	389	114	30	222	17	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.966				0.948	
Flt Protected				0.994	0.970	
Satd. Flow (prot)	3336	0	0	3408	1556	0
Flt Permitted				0.994	0.970	
Satd. Flow (perm)	3336	0	0	3408	1556	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	3%	0%	6%	20%	0%
Adj. Flow (vph)	437	128	34	249	19	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	565	0	0	283	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

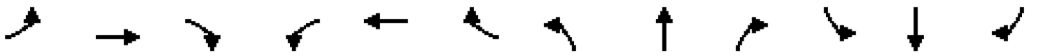
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	389	114	30	222	17	11
Future Volume (Veh/h)	389	114	30	222	17	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	437	128	34	249	19	12
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			567		696	285
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			567		696	285
tC, single (s)			4.1		7.2	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			97		94	98
cM capacity (veh/h)			1013		327	717

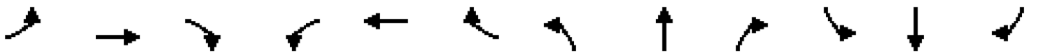
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	291	274	117	166	31
Volume Left	0	0	34	0	19
Volume Right	0	128	0	0	12
cSH	1700	1700	1013	1700	414
Volume to Capacity	0.17	0.16	0.03	0.10	0.07
Queue Length 95th (m)	0.0	0.0	0.8	0.0	1.9
Control Delay (s/veh)	0.0	0.0	2.7	0.0	14.4
Lane LOS			A		B
Approach Delay (s/veh)	0.0		1.1		14.4
Approach LOS					B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	699	62	15	130	20	15	0	4	104	2	78
Future Volume (vph)	21	699	62	15	130	20	15	0	4	104	2	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.982			0.971			0.942	
Flt Protected		0.999			0.995			0.962			0.973	
Satd. Flow (prot)	0	3450	0	0	3206	0	0	1504	0	0	1732	0
Flt Permitted		0.999			0.995			0.962			0.973	
Satd. Flow (perm)	0	3450	0	0	3206	0	0	1504	0	0	1732	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	25	822	73	18	153	24	18	0	5	122	2	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	920	0	0	195	0	0	23	0	0	216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

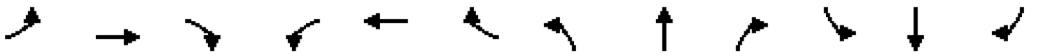
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	699	62	15	130	20	15	0	4	104	2	78
Future Volume (Veh/h)	21	699	62	15	130	20	15	0	4	104	2	78
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	25	822	73	18	153	24	18	0	5	122	2	92
Pedestrians								9			5	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	182			904			1123	1136	457	672	1160	94
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	182			904			1123	1136	457	672	1160	94
tC, single (s)	4.4			4.4			8.0	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.4			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			84	100	99	62	99	90
cM capacity (veh/h)	1289			667			116	192	552	324	186	948

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	436	484	95	101	23	216
Volume Left	25	0	18	0	18	122
Volume Right	0	73	0	24	5	92
cSH	1289	1700	667	1700	140	446
Volume to Capacity	0.02	0.28	0.03	0.06	0.16	0.48
Queue Length 95th (m)	0.5	0.0	0.7	0.0	4.5	20.7
Control Delay (s/veh)	0.6	0.0	2.3	0.0	35.7	20.4
Lane LOS	A		A		E	C
Approach Delay (s/veh)	0.3		1.1		35.7	20.4
Approach LOS					E	C

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	48.8%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	400	172	94	97	58	120	900	202	244	1510	123
Future Volume (vph)	173	400	172	94	97	58	120	900	202	244	1510	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Frt		0.955			0.944			0.973			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3169	0	1492	3052	0	1597	4163	0	1770	4296	0
Flt Permitted	0.650			0.191			0.079			0.116		
Satd. Flow (perm)	1093	3169	0	299	3052	0	133	4163	0	216	4296	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			60			36			13	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	180	417	179	98	101	60	125	938	210	254	1573	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	596	0	98	161	0	125	1148	0	254	1701	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	34.0		11.0	34.0		11.0	48.0		27.0	64.0	
Total Split (%)	9.2%	28.3%		9.2%	28.3%		9.2%	40.0%		22.5%	53.3%	
Maximum Green (s)	7.0	27.7		7.0	27.7		7.0	41.7		23.0	57.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	34.2	24.9		34.2	24.9		61.3	50.9		73.3	59.4	
Actuated g/C Ratio	0.29	0.21		0.29	0.21		0.51	0.42		0.61	0.50	
v/c Ratio	0.53	0.85		0.64	0.24		0.75	0.64		0.73	0.80	
Control Delay (s/veh)	38.6	54.2		49.3	24.7		45.3	33.3		40.8	16.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	38.6	54.2		49.3	24.7		45.3	33.3		40.8	16.1	
LOS	D	D		D	C		D	C		D	B	
Approach Delay (s/veh)		50.6			34.0			34.5			19.3	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	36.6	71.4		20.0	11.5		16.9	122.7		44.4	75.3	
Queue Length 95th (m)	57.4	92.9		#37.3	21.6		m#45.7	142.4		70.6	128.5	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	341	771		154	750		166	1785		430	2133	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.53	0.77		0.64	0.21		0.75	0.64		0.59	0.80	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 58 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 30.4	Intersection LOS: C

Intersection Capacity Utilization 80.5% ICU Level of Service D

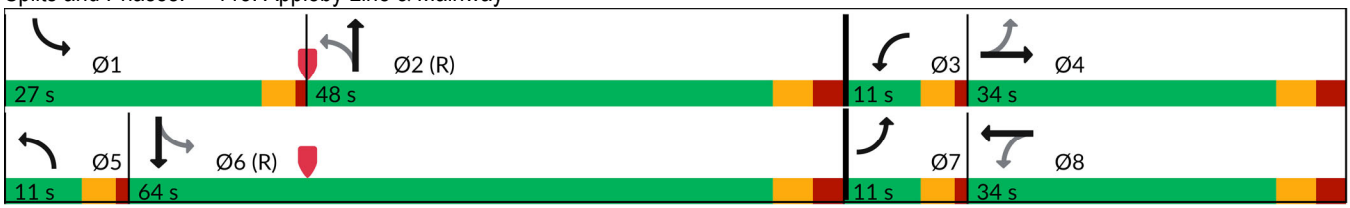
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

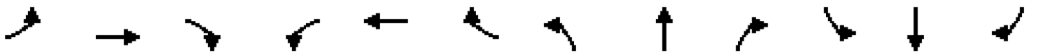


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	400	172	94	97	58	120	900	202	244	1510	123
Future Volume (vph)	173	400	172	94	97	58	120	900	202	244	1510	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1603	3169		1491	3052		1597	4161		1769	4295	
Flt Permitted	0.65	1.00		0.19	1.00		0.08	1.00		0.12	1.00	
Satd. Flow (perm)	1097	3169		299	3052		132	4161		217	4295	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	180	417	179	98	101	60	125	938	210	254	1573	128
RTOR Reduction (vph)	0	41	0	0	48	0	0	21	0	0	7	0
Lane Group Flow (vph)	180	555	0	98	113	0	125	1127	0	254	1694	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.9	24.9		31.9	24.9		58.9	50.8		71.5	59.4	
Effective Green, g (s)	31.9	24.9		31.9	24.9		58.9	50.8		71.5	59.4	
Actuated g/C Ratio	0.27	0.21		0.27	0.21		0.49	0.42		0.60	0.50	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	321	657		149	633		163	1761		345	2126	
v/s Ratio Prot	0.03	c0.18		c0.04	0.04		0.05	0.27		c0.10	c0.39	
v/s Ratio Perm	0.12			0.14			0.32			0.34		
v/c Ratio	0.56	0.84		0.66	0.18		0.77	0.64		0.74	0.80	
Uniform Delay, d1	36.7	45.7		35.5	39.1		21.8	27.4		21.5	25.3	
Progression Factor	1.00	1.00		1.00	1.00		0.90	1.14		1.63	0.52	
Incremental Delay, d2	2.2	9.7		10.0	0.1		14.6	1.3		6.3	2.5	
Delay (s)	39.0	55.4		45.6	39.3		34.1	32.4		41.3	15.8	
Level of Service	D	E		D	D		C	C		D	B	
Approach Delay (s/veh)		51.6			41.7			32.6			19.1	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	9	28	138	17	105	36	1023	67	78	1791	49
Future Volume (vph)	19	9	28	138	17	105	36	1023	67	78	1791	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.945			0.991			0.996	
Flt Protected		0.984			0.974		0.950			0.950		
Satd. Flow (prot)	0	1321	0	0	1691	0	1530	4214	0	1736	4362	0
Flt Permitted		0.850			0.803		0.066			0.167		
Satd. Flow (perm)	0	1140	0	0	1389	0	106	4214	0	304	4362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			29			10			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	19	9	29	141	17	107	37	1044	68	80	1828	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	265	0	37	1112	0	80	1878	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	42.0	42.0		42.0	42.0		66.0	66.0		12.0	78.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		55.0%	55.0%		10.0%	65.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		60.0	60.0		8.0	72.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		26.0			26.0		72.2	72.2		83.5	81.5	
Actuated g/C Ratio		0.22			0.22		0.60	0.60		0.70	0.68	
v/c Ratio		0.22			0.82		0.59	0.44		0.27	0.63	
Control Delay (s/veh)		28.1			58.9		66.0	24.9		4.9	6.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		28.1			58.9		66.0	24.9		4.9	6.5	
LOS		C			E		E	C		A	A	
Approach Delay (s/veh)		28.1			58.9			26.2			6.4	
Approach LOS		C			E			C			A	
Queue Length 50th (m)		8.9			56.4		9.9	102.9		3.1	48.3	
Queue Length 95th (m)		20.0			80.8		m#20.2	132.3		m4.8	m73.2	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		349			431		63	2540		307	2963	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.61		0.59	0.44		0.26	0.63	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 17.5	Intersection LOS: B

Intersection Capacity Utilization 80.4% ICU Level of Service D

Analysis Period (min) 15

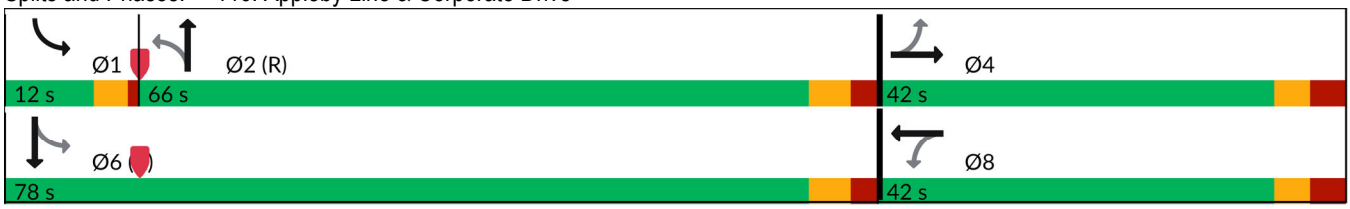
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

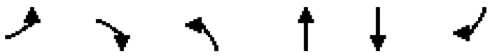
Splits and Phases: 116: Appleby Line & Corporate Drive



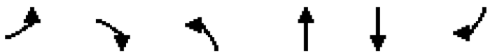
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	9	28	138	17	105	36	1023	67	78	1791	49
Future Volume (vph)	19	9	28	138	17	105	36	1023	67	78	1791	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.95		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1320			1686		1529	4213		1735	4362	
Flt Permitted		0.85			0.80		0.07	1.00		0.17	1.00	
Satd. Flow (perm)		1141			1389		107	4213		305	4362	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	19	9	29	141	17	107	37	1044	68	80	1828	50
RTOR Reduction (vph)	0	13	0	0	23	0	0	4	0	0	2	0
Lane Group Flow (vph)	0	44	0	0	242	0	37	1108	0	80	1876	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.0			26.0		71.4	71.4		81.5	81.5	
Effective Green, g (s)		26.0			26.0		71.4	71.4		81.5	81.5	
Actuated g/C Ratio		0.22			0.22		0.60	0.60		0.68	0.68	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		247			300		63	2506		279	2962	
v/s Ratio Prot								0.26		0.01	c0.43	
v/s Ratio Perm		0.04			c0.17		0.35			0.18		
v/c Ratio		0.18			0.81		0.59	0.44		0.29	0.63	
Uniform Delay, d1		38.3			44.6		15.1	13.4		7.6	10.8	
Progression Factor		1.00			1.00		1.50	1.68		0.59	0.52	
Incremental Delay, d2		0.3			14.6		28.2	0.5		0.1	0.3	
Delay (s)		38.6			59.3		50.9	22.9		4.7	5.8	
Level of Service		D			E		D	C		A	A	
Approach Delay (s/veh)		38.6			59.3			23.8			5.8	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	104	447	701	1426	110
Future Volume (vph)	31	104	447	701	1426	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.989	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	1719	4427	4418	0
Flt Permitted	0.950		0.074			
Satd. Flow (perm)	1805	1313	134	4427	4418	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		105			15	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	31	105	452	708	1440	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	105	452	708	1551	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	23.0	23.0	20.0	87.0	67.0	
Total Split (%)	20.9%	20.9%	18.2%	79.1%	60.9%	
Maximum Green (s)	16.0	16.0	16.0	80.0	60.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.9	8.9	90.1	87.1	60.0	
Actuated g/C Ratio	0.08	0.08	0.82	0.79	0.55	
v/c Ratio	0.21	0.52	1.02	0.20	0.64	
Control Delay (s/veh)	50.2	18.8	74.2	1.6	7.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	50.2	18.8	74.2	1.6	7.8	
LOS	D	B	E	A	A	
Approach Delay (s/veh)	25.9			29.9	7.8	
Approach LOS	C			C	A	
Queue Length 50th (m)	6.7	0.0	91.3	6.0	27.6	
Queue Length 95th (m)	16.0	19.2	m#99.1	m9.0	m33.0	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	262	280	442	3506	2416	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.38	1.02	0.20	0.64	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 17.7	Intersection LOS: B

Intersection Capacity Utilization 76.5% ICU Level of Service D

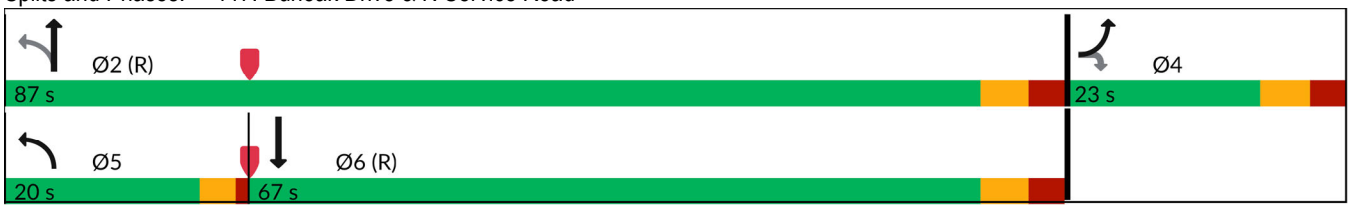
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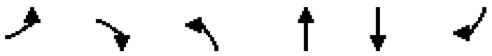
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	104	447	701	1426	110
Future Volume (vph)	31	104	447	701	1426	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	1719	4427	4419	
Flt Permitted	0.95	1.00	0.07	1.00	1.00	
Satd. Flow (perm)	1805	1313	135	4427	4419	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	31	105	452	708	1440	111
RTOR Reduction (vph)	0	97	0	0	7	0
Lane Group Flow (vph)	31	8	452	708	1544	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	8.9	8.9	87.1	87.1	60.0	
Effective Green, g (s)	8.9	8.9	87.1	87.1	60.0	
Actuated g/C Ratio	0.08	0.08	0.79	0.79	0.55	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	146	106	439	3505	2410	
v/s Ratio Prot	c0.02		c0.22	0.16	0.35	
v/s Ratio Perm		0.01	c0.60			
v/c Ratio	0.21	0.08	1.03	0.20	0.64	
Uniform Delay, d1	47.3	46.8	33.8	2.8	17.5	
Progression Factor	1.00	1.00	1.26	0.53	0.40	
Incremental Delay, d2	0.7	0.3	37.4	0.1	0.8	
Delay (s)	48.0	47.1	80.2	1.6	7.8	
Level of Service	D	D	F	A	A	
Approach Delay (s/veh)	47.3			32.2	7.8	
Approach LOS	D			C	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1025	959	613	0	0	1801
Future Volume (vph)	1025	959	613	0	0	1801
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3251	1427	4427	0	0	4427
Flt Permitted	0.964					
Satd. Flow (perm)	3251	1427	4427	0	0	4427
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	42	255				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1102	1031	659	0	0	1937
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	1463	670	659	0	0	1937
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

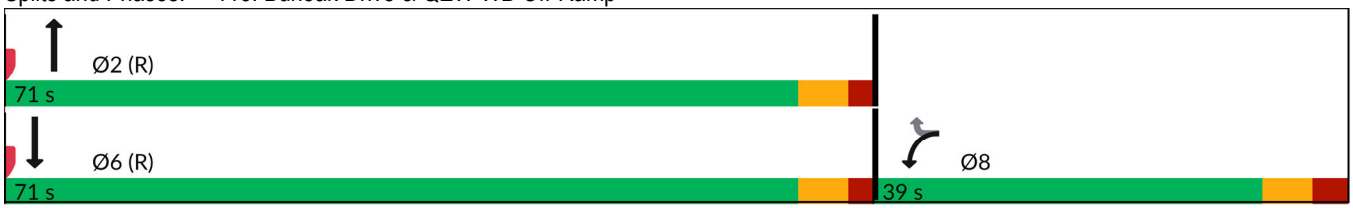


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	39.0	39.0	71.0			71.0
Total Split (%)	35.5%	35.5%	64.5%			64.5%
Maximum Green (s)	32.0	32.0	65.0			65.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
v/c Ratio	1.50	1.13	0.25			0.74
Control Delay (s/veh)	260.5	100.6	10.9			8.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	260.5	100.6	10.9			8.7
LOS	F	F	B			A
Approach Delay (s/veh)	210.3		10.9			8.7
Approach LOS	F		B			A
Queue Length 50th (m)	~245.4	~147.9	38.2			132.7
Queue Length 95th (m)	#291.3	#230.3	15.0			76.0
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	975	595	2615			2615
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.50	1.13	0.25			0.74

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.50			
Intersection Signal Delay (s/veh): 99.9		Intersection LOS: F	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

*	User Entered Value
~	Volume exceeds capacity, queue is theoretically infinite.
	Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer.
	Queue shown is maximum after two cycles.

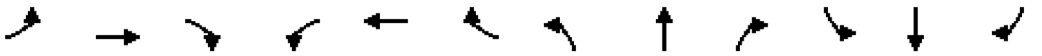
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



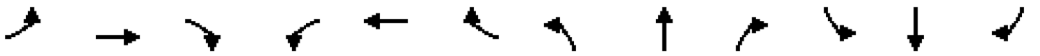


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1025	959	613	0	0	1801
Future Volume (vph)	1025	959	613	0	0	1801
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3250	1427	4427			4427
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3250	1427	4427			4427
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1102	1031	659	0	0	1937
RTOR Reduction (vph)	30	181	0	0	0	0
Lane Group Flow (vph)	1433	489	659	0	0	1937
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0	65.0			65.0
Effective Green, g (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	945	415	2615			2615
v/s Ratio Prot	c0.44		0.15			c0.44
v/s Ratio Perm		0.34				
v/c Ratio	1.52	1.18	0.25			0.74
Uniform Delay, d1	39.0	39.0	10.8			16.4
Progression Factor	1.00	1.00	0.98			0.42
Incremental Delay, d2	237.9	102.8	0.2			1.7
Delay (s)	276.9	141.8	10.8			8.6
Level of Service	F	F	B			A
Approach Delay (s/veh)	234.5		10.8			8.6
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	110.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	91	301	0	0	69	0	718	5	5	1794	0
Future Volume (vph)	123	91	301	0	0	69	0	718	5	5	1794	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.907	0.850			0.865		0.999				
Flt Protected	0.950											
Satd. Flow (prot)	1770	2847	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950										0.938	
Satd. Flow (perm)	1770	2847	1318	0	0	1417	0	5032	0	0	4634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		162	162			260		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	132	98	324	0	0	74	0	772	5	5	1929	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	132	260	162	0	0	74	0	777	0	0	1934	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

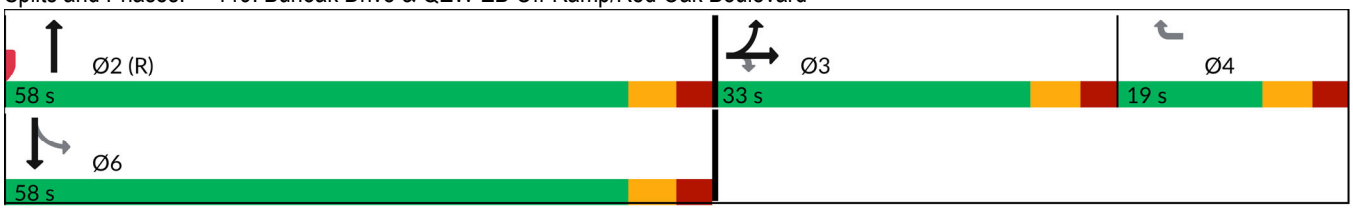


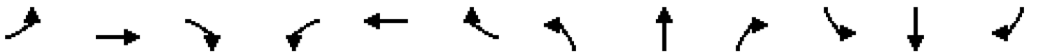
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		None	None	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	13.7	13.7	13.7			8.0		70.3			70.3	
Actuated g/C Ratio	0.12	0.12	0.12			0.07		0.64			0.64	
v/c Ratio	0.60	0.52	0.53			0.22		0.24			0.65	
Control Delay (s/veh)	56.2	20.5	13.1			1.4		9.8			14.2	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	56.2	20.5	13.1			1.4		9.8			14.2	
LOS	E	C	B			A		A			B	
Approach Delay (s/veh)		26.8			1.4			9.8			14.2	
Approach LOS		C			A			A			B	
Queue Length 50th (m)	29.1	11.8	0.0			0.0		27.8			78.9	
Queue Length 95th (m)	46.9	24.7	22.0			0.0		40.5			m103.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	418	796	435			386		3216			2961	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.32	0.33	0.37			0.19		0.24			0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 3 (3%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 15.0		Intersection LOS: B	

Intersection Capacity Utilization 59.0% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

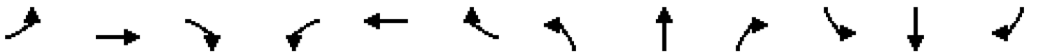




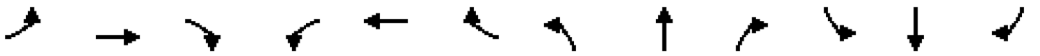
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	91	301	0	0	69	0	718	5	5	1794	0
Future Volume (vph)	123	91	301	0	0	69	0	718	5	5	1794	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1770	2844	1317			1417		5032			4940	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1770	2844	1317			1417		5032			4635	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	132	98	324	0	0	74	0	772	5	5	1929	0
RTOR Reduction (vph)	0	142	142	0	0	70	0	0	0	0	0	0
Lane Group Flow (vph)	132	118	20	0	0	4	0	777	0	0	1934	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	13.7	13.7	13.7			6.4		68.9			68.9	
Effective Green, g (s)	13.7	13.7	13.7			6.4		68.9			68.9	
Actuated g/C Ratio	0.12	0.12	0.12			0.06		0.63			0.63	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	220	354	164			82		3151			2903	
v/s Ratio Prot	c0.07	0.04						0.15				
v/s Ratio Perm			0.02			c0.00					c0.42	
v/c Ratio	0.60	0.33	0.12			0.05		0.25			0.67	
Uniform Delay, d1	45.6	44.0	42.8			48.9		9.1			13.2	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	4.5	0.6	0.3			0.3		0.2			0.1	
Delay (s)	50.1	44.5	43.1			49.2		9.3			13.3	
Level of Service	D	D	D			D		A			B	
Approach Delay (s/veh)		45.5			49.2			9.3			13.3	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	121	48	79	11	42	148	1216	435	99	1564	37
Future Volume (vph)	49	121	48	79	11	42	148	1216	435	99	1564	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.957			0.882			0.960			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1681	0	1504	1568	0	1719	4166	0	1752	4329	0
Flt Permitted	0.720			0.352			0.061			0.059		
Satd. Flow (perm)	1200	1681	0	557	1568	0	110	4166	0	109	4329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			44			106			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	52	127	51	83	12	44	156	1280	458	104	1646	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	178	0	83	56	0	156	1738	0	104	1685	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	27.0	27.0		11.0	38.0		14.0	68.0		14.0	68.0	
Total Split (%)	22.5%	22.5%		9.2%	31.7%		11.7%	56.7%		11.7%	56.7%	
Maximum Green (s)	20.9	20.9		7.0	31.9		10.0	61.4		10.0	61.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.4	16.4		27.3	25.2		82.2	69.7		79.2	68.2	
Actuated g/C Ratio	0.14	0.14		0.23	0.21		0.69	0.58		0.66	0.57	
v/c Ratio	0.32	0.74		0.46	0.15		0.75	0.71		0.56	0.68	
Control Delay (s/veh)	50.4	62.8		43.8	14.4		42.8	17.6		42.4	13.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.4	62.8		43.8	14.4		42.8	17.6		42.4	13.6	
LOS	D	E		D	B		D	B		D	B	
Approach Delay (s/veh)		60.0			32.0			19.7			15.3	
Approach LOS		E			C			B			B	
Queue Length 50th (m)	12.9	39.9		18.8	2.5		23.5	84.9		12.0	159.9	
Queue Length 95th (m)	26.2	63.4		33.6	13.7		m35.8	m129.0		m15.9	206.2	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	209	305		182	449		218	2464		210	2462	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.58		0.46	0.12		0.72	0.71		0.50	0.68	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 20.4	Intersection LOS: C

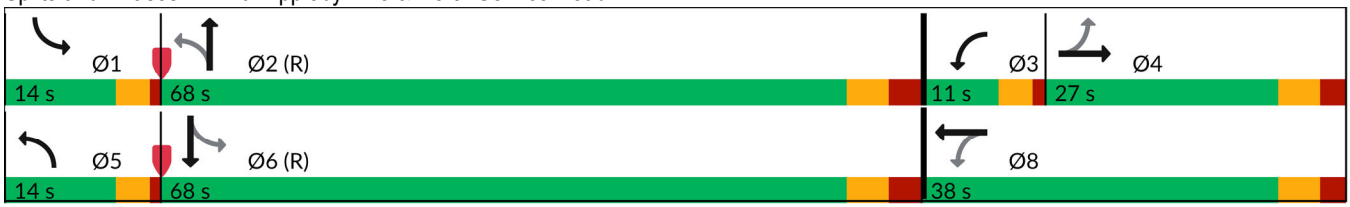
Intersection Capacity Utilization 71.6% ICU Level of Service C

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	121	48	79	11	42	148	1216	435	99	1564	37
Future Volume (vph)	49	121	48	79	11	42	148	1216	435	99	1564	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1681		1504	1569		1719	4168		1752	4327	
Flt Permitted	0.72	1.00		0.35	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1201	1681		557	1569		110	4168		109	4327	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	127	51	83	12	44	156	1280	458	104	1646	39
RTOR Reduction (vph)	0	13	0	0	34	0	0	45	0	0	2	0
Lane Group Flow (vph)	52	165	0	83	22	0	156	1693	0	104	1683	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.4	16.4		26.0	26.0		78.8	68.9		75.8	67.4	
Effective Green, g (s)	16.4	16.4		26.0	26.0		78.8	68.9		75.8	67.4	
Actuated g/C Ratio	0.14	0.14		0.22	0.22		0.66	0.57		0.63	0.56	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	229		164	339		204	2393		183	2430	
v/s Ratio Prot		c0.10		c0.02	0.01		c0.06	0.41		0.04	0.39	
v/s Ratio Perm	0.04			0.09			c0.44			0.32		
v/c Ratio	0.32	0.72		0.51	0.06		0.76	0.71		0.57	0.69	
Uniform Delay, d1	46.7	49.6		39.4	37.3		27.2	18.3		15.5	18.9	
Progression Factor	1.00	1.00		1.00	1.00		1.26	0.91		1.98	0.63	
Incremental Delay, d2	1.1	10.6		2.4	0.1		8.7	1.0		2.4	1.0	
Delay (s)	47.9	60.2		41.8	37.4		43.2	17.6		33.0	12.9	
Level of Service	D	E		D	D		D	B		C	B	
Approach Delay (s/veh)		57.4			40.0			19.7			14.1	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	424	487	1769	0	0	1469
Future Volume (vph)	424	487	1769	0	0	1469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	1495	4385	0	0	4302
Flt Permitted	0.950					
Satd. Flow (perm)	3183	1495	4385	0	0	4302
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		15				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	466	535	1944	0	0	1614
Shared Lane Traffic (%)						
Lane Group Flow (vph)	466	535	1944	0	0	1614
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

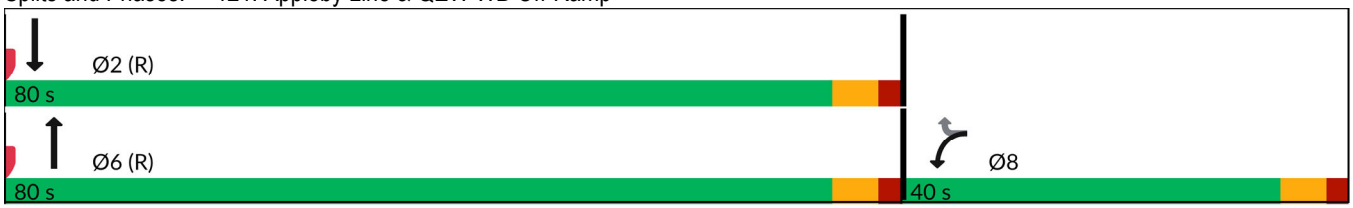


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
v/c Ratio	0.52	1.23	0.72			0.61
Control Delay (s/veh)	38.6	159.9	13.0			3.8
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	38.6	159.9	13.0			3.8
LOS	D	F	B			A
Approach Delay (s/veh)	103.4		13.0			3.8
Approach LOS	F		B			A
Queue Length 50th (m)	53.6	~171.2	88.8			18.9
Queue Length 95th (m)	71.7	#245.5	103.6			19.4
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	901	434	2704			2652
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.52	1.23	0.72			0.61

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay (s/veh): 29.6		Intersection LOS: C	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

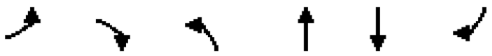
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



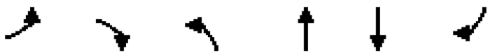


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	424	487	1769	0	0	1469
Future Volume (vph)	424	487	1769	0	0	1469
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	1495	4385			4302
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	1495	4385			4302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	466	535	1944	0	0	1614
RTOR Reduction (vph)	0	11	0	0	0	0
Lane Group Flow (vph)	466	524	1944	0	0	1614
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	74.0			74.0
Effective Green, g (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	901	423	2704			2652
v/s Ratio Prot	0.15		c0.44			0.38
v/s Ratio Perm		c0.35				
v/c Ratio	0.52	1.24	0.72			0.61
Uniform Delay, d1	36.1	43.0	15.8			14.1
Progression Factor	1.00	1.00	0.73			0.21
Incremental Delay, d2	0.5	126.5	1.3			0.8
Delay (s)	36.6	169.5	12.8			3.8
Level of Service	D	F	B			A
Approach Delay (s/veh)	107.6		12.8			3.8
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	691	393	0	1444	1471	0
Future Volume (vph)	691	393	0	1444	1471	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4302	4302	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4302	4302	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		34				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	768	437	0	1604	1634	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	768	437	0	1604	1634	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

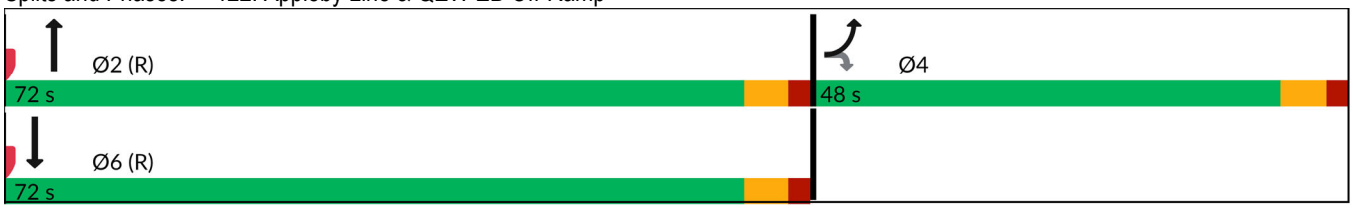


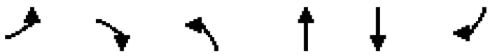
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	34.4	34.4		73.6	73.6	
Actuated g/C Ratio	0.29	0.29		0.61	0.61	
v/c Ratio	0.80	0.55		0.61	0.62	
Control Delay (s/veh)	46.4	35.3		7.7	15.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	46.4	35.3		7.7	15.5	
LOS	D	D		A	B	
Approach Delay (s/veh)	42.4			7.7	15.5	
Approach LOS	D			A	B	
Queue Length 50th (m)	93.8	49.5		36.0	81.7	
Queue Length 95th (m)	108.7	63.0		43.4	128.5	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1167	969		2640	2640	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.66	0.45		0.61	0.62	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 20.0		Intersection LOS: B	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

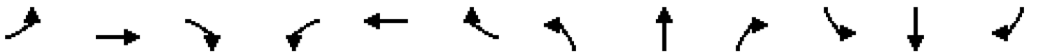
Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



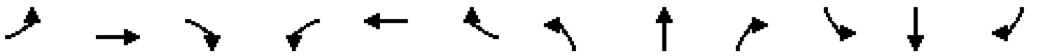


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	691	393	0	1444	1471	0
Future Volume (vph)	691	393	0	1444	1471	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4302	4302	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4302	4302	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	768	437	0	1604	1634	0
RTOR Reduction (vph)	0	24	0	0	0	0
Lane Group Flow (vph)	768	413	0	1604	1634	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	34.4	34.4		73.6	73.6	
Effective Green, g (s)	34.4	34.4		73.6	73.6	
Actuated g/C Ratio	0.29	0.29		0.61	0.61	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	956	776		2638	2638	
v/s Ratio Prot	c0.23			0.37	c0.38	
v/s Ratio Perm		0.15				
v/c Ratio	0.80	0.53		0.61	0.62	
Uniform Delay, d1	39.7	36.0		14.3	14.5	
Progression Factor	1.00	1.00		0.46	0.95	
Incremental Delay, d2	5.0	0.7		0.7	0.9	
Delay (s)	44.6	36.7		7.3	14.6	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	41.8			7.3	14.6	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	449	63	95	133	206	77	1147	352	368	643	244
Future Volume (vph)	162	449	63	95	133	206	77	1147	352	368	643	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99	1.00		0.98
Frt		0.982			0.909				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3263	0	1656	2910	0	1687	4427	1568	1770	4302	1417
Flt Permitted	0.305			0.312			0.345			0.084		
Satd. Flow (perm)	489	3263	0	544	2910	0	612	4427	1547	156	4302	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			219				227			260
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	172	478	67	101	141	219	82	1220	374	391	684	260
Shared Lane Traffic (%)												
Lane Group Flow (vph)	172	545	0	101	360	0	82	1220	374	391	684	260
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.6		7.0	21.6		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	37.6	24.4		27.6	18.2		54.2	43.7	43.7	74.2	62.0	62.0
Actuated g/C Ratio	0.31	0.20		0.23	0.15		0.45	0.36	0.36	0.62	0.52	0.52
v/c Ratio	0.64	0.81		0.53	0.57		0.23	0.76	0.53	0.93	0.31	0.31
Control Delay (s/veh)	42.9	54.6		41.2	21.5		12.5	27.6	10.2	62.1	19.6	6.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.9	54.6		41.2	21.5		12.5	27.6	10.2	62.1	19.6	6.0
LOS	D	D		D	C		B	C	B	E	B	A
Approach Delay (s/veh)		51.8			25.8			23.0			29.4	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	36.9	69.5		19.3	17.4		8.0	71.2	21.8	89.7	42.1	8.4
Queue Length 95th (m)	56.8	87.7		32.9	33.0		m10.7	m79.5	m25.6	#158.1	62.7	23.3
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	275	786		190	703		389	1612	707	422	2221	846
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.69		0.53	0.51		0.21	0.76	0.53	0.93	0.31	0.31

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 30.3	Intersection LOS: C

Intersection Capacity Utilization 86.9% ICU Level of Service E

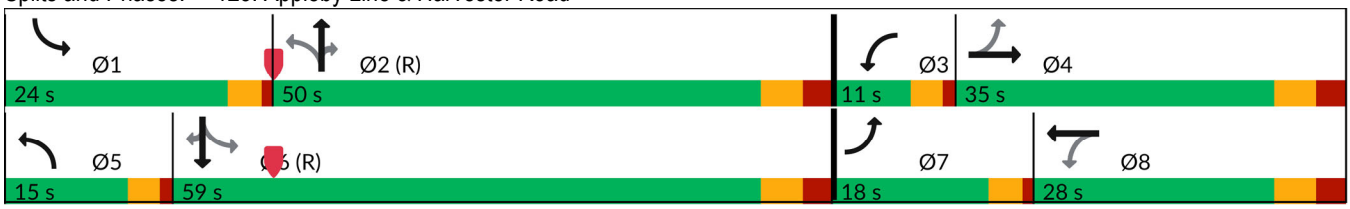
Analysis Period (min) 15

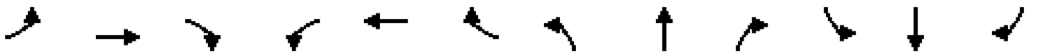
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road

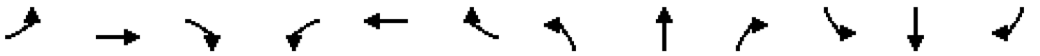




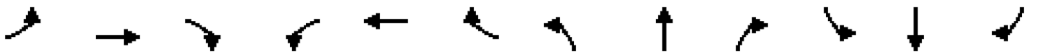
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	449	63	95	133	206	77	1147	352	368	643	244
Future Volume (vph)	162	449	63	95	133	206	77	1147	352	368	643	244
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3262		1656	2910		1686	4427	1547	1770	4302	1395
Flt Permitted	0.31	1.00		0.31	1.00		0.35	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	491	3262		545	2910		613	4427	1547	156	4302	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	172	478	67	101	141	219	82	1220	374	391	684	260
RTOR Reduction (vph)	0	10	0	0	186	0	0	0	144	0	0	128
Lane Group Flow (vph)	172	535	0	101	174	0	82	1220	230	391	684	132
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	35.4	24.4		25.2	18.2		50.5	43.7	43.7	71.9	61.1	61.1
Effective Green, g (s)	35.4	24.4		25.2	18.2		50.5	43.7	43.7	71.9	61.1	61.1
Actuated g/C Ratio	0.30	0.20		0.21	0.15		0.42	0.36	0.36	0.60	0.51	0.51
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	663		179	441		318	1612	563	418	2190	710
v/s Ratio Prot	c0.07	c0.16		0.03	0.06		0.01	0.28		c0.19	0.16	
v/s Ratio Perm	0.12			0.09			0.09		0.15	c0.37		0.09
v/c Ratio	0.67	0.81		0.56	0.40		0.26	0.76	0.41	0.94	0.31	0.19
Uniform Delay, d1	34.1	45.6		40.0	45.9		21.2	33.5	28.5	36.0	17.2	16.0
Progression Factor	1.00	1.00		1.00	1.00		0.99	0.76	0.76	1.10	1.07	2.20
Incremental Delay, d2	6.4	7.2		4.0	0.6		0.2	1.9	1.2	24.5	0.3	0.5
Delay (s)	40.5	52.7		44.1	46.5		21.1	27.3	22.9	64.2	18.6	35.6
Level of Service	D	D		D	D		C	C	C	E	B	D
Approach Delay (s/veh)		49.8			46.0			26.0			35.3	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	548	153	231	97	64	153	195	1048	120	204	1051	128
Future Volume (vph)	548	153	231	97	64	153	195	1048	120	204	1051	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	4471	1538
Flt Permitted	0.950			0.655			0.128			0.090		
Satd. Flow (perm)	3389	1776	1513	1097	1610	1395	241	3539	1403	150	4471	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243			153			150			150
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	577	161	243	102	67	161	205	1103	126	215	1106	135
Shared Lane Traffic (%)												
Lane Group Flow (vph)	577	161	243	102	67	161	205	1103	126	215	1106	135
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	34.0	47.0	47.0	14.0	27.0	27.0	12.0	45.0	45.0	14.0	47.0	47.0
Total Split (%)	28.3%	39.2%	39.2%	11.7%	22.5%	22.5%	10.0%	37.5%	37.5%	11.7%	39.2%	39.2%
Maximum Green (s)	29.0	40.5	40.5	10.0	20.5	20.5	8.0	38.2	38.2	10.0	40.2	40.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	25.0	27.4	27.4	22.5	10.7	10.7	61.5	41.2	41.2	67.9	44.5	44.5
Actuated g/C Ratio	0.21	0.23	0.23	0.19	0.09	0.09	0.51	0.34	0.34	0.57	0.37	0.37
v/c Ratio	0.81	0.40	0.46	0.42	0.47	0.61	0.59	0.91	0.22	0.65	0.67	0.21
Control Delay (s/veh)	55.0	41.2	7.1	32.3	61.9	19.4	26.6	49.8	3.8	34.1	40.7	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.0	41.2	7.1	32.3	61.9	19.4	26.6	49.8	3.8	34.1	40.7	11.3
LOS	D	D	A	C	E	B	C	D	A	C	D	B
Approach Delay (s/veh)		40.8			32.0			42.5			37.0	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	72.0	36.0	0.0	18.7	18.2	2.1	23.5	139.6	0.0	37.6	108.0	4.5
Queue Length 95th (m)	89.8	53.4	20.0	29.9	34.4	25.4	#59.2	#192.3	10.3	m#88.5	130.5	m20.3
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	821	599	671	254	275	365	348	1215	580	332	1658	655
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.27	0.36	0.40	0.24	0.44	0.59	0.91	0.22	0.65	0.67	0.21

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 39.4	Intersection LOS: D

Intersection Capacity Utilization 83.0% ICU Level of Service E

Analysis Period (min) 15

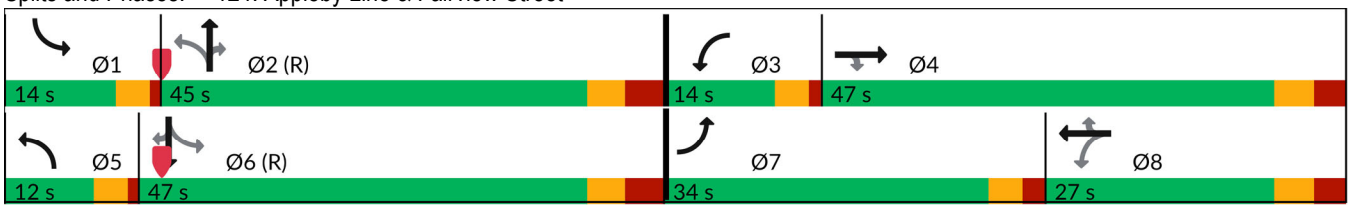
* User Entered Value

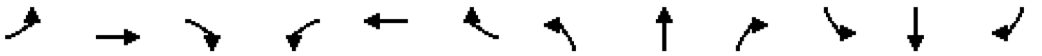
\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street

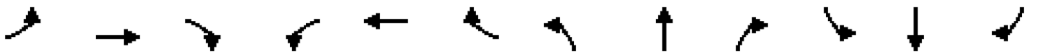




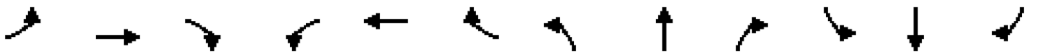
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	548	153	231	97	64	153	195	1048	120	204	1051	128
Future Volume (vph)	548	153	231	97	64	153	195	1048	120	204	1051	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	4471	1513
Flt Permitted	0.95	1.00	1.00	0.66	1.00	1.00	0.13	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1099	1610	1395	242	3539	1403	150	4471	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	577	161	243	102	67	161	205	1103	126	215	1106	135
RTOR Reduction (vph)	0	0	188	0	0	139	0	0	83	0	0	85
Lane Group Flow (vph)	577	161	55	102	67	22	205	1103	43	215	1106	50
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	25.0	27.4	27.4	20.0	10.7	10.7	58.8	41.3	41.3	65.2	44.5	44.5
Effective Green, g (s)	25.0	27.4	27.4	20.0	10.7	10.7	58.8	41.3	41.3	65.2	44.5	44.5
Actuated g/C Ratio	0.21	0.23	0.23	0.17	0.09	0.09	0.49	0.34	0.34	0.54	0.37	0.37
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	708	405	345	221	143	124	343	1218	482	328	1657	561
v/s Ratio Prot	c0.17	c0.09		0.04	0.04		0.09	c0.31		c0.11	0.25	
v/s Ratio Perm			0.04	0.04		0.02	0.21		0.03	0.24		0.03
v/c Ratio	0.81	0.40	0.16	0.46	0.47	0.17	0.60	0.91	0.09	0.66	0.67	0.09
Uniform Delay, d1	45.3	39.3	37.1	44.5	51.9	50.6	19.8	37.5	26.6	28.6	31.6	24.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.19	3.03
Incremental Delay, d2	7.2	0.6	0.2	1.5	2.4	0.7	2.8	11.2	0.4	4.6	2.1	0.3
Delay (s)	52.5	39.9	37.3	46.0	54.4	51.2	22.6	48.7	27.0	31.1	39.6	74.7
Level of Service	D	D	D	D	D	D	C	D	C	C	D	E
Approach Delay (s/veh)		46.7			50.3			43.1			41.6	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	44.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1306	435	392	605	136	211	549	330	264	808	166
Future Volume (vph)	220	1306	435	392	605	136	211	549	330	264	808	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3361	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			359			145			205			177
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	234	1389	463	417	644	145	224	584	351	281	860	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	234	1389	463	417	644	145	224	584	351	281	860	177
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	20.0	61.0	61.0	25.0	64.0	64.0	24.0	30.0	30.0	24.0	32.0	32.0
Total Split (%)	14.1%	43.0%	43.0%	17.6%	45.1%	45.1%	16.9%	21.1%	21.1%	16.9%	22.5%	22.5%
Maximum Green (s)	15.0	53.6	53.6	20.0	56.6	56.6	19.0	22.6	22.6	19.0	24.6	24.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.6	48.6	48.6	20.0	54.0	54.0	16.3	30.8	30.8	17.9	32.4	32.4
Actuated g/C Ratio	0.10	0.34	0.34	0.14	0.38	0.38	0.11	0.22	0.22	0.13	0.23	0.23
v/c Ratio	0.68	0.80	0.61	0.92	0.35	0.23	0.58	0.56	0.73	0.66	0.76	0.36
Control Delay (s/veh)	71.9	46.0	11.7	86.8	31.7	4.7	65.6	53.2	31.8	67.1	56.8	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.9	46.0	11.7	86.8	31.7	4.7	65.6	53.2	31.8	67.1	56.8	9.1
LOS	E	D	B	F	C	A	E	D	C	E	E	A
Approach Delay (s/veh)		41.3			47.5			49.1			52.6	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	35.8	136.9	22.6	67.7	52.3	0.0	33.7	60.6	44.0	42.3	91.0	0.0
Queue Length 95th (m)	51.2	148.5	58.0	#101.2	60.9	14.7	47.5	78.7	#99.8	58.6	#129.6	21.9
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	355	1919	802	452	1982	686	450	1050	482	454	1136	485
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.72	0.58	0.92	0.32	0.21	0.50	0.56	0.73	0.62	0.76	0.36

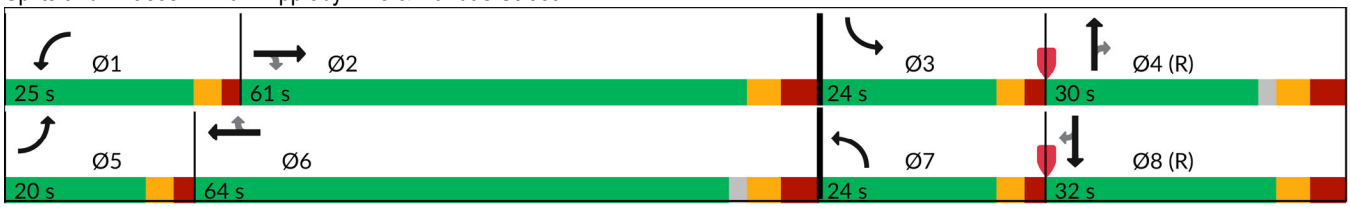
Intersection Summary	
Area Type:	Other
Cycle Length: 142	
Actuated Cycle Length: 142	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 46.7	Intersection LOS: D

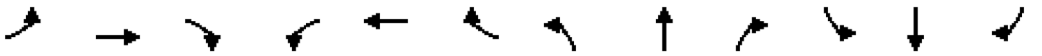
Intersection Capacity Utilization 99.0% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1306	435	392	605	136	211	549	330	264	808	166
Future Volume (vph)	220	1306	435	392	605	136	211	549	330	264	808	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	234	1389	463	417	644	145	224	584	351	281	860	177
RTOR Reduction (vph)	0	0	236	0	0	90	0	0	161	0	0	137
Lane Group Flow (vph)	234	1389	227	417	644	55	224	584	190	281	860	40
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.6	48.6	48.6	20.0	54.0	54.0	16.3	30.7	30.7	17.9	32.3	32.3
Effective Green, g (s)	14.6	48.6	48.6	20.0	54.0	54.0	16.3	30.7	30.7	17.9	32.3	32.3
Actuated g/C Ratio	0.10	0.34	0.34	0.14	0.38	0.38	0.11	0.22	0.22	0.13	0.23	0.23
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	346	1740	524	452	1826	554	386	1048	321	424	1134	348
v/s Ratio Prot	0.07	c0.27		c0.13	0.13		0.07	0.12		c0.08	c0.17	
v/s Ratio Perm			0.15			0.04			0.13			0.03
v/c Ratio	0.68	0.80	0.43	0.92	0.35	0.10	0.58	0.56	0.59	0.66	0.76	0.12
Uniform Delay, d1	61.4	42.3	36.1	60.2	31.5	28.3	59.6	49.6	50.0	59.2	51.2	43.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	2.6	0.6	25.3	0.1	0.1	3.4	2.1	7.8	5.1	4.8	0.7
Delay (s)	68.1	44.9	36.6	85.5	31.6	28.4	63.0	51.7	57.9	64.3	56.0	44.2
Level of Service	E	D	D	F	C	C	E	D	E	E	E	D
Approach Delay (s/veh)		45.7			49.9			55.8			56.2	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	51.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	616	331	241	295	259	190	890	159	361	1474	53
Future Volume (vph)	173	616	331	241	295	259	190	890	159	361	1474	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.98				0.98	1.00	1.00			1.00	
Frt		0.948				0.850		0.977			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3322	0	1736	4471	1553	3400	4091	0	1752	4356	0
Flt Permitted	0.516			0.125			0.950			0.099		
Satd. Flow (perm)	928	3322	0	228	4471	1521	3395	4091	0	183	4356	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81				288		25			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	192	684	368	268	328	288	211	989	177	401	1638	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	1052	0	268	328	288	211	1166	0	401	1697	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



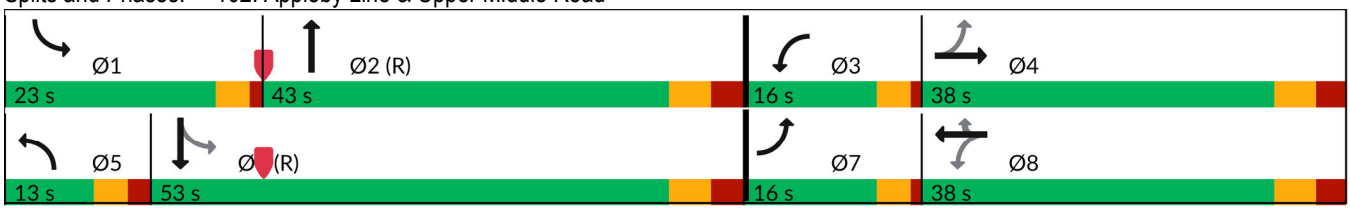
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	38.0		16.0	38.0	38.0	13.0	43.0		23.0	53.0	
Total Split (%)	13.3%	31.7%		13.3%	31.7%	31.7%	10.8%	35.8%		19.2%	44.2%	
Maximum Green (s)	12.0	31.6		12.0	31.6	31.6	8.0	36.5		19.0	46.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	45.5	31.6		46.5	32.1	32.1	8.0	36.5		62.0	46.5	
Actuated g/C Ratio	0.38	0.26		0.39	0.27	0.27	0.07	0.30		0.52	0.39	
v/c Ratio	0.45	1.13		1.12	0.27	0.47	0.93	0.92		1.17	1.00	
Control Delay (s/veh)	27.1	108.5		131.1	32.4	6.7	100.2	64.8		136.2	59.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.1	108.5		131.1	32.4	6.7	100.2	64.8		136.2	59.7	
LOS	C	F		F	C	A	F	E		F	E	
Approach Delay (s/veh)		95.9			54.0			70.2			74.3	
Approach LOS		F			D			E			E	
Queue Length 50th (m)	31.9	~152.0		~61.0	23.1	0.9	29.2	108.4		~103.6	~179.6	
Queue Length 95th (m)	50.4	#195.9		m#114.2	m32.8	m12.3	#54.1	#161.8		#168.9	#224.8	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	434	934		239	1196	617	226	1261		342	1690	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.44	1.13		1.12	0.27	0.47	0.93	0.92		1.17	1.00	

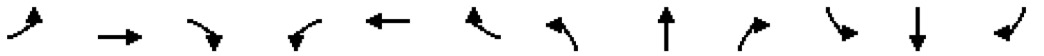
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay (s/veh): 74.9	Intersection LOS: E

Intersection Capacity Utilization 102.6%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



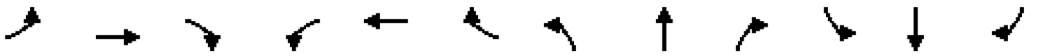


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	616	331	241	295	259	190	890	159	361	1474	53
Future Volume (vph)	173	616	331	241	295	259	190	890	159	361	1474	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1714	3321		1736	4471	1521	3400	4092		1752	4355	
Flt Permitted	0.52	1.00		0.12	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	932	3321		228	4471	1521	3400	4092		182	4355	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	192	684	368	268	328	288	211	989	177	401	1638	59
RTOR Reduction (vph)	0	60	0	0	0	211	0	17	0	0	2	0
Lane Group Flow (vph)	192	992	0	268	328	77	211	1149	0	401	1695	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	43.1	31.6		44.1	32.1	32.1	8.0	36.5		59.5	46.5	
Effective Green, g (s)	43.1	31.6		44.1	32.1	32.1	8.0	36.5		59.5	46.5	
Actuated g/C Ratio	0.36	0.26		0.37	0.27	0.27	0.07	0.30		0.50	0.39	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	409	874		234	1195	406	226	1244		338	1687	
v/s Ratio Prot	0.04	0.30		c0.11	0.07		0.06	0.28		c0.19	0.39	
v/s Ratio Perm	0.12			c0.31		0.05				c0.40		
v/c Ratio	0.47	1.14		1.15	0.27	0.19	0.93	0.92		1.19	1.00	
Uniform Delay, d1	27.7	44.2		32.2	34.7	33.9	55.7	40.4		36.6	36.8	
Progression Factor	1.00	1.00		1.42	0.91	1.06	1.03	1.34		1.00	1.00	
Incremental Delay, d2	0.9	75.0		101.5	0.1	0.2	39.5	11.9		109.8	23.0	
Delay (s)	28.6	119.2		147.2	31.7	36.0	97.1	66.0		146.4	59.7	
Level of Service	C	F		F	C	D	F	E		F	E	
Approach Delay (s/veh)		105.2			68.1			70.7			76.3	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	80.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	102.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1133	272	47	673	0	203	0	100	5	0	14
Future Volume (vph)	5	1133	272	47	673	0	203	0	100	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.971							0.850		0.899	
Flt Protected	0.950			0.950				0.950			0.988	
Satd. Flow (prot)	1805	4272	0	1805	4385	0	0	1752	1615	0	1550	0
Flt Permitted	0.276			0.056				0.742			0.914	
Satd. Flow (perm)	518	4272	0	106	4385	0	0	1362	1585	0	1432	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57							130		64	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	6	1471	353	61	874	0	264	0	130	6	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1824	0	61	874	0	0	264	130	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	65.0	65.0		9.0	78.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	68.8	68.8		80.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.67	0.65			0.24	0.24		0.24	
v/c Ratio	0.02	0.74		0.35	0.31			0.80	0.27		0.06	
Control Delay (s/veh)	14.8	19.9		12.6	9.5			62.2	7.7		0.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	14.8	19.9		12.6	9.5			62.2	7.7		0.3	
LOS	B	B		B	A			E	A		A	
Approach Delay (s/veh)		19.9			9.7			44.2			0.3	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.7	103.4		6.0	43.8			61.9	0.0		0.0	
Queue Length 95th (m)	m1.1	m91.8		m8.3	m40.9			77.7	9.6		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	297	2474		198	2850			329	481		394	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.02	0.74		0.31	0.31			0.80	0.27		0.06	

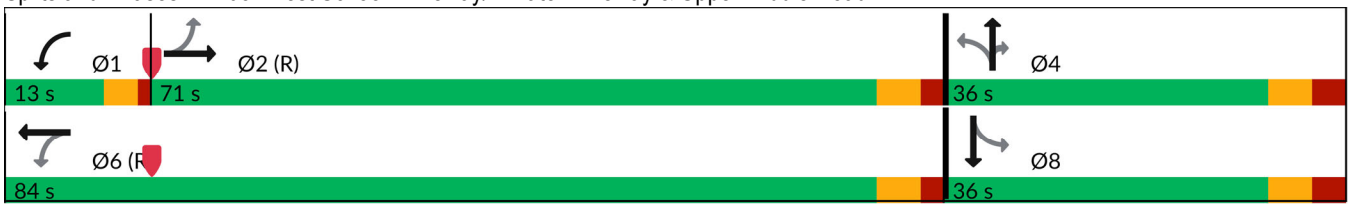
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay (s/veh): 19.7		Intersection LOS: B	

Intersection Capacity Utilization 91.6%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1133	272	47	673	0	203	0	100	5	0	14
Future Volume (vph)	5	1133	272	47	673	0	203	0	100	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1784	4271		1805	4385			1744	1585		1547	
Flt Permitted	0.28	1.00		0.06	1.00			0.74	1.00		0.91	
Satd. Flow (perm)	518	4271		106	4385			1361	1585		1432	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	6	1471	353	61	874	0	264	0	130	6	0	18
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	99	0	18	0
Lane Group Flow (vph)	6	1799	0	61	874	0	0	264	31	0	6	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Effective Green, g (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.65	0.65			0.24	0.24		0.24	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	293	2420		153	2850			328	383		346	
v/s Ratio Prot		c0.42		c0.02	0.20							
v/s Ratio Perm	0.01			0.24				c0.19	0.02		0.00	
v/c Ratio	0.02	0.74		0.40	0.31			0.80	0.08		0.02	
Uniform Delay, d1	11.4	19.5		15.2	9.2			42.8	35.2		34.6	
Progression Factor	1.17	0.97		0.91	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.1	1.3		1.5	0.2			18.7	0.4		0.1	
Delay (s)	13.4	20.3		15.3	9.4			61.5	35.6		34.7	
Level of Service	B	C		B	A			E	D		C	
Approach Delay (s/veh)		20.3			9.8			53.0			34.7	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1057	174	270	686	49	200
Future Volume (vph)	1057	174	270	686	49	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.979					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4346	0	1787	4385	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4346	0	1787	4385	1805	1615
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	1489	245	380	966	69	282
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1734	0	380	966	69	282
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

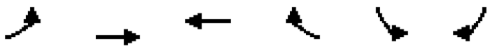
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1057	174	270	686	49	200
Future Volume (Veh/h)	1057	174	270	686	49	200
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1489	245	380	966	69	282
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.74		0.74	0.74
vC, conflicting volume			1746		2706	631
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			798		2088	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			38		0	65
cM capacity (veh/h)			609		13	803

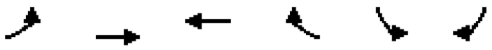
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	596	596	543	380	322	322	322	69	282
Volume Left	0	0	0	380	0	0	0	69	0
Volume Right	0	0	245	0	0	0	0	0	282
cSH	1700	1700	1700	609	1700	1700	1700	13	803
Volume to Capacity	0.35	0.35	0.32	0.62	0.19	0.19	0.19	5.35	0.35
Queue Length 95th (m)	0.0	0.0	0.0	34.6	0.0	0.0	0.0	Err	12.7
Control Delay (s/veh)	0.0	0.0	0.0	20.2	0.0	0.0	0.0	Err	11.9
Lane LOS				C				F	B
Approach Delay (s/veh)	0.0			5.7				1975.2	
Approach LOS								F	

Intersection Summary			
Average Delay	204.3		
Intersection Capacity Utilization	52.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	161	1097	703	82	97	248
Future Volume (vph)	161	1097	703	82	97	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.903	
Flt Protected	0.950				0.986	
Satd. Flow (prot)	1752	4471	4352	0	1668	0
Flt Permitted	0.950				0.986	
Satd. Flow (perm)	1752	4471	4352	0	1668	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	29			29		1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	3%	4%	0%	2%
Adj. Flow (vph)	212	1443	925	108	128	326
Shared Lane Traffic (%)						
Lane Group Flow (vph)	212	1443	1033	0	454	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

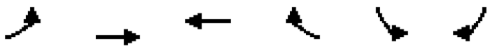
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.3%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



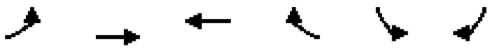
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	161	1097	703	82	97	248
Future Volume (Veh/h)	161	1097	703	82	97	248
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	212	1443	925	108	128	326
Pedestrians		1			29	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked						
vC, conflicting volume	1062				1913	392
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1062				1913	392
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	66				0	45
cM capacity (veh/h)	630				40	591

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	212	481	481	481	370	370	293	454
Volume Left	212	0	0	0	0	0	0	128
Volume Right	0	0	0	0	0	0	108	326
cSH	630	1700	1700	1700	1700	1700	1700	120
Volume to Capacity	0.34	0.28	0.28	0.28	0.22	0.22	0.17	3.79
Queue Length 95th (m)	11.8	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	13.6	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	B							F
Approach Delay (s/veh)	1.7				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	1445.7		
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	938	474	176	504	296
Future Volume (vph)	265	938	474	176	504	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor	0.99		0.98		0.98	
Frt			0.959		0.950	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1703	4515	4147	0	1711	0
Flt Permitted	0.231				0.969	
Satd. Flow (perm)	408	4515	4147	0	1688	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			94		28	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	24			24	16	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Adj. Flow (vph)	315	1117	564	210	600	352
Shared Lane Traffic (%)						
Lane Group Flow (vph)	315	1117	774	0	952	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	13.0	68.0	55.0		52.0	
Total Split (%)	10.8%	56.7%	45.8%		43.3%	
Maximum Green (s)	9.0	62.0	49.0		45.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	64.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.53	0.52	0.41		0.38	
v/c Ratio	1.00	0.48	0.44		1.46	
Control Delay (s/veh)	69.6	9.1	23.2		247.2	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	69.6	9.1	23.2		247.2	
LOS	E	A	C		F	
Approach Delay (s/veh)		22.4	23.2		247.2	
Approach LOS		C	C		F	
Queue Length 50th (m)	28.8	27.4	50.7		~321.2	
Queue Length 95th (m)	#48.1	30.8	58.8		#363.7	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	314	2332	1748		650	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	1.00	0.48	0.44		1.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.46	
Intersection Signal Delay (s/veh): 90.4	Intersection LOS: F

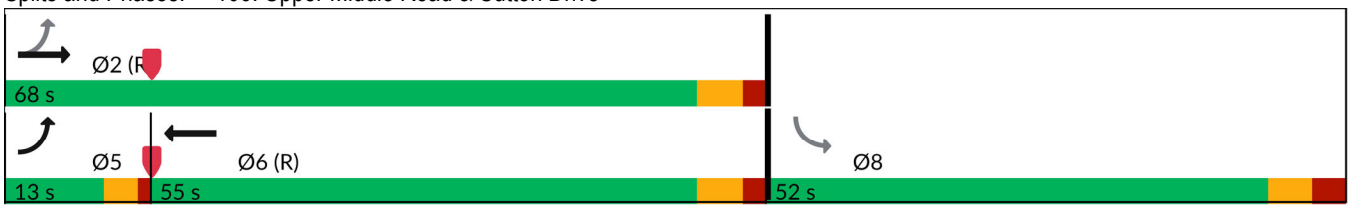
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

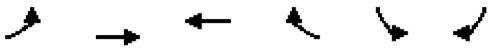
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 106: Upper Middle Road & Sutton Drive

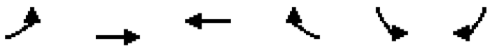




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	265	938	474	176	504	296
Future Volume (vph)	265	938	474	176	504	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		0.99	
Frt	1.00	1.00	0.96		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1698	4515	4148		1689	
Flt Permitted	0.23	1.00	1.00		0.97	
Satd. Flow (perm)	414	4515	4148		1689	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	315	1117	564	210	600	352
RTOR Reduction (vph)	0	0	56	0	18	0
Lane Group Flow (vph)	315	1117	718	0	935	0
Confl. Peds. (#/hr)	24			24	16	6
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	62.0	62.0	49.0		45.0	
Effective Green, g (s)	62.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.52	0.52	0.41		0.38	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	310	2332	1693		633	
v/s Ratio Prot	c0.08	0.25	0.17			
v/s Ratio Perm	c0.45				c0.55	
v/c Ratio	1.02	0.48	0.42		1.48	
Uniform Delay, d1	24.7	18.6	25.4		37.5	
Progression Factor	0.90	0.45	1.00		1.00	
Incremental Delay, d2	52.1	0.6	0.8		222.8	
Delay (s)	74.4	9.0	26.2		260.3	
Level of Service	E	A	C		F	
Approach Delay (s/veh)		23.4	26.2		260.3	
Approach LOS		C	C		F	

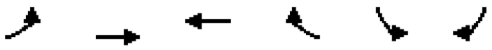
Intersection Summary			
HCM 2000 Control Delay (s/veh)	95.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	39	1410	565	5	0	69
Future Volume (vph)	39	1410	565	5	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	4515	4382	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	4515	4382	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	44	1584	635	6	0	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	1584	641	0	0	78
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

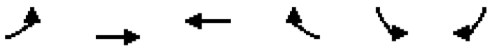
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	1410	565	5	0	69
Future Volume (Veh/h)	39	1410	565	5	0	69
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	44	1584	635	6	0	78
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.87	
vC, conflicting volume	659				1272	233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	659				792	233
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	95				100	90
cM capacity (veh/h)	872				269	758

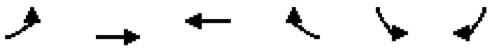
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	44	528	528	528	254	254	133	78
Volume Left	44	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	6	78
cSH	872	1700	1700	1700	1700	1700	1700	758
Volume to Capacity	0.05	0.31	0.31	0.31	0.15	0.15	0.08	0.10
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Control Delay (s/veh)	9.3	0.0	0.0	0.0	0.0	0.0	0.0	10.3
Lane LOS	A							B
Approach Delay (s/veh)	0.3				0.0			10.3
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	30.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	1407	578	4	27	9
Future Volume (vph)	4	1407	578	4	27	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.965	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1805	4515	4415	0	1624	0
Flt Permitted	0.950				0.964	
Satd. Flow (perm)	1805	4515	4415	0	1624	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	4	1529	628	4	29	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	1529	632	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.2%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

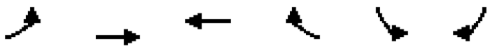


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1407	578	4	27	9
Future Volume (Veh/h)	4	1407	578	4	27	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1529	628	4	29	10
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	646				1162	225
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	646				1162	225
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	100				84	99
cM capacity (veh/h)	938				179	725

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	4	510	510	510	251	251	130	39
Volume Left	4	0	0	0	0	0	0	29
Volume Right	0	0	0	0	0	0	4	10
cSH	938	1700	1700	1700	1700	1700	1700	222
Volume to Capacity	0.00*	0.30	0.30	0.30	0.15	0.15	0.08	0.18
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Control Delay (s/veh)	8.9	0.0	0.0	0.0	0.0	0.0	0.0	24.6
Lane LOS	A							C
Approach Delay (s/veh)	0.0				0.0			24.6
Approach LOS								C

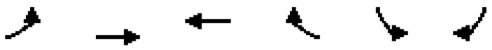
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	1439	498	35	205	47
Future Volume (vph)	27	1439	498	35	205	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	4515	4341	0	1737	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1703	4515	4341	0	1737	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	30	1599	553	39	228	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	1599	592	0	280	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	1439	498	35	205	47
Future Volume (Veh/h)	27	1439	498	35	205	47
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	1599	553	39	228	52
Pedestrians					10	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	602				1176	214
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	602				1176	214
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	97				0	93
cM capacity (veh/h)	937				178	764

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	30	533	533	533	221	221	150	280
Volume Left	30	0	0	0	0	0	0	228
Volume Right	0	0	0	0	0	0	39	52
cSH	937	1700	1700	1700	1700	1700	1700	208
Volume to Capacity	0.03	0.31	0.31	0.31	0.13	0.13	0.09	1.35
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	0.0	125.5
Control Delay (s/veh)	9.0	0.0	0.0	0.0	0.0	0.0	0.0	228.8
Lane LOS	A							F
Approach Delay (s/veh)	0.2				0.0			228.8
Approach LOS								F

Intersection Summary			
Average Delay	25.7		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	4	552	50	22	1571
Future Volume (vph)	13	4	552	50	22	1571
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.970		0.987			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1775	0	4380	0	1805	4515
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	1775	0	4380	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	14	4	613	56	24	1746
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	669	0	24	1746
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

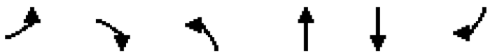
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.4%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



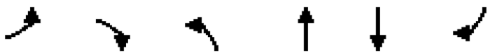
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	4	552	50	22	1571
Future Volume (Veh/h)	13	4	552	50	22	1571
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	4	613	56	24	1746
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1272	233			670	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1272	233			670	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	99			97	
cM capacity (veh/h)	158	774			929	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	18	245	245	179	24	582	582	582
Volume Left	14	0	0	0	24	0	0	0
Volume Right	4	0	0	56	0	0	0	0
cSH	192	1700	1700	1700	929	1700	1700	1700
Volume to Capacity	0.09	0.14	0.14	0.11	0.03	0.34	0.34	0.34
Queue Length 95th (m)	2.5	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Control Delay (s/veh)	25.7	0.0	0.0	0.0	9.0	0.0	0.0	0.0
Lane LOS	D				A			
Approach Delay (s/veh)	25.7	0.0			0.1			
Approach LOS	D							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	40.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	425	389	549	1512	81
Future Volume (vph)	65	425	389	549	1512	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor					1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	1736	4427	4476	0
Flt Permitted	0.950		0.063			
Satd. Flow (perm)	1805	1524	115	4427	4476	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		171			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	71	467	427	603	1662	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	467	427	603	1751	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	14.0	80.0	66.0	
Total Split (%)	27.3%	27.3%	12.7%	72.7%	60.0%	
Maximum Green (s)	23.0	23.0	10.0	73.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.54	
v/c Ratio	0.19	1.03	1.89	0.21	0.73	
Control Delay (s/veh)	37.4	78.5	437.7	10.1	21.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.4	78.5	437.7	10.1	21.5	
LOS	D	E	F	B	C	
Approach Delay (s/veh)	73.1			187.4	21.5	
Approach LOS	E			F	C	
Queue Length 50th (m)	13.3	~83.6	~132.8	28.6	119.9	
Queue Length 95th (m)	26.3	#151.7	#198.7	36.0	141.7	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	377	453	226	2937	2405	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.19	1.03	1.89	0.21	0.73	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 74 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.89	
Intersection Signal Delay (s/veh): 81.3	Intersection LOS: F

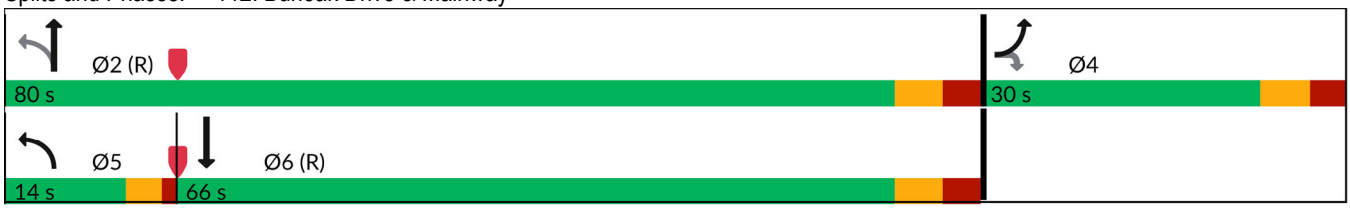
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

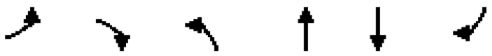
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	425	389	549	1512	81
Future Volume (vph)	65	425	389	549	1512	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	1736	4427	4478	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1524	116	4427	4478	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	71	467	427	603	1662	89
RTOR Reduction (vph)	0	135	0	0	5	0
Lane Group Flow (vph)	71	332	427	603	1746	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	59.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	318	224	2937	2401	
v/s Ratio Prot	0.04		c0.17	0.14	0.39	
v/s Ratio Perm		c0.22	c1.09			
v/c Ratio	0.19	1.04	1.91	0.21	0.73	
Uniform Delay, d1	35.8	43.5	32.9	7.2	19.4	
Progression Factor	1.00	1.00	0.82	1.37	1.00	
Incremental Delay, d2	0.2	62.2	424.0	0.2	2.0	
Delay (s)	36.1	105.7	450.8	10.0	21.4	
Level of Service	D	F	F	B	C	
Approach Delay (s/veh)	96.5			192.8	21.4	
Approach LOS	F			F	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	86.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	409	120	32	233	17	12
Future Volume (vph)	409	120	32	233	17	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.966				0.945	
Flt Protected				0.994	0.971	
Satd. Flow (prot)	3336	0	0	3409	1558	0
Flt Permitted				0.994	0.971	
Satd. Flow (perm)	3336	0	0	3409	1558	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	3%	0%	6%	20%	0%
Adj. Flow (vph)	460	135	36	262	19	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	595	0	0	298	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

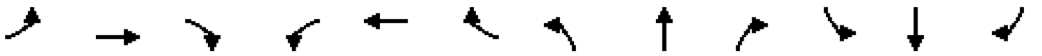
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	409	120	32	233	17	12
Future Volume (Veh/h)	409	120	32	233	17	12
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	460	135	36	262	19	13
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			597		733	300
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			597		733	300
tC, single (s)			4.1		7.2	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			96		94	98
cM capacity (veh/h)			988		308	701

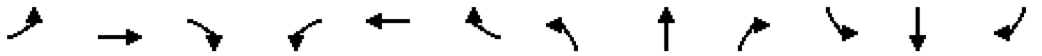
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	307	288	123	175	32
Volume Left	0	0	36	0	19
Volume Right	0	135	0	0	13
cSH	1700	1700	988	1700	399
Volume to Capacity	0.18	0.17	0.04	0.10	0.08
Queue Length 95th (m)	0.0	0.0	0.9	0.0	2.1
Control Delay (s/veh)	0.0	0.0	2.8	0.0	14.8
Lane LOS			A		B
Approach Delay (s/veh)	0.0		1.2		14.8
Approach LOS					B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	735	66	15	137	21	15	0	4	109	2	82
Future Volume (vph)	22	735	66	15	137	21	15	0	4	109	2	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.982			0.971			0.943	
Flt Protected		0.999			0.996			0.962			0.972	
Satd. Flow (prot)	0	3450	0	0	3210	0	0	1504	0	0	1732	0
Flt Permitted		0.999			0.996			0.962			0.972	
Satd. Flow (perm)	0	3450	0	0	3210	0	0	1504	0	0	1732	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	26	865	78	18	161	25	18	0	5	128	2	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	969	0	0	204	0	0	23	0	0	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			

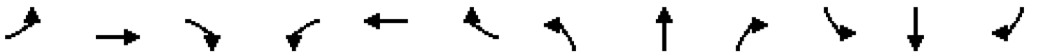


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	735	66	15	137	21	15	0	4	109	2	82
Future Volume (Veh/h)	22	735	66	15	137	21	15	0	4	109	2	82
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	26	865	78	18	161	25	18	0	5	128	2	96
Pedestrians								9			5	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	191			952			1179	1192	481	704	1219	98
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	191			952			1179	1192	481	704	1219	98
tC, single (s)	4.4			4.4			8.0	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.4			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			83	100	99	58	99	90
cM capacity (veh/h)	1278			638			104	178	533	307	171	941

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	459	511	99	106	23	226
Volume Left	26	0	18	0	18	128
Volume Right	0	78	0	25	5	96
cSH	1278	1700	638	1700	126	426
Volume to Capacity	0.02	0.30	0.03	0.06	0.18	0.53
Queue Length 95th (m)	0.5	0.0	0.7	0.0	5.1	24.2
Control Delay (s/veh)	0.6	0.0	2.2	0.0	39.8	22.6
Lane LOS	A		A		E	C
Approach Delay (s/veh)	0.3		1.1		39.8	22.6
Approach LOS					E	C

Intersection Summary				
Average Delay	4.6			
Intersection Capacity Utilization	50.6%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	420	180	98	102	61	126	941	212	256	1580	128
Future Volume (vph)	181	420	180	98	102	61	126	941	212	256	1580	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Frt		0.955			0.944			0.972			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3169	0	1492	3051	0	1597	4158	0	1770	4296	0
Flt Permitted	0.644			0.174			0.081			0.100		
Satd. Flow (perm)	1083	3169	0	272	3051	0	136	4158	0	186	4296	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			64			36			13	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	189	438	188	102	106	64	131	980	221	267	1646	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	626	0	102	170	0	131	1201	0	267	1779	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	34.0		11.0	34.0		11.0	48.0		27.0	64.0	
Total Split (%)	9.2%	28.3%		9.2%	28.3%		9.2%	40.0%		22.5%	53.3%	
Maximum Green (s)	7.0	27.7		7.0	27.7		7.0	41.7		23.0	57.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	34.9	25.6		34.9	25.6		59.7	49.4		72.5	58.7	
Actuated g/C Ratio	0.29	0.21		0.29	0.21		0.50	0.41		0.60	0.49	
v/c Ratio	0.55	0.87		0.68	0.24		0.79	0.69		0.78	0.84	
Control Delay (s/veh)	39.0	55.5		53.3	24.4		49.0	33.5		48.1	17.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	39.0	55.5		53.3	24.4		49.0	33.5		48.1	17.7	
LOS	D	E		D	C		D	C		D	B	
Approach Delay (s/veh)		51.7			35.2			35.1			21.7	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	37.9	75.1		20.6	11.9		17.2	129.7		51.4	106.3	
Queue Length 95th (m)	60.3	98.6		#36.6	22.4		m#41.5	148.6		78.9	153.1	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	346	771		150	753		165	1732		416	2108	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.81		0.68	0.23		0.79	0.69		0.64	0.84	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 58 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 32.0	Intersection LOS: C

Intersection Capacity Utilization 82.9% ICU Level of Service E

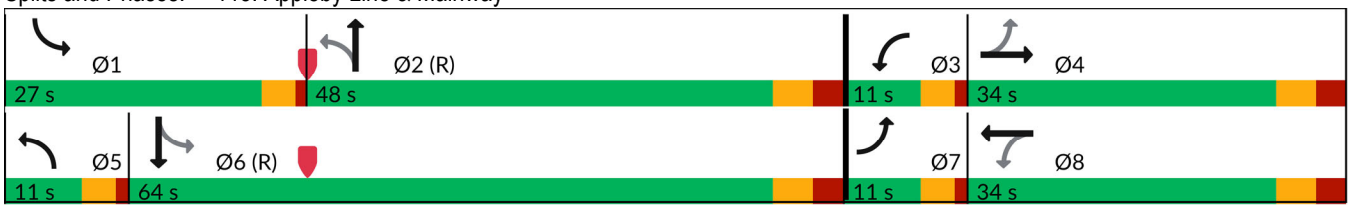
Analysis Period (min) 15

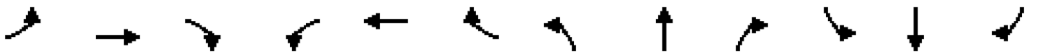
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	420	180	98	102	61	126	941	212	256	1580	128
Future Volume (vph)	181	420	180	98	102	61	126	941	212	256	1580	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1603	3169		1491	3050		1597	4160		1770	4295	
Flt Permitted	0.64	1.00		0.17	1.00		0.08	1.00		0.10	1.00	
Satd. Flow (perm)	1088	3169		273	3050		136	4160		186	4295	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	189	438	188	102	106	64	131	980	221	267	1646	133
RTOR Reduction (vph)	0	41	0	0	50	0	0	21	0	0	7	0
Lane Group Flow (vph)	189	585	0	102	120	0	131	1180	0	267	1772	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	32.6	25.6		32.6	25.6		57.4	49.4		70.8	58.8	
Effective Green, g (s)	32.6	25.6		32.6	25.6		57.4	49.4		70.8	58.8	
Actuated g/C Ratio	0.27	0.21		0.27	0.21		0.48	0.41		0.59	0.49	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	325	676		145	650		162	1712		339	2104	
v/s Ratio Prot	0.03	c0.18		c0.04	0.04		0.05	0.28		c0.11	c0.41	
v/s Ratio Perm	0.12			0.15			0.33			0.35		
v/c Ratio	0.58	0.87		0.70	0.18		0.81	0.69		0.79	0.84	
Uniform Delay, d1	36.5	45.5		35.3	38.6		23.2	29.0		27.4	26.6	
Progression Factor	1.00	1.00		1.00	1.00		0.93	1.07		1.51	0.53	
Incremental Delay, d2	2.6	11.2		14.4	0.1		17.6	1.5		8.8	3.3	
Delay (s)	39.1	56.8		49.6	38.8		39.2	32.7		50.2	17.4	
Level of Service	D	E		D	D		D	C		D	B	
Approach Delay (s/veh)		52.7			42.8			33.3			21.7	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	82.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	30	145	17	110	38	1069	70	82	1874	51
Future Volume (vph)	20	10	30	145	17	110	38	1069	70	82	1874	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.945			0.991			0.996	
Flt Protected		0.984			0.974		0.950			0.950		
Satd. Flow (prot)	0	1322	0	0	1691	0	1530	4214	0	1736	4362	0
Flt Permitted		0.849			0.800		0.057			0.153		
Satd. Flow (perm)	0	1140	0	0	1384	0	92	4214	0	279	4362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			29			10			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	20	10	31	148	17	112	39	1091	71	84	1912	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	277	0	39	1162	0	84	1964	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	42.0	42.0		42.0	42.0		66.0	66.0		12.0	78.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		55.0%	55.0%		10.0%	65.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		60.0	60.0		8.0	72.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		26.9			26.9		71.3	71.3		82.6	80.6	
Actuated g/C Ratio		0.22			0.22		0.59	0.59		0.69	0.67	
v/c Ratio		0.23			0.83		0.72	0.46		0.30	0.67	
Control Delay (s/veh)		29.9			60.1		87.7	24.5		4.8	6.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		29.9			60.1		87.7	24.5		4.8	6.9	
LOS		C			E		F	C		A	A	
Approach Delay (s/veh)		29.9			60.1			26.6			6.8	
Approach LOS		C			E			C			A	
Queue Length 50th (m)		10.3			59.2		11.4	108.8		3.9	63.2	
Queue Length 95th (m)		21.9			85.2		m#21.5	139.9		m4.8	m72.7	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		347			429		54	2508		290	2932	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.18			0.65		0.72	0.46		0.29	0.67	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay (s/veh): 18.0	Intersection LOS: B

Intersection Capacity Utilization 82.6% ICU Level of Service E

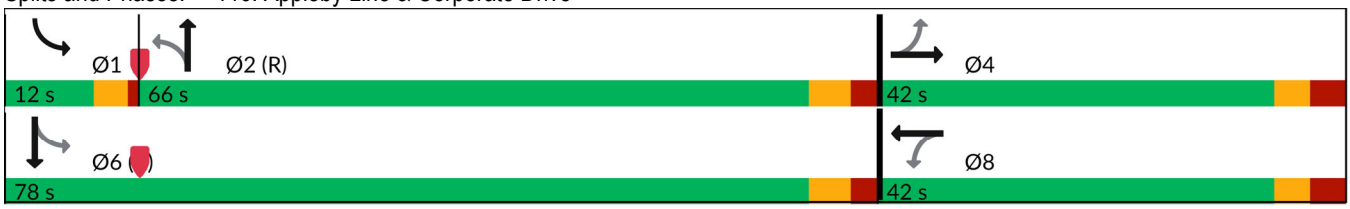
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

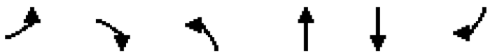
Splits and Phases: 116: Appleby Line & Corporate Drive



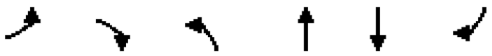
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	30	145	17	110	38	1069	70	82	1874	51
Future Volume (vph)	20	10	30	145	17	110	38	1069	70	82	1874	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.95		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1321			1685		1529	4213		1735	4363	
Flt Permitted		0.85			0.80		0.06	1.00		0.15	1.00	
Satd. Flow (perm)		1140			1384		91	4213		280	4363	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	10	31	148	17	112	39	1091	71	84	1912	52
RTOR Reduction (vph)	0	11	0	0	22	0	0	4	0	0	2	0
Lane Group Flow (vph)	0	50	0	0	255	0	39	1158	0	84	1962	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.9			26.9		70.5	70.5		80.6	80.6	
Effective Green, g (s)		26.9			26.9		70.5	70.5		80.6	80.6	
Actuated g/C Ratio		0.22			0.22		0.59	0.59		0.67	0.67	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		255			310		53	2475		262	2930	
v/s Ratio Prot								0.27		0.02	c0.45	
v/s Ratio Perm		0.04			c0.18		c0.43			0.20		
v/c Ratio		0.20			0.82		0.74	0.47		0.32	0.67	
Uniform Delay, d1		37.8			44.3		18.0	14.1		8.2	11.8	
Progression Factor		1.00			1.00		1.45	1.57		0.61	0.52	
Incremental Delay, d2		0.4			15.8		50.4	0.5		0.1	0.1	
Delay (s)		38.2			60.1		76.6	22.6		5.1	6.3	
Level of Service		D			E		E	C		A	A	
Approach Delay (s/veh)		38.2			60.1			24.4			6.2	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	82.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	109	470	736	1498	116
Future Volume (vph)	33	109	470	736	1498	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.989	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	1719	4427	4418	0
Flt Permitted	0.950		0.064			
Satd. Flow (perm)	1805	1313	116	4427	4418	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		110			15	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	33	110	475	743	1513	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	110	475	743	1630	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	23.0	23.0	20.0	87.0	67.0	
Total Split (%)	20.9%	20.9%	18.2%	79.1%	60.9%	
Maximum Green (s)	16.0	16.0	16.0	80.0	60.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.9	8.9	90.1	87.1	60.0	
Actuated g/C Ratio	0.08	0.08	0.82	0.79	0.55	
v/c Ratio	0.23	0.53	1.10	0.21	0.67	
Control Delay (s/veh)	50.4	18.6	89.2	1.8	8.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	50.4	18.6	89.2	1.8	8.1	
LOS	D	B	F	A	A	
Approach Delay (s/veh)	25.9			35.9	8.1	
Approach LOS	C			D	A	
Queue Length 50th (m)	7.2	0.0	~99.6	6.2	29.4	
Queue Length 95th (m)	16.6	19.7	m#100.1	m10.2	m37.2	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	262	284	430	3503	2416	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.39	1.10	0.21	0.67	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay (s/veh): 20.3		Intersection LOS: C	

Intersection Capacity Utilization 79.3% ICU Level of Service D

Analysis Period (min) 15

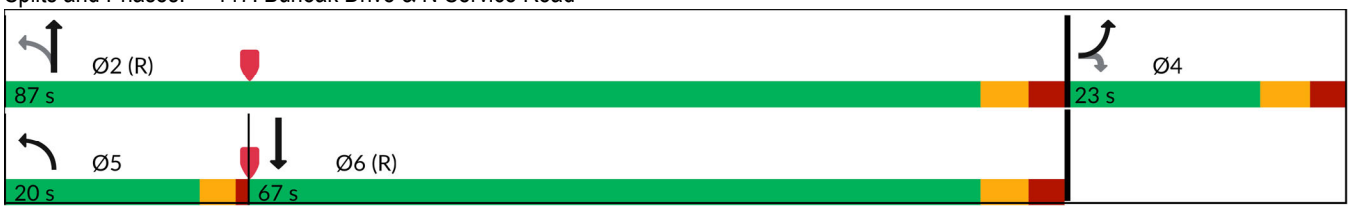
* User Entered Value

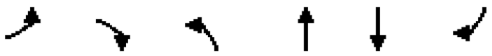
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	109	470	736	1498	116
Future Volume (vph)	33	109	470	736	1498	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	1719	4427	4419	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1313	115	4427	4419	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	33	110	475	743	1513	117
RTOR Reduction (vph)	0	101	0	0	7	0
Lane Group Flow (vph)	33	9	475	743	1623	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	8.9	8.9	87.1	87.1	60.0	
Effective Green, g (s)	8.9	8.9	87.1	87.1	60.0	
Actuated g/C Ratio	0.08	0.08	0.79	0.79	0.55	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	146	106	427	3505	2410	
v/s Ratio Prot	c0.02		c0.23	0.17	0.37	
v/s Ratio Perm		0.01	c0.65			
v/c Ratio	0.23	0.08	1.11	0.21	0.67	
Uniform Delay, d1	47.3	46.8	35.1	2.9	18.0	
Progression Factor	1.00	1.00	1.27	0.61	0.40	
Incremental Delay, d2	0.8	0.3	54.1	0.0	0.9	
Delay (s)	48.1	47.1	98.6	1.8	8.1	
Level of Service	D	D	F	A	A	
Approach Delay (s/veh)	47.3			39.5	8.1	
Approach LOS	D			D	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1217	1139	725	0	0	2134
Future Volume (vph)	1217	1139	725	0	0	2134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3251	1427	4427	0	0	4427
Flt Permitted	0.964					
Satd. Flow (perm)	3251	1427	4427	0	0	4427
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	42	194				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1309	1225	780	0	0	2295
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	1738	796	780	0	0	2295
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

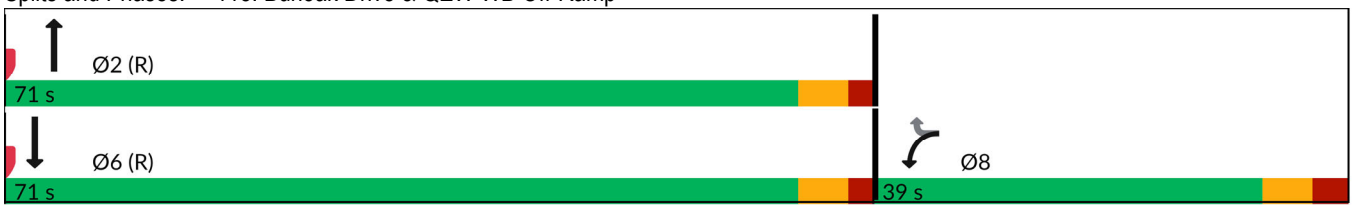


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	39.0	39.0	71.0			71.0
Total Split (%)	35.5%	35.5%	64.5%			64.5%
Maximum Green (s)	32.0	32.0	65.0			65.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
v/c Ratio	1.78	1.44	0.30			0.88
Control Delay (s/veh)	382.8	233.9	10.4			15.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	382.8	233.9	10.4			15.3
LOS	F	F	B			B
Approach Delay (s/veh)	336.1		10.4			15.3
Approach LOS	F		B			B
Queue Length 50th (m)	~316.4	~239.5	46.5			198.1
Queue Length 95th (m)	#362.6	#325.8	16.1			230.7
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	975	552	2615			2615
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.78	1.44	0.30			0.88

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.78			
Intersection Signal Delay (s/veh): 159.5		Intersection LOS: F	
Intersection Capacity Utilization 98.7%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

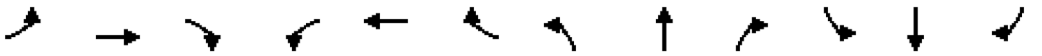
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



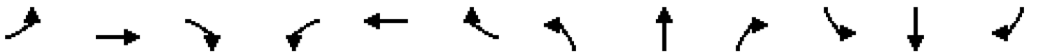


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1217	1139	725	0	0	2134
Future Volume (vph)	1217	1139	725	0	0	2134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3250	1427	4427			4427
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3250	1427	4427			4427
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1309	1225	780	0	0	2295
RTOR Reduction (vph)	30	138	0	0	0	0
Lane Group Flow (vph)	1708	658	780	0	0	2295
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0	65.0			65.0
Effective Green, g (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	945	415	2615			2615
v/s Ratio Prot	c0.53		0.18			c0.52
v/s Ratio Perm		0.46				
v/c Ratio	1.81	1.59	0.30			0.88
Uniform Delay, d1	39.0	39.0	11.2			19.1
Progression Factor	1.00	1.00	0.90			0.57
Incremental Delay, d2	367.7	275.2	0.3			4.1
Delay (s)	406.7	314.2	10.3			15.0
Level of Service	F	F	B			B
Approach Delay (s/veh)	377.6		10.3			15.0
Approach LOS	F		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	178.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	108	357	0	0	82	0	850	5	5	2125	0
Future Volume (vph)	146	108	357	0	0	82	0	850	5	5	2125	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.906	0.850			0.865		0.999				
Flt Protected	0.950											
Satd. Flow (prot)	1770	2844	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950										0.938	
Satd. Flow (perm)	1770	2844	1318	0	0	1417	0	5032	0	0	4634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192	192			209		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	157	116	384	0	0	88	0	914	5	5	2285	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	157	308	192	0	0	88	0	919	0	0	2290	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

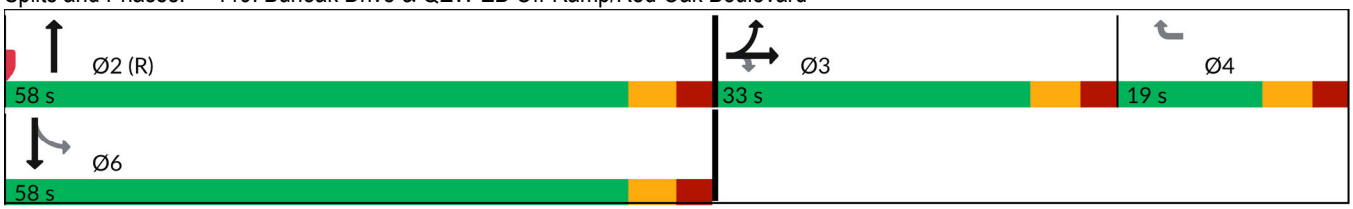


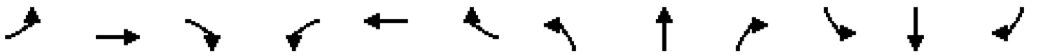
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		None	None	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	15.5	15.5	15.5			8.0		68.5			68.5	
Actuated g/C Ratio	0.14	0.14	0.14			0.07		0.62			0.62	
v/c Ratio	0.63	0.54	0.55			0.30		0.29			0.79	
Control Delay (s/veh)	55.0	19.4	11.9			2.5		11.1			19.2	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	55.0	19.4	11.9			2.5		11.1			19.2	
LOS	E	B	B			A		B			B	
Approach Delay (s/veh)		25.7			2.5			11.1			19.2	
Approach LOS		C			A			B			B	
Queue Length 50th (m)	34.6	13.9	0.0			0.0		35.5			146.8	
Queue Length 95th (m)	53.1	27.3	22.9			0.0		52.0			m148.9	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	418	818	458			340		3132			2884	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.38	0.38	0.42			0.26		0.29			0.79	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 3 (3%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 18.0		Intersection LOS: B	

Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

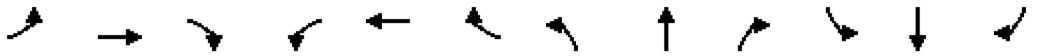




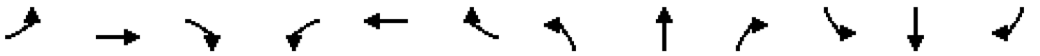
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	108	357	0	0	82	0	850	5	5	2125	0
Future Volume (vph)	146	108	357	0	0	82	0	850	5	5	2125	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1770	2844	1317			1417		5033			4940	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1770	2844	1317			1417		5033			4634	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	157	116	384	0	0	88	0	914	5	5	2285	0
RTOR Reduction (vph)	0	165	165	0	0	83	0	0	0	0	0	0
Lane Group Flow (vph)	157	143	27	0	0	5	0	919	0	0	2290	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	15.5	15.5	15.5			6.4		67.1			67.1	
Effective Green, g (s)	15.5	15.5	15.5			6.4		67.1			67.1	
Actuated g/C Ratio	0.14	0.14	0.14			0.06		0.61			0.61	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	249	400	185			82		3070			2826	
v/s Ratio Prot	c0.09	0.05						0.18				
v/s Ratio Perm			0.02			c0.00					c0.49	
v/c Ratio	0.63	0.36	0.15			0.06		0.30			0.81	
Uniform Delay, d1	44.6	42.7	41.4			49.0		10.2			16.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.06	
Incremental Delay, d2	5.1	0.6	0.4			0.3		0.3			0.2	
Delay (s)	49.7	43.3	41.8			49.3		10.5			17.7	
Level of Service	D	D	D			D		B			B	
Approach Delay (s/veh)		44.4			49.3			10.5			17.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	127	50	83	12	44	155	1273	457	104	1637	39
Future Volume (vph)	51	127	50	83	12	44	155	1273	457	104	1637	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.957			0.883			0.960			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1682	0	1504	1570	0	1719	4166	0	1752	4329	0
Flt Permitted	0.719			0.338			0.060			0.061		
Satd. Flow (perm)	1198	1682	0	535	1570	0	109	4166	0	113	4329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			46			106			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	54	134	53	87	13	46	163	1340	481	109	1723	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	187	0	87	59	0	163	1821	0	109	1764	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	27.0	27.0		11.0	38.0		14.0	68.0		14.0	68.0	
Total Split (%)	22.5%	22.5%		9.2%	31.7%		11.7%	56.7%		11.7%	56.7%	
Maximum Green (s)	20.9	20.9		7.0	31.9		10.0	61.4		10.0	61.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.9	16.9		30.0	27.9		79.6	66.8		76.3	65.2	
Actuated g/C Ratio	0.14	0.14		0.25	0.23		0.66	0.56		0.64	0.54	
v/c Ratio	0.32	0.75		0.46	0.15		0.78	0.77		0.58	0.75	
Control Delay (s/veh)	50.2	64.0		42.9	14.0		39.0	17.0		41.7	15.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.2	64.0		42.9	14.0		39.0	17.0		41.7	15.2	
LOS	D	E		D	B		D	B		D	B	
Approach Delay (s/veh)		60.9			31.2			18.8			16.7	
Approach LOS		E			C			B			B	
Queue Length 50th (m)	13.3	42.4		19.5	2.7		25.8	94.0		12.7	191.7	
Queue Length 95th (m)	27.0	66.9		34.9	14.1		m30.2	m114.5		m15.0	214.8	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	208	304		190	451		215	2366		210	2352	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.62		0.46	0.13		0.76	0.77		0.52	0.75	

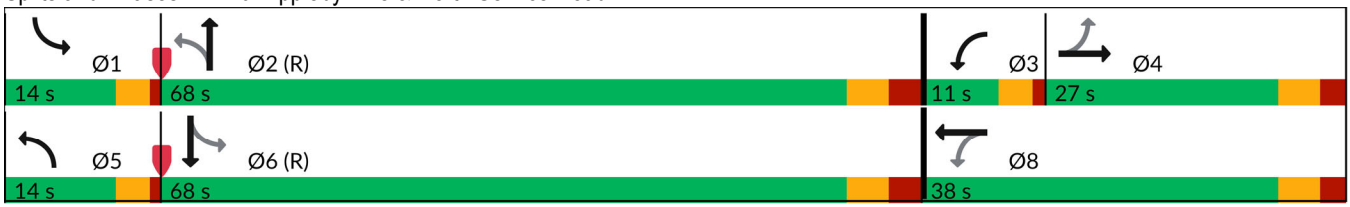
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay (s/veh): 20.7		Intersection LOS: C	

Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	127	50	83	12	44	155	1273	457	104	1637	39
Future Volume (vph)	51	127	50	83	12	44	155	1273	457	104	1637	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1683		1504	1570		1719	4167		1752	4327	
Flt Permitted	0.72	1.00		0.34	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1198	1683		535	1570		108	4167		113	4327	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	134	53	87	13	46	163	1340	481	109	1723	41
RTOR Reduction (vph)	0	12	0	0	35	0	0	47	0	0	2	0
Lane Group Flow (vph)	54	175	0	87	24	0	163	1774	0	109	1762	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.9	16.9		27.9	27.9		77.0	66.8		73.8	65.2	
Effective Green, g (s)	16.9	16.9		27.9	27.9		77.0	66.8		73.8	65.2	
Actuated g/C Ratio	0.14	0.14		0.23	0.23		0.64	0.56		0.62	0.54	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168	237		180	365		206	2319		186	2351	
v/s Ratio Prot		c0.10		c0.03	0.02		c0.07	0.43		0.04	0.41	
v/s Ratio Perm	0.05			0.08			c0.44			0.32		
v/c Ratio	0.32	0.74		0.48	0.06		0.79	0.76		0.59	0.75	
Uniform Delay, d1	46.4	49.4		38.0	35.9		29.9	20.5		17.5	21.1	
Progression Factor	1.00	1.00		1.00	1.00		1.22	0.80		1.93	0.63	
Incremental Delay, d2	1.1	11.4		2.0	0.1		5.8	0.7		2.5	1.2	
Delay (s)	47.5	60.8		40.0	36.0		42.2	17.1		36.1	14.5	
Level of Service	D	E		D	D		D	B		D	B	
Approach Delay (s/veh)		57.8			38.4			19.1			15.8	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	498	568	2067	0	0	1711
Future Volume (vph)	498	568	2067	0	0	1711
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	1495	4385	0	0	4302
Flt Permitted	0.950					
Satd. Flow (perm)	3183	1495	4385	0	0	4302
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		7				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	547	624	2271	0	0	1880
Shared Lane Traffic (%)						
Lane Group Flow (vph)	547	624	2271	0	0	1880
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

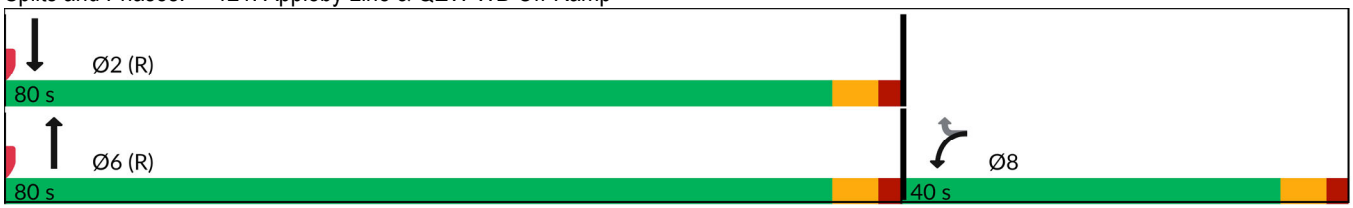


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
v/c Ratio	0.61	1.46	0.84			0.71
Control Delay (s/veh)	40.6	251.5	16.1			4.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	40.6	251.5	16.1			4.4
LOS	D	F	B			A
Approach Delay (s/veh)	153.0		16.1			4.4
Approach LOS	F		B			A
Queue Length 50th (m)	64.8	~223.8	110.7			22.5
Queue Length 95th (m)	85.2	#301.4	156.9			32.1
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	901	428	2704			2652
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.61	1.46	0.84			0.71

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.46			
Intersection Signal Delay (s/veh): 42.1		Intersection LOS: D	
Intersection Capacity Utilization 85.1%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

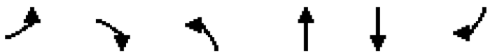
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



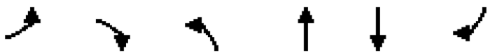


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	498	568	2067	0	0	1711
Future Volume (vph)	498	568	2067	0	0	1711
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	1495	4385			4302
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	1495	4385			4302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	547	624	2271	0	0	1880
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	547	619	2271	0	0	1880
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	74.0			74.0
Effective Green, g (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	901	423	2704			2652
v/s Ratio Prot	0.17		c0.52			0.44
v/s Ratio Perm		c0.41				
v/c Ratio	0.61	1.46	0.84			0.71
Uniform Delay, d1	37.2	43.0	18.3			15.7
Progression Factor	1.00	1.00	0.75			0.21
Incremental Delay, d2	1.2	221.2	2.1			1.1
Delay (s)	38.4	264.2	15.8			4.3
Level of Service	D	F	B			A
Approach Delay (s/veh)	158.7		15.8			4.3
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	805	462	0	1692	1722	0
Future Volume (vph)	805	462	0	1692	1722	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4302	4302	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4302	4302	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		16				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	894	513	0	1880	1913	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	894	513	0	1880	1913	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

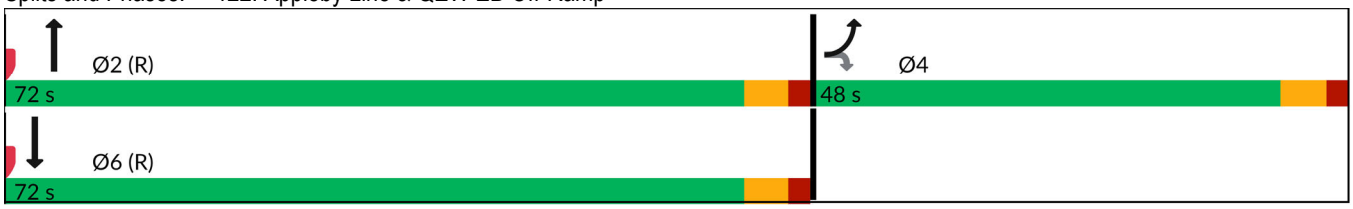


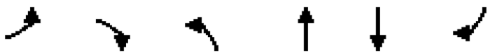
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	38.1	38.1		69.9	69.9	
Actuated g/C Ratio	0.32	0.32		0.58	0.58	
v/c Ratio	0.84	0.59		0.75	0.76	
Control Delay (s/veh)	46.3	35.8		10.4	19.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	46.3	35.8		10.4	19.7	
LOS	D	D		B	B	
Approach Delay (s/veh)	42.5			10.4	19.7	
Approach LOS	D			B	B	
Queue Length 50th (m)	108.1	59.6		49.6	124.2	
Queue Length 95th (m)	130.3	77.6		57.8	152.5	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1167	957		2506	2506	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.77	0.54		0.75	0.76	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 22.5		Intersection LOS: C	
Intersection Capacity Utilization 85.1%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

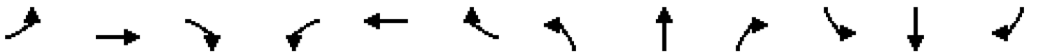




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	805	462	0	1692	1722	0
Future Volume (vph)	805	462	0	1692	1722	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4302	4302	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4302	4302	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	894	513	0	1880	1913	0
RTOR Reduction (vph)	0	11	0	0	0	0
Lane Group Flow (vph)	894	502	0	1880	1913	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	38.1	38.1		69.9	69.9	
Effective Green, g (s)	38.1	38.1		69.9	69.9	
Actuated g/C Ratio	0.32	0.32		0.58	0.58	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1058	859		2505	2505	
v/s Ratio Prot	c0.27			0.44	c0.44	
v/s Ratio Perm		0.19				
v/c Ratio	0.84	0.58		0.75	0.76	
Uniform Delay, d1	38.2	34.3		18.6	18.8	
Progression Factor	1.00	1.00		0.45	0.91	
Incremental Delay, d2	6.3	1.0		1.6	1.6	
Delay (s)	44.5	35.3		10.0	18.8	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	41.2			10.0	18.8	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	471	67	100	140	216	81	1204	370	386	674	256
Future Volume (vph)	170	471	67	100	140	216	81	1204	370	386	674	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99	1.00		0.98
Frt		0.981			0.909				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3259	0	1656	2911	0	1687	4427	1568	1770	4302	1417
Flt Permitted	0.291			0.289			0.332			0.084		
Satd. Flow (perm)	467	3259	0	504	2911	0	589	4427	1547	156	4302	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			230				219			272
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	181	501	71	106	149	230	86	1281	394	411	717	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	572	0	106	379	0	86	1281	394	411	717	272
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.6		7.0	21.6		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	38.5	25.1		28.2	18.8		54.3	43.7	43.7	73.5	61.1	61.1
Actuated g/C Ratio	0.32	0.21		0.24	0.16		0.45	0.36	0.36	0.61	0.51	0.51
v/c Ratio	0.68	0.83		0.57	0.58		0.25	0.79	0.56	1.00	0.33	0.32
Control Delay (s/veh)	44.3	55.0		43.0	21.5		12.1	26.3	10.4	74.5	23.1	7.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.3	55.0		43.0	21.5		12.1	26.3	10.4	74.5	23.1	7.2
LOS	D	E		D	C		B	C	B	E	C	A
Approach Delay (s/veh)		52.5			26.2			22.0			35.1	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	38.5	72.9		20.0	18.2		8.5	67.0	23.0	~99.8	49.7	6.7
Queue Length 95th (m)	59.7	92.4		34.2	34.5		m9.8	m70.3	m23.2	#170.6	70.7	m25.7
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	273	785		185	712		380	1612	702	411	2189	843
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.73		0.57	0.53		0.23	0.79	0.56	1.00	0.33	0.32

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 31.9	Intersection LOS: C

Intersection Capacity Utilization 88.7% ICU Level of Service E

Analysis Period (min) 15

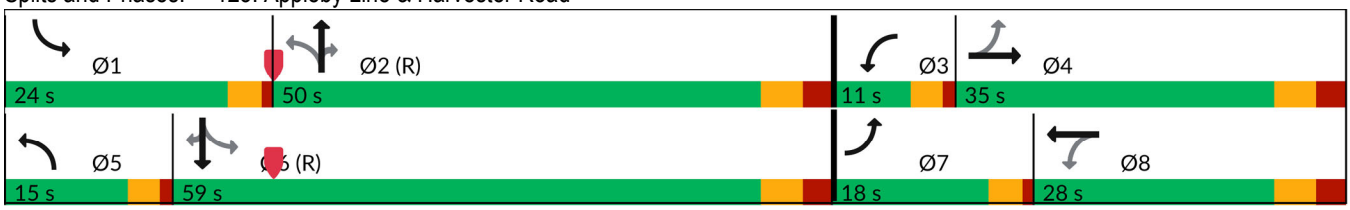
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road

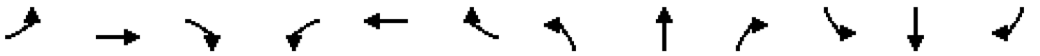


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	471	67	100	140	216	81	1204	370	386	674	256
Future Volume (vph)	170	471	67	100	140	216	81	1204	370	386	674	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3260		1656	2911		1686	4427	1547	1770	4302	1395
Flt Permitted	0.29	1.00		0.29	1.00		0.33	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	468	3260		504	2911		589	4427	1547	156	4302	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	181	501	71	106	149	230	86	1281	394	411	717	272
RTOR Reduction (vph)	0	9	0	0	194	0	0	0	139	0	0	135
Lane Group Flow (vph)	181	563	0	106	185	0	86	1281	255	411	717	137
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	36.1	25.1		25.8	18.8		50.6	43.7	43.7	71.2	60.3	60.3
Effective Green, g (s)	36.1	25.1		25.8	18.8		50.6	43.7	43.7	71.2	60.3	60.3
Actuated g/C Ratio	0.30	0.21		0.22	0.16		0.42	0.36	0.36	0.59	0.50	0.50
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	258	681		175	456		311	1612	563	408	2161	700
v/s Ratio Prot	c0.08	c0.17		0.04	0.06		0.02	0.29		c0.20	0.17	
v/s Ratio Perm	0.13			0.09			0.10		0.16	c0.40		0.10
v/c Ratio	0.70	0.83		0.61	0.41		0.28	0.79	0.45	1.01	0.33	0.20
Uniform Delay, d1	33.8	45.4		39.7	45.6		21.1	34.1	29.0	37.7	17.8	16.5
Progression Factor	1.00	1.00		1.00	1.00		0.96	0.72	0.71	1.06	1.22	2.71
Incremental Delay, d2	8.3	8.1		5.8	0.6		0.2	1.5	0.9	38.7	0.3	0.4
Delay (s)	42.2	53.5		45.5	46.2		20.5	26.0	21.6	78.6	22.0	45.0
Level of Service	D	D		D	D		C	C	C	E	C	D
Approach Delay (s/veh)		50.7			46.0			24.8			43.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	605	169	255	108	71	169	215	1156	133	224	1159	141
Future Volume (vph)	605	169	255	108	71	169	215	1156	133	224	1159	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	4471	1538
Flt Permitted	0.950			0.645			0.105			0.099		
Satd. Flow (perm)	3389	1776	1513	1081	1610	1395	197	3539	1403	165	4471	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			258			153			150			150
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	637	178	268	114	75	178	226	1217	140	236	1220	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	637	178	268	114	75	178	226	1217	140	236	1220	148
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	34.0	47.0	47.0	14.0	27.0	27.0	12.0	45.0	45.0	14.0	47.0	47.0
Total Split (%)	28.3%	39.2%	39.2%	11.7%	22.5%	22.5%	10.0%	37.5%	37.5%	11.7%	39.2%	39.2%
Maximum Green (s)	29.0	40.5	40.5	10.0	20.5	20.5	8.0	38.2	38.2	10.0	40.2	40.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	26.4	29.4	29.4	23.5	11.5	11.5	60.2	38.2	38.2	65.0	40.6	40.6
Actuated g/C Ratio	0.22	0.25	0.25	0.20	0.10	0.10	0.50	0.32	0.32	0.54	0.34	0.34
v/c Ratio	0.85	0.41	0.47	0.45	0.49	0.66	0.64	1.08	0.26	0.69	0.81	0.24
Control Delay (s/veh)	56.6	39.9	7.5	32.0	61.2	23.3	35.0	90.7	5.2	37.2	47.5	12.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.6	39.9	7.5	32.0	61.2	23.3	35.0	90.7	5.2	37.2	47.5	12.6
LOS	E	D	A	C	E	C	C	F	A	D	D	B
Approach Delay (s/veh)		41.7			33.8			75.2			42.8	
Approach LOS		D			C			E			D	
Queue Length 50th (m)	79.3	39.0	2.0	20.3	20.4	6.4	34.3	~180.0	0.0	42.9	126.5	6.0
Queue Length 95th (m)	100.3	56.9	22.7	31.7	36.8	31.1	#88.4	#224.3	14.0	m#107.7	145.3	m22.8
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	821	599	681	259	275	365	353	1126	548	344	1511	610
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.30	0.39	0.44	0.27	0.49	0.64	1.08	0.26	0.69	0.81	0.24

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 52.9	Intersection LOS: D

Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	

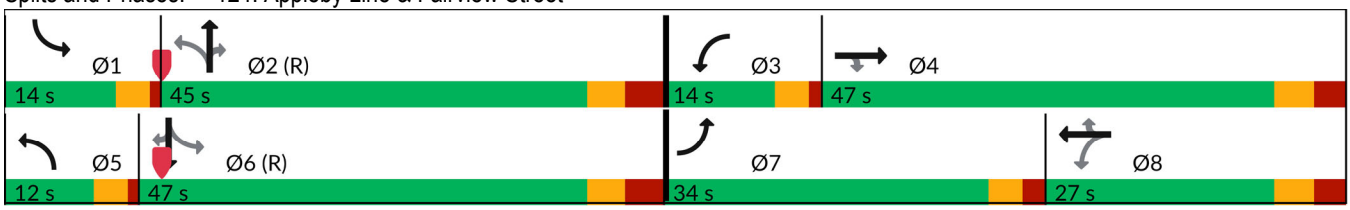
* User Entered Value

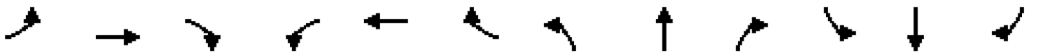
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



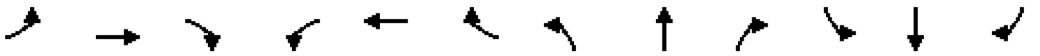


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	605	169	255	108	71	169	215	1156	133	224	1159	141
Future Volume (vph)	605	169	255	108	71	169	215	1156	133	224	1159	141
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	4471	1513
Flt Permitted	0.95	1.00	1.00	0.64	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1082	1610	1395	197	3539	1403	164	4471	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	637	178	268	114	75	178	226	1217	140	236	1220	148
RTOR Reduction (vph)	0	0	195	0	0	138	0	0	95	0	0	98
Lane Group Flow (vph)	637	178	73	114	75	40	226	1217	45	236	1220	50
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	26.4	29.4	29.4	21.0	11.5	11.5	57.4	38.2	38.2	62.2	40.6	40.6
Effective Green, g (s)	26.4	29.4	29.4	21.0	11.5	11.5	57.4	38.2	38.2	62.2	40.6	40.6
Actuated g/C Ratio	0.22	0.25	0.25	0.18	0.10	0.10	0.48	0.32	0.32	0.52	0.34	0.34
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	748	435	370	229	154	133	348	1126	446	340	1512	511
v/s Ratio Prot	c0.19	c0.10		0.04	0.05		0.10	c0.34		c0.12	0.27	
v/s Ratio Perm			0.05	0.05		0.03	0.21		0.03	0.23		0.03
v/c Ratio	0.85	0.41	0.20	0.50	0.49	0.30	0.65	1.08	0.10	0.69	0.81	0.10
Uniform Delay, d1	44.9	38.0	35.9	44.0	51.5	50.5	25.5	40.9	28.8	29.9	36.1	27.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.17	2.66
Incremental Delay, d2	9.2	0.6	0.3	1.7	2.4	1.3	4.1	51.5	0.4	6.0	4.7	0.4
Delay (s)	54.1	38.6	36.2	45.7	53.9	51.8	29.6	92.4	29.2	34.3	47.0	72.6
Level of Service	D	D	D	D	D	D	C	F	C	C	D	E
Approach Delay (s/veh)		47.2			50.3			77.8			47.5	
Approach LOS		D			D			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	457	411	636	143	220	576	345	277	849	175
Future Volume (vph)	231	1371	457	411	636	143	220	576	345	277	849	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3361	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			358			152			202			186
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	246	1459	486	437	677	152	234	613	367	295	903	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	1459	486	437	677	152	234	613	367	295	903	186
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	20.0	61.0	61.0	25.0	64.0	64.0	24.0	30.0	30.0	24.0	32.0	32.0
Total Split (%)	14.1%	43.0%	43.0%	17.6%	45.1%	45.1%	16.9%	21.1%	21.1%	16.9%	22.5%	22.5%
Maximum Green (s)	15.0	53.6	53.6	20.0	56.6	56.6	19.0	22.6	22.6	19.0	24.6	24.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.7	50.1	50.1	20.0	55.5	55.5	16.6	29.0	29.0	18.0	30.5	30.5
Actuated g/C Ratio	0.10	0.35	0.35	0.14	0.39	0.39	0.12	0.20	0.20	0.13	0.21	0.21
v/c Ratio	0.71	0.81	0.63	0.97	0.36	0.23	0.60	0.62	0.79	0.69	0.84	0.39
Control Delay (s/veh)	73.4	45.7	13.0	95.0	31.0	4.6	65.8	55.6	37.8	68.2	62.0	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.4	45.7	13.0	95.0	31.0	4.6	65.8	55.6	37.8	68.2	62.0	9.3
LOS	E	D	B	F	C	A	E	E	D	E	E	A
Approach Delay (s/veh)		41.5			49.9			52.2			56.2	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	37.8	142.7	29.0	71.5	53.9	0.0	35.2	65.8	52.4	44.3	99.0	0.0
Queue Length 95th (m)	53.5	158.6	67.7	#108.6	64.3	14.9	49.5	82.6	#113.2	61.3	#139.8	22.6
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	355	1919	801	452	1982	690	450	991	464	452	1070	474
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.76	0.61	0.97	0.34	0.22	0.52	0.62	0.79	0.65	0.84	0.39

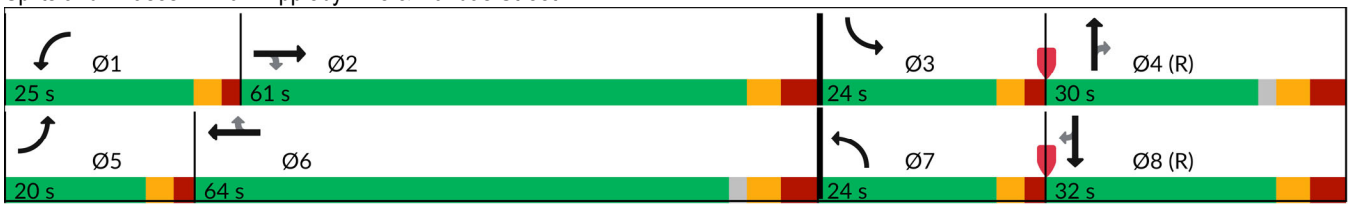
Intersection Summary	
Area Type:	Other
Cycle Length: 142	
Actuated Cycle Length: 142	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 48.8	Intersection LOS: D

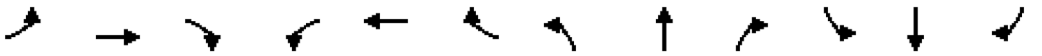
Intersection Capacity Utilization 101.1% ICU Level of Service G

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street



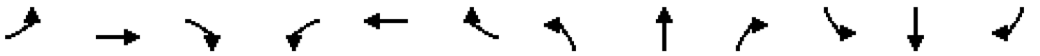


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	457	411	636	143	220	576	345	277	849	175
Future Volume (vph)	231	1371	457	411	636	143	220	576	345	277	849	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	246	1459	486	437	677	152	234	613	367	295	903	186
RTOR Reduction (vph)	0	0	231	0	0	93	0	0	161	0	0	146
Lane Group Flow (vph)	246	1459	255	437	677	59	234	613	206	295	903	40
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.7	50.2	50.2	20.0	55.5	55.5	16.6	29.0	29.0	18.0	30.4	30.4
Effective Green, g (s)	14.7	50.2	50.2	20.0	55.5	55.5	16.6	29.0	29.0	18.0	30.4	30.4
Actuated g/C Ratio	0.10	0.35	0.35	0.14	0.39	0.39	0.12	0.20	0.20	0.13	0.21	0.21
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	348	1797	541	452	1877	569	393	990	303	426	1067	327
v/s Ratio Prot	0.07	c0.29		c0.14	0.14		0.07	0.13		c0.09	c0.18	
v/s Ratio Perm			0.17			0.04			0.14			0.03
v/c Ratio	0.71	0.81	0.47	0.97	0.36	0.10	0.60	0.62	0.68	0.69	0.85	0.12
Uniform Delay, d1	61.6	41.6	35.6	60.7	30.7	27.5	59.5	51.5	52.2	59.4	53.6	45.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	2.9	0.6	34.0	0.1	0.1	3.6	2.9	11.7	6.1	8.3	0.8
Delay (s)	69.6	44.5	36.2	94.7	30.8	27.5	63.1	54.4	63.9	65.4	61.9	45.8
Level of Service	E	D	D	F	C	C	E	D	E	E	E	D
Approach Delay (s/veh)		45.5			52.4			59.0			60.5	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	646	347	253	309	272	200	933	166	380	1547	56
Future Volume (vph)	181	646	347	253	309	272	200	933	166	380	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.98				0.98	1.00	1.00			1.00	
Frt		0.948				0.850		0.977			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3322	0	1736	4471	1553	3400	4091	0	1752	4356	0
Flt Permitted	0.500			0.125			0.950			0.099		
Satd. Flow (perm)	900	3322	0	228	4471	1521	3396	4091	0	183	4356	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81				302		24			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	201	718	386	281	343	302	222	1037	184	422	1719	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	1104	0	281	343	302	222	1221	0	422	1781	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



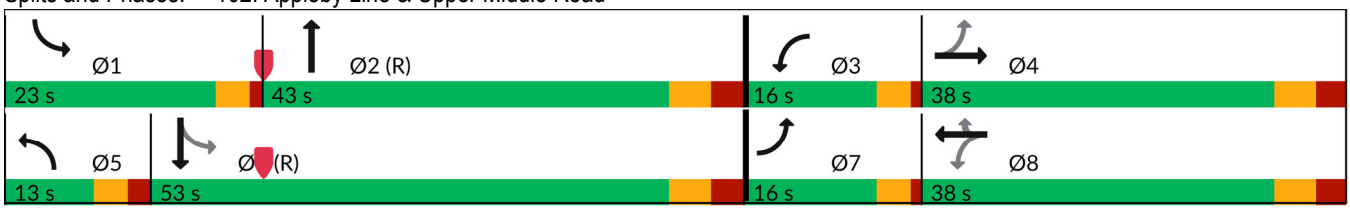
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	38.0		16.0	38.0	38.0	13.0	43.0		23.0	53.0	
Total Split (%)	13.3%	31.7%		13.3%	31.7%	31.7%	10.8%	35.8%		19.2%	44.2%	
Maximum Green (s)	12.0	31.6		12.0	31.6	31.6	8.0	36.5		19.0	46.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	45.6	31.6		46.4	32.0	32.0	8.0	36.5		62.0	46.5	
Actuated g/C Ratio	0.38	0.26		0.39	0.27	0.27	0.07	0.30		0.52	0.39	
v/c Ratio	0.48	1.18		1.18	0.29	0.48	0.98	0.97		1.23	1.05	
Control Delay (s/veh)	27.7	129.6		149.0	33.6	7.1	108.6	74.0		159.3	73.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.7	129.6		149.0	33.6	7.1	108.6	74.0		159.3	73.6	
LOS	C	F		F	C	A	F	E		F	E	
Approach Delay (s/veh)		113.9			60.0			79.4			90.1	
Approach LOS		F			E			E			F	
Queue Length 50th (m)	33.5	~166.4		~68.1	24.5	0.7	30.8	120.1		~114.8	~206.9	
Queue Length 95th (m)	52.7	#210.6		m#120.2	m34.4	m12.9	#57.6	#175.1		#181.3	#243.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	426	934		239	1193	627	226	1261		342	1690	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.47	1.18		1.18	0.29	0.48	0.98	0.97		1.23	1.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay (s/veh): 88.0	Intersection LOS: F

Intersection Capacity Utilization 105.7%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	646	347	253	309	272	200	933	166	380	1547	56
Future Volume (vph)	181	646	347	253	309	272	200	933	166	380	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	3321		1736	4471	1521	3400	4093		1752	4355	
Flt Permitted	0.50	1.00		0.13	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	902	3321		228	4471	1521	3400	4093		182	4355	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	201	718	386	281	343	302	222	1037	184	422	1719	62
RTOR Reduction (vph)	0	60	0	0	0	221	0	17	0	0	2	0
Lane Group Flow (vph)	201	1044	0	281	343	81	222	1204	0	422	1779	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	43.2	31.6		44.0	32.0	32.0	8.0	36.5		59.5	46.5	
Effective Green, g (s)	43.2	31.6		44.0	32.0	32.0	8.0	36.5		59.5	46.5	
Actuated g/C Ratio	0.36	0.26		0.37	0.27	0.27	0.07	0.30		0.50	0.39	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	403	874		234	1192	405	226	1244		338	1687	
v/s Ratio Prot	0.05	0.31		c0.12	0.08		0.07	0.29		c0.20	0.41	
v/s Ratio Perm	0.13			c0.32		0.05				c0.42		
v/c Ratio	0.50	1.19		1.20	0.29	0.20	0.98	0.97		1.25	1.05	
Uniform Delay, d1	27.8	44.2		32.1	34.9	34.1	55.9	41.2		36.8	36.8	
Progression Factor	1.00	1.00		1.41	0.94	1.17	1.00	1.42		1.00	1.00	
Incremental Delay, d2	1.0	98.9		121.6	0.1	0.2	51.6	17.7		134.1	37.8	
Delay (s)	28.8	143.1		167.0	32.9	40.0	107.5	76.0		171.0	74.6	
Level of Service	C	F		F	C	D	F	E		F	E	
Approach Delay (s/veh)		125.5			75.9			80.8			93.0	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	94.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1189	286	49	706	0	214	0	105	6	0	15
Future Volume (vph)	6	1189	286	49	706	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.971							0.850		0.905	
Flt Protected	0.950			0.950				0.950			0.985	
Satd. Flow (prot)	1805	4272	0	1805	4385	0	0	1752	1615	0	1563	0
Flt Permitted	0.262			0.056				0.740			0.890	
Satd. Flow (perm)	492	4272	0	106	4385	0	0	1358	1585	0	1411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57							136		64	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	8	1544	371	64	917	0	278	0	136	8	0	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	1915	0	64	917	0	0	278	136	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	65.0	65.0		9.0	78.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	68.8	68.8		80.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.67	0.65			0.24	0.24		0.24	
v/c Ratio	0.03	0.77		0.37	0.32			0.85	0.28		0.07	
Control Delay (s/veh)	14.8	20.7		13.0	9.6			67.2	7.6		0.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	14.8	20.7		13.0	9.6			67.2	7.6		0.3	
LOS	B	C		B	A			E	A		A	
Approach Delay (s/veh)		20.6			9.8			47.6			0.3	
Approach LOS		C			A			D			A	
Queue Length 50th (m)	0.8	109.8		6.4	46.5			66.1	0.0		0.0	
Queue Length 95th (m)	m1.4	m94.0		m8.4	m42.5			#83.0	9.8		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	281	2472		198	2850			328	486		389	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.03	0.77		0.32	0.32			0.85	0.28		0.07	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 20.6	Intersection LOS: C

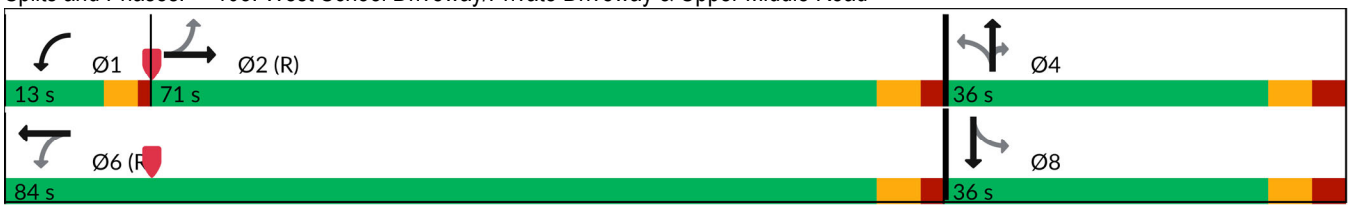
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1189	286	49	706	0	214	0	105	6	0	15
Future Volume (vph)	6	1189	286	49	706	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1785	4271		1805	4385			1744	1585		1562	
Flt Permitted	0.26	1.00		0.06	1.00			0.74	1.00		0.89	
Satd. Flow (perm)	493	4271		106	4385			1358	1585		1411	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	8	1544	371	64	917	0	278	0	136	8	0	19
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	103	0	20	0
Lane Group Flow (vph)	8	1890	0	64	917	0	0	278	33	0	7	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Effective Green, g (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.65	0.65			0.24	0.24		0.24	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	279	2420		153	2850			328	383		340	
v/s Ratio Prot		c0.44		c0.02	0.21							
v/s Ratio Perm	0.02			0.25				c0.20	0.02		0.00	
v/c Ratio	0.03	0.78		0.42	0.32			0.85	0.09		0.02	
Uniform Delay, d1	11.5	20.2		16.5	9.3			43.4	35.2		34.7	
Progression Factor	1.15	0.96		0.88	0.99			1.00	1.00		1.00	
Incremental Delay, d2	0.1	1.5		1.6	0.3			22.9	0.4		0.1	
Delay (s)	13.3	20.9		16.1	9.5			66.3	35.7		34.8	
Level of Service	B	C		B	A			E	D		C	
Approach Delay (s/veh)		20.9			9.9			56.2			34.8	
Approach LOS		C			A			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1110	183	284	720	52	210
Future Volume (vph)	1110	183	284	720	52	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.979					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4346	0	1787	4385	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4346	0	1787	4385	1805	1615
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	1563	258	400	1014	73	296
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1821	0	400	1014	73	296
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

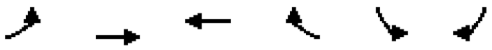
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.8%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1110	183	284	720	52	210
Future Volume (Veh/h)	1110	183	284	720	52	210
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1563	258	400	1014	73	296
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.71		0.71	0.71
vC, conflicting volume			1833		2842	662
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			767		2179	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			33		0	62
cM capacity (veh/h)			601		10	771

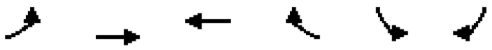
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	625	625	571	400	338	338	338	73	296
Volume Left	0	0	0	400	0	0	0	73	0
Volume Right	0	0	258	0	0	0	0	0	296
cSH	1700	1700	1700	601	1700	1700	1700	10	771
Volume to Capacity	0.37	0.37	0.34	0.67	0.20	0.20	0.20	7.65	0.38
Queue Length 95th (m)	0.0	0.0	0.0	39.9	0.0	0.0	0.0	Err	14.5
Control Delay (s/veh)	0.0	0.0	0.0	22.1	0.0	0.0	0.0	Err	12.5
Lane LOS				C				F	B
Approach Delay (s/veh)	0.0			6.3				1988.2	
Approach LOS								F	

Intersection Summary			
Average Delay	206.0		
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	169	1151	738	86	102	260
Future Volume (vph)	169	1151	738	86	102	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.903	
Flt Protected	0.950				0.986	
Satd. Flow (prot)	1752	4471	4352	0	1668	0
Flt Permitted	0.950				0.986	
Satd. Flow (perm)	1752	4471	4352	0	1668	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	29			29		1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	3%	4%	0%	2%
Adj. Flow (vph)	222	1514	971	113	134	342
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	1514	1084	0	476	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

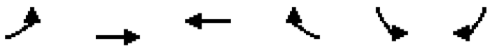
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.5%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



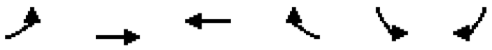
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	169	1151	738	86	102	260
Future Volume (Veh/h)	169	1151	738	86	102	260
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	222	1514	971	113	134	342
Pedestrians		1			29	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked						
vC, conflicting volume	1113				2005	410
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1113				2005	410
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	63				0	41
cM capacity (veh/h)	602				33	576

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	222	505	505	505	388	388	307	476
Volume Left	222	0	0	0	0	0	0	134
Volume Right	0	0	0	0	0	0	113	342
cSH	602	1700	1700	1700	1700	1700	1700	101
Volume to Capacity	0.37	0.30	0.30	0.30	0.23	0.23	0.18	4.70
Queue Length 95th (m)	13.5	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	14.4	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	B							F
Approach Delay (s/veh)	1.8				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	1445.0		
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	278	984	498	185	530	312
Future Volume (vph)	278	984	498	185	530	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor	0.99		0.98		0.98	
Frt			0.959		0.950	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1703	4515	4147	0	1711	0
Flt Permitted	0.216				0.969	
Satd. Flow (perm)	382	4515	4147	0	1688	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			94		28	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	24			24	16	6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Adj. Flow (vph)	331	1171	593	220	631	371
Shared Lane Traffic (%)						
Lane Group Flow (vph)	331	1171	813	0	1002	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

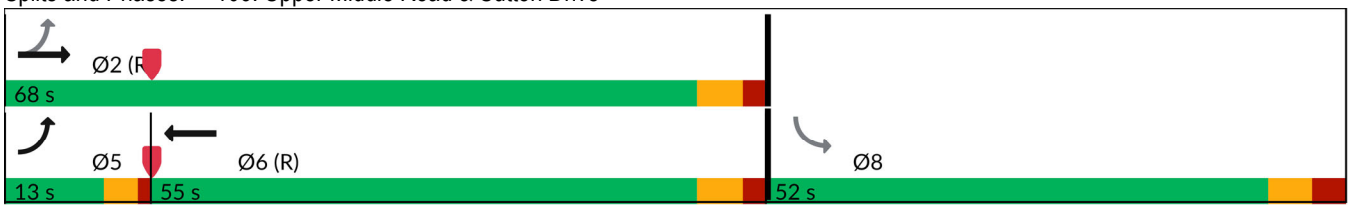


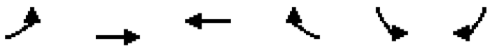
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	13.0	68.0	55.0		52.0	
Total Split (%)	10.8%	56.7%	45.8%		43.3%	
Maximum Green (s)	9.0	62.0	49.0		45.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	64.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.53	0.52	0.41		0.38	
v/c Ratio	1.10	0.50	0.47		1.54	
Control Delay (s/veh)	99.2	9.6	23.7		280.1	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	99.2	9.6	23.7		280.1	
LOS	F	A	C		F	
Approach Delay (s/veh)		29.3	23.7		280.1	
Approach LOS		C	C		F	
Queue Length 50th (m)	~45.5	28.8	54.3		~347.5	
Queue Length 95th (m)	#66.3	35.8	62.5		#388.9	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	302	2332	1748		650	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	1.10	0.50	0.47		1.54	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay (s/veh): 103.7	Intersection LOS: F

Intersection Capacity Utilization 99.1%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Upper Middle Road & Sutton Drive

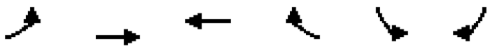




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	278	984	498	185	530	312
Future Volume (vph)	278	984	498	185	530	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		0.99	
Frt	1.00	1.00	0.96		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1699	4515	4149		1689	
Flt Permitted	0.22	1.00	1.00		0.97	
Satd. Flow (perm)	386	4515	4149		1689	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	331	1171	593	220	631	371
RTOR Reduction (vph)	0	0	56	0	18	0
Lane Group Flow (vph)	331	1171	757	0	985	0
Confl. Peds. (#/hr)	24			24	16	6
Heavy Vehicles (%)	6%	1%	3%	4%	0%	4%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	62.0	62.0	49.0		45.0	
Effective Green, g (s)	62.0	62.0	49.0		45.0	
Actuated g/C Ratio	0.52	0.52	0.41		0.38	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	297	2332	1694		633	
v/s Ratio Prot	c0.08	0.26	0.18			
v/s Ratio Perm	c0.49				c0.58	
v/c Ratio	1.11	0.50	0.45		1.56	
Uniform Delay, d1	24.3	18.9	25.7		37.5	
Progression Factor	1.02	0.47	1.00		1.00	
Incremental Delay, d2	83.1	0.7	0.9		257.6	
Delay (s)	108.0	9.5	26.6		295.1	
Level of Service	F	A	C		F	
Approach Delay (s/veh)		31.2	26.6		295.1	
Approach LOS		C	C		F	

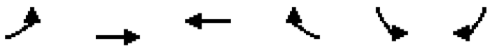
Intersection Summary			
HCM 2000 Control Delay (s/veh)	109.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	1481	593	6	0	72
Future Volume (vph)	41	1481	593	6	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	4515	4378	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	4515	4378	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	46	1664	666	7	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	1664	673	0	0	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

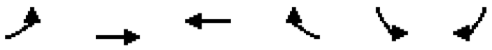
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	1481	593	6	0	72
Future Volume (Veh/h)	41	1481	593	6	0	72
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	46	1664	666	7	0	81
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.86	
vC, conflicting volume	691				1334	244
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	691				817	244
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	95				100	89
cM capacity (veh/h)	848				255	746

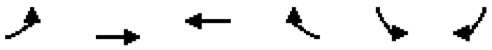
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	46	555	555	555	266	266	140	81
Volume Left	46	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	7	81
cSH	848	1700	1700	1700	1700	1700	1700	746
Volume to Capacity	0.05	0.33	0.33	0.33	0.16	0.16	0.08	0.11
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Control Delay (s/veh)	9.5	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS	A							B
Approach Delay (s/veh)	0.3				0.0			10.4
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	1477	607	5	29	9
Future Volume (vph)	5	1477	607	5	29	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.968	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1805	4515	4413	0	1631	0
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1805	4515	4413	0	1631	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	5	1605	660	5	32	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	1605	665	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

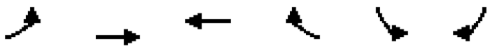


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1477	607	5	29	9
Future Volume (Veh/h)	5	1477	607	5	29	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1605	660	5	32	10
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	679				1222	237
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	679				1222	237
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	99				80	99
cM capacity (veh/h)	912				164	713

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	5	535	535	535	264	264	137	42
Volume Left	5	0	0	0	0	0	0	32
Volume Right	0	0	0	0	0	0	5	10
cSH	912	1700	1700	1700	1700	1700	1700	200
Volume to Capacity	0.00*	0.31	0.31	0.31	0.16	0.16	0.08	0.21
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	6.1
Control Delay (s/veh)	9.0	0.0	0.0	0.0	0.0	0.0	0.0	27.7
Lane LOS	A							D
Approach Delay (s/veh)	0.0				0.0			27.7
Approach LOS								D

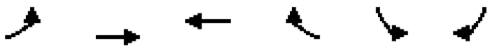
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	1511	523	37	215	49
Future Volume (vph)	29	1511	523	37	215	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	4515	4341	0	1737	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1703	4515	4341	0	1737	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	32	1679	581	41	239	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	1679	622	0	293	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	1511	523	37	215	49
Future Volume (Veh/h)	29	1511	523	37	215	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	32	1679	581	41	239	54
Pedestrians					10	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	632				1235	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	632				1235	224
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	96				0	93
cM capacity (veh/h)	912				163	752

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	32	560	560	560	232	232	157	293
Volume Left	32	0	0	0	0	0	0	239
Volume Right	0	0	0	0	0	0	41	54
cSH	912	1700	1700	1700	1700	1700	1700	190
Volume to Capacity	0.04	0.33	0.33	0.33	0.14	0.14	0.09	1.54
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	149.8
Control Delay (s/veh)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	313.0
Lane LOS	A							F
Approach Delay (s/veh)	0.2				0.0			313.0
Approach LOS								F

Intersection Summary			
Average Delay	35.0		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	5	579	53	23	1650
Future Volume (vph)	14	5	579	53	23	1650
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.963		0.987			
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1766	0	4380	0	1805	4515
Flt Permitted	0.965				0.950	
Satd. Flow (perm)	1766	0	4380	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	16	6	643	59	26	1833
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	702	0	26	1833
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

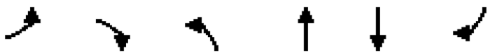
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



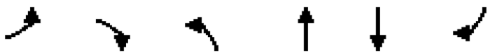
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	5	579	53	23	1650
Future Volume (Veh/h)	14	5	579	53	23	1650
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	6	643	59	26	1833
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1337	245			703	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1337	245			703	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	99			97	
cM capacity (veh/h)	143	761			903	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	22	257	257	188	26	611	611	611
Volume Left	16	0	0	0	26	0	0	0
Volume Right	6	0	0	59	0	0	0	0
cSH	183	1700	1700	1700	903	1700	1700	1700
Volume to Capacity	0.12	0.15	0.15	0.11	0.03	0.36	0.36	0.36
Queue Length 95th (m)	3.2	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Control Delay (s/veh)	27.3	0.0	0.0	0.0	9.1	0.0	0.0	0.0
Lane LOS	D				A			
Approach Delay (s/veh)	27.3	0.0			0.1			
Approach LOS	D							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	447	409	576	1588	85
Future Volume (vph)	68	447	409	576	1588	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor					1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	1736	4427	4476	0
Flt Permitted	0.950		0.063			
Satd. Flow (perm)	1805	1524	115	4427	4476	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		168			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	75	491	449	633	1745	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	491	449	633	1838	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	14.0	80.0	66.0	
Total Split (%)	27.3%	27.3%	12.7%	72.7%	60.0%	
Maximum Green (s)	23.0	23.0	10.0	73.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.54	
v/c Ratio	0.20	1.09	1.99	0.22	0.76	
Control Delay (s/veh)	37.6	96.5	480.2	10.6	22.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.6	96.5	480.2	10.6	22.6	
LOS	D	F	F	B	C	
Approach Delay (s/veh)	88.7			205.5	22.6	
Approach LOS	F			F	C	
Queue Length 50th (m)	14.1	~96.9	~144.6	31.2	130.0	
Queue Length 95th (m)	27.3	#166.5	#210.9	39.0	153.2	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	377	451	226	2937	2405	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.20	1.09	1.99	0.22	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 74 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.99	
Intersection Signal Delay (s/veh): 90.1	Intersection LOS: F

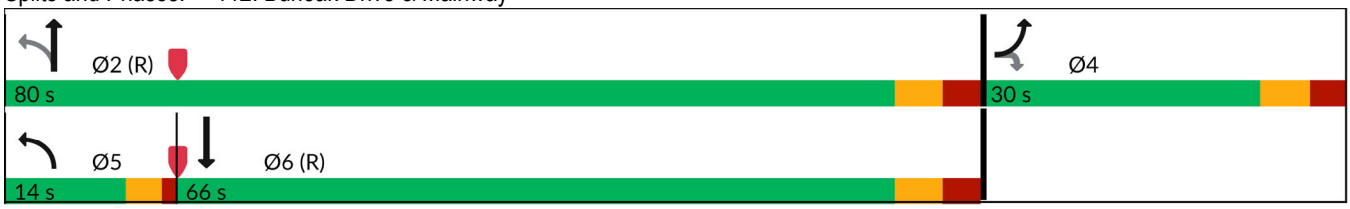
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

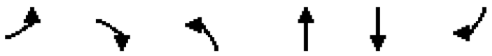
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	447	409	576	1588	85
Future Volume (vph)	68	447	409	576	1588	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	1736	4427	4478	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1524	116	4427	4478	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	491	449	633	1745	93
RTOR Reduction (vph)	0	133	0	0	5	0
Lane Group Flow (vph)	75	358	449	633	1833	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	59.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	318	224	2937	2401	
v/s Ratio Prot	0.04		c0.18	0.14	0.41	
v/s Ratio Perm		c0.24	c1.15			
v/c Ratio	0.20	1.13	2.00	0.22	0.76	
Uniform Delay, d1	35.9	43.5	33.4	7.3	20.0	
Progression Factor	1.00	1.00	0.82	1.43	1.00	
Incremental Delay, d2	0.3	89.0	467.4	0.2	2.4	
Delay (s)	36.2	132.5	494.6	10.6	22.4	
Level of Service	D	F	F	B	C	
Approach Delay (s/veh)	119.7			211.4	22.4	
Approach LOS	F			F	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	96.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.84		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	430	126	33	245	18	13
Future Volume (vph)	430	126	33	245	18	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.966				0.942	
Flt Protected				0.994	0.972	
Satd. Flow (prot)	3336	0	0	3408	1561	0
Flt Permitted				0.994	0.972	
Satd. Flow (perm)	3336	0	0	3408	1561	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		2	2			
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	5%	3%	0%	6%	20%	0%
Adj. Flow (vph)	483	142	37	275	20	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	625	0	0	312	35	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



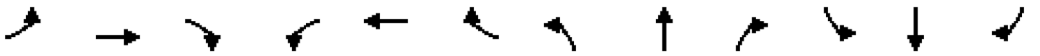
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	430	126	33	245	18	13
Future Volume (Veh/h)	430	126	33	245	18	13
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	483	142	37	275	20	15
Pedestrians					2	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			627		768	315
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			627		768	315
tC, single (s)			4.1		7.2	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			96		93	98
cM capacity (veh/h)			963		291	686

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	322	303	129	183	35
Volume Left	0	0	37	0	20
Volume Right	0	142	0	0	15
cSH	1700	1700	963	1700	386
Volume to Capacity	0.19	0.18	0.04	0.11	0.09
Queue Length 95th (m)	0.0	0.0	1.0	0.0	2.4
Control Delay (s/veh)	0.0	0.0	2.8	0.0	15.2
Lane LOS			A		C
Approach Delay (s/veh)	0.0		1.2		15.2
Approach LOS					C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	772	69	16	143	22	16	0	5	115	2	86
Future Volume (vph)	23	772	69	16	143	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.982			0.968			0.943	
Flt Protected		0.999			0.996			0.963			0.972	
Satd. Flow (prot)	0	3450	0	0	3209	0	0	1508	0	0	1732	0
Flt Permitted		0.999			0.996			0.963			0.972	
Satd. Flow (perm)	0	3450	0	0	3209	0	0	1508	0	0	1732	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	27	908	81	19	168	26	19	0	6	135	2	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1016	0	0	213	0	0	25	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.8%		ICU Level of Service A	
Analysis Period (min) 15			

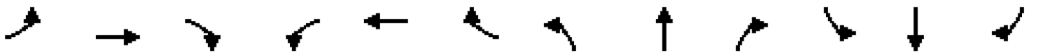


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	772	69	16	143	22	16	0	5	115	2	86
Future Volume (Veh/h)	23	772	69	16	143	22	16	0	5	115	2	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	27	908	81	19	168	26	19	0	6	135	2	101
Pedestrians								9			5	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	199			998			1236	1249	504	738	1276	102
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	199			998			1236	1249	504	738	1276	102
tC, single (s)	4.4			4.4			8.0	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.4			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			80	100	99	53	99	89
cM capacity (veh/h)	1269			611			93	164	515	289	158	936

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	481	535	103	110	25	238
Volume Left	27	0	19	0	19	135
Volume Right	0	81	0	26	6	101
cSH	1269	1700	611	1700	116	404
Volume to Capacity	0.02	0.31	0.03	0.06	0.22	0.59
Queue Length 95th (m)	0.5	0.0	0.8	0.0	6.2	29.2
Control Delay (s/veh)	0.7	0.0	2.3	0.0	44.5	25.9
Lane LOS	A		A		E	D
Approach Delay (s/veh)	0.3		1.1		44.5	25.9
Approach LOS					E	D

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	52.8%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	441	189	103	107	64	132	984	223	269	1654	134
Future Volume (vph)	189	441	189	103	107	64	132	984	223	269	1654	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	1.00			1.00	
Frt		0.955			0.944			0.972			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3169	0	1492	3051	0	1597	4158	0	1770	4296	0
Flt Permitted	0.640			0.159			0.083			0.083		
Satd. Flow (perm)	1077	3169	0	249	3051	0	140	4158	0	155	4296	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			67			37			13	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	197	459	197	107	111	67	138	1025	232	280	1723	140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	656	0	107	178	0	138	1257	0	280	1863	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

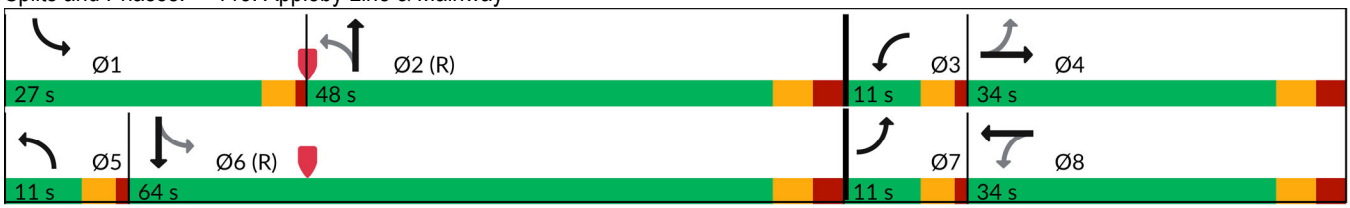


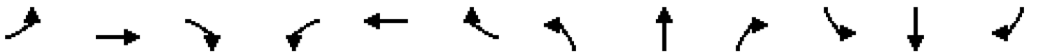
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	34.0		11.0	34.0		11.0	48.0		27.0	64.0	
Total Split (%)	9.2%	28.3%		9.2%	28.3%		9.2%	40.0%		22.5%	53.3%	
Maximum Green (s)	7.0	27.7		7.0	27.7		7.0	41.7		23.0	57.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	35.6	26.3		35.6	26.3		58.3	48.1		71.8	58.2	
Actuated g/C Ratio	0.30	0.22		0.30	0.22		0.49	0.40		0.60	0.49	
v/c Ratio	0.56	0.89		0.73	0.25		0.85	0.75		0.83	0.89	
Control Delay (s/veh)	39.3	57.5		59.3	24.3		54.9	34.2		55.4	20.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	39.3	57.5		59.3	24.3		54.9	34.2		55.4	20.0	
LOS	D	E		E	C		D	C		E	C	
Approach Delay (s/veh)		53.3			37.5			36.3			24.6	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	39.5	79.7		21.5	12.4		18.0	136.0		58.4	127.2	
Queue Length 95th (m)	62.6	#110.9		#43.4	23.2		m#40.8	156.2		86.5	191.3	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	350	771		146	755		163	1687		403	2091	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.85		0.73	0.24		0.85	0.75		0.69	0.89	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 58 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 34.1	Intersection LOS: C

Intersection Capacity Utilization 85.5% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	441	189	103	107	64	132	984	223	269	1654	134
Future Volume (vph)	189	441	189	103	107	64	132	984	223	269	1654	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.94		1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1603	3169		1491	3050		1597	4160		1770	4295	
Flt Permitted	0.64	1.00		0.16	1.00		0.08	1.00		0.08	1.00	
Satd. Flow (perm)	1079	3169		249	3050		140	4160		155	4295	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	197	459	197	107	111	67	138	1025	232	280	1723	140
RTOR Reduction (vph)	0	41	0	0	52	0	0	22	0	0	7	0
Lane Group Flow (vph)	197	615	0	107	126	0	138	1235	0	280	1856	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.3	26.3		33.3	26.3		55.9	48.0		70.1	58.2	
Effective Green, g (s)	33.3	26.3		33.3	26.3		55.9	48.0		70.1	58.2	
Actuated g/C Ratio	0.28	0.22		0.28	0.22		0.47	0.40		0.58	0.49	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	329	694		141	668		161	1664		334	2083	
v/s Ratio Prot	0.03	c0.19		c0.04	0.04		0.06	0.30		c0.13	c0.43	
v/s Ratio Perm	0.13			0.17			0.34			0.36		
v/c Ratio	0.60	0.89		0.76	0.19		0.86	0.74		0.84	0.89	
Uniform Delay, d1	36.2	45.4		35.0	38.2		24.8	30.7		32.5	28.0	
Progression Factor	1.00	1.00		1.00	1.00		0.97	1.03		1.39	0.54	
Incremental Delay, d2	2.9	13.1		20.6	0.1		23.1	1.9		12.2	4.5	
Delay (s)	39.1	58.5		55.6	38.3		47.0	33.7		57.5	19.6	
Level of Service	D	E		E	D		D	C		E	B	
Approach Delay (s/veh)		54.0			44.8			35.0			24.6	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	85.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	153	18	116	40	1119	74	86	1962	54
Future Volume (vph)	21	10	31	153	18	116	40	1119	74	86	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.945			0.991			0.996	
Flt Protected		0.984			0.974		0.950			0.950		
Satd. Flow (prot)	0	1322	0	0	1691	0	1530	4214	0	1736	4362	0
Flt Permitted		0.843			0.802		0.059			0.136		
Satd. Flow (perm)	0	1131	0	0	1387	0	95	4214	0	248	4362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			29			11			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	21	10	32	156	18	118	41	1142	76	88	2002	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	292	0	41	1218	0	88	2057	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	42.0	42.0		42.0	42.0		66.0	66.0		12.0	78.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		55.0%	55.0%		10.0%	65.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		60.0	60.0		8.0	72.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		27.9			27.9		68.0	68.0		81.6	79.6	
Actuated g/C Ratio		0.23			0.23		0.57	0.57		0.68	0.66	
v/c Ratio		0.23			0.85		0.76	0.51		0.33	0.71	
Control Delay (s/veh)		31.0			61.0		92.5	26.1		7.5	7.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.0			61.0		92.5	26.1		7.5	7.8	
LOS		C			E		F	C		A	A	
Approach Delay (s/veh)		31.0			61.0			28.2			7.8	
Approach LOS		C			E			C			A	
Queue Length 50th (m)		11.3			62.7		11.9	120.5		4.3	70.0	
Queue Length 95th (m)		23.5			90.8		m#20.6	147.2		m4.8	m72.6	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		342			430		54	2394		269	2896	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.18			0.68		0.76	0.51		0.33	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 19.2	Intersection LOS: B

Intersection Capacity Utilization 85.1% ICU Level of Service E

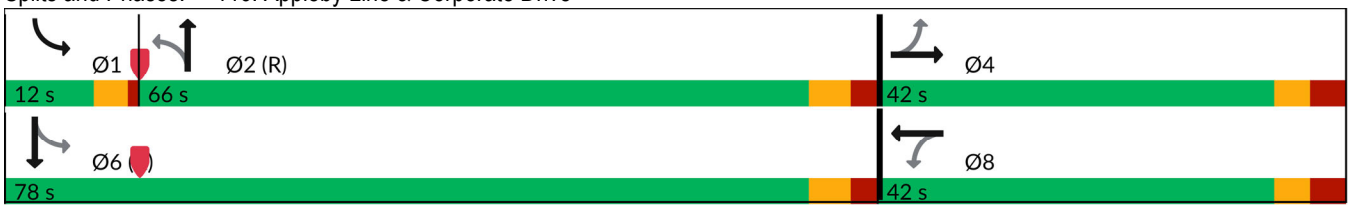
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

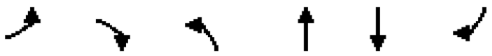
Splits and Phases: 116: Appleby Line & Corporate Drive



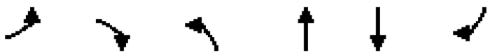
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	153	18	116	40	1119	74	86	1962	54
Future Volume (vph)	21	10	31	153	18	116	40	1119	74	86	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.95		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1320			1685		1529	4212		1735	4362	
Flt Permitted		0.84			0.80		0.06	1.00		0.14	1.00	
Satd. Flow (perm)		1131			1388		95	4212		249	4362	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	10	32	156	18	118	41	1142	76	88	2002	55
RTOR Reduction (vph)	0	8	0	0	22	0	0	5	0	0	2	0
Lane Group Flow (vph)	0	55	0	0	270	0	41	1213	0	88	2055	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.9			27.9		68.0	68.0		79.6	79.6	
Effective Green, g (s)		27.9			27.9		68.0	68.0		79.6	79.6	
Actuated g/C Ratio		0.23			0.23		0.57	0.57		0.66	0.66	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		262			322		53	2386		259	2893	
v/s Ratio Prot								0.29		0.02	c0.47	
v/s Ratio Perm		0.05			c0.19		c0.43			0.20		
v/c Ratio		0.21			0.84		0.77	0.51		0.34	0.71	
Uniform Delay, d1		37.1			43.9		20.1	15.8		9.1	12.9	
Progression Factor		1.00			1.00		1.40	1.52		0.92	0.54	
Incremental Delay, d2		0.4			17.0		54.0	0.6		0.1	0.1	
Delay (s)		37.5			60.9		82.2	24.6		8.4	7.1	
Level of Service		D			E		F	C		A	A	
Approach Delay (s/veh)		37.5			60.9			26.4			7.2	
Approach LOS		D			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	115	494	772	1572	122
Future Volume (vph)	34	115	494	772	1572	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.989	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	1719	4427	4418	0
Flt Permitted	0.950		0.062			
Satd. Flow (perm)	1805	1313	112	4427	4418	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		116			15	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	34	116	499	780	1588	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	116	499	780	1711	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	23.0	23.0	20.0	87.0	67.0	
Total Split (%)	20.9%	20.9%	18.2%	79.1%	60.9%	
Maximum Green (s)	16.0	16.0	16.0	80.0	60.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.0	9.0	90.0	87.0	60.0	
Actuated g/C Ratio	0.08	0.08	0.82	0.79	0.55	
v/c Ratio	0.23	0.54	1.17	0.22	0.71	
Control Delay (s/veh)	50.4	18.5	116.5	2.3	8.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	50.4	18.5	116.5	2.3	8.4	
LOS	D	B	F	A	A	
Approach Delay (s/veh)	25.7			46.9	8.4	
Approach LOS	C			D	A	
Queue Length 50th (m)	7.4	0.0	~112.2	9.3	35.9	
Queue Length 95th (m)	17.0	19.9	m#93.1	m11.2	m41.0	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	262	290	427	3501	2416	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.40	1.17	0.22	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay (s/veh): 24.9	Intersection LOS: C

Intersection Capacity Utilization 82.2%	ICU Level of Service E

Analysis Period (min) 15

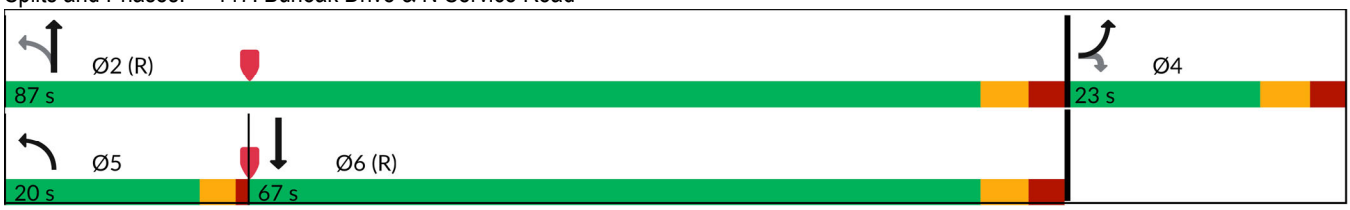
* User Entered Value

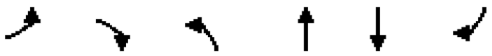
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	115	494	772	1572	122
Future Volume (vph)	34	115	494	772	1572	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	1719	4427	4419	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1313	113	4427	4419	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	34	116	499	780	1588	123
RTOR Reduction (vph)	0	107	0	0	7	0
Lane Group Flow (vph)	34	9	499	780	1704	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.0	9.0	87.0	87.0	60.0	
Effective Green, g (s)	9.0	9.0	87.0	87.0	60.0	
Actuated g/C Ratio	0.08	0.08	0.79	0.79	0.55	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	147	107	425	3501	2410	
v/s Ratio Prot	c0.02		c0.25	0.18	0.39	
v/s Ratio Perm		0.01	c0.68			
v/c Ratio	0.23	0.09	1.17	0.22	0.71	
Uniform Delay, d1	47.3	46.7	35.5	2.9	18.5	
Progression Factor	1.00	1.00	1.29	0.76	0.40	
Incremental Delay, d2	0.8	0.4	80.8	0.0	0.9	
Delay (s)	48.1	47.1	126.5	2.2	8.3	
Level of Service	D	D	F	A	A	
Approach Delay (s/veh)	47.3			50.7	8.3	
Approach LOS	D			D	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1353	858	0	0	2528
Future Volume (vph)	1445	1353	858	0	0	2528
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3251	1427	4427	0	0	4427
Flt Permitted	0.964					
Satd. Flow (perm)	3251	1427	4427	0	0	4427
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	42	139				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1554	1455	923	0	0	2718
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	2063	946	923	0	0	2718
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

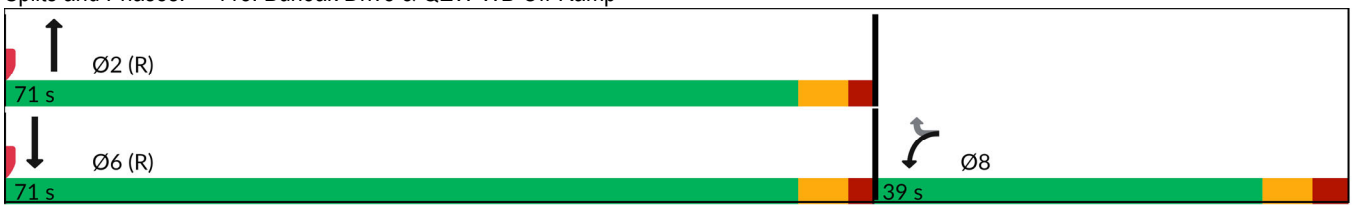


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	39.0	39.0	71.0			71.0
Total Split (%)	35.5%	35.5%	64.5%			64.5%
Maximum Green (s)	32.0	32.0	65.0			65.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
v/c Ratio	2.12	1.84	0.35			1.04
Control Delay (s/veh)	528.9	410.6	9.3			44.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	528.9	410.6	9.3			44.7
LOS	F	F	A			D
Approach Delay (s/veh)	491.7		9.3			44.7
Approach LOS	F		A			D
Queue Length 50th (m)	~400.3	~341.7	49.8			~289.2
Queue Length 95th (m)	#446.2	#431.2	19.2			#324.7
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	975	513	2615			2615
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.12	1.84	0.35			1.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.12			
Intersection Signal Delay (s/veh): 242.1		Intersection LOS: F	
Intersection Capacity Utilization 115.1%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

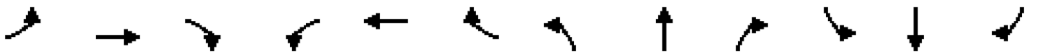
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



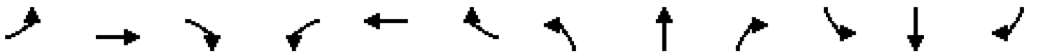


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1353	858	0	0	2528
Future Volume (vph)	1445	1353	858	0	0	2528
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3250	1427	4427			4427
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3250	1427	4427			4427
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1554	1455	923	0	0	2718
RTOR Reduction (vph)	30	99	0	0	0	0
Lane Group Flow (vph)	2033	847	923	0	0	2718
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0	65.0			65.0
Effective Green, g (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	945	415	2615			2615
v/s Ratio Prot	c0.63		0.21			c0.61
v/s Ratio Perm		0.59				
v/c Ratio	2.15	2.04	0.35			1.04
Uniform Delay, d1	39.0	39.0	11.6			22.5
Progression Factor	1.00	1.00	0.76			0.66
Incremental Delay, d2	521.7	477.3	0.4			28.2
Delay (s)	560.7	516.3	9.2			43.0
Level of Service	F	F	A			D
Approach Delay (s/veh)	546.8		9.2			43.0
Approach LOS	F		A			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	266.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	115.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	128	424	0	0	97	0	1007	6	6	2519	0
Future Volume (vph)	173	128	424	0	0	97	0	1007	6	6	2519	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.907	0.850			0.865		0.999				
Flt Protected	0.950											
Satd. Flow (prot)	1770	2847	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950										0.937	
Satd. Flow (perm)	1770	2847	1318	0	0	1417	0	5032	0	0	4629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		208	208			165		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	186	138	456	0	0	104	0	1083	6	6	2709	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	186	366	228	0	0	104	0	1089	0	0	2715	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



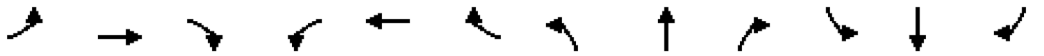
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		None	None	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	17.5	17.5	17.5			8.0		63.5			63.5	
Actuated g/C Ratio	0.16	0.16	0.16			0.07		0.58			0.58	
v/c Ratio	0.66	0.58	0.59			0.41		0.37			1.02	
Control Delay (s/veh)	54.2	21.1	13.9			6.0		13.6			35.4	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	54.2	21.1	13.9			6.0		13.6			35.4	
LOS	D	C	B			A		B			D	
Approach Delay (s/veh)		26.9			6.0			13.6			35.4	
Approach LOS		C			A			B			D	
Queue Length 50th (m)	40.4	18.6	4.6			0.0		46.9			~232.8	
Queue Length 95th (m)	60.4	33.1	30.4			3.6		66.3			m155.9	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	418	831	470			301		2906			2672	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.44	0.44	0.49			0.35		0.37			1.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 3 (3%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 28.3	Intersection LOS: C

Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



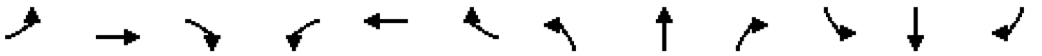


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	128	424	0	0	97	0	1007	6	6	2519	0
Future Volume (vph)	173	128	424	0	0	97	0	1007	6	6	2519	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1770	2845	1318			1417		5033			4940	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1770	2845	1318			1417		5033			4629	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	186	138	456	0	0	104	0	1083	6	6	2709	0
RTOR Reduction (vph)	0	175	175	0	0	96	0	0	0	0	0	0
Lane Group Flow (vph)	186	191	53	0	0	8	0	1089	0	0	2715	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	17.5	17.5	17.5			8.0		63.5			63.5	
Effective Green, g (s)	17.5	17.5	17.5			8.0		63.5			63.5	
Actuated g/C Ratio	0.16	0.16	0.16			0.07		0.58			0.58	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	281	452	209			103		2905			2672	
v/s Ratio Prot	c0.11	0.07						0.22				
v/s Ratio Perm			0.04			c0.01					c0.59	
v/c Ratio	0.66	0.42	0.25			0.07		0.37			1.02	
Uniform Delay, d1	43.5	41.7	40.5			47.5		12.5			23.3	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.06	
Incremental Delay, d2	5.8	0.6	0.6			0.3		0.4			10.0	
Delay (s)	49.2	42.3	41.2			47.8		12.9			34.6	
Level of Service	D	D	D			D		B			C	
Approach Delay (s/veh)		43.6			47.8			12.9			34.6	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1333	480	109	1713	41
Future Volume (vph)	54	133	53	87	13	46	163	1333	480	109	1713	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.957			0.884			0.960			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1681	0	1504	1571	0	1719	4166	0	1752	4329	0
Flt Permitted	0.717			0.323			0.060			0.062		
Satd. Flow (perm)	1195	1681	0	511	1571	0	109	4166	0	114	4329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			48			107			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	57	140	56	92	14	48	172	1403	505	115	1803	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	196	0	92	62	0	172	1908	0	115	1846	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	27.0	27.0		11.0	38.0		14.0	68.0		14.0	68.0	
Total Split (%)	22.5%	22.5%		9.2%	31.7%		11.7%	56.7%		11.7%	56.7%	
Maximum Green (s)	20.9	20.9		7.0	31.9		10.0	61.4		10.0	61.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.3	17.3		30.4	28.3		79.4	66.3		75.7	64.5	
Actuated g/C Ratio	0.14	0.14		0.25	0.24		0.66	0.55		0.63	0.54	
v/c Ratio	0.33	0.77		0.49	0.15		0.81	0.81		0.61	0.79	
Control Delay (s/veh)	50.1	64.8		44.1	13.8		34.3	18.0		42.4	16.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.1	64.8		44.1	13.8		34.3	18.0		42.4	16.1	
LOS	D	E		D	B		C	B		D	B	
Approach Delay (s/veh)		61.5			31.9			19.3			17.7	
Approach LOS		E			C			B			B	
Queue Length 50th (m)	14.0	44.3		20.6	2.9		28.2	111.0		13.5	203.7	
Queue Length 95th (m)	28.4	70.0		36.4	14.8		m25.4	m112.7		m14.9	223.7	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	208	305		187	452		216	2350		209	2329	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.27	0.64		0.49	0.14		0.80	0.81		0.55	0.79	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 21.4	Intersection LOS: C

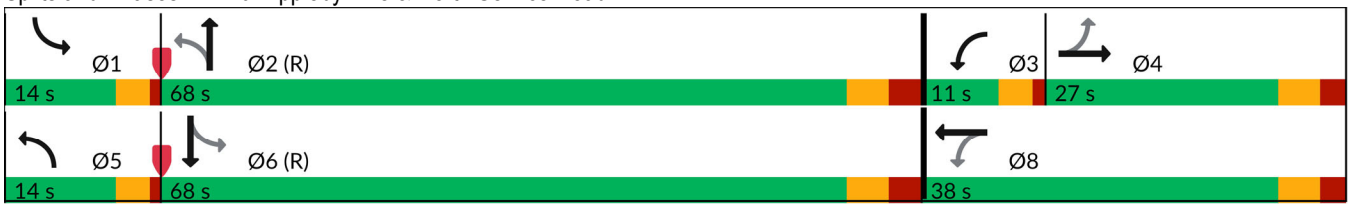
Intersection Capacity Utilization 76.4% ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1333	480	109	1713	41
Future Volume (vph)	54	133	53	87	13	46	163	1333	480	109	1713	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1682		1504	1571		1719	4167		1752	4327	
Flt Permitted	0.72	1.00		0.32	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1194	1682		512	1571		109	4167		114	4327	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	140	56	92	14	48	172	1403	505	115	1803	43
RTOR Reduction (vph)	0	13	0	0	37	0	0	48	0	0	2	0
Lane Group Flow (vph)	57	183	0	92	25	0	172	1860	0	115	1844	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.3	17.3		28.3	28.3		76.8	66.4		73.2	64.6	
Effective Green, g (s)	17.3	17.3		28.3	28.3		76.8	66.4		73.2	64.6	
Actuated g/C Ratio	0.14	0.14		0.24	0.24		0.64	0.55		0.61	0.54	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	172	242		178	370		209	2305		186	2329	
v/s Ratio Prot		c0.11		c0.03	0.02		c0.07	0.45		0.04	0.43	
v/s Ratio Perm	0.05			0.09			c0.45			0.33		
v/c Ratio	0.33	0.76		0.52	0.07		0.82	0.81		0.62	0.79	
Uniform Delay, d1	46.2	49.3		37.8	35.6		31.8	21.6		19.2	22.3	
Progression Factor	1.00	1.00		1.00	1.00		1.16	0.81		1.87	0.63	
Incremental Delay, d2	1.1	12.7		2.5	0.1		2.5	0.3		2.8	1.3	
Delay (s)	47.3	62.0		40.3	35.7		39.4	17.9		38.6	15.4	
Level of Service	D	E		D	D		D	B		D	B	
Approach Delay (s/veh)		58.7			38.5			19.7			16.8	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2418	0	0	1995
Future Volume (vph)	586	663	2418	0	0	1995
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	1495	4385	0	0	4302
Flt Permitted	0.950					
Satd. Flow (perm)	3183	1495	4385	0	0	4302
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		3				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	644	729	2657	0	0	2192
Shared Lane Traffic (%)						
Lane Group Flow (vph)	644	729	2657	0	0	2192
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

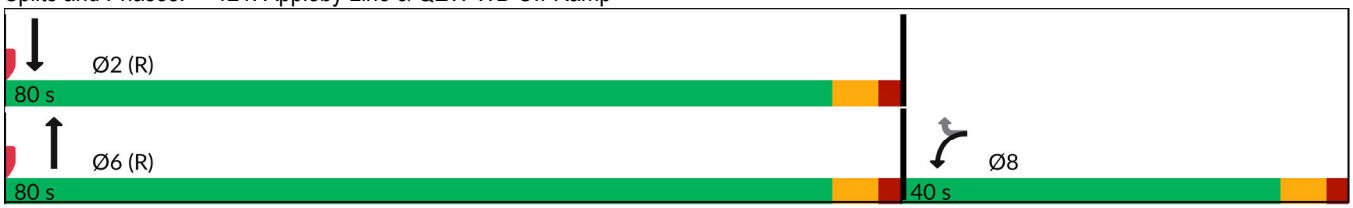


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
v/c Ratio	0.71	1.72	0.98			0.83
Control Delay (s/veh)	43.9	360.8	25.3			8.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	43.9	360.8	25.3			8.3
LOS	D	F	C			A
Approach Delay (s/veh)	212.2		25.3			8.3
Approach LOS	F		C			A
Queue Length 50th (m)	79.3	~283.6	193.2			34.3
Queue Length 95th (m)	102.5	#364.6	#320.0			54.7
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	901	425	2704			2652
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.71	1.72	0.98			0.83

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.72			
Intersection Signal Delay (s/veh): 60.5		Intersection LOS: E	
Intersection Capacity Utilization 97.8%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

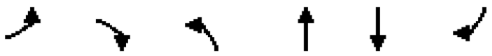
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



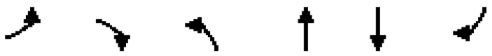


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2418	0	0	1995
Future Volume (vph)	586	663	2418	0	0	1995
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	1495	4385			4302
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	1495	4385			4302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	644	729	2657	0	0	2192
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	644	727	2657	0	0	2192
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	74.0			74.0
Effective Green, g (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	901	423	2704			2652
v/s Ratio Prot	0.20		c0.61			0.51
v/s Ratio Perm		c0.49				
v/c Ratio	0.71	1.72	0.98			0.83
Uniform Delay, d1	38.6	43.0	22.4			18.0
Progression Factor	1.00	1.00	0.76			0.33
Incremental Delay, d2	2.7	333.1	7.6			2.2
Delay (s)	41.4	376.1	24.5			8.1
Level of Service	D	F	C			A
Approach Delay (s/veh)	219.1		24.5			8.1
Approach LOS	F		C			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	61.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	939	544	0	1984	2017	0
Future Volume (vph)	939	544	0	1984	2017	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4302	4302	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4302	4302	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		7				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	1043	604	0	2204	2241	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1043	604	0	2204	2241	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

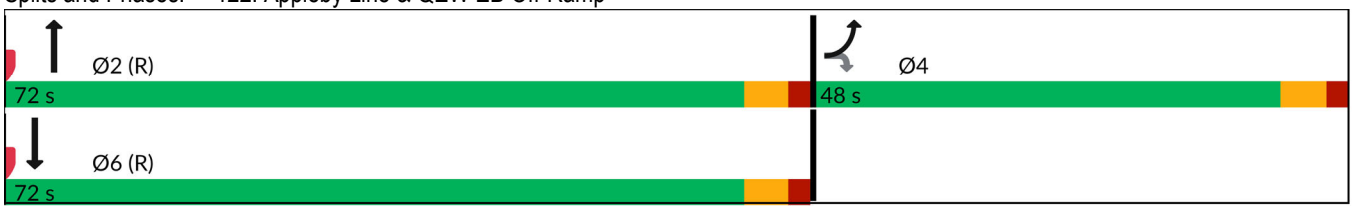


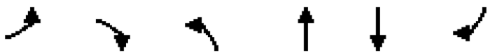
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	41.0	41.0		67.0	67.0	
Actuated g/C Ratio	0.34	0.34		0.56	0.56	
v/c Ratio	0.92	0.65		0.92	0.93	
Control Delay (s/veh)	50.9	36.7		17.4	27.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.9	36.7		17.4	27.0	
LOS	D	D		B	C	
Approach Delay (s/veh)	45.7			17.4	27.0	
Approach LOS	D			B	C	
Queue Length 50th (m)	129.5	72.3		68.7	163.0	
Queue Length 95th (m)	#170.0	95.4		77.0	#236.4	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1167	952		2402	2402	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.89	0.63		0.92	0.93	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay (s/veh): 28.6		Intersection LOS: C	
Intersection Capacity Utilization 97.8%		ICU Level of Service F	
Analysis Period (min) 15			

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

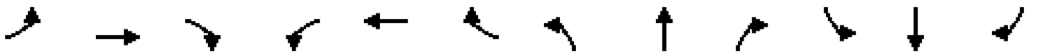




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	939	544	0	1984	2017	0
Future Volume (vph)	939	544	0	1984	2017	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4302	4302	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4302	4302	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1043	604	0	2204	2241	0
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	1043	599	0	2204	2241	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	41.0	41.0		67.0	67.0	
Effective Green, g (s)	41.0	41.0		67.0	67.0	
Actuated g/C Ratio	0.34	0.34		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1139	924		2401	2401	
v/s Ratio Prot	c0.31			0.51	c0.52	
v/s Ratio Perm		0.22				
v/c Ratio	0.92	0.65		0.92	0.93	
Uniform Delay, d1	37.8	33.4		24.0	24.4	
Progression Factor	1.00	1.00		0.46	0.86	
Incremental Delay, d2	11.3	1.6		5.6	5.1	
Delay (s)	49.2	35.0		16.6	26.2	
Level of Service	D	C		B	C	
Approach Delay (s/veh)	44.0			16.6	26.2	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.8%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	495	70	105	147	227	85	1265	389	405	707	269
Future Volume (vph)	178	495	70	105	147	227	85	1265	389	405	707	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99			0.98
Frt		0.982			0.909				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3263	0	1656	2911	0	1687	4427	1568	1770	4302	1417
Flt Permitted	0.279			0.265			0.319			0.084		
Satd. Flow (perm)	448	3263	0	462	2911	0	566	4427	1547	156	4302	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			241				211			286
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	189	527	74	112	156	241	90	1346	414	431	752	286
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	601	0	112	397	0	90	1346	414	431	752	286
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.6		7.0	21.6		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	39.2	25.8		28.8	19.4		54.4	43.7	43.7	72.8	58.1	58.1
Actuated g/C Ratio	0.33	0.22		0.24	0.16		0.45	0.36	0.36	0.61	0.48	0.48
v/c Ratio	0.71	0.85		0.62	0.59		0.27	0.83	0.59	1.07	0.36	0.35
Control Delay (s/veh)	46.1	56.0		46.1	21.4		11.5	25.5	10.3	87.8	26.8	7.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.1	56.0		46.1	21.4		11.5	25.5	10.3	87.8	26.8	7.9
LOS	D	E		D	C		B	C	B	F	C	A
Approach Delay (s/veh)		53.7			26.8			21.4			41.0	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	39.9	76.7		21.0	18.9		9.0	75.8	24.3	~107.5	59.7	12.3
Queue Length 95th (m)	62.5	98.0		35.7	36.0		m9.2	m69.5	m22.1	m#142.6	m67.0	m19.9
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	272	786		180	721		371	1612	697	401	2082	822
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.76		0.62	0.55		0.24	0.83	0.59	1.07	0.36	0.35

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 33.8	Intersection LOS: C

Intersection Capacity Utilization 90.7% ICU Level of Service E

Analysis Period (min) 15

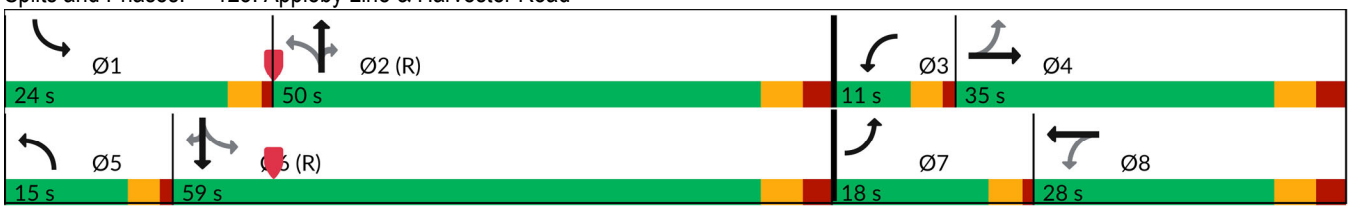
* User Entered Value

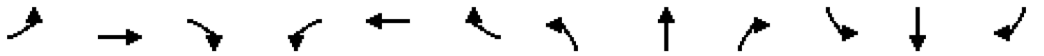
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road



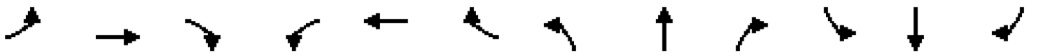


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	495	70	105	147	227	85	1265	389	405	707	269
Future Volume (vph)	178	495	70	105	147	227	85	1265	389	405	707	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3262		1656	2911		1686	4427	1547	1770	4302	1395
Flt Permitted	0.28	1.00		0.27	1.00		0.32	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	448	3262		462	2911		566	4427	1547	156	4302	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	189	527	74	112	156	241	90	1346	414	431	752	286
RTOR Reduction (vph)	0	9	0	0	202	0	0	0	134	0	0	148
Lane Group Flow (vph)	189	592	0	112	195	0	90	1346	280	431	752	138
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	36.8	25.8		26.4	19.4		52.1	43.7	43.7	70.5	58.1	58.1
Effective Green, g (s)	36.8	25.8		26.4	19.4		52.1	43.7	43.7	70.5	58.1	58.1
Actuated g/C Ratio	0.31	0.22		0.22	0.16		0.43	0.36	0.36	0.59	0.48	0.48
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	257	701		171	470		324	1612	563	398	2082	675
v/s Ratio Prot	c0.08	c0.18		0.04	0.07		0.02	0.30		c0.21	0.17	
v/s Ratio Perm	0.14			0.11			0.10		0.18	c0.43		0.10
v/c Ratio	0.74	0.84		0.65	0.41		0.28	0.83	0.50	1.08	0.36	0.21
Uniform Delay, d1	33.5	45.2		39.4	45.2		20.3	34.9	29.6	37.9	19.3	17.7
Progression Factor	1.00	1.00		1.00	1.00		0.94	0.71	0.68	1.03	1.32	3.08
Incremental Delay, d2	10.4	9.1		8.7	0.6		0.0	0.5	0.3	55.7	0.2	0.3
Delay (s)	44.0	54.3		48.1	45.8		19.1	25.2	20.3	94.6	25.7	55.0
Level of Service	D	D		D	D		B	C	C	F	C	D
Approach Delay (s/veh)		51.8			46.3			23.8			51.6	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	667	186	281	119	78	185	238	1276	146	247	1279	154
Future Volume (vph)	667	186	281	119	78	185	238	1276	146	247	1279	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	4471	1538
Flt Permitted	0.950			0.634			0.105			0.100		
Satd. Flow (perm)	3389	1776	1513	1062	1610	1395	197	3539	1403	167	4471	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248			153			150			162
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	702	196	296	125	82	195	251	1343	154	260	1346	162
Shared Lane Traffic (%)												
Lane Group Flow (vph)	702	196	296	125	82	195	251	1343	154	260	1346	162
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	34.0	47.0	47.0	14.0	27.0	27.0	12.0	45.0	45.0	14.0	47.0	47.0
Total Split (%)	28.3%	39.2%	39.2%	11.7%	22.5%	22.5%	10.0%	37.5%	37.5%	11.7%	39.2%	39.2%
Maximum Green (s)	29.0	40.5	40.5	10.0	20.5	20.5	8.0	38.2	38.2	10.0	40.2	40.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	27.7	31.3	31.3	24.3	12.2	12.2	58.6	38.2	38.2	62.6	40.2	40.2
Actuated g/C Ratio	0.23	0.26	0.26	0.20	0.10	0.10	0.49	0.32	0.32	0.52	0.34	0.34
v/c Ratio	0.89	0.42	0.51	0.49	0.50	0.70	0.76	1.19	0.28	0.82	0.90	0.26
Control Delay (s/veh)	59.5	38.8	10.2	31.9	60.7	27.2	44.8	132.6	6.5	49.8	54.7	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	59.5	38.8	10.2	31.9	60.7	27.2	44.8	132.6	6.5	49.8	54.7	12.7
LOS	E	D	B	C	E	C	D	F	A	D	D	B
Approach Delay (s/veh)		43.9			35.5			108.8			50.1	
Approach LOS		D			D			F			D	
Queue Length 50th (m)	87.9	42.5	9.4	21.8	22.2	10.9	42.3	~214.6	0.7	52.8	142.5	8.0
Queue Length 95th (m)	#118.4	60.9	32.8	33.2	39.0	37.2	#112.2	#259.5	17.5 m	#130.3	#164.0	m23.7
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	821	599	674	263	275	365	329	1126	548	318	1497	614
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.33	0.44	0.48	0.30	0.53	0.76	1.19	0.28	0.82	0.90	0.26

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay (s/veh): 67.6	Intersection LOS: E

Intersection Capacity Utilization 95.1%	ICU Level of Service F
Analysis Period (min) 15	

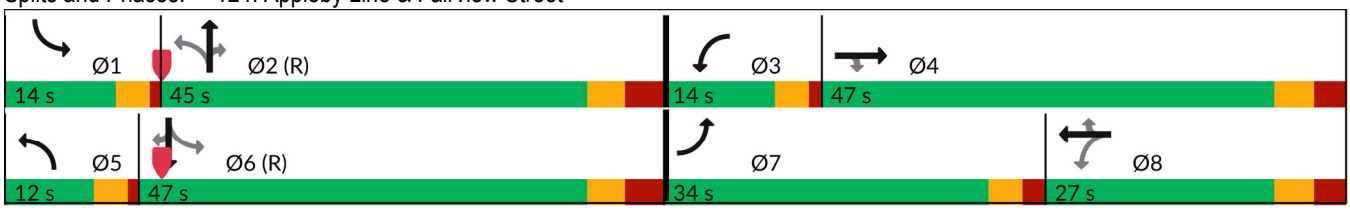
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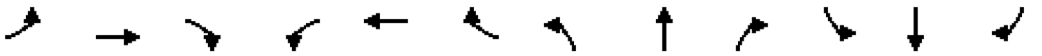
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street

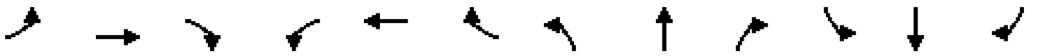




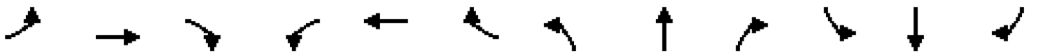
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	667	186	281	119	78	185	238	1276	146	247	1279	154
Future Volume (vph)	667	186	281	119	78	185	238	1276	146	247	1279	154
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	4471	1513
Flt Permitted	0.95	1.00	1.00	0.63	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1065	1610	1395	197	3539	1403	166	4471	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	702	196	296	125	82	195	251	1343	154	260	1346	162
RTOR Reduction (vph)	0	0	183	0	0	137	0	0	102	0	0	108
Lane Group Flow (vph)	702	196	113	125	82	58	251	1343	52	260	1346	54
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	27.7	31.3	31.3	21.8	12.2	12.2	55.8	38.2	38.2	59.8	40.2	40.2
Effective Green, g (s)	27.7	31.3	31.3	21.8	12.2	12.2	55.8	38.2	38.2	59.8	40.2	40.2
Actuated g/C Ratio	0.23	0.26	0.26	0.18	0.10	0.10	0.47	0.32	0.32	0.50	0.34	0.34
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	784	463	394	235	163	141	324	1126	446	314	1497	506
v/s Ratio Prot	c0.21	0.11		0.04	0.05		0.11	c0.38		c0.14	0.30	
v/s Ratio Perm			0.07	c0.05		0.04	0.25		0.04	0.28		0.04
v/c Ratio	0.90	0.42	0.29	0.53	0.50	0.41	0.77	1.19	0.12	0.83	0.90	0.11
Uniform Delay, d1	44.7	36.9	35.4	43.6	51.0	50.5	29.9	40.9	28.9	33.3	38.0	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.20	2.67
Incremental Delay, d2	12.7	0.6	0.4	2.3	2.4	1.9	11.0	95.7	0.5	16.0	8.8	0.4
Delay (s)	57.5	37.5	35.8	45.9	53.5	52.4	40.9	136.6	29.5	47.6	54.5	74.0
Level of Service	E	D	D	D	D	D	D	F	C	D	D	E
Approach Delay (s/veh)		48.8			50.6			113.4			55.2	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	73.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	95.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	1244	427	385	576	129	217	537	322	251	793	158
Future Volume (vph)	210	1244	427	385	576	129	217	537	322	251	793	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3361	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			359			137			209			168
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	223	1323	454	410	613	137	231	571	343	267	844	168
Shared Lane Traffic (%)												
Lane Group Flow (vph)	223	1323	454	410	613	137	231	571	343	267	844	168
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	20.0	61.0	61.0	25.0	64.0	64.0	24.0	30.0	30.0	24.0	32.0	32.0
Total Split (%)	14.1%	43.0%	43.0%	17.6%	45.1%	45.1%	16.9%	21.1%	21.1%	16.9%	22.5%	22.5%
Maximum Green (s)	15.0	53.6	53.6	20.0	56.6	56.6	19.0	22.6	22.6	19.0	24.6	24.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.5	46.9	46.9	20.0	52.4	52.4	16.5	32.7	32.7	17.6	33.8	33.8
Actuated g/C Ratio	0.10	0.33	0.33	0.14	0.37	0.37	0.12	0.23	0.23	0.12	0.24	0.24
v/c Ratio	0.65	0.79	0.61	0.91	0.35	0.22	0.59	0.51	0.68	0.64	0.71	0.34
Control Delay (s/veh)	70.7	46.5	11.5	84.4	32.5	4.9	65.8	51.0	28.0	66.4	54.4	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.7	46.5	11.5	84.4	32.5	4.9	65.8	51.0	28.0	66.4	54.4	9.0
LOS	E	D	B	F	C	A	E	D	C	E	D	A
Approach Delay (s/veh)		41.3			47.6			47.1			50.9	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	34.0	131.4	20.6	66.4	50.7	0.0	34.8	57.5	38.6	40.2	87.3	0.0
Queue Length 95th (m)	49.0	139.5	54.4	#98.8	57.8	14.3	48.9	76.8	#91.7	55.9	#125.9	21.6
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	355	1919	802	452	1982	682	450	1114	502	455	1186	492
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.63	0.69	0.57	0.91	0.31	0.20	0.51	0.51	0.68	0.59	0.71	0.34

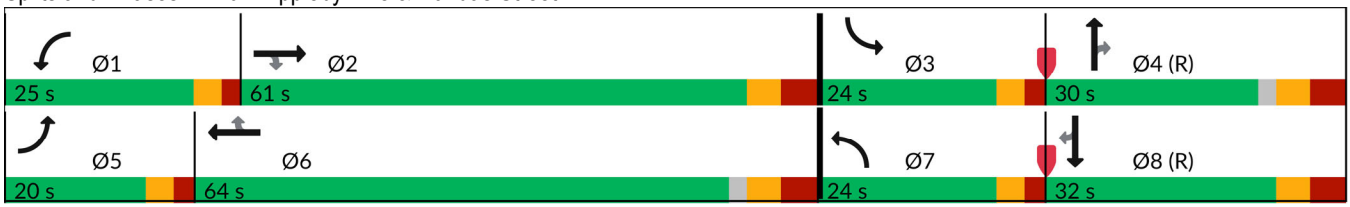
Intersection Summary	
Area Type:	Other
Cycle Length: 142	
Actuated Cycle Length: 142	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 46.0	Intersection LOS: D

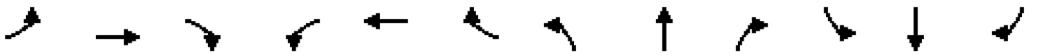
Intersection Capacity Utilization 97.3% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

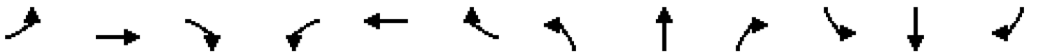




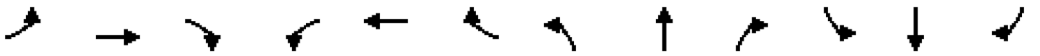
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	1244	427	385	576	129	217	537	322	251	793	158
Future Volume (vph)	210	1244	427	385	576	129	217	537	322	251	793	158
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	223	1323	454	410	613	137	231	571	343	267	844	168
RTOR Reduction (vph)	0	0	240	0	0	86	0	0	161	0	0	128
Lane Group Flow (vph)	223	1323	214	410	613	51	231	571	182	267	844	40
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.5	46.9	46.9	20.0	52.4	52.4	16.5	32.7	32.7	17.6	33.8	33.8
Effective Green, g (s)	14.5	46.9	46.9	20.0	52.4	52.4	16.5	32.7	32.7	17.6	33.8	33.8
Actuated g/C Ratio	0.10	0.33	0.33	0.14	0.37	0.37	0.12	0.23	0.23	0.12	0.24	0.24
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	343	1679	506	452	1772	538	391	1116	341	417	1187	364
v/s Ratio Prot	0.07	c0.26		c0.13	0.13		0.07	0.12		c0.08	c0.17	
v/s Ratio Perm			0.14			0.03			0.12			0.03
v/c Ratio	0.65	0.79	0.42	0.91	0.35	0.09	0.59	0.51	0.53	0.64	0.71	0.11
Uniform Delay, d1	61.3	43.0	37.0	60.1	32.4	29.3	59.5	47.7	48.0	59.2	49.6	42.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	2.5	0.6	22.7	0.1	0.1	3.6	1.7	5.9	4.5	3.6	0.6
Delay (s)	67.1	45.6	37.6	82.8	32.5	29.4	63.1	49.4	53.9	63.7	53.3	42.9
Level of Service	E	D	D	F	C	C	E	D	D	E	D	D
Approach Delay (s/veh)		46.2			49.9			53.5			54.1	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	679	322	230	326	276	185	858	152	391	1404	51
Future Volume (vph)	164	679	322	230	326	276	185	858	152	391	1404	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99				0.98	1.00	1.00		1.00	1.00	
Frt		0.952				0.850		0.977			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3342	0	1736	4471	1553	3400	4091	0	1752	4356	0
Flt Permitted	0.485			0.124			0.950			0.099		
Satd. Flow (perm)	873	3342	0	227	4471	1521	3395	4091	0	182	4356	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64				307		24			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	182	754	358	256	362	307	206	953	169	434	1560	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	1112	0	256	362	307	206	1122	0	434	1617	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	38.0		16.0	38.0	38.0	13.0	43.0		23.0	53.0	
Total Split (%)	13.3%	31.7%		13.3%	31.7%	31.7%	10.8%	35.8%		19.2%	44.2%	
Maximum Green (s)	12.0	31.6		12.0	31.6	31.6	8.0	36.5		19.0	46.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	45.4	31.6		46.6	32.2	32.2	8.0	36.5		62.0	46.5	
Actuated g/C Ratio	0.38	0.26		0.39	0.27	0.27	0.07	0.30		0.52	0.39	
v/c Ratio	0.44	1.20		1.08	0.30	0.49	0.91	0.89		1.27	0.96	
Control Delay (s/veh)	26.9	137.2		117.0	34.4	7.4	92.6	67.9		173.1	49.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	26.9	137.2		117.0	34.4	7.4	92.6	67.9		173.1	49.7	
LOS	C	F		F	C	A	F	E		F	D	
Approach Delay (s/veh)		121.7			48.3			71.7			75.8	
Approach LOS		F			D			E			E	
Queue Length 50th (m)	30.0	~171.4		~55.2	26.7	0.8	28.5	128.5		~121.5	164.7	
Queue Length 95th (m)	48.0	#215.6		m#108.4	m37.4	m16.7	m#51.3	#151.6		#189.0	#206.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	419	927		238	1199	632	226	1261		342	1691	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.43	1.20		1.08	0.30	0.49	0.91	0.89		1.27	0.96	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay (s/veh): 80.9	Intersection LOS: F

Intersection Capacity Utilization 105.0%	ICU Level of Service G
Analysis Period (min) 15	

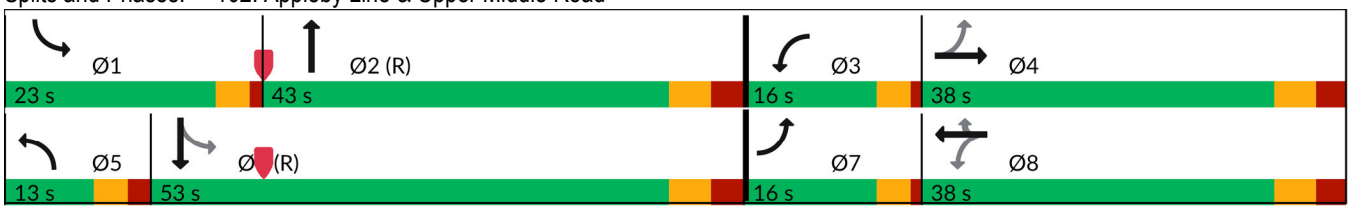
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	679	322	230	326	276	185	858	152	391	1404	51
Future Volume (vph)	164	679	322	230	326	276	185	858	152	391	1404	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	3341		1736	4471	1521	3400	4093		1752	4355	
Flt Permitted	0.49	1.00		0.12	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	876	3341		227	4471	1521	3400	4093		182	4355	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	754	358	256	362	307	206	953	169	434	1560	57
RTOR Reduction (vph)	0	47	0	0	0	225	0	17	0	0	3	0
Lane Group Flow (vph)	182	1065	0	256	362	82	206	1105	0	434	1614	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	43.0	31.6		44.2	32.2	32.2	8.0	36.5		59.5	46.5	
Effective Green, g (s)	43.0	31.6		44.2	32.2	32.2	8.0	36.5		59.5	46.5	
Actuated g/C Ratio	0.36	0.26		0.37	0.27	0.27	0.07	0.30		0.50	0.39	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	393	879		234	1199	408	226	1244		338	1687	
v/s Ratio Prot	0.04	c0.32		c0.11	0.08		0.06	0.27		c0.20	0.37	
v/s Ratio Perm	0.12			0.29		0.05				c0.43		
v/c Ratio	0.46	1.21		1.09	0.30	0.20	0.91	0.89		1.28	0.96	
Uniform Delay, d1	27.6	44.2		32.2	35.0	34.0	55.6	39.8		36.5	35.8	
Progression Factor	1.00	1.00		1.46	0.96	1.23	0.97	1.52		1.00	1.00	
Incremental Delay, d2	0.9	105.7		84.1	0.1	0.2	34.1	8.8		148.5	13.8	
Delay (s)	28.5	149.9		130.9	33.6	42.0	88.4	69.2		185.0	49.6	
Level of Service	C	F		F	C	D	F	E		F	D	
Approach Delay (s/veh)		132.8			63.3			72.2			78.2	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	87.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	105.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1218	259	45	715	0	194	0	95	5	0	14
Future Volume (vph)	5	1218	259	45	715	0	194	0	95	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.974							0.850		0.899	
Flt Protected	0.950			0.950				0.950			0.988	
Satd. Flow (prot)	1805	4291	0	1805	4385	0	0	1752	1615	0	1550	0
Flt Permitted	0.259			0.055				0.742			0.916	
Satd. Flow (perm)	487	4291	0	104	4385	0	0	1362	1585	0	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48							123		64	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	6	1582	336	58	929	0	252	0	123	6	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1918	0	58	929	0	0	252	123	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	65.0	65.0		9.0	78.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	68.9	68.9		80.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.67	0.65			0.24	0.24		0.24	
v/c Ratio	0.02	0.77		0.34	0.33			0.77	0.26		0.06	
Control Delay (s/veh)	14.8	19.9		12.6	9.3			58.9	7.8		0.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	14.8	19.9		12.6	9.3			58.9	7.8		0.3	
LOS	B	B		B	A			E	A		A	
Approach Delay (s/veh)		19.9			9.5			42.2			0.3	
Approach LOS		B			A			D			A	
Queue Length 50th (m)	0.7	106.4		5.5	45.1			58.4	0.0		0.0	
Queue Length 95th (m)	m1.1	m89.5		m7.5	m40.7			74.0	9.6		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	279	2485		196	2850			329	476		395	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.02	0.77		0.30	0.33			0.77	0.26		0.06	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 19.2	Intersection LOS: B

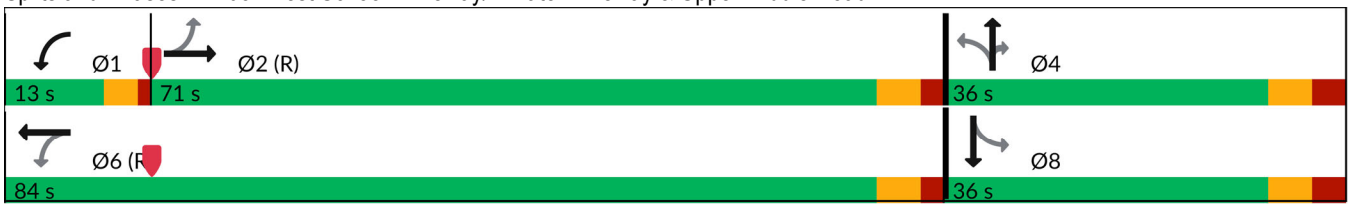
Intersection Capacity Utilization 93.0% ICU Level of Service F

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1218	259	45	715	0	194	0	95	5	0	14
Future Volume (vph)	5	1218	259	45	715	0	194	0	95	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1786	4290		1805	4385			1744	1585		1547	
Flt Permitted	0.26	1.00		0.06	1.00			0.74	1.00		0.92	
Satd. Flow (perm)	486	4290		105	4385			1361	1585		1435	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	6	1582	336	58	929	0	252	0	123	6	0	18
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	93	0	18	0
Lane Group Flow (vph)	6	1897	0	58	929	0	0	252	30	0	6	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	68.1	68.1		78.0	78.0			29.0	29.0		29.0	
Effective Green, g (s)	68.1	68.1		78.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.65	0.65			0.24	0.24		0.24	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	275	2434		151	2850			328	383		346	
v/s Ratio Prot		c0.44		0.02	c0.21							
v/s Ratio Perm	0.01			0.23				c0.19	0.02		0.00	
v/c Ratio	0.02	0.78		0.38	0.33			0.77	0.08		0.02	
Uniform Delay, d1	11.4	20.1		16.2	9.3			42.4	35.2		34.6	
Progression Factor	1.19	0.94		0.99	0.96			1.00	1.00		1.00	
Incremental Delay, d2	0.1	1.3		1.4	0.3			15.8	0.4		0.1	
Delay (s)	13.5	20.2		17.4	9.2			58.2	35.6		34.7	
Level of Service	B	C		B	A			E	D		C	
Approach Delay (s/veh)		20.2			9.7			50.8			34.7	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



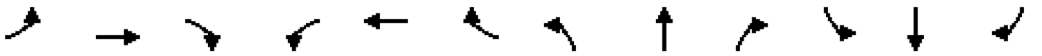
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1146	165	257	728	47	190
Future Volume (vph)	1146	165	257	728	47	190
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.981					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4354	0	1787	4385	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4354	0	1787	4385	1805	1615
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	1614	232	362	1025	66	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1846	0	362	1025	66	268
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1146	165	257	728	47	190
Future Volume (Veh/h)	1146	165	257	728	47	190
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1614	232	362	1025	66	268
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.71		0.71	0.71
vC, conflicting volume			1858		2808	666
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			771		2112	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			39		0	65
cM capacity (veh/h)			593		12	765

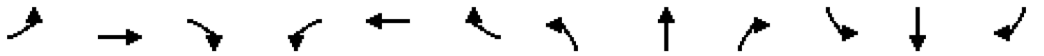
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	646	646	555	362	342	342	342	66	268
Volume Left	0	0	0	362	0	0	0	66	0
Volume Right	0	0	232	0	0	0	0	0	268
cSH	1700	1700	1700	593	1700	1700	1700	12	765
Volume to Capacity	0.38	0.38	0.33	0.61	0.20	0.20	0.20	5.38	0.35
Queue Length 95th (m)	0.0	0.0	0.0	32.9	0.0	0.0	0.0	Err	12.6
Control Delay (s/veh)	0.0	0.0	0.0	20.1	0.0	0.0	0.0	Err	12.2
Lane LOS				C				F	B
Approach Delay (s/veh)	0.0			5.2				1985.7	
Approach LOS								F	

Intersection Summary			
Average Delay	188.0		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	1166	18	0	722	78	22	0	1	92	0	236
Future Volume (vph)	153	1166	18	0	722	78	22	0	1	92	0	236
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.985			0.995			0.903	
Flt Protected	0.950							0.954			0.986	
Satd. Flow (prot)	1752	4462	0	0	4357	0	0	1768	0	0	1668	0
Flt Permitted	0.950							0.954			0.986	
Satd. Flow (perm)	1752	4462	0	0	4357	0	0	1768	0	0	1668	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			140.7			285.4	
Travel Time (s)		7.1			17.4			12.7			25.7	
Confl. Peds. (#/hr)	29					29						1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	201	1534	24	0	950	103	29	0	1	121	0	311
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	1558	0	0	1053	0	0	30	0	0	432	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

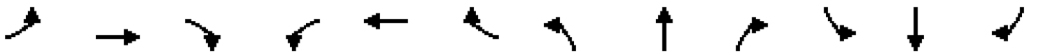
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 66.9%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			



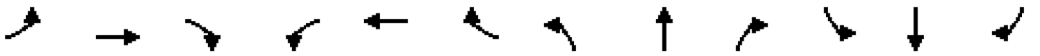
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	1166	18	0	722	78	22	0	1	92	0	236
Future Volume (Veh/h)	153	1166	18	0	722	78	22	0	1	92	0	236
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	201	1534	24	0	950	103	29	0	1	121	0	311
Pedestrians		1									29	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked												
vC, conflicting volume	1082			1558			2577	3030	523	1945	2991	398
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1082			1558			2577	3030	523	1945	2991	398
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	68			100			0	100	100	0	100	47
cM capacity (veh/h)	619			421			4	8	498	29	9	586

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	201	614	614	331	238	475	341	30	432
Volume Left	201	0	0	0	0	0	0	29	121
Volume Right	0	0	0	24	0	0	103	1	311
cSH	619	1700	1700	1700	421	1700	1700	5	91
Volume to Capacity	0.32	0.36	0.36	0.19	0.00	0.28	0.20	6.62	4.77
Queue Length 95th (m)	11.2	0.0	0.0	0.0	0.0	0.0	0.0	Err	Err
Control Delay (s/veh)	13.6	0.0	0.0	0.0	0.0	0.0	0.0	Err	Err
Lane LOS	B							F	F
Approach Delay (s/veh)	1.6				0.0			Err	Err
Approach LOS								F	F

Intersection Summary				
Average Delay	1411.8			
Intersection Capacity Utilization	66.9%	ICU Level of Service	C	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	894	121	2	452	168	52	2	5	480	6	282
Future Volume (vph)	253	894	121	2	452	168	52	2	5	480	6	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98				0.98						0.98	
Frt		0.982			0.959			0.988			0.950	
Flt Protected	0.950							0.958			0.970	
Satd. Flow (prot)	1703	4428	0	0	4147	0	0	1763	0	0	1713	0
Flt Permitted	0.246				0.937			0.611			0.778	
Satd. Flow (perm)	434	4428	0	0	3886	0	0	1124	0	0	1349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			94			5			28	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			133.0			244.6	
Travel Time (s)		17.4			14.7			12.0			22.0	
Confl. Peds. (#/hr)	24					24				16		6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	301	1064	144	2	538	200	62	2	6	571	7	336
Shared Lane Traffic (%)												
Lane Group Flow (vph)	301	1208	0	0	740	0	0	70	0	0	914	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

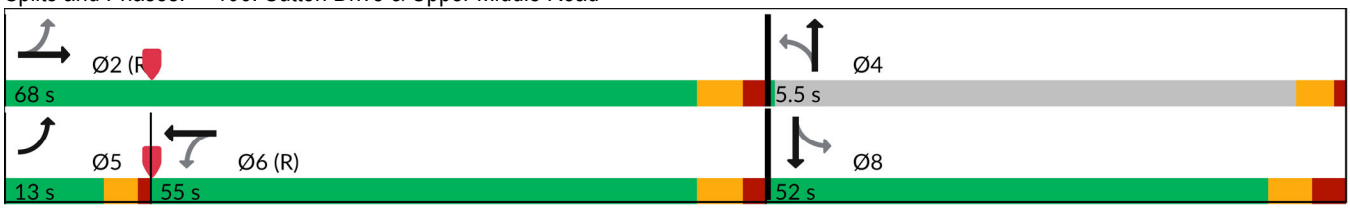


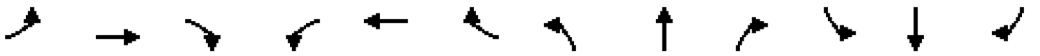
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		8.0	8.0		5.0	5.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		31.0	31.0		22.5	22.5		34.0	34.0	
Total Split (s)	13.0	68.0		55.0	55.0		5.5	5.5		52.0	52.0	
Total Split (%)	10.8%	56.7%		45.8%	45.8%		4.6%	4.6%		43.3%	43.3%	
Maximum Green (s)	9.0	62.0		49.0	49.0		1.0	1.0		45.0	45.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.5	3.5		4.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	1.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	6.0			6.0			4.5			7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		18.0		18.0	18.0		11.0	11.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	64.0	62.0			49.0			47.5			45.0	
Actuated g/C Ratio	0.53	0.52			0.41			0.40			0.38	
v/c Ratio	0.92	0.53			0.45			0.16			1.75	
Control Delay (s/veh)	48.1	8.9			23.2			22.9			370.6	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	48.1	8.9			23.2			22.9			370.6	
LOS	D	A			C			C			F	
Approach Delay (s/veh)		16.7			23.2			22.9			370.6	
Approach LOS		B			C			C			F	
Queue Length 50th (m)	21.8	26.6			48.3			10.3			~340.0	
Queue Length 95th (m)	#38.7	32.6			56.6			19.6			#383.6	
Internal Link Dist (m)		266.7			220.7			109.0			220.6	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	326	2299			1642			447			523	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.92	0.53			0.45			0.16			1.75	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.75	
Intersection Signal Delay (s/veh): 118.4	Intersection LOS: F

Intersection Capacity Utilization 99.5%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Sutton Drive & Upper Middle Road

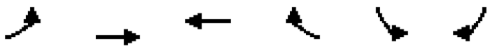




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	894	121	2	452	168	52	2	5	480	6	282
Future Volume (vph)	253	894	121	2	452	168	52	2	5	480	6	282
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			4.5			7.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.98			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			0.98	
Frt	1.00	0.98			0.96			0.99			0.95	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1697	4429			4149			1763			1683	
Flt Permitted	0.25	1.00			0.94			0.61			0.78	
Satd. Flow (perm)	439	4429			3886			1124			1350	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	301	1064	144	2	538	200	62	2	6	571	7	336
RTOR Reduction (vph)	0	12	0	0	56	0	0	3	0	0	18	0
Lane Group Flow (vph)	301	1196	0	0	684	0	0	67	0	0	897	0
Confl. Peds. (#/hr)	24					24				16		6
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	62.0	62.0			49.0			47.5			45.0	
Effective Green, g (s)	62.0	62.0			49.0			47.5			45.0	
Actuated g/C Ratio	0.52	0.52			0.41			0.40			0.38	
Clearance Time (s)	4.0	6.0			6.0			4.5			7.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	321	2288			1586			444			506	
v/s Ratio Prot	c0.07	0.27										
v/s Ratio Perm	c0.41				0.18			0.06			c0.66	
v/c Ratio	0.94	0.52			0.43			0.15			1.77	
Uniform Delay, d1	23.0	19.2			25.5			23.3			37.5	
Progression Factor	0.79	0.43			1.00			1.00			1.00	
Incremental Delay, d2	30.5	0.7			0.9			0.2			355.3	
Delay (s)	48.8	9.0			26.4			23.5			392.8	
Level of Service	D	A			C			C			F	
Approach Delay (s/veh)		16.9			26.4			23.5			392.8	
Approach LOS		B			C			C			F	

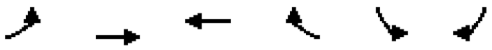
Intersection Summary			
HCM 2000 Control Delay (s/veh)	125.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	99.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	37	1348	540	5	0	66
Future Volume (vph)	37	1348	540	5	0	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	4515	4382	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	4515	4382	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	42	1515	607	6	0	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	1515	613	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

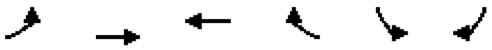
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	37	1348	540	5	0	66
Future Volume (Veh/h)	37	1348	540	5	0	66
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	42	1515	607	6	0	74
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.87	
vC, conflicting volume	631				1217	223
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	631				742	223
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	95				100	90
cM capacity (veh/h)	894				291	768

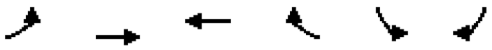
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	42	505	505	505	243	243	127	74
Volume Left	42	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	6	74
cSH	894	1700	1700	1700	1700	1700	1700	768
Volume to Capacity	0.05	0.30	0.30	0.30	0.14	0.14	0.07	0.10
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	0.0	0.0	2.5
Control Delay (s/veh)	9.2	0.0	0.0	0.0	0.0	0.0	0.0	10.2
Lane LOS	A							B
Approach Delay (s/veh)	0.2				0.0			10.2
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	1345	553	4	26	8
Future Volume (vph)	4	1345	553	4	26	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.967	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1805	4515	4414	0	1630	0
Flt Permitted	0.950				0.964	
Satd. Flow (perm)	1805	4515	4414	0	1630	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	4	1462	601	4	28	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	1462	605	0	37	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

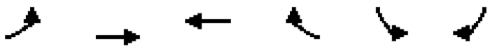


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1345	553	4	26	8
Future Volume (Veh/h)	4	1345	553	4	26	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1462	601	4	28	9
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	619				1112	216
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	619				1112	216
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	100				86	99
cM capacity (veh/h)	960				193	735

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	4	487	487	487	240	240	124	37
Volume Left	4	0	0	0	0	0	0	28
Volume Right	0	0	0	0	0	0	4	9
cSH	960	1700	1700	1700	1700	1700	1700	236
Volume to Capacity	0.00*	0.29	0.29	0.29	0.14	0.14	0.07	0.16
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	4.4
Control Delay (s/veh)	8.8	0.0	0.0	0.0	0.0	0.0	0.0	23.1
Lane LOS	A							C
Approach Delay (s/veh)	0.0				0.0			23.1
Approach LOS								C

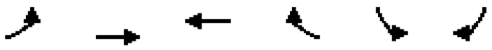
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	36.0%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	1375	477	33	195	45
Future Volume (vph)	26	1375	477	33	195	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	4515	4341	0	1737	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1703	4515	4341	0	1737	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	29	1528	530	37	217	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	1528	567	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	1375	477	33	195	45
Future Volume (Veh/h)	26	1375	477	33	195	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	29	1528	530	37	217	50
Pedestrians					10	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	577				1126	205
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577				1126	205
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	97				0	94
cM capacity (veh/h)	957				193	774

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	29	509	509	509	212	212	143	267
Volume Left	29	0	0	0	0	0	0	217
Volume Right	0	0	0	0	0	0	37	50
cSH	957	1700	1700	1700	1700	1700	1700	224
Volume to Capacity	0.03	0.30	0.30	0.30	0.12	0.12	0.08	1.19
Queue Length 95th (m)	0.7	0.0	0.0	0.0	0.0	0.0	0.0	104.4
Control Delay (s/veh)	8.9	0.0	0.0	0.0	0.0	0.0	0.0	166.6
Lane LOS	A							F
Approach Delay (s/veh)	0.2				0.0			166.6
Approach LOS								F

Intersection Summary			
Average Delay	18.7		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	4	528	48	21	1501
Future Volume (vph)	12	4	528	48	21	1501
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.968		0.988			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1771	0	4385	0	1805	4515
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	1771	0	4385	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	13	4	587	53	23	1668
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	640	0	23	1668
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

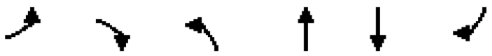
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



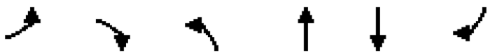
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	12	4	528	48	21	1501
Future Volume (Veh/h)	12	4	528	48	21	1501
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	4	587	53	23	1668
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1217	223			641	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1217	223			641	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	92	99			98	
cM capacity (veh/h)	172	786			952	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	17	235	235	170	23	556	556	556
Volume Left	13	0	0	0	23	0	0	0
Volume Right	4	0	0	53	0	0	0	0
cSH	211	1700	1700	1700	952	1700	1700	1700
Volume to Capacity	0.08	0.14	0.14	0.10	0.02	0.33	0.33	0.33
Queue Length 95th (m)	2.1	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Control Delay (s/veh)	23.6	0.0	0.0	0.0	8.9	0.0	0.0	0.0
Lane LOS	C				A			
Approach Delay (s/veh)	23.6	0.0			0.1			
Approach LOS	C							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	496	538	525	1445	77
Future Volume (vph)	61	496	538	525	1445	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	1736	4427	4476	0
Flt Permitted	0.950		0.063			
Satd. Flow (perm)	1805	1524	115	4427	4476	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		174			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	67	545	591	577	1588	85
Shared Lane Traffic (%)						
Lane Group Flow (vph)	67	545	591	577	1673	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

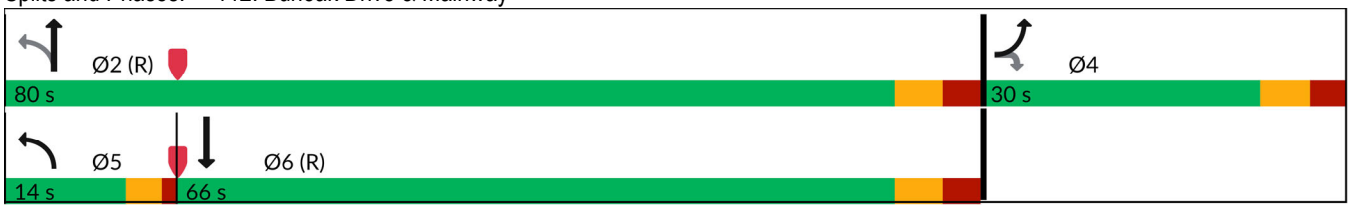


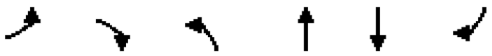
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	14.0	80.0	66.0	
Total Split (%)	27.3%	27.3%	12.7%	72.7%	60.0%	
Maximum Green (s)	23.0	23.0	10.0	73.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.54	
v/c Ratio	0.18	1.20	2.62	0.20	0.70	
Control Delay (s/veh)	37.3	134.8	756.9	9.9	20.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.3	134.8	756.9	9.9	20.7	
LOS	D	F	F	A	C	
Approach Delay (s/veh)	124.1			387.9	20.7	
Approach LOS	F			F	C	
Queue Length 50th (m)	12.5	~121.5	~212.1	27.0	111.4	
Queue Length 95th (m)	25.2	#193.6	#285.5	34.1	131.9	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	377	456	226	2937	2405	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.18	1.20	2.62	0.20	0.70	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 74 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.62	
Intersection Signal Delay (s/veh): 163.2	Intersection LOS: F

Intersection Capacity Utilization 81.1%	ICU Level of Service D
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 112: Burloak Drive & Mainway





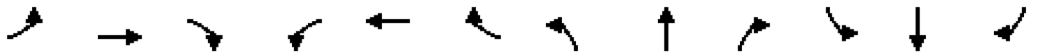
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	61	496	538	525	1445	77
Future Volume (vph)	61	496	538	525	1445	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	1736	4427	4478	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1524	116	4427	4478	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	67	545	591	577	1588	85
RTOR Reduction (vph)	0	138	0	0	5	0
Lane Group Flow (vph)	67	407	591	577	1668	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	59.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	318	224	2937	2401	
v/s Ratio Prot	0.04		c0.24	0.13	0.37	
v/s Ratio Perm		c0.27	c1.51			
v/c Ratio	0.18	1.28	2.64	0.20	0.69	
Uniform Delay, d1	35.7	43.5	32.5	7.2	18.8	
Progression Factor	1.00	1.00	0.83	1.35	1.00	
Incremental Delay, d2	0.2	148.5	749.9	0.1	1.7	
Delay (s)	36.0	192.0	776.9	9.8	20.5	
Level of Service	D	F	F	A	C	
Approach Delay (s/veh)	174.9			398.0	20.5	
Approach LOS	F			F	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	175.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.37		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	394	114	30	244	146	17	78	11	86	46	28
Future Volume (vph)	106	394	114	30	244	146	17	78	11	86	46	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.972			0.948			0.986			0.977	
Flt Protected		0.991			0.996			0.992			0.974	
Satd. Flow (prot)	0	3340	0	0	3272	0	0	1775	0	0	1773	0
Flt Permitted		0.991			0.996			0.992			0.974	
Satd. Flow (perm)	0	3340	0	0	3272	0	0	1775	0	0	1773	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		110.8			869.1			154.8			187.1	
Travel Time (s)		6.6			52.1			13.9			16.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Adj. Flow (vph)	119	443	128	34	274	164	19	88	12	97	52	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	690	0	0	472	0	0	119	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

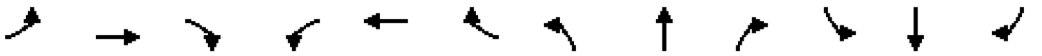
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	394	114	30	244	146	17	78	11	86	46	28
Future Volume (Veh/h)	106	394	114	30	244	146	17	78	11	86	46	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	119	443	128	34	274	164	19	88	12	97	52	31
Pedestrians								2				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	438			573			1009	1253	288	940	1235	219
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	438			573			1009	1253	288	940	1235	219
tC, single (s)	4.1			4.1			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			97			82	40	98	5	66	96
cM capacity (veh/h)	1118			1008			108	147	714	102	151	785

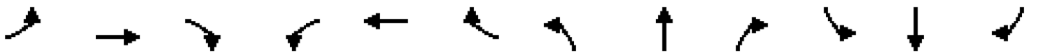
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	341	350	171	301	119	180
Volume Left	119	0	34	0	19	97
Volume Right	0	128	0	164	12	31
cSH	1118	1700	1008	1700	151	135
Volume to Capacity	0.11	0.21	0.03	0.18	0.79	1.33
Queue Length 95th (m)	2.9	0.0	0.8	0.0	39.9	92.0
Control Delay (s/veh)	3.7	0.0	2.0	0.0	85.3	254.1
Lane LOS	A		A		F	F
Approach Delay (s/veh)	1.8		0.7		85.3	254.1
Approach LOS					F	F

Intersection Summary				
Average Delay	39.4			
Intersection Capacity Utilization	55.5%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	866	62	15	178	20	15	0	4	104	2	78
Future Volume (vph)	21	866	62	15	178	20	15	0	4	104	2	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.986			0.971			0.942	
Flt Protected		0.999			0.996			0.962			0.973	
Satd. Flow (prot)	0	3459	0	0	3216	0	0	1504	0	0	1732	0
Flt Permitted		0.999			0.996			0.962			0.973	
Satd. Flow (perm)	0	3459	0	0	3216	0	0	1504	0	0	1732	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			643.2			107.7			112.1	
Travel Time (s)		25.6			38.6			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	25	1019	73	18	209	24	18	0	5	122	2	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1117	0	0	251	0	0	23	0	0	216	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

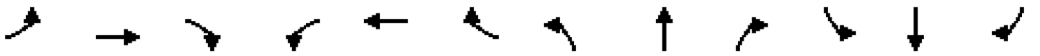
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.5%		ICU Level of Service A	
Analysis Period (min) 15			



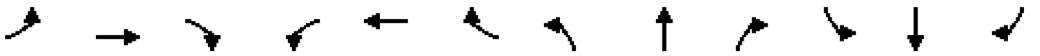
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	21	866	62	15	178	20	15	0	4	104	2	78
Future Volume (Veh/h)	21	866	62	15	178	20	15	0	4	104	2	78
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	25	1019	73	18	209	24	18	0	5	122	2	92
Pedestrians								9			5	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	238			1101			1348	1389	555	827	1413	122
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	238			1101			1348	1389	555	827	1413	122
tC, single (s)	4.4			4.4			8.0	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.4			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			76	100	99	51	98	90
cM capacity (veh/h)	1225			555			76	135	477	249	130	909

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	535	583	123	129	23	216
Volume Left	25	0	18	0	18	122
Volume Right	0	73	0	24	5	92
cSH	1225	1700	555	1700	93	356
Volume to Capacity	0.02	0.34	0.03	0.08	0.25	0.61
Queue Length 95th (m)	0.5	0.0	0.8	0.0	7.1	30.4
Control Delay (s/veh)	0.6	0.0	2.1	0.0	55.7	29.5
Lane LOS	A		A		F	D
Approach Delay (s/veh)	0.3		1.0		55.7	29.5
Approach LOS					F	D

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	54.5%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	461	172	122	109	66	120	918	308	244	1557	144
Future Volume (vph)	185	461	172	122	109	66	120	918	308	244	1557	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	0.99			1.00	
Frt		0.959			0.943			0.962			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3190	0	1492	3048	0	1597	4107	0	1770	4287	0
Flt Permitted	0.636			0.157			0.081			0.083		
Satd. Flow (perm)	1070	3190	0	246	3048	0	136	4107	0	155	4287	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			69			70			15	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	193	480	179	127	114	69	125	956	321	254	1622	150
Shared Lane Traffic (%)												
Lane Group Flow (vph)	193	659	0	127	183	0	125	1277	0	254	1772	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	34.0		11.0	34.0		11.0	48.0		27.0	64.0	
Total Split (%)	9.2%	28.3%		9.2%	28.3%		9.2%	40.0%		22.5%	53.3%	
Maximum Green (s)	7.0	27.7		7.0	27.7		7.0	41.7		23.0	57.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	35.7	26.4		35.7	26.4		59.1	49.3		71.7	58.5	
Actuated g/C Ratio	0.30	0.22		0.30	0.22		0.49	0.41		0.60	0.49	
v/c Ratio	0.55	0.90		0.88	0.25		0.79	0.74		0.80	0.85	
Control Delay (s/veh)	38.8	58.6		80.8	24.3		49.9	35.2		51.4	18.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	38.8	58.6		80.8	24.3		49.9	35.2		51.4	18.2	
LOS	D	E		F	C		D	D		D	B	
Approach Delay (s/veh)		54.1			47.5			36.5			22.3	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	38.6	81.4		25.9	12.7		17.0	136.5		51.4	104.0	
Queue Length 95th (m)	61.2	#113.3		#59.1	23.8		m#38.3	157.0		m77.2	160.5	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	349	768		145	756		158	1729		402	2097	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.55	0.86		0.88	0.24		0.79	0.74		0.63	0.85	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 58 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 34.3	Intersection LOS: C

Intersection Capacity Utilization 84.1% ICU Level of Service E

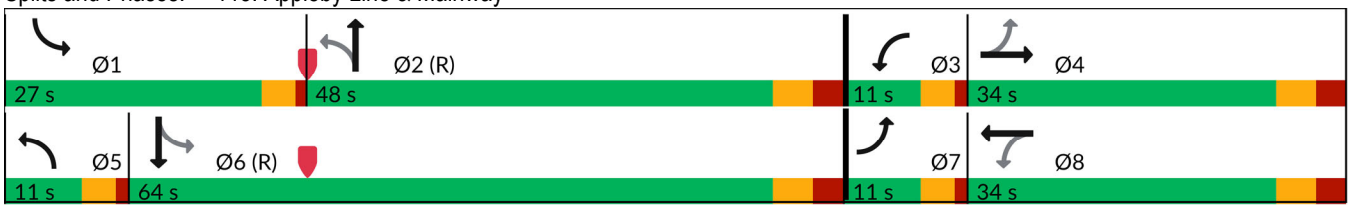
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

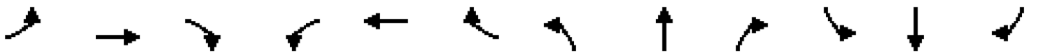


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	461	172	122	109	66	120	918	308	244	1557	144
Future Volume (vph)	185	461	172	122	109	66	120	918	308	244	1557	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1604	3191		1491	3049		1597	4109		1770	4289	
Flt Permitted	0.64	1.00		0.16	1.00		0.08	1.00		0.08	1.00	
Satd. Flow (perm)	1074	3191		247	3049		136	4109		155	4289	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	193	480	179	127	114	69	125	956	321	254	1622	150
RTOR Reduction (vph)	0	33	0	0	54	0	0	41	0	0	8	0
Lane Group Flow (vph)	193	626	0	127	129	0	125	1236	0	254	1764	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	33.4	26.4		33.4	26.4		56.8	49.3		70.0	58.5	
Effective Green, g (s)	33.4	26.4		33.4	26.4		56.8	49.3		70.0	58.5	
Actuated g/C Ratio	0.28	0.22		0.28	0.22		0.47	0.41		0.58	0.49	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	329	702		141	670		155	1688		315	2090	
v/s Ratio Prot	0.03	0.20		c0.05	0.04		0.05	0.30		c0.11	c0.41	
v/s Ratio Perm	0.13			c0.20			0.33			0.36		
v/c Ratio	0.59	0.89		0.90	0.19		0.81	0.73		0.81	0.84	
Uniform Delay, d1	36.0	45.4		37.5	38.1		23.3	29.8		31.0	26.8	
Progression Factor	1.00	1.00		1.00	1.00		0.97	1.12		1.41	0.55	
Incremental Delay, d2	2.7	13.6		47.3	0.1		18.3	1.9		10.4	3.2	
Delay (s)	38.6	59.1		84.8	38.3		40.9	35.4		53.9	17.9	
Level of Service	D	E		F	D		D	D		D	B	
Approach Delay (s/veh)		54.4			57.3			35.9			22.5	
Approach LOS		D			E			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	9	28	206	17	108	36	1031	97	84	1791	49
Future Volume (vph)	19	9	28	206	17	108	36	1031	97	84	1791	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.956			0.987			0.996	
Flt Protected		0.984			0.970		0.950			0.950		
Satd. Flow (prot)	0	1321	0	0	1708	0	1530	4193	0	1736	4362	0
Flt Permitted		0.854			0.777		0.061			0.148		
Satd. Flow (perm)	0	1146	0	0	1362	0	98	4193	0	270	4362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			21			16			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	19	9	29	210	17	110	37	1052	99	86	1828	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	337	0	37	1151	0	86	1878	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	42.0	42.0		42.0	42.0		66.0	66.0		12.0	78.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		55.0%	55.0%		10.0%	65.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		60.0	60.0		8.0	72.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		31.7			31.7		66.5	66.5		77.8	75.8	
Actuated g/C Ratio		0.26			0.26		0.55	0.55		0.65	0.63	
v/c Ratio		0.18			0.90		0.69	0.49		0.32	0.68	
Control Delay (s/veh)		25.3			66.7		81.6	27.1		6.3	7.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		25.3			66.7		81.6	27.1		6.3	7.8	
LOS		C			E		F	C		A	A	
Approach Delay (s/veh)		25.3			66.7			28.8			7.8	
Approach LOS		C			E			C			A	
Queue Length 50th (m)		8.0			74.1		10.9	115.0		4.5	63.6	
Queue Length 95th (m)		20.0			#121.8		m#17.3	134.7		m5.2	m72.8	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		350			417		54	2329		272	2757	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.81		0.69	0.49		0.32	0.68	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 20.7	Intersection LOS: C

Intersection Capacity Utilization 83.7% ICU Level of Service E

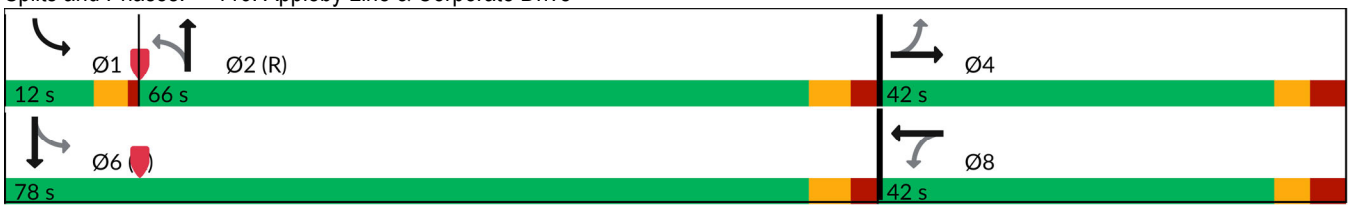
Analysis Period (min) 15

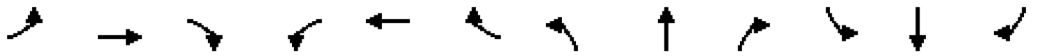
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 116: Appleby Line & Corporate Drive

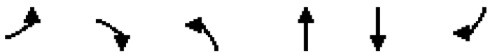




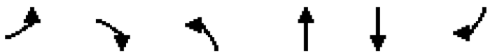
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	9	28	206	17	108	36	1031	97	84	1791	49
Future Volume (vph)	19	9	28	206	17	108	36	1031	97	84	1791	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1320			1700		1529	4193		1735	4362	
Flt Permitted		0.85			0.78		0.06	1.00		0.15	1.00	
Satd. Flow (perm)		1146			1361		98	4193		270	4362	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	19	9	29	210	17	110	37	1052	99	86	1828	50
RTOR Reduction (vph)	0	13	0	0	15	0	0	7	0	0	2	0
Lane Group Flow (vph)	0	44	0	0	322	0	37	1144	0	86	1876	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		31.7			31.7		65.6	65.6		75.8	75.8	
Effective Green, g (s)		31.7			31.7		65.6	65.6		75.8	75.8	
Actuated g/C Ratio		0.26			0.26		0.55	0.55		0.63	0.63	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		302			359		53	2292		246	2755	
v/s Ratio Prot								0.27		0.02	c0.43	
v/s Ratio Perm		0.04			c0.24		0.38			0.20		
v/c Ratio		0.15			0.90		0.70	0.50		0.35	0.68	
Uniform Delay, d1		33.8			42.6		19.9	17.0		10.3	14.3	
Progression Factor		1.00			1.00		1.38	1.51		0.68	0.51	
Incremental Delay, d2		0.2			23.6		43.1	0.6		0.1	0.1	
Delay (s)		34.0			66.2		70.7	26.1		7.0	7.4	
Level of Service		C			E		E	C		A	A	
Approach Delay (s/veh)		34.0			66.2			27.5			7.4	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	139	507	871	1522	110
Future Volume (vph)	31	139	507	871	1522	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	1719	4427	4423	0
Flt Permitted	0.950		0.062			
Satd. Flow (perm)	1805	1313	112	4427	4423	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		140			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	31	140	512	880	1537	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	140	512	880	1648	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	23.0	23.0	20.0	87.0	67.0	
Total Split (%)	20.9%	20.9%	18.2%	79.1%	60.9%	
Maximum Green (s)	16.0	16.0	16.0	80.0	60.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.2	9.2	89.8	86.8	60.0	
Actuated g/C Ratio	0.08	0.08	0.82	0.79	0.55	
v/c Ratio	0.21	0.59	1.21	0.25	0.68	
Control Delay (s/veh)	49.4	18.4	138.1	2.3	10.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	49.4	18.4	138.1	2.3	10.0	
LOS	D	B	F	A	A	
Approach Delay (s/veh)	24.0			52.3	10.0	
Approach LOS	C			D	A	
Queue Length 50th (m)	6.7	0.0	~117.9	9.5	51.5	
Queue Length 95th (m)	15.8	21.8	m#137.6	m15.4	m49.7	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	262	310	424	3492	2418	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.12	0.45	1.21	0.25	0.68	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay (s/veh): 29.1	Intersection LOS: C

Intersection Capacity Utilization 81.7%	ICU Level of Service D
Analysis Period (min) 15	

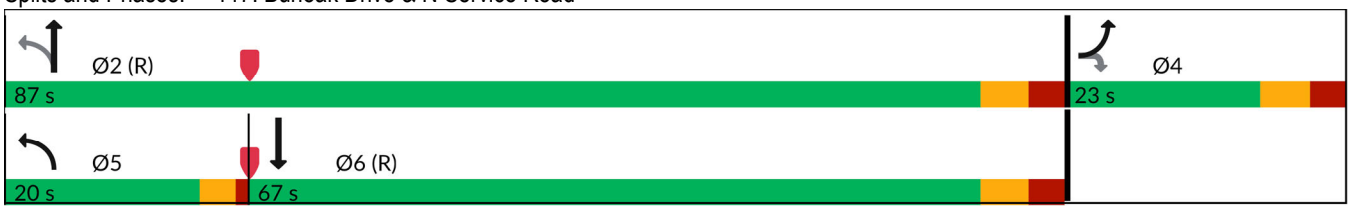
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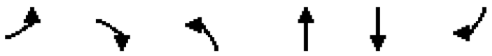
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	31	139	507	871	1522	110
Future Volume (vph)	31	139	507	871	1522	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	1719	4427	4422	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1313	113	4427	4422	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	31	140	512	880	1537	111
RTOR Reduction (vph)	0	128	0	0	6	0
Lane Group Flow (vph)	31	12	512	880	1642	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.2	9.2	86.8	86.8	60.0	
Effective Green, g (s)	9.2	9.2	86.8	86.8	60.0	
Actuated g/C Ratio	0.08	0.08	0.79	0.79	0.55	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	150	109	422	3493	2412	
v/s Ratio Prot	c0.02		c0.25	0.20	0.37	
v/s Ratio Perm		0.01	c0.71			
v/c Ratio	0.21	0.11	1.21	0.25	0.68	
Uniform Delay, d1	47.0	46.6	35.4	3.1	18.1	
Progression Factor	1.00	1.00	1.25	0.71	0.50	
Incremental Delay, d2	0.7	0.4	103.7	0.1	0.9	
Delay (s)	47.7	47.0	147.8	2.2	10.0	
Level of Service	D	D	F	A	A	
Approach Delay (s/veh)	47.2			55.8	10.0	
Approach LOS	D			E	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1025	1050	752	0	0	1877
Future Volume (vph)	1025	1050	752	0	0	1877
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Frt	0.958	0.850				
Flt Protected	0.965					
Satd. Flow (prot)	3240	1427	4427	0	0	4427
Flt Permitted	0.965					
Satd. Flow (perm)	3240	1427	4427	0	0	4427
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	55	181				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1102	1129	809	0	0	2018
Shared Lane Traffic (%)		38%				
Lane Group Flow (vph)	1531	700	809	0	0	2018
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

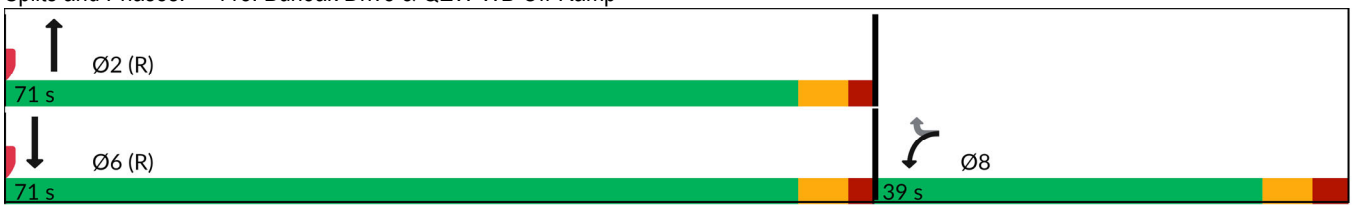


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	39.0	39.0	71.0			71.0
Total Split (%)	35.5%	35.5%	64.5%			64.5%
Maximum Green (s)	32.0	32.0	65.0			65.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
v/c Ratio	1.56	1.29	0.31			0.77
Control Delay (s/veh)	286.2	169.6	12.3			9.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	286.2	169.6	12.3			9.1
LOS	F	F	B			A
Approach Delay (s/veh)	249.6		12.3			9.1
Approach LOS	F		B			A
Queue Length 50th (m)	~261.0	~192.8	26.8			161.6
Queue Length 95th (m)	#306.9	#275.9	25.8			69.3
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	981	543	2615			2615
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.56	1.29	0.31			0.77

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.56			
Intersection Signal Delay (s/veh): 115.7		Intersection LOS: F	
Intersection Capacity Utilization 87.3%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

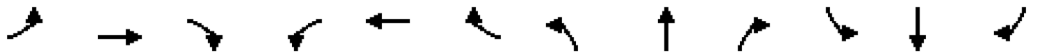
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



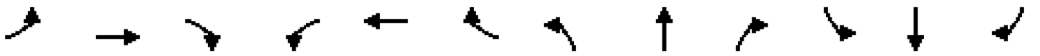


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1025	1050	752	0	0	1877
Future Volume (vph)	1025	1050	752	0	0	1877
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.97	1.00	1.00			1.00
Satd. Flow (prot)	3241	1427	4427			4427
Flt Permitted	0.97	1.00	1.00			1.00
Satd. Flow (perm)	3241	1427	4427			4427
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1102	1129	809	0	0	2018
RTOR Reduction (vph)	39	128	0	0	0	0
Lane Group Flow (vph)	1492	572	809	0	0	2018
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0	65.0			65.0
Effective Green, g (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	942	415	2615			2615
v/s Ratio Prot	c0.46		0.18			c0.46
v/s Ratio Perm		0.40				
v/c Ratio	1.58	1.38	0.31			0.77
Uniform Delay, d1	39.0	39.0	11.3			16.9
Progression Factor	1.00	1.00	1.05			0.42
Incremental Delay, d2	267.8	184.4	0.3			1.9
Delay (s)	306.8	223.4	12.2			9.0
Level of Service	F	F	B			A
Approach Delay (s/veh)	280.7		12.2			9.0
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	129.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	91	301	0	0	69	0	741	5	5	1808	0
Future Volume (vph)	239	91	301	0	0	69	0	741	5	5	1808	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.907	0.850			0.865		0.999				
Flt Protected	0.950											
Satd. Flow (prot)	1770	2847	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950										0.938	
Satd. Flow (perm)	1770	2847	1318	0	0	1417	0	5032	0	0	4634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		162	162			164		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	257	98	324	0	0	74	0	797	5	5	1944	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	257	260	162	0	0	74	0	802	0	0	1949	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

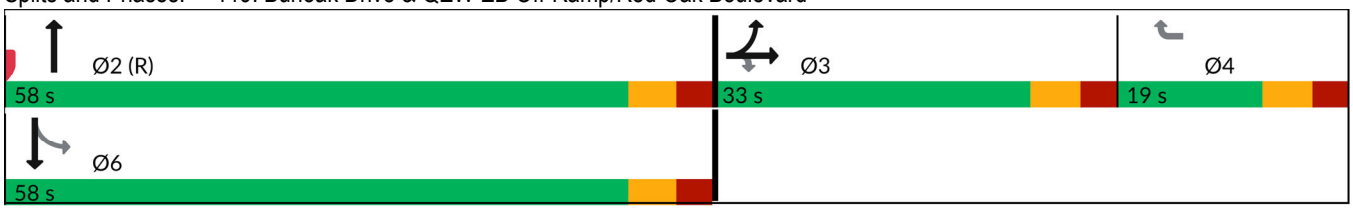


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		None	None	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	20.8	20.8	20.8			8.0		63.2			63.2	
Actuated g/C Ratio	0.19	0.19	0.19			0.07		0.57			0.57	
v/c Ratio	0.77	0.39	0.43			0.29		0.28			0.73	
Control Delay (s/veh)	57.3	15.7	9.1			2.9		13.5			19.8	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	57.3	15.7	9.1			2.9		13.5			19.8	
LOS	E	B	A			A		B			B	
Approach Delay (s/veh)		29.9			2.9			13.5			19.8	
Approach LOS		C			A			B			B	
Queue Length 50th (m)	56.2	10.8	0.0			0.0		34.9			114.4	
Queue Length 95th (m)	81.4	22.7	20.2			0.0		48.3			m128.0	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	418	796	435			300		2891			2662	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.61	0.33	0.37			0.25		0.28			0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 3 (3%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 19.9		Intersection LOS: B	

Intersection Capacity Utilization 63.2% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

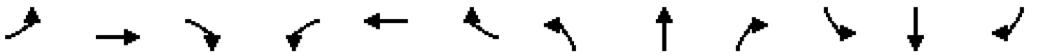
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



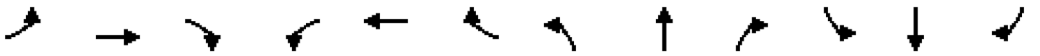
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	91	301	0	0	69	0	741	5	5	1808	0
Future Volume (vph)	239	91	301	0	0	69	0	741	5	5	1808	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1770	2845	1318			1417		5032			4940	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1770	2845	1318			1417		5032			4634	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	257	98	324	0	0	74	0	797	5	5	1944	0
RTOR Reduction (vph)	0	131	131	0	0	70	0	0	0	0	0	0
Lane Group Flow (vph)	257	129	31	0	0	4	0	802	0	0	1949	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	20.8	20.8	20.8			6.4		61.8			61.8	
Effective Green, g (s)	20.8	20.8	20.8			6.4		61.8			61.8	
Actuated g/C Ratio	0.19	0.19	0.19			0.06		0.56			0.56	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	334	537	249			82		2827			2603	
v/s Ratio Prot	c0.15	0.05						0.16				
v/s Ratio Perm			0.02			c0.00					c0.42	
v/c Ratio	0.77	0.24	0.12			0.05		0.28			0.75	
Uniform Delay, d1	42.3	37.9	37.0			48.9		12.6			18.2	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.01	
Incremental Delay, d2	10.2	0.2	0.2			0.3		0.3			0.1	
Delay (s)	52.5	38.1	37.3			49.2		12.8			18.6	
Level of Service	D	D	D			D		B			B	
Approach Delay (s/veh)		43.4			49.2			12.8			18.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	121	48	79	11	42	148	1340	435	99	1639	37
Future Volume (vph)	49	121	48	79	11	42	148	1340	435	99	1639	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.957			0.882			0.963			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1681	0	1504	1568	0	1719	4179	0	1752	4329	0
Flt Permitted	0.720			0.352			0.058			0.059		
Satd. Flow (perm)	1200	1681	0	557	1568	0	105	4179	0	109	4329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			44			88			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	52	127	51	83	12	44	156	1411	458	104	1725	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	52	178	0	83	56	0	156	1869	0	104	1764	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	27.0	27.0		11.0	38.0		14.0	68.0		14.0	68.0	
Total Split (%)	22.5%	22.5%		9.2%	31.7%		11.7%	56.7%		11.7%	56.7%	
Maximum Green (s)	20.9	20.9		7.0	31.9		10.0	61.4		10.0	61.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.4	16.4		27.3	25.2		82.2	69.7		79.2	68.2	
Actuated g/C Ratio	0.14	0.14		0.23	0.21		0.69	0.58		0.66	0.57	
v/c Ratio	0.32	0.74		0.46	0.15		0.76	0.76		0.56	0.72	
Control Delay (s/veh)	50.4	62.8		43.8	14.4		43.3	18.4		40.6	13.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.4	62.8		43.8	14.4		43.3	18.4		40.6	13.7	
LOS	D	E		D	B		D	B		D	B	
Approach Delay (s/veh)		60.0			32.0			20.3			15.2	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	12.9	39.9		18.8	2.5		24.6	98.5		11.9	178.7	
Queue Length 95th (m)	26.2	63.4		33.6	13.7		m34.0	m141.4		m13.7	210.4	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	209	305		182	449		215	2464		210	2462	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.58		0.46	0.12		0.73	0.76		0.50	0.72	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay (s/veh): 20.6	Intersection LOS: C

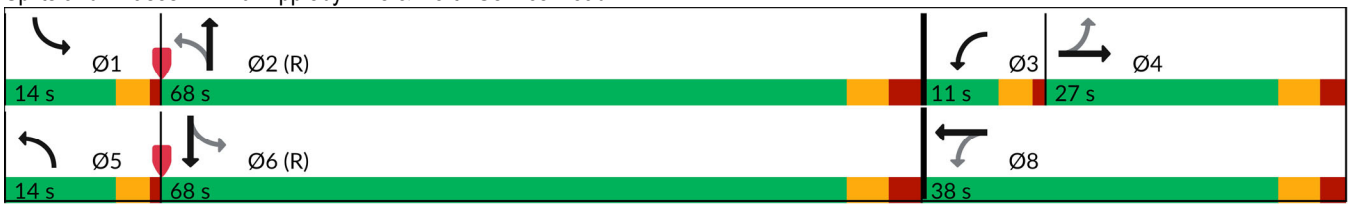
Intersection Capacity Utilization 73.8%	ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	121	48	79	11	42	148	1340	435	99	1639	37
Future Volume (vph)	49	121	48	79	11	42	148	1340	435	99	1639	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1681		1504	1569		1719	4180		1752	4328	
Flt Permitted	0.72	1.00		0.35	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1201	1681		557	1569		105	4180		109	4328	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	52	127	51	83	12	44	156	1411	458	104	1725	39
RTOR Reduction (vph)	0	13	0	0	34	0	0	37	0	0	1	0
Lane Group Flow (vph)	52	165	0	83	22	0	156	1832	0	104	1763	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.4	16.4		26.0	26.0		78.8	68.9		75.8	67.4	
Effective Green, g (s)	16.4	16.4		26.0	26.0		78.8	68.9		75.8	67.4	
Actuated g/C Ratio	0.14	0.14		0.22	0.22		0.66	0.57		0.63	0.56	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	229		164	339		202	2400		183	2430	
v/s Ratio Prot		c0.10		c0.02	0.01		c0.06	0.44		0.04	0.41	
v/s Ratio Perm	0.04			0.09			c0.44			0.32		
v/c Ratio	0.32	0.72		0.51	0.06		0.77	0.76		0.57	0.73	
Uniform Delay, d1	46.7	49.6		39.4	37.3		29.0	19.4		16.8	19.5	
Progression Factor	1.00	1.00		1.00	1.00		1.25	0.87		1.94	0.62	
Incremental Delay, d2	1.1	10.6		2.4	0.1		8.4	1.1		2.0	1.0	
Delay (s)	47.9	60.2		41.8	37.4		44.6	18.1		34.6	13.0	
Level of Service	D	E		D	D		D	B		C	B	
Approach Delay (s/veh)		57.4			40.0			20.1			14.2	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	424	487	1893	0	0	1530
Future Volume (vph)	424	487	1893	0	0	1530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	1495	4385	0	0	4302
Flt Permitted	0.950					
Satd. Flow (perm)	3183	1495	4385	0	0	4302
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		11				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	466	535	2080	0	0	1681
Shared Lane Traffic (%)						
Lane Group Flow (vph)	466	535	2080	0	0	1681
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

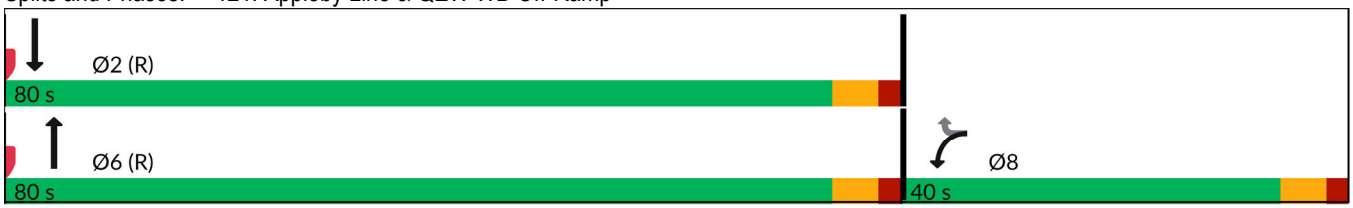


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
v/c Ratio	0.52	1.24	0.77			0.63
Control Delay (s/veh)	38.6	163.6	14.1			4.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	38.6	163.6	14.1			4.4
LOS	D	F	B			A
Approach Delay (s/veh)	105.4		14.1			4.4
Approach LOS	F		B			A
Queue Length 50th (m)	53.6	~172.8	125.4			20.4
Queue Length 95th (m)	71.7	#247.1	114.5			27.8
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	901	431	2704			2652
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.52	1.24	0.77			0.63

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.24			
Intersection Signal Delay (s/veh): 29.9		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

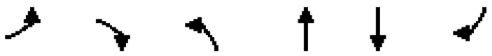
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



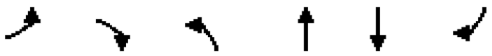


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	424	487	1893	0	0	1530
Future Volume (vph)	424	487	1893	0	0	1530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	1495	4385			4302
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	1495	4385			4302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	466	535	2080	0	0	1681
RTOR Reduction (vph)	0	8	0	0	0	0
Lane Group Flow (vph)	466	527	2080	0	0	1681
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	74.0			74.0
Effective Green, g (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	901	423	2704			2652
v/s Ratio Prot	0.15		c0.47			0.39
v/s Ratio Perm		c0.35				
v/c Ratio	0.52	1.25	0.77			0.63
Uniform Delay, d1	36.1	43.0	16.8			14.5
Progression Factor	1.00	1.00	0.73			0.25
Incremental Delay, d2	0.5	129.2	1.6			0.8
Delay (s)	36.6	172.2	13.9			4.4
Level of Service	D	F	B			A
Approach Delay (s/veh)	109.1		13.9			4.4
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	722	393	0	1537	1532	0
Future Volume (vph)	722	393	0	1537	1532	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4302	4302	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4302	4302	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		28				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	802	437	0	1708	1702	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	802	437	0	1708	1702	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

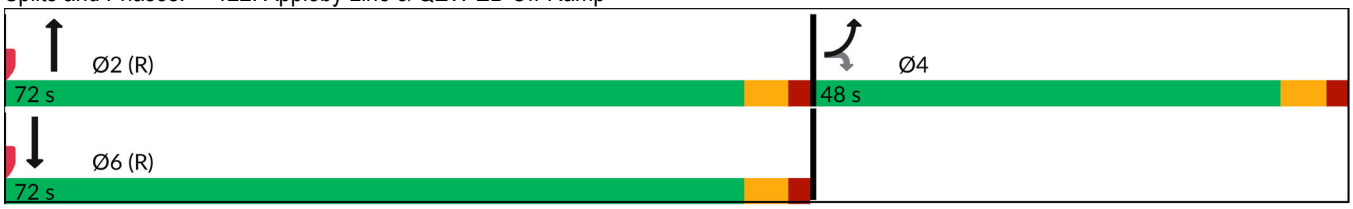


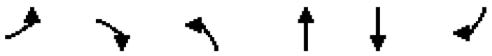
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	35.3	35.3		72.7	72.7	
Actuated g/C Ratio	0.29	0.29		0.61	0.61	
v/c Ratio	0.82	0.53		0.66	0.65	
Control Delay (s/veh)	46.4	34.9		8.2	16.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	46.4	34.9		8.2	16.6	
LOS	D	C		A	B	
Approach Delay (s/veh)	42.4			8.2	16.6	
Approach LOS	D			A	B	
Queue Length 50th (m)	97.9	49.6		39.4	88.7	
Queue Length 95th (m)	113.6	63.3		47.1	135.8	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1167	965		2604	2604	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.69	0.45		0.66	0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 20.4		Intersection LOS: C	
Intersection Capacity Utilization 76.7%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

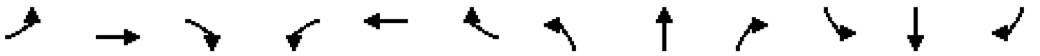




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	722	393	0	1537	1532	0
Future Volume (vph)	722	393	0	1537	1532	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4302	4302	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4302	4302	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	802	437	0	1708	1702	0
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	802	417	0	1708	1702	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	35.3	35.3		72.7	72.7	
Effective Green, g (s)	35.3	35.3		72.7	72.7	
Actuated g/C Ratio	0.29	0.29		0.61	0.61	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	981	796		2606	2606	
v/s Ratio Prot	c0.24			c0.40	0.40	
v/s Ratio Perm		0.15				
v/c Ratio	0.82	0.52		0.66	0.65	
Uniform Delay, d1	39.4	35.3		15.5	15.4	
Progression Factor	1.00	1.00		0.44	0.95	
Incremental Delay, d2	5.4	0.6		0.8	1.0	
Delay (s)	44.7	36.0		7.7	15.7	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	41.6			7.7	15.7	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	449	63	95	133	229	77	1205	352	384	681	251
Future Volume (vph)	174	449	63	95	133	229	77	1205	352	384	681	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99	1.00		0.98
Frt		0.982			0.905				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3263	0	1656	2890	0	1687	4427	1568	1770	4302	1417
Flt Permitted	0.273			0.316			0.329			0.084		
Satd. Flow (perm)	438	3263	0	551	2890	0	583	4427	1547	156	4302	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			244				224			267
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	185	478	67	101	141	244	82	1282	374	409	724	267
Shared Lane Traffic (%)												
Lane Group Flow (vph)	185	545	0	101	385	0	82	1282	374	409	724	267
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.6		7.0	21.6		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	37.7	24.4		27.4	18.0		54.2	43.7	43.7	74.2	62.0	62.0
Actuated g/C Ratio	0.31	0.20		0.23	0.15		0.45	0.36	0.36	0.62	0.52	0.52
v/c Ratio	0.71	0.81		0.53	0.60		0.24	0.80	0.53	0.97	0.33	0.31
Control Delay (s/veh)	47.7	54.6		41.2	20.8		12.4	27.6	10.2	70.0	20.6	6.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	47.7	54.6		41.2	20.8		12.4	27.6	10.2	70.0	20.6	6.2
LOS	D	D		D	C		B	C	B	E	C	A
Approach Delay (s/veh)		52.8			25.0			23.1			32.3	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	40.0	69.5		19.3	17.4		8.1	68.0	21.6	96.4	44.2	7.9
Queue Length 95th (m)	61.1	87.7		32.9	33.6		m10.1	m81.4	m23.9	#168.9	67.8	26.5
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	265	786		190	720		378	1612	705	422	2221	849
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.70	0.69		0.53	0.53		0.22	0.80	0.53	0.97	0.33	0.31

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 31.3	Intersection LOS: C

Intersection Capacity Utilization 89.0% ICU Level of Service E

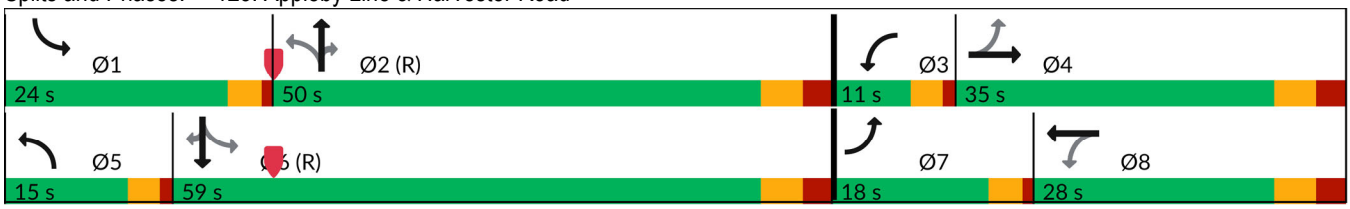
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

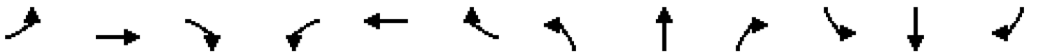
Splits and Phases: 123: Appleby Line & Harvester Road



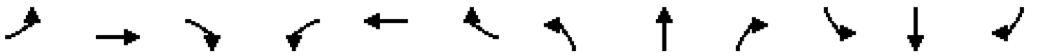
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	174	449	63	95	133	229	77	1205	352	384	681	251
Future Volume (vph)	174	449	63	95	133	229	77	1205	352	384	681	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3262		1656	2890		1686	4427	1547	1770	4302	1395
Flt Permitted	0.27	1.00		0.32	1.00		0.33	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	439	3262		551	2890		585	4427	1547	156	4302	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	185	478	67	101	141	244	82	1282	374	409	724	267
RTOR Reduction (vph)	0	10	0	0	207	0	0	0	142	0	0	131
Lane Group Flow (vph)	185	535	0	101	178	0	82	1282	232	409	724	136
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	35.4	24.4		25.0	18.0		50.5	43.7	43.7	71.9	61.1	61.1
Effective Green, g (s)	35.4	24.4		25.0	18.0		50.5	43.7	43.7	71.9	61.1	61.1
Actuated g/C Ratio	0.30	0.20		0.21	0.15		0.42	0.36	0.36	0.60	0.51	0.51
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	251	663		179	433		308	1612	563	418	2190	710
v/s Ratio Prot	c0.08	c0.16		0.03	0.06		0.02	0.29		c0.20	0.17	
v/s Ratio Perm	0.14			0.08			0.10		0.15	c0.39		0.10
v/c Ratio	0.74	0.81		0.56	0.41		0.27	0.80	0.41	0.98	0.33	0.19
Uniform Delay, d1	34.5	45.6		40.2	46.2		21.2	34.1	28.5	37.1	17.4	16.0
Progression Factor	1.00	1.00		1.00	1.00		0.98	0.74	0.76	1.10	1.11	2.29
Incremental Delay, d2	10.7	7.2		4.0	0.6		0.2	2.1	1.1	33.3	0.3	0.5
Delay (s)	45.2	52.7		44.2	46.8		21.0	27.3	22.7	74.2	19.6	37.1
Level of Service	D	D		D	D		C	C	C	E	B	D
Approach Delay (s/veh)		50.8			46.3			26.0			38.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	153	231	97	64	165	195	1076	120	215	1067	139
Future Volume (vph)	566	153	231	97	64	165	195	1076	120	215	1067	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	4471	1538
Flt Permitted	0.950			0.655			0.126			0.092		
Satd. Flow (perm)	3389	1776	1513	1097	1610	1395	237	3539	1403	153	4471	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			243			153			150			150
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	596	161	243	102	67	174	205	1133	126	226	1123	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	596	161	243	102	67	174	205	1133	126	226	1123	146
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	34.0	47.0	47.0	14.0	27.0	27.0	12.0	45.0	45.0	14.0	47.0	47.0
Total Split (%)	28.3%	39.2%	39.2%	11.7%	22.5%	22.5%	10.0%	37.5%	37.5%	11.7%	39.2%	39.2%
Maximum Green (s)	29.0	40.5	40.5	10.0	20.5	20.5	8.0	38.2	38.2	10.0	40.2	40.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	25.5	28.2	28.2	22.8	11.0	11.0	59.3	39.3	39.3	67.2	43.9	43.9
Actuated g/C Ratio	0.21	0.24	0.24	0.19	0.09	0.09	0.49	0.33	0.33	0.56	0.37	0.37
v/c Ratio	0.83	0.39	0.45	0.41	0.45	0.65	0.60	0.98	0.23	0.65	0.69	0.22
Control Delay (s/veh)	55.3	40.2	6.8	31.6	60.5	22.9	28.5	62.0	3.8	34.9	42.0	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.3	40.2	6.8	31.6	60.5	22.9	28.5	62.0	3.8	34.9	42.0	12.7
LOS	E	D	A	C	E	C	C	E	A	C	D	B
Approach Delay (s/veh)		41.1			32.8			52.3			38.1	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	74.2	35.8	0.0	18.6	18.2	5.4	24.9	~150.3	0.0	39.6	111.8	5.7
Queue Length 95th (m)	93.1	52.3	19.6	29.1	33.8	29.9	#66.3	#200.6	10.3	#101.8	133.0	m23.7
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	821	599	671	257	275	365	339	1158	560	346	1636	649
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.27	0.36	0.40	0.24	0.48	0.60	0.98	0.23	0.65	0.69	0.22

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 43.2	Intersection LOS: D

Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

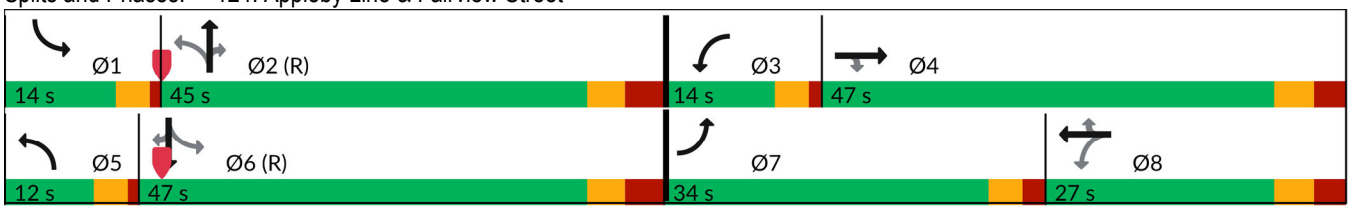
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	153	231	97	64	165	195	1076	120	215	1067	139
Future Volume (vph)	566	153	231	97	64	165	195	1076	120	215	1067	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	4471	1513
Flt Permitted	0.95	1.00	1.00	0.66	1.00	1.00	0.13	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1099	1610	1395	237	3539	1403	154	4471	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	596	161	243	102	67	174	205	1133	126	226	1123	146
RTOR Reduction (vph)	0	0	186	0	0	139	0	0	85	0	0	92
Lane Group Flow (vph)	596	161	57	102	67	35	205	1133	41	226	1123	54
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	25.5	28.2	28.2	20.3	11.0	11.0	56.5	39.3	39.3	65.2	44.0	44.0
Effective Green, g (s)	25.5	28.2	28.2	20.3	11.0	11.0	56.5	39.3	39.3	65.2	44.0	44.0
Actuated g/C Ratio	0.21	0.24	0.24	0.17	0.09	0.09	0.47	0.33	0.33	0.54	0.37	0.37
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	722	417	355	224	147	127	333	1159	459	344	1639	554
v/s Ratio Prot	c0.18	c0.09		0.04	0.04		0.09	c0.32		c0.12	0.25	
v/s Ratio Perm			0.04	0.04		0.03	0.20		0.03	0.24		0.04
v/c Ratio	0.83	0.39	0.16	0.46	0.46	0.28	0.62	0.98	0.09	0.66	0.69	0.10
Uniform Delay, d1	45.1	38.6	36.5	44.2	51.7	50.8	21.0	39.9	28.0	29.1	32.1	25.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.20	2.78
Incremental Delay, d2	7.7	0.6	0.2	1.5	2.2	1.2	3.4	21.6	0.4	4.4	2.3	0.3
Delay (s)	52.8	39.2	36.7	45.7	53.9	52.0	24.4	61.5	28.3	31.4	40.8	69.8
Level of Service	D	D	D	D	D	D	C	E	C	C	D	E
Approach Delay (s/veh)		46.7			50.5			53.4			42.2	
Approach LOS		D			D			D			D	

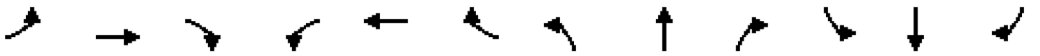
Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	913	0	0	266	22	0	0	0	5	0	20
Future Volume (vph)	61	913	0	0	266	22	0	0	0	5	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.988						0.890	
Flt Protected		0.997									0.991	
Satd. Flow (prot)	0	3529	0	0	3497	0	0	1863	0	0	1643	0
Flt Permitted		0.997									0.991	
Satd. Flow (perm)	0	3529	0	0	3497	0	0	1863	0	0	1643	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		643.2			110.8			96.8			111.9	
Travel Time (s)		38.6			6.6			8.7			10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	992	0	0	289	24	0	0	0	5	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1058	0	0	313	0	0	0	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

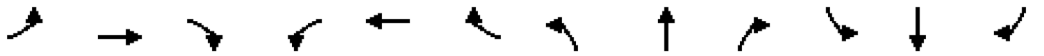
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.4%		ICU Level of Service A	
Analysis Period (min) 15			



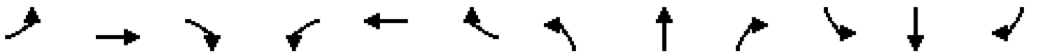
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	913	0	0	266	22	0	0	0	5	0	20
Future Volume (Veh/h)	61	913	0	0	266	22	0	0	0	5	0	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	992	0	0	289	24	0	0	0	5	0	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	313			992			1291	1437	496	929	1425	157
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	313			992			1291	1437	496	929	1425	157
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	100	100	98	100	97
cM capacity (veh/h)	1244			693			113	125	519	213	127	861

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	562	496	145	169	0	27
Volume Left	66	0	0	0	0	5
Volume Right	0	0	0	24	0	22
cSH	1244	1700	693	1700	1700	551
Volume to Capacity	0.05	0.29	0.00	0.10	0.00	0.05
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	1.2
Control Delay (s/veh)	1.5	0.0	0.0	0.0	0.0	11.9
Lane LOS	A				A	B
Approach Delay (s/veh)	0.8		0.0		0.0	11.9
Approach LOS					A	B

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	48.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1306	447	404	605	136	227	563	337	264	831	166
Future Volume (vph)	220	1306	447	404	605	136	227	563	337	264	831	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3361	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			358			145			205			177
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	234	1389	476	430	644	145	241	599	359	281	884	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	234	1389	476	430	644	145	241	599	359	281	884	177
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	20.0	61.0	61.0	25.0	64.0	64.0	24.0	30.0	30.0	24.0	32.0	32.0
Total Split (%)	14.1%	43.0%	43.0%	17.6%	45.1%	45.1%	16.9%	21.1%	21.1%	16.9%	22.5%	22.5%
Maximum Green (s)	15.0	53.6	53.6	20.0	56.6	56.6	19.0	22.6	22.6	19.0	24.6	24.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.6	48.6	48.6	20.0	54.0	54.0	16.8	30.8	30.8	17.9	31.8	31.8
Actuated g/C Ratio	0.10	0.34	0.34	0.14	0.38	0.38	0.12	0.22	0.22	0.13	0.22	0.22
v/c Ratio	0.68	0.80	0.63	0.95	0.35	0.23	0.61	0.57	0.74	0.66	0.79	0.37
Control Delay (s/veh)	71.9	46.0	12.7	91.8	31.7	4.7	65.9	53.5	33.3	67.1	58.3	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.9	46.0	12.7	91.8	31.7	4.7	65.9	53.5	33.3	67.1	58.3	9.1
LOS	E	D	B	F	C	A	E	D	C	E	E	A
Approach Delay (s/veh)		41.3			49.7			49.9			53.7	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	35.8	136.9	26.8	70.2	52.3	0.0	36.2	62.4	46.9	42.3	94.6	0.0
Queue Length 95th (m)	51.2	148.5	63.5	#106.2	60.9	14.7	50.9	80.8	#105.6	58.6	#135.2	21.9
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	355	1919	801	452	1982	686	450	1050	482	454	1118	480
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.72	0.59	0.95	0.32	0.21	0.54	0.57	0.74	0.62	0.79	0.37

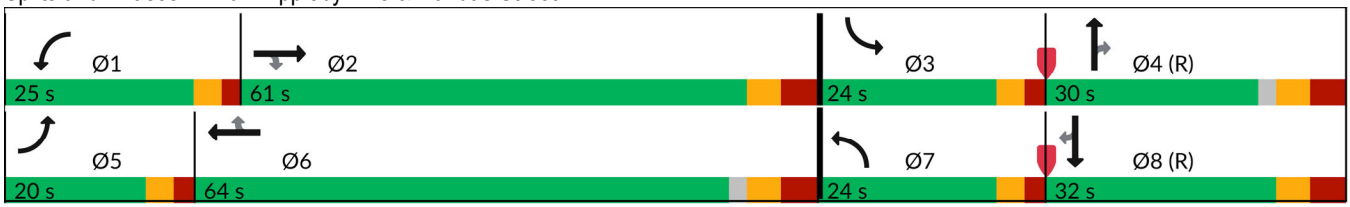
Intersection Summary	
Area Type:	Other
Cycle Length: 142	
Actuated Cycle Length: 142	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 47.7	Intersection LOS: D

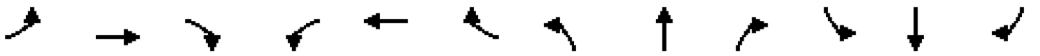
Intersection Capacity Utilization 99.4% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street



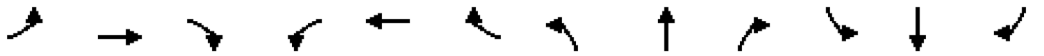


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	220	1306	447	404	605	136	227	563	337	264	831	166
Future Volume (vph)	220	1306	447	404	605	136	227	563	337	264	831	166
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	234	1389	476	430	644	145	241	599	359	281	884	177
RTOR Reduction (vph)	0	0	235	0	0	90	0	0	161	0	0	137
Lane Group Flow (vph)	234	1389	241	430	644	55	241	599	198	281	884	40
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.6	48.6	48.6	20.0	54.0	54.0	16.8	30.7	30.7	17.9	31.8	31.8
Effective Green, g (s)	14.6	48.6	48.6	20.0	54.0	54.0	16.8	30.7	30.7	17.9	31.8	31.8
Actuated g/C Ratio	0.10	0.34	0.34	0.14	0.38	0.38	0.12	0.22	0.22	0.13	0.22	0.22
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	346	1740	524	452	1826	554	398	1048	321	424	1117	342
v/s Ratio Prot	0.07	c0.27		c0.13	0.13		0.07	0.12		c0.08	c0.18	
v/s Ratio Perm			0.16			0.04			0.13			0.03
v/c Ratio	0.68	0.80	0.46	0.95	0.35	0.10	0.61	0.57	0.62	0.66	0.79	0.12
Uniform Delay, d1	61.4	42.3	36.4	60.5	31.5	28.3	59.5	49.8	50.3	59.2	52.0	43.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	2.6	0.6	30.8	0.1	0.1	3.8	2.3	8.6	5.1	5.8	0.7
Delay (s)	68.1	44.9	37.1	91.3	31.6	28.4	63.3	52.0	59.0	64.3	57.7	44.6
Level of Service	E	D	D	F	C	C	E	D	E	E	E	D
Approach Delay (s/veh)		45.7			52.3			56.4			57.4	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	708	337	241	340	288	193	898	159	408	1474	53
Future Volume (vph)	173	708	337	241	340	288	193	898	159	408	1474	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99				0.98	1.00	1.00			1.00	
Frt		0.952				0.850		0.977			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3342	0	1736	4471	1553	3400	4091	0	1752	4356	0
Flt Permitted	0.469			0.125			0.950			0.099		
Satd. Flow (perm)	844	3342	0	228	4471	1521	3395	4091	0	183	4356	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64				320		24			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	192	787	374	268	378	320	214	998	177	453	1638	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	1161	0	268	378	320	214	1175	0	453	1697	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



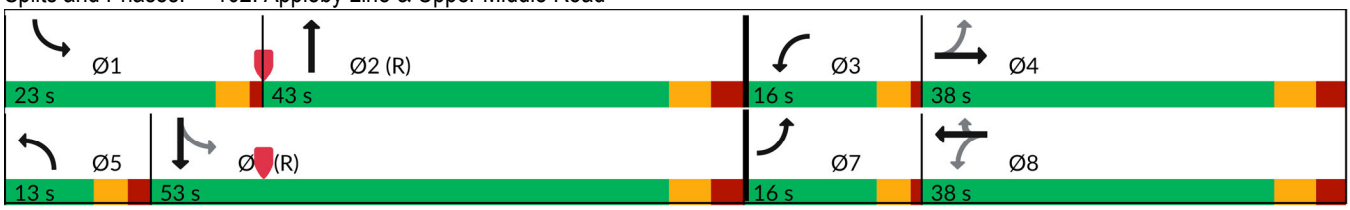
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	38.0		16.0	38.0	38.0	13.0	43.0		23.0	53.0	
Total Split (%)	13.3%	31.7%		13.3%	31.7%	31.7%	10.8%	35.8%		19.2%	44.2%	
Maximum Green (s)	12.0	31.6		12.0	31.6	31.6	8.0	36.5		19.0	46.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	45.5	31.6		46.5	32.1	32.1	8.0	36.5		62.0	46.5	
Actuated g/C Ratio	0.38	0.26		0.39	0.27	0.27	0.07	0.30		0.52	0.39	
v/c Ratio	0.48	1.25		1.12	0.32	0.50	0.95	0.93		1.32	1.00	
Control Delay (s/veh)	27.6	158.4		131.4	35.5	7.9	97.3	76.1		195.2	59.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	27.6	158.4		131.4	35.5	7.9	97.3	76.1		195.2	59.7	
LOS	C	F		F	D	A	F	E		F	E	
Approach Delay (s/veh)		139.8			53.0			79.4			88.2	
Approach LOS		F			D			E			F	
Queue Length 50th (m)	31.9	~185.1		~61.6	28.3	0.5	29.6	135.7		~131.4	~179.6	
Queue Length 95th (m)	50.4	#229.5		m#115.0	m39.1	m17.3	m#53.8	#164.2		#200.0	#224.8	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	411	927		239	1196	641	226	1261		342	1690	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.47	1.25		1.12	0.32	0.50	0.95	0.93		1.32	1.00	

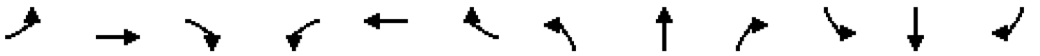
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay (s/veh): 92.2	Intersection LOS: F

Intersection Capacity Utilization 107.9%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



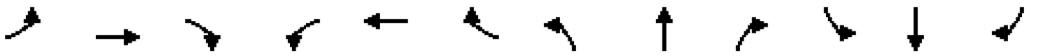


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	708	337	241	340	288	193	898	159	408	1474	53
Future Volume (vph)	173	708	337	241	340	288	193	898	159	408	1474	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	3340		1736	4471	1521	3400	4093		1752	4355	
Flt Permitted	0.47	1.00		0.12	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	846	3340		228	4471	1521	3400	4093		182	4355	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	192	787	374	268	378	320	214	998	177	453	1638	59
RTOR Reduction (vph)	0	47	0	0	0	234	0	17	0	0	2	0
Lane Group Flow (vph)	192	1114	0	268	378	86	214	1158	0	453	1695	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	43.1	31.6		44.1	32.1	32.1	8.0	36.5		59.5	46.5	
Effective Green, g (s)	43.1	31.6		44.1	32.1	32.1	8.0	36.5		59.5	46.5	
Actuated g/C Ratio	0.36	0.26		0.37	0.27	0.27	0.07	0.30		0.50	0.39	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	387	879		234	1195	406	226	1244		338	1687	
v/s Ratio Prot	0.05	c0.33		c0.11	0.08		0.06	0.28		c0.21	0.39	
v/s Ratio Perm	0.13			0.31		0.06				c0.45		
v/c Ratio	0.50	1.27		1.15	0.32	0.21	0.95	0.93		1.34	1.00	
Uniform Delay, d1	27.8	44.2		32.2	35.2	34.1	55.8	40.5		36.7	36.8	
Progression Factor	1.00	1.00		1.45	0.98	1.36	0.94	1.62		1.00	1.00	
Incremental Delay, d2	1.0	129.3		101.3	0.1	0.2	41.3	12.3		171.8	23.0	
Delay (s)	28.8	173.5		147.8	34.7	46.5	94.0	78.1		208.5	59.7	
Level of Service	C	F		F	C	D	F	E		F	E	
Approach Delay (s/veh)		152.9			70.0			80.5			91.1	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	99.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	107.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1272	272	47	747	0	203	0	100	5	0	14
Future Volume (vph)	5	1272	272	47	747	0	203	0	100	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.974							0.850		0.899	
Flt Protected	0.950			0.950				0.950			0.988	
Satd. Flow (prot)	1805	4291	0	1805	4385	0	0	1752	1615	0	1550	0
Flt Permitted	0.246			0.056				0.742			0.914	
Satd. Flow (perm)	463	4291	0	106	4385	0	0	1362	1585	0	1432	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48							130		64	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	6	1652	353	61	970	0	264	0	130	6	0	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	2005	0	61	970	0	0	264	130	0	24	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	65.0	65.0		9.0	78.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	68.8	68.8		80.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.67	0.65			0.24	0.24		0.24	
v/c Ratio	0.02	0.81		0.35	0.34			0.80	0.27		0.06	
Control Delay (s/veh)	14.6	20.8		12.7	9.4			62.2	7.7		0.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	14.6	20.8		12.7	9.4			62.2	7.7		0.3	
LOS	B	C		B	A			E	A		A	
Approach Delay (s/veh)		20.8			9.6			44.2			0.3	
Approach LOS		C			A			D			A	
Queue Length 50th (m)	0.7	112.3		5.7	47.7			61.9	0.0		0.0	
Queue Length 95th (m)	m1.1	m91.7		m7.5	m42.5			77.7	9.6		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	265	2481		198	2850			329	481		394	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.02	0.81		0.31	0.34			0.80	0.27		0.06	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 20.0	Intersection LOS: B

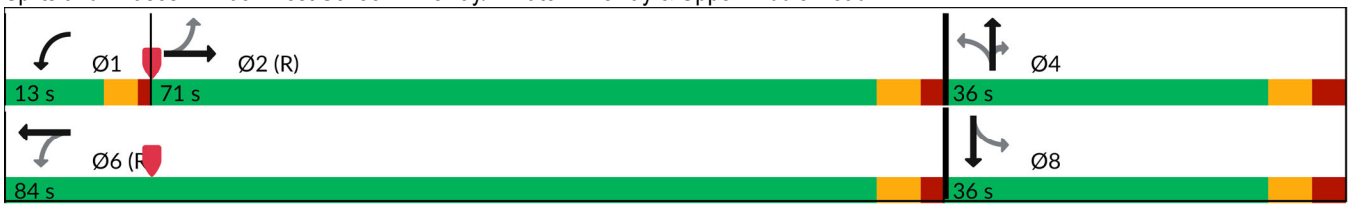
Intersection Capacity Utilization 94.3% ICU Level of Service F

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1272	272	47	747	0	203	0	100	5	0	14
Future Volume (vph)	5	1272	272	47	747	0	203	0	100	5	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1787	4289		1805	4385			1744	1585		1547	
Flt Permitted	0.25	1.00		0.06	1.00			0.74	1.00		0.91	
Satd. Flow (perm)	463	4289		106	4385			1361	1585		1432	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	6	1652	353	61	970	0	264	0	130	6	0	18
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	99	0	18	0
Lane Group Flow (vph)	6	1984	0	61	970	0	0	264	31	0	6	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Effective Green, g (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.65	0.65			0.24	0.24		0.24	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	262	2430		153	2850			328	383		346	
v/s Ratio Prot		c0.46		0.02	c0.22							
v/s Ratio Perm	0.01			0.24				c0.19	0.02		0.00	
v/c Ratio	0.02	0.82		0.40	0.34			0.80	0.08		0.02	
Uniform Delay, d1	11.4	21.0		17.7	9.4			42.8	35.2		34.6	
Progression Factor	1.15	0.93		0.95	0.96			1.00	1.00		1.00	
Incremental Delay, d2	0.1	1.5		1.5	0.3			18.7	0.4		0.1	
Delay (s)	13.2	21.0		18.2	9.3			61.5	35.6		34.7	
Level of Service	B	C		B	A			E	D		C	
Approach Delay (s/veh)		21.0			9.8			53.0			34.7	
Approach LOS		C			A			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1196	174	270	760	49	200
Future Volume (vph)	1196	174	270	760	49	200
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.981					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4354	0	1787	4385	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4354	0	1787	4385	1805	1615
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	1685	245	380	1070	69	282
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1930	0	380	1070	69	282
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

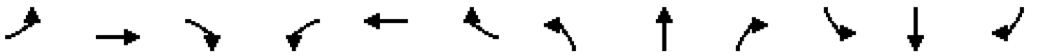
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1196	174	270	760	49	200
Future Volume (Veh/h)	1196	174	270	760	49	200
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1685	245	380	1070	69	282
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.68		0.68	0.68
vC, conflicting volume			1942		2936	696
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			726		2193	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			36		0	61
cM capacity (veh/h)			590		9	732

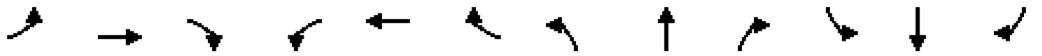
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	674	674	582	380	357	357	357	69	282
Volume Left	0	0	0	380	0	0	0	69	0
Volume Right	0	0	245	0	0	0	0	0	282
cSH	1700	1700	1700	590	1700	1700	1700	9	732
Volume to Capacity	0.40	0.40	0.34	0.64	0.21	0.21	0.21	7.31	0.39
Queue Length 95th (m)	0.0	0.0	0.0	36.9	0.0	0.0	0.0	Err	14.6
Control Delay (s/veh)	0.0	0.0	0.0	21.5	0.0	0.0	0.0	Err	13.0
Lane LOS				C				F	B
Approach Delay (s/veh)	0.0			5.6				1976.0	
Approach LOS								F	

Intersection Summary				
Average Delay	188.1			
Intersection Capacity Utilization	55.4%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	1218	18	0	755	82	22	0	1	97	0	248
Future Volume (vph)	161	1218	18	0	755	82	22	0	1	97	0	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.985			0.995			0.903	
Flt Protected	0.950							0.954			0.986	
Satd. Flow (prot)	1752	4462	0	0	4357	0	0	1768	0	0	1668	0
Flt Permitted	0.950							0.954			0.986	
Satd. Flow (perm)	1752	4462	0	0	4357	0	0	1768	0	0	1668	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			140.7			285.4	
Travel Time (s)		7.1			17.4			12.7			25.7	
Confl. Peds. (#/hr)	29					29						1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	212	1603	24	0	993	108	29	0	1	128	0	326
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	1627	0	0	1101	0	0	30	0	0	454	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.6%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			

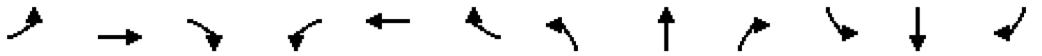


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	161	1218	18	0	755	82	22	0	1	97	0	248
Future Volume (Veh/h)	161	1218	18	0	755	82	22	0	1	97	0	248
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	212	1603	24	0	993	108	29	0	1	128	0	326
Pedestrians		1									29	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked												
vC, conflicting volume	1130			1627			2697	3169	546	2035	3127	415
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1130			1627			2697	3169	546	2035	3127	415
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	64			100			0	100	100	0	100	43
cM capacity (veh/h)	594			396			3	6	481	24	7	572

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	212	641	641	345	248	497	356	30	454
Volume Left	212	0	0	0	0	0	0	29	128
Volume Right	0	0	0	24	0	0	108	1	326
cSH	594	1700	1700	1700	396	1700	1700	3	76
Volume to Capacity	0.36	0.38	0.38	0.20	0.00	0.29	0.21	9.30	6.01
Queue Length 95th (m)	12.9	0.0	0.0	0.0	0.0	0.0	0.0	Err	Err
Control Delay (s/veh)	14.4	0.0	0.0	0.0	0.0	0.0	0.0	Err	Err
Lane LOS	B							F	F
Approach Delay (s/veh)	1.7				0.0			Err	Err
Approach LOS								F	F

Intersection Summary				
Average Delay	1414.3			
Intersection Capacity Utilization	69.6%	ICU Level of Service	C	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	938	121	2	474	176	52	2	5	504	6	296
Future Volume (vph)	266	938	121	2	474	176	52	2	5	504	6	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98						0.98	
Frt		0.983			0.959			0.988			0.950	
Flt Protected	0.950							0.958			0.970	
Satd. Flow (prot)	1703	4433	0	0	4147	0	0	1763	0	0	1713	0
Flt Permitted	0.231				0.936			0.618			0.778	
Satd. Flow (perm)	408	4433	0	0	3882	0	0	1137	0	0	1349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		23			94			5			28	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			133.0			244.6	
Travel Time (s)		17.4			14.7			12.0			22.0	
Confl. Peds. (#/hr)	24					24				16		6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	317	1117	144	2	564	210	62	2	6	600	7	352
Shared Lane Traffic (%)												
Lane Group Flow (vph)	317	1261	0	0	776	0	0	70	0	0	959	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



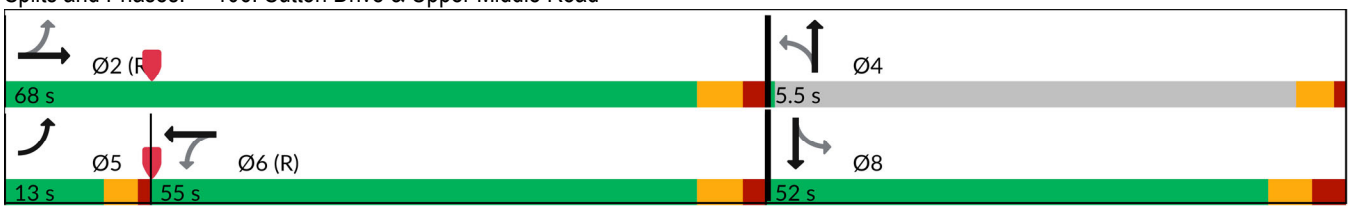
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		8.0	8.0		5.0	5.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		31.0	31.0		22.5	22.5		34.0	34.0	
Total Split (s)	13.0	68.0		55.0	55.0		5.5	5.5		52.0	52.0	
Total Split (%)	10.8%	56.7%		45.8%	45.8%		4.6%	4.6%		43.3%	43.3%	
Maximum Green (s)	9.0	62.0		49.0	49.0		1.0	1.0		45.0	45.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.5	3.5		4.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	1.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	6.0			6.0			4.5			7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		18.0		18.0	18.0		11.0	11.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	64.0	62.0			49.0			47.5			45.0	
Actuated g/C Ratio	0.53	0.52			0.41			0.40			0.38	
v/c Ratio	1.01	0.55			0.47			0.15			1.83	
Control Delay (s/veh)	70.2	9.6			23.7			22.8			408.0	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	70.2	9.6			23.7			22.8			408.0	
LOS	E	A			C			C			F	
Approach Delay (s/veh)		21.8			23.7			22.8			408.0	
Approach LOS		C			C			C			F	
Queue Length 50th (m)	~30.7	28.1			51.7			10.3			~363.9	
Queue Length 95th (m)	m#50.9	39.1			60.0			19.6			#407.0	
Internal Link Dist (m)		266.7			220.7			109.0			220.6	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	314	2301			1640			453			523	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.01	0.55			0.47			0.15			1.83	

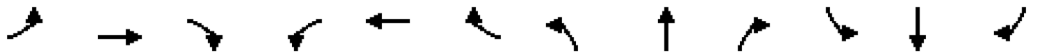
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.83	
Intersection Signal Delay (s/veh): 131.7	Intersection LOS: F

Intersection Capacity Utilization 102.4%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: Sutton Drive & Upper Middle Road

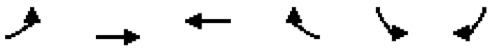




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	266	938	121	2	474	176	52	2	5	504	6	296
Future Volume (vph)	266	938	121	2	474	176	52	2	5	504	6	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			4.5			7.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.98			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			0.98	
Frt	1.00	0.98			0.96			0.99			0.95	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1698	4433			4148			1763			1683	
Flt Permitted	0.23	1.00			0.94			0.62			0.78	
Satd. Flow (perm)	412	4433			3885			1139			1349	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	317	1117	144	2	564	210	62	2	6	600	7	352
RTOR Reduction (vph)	0	11	0	0	56	0	0	3	0	0	18	0
Lane Group Flow (vph)	317	1250	0	0	720	0	0	67	0	0	942	0
Confl. Peds. (#/hr)	24					24				16		6
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	62.0	62.0			49.0			47.5			45.0	
Effective Green, g (s)	62.0	62.0			49.0			47.5			45.0	
Actuated g/C Ratio	0.52	0.52			0.41			0.40			0.38	
Clearance Time (s)	4.0	6.0			6.0			4.5			7.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	309	2290			1586			450			505	
v/s Ratio Prot	c0.08	0.28										
v/s Ratio Perm	c0.45				0.19			0.06			c0.70	
v/c Ratio	1.03	0.55			0.45			0.15			1.86	
Uniform Delay, d1	24.7	19.5			25.8			23.3			37.5	
Progression Factor	0.91	0.46			1.00			1.00			1.00	
Incremental Delay, d2	53.5	0.8			0.9			0.2			396.5	
Delay (s)	76.1	9.7			26.7			23.4			434.0	
Level of Service	E	A			C			C			F	
Approach Delay (s/veh)		23.0			26.7			23.4			434.0	
Approach LOS		C			C			C			F	

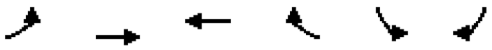
Intersection Summary			
HCM 2000 Control Delay (s/veh)	140.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	39	1415	567	5	0	69
Future Volume (vph)	39	1415	567	5	0	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	4515	4382	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	4515	4382	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	44	1590	637	6	0	78
Shared Lane Traffic (%)						
Lane Group Flow (vph)	44	1590	643	0	0	78
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

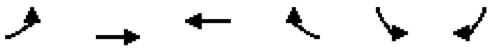
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	1415	567	5	0	69
Future Volume (Veh/h)	39	1415	567	5	0	69
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	44	1590	637	6	0	78
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.86	
vC, conflicting volume	661				1276	233
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	661				756	233
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	95				100	90
cM capacity (veh/h)	871				280	757

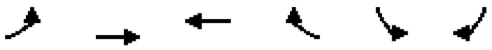
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	44	530	530	530	255	255	133	78
Volume Left	44	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	6	78
cSH	871	1700	1700	1700	1700	1700	1700	757
Volume to Capacity	0.05	0.31	0.31	0.31	0.15	0.15	0.08	0.10
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0	0.0	0.0	2.7
Control Delay (s/veh)	9.4	0.0	0.0	0.0	0.0	0.0	0.0	10.3
Lane LOS	A							B
Approach Delay (s/veh)	0.3				0.0			10.3
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	30.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	1412	580	4	27	9
Future Volume (vph)	4	1412	580	4	27	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.965	
Flt Protected	0.950				0.964	
Satd. Flow (prot)	1805	4515	4415	0	1624	0
Flt Permitted	0.950				0.964	
Satd. Flow (perm)	1805	4515	4415	0	1624	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	4	1535	630	4	29	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	4	1535	634	0	39	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.3%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

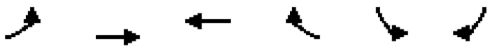


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	1412	580	4	27	9
Future Volume (Veh/h)	4	1412	580	4	27	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1535	630	4	29	10
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	648				1166	226
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	648				1166	226
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	100				84	99
cM capacity (veh/h)	936				178	724

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	4	512	512	512	252	252	130	39
Volume Left	4	0	0	0	0	0	0	29
Volume Right	0	0	0	0	0	0	4	10
cSH	936	1700	1700	1700	1700	1700	1700	221
Volume to Capacity	0.00*	0.30	0.30	0.30	0.15	0.15	0.08	0.18
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	5.0
Control Delay (s/veh)	8.9	0.0	0.0	0.0	0.0	0.0	0.0	24.7
Lane LOS	A							C
Approach Delay (s/veh)	0.0				0.0			24.7
Approach LOS								C

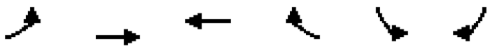
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	37.3%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	1444	500	35	205	47
Future Volume (vph)	27	1444	500	35	205	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	4515	4341	0	1737	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1703	4515	4341	0	1737	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	30	1604	556	39	228	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	1604	595	0	280	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.8%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	1444	500	35	205	47
Future Volume (Veh/h)	27	1444	500	35	205	47
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	1604	556	39	228	52
Pedestrians					10	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	605				1180	215
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	605				1180	215
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	97				0	93
cM capacity (veh/h)	934				177	762

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	30	535	535	535	222	222	150	280
Volume Left	30	0	0	0	0	0	0	228
Volume Right	0	0	0	0	0	0	39	52
cSH	934	1700	1700	1700	1700	1700	1700	207
Volume to Capacity	0.03	0.31	0.31	0.31	0.13	0.13	0.09	1.36
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	0.0	126.5
Control Delay (s/veh)	9.0	0.0	0.0	0.0	0.0	0.0	0.0	232.8
Lane LOS	A							F
Approach Delay (s/veh)	0.2				0.0			232.8
Approach LOS								F

Intersection Summary			
Average Delay	26.1		
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	13	4	554	50	22	1576
Future Volume (vph)	13	4	554	50	22	1576
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.970		0.987			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1775	0	4380	0	1805	4515
Flt Permitted	0.963				0.950	
Satd. Flow (perm)	1775	0	4380	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	14	4	616	56	24	1751
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	0	672	0	24	1751
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

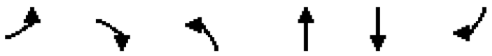
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



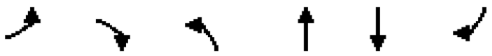
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	4	554	50	22	1576
Future Volume (Veh/h)	13	4	554	50	22	1576
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	14	4	616	56	24	1751
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1277	234			673	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1277	234			673	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	91	99			97	
cM capacity (veh/h)	157	773			927	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	18	246	246	179	24	584	584	584
Volume Left	14	0	0	0	24	0	0	0
Volume Right	4	0	0	56	0	0	0	0
cSH	190	1700	1700	1700	927	1700	1700	1700
Volume to Capacity	0.09	0.14	0.14	0.11	0.03	0.34	0.34	0.34
Queue Length 95th (m)	2.5	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Control Delay (s/veh)	25.9	0.0	0.0	0.0	9.0	0.0	0.0	0.0
Lane LOS	D				A			
Approach Delay (s/veh)	25.9	0.0			0.1			
Approach LOS	D							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	40.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	516	557	551	1517	81
Future Volume (vph)	65	516	557	551	1517	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor					1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	1736	4427	4476	0
Flt Permitted	0.950		0.063			
Satd. Flow (perm)	1805	1524	115	4427	4476	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		171			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	71	567	612	605	1667	89
Shared Lane Traffic (%)						
Lane Group Flow (vph)	71	567	612	605	1756	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	14.0	80.0	66.0	
Total Split (%)	27.3%	27.3%	12.7%	72.7%	60.0%	
Maximum Green (s)	23.0	23.0	10.0	73.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.54	
v/c Ratio	0.19	1.25	2.71	0.21	0.73	
Control Delay (s/veh)	37.4	157.5	798.0	10.3	21.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.4	157.5	798.0	10.3	21.6	
LOS	D	F	F	B	C	
Approach Delay (s/veh)	144.1			406.4	21.6	
Approach LOS	F			F	C	
Queue Length 50th (m)	13.3	~133.7	~223.6	29.2	120.6	
Queue Length 95th (m)	26.3	#206.3	#298.2	36.7	142.1	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	377	453	226	2937	2405	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.19	1.25	2.71	0.21	0.73	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 74 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.71	
Intersection Signal Delay (s/veh): 172.9	Intersection LOS: F

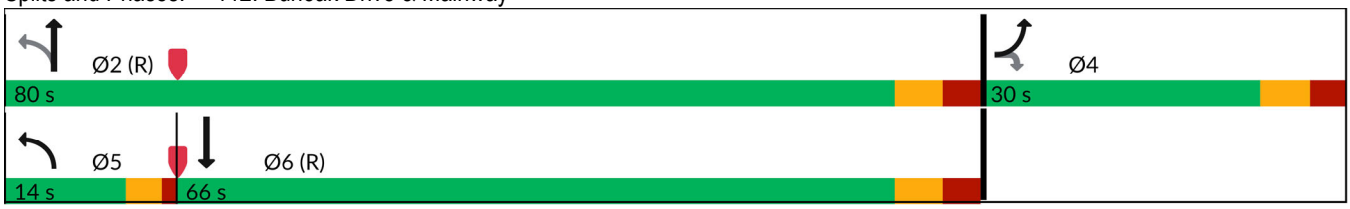
Intersection Capacity Utilization 83.7%	ICU Level of Service E
Analysis Period (min) 15	

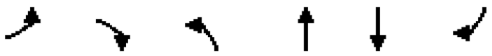
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

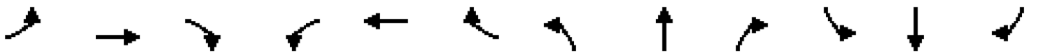




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	65	516	557	551	1517	81
Future Volume (vph)	65	516	557	551	1517	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	1736	4427	4478	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1524	116	4427	4478	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	71	567	612	605	1667	89
RTOR Reduction (vph)	0	135	0	0	5	0
Lane Group Flow (vph)	71	432	612	605	1751	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	59.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	318	224	2937	2401	
v/s Ratio Prot	0.04		c0.25	0.14	0.39	
v/s Ratio Perm		c0.28	c1.56			
v/c Ratio	0.19	1.36	2.73	0.21	0.73	
Uniform Delay, d1	35.8	43.5	32.9	7.2	19.4	
Progression Factor	1.00	1.00	0.83	1.40	1.00	
Incremental Delay, d2	0.2	180.2	791.8	0.2	2.0	
Delay (s)	36.1	223.7	819.0	10.2	21.4	
Level of Service	D	F	F	B	C	
Approach Delay (s/veh)	202.8			417.0	21.4	
Approach LOS	F			F	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	186.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.46		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	414	120	32	255	146	17	78	12	86	46	28
Future Volume (vph)	106	414	120	32	255	146	17	78	12	86	46	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.972			0.949			0.985			0.977	
Flt Protected		0.992			0.996			0.992			0.974	
Satd. Flow (prot)	0	3343	0	0	3274	0	0	1774	0	0	1773	0
Flt Permitted		0.992			0.996			0.992			0.974	
Satd. Flow (perm)	0	3343	0	0	3274	0	0	1774	0	0	1773	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		110.8			869.1			154.8			187.1	
Travel Time (s)		6.6			52.1			13.9			16.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Adj. Flow (vph)	119	465	135	36	287	164	19	88	13	97	52	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	719	0	0	487	0	0	120	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

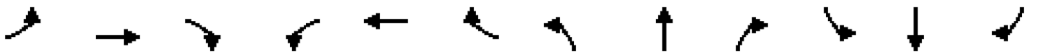
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.6%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	414	120	32	255	146	17	78	12	86	46	28
Future Volume (Veh/h)	106	414	120	32	255	146	17	78	12	86	46	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	119	465	135	36	287	164	19	88	13	97	52	31
Pedestrians								2				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	451			602			1045	1296	302	969	1281	226
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	451			602			1045	1296	302	969	1281	226
tC, single (s)	4.1			4.1			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			96			81	36	98	0	63	96
cM capacity (veh/h)	1106			984			98	138	699	91	141	778

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	352	368	180	308	120	180
Volume Left	119	0	36	0	19	97
Volume Right	0	135	0	164	13	31
cSH	1106	1700	984	1700	141	122
Volume to Capacity	0.11	0.22	0.04	0.18	0.85	1.48
Queue Length 95th (m)	2.9	0.0	0.9	0.0	44.0	101.1
Control Delay (s/veh)	3.6	0.0	2.0	0.0	100.7	319.4
Lane LOS	A		A		F	F
Approach Delay (s/veh)	1.8		0.8		100.7	319.4
Approach LOS					F	F

Intersection Summary				
Average Delay	47.3			
Intersection Capacity Utilization	56.6%	ICU Level of Service		B
Analysis Period (min)	15			



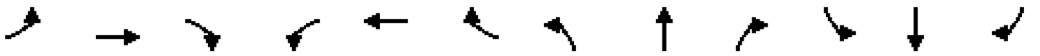
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	902	66	15	185	21	15	0	4	109	2	82
Future Volume (vph)	22	902	66	15	185	21	15	0	4	109	2	82
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.986			0.971			0.943	
Flt Protected		0.999			0.997			0.962			0.972	
Satd. Flow (prot)	0	3459	0	0	3220	0	0	1504	0	0	1732	0
Flt Permitted		0.999			0.997			0.962			0.972	
Satd. Flow (perm)	0	3459	0	0	3220	0	0	1504	0	0	1732	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			643.2			107.7			112.1	
Travel Time (s)		25.6			38.6			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	26	1061	78	18	218	25	18	0	5	128	2	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1165	0	0	261	0	0	23	0	0	226	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.4%		ICU Level of Service B	
Analysis Period (min) 15			

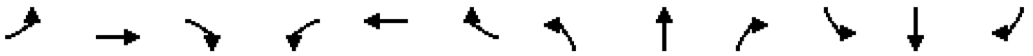
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	902	66	15	185	21	15	0	4	109	2	82
Future Volume (Veh/h)	22	902	66	15	185	21	15	0	4	109	2	82
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	26	1061	78	18	218	25	18	0	5	128	2	96
Pedestrians								9			5	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	248			1148			1403	1445	579	859	1472	127
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	248			1148			1403	1445	579	859	1472	127
tC, single (s)	4.4			4.4			8.0	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.4			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			97			74	100	99	46	98	89
cM capacity (veh/h)	1214			531			68	124	460	236	120	903

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	557	609	127	134	23	226
Volume Left	26	0	18	0	18	128
Volume Right	0	78	0	25	5	96
cSH	1214	1700	531	1700	84	339
Volume to Capacity	0.02	0.36	0.03	0.08	0.27	0.67
Queue Length 95th (m)	0.5	0.0	0.8	0.0	8.0	36.3
Control Delay (s/veh)	0.6	0.0	2.1	0.0	63.3	34.5
Lane LOS	A		A		F	D
Approach Delay (s/veh)	0.3		1.0		63.3	34.5
Approach LOS					F	D

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	56.4%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	481	180	126	114	69	126	959	318	256	1627	149
Future Volume (vph)	193	481	180	126	114	69	126	959	318	256	1627	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	0.99			1.00	
Frt		0.959			0.943			0.963			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3190	0	1492	3048	0	1597	4112	0	1770	4287	0
Flt Permitted	0.632			0.148			0.083			0.077		
Satd. Flow (perm)	1064	3190	0	232	3048	0	140	4112	0	143	4287	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			72			68			15	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	201	501	188	131	119	72	131	999	331	267	1695	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	689	0	131	191	0	131	1330	0	267	1850	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	34.0		11.0	34.0		11.0	48.0		27.0	64.0	
Total Split (%)	9.2%	28.3%		9.2%	28.3%		9.2%	40.0%		22.5%	53.3%	
Maximum Green (s)	7.0	27.7		7.0	27.7		7.0	41.7		23.0	57.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	36.3	27.0		36.3	27.0		57.7	48.0		71.1	58.0	
Actuated g/C Ratio	0.30	0.23		0.30	0.23		0.48	0.40		0.59	0.48	
v/c Ratio	0.57	0.92		0.91	0.26		0.83	0.79		0.83	0.89	
Control Delay (s/veh)	39.3	61.1		88.7	24.3		53.5	35.5		55.3	20.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	39.3	61.1		88.7	24.3		53.5	35.5		55.3	20.1	
LOS	D	E		F	C		D	D		E	C	
Approach Delay (s/veh)		56.2			50.5			37.1			24.6	
Approach LOS		E			D			D			C	
Queue Length 50th (m)	40.5	86.4		26.8	13.4		16.2	142.7		52.8	134.8	
Queue Length 95th (m)	63.9	#122.5		#64.1	24.6		m#34.7	#168.4		m81.5	189.7	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	354	768		144	758		157	1686		397	2081	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.90		0.91	0.25		0.83	0.79		0.67	0.89	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 58 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 36.0	Intersection LOS: D

Intersection Capacity Utilization 86.7% ICU Level of Service E

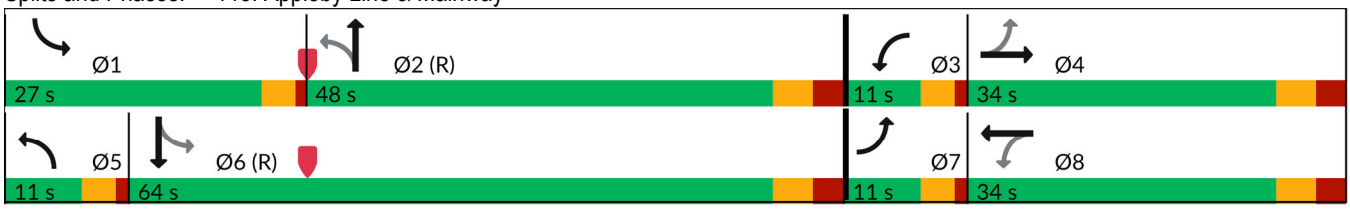
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

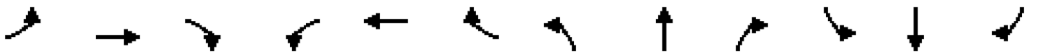


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	481	180	126	114	69	126	959	318	256	1627	149
Future Volume (vph)	193	481	180	126	114	69	126	959	318	256	1627	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1604	3190		1491	3049		1597	4110		1770	4289	
Flt Permitted	0.63	1.00		0.15	1.00		0.08	1.00		0.08	1.00	
Satd. Flow (perm)	1066	3190		233	3049		140	4110		143	4289	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	201	501	188	131	119	72	131	999	331	267	1695	155
RTOR Reduction (vph)	0	33	0	0	56	0	0	41	0	0	8	0
Lane Group Flow (vph)	201	656	0	131	135	0	131	1289	0	267	1842	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.0	27.0		34.0	27.0		55.4	48.0		69.4	58.0	
Effective Green, g (s)	34.0	27.0		34.0	27.0		55.4	48.0		69.4	58.0	
Actuated g/C Ratio	0.28	0.23		0.28	0.23		0.46	0.40		0.58	0.48	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	333	717		139	686		154	1644		318	2073	
v/s Ratio Prot	0.04	0.21		c0.05	0.04		0.05	0.31		c0.12	c0.43	
v/s Ratio Perm	0.14			c0.21			0.34			0.36		
v/c Ratio	0.60	0.92		0.94	0.20		0.85	0.78		0.84	0.89	
Uniform Delay, d1	35.7	45.4		37.8	37.7		24.7	31.5		33.6	28.1	
Progression Factor	1.00	1.00		1.00	1.00		0.99	1.07		1.35	0.55	
Incremental Delay, d2	3.1	16.3		58.7	0.1		22.5	2.3		12.4	4.3	
Delay (s)	38.8	61.7		96.5	37.9		46.9	35.8		57.7	19.8	
Level of Service	D	E		F	D		D	D		E	B	
Approach Delay (s/veh)		56.5			61.7			36.8			24.5	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	30	213	17	113	38	1077	100	88	1874	51
Future Volume (vph)	20	10	30	213	17	113	38	1077	100	88	1874	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.956			0.987			0.996	
Flt Protected		0.984			0.970		0.950			0.950		
Satd. Flow (prot)	0	1322	0	0	1708	0	1530	4193	0	1736	4362	0
Flt Permitted		0.852			0.775		0.063			0.132		
Satd. Flow (perm)	0	1144	0	0	1358	0	101	4193	0	241	4362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			21			15			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	20	10	31	217	17	115	39	1099	102	90	1912	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	349	0	39	1201	0	90	1964	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	42.0	42.0		42.0	42.0		66.0	66.0		12.0	78.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		55.0%	55.0%		10.0%	65.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		60.0	60.0		8.0	72.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		32.5			32.5		63.4	63.4		77.0	75.0	
Actuated g/C Ratio		0.27			0.27		0.53	0.53		0.64	0.63	
v/c Ratio		0.19			0.91		0.74	0.54		0.36	0.72	
Control Delay (s/veh)		27.0			68.3		87.3	28.6		8.9	8.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		27.0			68.3		87.3	28.6		8.9	8.5	
LOS		C			E		F	C		A	A	
Approach Delay (s/veh)		27.0			68.3			30.4			8.5	
Approach LOS		C			E			C			A	
Queue Length 50th (m)		9.3			76.6		11.5	125.8		5.4	76.0	
Queue Length 95th (m)		21.9			#128.9		m#16.9	142.7		m5.1	m72.2	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		348			416		53	2223		254	2728	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.18			0.84		0.74	0.54		0.35	0.72	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 21.8	Intersection LOS: C

Intersection Capacity Utilization 85.9% ICU Level of Service E

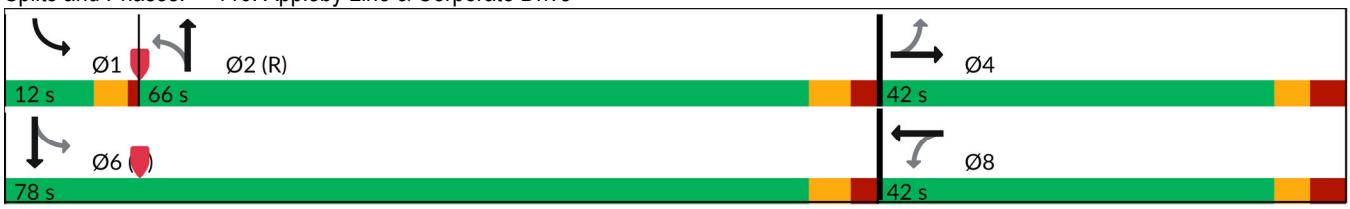
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

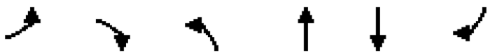
Splits and Phases: 116: Appleby Line & Corporate Drive



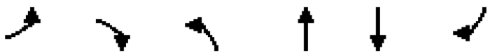
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	10	30	213	17	113	38	1077	100	88	1874	51
Future Volume (vph)	20	10	30	213	17	113	38	1077	100	88	1874	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1321			1699		1529	4194		1735	4363	
Flt Permitted		0.85			0.77		0.06	1.00		0.13	1.00	
Satd. Flow (perm)		1144			1357		102	4194		241	4363	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	20	10	31	217	17	115	39	1099	102	90	1912	52
RTOR Reduction (vph)	0	10	0	0	15	0	0	7	0	0	2	0
Lane Group Flow (vph)	0	51	0	0	334	0	39	1194	0	90	1962	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		32.5			32.5		63.4	63.4		75.0	75.0	
Effective Green, g (s)		32.5			32.5		63.4	63.4		75.0	75.0	
Actuated g/C Ratio		0.27			0.27		0.53	0.53		0.63	0.63	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		309			367		53	2215		245	2726	
v/s Ratio Prot								0.28		0.02	c0.45	
v/s Ratio Perm		0.04			c0.25		0.38			0.21		
v/c Ratio		0.16			0.91		0.74	0.54		0.37	0.72	
Uniform Delay, d1		33.4			42.3		21.8	18.7		11.1	15.3	
Progression Factor		1.00			1.00		1.36	1.45		0.95	0.52	
Incremental Delay, d2		0.3			25.4		46.0	0.6		0.1	0.2	
Delay (s)		33.6			67.8		75.7	27.8		10.6	8.1	
Level of Service		C			E		E	C		B	A	
Approach Delay (s/veh)		33.6			67.8			29.3			8.2	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	144	530	906	1594	116
Future Volume (vph)	33	144	530	906	1594	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor					1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	1719	4427	4423	0
Flt Permitted	0.950		0.062			
Satd. Flow (perm)	1805	1313	112	4427	4423	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		145			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	33	145	535	915	1610	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	145	535	915	1727	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



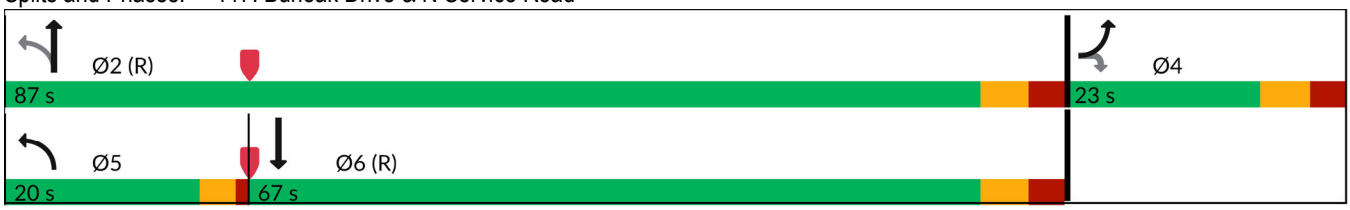
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	23.0	23.0	20.0	87.0	67.0	
Total Split (%)	20.9%	20.9%	18.2%	79.1%	60.9%	
Maximum Green (s)	16.0	16.0	16.0	80.0	60.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.3	9.3	89.7	86.7	60.0	
Actuated g/C Ratio	0.08	0.08	0.82	0.79	0.55	
v/c Ratio	0.22	0.60	1.26	0.26	0.71	
Control Delay (s/veh)	49.5	18.4	156.7	2.8	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	49.5	18.4	156.7	2.8	10.2	
LOS	D	B	F	A	B	
Approach Delay (s/veh)	24.1			59.6	10.2	
Approach LOS	C			E	B	
Queue Length 50th (m)	7.2	0.0	~139.4	12.7	59.3	
Queue Length 95th (m)	16.4	22.0	m#125.8	m15.9	m53.2	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	262	314	423	3490	2418	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.46	1.26	0.26	0.71	

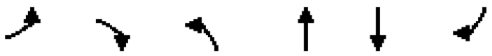
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay (s/veh): 32.3	Intersection LOS: C

Intersection Capacity Utilization 84.5%	ICU Level of Service E
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	33	144	530	906	1594	116
Future Volume (vph)	33	144	530	906	1594	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	1719	4427	4422	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1313	113	4427	4422	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	33	145	535	915	1610	117
RTOR Reduction (vph)	0	133	0	0	6	0
Lane Group Flow (vph)	33	12	535	915	1721	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.3	9.3	86.7	86.7	60.0	
Effective Green, g (s)	9.3	9.3	86.7	86.7	60.0	
Actuated g/C Ratio	0.08	0.08	0.79	0.79	0.55	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	152	111	420	3489	2412	
v/s Ratio Prot	c0.02		c0.26	0.21	0.39	
v/s Ratio Perm		0.01	c0.74			
v/c Ratio	0.22	0.11	1.27	0.26	0.71	
Uniform Delay, d1	47.0	46.5	35.6	3.1	18.6	
Progression Factor	1.00	1.00	1.27	0.84	0.50	
Incremental Delay, d2	0.7	0.4	125.0	0.0	0.9	
Delay (s)	47.7	47.0	170.2	2.6	10.2	
Level of Service	D	D	F	A	B	
Approach Delay (s/veh)	47.1			64.4	10.2	
Approach LOS	D			E	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1217	1230	864	0	0	2210
Future Volume (vph)	1217	1230	864	0	0	2210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Frt	0.959	0.850				
Flt Protected	0.965					
Satd. Flow (prot)	3243	1427	4427	0	0	4427
Flt Permitted	0.965					
Satd. Flow (perm)	3243	1427	4427	0	0	4427
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	52	137				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1309	1323	929	0	0	2376
Shared Lane Traffic (%)		37%				
Lane Group Flow (vph)	1799	833	929	0	0	2376
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

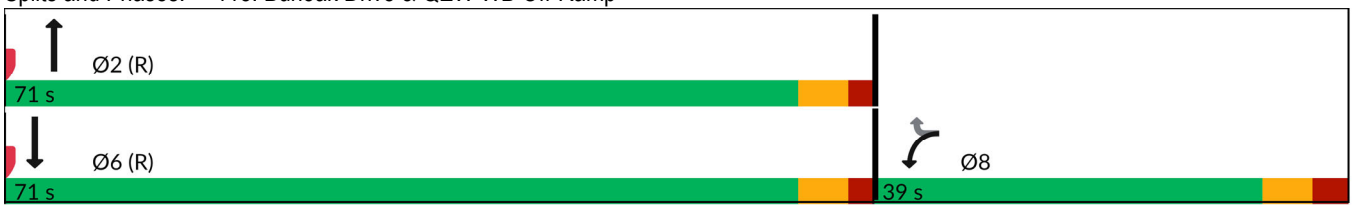


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	39.0	39.0	71.0			71.0
Total Split (%)	35.5%	35.5%	64.5%			64.5%
Maximum Green (s)	32.0	32.0	65.0			65.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
v/c Ratio	1.84	1.63	0.36			0.91
Control Delay (s/veh)	405.9	316.0	11.6			16.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	405.9	316.0	11.6			16.9
LOS	F	F	B			B
Approach Delay (s/veh)	377.4		11.6			16.9
Approach LOS	F		B			B
Queue Length 50th (m)	~330.6	~281.6	23.5			213.2
Queue Length 95th (m)	#376.8	#369.0	28.7			247.2
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	980	512	2615			2615
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.84	1.63	0.36			0.91

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.84			
Intersection Signal Delay (s/veh): 175.9		Intersection LOS: F	
Intersection Capacity Utilization 101.1%		ICU Level of Service G	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

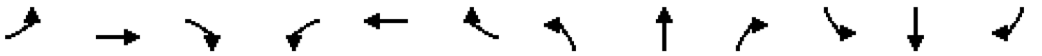
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



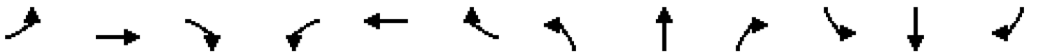


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1217	1230	864	0	0	2210
Future Volume (vph)	1217	1230	864	0	0	2210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3243	1427	4427			4427
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3243	1427	4427			4427
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1309	1323	929	0	0	2376
RTOR Reduction (vph)	37	97	0	0	0	0
Lane Group Flow (vph)	1762	736	929	0	0	2376
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0	65.0			65.0
Effective Green, g (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	943	415	2615			2615
v/s Ratio Prot	c0.54		0.21			c0.54
v/s Ratio Perm		0.52				
v/c Ratio	1.87	1.77	0.36			0.91
Uniform Delay, d1	39.0	39.0	11.7			19.9
Progression Factor	1.00	1.00	0.96			0.56
Incremental Delay, d2	395.0	357.6	0.4			5.3
Delay (s)	434.0	396.6	11.5			16.3
Level of Service	F	F	B			B
Approach Delay (s/veh)	422.1		11.5			16.3
Approach LOS	F		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	195.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	108	357	0	0	82	0	873	5	5	2139	0
Future Volume (vph)	262	108	357	0	0	82	0	873	5	5	2139	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.906	0.850			0.865		0.999				
Flt Protected	0.950											
Satd. Flow (prot)	1770	2844	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950										0.938	
Satd. Flow (perm)	1770	2844	1318	0	0	1417	0	5032	0	0	4634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192	192			126		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	282	116	384	0	0	88	0	939	5	5	2300	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	282	308	192	0	0	88	0	944	0	0	2305	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

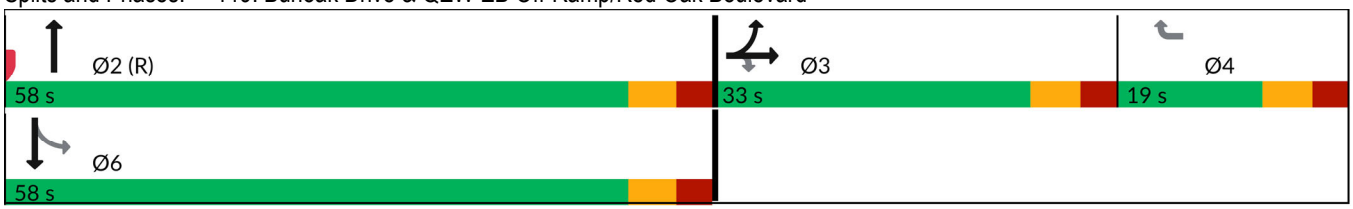


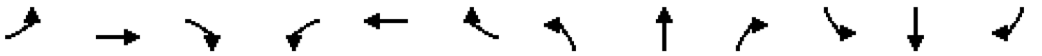
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		None	None	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	22.0	22.0	22.0			8.0		62.0			62.0	
Actuated g/C Ratio	0.20	0.20	0.20			0.07		0.56			0.56	
v/c Ratio	0.80	0.43	0.46			0.40		0.33			0.88	
Control Delay (s/veh)	58.2	15.5	8.8			8.8		14.6			25.0	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	58.2	15.5	8.8			8.8		14.6			25.0	
LOS	E	B	A			A		B			C	
Approach Delay (s/veh)		29.2			8.8			14.6			25.0	
Approach LOS		C			A			B			C	
Queue Length 50th (m)	61.0	12.5	0.0			0.0		44.7			163.5	
Queue Length 95th (m)	89.8	25.9	21.8			7.8		57.9			m149.1	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	418	818	458			266		2834			2610	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.67	0.38	0.42			0.33		0.33			0.88	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 3 (3%), Referenced to phase 2:NBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 23.1	Intersection LOS: C

Intersection Capacity Utilization 70.9% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

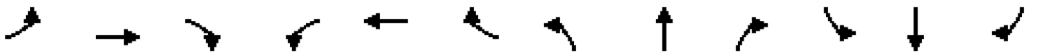




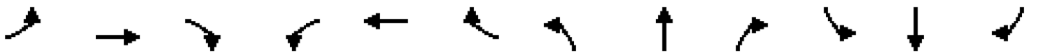
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	108	357	0	0	82	0	873	5	5	2139	0
Future Volume (vph)	262	108	357	0	0	82	0	873	5	5	2139	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1770	2845	1318			1417		5033			4940	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1770	2845	1318			1417		5033			4633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	282	116	384	0	0	88	0	939	5	5	2300	0
RTOR Reduction (vph)	0	154	154	0	0	83	0	0	0	0	0	0
Lane Group Flow (vph)	282	154	38	0	0	5	0	944	0	0	2305	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	22.0	22.0	22.0			6.4		60.6			60.6	
Effective Green, g (s)	22.0	22.0	22.0			6.4		60.6			60.6	
Actuated g/C Ratio	0.20	0.20	0.20			0.06		0.55			0.55	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	354	569	263			82		2772			2552	
v/s Ratio Prot	c0.16	0.05						0.19				
v/s Ratio Perm			0.03			c0.00					c0.50	
v/c Ratio	0.80	0.27	0.15			0.06		0.34			0.90	
Uniform Delay, d1	41.9	37.2	36.3			49.0		13.7			22.1	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.06	
Incremental Delay, d2	11.8	0.3	0.3			0.3		0.3			0.5	
Delay (s)	53.6	37.5	36.5			49.3		14.0			23.8	
Level of Service	D	D	D			D		B			C	
Approach Delay (s/veh)		43.1			49.3			14.0			23.8	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	127	50	83	12	44	155	1397	457	104	1712	39
Future Volume (vph)	51	127	50	83	12	44	155	1397	457	104	1712	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.957			0.883			0.963			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1682	0	1504	1570	0	1719	4179	0	1752	4329	0
Flt Permitted	0.719			0.338			0.060			0.061		
Satd. Flow (perm)	1198	1682	0	535	1570	0	109	4179	0	113	4329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			46			89			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	54	134	53	87	13	46	163	1471	481	109	1802	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	187	0	87	59	0	163	1952	0	109	1843	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	27.0	27.0		11.0	38.0		14.0	68.0		14.0	68.0	
Total Split (%)	22.5%	22.5%		9.2%	31.7%		11.7%	56.7%		11.7%	56.7%	
Maximum Green (s)	20.9	20.9		7.0	31.9		10.0	61.4		10.0	61.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.9	16.9		30.0	27.9		79.6	66.8		76.3	65.2	
Actuated g/C Ratio	0.14	0.14		0.25	0.23		0.66	0.56		0.64	0.54	
v/c Ratio	0.32	0.75		0.46	0.15		0.78	0.83		0.58	0.78	
Control Delay (s/veh)	50.2	64.0		42.9	14.0		33.6	17.9		39.9	15.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.2	64.0		42.9	14.0		33.6	17.9		39.9	15.4	
LOS	D	E		D	B		C	B		D	B	
Approach Delay (s/veh)		60.9			31.2			19.1			16.8	
Approach LOS		E			C			B			B	
Queue Length 50th (m)	13.3	42.4		19.5	2.7		25.8	109.3		12.6	202.4	
Queue Length 95th (m)	27.0	66.9		34.9	14.1		m28.1	m144.2		m12.9	221.4	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	208	304		190	451		215	2366		210	2352	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.62		0.46	0.13		0.76	0.83		0.52	0.78	

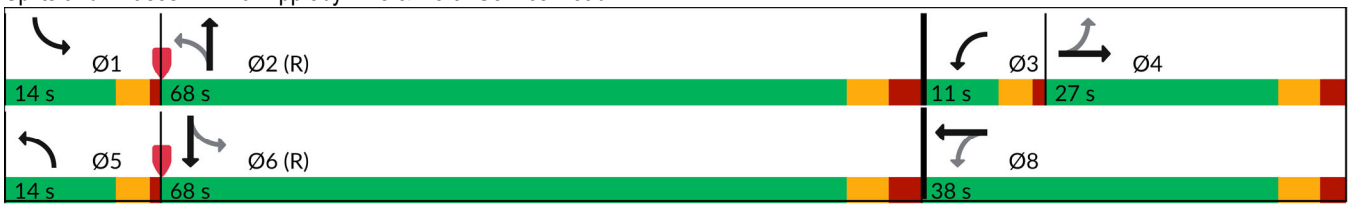
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.83	
Intersection Signal Delay (s/veh): 20.7	Intersection LOS: C

Intersection Capacity Utilization 75.9%	ICU Level of Service D
Analysis Period (min) 15	

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	127	50	83	12	44	155	1397	457	104	1712	39
Future Volume (vph)	51	127	50	83	12	44	155	1397	457	104	1712	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1683		1504	1570		1719	4179		1752	4328	
Flt Permitted	0.72	1.00		0.34	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1198	1683		535	1570		108	4179		113	4328	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	54	134	53	87	13	46	163	1471	481	109	1802	41
RTOR Reduction (vph)	0	12	0	0	35	0	0	39	0	0	1	0
Lane Group Flow (vph)	54	175	0	87	24	0	163	1913	0	109	1842	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.9	16.9		27.9	27.9		77.0	66.8		73.8	65.2	
Effective Green, g (s)	16.9	16.9		27.9	27.9		77.0	66.8		73.8	65.2	
Actuated g/C Ratio	0.14	0.14		0.23	0.23		0.64	0.56		0.62	0.54	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	168	237		180	365		206	2326		186	2351	
v/s Ratio Prot		c0.10		c0.03	0.02		c0.07	c0.46		0.04	0.43	
v/s Ratio Perm	0.05			0.08			0.44			0.32		
v/c Ratio	0.32	0.74		0.48	0.06		0.79	0.82		0.59	0.78	
Uniform Delay, d1	46.4	49.4		38.0	35.9		30.4	21.7		18.9	21.8	
Progression Factor	1.00	1.00		1.00	1.00		1.21	0.79		1.89	0.62	
Incremental Delay, d2	1.1	11.4		2.0	0.1		1.9	0.3		2.0	1.2	
Delay (s)	47.5	60.8		40.0	36.0		38.8	17.5		37.7	14.7	
Level of Service	D	E		D	D		D	B		D	B	
Approach Delay (s/veh)		57.8			38.4			19.2			16.0	
Approach LOS		E			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	498	568	2191	0	0	1772
Future Volume (vph)	498	568	2191	0	0	1772
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	1495	4385	0	0	4302
Flt Permitted	0.950					
Satd. Flow (perm)	3183	1495	4385	0	0	4302
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	547	624	2408	0	0	1947
Shared Lane Traffic (%)						
Lane Group Flow (vph)	547	624	2408	0	0	1947
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

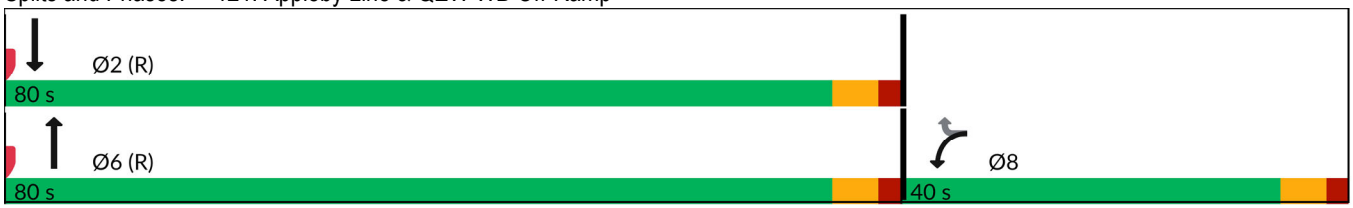


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
v/c Ratio	0.61	1.46	0.89			0.73
Control Delay (s/veh)	40.6	253.0	18.3			5.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	40.6	253.0	18.3			5.0
LOS	D	F	B			A
Approach Delay (s/veh)	153.8		18.3			5.0
Approach LOS	F		B			A
Queue Length 50th (m)	64.8	~224.6	139.9			23.4
Queue Length 95th (m)	85.2	#302.2	190.5			40.7
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	901	427	2704			2652
Starvation Cap Reductn	0	0	0			4
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.61	1.46	0.89			0.74

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.46			
Intersection Signal Delay (s/veh): 42.3		Intersection LOS: D	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

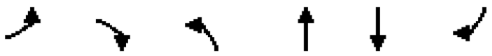
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



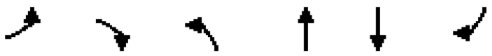


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	498	568	2191	0	0	1772
Future Volume (vph)	498	568	2191	0	0	1772
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	1495	4385			4302
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	1495	4385			4302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	547	624	2408	0	0	1947
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	547	620	2408	0	0	1947
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	74.0			74.0
Effective Green, g (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	901	423	2704			2652
v/s Ratio Prot	0.17		c0.55			0.45
v/s Ratio Perm		c0.41				
v/c Ratio	0.61	1.47	0.89			0.73
Uniform Delay, d1	37.2	43.0	19.6			16.1
Progression Factor	1.00	1.00	0.76			0.23
Incremental Delay, d2	1.2	222.6	2.9			1.2
Delay (s)	38.4	265.6	17.8			4.9
Level of Service	D	F	B			A
Approach Delay (s/veh)	159.5		17.8			4.9
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	836	462	0	1785	1783	0
Future Volume (vph)	836	462	0	1785	1783	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4302	4302	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4302	4302	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		13				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	929	513	0	1983	1981	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	929	513	0	1983	1981	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

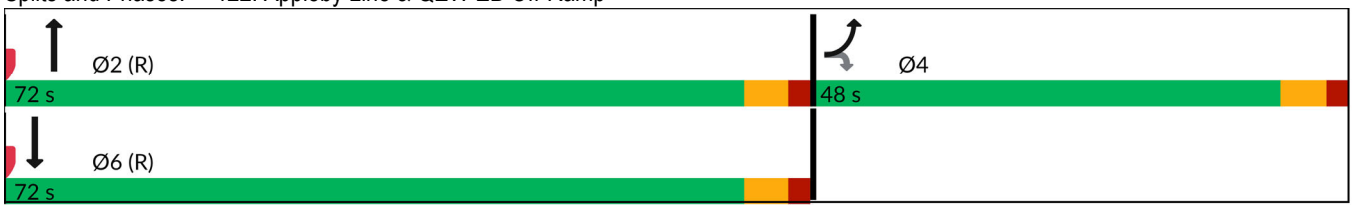


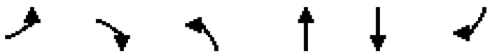
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	38.7	38.7		69.3	69.3	
Actuated g/C Ratio	0.32	0.32		0.58	0.58	
v/c Ratio	0.86	0.58		0.80	0.80	
Control Delay (s/veh)	47.2	35.5		11.4	20.9	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	47.2	35.5		11.4	20.9	
LOS	D	D		B	C	
Approach Delay (s/veh)	43.0			11.4	20.9	
Approach LOS	D			B	C	
Queue Length 50th (m)	112.2	59.2		53.6	132.3	
Queue Length 95th (m)	137.2	78.0		61.7	160.0	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1167	955		2483	2483	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.80	0.54		0.80	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 23.3		Intersection LOS: C	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

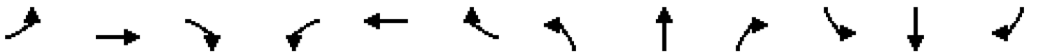




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	836	462	0	1785	1783	0
Future Volume (vph)	836	462	0	1785	1783	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4302	4302	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4302	4302	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	929	513	0	1983	1981	0
RTOR Reduction (vph)	0	9	0	0	0	0
Lane Group Flow (vph)	929	504	0	1983	1981	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	38.7	38.7		69.3	69.3	
Effective Green, g (s)	38.7	38.7		69.3	69.3	
Actuated g/C Ratio	0.32	0.32		0.58	0.58	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1075	873		2484	2484	
v/s Ratio Prot	c0.28			c0.46	0.46	
v/s Ratio Perm		0.19				
v/c Ratio	0.86	0.58		0.80	0.80	
Uniform Delay, d1	38.2	33.8		19.9	19.9	
Progression Factor	1.00	1.00		0.45	0.91	
Incremental Delay, d2	7.4	0.9		1.9	1.9	
Delay (s)	45.6	34.8		10.9	20.0	
Level of Service	D	C		B	B	
Approach Delay (s/veh)	41.7			10.9	20.0	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	471	67	100	140	239	81	1262	370	402	712	263
Future Volume (vph)	182	471	67	100	140	239	81	1262	370	402	712	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99			0.98
Frt		0.981			0.905				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3259	0	1656	2891	0	1687	4427	1568	1770	4302	1417
Flt Permitted	0.262			0.293			0.317			0.084		
Satd. Flow (perm)	421	3259	0	510	2891	0	562	4427	1547	156	4302	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			254				216			280
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	194	501	71	106	149	254	86	1343	394	428	757	280
Shared Lane Traffic (%)												
Lane Group Flow (vph)	194	572	0	106	403	0	86	1343	394	428	757	280
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



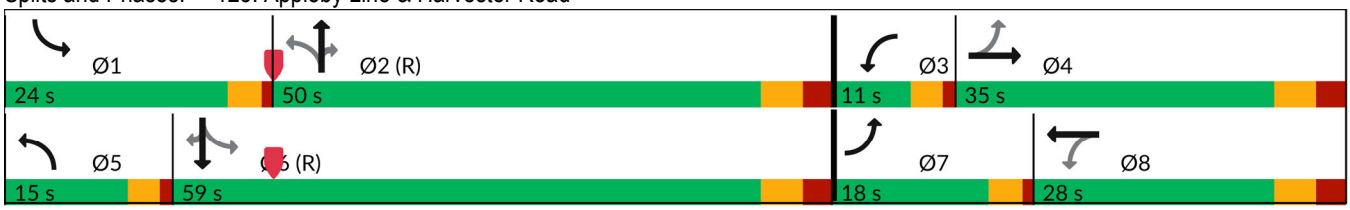
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.6		7.0	21.6		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	38.5	25.1		28.1	18.7		54.3	43.7	43.7	73.5	61.1	61.1
Actuated g/C Ratio	0.32	0.21		0.23	0.16		0.45	0.36	0.36	0.61	0.51	0.51
v/c Ratio	0.75	0.83		0.57	0.61		0.26	0.83	0.56	1.04	0.35	0.33
Control Delay (s/veh)	50.0	55.0		42.9	20.8		12.0	27.0	10.5	84.1	23.9	7.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.0	55.0		42.9	20.8		12.0	27.0	10.5	84.1	23.9	7.4
LOS	D	E		D	C		B	C	B	F	C	A
Approach Delay (s/veh)		53.8			25.4			22.8			38.4	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	41.7	72.9		20.0	18.2		8.6	76.5	22.8	~103.6	55.9	7.0
Queue Length 95th (m)	#67.4	92.4		34.2	35.2		m9.5	m77.1	m22.5	m#173.0	75.2	m25.7
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	264	785		186	728		370	1612	700	411	2189	847
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.73		0.57	0.55		0.23	0.83	0.56	1.04	0.35	0.33

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay (s/veh): 33.3	Intersection LOS: C

Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road

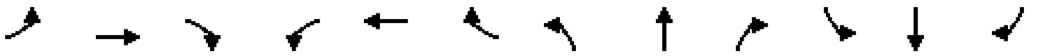


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	471	67	100	140	239	81	1262	370	402	712	263
Future Volume (vph)	182	471	67	100	140	239	81	1262	370	402	712	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1529	3260		1656	2893		1686	4427	1547	1770	4302	1395
Flt Permitted	0.26	1.00		0.29	1.00		0.32	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	422	3260		511	2893		562	4427	1547	157	4302	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	194	501	71	106	149	254	86	1343	394	428	757	280
RTOR Reduction (vph)	0	9	0	0	214	0	0	0	138	0	0	140
Lane Group Flow (vph)	194	563	0	106	189	0	86	1343	256	428	757	140
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	36.2	25.2		25.7	18.7		50.5	43.6	43.6	71.1	60.2	60.2
Effective Green, g (s)	36.2	25.2		25.7	18.7		50.5	43.6	43.6	71.1	60.2	60.2
Actuated g/C Ratio	0.30	0.21		0.21	0.16		0.42	0.36	0.36	0.59	0.50	0.50
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	251	684		176	450		301	1608	562	408	2158	699
v/s Ratio Prot	c0.09	c0.17		0.04	0.07		0.02	0.30		c0.21	0.18	
v/s Ratio Perm	0.15			0.09			0.10		0.17	c0.42		0.10
v/c Ratio	0.77	0.82		0.60	0.42		0.29	0.84	0.46	1.05	0.35	0.20
Uniform Delay, d1	34.2	45.3		39.8	45.7		21.2	34.9	29.2	37.8	18.1	16.6
Progression Factor	1.00	1.00		1.00	1.00		0.96	0.72	0.71	1.06	1.25	2.86
Incremental Delay, d2	13.7	7.9		5.7	0.6		0.2	1.7	0.8	49.4	0.3	0.4
Delay (s)	47.9	53.2		45.5	46.4		20.5	26.9	21.5	89.5	22.9	47.9
Level of Service	D	D		D	D		C	C	C	F	C	D
Approach Delay (s/veh)		51.8			46.2			25.4			47.1	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	623	169	255	108	71	181	215	1184	133	235	1175	152
Future Volume (vph)	623	169	255	108	71	181	215	1184	133	235	1175	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	4471	1538
Flt Permitted	0.950			0.645			0.105			0.099		
Satd. Flow (perm)	3389	1776	1513	1081	1610	1395	197	3539	1403	165	4471	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			257			153			150			160
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	656	178	268	114	75	191	226	1246	140	247	1237	160
Shared Lane Traffic (%)												
Lane Group Flow (vph)	656	178	268	114	75	191	226	1246	140	247	1237	160
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



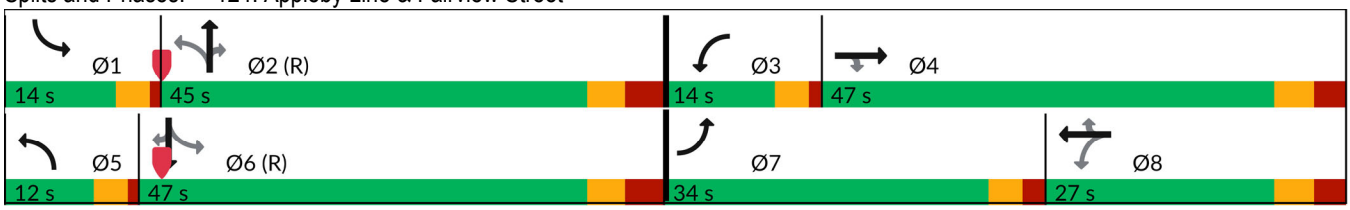
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	34.0	47.0	47.0	14.0	27.0	27.0	12.0	45.0	45.0	14.0	47.0	47.0
Total Split (%)	28.3%	39.2%	39.2%	11.7%	22.5%	22.5%	10.0%	37.5%	37.5%	11.7%	39.2%	39.2%
Maximum Green (s)	29.0	40.5	40.5	10.0	20.5	20.5	8.0	38.2	38.2	10.0	40.2	40.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	26.8	30.2	30.2	23.8	11.8	11.8	59.7	38.2	38.2	64.0	40.4	40.4
Actuated g/C Ratio	0.22	0.25	0.25	0.20	0.10	0.10	0.50	0.32	0.32	0.53	0.34	0.34
v/c Ratio	0.86	0.40	0.47	0.45	0.47	0.69	0.66	1.11	0.26	0.74	0.82	0.26
Control Delay (s/veh)	57.2	39.0	7.4	31.4	60.0	26.7	36.0	99.7	5.2	41.4	48.8	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.2	39.0	7.4	31.4	60.0	26.7	36.0	99.7	5.2	41.4	48.8	13.2
LOS	E	D	A	C	E	C	D	F	A	D	D	B
Approach Delay (s/veh)		42.1			34.7			82.5			44.2	
Approach LOS		D			C			F			D	
Queue Length 50th (m)	81.5	38.7	2.2	20.1	20.4	9.9	34.7	~188.0	0.0	47.3	129.0	7.5
Queue Length 95th (m)	103.7	55.8	22.5	30.9	36.3	35.8	#94.4	#232.5	14.0	m#121.5	148.0	m25.0
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	821	599	680	261	275	365	345	1126	548	334	1503	615
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.80	0.30	0.39	0.44	0.27	0.52	0.66	1.11	0.26	0.74	0.82	0.26

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay (s/veh): 56.0	Intersection LOS: E

Intersection Capacity Utilization 90.6%	ICU Level of Service E
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

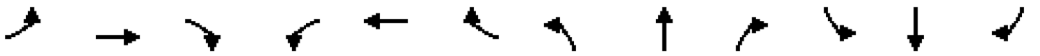
Splits and Phases: 124: Appleby Line & Fairview Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	623	169	255	108	71	181	215	1184	133	235	1175	152
Future Volume (vph)	623	169	255	108	71	181	215	1184	133	235	1175	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	4471	1513
Flt Permitted	0.95	1.00	1.00	0.64	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1082	1610	1395	197	3539	1403	165	4471	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	656	178	268	114	75	191	226	1246	140	247	1237	160
RTOR Reduction (vph)	0	0	192	0	0	138	0	0	96	0	0	106
Lane Group Flow (vph)	656	178	76	114	75	53	226	1246	44	247	1237	54
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	26.8	30.2	30.2	21.4	11.9	11.9	56.8	38.1	38.1	61.2	40.3	40.3
Effective Green, g (s)	26.8	30.2	30.2	21.4	11.9	11.9	56.8	38.1	38.1	61.2	40.3	40.3
Actuated g/C Ratio	0.22	0.25	0.25	0.18	0.10	0.10	0.47	0.32	0.32	0.51	0.34	0.34
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	759	446	380	233	159	138	341	1123	445	331	1501	508
v/s Ratio Prot	c0.19	0.10		0.04	0.05		0.10	c0.35		c0.13	0.28	
v/s Ratio Perm			0.05	c0.05		0.04	0.21		0.03	0.25		0.04
v/c Ratio	0.86	0.40	0.20	0.49	0.47	0.39	0.66	1.11	0.10	0.75	0.82	0.11
Uniform Delay, d1	44.8	37.4	35.4	43.6	51.1	50.6	25.9	41.0	28.9	31.2	36.6	27.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.94	1.18	2.77
Incremental Delay, d2	10.1	0.6	0.3	1.6	2.2	1.8	4.8	62.2	0.4	8.7	5.2	0.4
Delay (s)	54.9	37.9	35.6	45.2	53.3	52.4	30.7	103.1	29.3	38.1	48.5	76.4
Level of Service	D	D	D	D	D	D	C	F	C	D	D	E
Approach Delay (s/veh)		47.5			50.4			86.6			49.7	
Approach LOS		D			D			F			D	

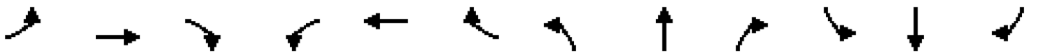
Intersection Summary			
HCM 2000 Control Delay (s/veh)	61.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	955	0	0	278	22	0	0	0	5	0	20
Future Volume (vph)	61	955	0	0	278	22	0	0	0	5	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989						0.890	
Flt Protected		0.997									0.991	
Satd. Flow (prot)	0	3529	0	0	3500	0	0	1863	0	0	1643	0
Flt Permitted		0.997									0.991	
Satd. Flow (perm)	0	3529	0	0	3500	0	0	1863	0	0	1643	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		643.2			110.8			96.8			111.9	
Travel Time (s)		38.6			6.6			8.7			10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	1038	0	0	302	24	0	0	0	5	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1104	0	0	326	0	0	0	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.9%		ICU Level of Service A	
Analysis Period (min) 15			

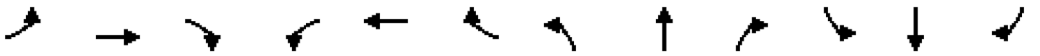


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	955	0	0	278	22	0	0	0	5	0	20
Future Volume (Veh/h)	61	955	0	0	278	22	0	0	0	5	0	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	1038	0	0	302	24	0	0	0	5	0	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	326			1038			1343	1496	519	965	1484	163
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	326			1038			1343	1496	519	965	1484	163
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	100	100	98	100	97
cM capacity (veh/h)	1230			665			103	115	502	201	117	853

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	585	519	151	175	0	27
Volume Left	66	0	0	0	0	5
Volume Right	0	0	0	24	0	22
cSH	1230	1700	665	1700	1700	533
Volume to Capacity	0.05	0.31	0.00	0.10	0.00	0.05
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0	1.3
Control Delay (s/veh)	1.5	0.0	0.0	0.0	0.0	12.1
Lane LOS	A				A	B
Approach Delay (s/veh)	0.8		0.0		0.0	12.1
Approach LOS					A	B

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	49.9%	ICU Level of Service		A
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Future Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3361	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			357			152			202			186
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	246	1459	499	450	677	152	251	628	374	295	928	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	1459	499	450	677	152	251	628	374	295	928	186
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	20.0	61.0	61.0	25.0	64.0	64.0	24.0	30.0	30.0	24.0	32.0	32.0
Total Split (%)	14.1%	43.0%	43.0%	17.6%	45.1%	45.1%	16.9%	21.1%	21.1%	16.9%	22.5%	22.5%
Maximum Green (s)	15.0	53.6	53.6	20.0	56.6	56.6	19.0	22.6	22.6	19.0	24.6	24.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.7	50.1	50.1	20.0	55.5	55.5	17.0	29.0	29.0	18.0	30.0	30.0
Actuated g/C Ratio	0.10	0.35	0.35	0.14	0.39	0.39	0.12	0.20	0.20	0.13	0.21	0.21
v/c Ratio	0.71	0.81	0.65	1.00	0.36	0.23	0.62	0.63	0.81	0.69	0.88	0.40
Control Delay (s/veh)	73.4	45.7	14.0	101.5	31.0	4.6	66.3	56.0	39.4	68.2	64.8	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.4	45.7	14.0	101.5	31.0	4.6	66.3	56.0	39.4	68.2	64.8	9.3
LOS	E	D	B	F	C	A	E	E	D	E	E	A
Approach Delay (s/veh)		41.6			52.7			53.1			58.2	
Approach LOS		D			D			D			E	
Queue Length 50th (m)	37.8	142.7	33.4	73.9	53.9	0.0	37.8	67.6	55.2	44.3	103.0	0.0
Queue Length 95th (m)	53.5	158.6	73.4	#113.3	64.3	14.9	52.7	84.7	#118.4	61.3	#145.6	22.6
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	355	1919	800	452	1982	690	450	991	464	452	1054	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.76	0.62	1.00	0.34	0.22	0.56	0.63	0.81	0.65	0.88	0.40

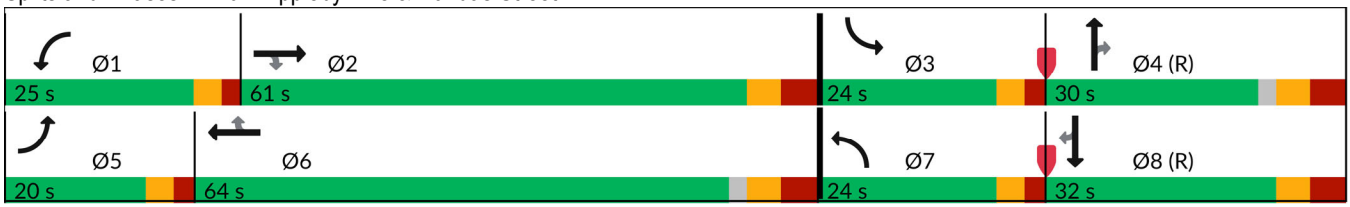
Intersection Summary			
Area Type:	Other		
Cycle Length: 142			
Actuated Cycle Length: 142			
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay (s/veh): 50.1		Intersection LOS: D	

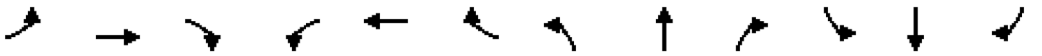
Intersection Capacity Utilization 101.5% ICU Level of Service G

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Future Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	246	1459	499	450	677	152	251	628	374	295	928	186
RTOR Reduction (vph)	0	0	231	0	0	93	0	0	161	0	0	147
Lane Group Flow (vph)	246	1459	268	450	677	59	251	628	213	295	928	39
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.7	50.2	50.2	20.0	55.5	55.5	17.0	29.0	29.0	18.0	30.0	30.0
Effective Green, g (s)	14.7	50.2	50.2	20.0	55.5	55.5	17.0	29.0	29.0	18.0	30.0	30.0
Actuated g/C Ratio	0.10	0.35	0.35	0.14	0.39	0.39	0.12	0.20	0.20	0.13	0.21	0.21
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	348	1797	541	452	1877	569	403	990	303	426	1053	323
v/s Ratio Prot	0.07	c0.29		c0.14	0.14		0.07	0.13		c0.09	c0.19	
v/s Ratio Perm			0.18			0.04			0.14			0.03
v/c Ratio	0.71	0.81	0.50	1.00	0.36	0.10	0.62	0.63	0.70	0.69	0.88	0.12
Uniform Delay, d1	61.6	41.6	36.0	61.0	30.7	27.5	59.5	51.7	52.5	59.4	54.3	45.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.0	2.9	0.7	41.0	0.1	0.1	4.2	3.1	12.9	6.1	10.6	0.8
Delay (s)	69.6	44.5	36.7	102.0	30.8	27.5	63.7	54.7	65.4	65.4	64.9	46.1
Level of Service	E	D	D	F	C	C	E	D	E	E	E	D
Approach Delay (s/veh)		45.5			55.5			59.7			62.5	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	142.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Future Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99				0.98	1.00	1.00			1.00	
Frt		0.951				0.850		0.978			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3338	0	1736	4471	1553	3400	4095	0	1752	4356	0
Flt Permitted	0.453			0.125			0.950			0.099		
Satd. Flow (perm)	816	3338	0	228	4471	1521	3396	4095	0	183	4356	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65				318		24			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	201	820	392	281	393	334	226	1046	184	474	1719	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	1212	0	281	393	334	226	1230	0	474	1781	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



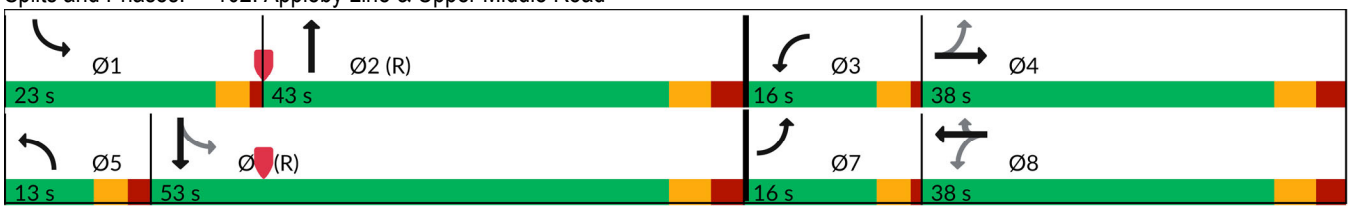
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	38.0		16.0	38.0	38.0	13.0	43.0		23.0	53.0	
Total Split (%)	13.3%	31.7%		13.3%	31.7%	31.7%	10.8%	35.8%		19.2%	44.2%	
Maximum Green (s)	12.0	31.6		12.0	31.6	31.6	8.0	36.5		19.0	46.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	45.6	31.6		46.4	32.0	32.0	8.0	36.5		62.0	46.5	
Actuated g/C Ratio	0.38	0.26		0.39	0.27	0.27	0.07	0.30		0.52	0.39	
v/c Ratio	0.51	1.31		1.18	0.33	0.52	1.00	0.97		1.39	1.05	
Control Delay (s/veh)	28.5	181.6		149.2	36.5	9.3	108.3	83.8		220.3	73.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.5	181.6		149.2	36.5	9.3	108.3	83.8		220.3	73.6	
LOS	C	F		F	D	A	F	F		F	E	
Approach Delay (s/veh)		159.8			58.9			87.6			104.5	
Approach LOS		F			E			F			F	
Queue Length 50th (m)	33.5	~199.2		~68.5	29.8	0.5	31.2	142.4		~142.7	~206.9	
Queue Length 95th (m)	52.7	#244.0		m#120.5	m40.4	m20.4	m#57.6	#177.5		#211.8	#243.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	403	926		239	1193	638	226	1262		342	1690	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.50	1.31		1.18	0.33	0.52	1.00	0.97		1.39	1.05	

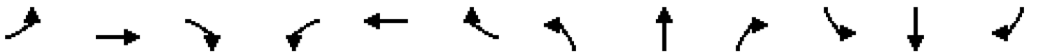
Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.39			
Intersection Signal Delay (s/veh): 105.7		Intersection LOS: F	

Intersection Capacity Utilization 110.9%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



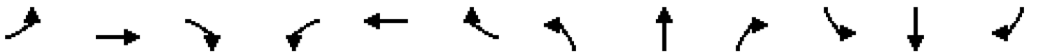


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Future Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	3340		1736	4471	1521	3400	4093		1752	4355	
Flt Permitted	0.45	1.00		0.13	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	819	3340		228	4471	1521	3400	4093		182	4355	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	201	820	392	281	393	334	226	1046	184	474	1719	62
RTOR Reduction (vph)	0	48	0	0	0	233	0	17	0	0	2	0
Lane Group Flow (vph)	201	1164	0	281	393	101	226	1213	0	474	1779	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	43.2	31.6		44.0	32.0	32.0	8.0	36.5		59.5	46.5	
Effective Green, g (s)	43.2	31.6		44.0	32.0	32.0	8.0	36.5		59.5	46.5	
Actuated g/C Ratio	0.36	0.26		0.37	0.27	0.27	0.07	0.30		0.50	0.39	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	381	879		234	1192	405	226	1244		338	1687	
v/s Ratio Prot	0.05	c0.35		c0.12	0.09		0.07	0.30		c0.22	0.41	
v/s Ratio Perm	0.14			0.32		0.07				c0.47		
v/c Ratio	0.53	1.32		1.20	0.33	0.25	1.00	0.98		1.40	1.05	
Uniform Delay, d1	27.9	44.2		32.1	35.4	34.6	56.0	41.3		36.9	36.8	
Progression Factor	1.00	1.00		1.43	1.00	1.33	0.93	1.65		1.00	1.00	
Incremental Delay, d2	1.3	153.9		121.4	0.1	0.3	55.5	18.5		198.0	37.8	
Delay (s)	29.2	198.1		167.5	35.6	46.3	107.5	86.8		234.9	74.6	
Level of Service	C	F		F	D	D	F	F		F	E	
Approach Delay (s/veh)		174.1			75.9			90.0			108.3	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	113.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Future Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.973							0.850		0.905	
Flt Protected	0.950			0.950				0.950			0.985	
Satd. Flow (prot)	1805	4286	0	1805	4385	0	0	1752	1615	0	1563	0
Flt Permitted	0.234			0.056				0.740			0.890	
Satd. Flow (perm)	440	4286	0	106	4385	0	0	1358	1585	0	1411	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48							136		64	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	8	1725	371	64	1013	0	278	0	136	8	0	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	2096	0	64	1013	0	0	278	136	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	65.0	65.0		9.0	78.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	68.8	68.8		80.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.67	0.65			0.24	0.24		0.24	
v/c Ratio	0.03	0.85		0.37	0.36			0.85	0.28		0.07	
Control Delay (s/veh)	14.8	21.8		13.0	9.4			67.2	7.6		0.3	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	14.8	21.8		13.0	9.4			67.2	7.6		0.3	
LOS	B	C		B	A			E	A		A	
Approach Delay (s/veh)		21.8			9.7			47.6			0.3	
Approach LOS		C			A			D			A	
Queue Length 50th (m)	0.8	118.9		6.0	50.4			66.1	0.0		0.0	
Queue Length 95th (m)	m1.1	m94.0		m7.7	m44.3			#83.0	9.8		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	252	2476		198	2850			328	486		389	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.03	0.85		0.32	0.36			0.85	0.28		0.07	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 64 (53%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 21.0		Intersection LOS: C	

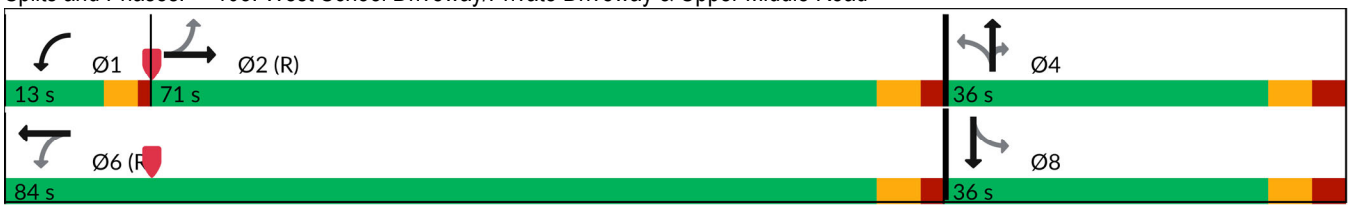
Intersection Capacity Utilization 95.7%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Future Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	*0.80		1.00	*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1788	4288		1805	4385			1744	1585		1562	
Flt Permitted	0.23	1.00		0.06	1.00			0.74	1.00		0.89	
Satd. Flow (perm)	440	4288		106	4385			1358	1585		1411	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	8	1725	371	64	1013	0	278	0	136	8	0	19
RTOR Reduction (vph)	0	21	0	0	0	0	0	0	103	0	20	0
Lane Group Flow (vph)	8	2075	0	64	1013	0	0	278	33	0	7	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Effective Green, g (s)	68.0	68.0		78.0	78.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.57	0.57		0.65	0.65			0.24	0.24		0.24	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	249	2429		153	2850			328	383		340	
v/s Ratio Prot		c0.48		0.02	c0.23							
v/s Ratio Perm	0.02			0.25				c0.20	0.02		0.00	
v/c Ratio	0.03	0.85		0.42	0.36			0.85	0.09		0.02	
Uniform Delay, d1	11.5	21.8		19.3	9.6			43.4	35.2		34.7	
Progression Factor	1.15	0.93		0.90	0.95			1.00	1.00		1.00	
Incremental Delay, d2	0.1	1.7		1.5	0.3			22.9	0.4		0.1	
Delay (s)	13.3	21.9		19.0	9.4			66.3	35.7		34.8	
Level of Service	B	C		B	A			E	D		C	
Approach Delay (s/veh)		21.9			9.9			56.2			34.8	
Approach LOS		C			A			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1249	183	284	794	52	210
Future Volume (vph)	1249	183	284	794	52	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.981					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4354	0	1787	4385	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4354	0	1787	4385	1805	1615
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	1759	258	400	1118	73	296
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2017	0	400	1118	73	296
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

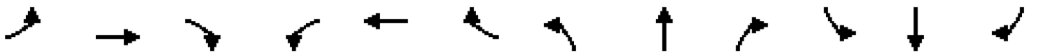
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1249	183	284	794	52	210
Future Volume (Veh/h)	1249	183	284	794	52	210
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	1759	258	400	1118	73	296
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.64		0.64	0.64
vC, conflicting volume			2029		3073	727
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			658		2281	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			33		0	57
cM capacity (veh/h)			594		7	695

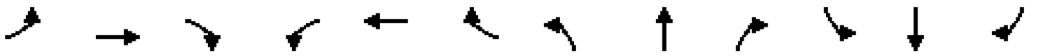
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	704	704	610	400	373	373	373	73	296
Volume Left	0	0	0	400	0	0	0	73	0
Volume Right	0	0	258	0	0	0	0	0	296
cSH	1700	1700	1700	594	1700	1700	1700	7	695
Volume to Capacity	0.41	0.41	0.36	0.67	0.22	0.22	0.22	10.21	0.43
Queue Length 95th (m)	0.0	0.0	0.0	40.9	0.0	0.0	0.0	Err	17.1
Control Delay (s/veh)	0.0	0.0	0.0	22.7	0.0	0.0	0.0	Err	14.0
Lane LOS				C				F	B
Approach Delay (s/veh)	0.0			6.0				1989.3	
Approach LOS								F	

Intersection Summary				
Average Delay	190.4			
Intersection Capacity Utilization	57.4%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1272	18	0	790	86	22	0	1	102	0	260
Future Volume (vph)	169	1272	18	0	790	86	22	0	1	102	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.998			0.985			0.995			0.903	
Flt Protected	0.950							0.954			0.986	
Satd. Flow (prot)	1752	4462	0	0	4357	0	0	1768	0	0	1668	0
Flt Permitted	0.950							0.954			0.986	
Satd. Flow (perm)	1752	4462	0	0	4357	0	0	1768	0	0	1668	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			140.7			285.4	
Travel Time (s)		7.1			17.4			12.7			25.7	
Confl. Peds. (#/hr)	29					29						1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	222	1674	24	0	1039	113	29	0	1	134	0	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	1698	0	0	1152	0	0	30	0	0	476	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

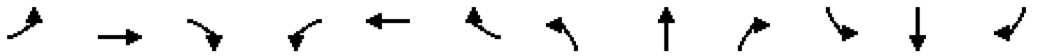
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 72.3%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	1272	18	0	790	86	22	0	1	102	0	260
Future Volume (Veh/h)	169	1272	18	0	790	86	22	0	1	102	0	260
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	222	1674	24	0	1039	113	29	0	1	134	0	342
Pedestrians		1									29	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked												
vC, conflicting volume	1181			1698			2819	3311	570	2128	3267	433
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1181			1698			2819	3311	570	2128	3267	433
tC, single (s)	4.2			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	61			100			0	100	100	0	100	39
cM capacity (veh/h)	567			371			2	5	465	19	5	557

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	222	670	670	359	260	520	373	30	476
Volume Left	222	0	0	0	0	0	0	29	134
Volume Right	0	0	0	24	0	0	113	1	342
cSH	567	1700	1700	1700	371	1700	1700	2	63
Volume to Capacity	0.39	0.39	0.39	0.21	0.00	0.31	0.22	13.42	7.57
Queue Length 95th (m)	14.8	0.0	0.0	0.0	0.0	0.0	0.0	Err	Err
Control Delay (s/veh)	15.4	0.0	0.0	0.0	0.0	0.0	0.0	Err	Err
Lane LOS	C							F	F
Approach Delay (s/veh)	1.8				0.0			Err	Err
Approach LOS								F	F

Intersection Summary				
Average Delay	1415.0			
Intersection Capacity Utilization	72.3%	ICU Level of Service		C
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Future Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				0.98						0.98	
Frt		0.984			0.960			0.988			0.950	
Flt Protected	0.950							0.958			0.970	
Satd. Flow (prot)	1703	4438	0	0	4152	0	0	1763	0	0	1713	0
Flt Permitted	0.215				0.936			0.627			0.778	
Satd. Flow (perm)	380	4438	0	0	3886	0	0	1154	0	0	1349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			93			5			28	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			133.0			244.6	
Travel Time (s)		17.4			14.7			12.0			22.0	
Confl. Peds. (#/hr)	24					24				16		6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	332	1171	144	2	593	220	62	2	6	631	7	371
Shared Lane Traffic (%)												
Lane Group Flow (vph)	332	1315	0	0	815	0	0	70	0	0	1009	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



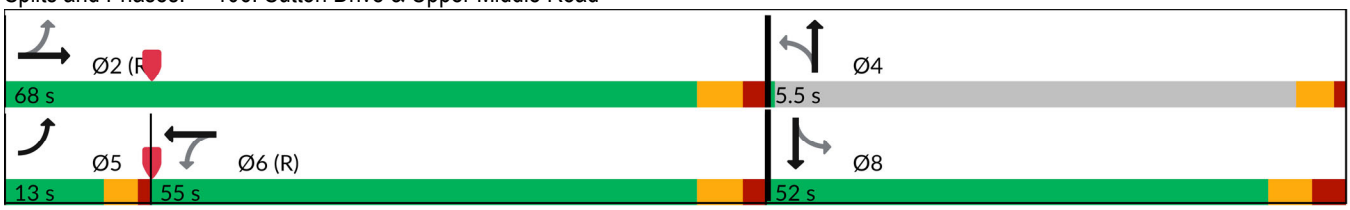
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		8.0	8.0		5.0	5.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		31.0	31.0		22.5	22.5		34.0	34.0	
Total Split (s)	13.0	68.0		55.0	55.0		5.5	5.5		52.0	52.0	
Total Split (%)	10.8%	56.7%		45.8%	45.8%		4.6%	4.6%		43.3%	43.3%	
Maximum Green (s)	9.0	62.0		49.0	49.0		1.0	1.0		45.0	45.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.5	3.5		4.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	1.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	6.0			6.0			4.5			7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		18.0		18.0	18.0		11.0	11.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	64.0	62.0			49.0			47.5			45.0	
Actuated g/C Ratio	0.53	0.52			0.41			0.40			0.38	
v/c Ratio	1.10	0.57			0.50			0.15			1.93	
Control Delay (s/veh)	100.5	10.2			24.3			22.8			449.7	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	100.5	10.2			24.3			22.8			449.7	
LOS	F	B			C			C			F	
Approach Delay (s/veh)		28.4			24.3			22.8			449.7	
Approach LOS		C			C			C			F	
Queue Length 50th (m)	~46.9	29.7			55.4			10.3			~390.5	
Queue Length 95th (m)	m#61.1	42.7			63.8			19.5			#432.6	
Internal Link Dist (m)		266.7			220.7			109.0			220.6	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	301	2303			1641			459			523	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.10	0.57			0.50			0.15			1.93	

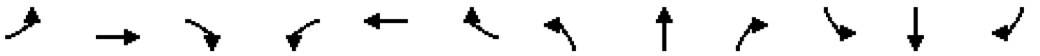
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 110 (92%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.93	
Intersection Signal Delay (s/veh): 147.4	Intersection LOS: F

Intersection Capacity Utilization 105.7%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: Sutton Drive & Upper Middle Road

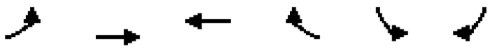




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Future Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			4.5			7.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.98			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			0.98	
Frt	1.00	0.98			0.96			0.99			0.95	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1699	4436			4149			1763			1683	
Flt Permitted	0.21	1.00			0.94			0.63			0.78	
Satd. Flow (perm)	384	4436			3886			1155			1349	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	332	1171	144	2	593	220	62	2	6	631	7	371
RTOR Reduction (vph)	0	11	0	0	55	0	0	3	0	0	18	0
Lane Group Flow (vph)	332	1304	0	0	760	0	0	67	0	0	992	0
Confl. Peds. (#/hr)	24					24				16		6
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	62.0	62.0			49.0			47.5			45.0	
Effective Green, g (s)	62.0	62.0			49.0			47.5			45.0	
Actuated g/C Ratio	0.52	0.52			0.41			0.40			0.38	
Clearance Time (s)	4.0	6.0			6.0			4.5			7.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	297	2291			1586			457			505	
v/s Ratio Prot	c0.08	0.29										
v/s Ratio Perm	c0.49				0.20			0.06			c0.73	
v/c Ratio	1.12	0.57			0.48			0.15			1.96	
Uniform Delay, d1	24.3	19.9			26.1			23.2			37.5	
Progression Factor	1.04	0.47			1.00			1.00			1.00	
Incremental Delay, d2	82.9	0.8			1.0			0.1			440.7	
Delay (s)	108.3	10.2			27.2			23.4			478.2	
Level of Service	F	B			C			C			F	
Approach Delay (s/veh)		30.0			27.2			23.4			478.2	
Approach LOS		C			C			C			F	

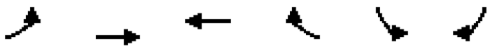
Intersection Summary			
HCM 2000 Control Delay (s/veh)	156.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	1486	595	6	0	72
Future Volume (vph)	41	1486	595	6	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	4515	4378	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	4515	4378	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	46	1670	669	7	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	1670	676	0	0	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

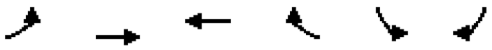
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	1486	595	6	0	72
Future Volume (Veh/h)	41	1486	595	6	0	72
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	46	1670	669	7	0	81
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.85	
vC, conflicting volume	694				1339	245
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	694				772	245
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	95				100	89
cM capacity (veh/h)	845				269	745

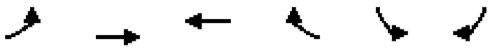
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	46	557	557	557	268	268	141	81
Volume Left	46	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	7	81
cSH	845	1700	1700	1700	1700	1700	1700	745
Volume to Capacity	0.05	0.33	0.33	0.33	0.16	0.16	0.08	0.11
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0	0.0	0.0	2.9
Control Delay (s/veh)	9.5	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Lane LOS	A							B
Approach Delay (s/veh)	0.3				0.0			10.4
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	1482	609	5	29	9
Future Volume (vph)	5	1482	609	5	29	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.968	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1805	4515	4413	0	1631	0
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1805	4515	4413	0	1631	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	5	1611	662	5	32	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	1611	667	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			

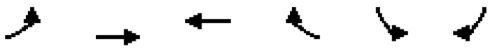


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1482	609	5	29	9
Future Volume (Veh/h)	5	1482	609	5	29	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1611	662	5	32	10
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	681				1226	237
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	681				1226	237
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	99				80	99
cM capacity (veh/h)	910				163	712

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	5	537	537	537	265	265	137	42
Volume Left	5	0	0	0	0	0	0	32
Volume Right	0	0	0	0	0	0	5	10
cSH	910	1700	1700	1700	1700	1700	1700	199
Volume to Capacity	0.00*	0.32	0.32	0.32	0.16	0.16	0.08	0.21
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.0	0.0	6.2
Control Delay (s/veh)	9.0	0.0	0.0	0.0	0.0	0.0	0.0	27.8
Lane LOS	A							D
Approach Delay (s/veh)	0.0				0.0			27.8
Approach LOS								D

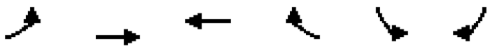
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	1516	525	37	215	49
Future Volume (vph)	29	1516	525	37	215	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	4515	4341	0	1737	0
Flt Permitted	0.950				0.961	
Satd. Flow (perm)	1703	4515	4341	0	1737	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	32	1684	583	41	239	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	1684	624	0	293	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	1516	525	37	215	49
Future Volume (Veh/h)	29	1516	525	37	215	49
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	32	1684	583	41	239	54
Pedestrians					10	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	634				1239	225
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	634				1239	225
tC, single (s)	4.2				6.8	7.1
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.4
p0 queue free %	96				0	93
cM capacity (veh/h)	911				162	751

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	32	561	561	561	233	233	158	293
Volume Left	32	0	0	0	0	0	0	239
Volume Right	0	0	0	0	0	0	41	54
cSH	911	1700	1700	1700	1700	1700	1700	189
Volume to Capacity	0.04	0.33	0.33	0.33	0.14	0.14	0.09	1.55
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.0	0.0	150.6
Control Delay (s/veh)	9.1	0.0	0.0	0.0	0.0	0.0	0.0	316.8
Lane LOS	A							F
Approach Delay (s/veh)	0.2				0.0			316.8
Approach LOS								F

Intersection Summary			
Average Delay	35.4		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	5	581	53	23	1655
Future Volume (vph)	14	5	581	53	23	1655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.963		0.987			
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1766	0	4380	0	1805	4515
Flt Permitted	0.965				0.950	
Satd. Flow (perm)	1766	0	4380	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	16	6	646	59	26	1839
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	705	0	26	1839
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

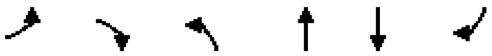
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



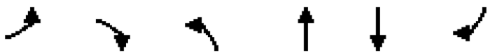
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	14	5	581	53	23	1655
Future Volume (Veh/h)	14	5	581	53	23	1655
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	6	646	59	26	1839
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1342	246			706	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1342	246			706	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	89	99			97	
cM capacity (veh/h)	142	760			901	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	22	258	258	188	26	613	613	613
Volume Left	16	0	0	0	26	0	0	0
Volume Right	6	0	0	59	0	0	0	0
cSH	182	1700	1700	1700	901	1700	1700	1700
Volume to Capacity	0.12	0.15	0.15	0.11	0.03	0.36	0.36	0.36
Queue Length 95th (m)	3.2	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Control Delay (s/veh)	27.5	0.0	0.0	0.0	9.1	0.0	0.0	0.0
Lane LOS	D				A			
Approach Delay (s/veh)	27.5	0.0			0.1			
Approach LOS	D							

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	538	577	578	1593	85
Future Volume (vph)	68	538	577	578	1593	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor					1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	1736	4427	4476	0
Flt Permitted	0.950		0.063			
Satd. Flow (perm)	1805	1524	115	4427	4476	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		168			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	75	591	634	635	1751	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	591	634	635	1844	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	14.0	80.0	66.0	
Total Split (%)	27.3%	27.3%	12.7%	72.7%	60.0%	
Maximum Green (s)	23.0	23.0	10.0	73.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.54	
v/c Ratio	0.20	1.31	2.81	0.22	0.77	
Control Delay (s/veh)	37.6	181.7	841.1	10.8	22.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.6	181.7	841.1	10.8	22.7	
LOS	D	F	F	B	C	
Approach Delay (s/veh)	165.5			425.6	22.7	
Approach LOS	F			F	C	
Queue Length 50th (m)	14.1	~146.9	~235.7	31.7	130.8	
Queue Length 95th (m)	27.3	#220.5	#310.8	39.7	154.1	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	377	451	226	2937	2405	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.20	1.31	2.81	0.22	0.77	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 74 (67%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.81			
Intersection Signal Delay (s/veh): 183.1		Intersection LOS: F	

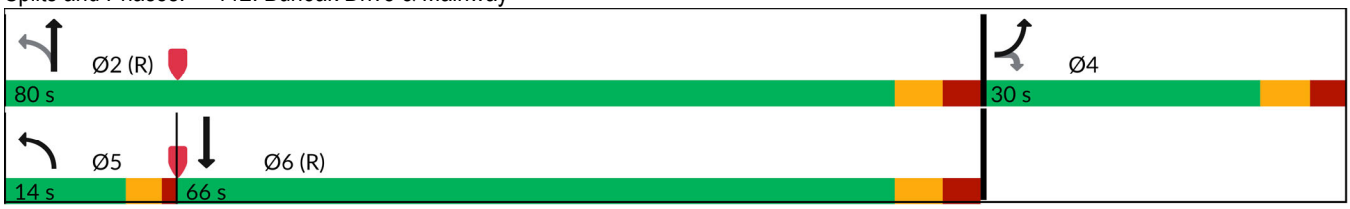
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

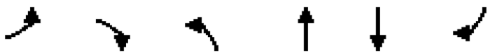
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

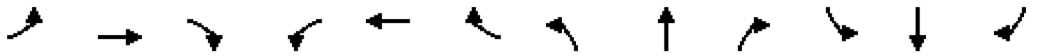




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	538	577	578	1593	85
Future Volume (vph)	68	538	577	578	1593	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	1736	4427	4478	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1524	116	4427	4478	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	591	634	635	1751	93
RTOR Reduction (vph)	0	133	0	0	5	0
Lane Group Flow (vph)	75	458	634	635	1839	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	59.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	59.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	377	318	224	2937	2401	
v/s Ratio Prot	0.04		c0.26	0.14	0.41	
v/s Ratio Perm		c0.30	c1.62			
v/c Ratio	0.20	1.44	2.83	0.22	0.77	
Uniform Delay, d1	35.9	43.5	33.4	7.3	20.1	
Progression Factor	1.00	1.00	0.82	1.45	1.00	
Incremental Delay, d2	0.3	215.3	835.8	0.2	2.4	
Delay (s)	36.2	258.8	863.0	10.7	22.5	
Level of Service	D	F	F	B	C	
Approach Delay (s/veh)	233.8			436.5	22.5	
Approach LOS	F			F	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	198.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	435	126	33	267	146	18	78	13	86	46	28
Future Volume (vph)	106	435	126	33	267	146	18	78	13	86	46	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.972			0.951			0.984			0.977	
Flt Protected		0.992			0.996			0.992			0.974	
Satd. Flow (prot)	0	3342	0	0	3280	0	0	1772	0	0	1773	0
Flt Permitted		0.992			0.996			0.992			0.974	
Satd. Flow (perm)	0	3342	0	0	3280	0	0	1772	0	0	1773	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		110.8			869.1			154.8			187.1	
Travel Time (s)		6.6			52.1			13.9			16.8	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Adj. Flow (vph)	119	489	142	37	300	164	20	88	15	97	52	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	750	0	0	501	0	0	123	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.7%		ICU Level of Service B	
Analysis Period (min) 15			

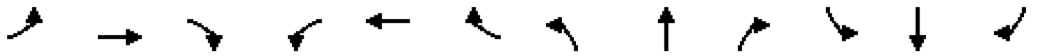
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	435	126	33	267	146	18	78	13	86	46	28
Future Volume (Veh/h)	106	435	126	33	267	146	18	78	13	86	46	28
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	119	489	142	37	300	164	20	88	15	97	52	31
Pedestrians								2				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	464			633			1081	1338	318	998	1327	232
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	464			633			1081	1338	318	998	1327	232
tC, single (s)	4.1			4.1			7.9	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			96			78	32	98	0	61	96
cM capacity (veh/h)	1094			958			89	130	683	79	132	770

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	364	387	187	314	123	180
Volume Left	119	0	37	0	20	97
Volume Right	0	142	0	164	15	31
cSH	1094	1700	958	1700	133	109
Volume to Capacity	0.11	0.23	0.04	0.18	0.92	1.66
Queue Length 95th (m)	2.9	0.0	1.0	0.0	49.5	110.4
Control Delay (s/veh)	3.6	0.0	2.1	0.0	122.1	400.9
Lane LOS	A		A		F	F
Approach Delay (s/veh)	1.7		0.8		122.1	400.9
Approach LOS					F	F

Intersection Summary				
Average Delay	57.2			
Intersection Capacity Utilization	57.7%	ICU Level of Service		B
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	939	69	16	191	22	16	0	5	115	2	86
Future Volume (vph)	23	939	69	16	191	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.986			0.968			0.943	
Flt Protected		0.999			0.996			0.963			0.972	
Satd. Flow (prot)	0	3459	0	0	3216	0	0	1508	0	0	1732	0
Flt Permitted		0.999			0.996			0.963			0.972	
Satd. Flow (perm)	0	3459	0	0	3216	0	0	1508	0	0	1732	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			643.2			107.7			112.1	
Travel Time (s)		25.6			38.6			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	27	1105	81	19	225	26	19	0	6	135	2	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1213	0	0	270	0	0	25	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

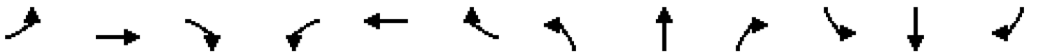
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			



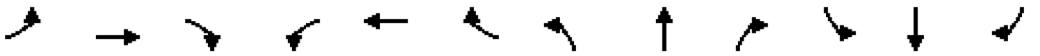
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	939	69	16	191	22	16	0	5	115	2	86
Future Volume (Veh/h)	23	939	69	16	191	22	16	0	5	115	2	86
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	27	1105	81	19	225	26	19	0	6	135	2	101
Pedestrians								9			5	
Lane Width (m)								3.6			3.6	
Walking Speed (m/s)								1.2			1.2	
Percent Blockage								1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	256			1195			1461	1503	602	894	1530	131
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	256			1195			1461	1503	602	894	1530	131
tC, single (s)	4.4			4.4			8.0	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.4			2.4			3.7	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			96			69	100	99	39	98	89
cM capacity (veh/h)	1205			508			61	114	444	221	110	898

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	580	634	132	139	25	238
Volume Left	27	0	19	0	19	135
Volume Right	0	81	0	26	6	101
cSH	1205	1700	508	1700	77	321
Volume to Capacity	0.02	0.37	0.04	0.08	0.33	0.74
Queue Length 95th (m)	0.5	0.0	0.9	0.0	9.7	44.7
Control Delay (s/veh)	0.6	0.0	2.2	0.0	73.0	42.5
Lane LOS	A		A		F	E
Approach Delay (s/veh)	0.3		1.1		73.0	42.5
Approach LOS					F	E

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	58.5%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Future Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	0.99			1.00	
Frt		0.959			0.943			0.963			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3190	0	1492	3048	0	1597	4112	0	1770	4292	0
Flt Permitted	0.627			0.146			0.085			0.079		
Satd. Flow (perm)	1055	3190	0	229	3048	0	143	4112	0	147	4292	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		42			75			67			14	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	209	523	197	136	124	75	138	1044	343	280	1772	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	720	0	136	199	0	138	1387	0	280	1933	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

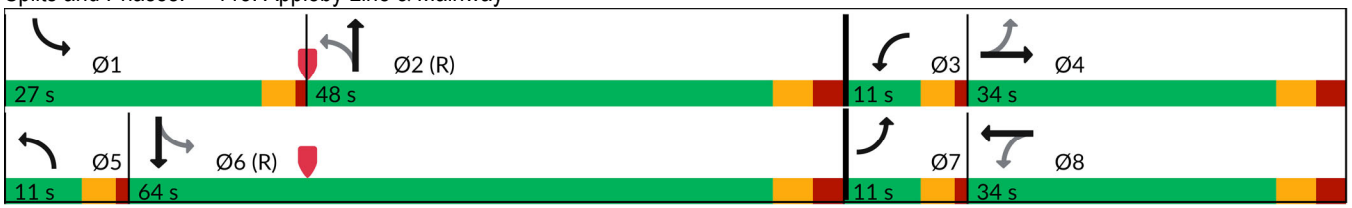


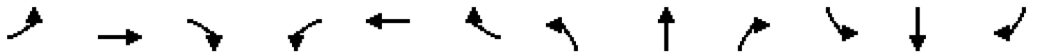
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	34.0		11.0	34.0		11.0	48.0		27.0	64.0	
Total Split (%)	9.2%	28.3%		9.2%	28.3%		9.2%	40.0%		22.5%	53.3%	
Maximum Green (s)	7.0	27.7		7.0	27.7		7.0	41.7		23.0	57.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	36.7	27.4		36.7	27.4		56.6	47.0		70.9	57.7	
Actuated g/C Ratio	0.31	0.23		0.31	0.23		0.47	0.39		0.59	0.48	
v/c Ratio	0.59	0.95		0.95	0.26		0.88	0.84		0.85	0.93	
Control Delay (s/veh)	40.1	65.4		97.1	24.3		59.4	36.6		54.4	23.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	40.1	65.4		97.1	24.3		59.4	36.6		54.4	23.1	
LOS	D	E		F	C		E	D		D	C	
Approach Delay (s/veh)		59.7			53.8			38.7			27.1	
Approach LOS		E			D			D			C	
Queue Length 50th (m)	42.3	91.8		27.9	14.0		18.1	149.3		55.4	158.5	
Queue Length 95th (m)	66.3	#132.1		#68.0	25.4		m#34.4	#181.5		m79.0	#243.6	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	354	768		143	761		156	1649		398	2071	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.59	0.94		0.95	0.26		0.88	0.84		0.70	0.93	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 58 (48%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 38.5	Intersection LOS: D

Intersection Capacity Utilization 89.6% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway



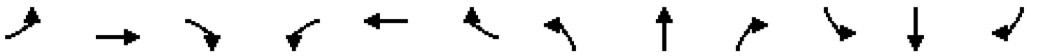


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Future Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1604	3189		1491	3049		1597	4112		1770	4289	
Flt Permitted	0.63	1.00		0.15	1.00		0.09	1.00		0.08	1.00	
Satd. Flow (perm)	1058	3189		229	3049		143	4112		146	4289	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	209	523	197	136	124	75	138	1044	343	280	1772	161
RTOR Reduction (vph)	0	32	0	0	58	0	0	41	0	0	7	0
Lane Group Flow (vph)	209	688	0	136	141	0	138	1346	0	280	1926	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.4	27.4		34.4	27.4		54.2	46.9		69.0	57.7	
Effective Green, g (s)	34.4	27.4		34.4	27.4		54.2	46.9		69.0	57.7	
Actuated g/C Ratio	0.29	0.23		0.29	0.23		0.45	0.39		0.57	0.48	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	335	728		139	696		153	1607		328	2062	
v/s Ratio Prot	0.04	0.22		c0.06	0.05		0.05	0.33		c0.13	c0.45	
v/s Ratio Perm	0.14			c0.22			0.35			0.36		
v/c Ratio	0.62	0.94		0.98	0.20		0.90	0.84		0.85	0.93	
Uniform Delay, d1	35.7	45.6		38.5	37.5		26.2	33.1		34.3	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.02	1.03		1.32	0.56	
Incremental Delay, d2	3.6	20.8		69.0	0.1		29.3	3.0		12.6	6.3	
Delay (s)	39.3	66.3		107.5	37.6		55.9	37.1		57.8	22.6	
Level of Service	D	E		F	D		E	D		E	C	
Approach Delay (s/veh)		60.2			66.0			38.8			27.1	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Future Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.955			0.987			0.996	
Flt Protected		0.984			0.970		0.950			0.950		
Satd. Flow (prot)	0	1322	0	0	1706	0	1530	4193	0	1736	4362	0
Flt Permitted		0.845			0.774		0.064			0.118		
Satd. Flow (perm)	0	1134	0	0	1355	0	103	4193	0	215	4362	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			21			15			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	21	10	32	226	18	121	41	1150	106	94	2002	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	365	0	41	1256	0	94	2057	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	42.0	42.0		42.0	42.0		66.0	66.0		12.0	78.0	
Total Split (%)	35.0%	35.0%		35.0%	35.0%		55.0%	55.0%		10.0%	65.0%	
Maximum Green (s)	35.5	35.5		35.5	35.5		60.0	60.0		8.0	72.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		33.4			33.4		62.5	62.5		76.1	74.1	
Actuated g/C Ratio		0.28			0.28		0.52	0.52		0.63	0.62	
v/c Ratio		0.20			0.93		0.77	0.57		0.41	0.76	
Control Delay (s/veh)		28.3			71.0		89.0	28.9		11.7	9.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		28.3			71.0		89.0	28.9		11.7	9.4	
LOS		C			E		F	C		B	A	
Approach Delay (s/veh)		28.3			71.0			30.8			9.5	
Approach LOS		C			E			C			A	
Queue Length 50th (m)		10.4			81.8		12.1	134.5		5.7	79.9	
Queue Length 95th (m)		23.5			#138.6		m#16.0	149.7		m5.1	m72.1	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		343			415		53	2190		237	2695	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.18			0.88		0.77	0.57		0.40	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 5 (4%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 22.7	Intersection LOS: C

Intersection Capacity Utilization 88.5% ICU Level of Service E

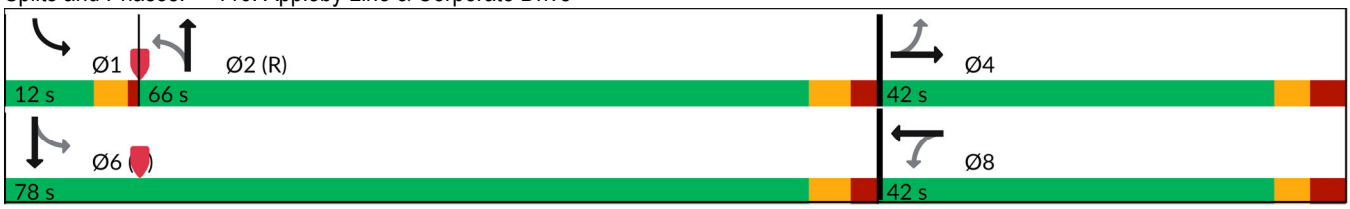
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

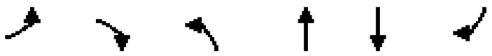
Splits and Phases: 116: Appleby Line & Corporate Drive



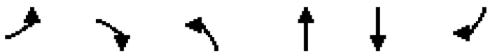
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Future Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1321			1699		1529	4195		1735	4362	
Flt Permitted		0.85			0.77		0.06	1.00		0.12	1.00	
Satd. Flow (perm)		1135			1356		103	4195		216	4362	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	10	32	226	18	121	41	1150	106	94	2002	55
RTOR Reduction (vph)	0	8	0	0	15	0	0	7	0	0	2	0
Lane Group Flow (vph)	0	55	0	0	350	0	41	1249	0	94	2055	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.4			33.4		62.5	62.5		74.1	74.1	
Effective Green, g (s)		33.4			33.4		62.5	62.5		74.1	74.1	
Actuated g/C Ratio		0.28			0.28		0.52	0.52		0.62	0.62	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		315			377		53	2184		229	2693	
v/s Ratio Prot								0.30		0.03	c0.47	
v/s Ratio Perm		0.05			c0.26		0.40			0.23		
v/c Ratio		0.17			0.93		0.77	0.57		0.41	0.76	
Uniform Delay, d1		32.8			42.1		23.1	19.6		12.0	16.6	
Progression Factor		1.00			1.00		1.33	1.41		1.23	0.53	
Incremental Delay, d2		0.3			28.5		48.5	0.7		0.1	0.2	
Delay (s)		33.1			70.7		79.1	28.3		14.9	9.0	
Level of Service		C			E		E	C		B	A	
Approach Delay (s/veh)		33.1			70.7			29.9			9.3	
Approach LOS		C			E			C			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	150	554	942	1668	122
Future Volume (vph)	34	150	554	942	1668	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor					1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	1719	4427	4423	0
Flt Permitted	0.950		0.062			
Satd. Flow (perm)	1805	1313	112	4427	4423	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		152			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	34	152	560	952	1685	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	152	560	952	1808	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	23.0	23.0	20.0	87.0	67.0	
Total Split (%)	20.9%	20.9%	18.2%	79.1%	60.9%	
Maximum Green (s)	16.0	16.0	16.0	80.0	60.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.3	9.3	89.7	86.7	60.0	
Actuated g/C Ratio	0.08	0.08	0.82	0.79	0.55	
v/c Ratio	0.22	0.61	1.33	0.27	0.75	
Control Delay (s/veh)	49.5	18.3	183.9	3.2	10.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	49.5	18.3	183.9	3.2	10.4	
LOS	D	B	F	A	B	
Approach Delay (s/veh)	24.0			70.1	10.4	
Approach LOS	C			E	B	
Queue Length 50th (m)	7.4	0.0	~152.0	15.6	66.4	
Queue Length 95th (m)	16.8	22.6	m#118.4	m16.4	m56.7	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	262	320	422	3487	2418	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.48	1.33	0.27	0.75	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 100 (91%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 36.9	Intersection LOS: D

Intersection Capacity Utilization 87.3%	ICU Level of Service E
Analysis Period (min) 15	

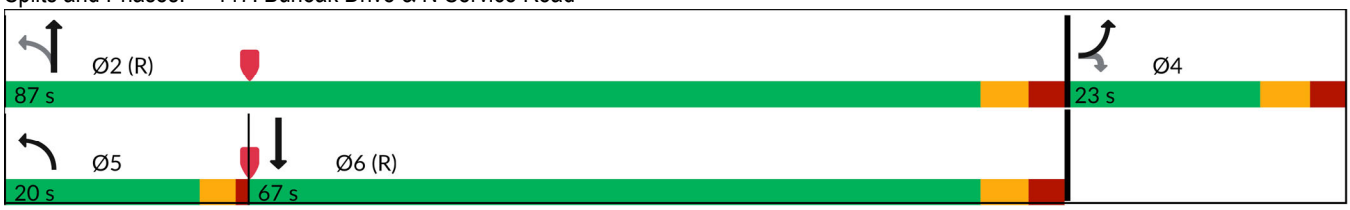
* User Entered Value

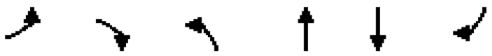
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	150	554	942	1668	122
Future Volume (vph)	34	150	554	942	1668	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	1719	4427	4422	
Flt Permitted	0.95	1.00	0.06	1.00	1.00	
Satd. Flow (perm)	1805	1313	113	4427	4422	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	34	152	560	952	1685	123
RTOR Reduction (vph)	0	139	0	0	6	0
Lane Group Flow (vph)	34	13	560	952	1802	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.3	9.3	86.7	86.7	60.0	
Effective Green, g (s)	9.3	9.3	86.7	86.7	60.0	
Actuated g/C Ratio	0.08	0.08	0.79	0.79	0.55	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	152	111	420	3489	2412	
v/s Ratio Prot	c0.02		c0.27	0.22	0.41	
v/s Ratio Perm		0.01	c0.77			
v/c Ratio	0.22	0.12	1.33	0.27	0.75	
Uniform Delay, d1	47.0	46.5	35.8	3.1	19.2	
Progression Factor	1.00	1.00	1.29	0.95	0.49	
Incremental Delay, d2	0.7	0.5	151.5	0.0	0.9	
Delay (s)	47.7	47.0	197.6	3.0	10.3	
Level of Service	D	D	F	A	B	
Approach Delay (s/veh)	47.1			75.1	10.3	
Approach LOS	D			E	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1444	997	0	0	2604
Future Volume (vph)	1445	1444	997	0	0	2604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Frt	0.959	0.850				
Flt Protected	0.965					
Satd. Flow (prot)	3243	1427	4427	0	0	4427
Flt Permitted	0.965					
Satd. Flow (perm)	3243	1427	4427	0	0	4427
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	51	98				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1554	1553	1072	0	0	2800
Shared Lane Traffic (%)		37%				
Lane Group Flow (vph)	2129	978	1072	0	0	2800
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6

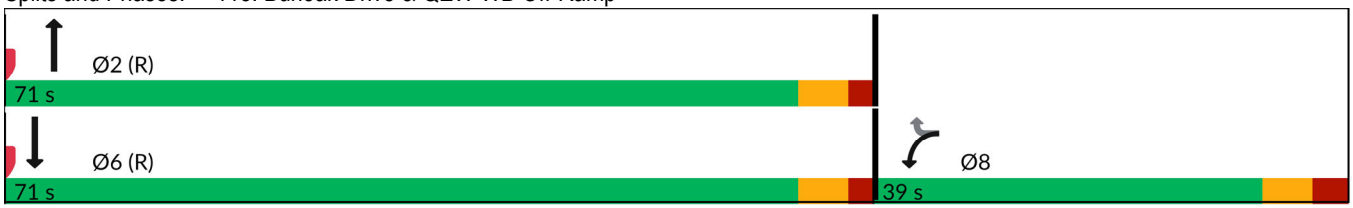


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	39.0	39.0	71.0			71.0
Total Split (%)	35.5%	35.5%	64.5%			64.5%
Maximum Green (s)	32.0	32.0	65.0			65.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
v/c Ratio	2.17	2.02	0.41			1.07
Control Delay (s/veh)	554.7	489.2	10.1			55.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	554.7	489.2	10.1			55.9
LOS	F	F	B			E
Approach Delay (s/veh)	534.1		10.1			55.9
Approach LOS	F		B			E
Queue Length 50th (m)	~415.9	~374.9	26.0			~306.2
Queue Length 95th (m)	#461.9	#464.9	32.1			#341.4
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	979	484	2615			2615
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.17	2.02	0.41			1.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.17			
Intersection Signal Delay (s/veh): 261.8		Intersection LOS: F	
Intersection Capacity Utilization 117.5%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

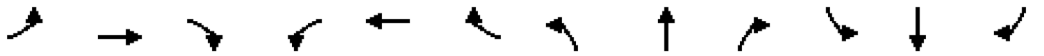
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



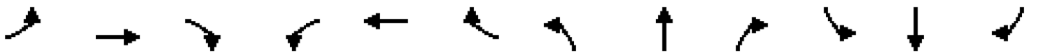


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1444	997	0	0	2604
Future Volume (vph)	1445	1444	997	0	0	2604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3244	1427	4427			4427
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3244	1427	4427			4427
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1554	1553	1072	0	0	2800
RTOR Reduction (vph)	36	69	0	0	0	0
Lane Group Flow (vph)	2093	909	1072	0	0	2800
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	32.0	32.0	65.0			65.0
Effective Green, g (s)	32.0	32.0	65.0			65.0
Actuated g/C Ratio	0.29	0.29	0.59			0.59
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	943	415	2615			2615
v/s Ratio Prot	c0.65		0.24			c0.63
v/s Ratio Perm		0.64				
v/c Ratio	2.22	2.19	0.41			1.07
Uniform Delay, d1	39.0	39.0	12.1			22.5
Progression Factor	1.00	1.00	0.79			0.64
Incremental Delay, d2	552.2	543.0	0.4			39.4
Delay (s)	591.2	582.0	10.0			53.7
Level of Service	F	F	A			D
Approach Delay (s/veh)	588.3		10.0			53.7
Approach LOS	F		A			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	285.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	117.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Future Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.907	0.850			0.865		0.999				
Flt Protected	0.950											
Satd. Flow (prot)	1770	2847	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950										0.937	
Satd. Flow (perm)	1770	2847	1318	0	0	1417	0	5032	0	0	4629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		208	208			109		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	311	138	456	0	0	104	0	1108	6	6	2724	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	311	366	228	0	0	104	0	1114	0	0	2730	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		None	None	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	23.4	23.4	23.4			8.6		57.0			57.0	
Actuated g/C Ratio	0.21	0.21	0.21			0.08		0.52			0.52	
v/c Ratio	0.83	0.48	0.51			0.49		0.43			1.14	
Control Delay (s/veh)	60.0	17.5	10.9			16.7		17.6			90.9	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	60.0	17.5	10.9			16.7		17.6			90.9	
LOS	E	B	B			B		B			F	
Approach Delay (s/veh)		30.4			16.7			17.6			90.9	
Approach LOS		C			B			B			F	
Queue Length 50th (m)	66.8	16.9	4.1			0.0		57.6			~279.9	
Queue Length 95th (m)	#105.1	32.4	29.7			17.2		74.9			m161.8	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	418	831	470			251		2608			2398	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.74	0.44	0.49			0.41		0.43			1.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 3 (3%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay (s/veh): 61.2		Intersection LOS: E	

Intersection Capacity Utilization 80.7%	ICU Level of Service D
Analysis Period (min) 15	

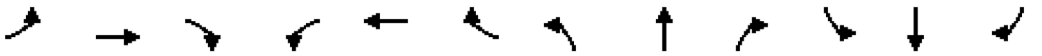
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

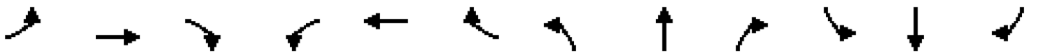




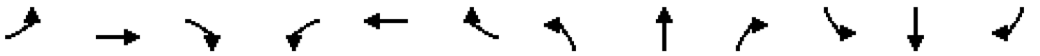
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Future Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1770	2846	1318			1417		5033			4940	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1770	2846	1318			1417		5033			4628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	311	138	456	0	0	104	0	1108	6	6	2724	0
RTOR Reduction (vph)	0	164	164	0	0	96	0	0	0	0	0	0
Lane Group Flow (vph)	311	202	64	0	0	8	0	1114	0	0	2730	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	23.4	23.4	23.4			8.6		57.0			57.0	
Effective Green, g (s)	23.4	23.4	23.4			8.6		57.0			57.0	
Actuated g/C Ratio	0.21	0.21	0.21			0.08		0.52			0.52	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	376	605	280			110		2608			2398	
v/s Ratio Prot	c0.18	0.07						0.22				
v/s Ratio Perm			0.05			c0.01					c0.59	
v/c Ratio	0.83	0.33	0.23			0.07		0.43			1.14	
Uniform Delay, d1	41.4	36.7	35.8			47.0		16.4			26.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.05	
Incremental Delay, d2	13.8	0.3	0.4			0.3		0.5			62.9	
Delay (s)	55.2	37.0	36.3			47.3		16.9			90.8	
Level of Service	E	D	D			D		B			F	
Approach Delay (s/veh)		43.1			47.3			16.9			90.8	
Approach LOS		D			D			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Future Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.957			0.884			0.963			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1681	0	1504	1571	0	1719	4179	0	1752	4329	0
Flt Permitted	0.717			0.323			0.060			0.062		
Satd. Flow (perm)	1195	1681	0	511	1571	0	109	4179	0	114	4329	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			48			90			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	57	140	56	92	14	48	172	1534	505	115	1882	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	196	0	92	62	0	172	2039	0	115	1925	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	27.0	27.0		11.0	38.0		14.0	68.0		14.0	68.0	
Total Split (%)	22.5%	22.5%		9.2%	31.7%		11.7%	56.7%		11.7%	56.7%	
Maximum Green (s)	20.9	20.9		7.0	31.9		10.0	61.4		10.0	61.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.3	17.3		30.4	28.3		79.4	66.3		75.7	64.5	
Actuated g/C Ratio	0.14	0.14		0.25	0.24		0.66	0.55		0.63	0.54	
v/c Ratio	0.33	0.77		0.49	0.15		0.81	0.87		0.61	0.83	
Control Delay (s/veh)	50.1	64.8		44.1	13.8		34.3	19.7		40.6	16.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.1	64.8		44.1	13.8		34.3	19.7		40.6	16.3	
LOS	D	E		D	B		C	B		D	B	
Approach Delay (s/veh)		61.5			31.9			20.9			17.7	
Approach LOS		E			C			C			B	
Queue Length 50th (m)	14.0	44.3		20.6	2.9		28.3	136.1		12.9	211.9	
Queue Length 95th (m)	28.4	70.0		36.4	14.8		m24.2	m119.4		m13.1	m227.3	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	208	305		187	452		216	2350		209	2328	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.27	0.64		0.49	0.14		0.80	0.87		0.55	0.83	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 92 (77%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay (s/veh): 22.0		Intersection LOS: C	

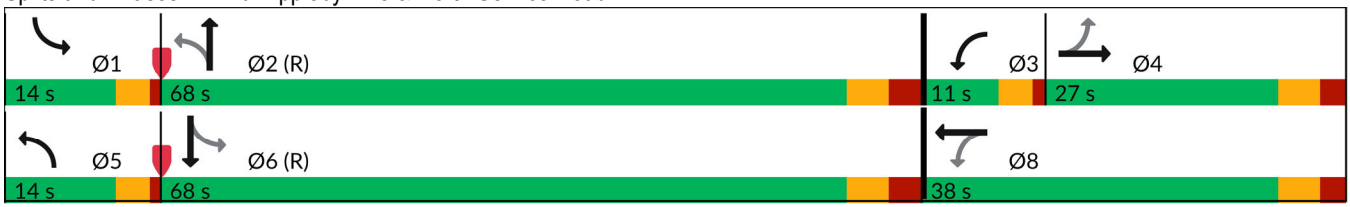
Intersection Capacity Utilization 78.2% ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Future Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1682		1504	1571		1719	4178		1752	4328	
Flt Permitted	0.72	1.00		0.32	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1194	1682		512	1571		109	4178		114	4328	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	140	56	92	14	48	172	1534	505	115	1882	43
RTOR Reduction (vph)	0	13	0	0	37	0	0	40	0	0	1	0
Lane Group Flow (vph)	57	183	0	92	25	0	172	1999	0	115	1924	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.3	17.3		28.3	28.3		76.8	66.4		73.2	64.6	
Effective Green, g (s)	17.3	17.3		28.3	28.3		76.8	66.4		73.2	64.6	
Actuated g/C Ratio	0.14	0.14		0.24	0.24		0.64	0.55		0.61	0.54	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	172	242		178	370		209	2311		186	2329	
v/s Ratio Prot		c0.11		c0.03	0.02		c0.07	c0.48		0.04	0.44	
v/s Ratio Perm	0.05			0.09			0.45			0.33		
v/c Ratio	0.33	0.76		0.52	0.07		0.82	0.86		0.62	0.83	
Uniform Delay, d1	46.2	49.3		37.8	35.6		32.3	23.0		20.6	23.0	
Progression Factor	1.00	1.00		1.00	1.00		1.16	0.82		1.85	0.62	
Incremental Delay, d2	1.1	12.7		2.5	0.1		2.5	0.4		2.2	1.3	
Delay (s)	47.3	62.0		40.3	35.7		40.1	19.3		40.2	15.6	
Level of Service	D	E		D	D		D	B		D	B	
Approach Delay (s/veh)		58.7			38.5			20.9			16.9	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2542	0	0	2056
Future Volume (vph)	586	663	2542	0	0	2056
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	1495	4385	0	0	4302
Flt Permitted	0.950					
Satd. Flow (perm)	3183	1495	4385	0	0	4302
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	644	729	2793	0	0	2259
Shared Lane Traffic (%)						
Lane Group Flow (vph)	644	729	2793	0	0	2259
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

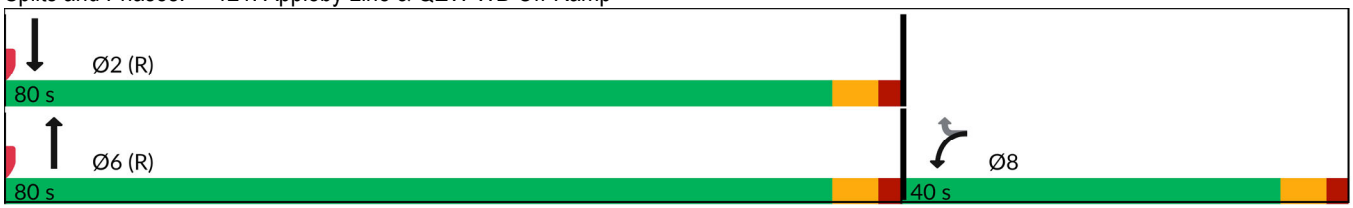


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
v/c Ratio	0.71	1.72	1.03			0.85
Control Delay (s/veh)	43.9	360.9	38.7			9.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	43.9	360.9	38.7			9.4
LOS	D	F	D			A
Approach Delay (s/veh)	212.2		38.7			9.4
Approach LOS	F		D			A
Queue Length 50th (m)	79.3	~284.0	~316.2			35.9
Queue Length 95th (m)	102.5	#365.0	m#342.1			61.7
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	901	425	2704			2652
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.71	1.72	1.03			0.85

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.72			
Intersection Signal Delay (s/veh): 65.5		Intersection LOS: E	
Intersection Capacity Utilization 100.2%		ICU Level of Service G	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

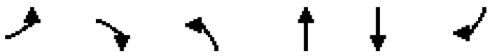
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



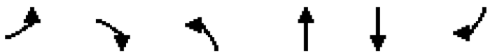


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2542	0	0	2056
Future Volume (vph)	586	663	2542	0	0	2056
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	1495	4385			4302
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	1495	4385			4302
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	644	729	2793	0	0	2259
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	644	728	2793	0	0	2259
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	74.0			74.0
Effective Green, g (s)	34.0	34.0	74.0			74.0
Actuated g/C Ratio	0.28	0.28	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	901	423	2704			2652
v/s Ratio Prot	0.20		c0.64			0.53
v/s Ratio Perm		c0.49				
v/c Ratio	0.71	1.72	1.03			0.85
Uniform Delay, d1	38.6	43.0	23.0			18.6
Progression Factor	1.00	1.00	0.77			0.36
Incremental Delay, d2	2.7	333.9	19.8			2.5
Delay (s)	41.4	376.9	37.5			9.3
Level of Service	D	F	D			A
Approach Delay (s/veh)	219.5		37.5			9.3
Approach LOS	F		D			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	66.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	970	544	0	2077	2078	0
Future Volume (vph)	970	544	0	2077	2078	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4302	4302	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4302	4302	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	1078	604	0	2308	2309	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1078	604	0	2308	2309	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

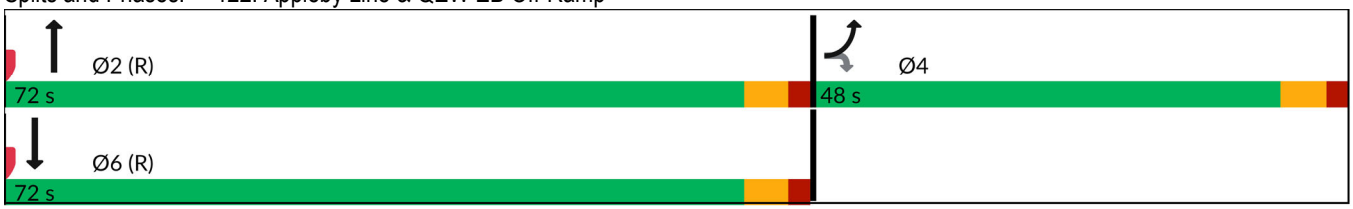


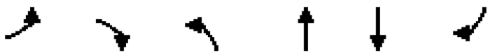
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	41.4	41.4		66.6	66.6	
Actuated g/C Ratio	0.35	0.35		0.56	0.56	
v/c Ratio	0.94	0.65		0.97	0.97	
Control Delay (s/veh)	53.6	36.5		22.7	30.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	53.6	36.5		22.7	30.5	
LOS	D	D		C	C	
Approach Delay (s/veh)	47.5			22.7	30.5	
Approach LOS	D			C	C	
Queue Length 50th (m)	136.1	72.6		72.8	170.7	
Queue Length 95th (m)	#179.8	95.7		#293.3	#285.7	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1167	950		2388	2388	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.92	0.64		0.97	0.97	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay (s/veh): 32.2		Intersection LOS: C	
Intersection Capacity Utilization 100.2%		ICU Level of Service G	
Analysis Period (min) 15			

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

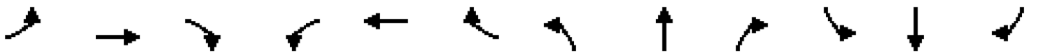




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	970	544	0	2077	2078	0
Future Volume (vph)	970	544	0	2077	2078	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4302	4302	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4302	4302	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1078	604	0	2308	2309	0
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	1078	601	0	2308	2309	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	41.4	41.4		66.6	66.6	
Effective Green, g (s)	41.4	41.4		66.6	66.6	
Actuated g/C Ratio	0.35	0.35		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1150	933		2387	2387	
v/s Ratio Prot	c0.32			0.54	c0.54	
v/s Ratio Perm		0.22				
v/c Ratio	0.94	0.64		0.97	0.97	
Uniform Delay, d1	38.0	33.1		25.6	25.7	
Progression Factor	1.00	1.00		0.46	0.86	
Incremental Delay, d2	13.9	1.5		9.8	7.9	
Delay (s)	52.0	34.6		21.5	29.8	
Level of Service	D	C		C	C	
Approach Delay (s/veh)	45.7			21.5	29.8	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Future Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99			0.98
Frt		0.982			0.905				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3263	0	1656	2891	0	1687	4427	1568	1770	4302	1417
Flt Permitted	0.249			0.268			0.304			0.084		
Satd. Flow (perm)	400	3263	0	467	2891	0	539	4427	1547	156	4302	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		12			266				208			294
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	202	527	74	112	156	266	90	1407	414	448	793	294
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	601	0	112	422	0	90	1407	414	448	793	294
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



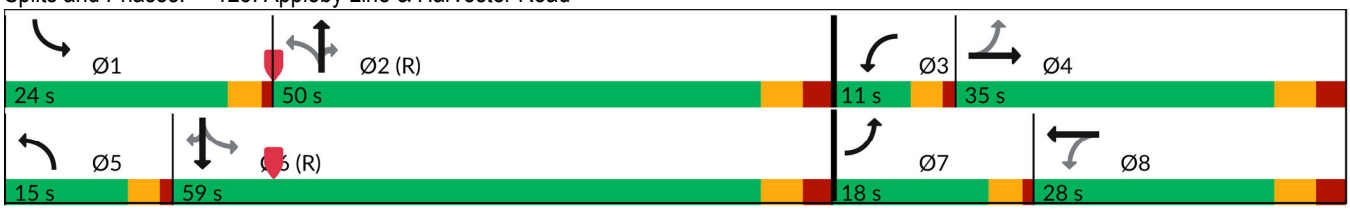
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.6		7.0	21.6		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	39.2	25.8		28.6	19.2		54.4	43.7	43.7	72.8	58.1	58.1
Actuated g/C Ratio	0.33	0.22		0.24	0.16		0.45	0.36	0.36	0.61	0.48	0.48
v/c Ratio	0.78	0.85		0.62	0.62		0.28	0.87	0.60	1.12	0.38	0.36
Control Delay (s/veh)	53.0	56.0		46.1	20.7		11.5	26.4	10.5	101.1	27.3	8.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.0	56.0		46.1	20.7		11.5	26.4	10.5	101.1	27.3	8.0
LOS	D	E		D	C		B	C	B	F	C	A
Approach Delay (s/veh)		55.3			26.0			22.2			45.2	
Approach LOS		E			C			C			D	
Queue Length 50th (m)	43.1	76.7		21.0	18.9		9.1	86.0	24.4	~116.8	64.4	13.7
Queue Length 95th (m)	#65.9	98.0		35.7	36.5		m9.0	m75.7	m21.6	m#144.8	m68.7	m19.1
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	262	786		180	738		361	1612	695	401	2082	826
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.76		0.62	0.57		0.25	0.87	0.60	1.12	0.38	0.36

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay (s/veh): 35.6	Intersection LOS: D

Intersection Capacity Utilization 92.9%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road

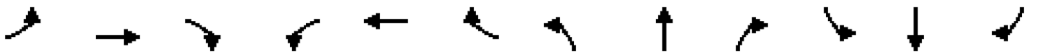


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Future Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1529	3262		1656	2893		1686	4427	1547	1770	4302	1395
Flt Permitted	0.25	1.00		0.27	1.00		0.30	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	400	3262		467	2893		539	4427	1547	156	4302	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	202	527	74	112	156	266	90	1407	414	448	793	294
RTOR Reduction (vph)	0	9	0	0	223	0	0	0	132	0	0	152
Lane Group Flow (vph)	202	592	0	112	199	0	90	1407	282	448	793	142
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	36.8	25.8		26.2	19.2		52.1	43.7	43.7	70.5	58.1	58.1
Effective Green, g (s)	36.8	25.8		26.2	19.2		52.1	43.7	43.7	70.5	58.1	58.1
Actuated g/C Ratio	0.31	0.22		0.22	0.16		0.43	0.36	0.36	0.59	0.48	0.48
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	250	701		171	462		314	1612	563	398	2082	675
v/s Ratio Prot	c0.09	c0.18		0.04	0.07		0.02	0.32		c0.21	0.18	
v/s Ratio Perm	0.16			0.10			0.10		0.18	c0.45		0.10
v/c Ratio	0.81	0.84		0.65	0.43		0.29	0.87	0.50	1.13	0.38	0.21
Uniform Delay, d1	34.0	45.2		39.6	45.5		20.3	35.6	29.7	38.1	19.6	17.8
Progression Factor	1.00	1.00		1.00	1.00		0.94	0.71	0.68	1.02	1.33	3.22
Incremental Delay, d2	17.2	9.1		8.7	0.6		0.0	0.7	0.3	70.2	0.2	0.3
Delay (s)	51.2	54.3		48.3	46.1		19.1	26.0	20.4	109.1	26.3	57.5
Level of Service	D	D		D	D		B	C	C	F	C	E
Approach Delay (s/veh)		53.5			46.6			24.5			56.4	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Future Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	4471	1538
Flt Permitted	0.950			0.634			0.105			0.100		
Satd. Flow (perm)	3389	1776	1513	1062	1610	1395	197	3539	1403	167	4471	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			248			153			150			174
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	721	196	296	125	82	207	251	1373	154	272	1363	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	721	196	296	125	82	207	251	1373	154	272	1363	174
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



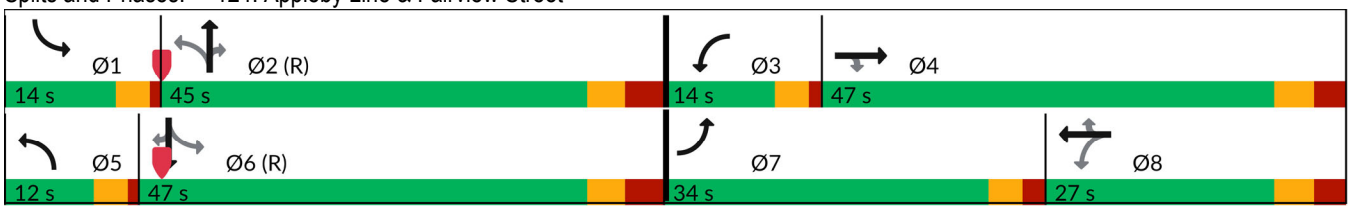
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	34.0	47.0	47.0	14.0	27.0	27.0	12.0	45.0	45.0	14.0	47.0	47.0
Total Split (%)	28.3%	39.2%	39.2%	11.7%	22.5%	22.5%	10.0%	37.5%	37.5%	11.7%	39.2%	39.2%
Maximum Green (s)	29.0	40.5	40.5	10.0	20.5	20.5	8.0	38.2	38.2	10.0	40.2	40.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	28.0	32.1	32.1	24.7	12.7	12.7	57.8	38.2	38.2	61.8	40.2	40.2
Actuated g/C Ratio	0.23	0.27	0.27	0.21	0.11	0.11	0.48	0.32	0.32	0.52	0.34	0.34
v/c Ratio	0.91	0.41	0.51	0.48	0.48	0.73	0.79	1.22	0.28	0.89	0.91	0.28
Control Delay (s/veh)	61.1	37.9	9.9	31.1	58.8	30.3	47.8	143.3	6.5	59.8	56.0	13.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	61.1	37.9	9.9	31.1	58.8	30.3	47.8	143.3	6.5	59.8	56.0	13.0
LOS	E	D	A	C	E	C	D	F	A	E	E	B
Approach Delay (s/veh)		44.9			36.2			117.9			52.5	
Approach LOS		D			D			F			D	
Queue Length 50th (m)	90.9	42.5	9.4	21.8	22.2	14.1	42.3	~222.9	0.7	57.0	145.0	9.3
Queue Length 95th (m)	#123.8	59.8	32.1	32.4	38.4	41.2	#117.8	#267.8	17.5 m	#144.4	#171.3	m25.5
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	821	599	674	267	275	365	317	1126	548	307	1497	622
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.33	0.44	0.47	0.30	0.57	0.79	1.22	0.28	0.89	0.91	0.28

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay (s/veh): 71.7	Intersection LOS: E

Intersection Capacity Utilization 97.0%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Future Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	4471	1513
Flt Permitted	0.95	1.00	1.00	0.63	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1065	1610	1395	197	3539	1403	166	4471	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	721	196	296	125	82	207	251	1373	154	272	1363	174
RTOR Reduction (vph)	0	0	182	0	0	137	0	0	102	0	0	116
Lane Group Flow (vph)	721	196	114	125	82	70	251	1373	52	272	1363	58
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	28.0	32.1	32.1	22.3	12.7	12.7	55.0	38.2	38.2	59.0	40.2	40.2
Effective Green, g (s)	28.0	32.1	32.1	22.3	12.7	12.7	55.0	38.2	38.2	59.0	40.2	40.2
Actuated g/C Ratio	0.23	0.27	0.27	0.19	0.11	0.11	0.46	0.32	0.32	0.49	0.34	0.34
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	793	475	404	240	170	147	312	1126	446	303	1497	506
v/s Ratio Prot	c0.21	0.11		0.04	0.05		0.11	c0.39		c0.14	0.30	
v/s Ratio Perm			0.08	c0.06		0.05	0.26		0.04	0.30		0.04
v/c Ratio	0.91	0.41	0.28	0.52	0.48	0.48	0.80	1.22	0.12	0.90	0.91	0.12
Uniform Delay, d1	44.8	36.2	34.8	43.2	50.6	50.5	30.5	40.9	28.9	34.9	38.2	27.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.96	1.21	2.81
Incremental Delay, d2	14.2	0.6	0.4	2.0	2.2	2.4	13.9	106.9	0.5	26.7	9.7	0.5
Delay (s)	58.9	36.8	35.2	45.2	52.7	53.0	44.4	147.8	29.5	60.4	55.9	78.1
Level of Service	E	D	D	D	D	D	D	F	C	E	E	E
Approach Delay (s/veh)		49.6			50.6			123.0			58.7	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	77.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



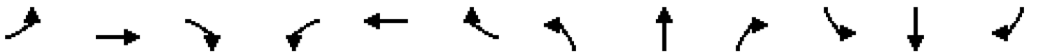
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	998	0	0	291	22	0	0	0	5	0	20
Future Volume (vph)	61	998	0	0	291	22	0	0	0	5	0	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.989						0.890	
Flt Protected		0.997									0.991	
Satd. Flow (prot)	0	3529	0	0	3500	0	0	1863	0	0	1643	0
Flt Permitted		0.997									0.991	
Satd. Flow (perm)	0	3529	0	0	3500	0	0	1863	0	0	1643	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		643.2			110.8			96.8			111.9	
Travel Time (s)		38.6			6.6			8.7			10.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	66	1085	0	0	316	24	0	0	0	5	0	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1151	0	0	340	0	0	0	0	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			

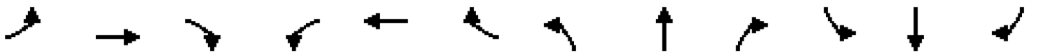
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	61	998	0	0	291	22	0	0	0	5	0	20
Future Volume (Veh/h)	61	998	0	0	291	22	0	0	0	5	0	20
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	66	1085	0	0	316	24	0	0	0	5	0	22
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	340			1085			1397	1557	543	1003	1545	170
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	340			1085			1397	1557	543	1003	1545	170
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	95			100			100	100	100	97	100	97
cM capacity (veh/h)	1216			639			94	106	484	188	107	844

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	609	543	158	182	0	27
Volume Left	66	0	0	0	0	5
Volume Right	0	0	0	24	0	22
cSH	1216	1700	639	1700	1700	513
Volume to Capacity	0.05	0.32	0.00	0.11	0.00	0.05
Queue Length 95th (m)	1.4	0.0	0.0	0.0	0.0	1.3
Control Delay (s/veh)	1.5	0.0	0.0	0.0	0.0	12.4
Lane LOS	A				A	B
Approach Delay (s/veh)	0.8		0.0		0.0	12.4
Approach LOS					A	B

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	51.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	634	249	410	1384	234	427	901	346	295	662	214
Future Volume (vph)	163	634	249	410	1384	234	427	901	346	295	662	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.98		0.98	0.99		0.97	0.99		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3427	5036	1523	3306	5085	1515	3471	5085	1521	3416	5085	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			257			241			357			165
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	168	654	257	423	1427	241	440	929	357	304	682	221
Shared Lane Traffic (%)												
Lane Group Flow (vph)	168	654	257	423	1427	241	440	929	357	304	682	221
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

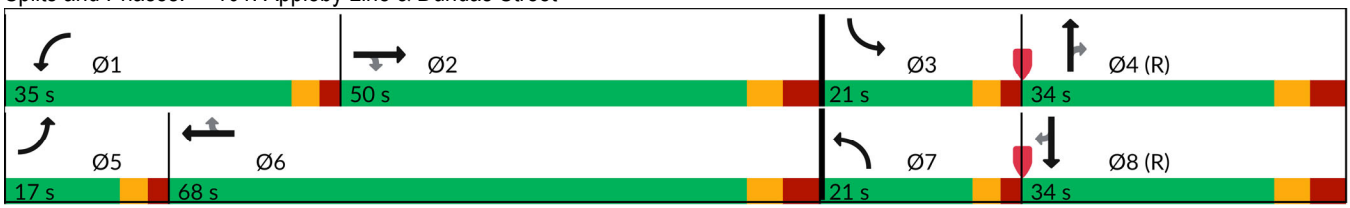


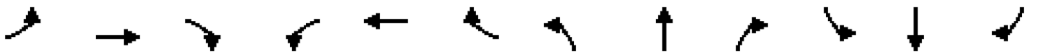
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	17.0	50.0	50.0	35.0	68.0	68.0	21.0	34.0	34.0	21.0	34.0	34.0
Total Split (%)	12.1%	35.7%	35.7%	25.0%	48.6%	48.6%	15.0%	24.3%	24.3%	15.0%	24.3%	24.3%
Maximum Green (s)	12.0	42.6	42.6	30.0	60.6	60.6	16.0	26.6	26.6	16.0	26.6	26.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	11.8	37.1	37.1	24.5	49.8	49.8	25.6	35.0	35.0	18.6	28.0	28.0
Actuated g/C Ratio	0.08	0.27	0.27	0.18	0.36	0.36	0.18	0.25	0.25	0.13	0.20	0.20
v/c Ratio	0.58	0.49	0.43	0.72	0.79	0.35	0.69	0.73	0.55	0.67	0.67	0.50
Control Delay (s/veh)	70.4	44.6	6.8	61.4	43.6	4.5	50.6	55.0	19.3	65.2	55.9	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.4	44.6	6.8	61.4	43.6	4.5	50.6	55.0	19.3	65.2	55.9	18.6
LOS	E	D	A	E	D	A	D	D	B	E	E	B
Approach Delay (s/veh)		39.6			42.7			46.5			51.4	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	25.0	60.2	0.0	62.4	137.4	0.0	65.1	101.9	31.6	44.3	69.8	14.0
Queue Length 95th (m)	37.8	72.5	21.8	78.1	143.2	17.1	m#90.0	#132.9	m47.6	61.1	85.4	41.2
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	294	1532	642	721	2201	792	641	1270	647	460	1015	440
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.43	0.40	0.59	0.65	0.30	0.69	0.73	0.55	0.66	0.67	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 44.9	Intersection LOS: D

Intersection Capacity Utilization 102.5% ICU Level of Service G
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Appleby Line & Dundas Street



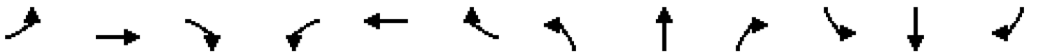


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	634	249	410	1384	234	427	901	346	295	662	214
Future Volume (vph)	163	634	249	410	1384	234	427	901	346	295	662	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	168	654	257	423	1427	241	440	929	357	304	682	221
RTOR Reduction (vph)	0	0	189	0	0	155	0	0	268	0	0	132
Lane Group Flow (vph)	168	654	68	423	1427	86	440	929	89	304	682	89
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	11.8	37.1	37.1	24.5	49.8	49.8	25.6	35.0	35.0	18.6	28.0	28.0
Effective Green, g (s)	11.8	37.1	37.1	24.5	49.8	49.8	25.6	35.0	35.0	18.6	28.0	28.0
Actuated g/C Ratio	0.08	0.27	0.27	0.18	0.36	0.36	0.18	0.25	0.25	0.13	0.20	0.20
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	289	1334	403	589	1808	538	640	1271	380	456	1017	309
v/s Ratio Prot	0.05	0.13		c0.13	c0.28		c0.13	c0.18		0.09	0.13	
v/s Ratio Perm			0.04			0.06			0.06			0.06
v/c Ratio	0.58	0.49	0.17	0.72	0.79	0.16	0.69	0.73	0.23	0.67	0.67	0.29
Uniform Delay, d1	61.7	43.5	39.6	54.5	40.4	30.8	53.5	48.2	41.8	57.8	51.7	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.87	1.08	3.63	1.00	1.00	1.00
Incremental Delay, d2	4.6	0.3	0.2	5.2	2.4	0.1	2.0	1.9	0.7	4.8	3.5	2.3
Delay (s)	66.3	43.7	39.8	59.7	42.8	30.9	48.5	53.7	152.5	62.6	55.3	49.9
Level of Service	E	D	D	E	D	C	D	D	F	E	E	D
Approach Delay (s/veh)		46.3			44.8			72.8			56.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	254	205	116	652	411	306	1284	93	190	736	201
Future Volume (vph)	162	254	205	116	652	411	306	1284	93	190	736	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.98		0.99		0.97	0.99	1.00			0.99	
Frt		0.933				0.850		0.990			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3306	0	1736	3610	1599	3502	3456	0	1787	3396	0
Flt Permitted	0.136			0.320			0.950			0.073		
Satd. Flow (perm)	247	3306	0	577	3610	1549	3471	3456	0	137	3396	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132				215		7			29	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	164	257	207	117	659	415	309	1297	94	192	743	203
Shared Lane Traffic (%)												
Lane Group Flow (vph)	164	464	0	117	659	415	309	1391	0	192	946	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

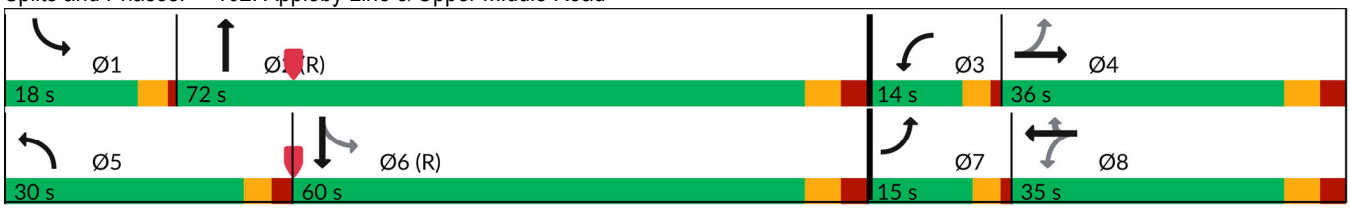


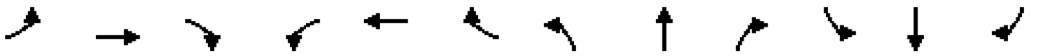
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	36.0		14.0	35.0	35.0	30.0	72.0		18.0	60.0	
Total Split (%)	10.7%	25.7%		10.0%	25.0%	25.0%	21.4%	51.4%		12.9%	42.9%	
Maximum Green (s)	11.0	29.6		10.0	28.6	28.6	25.0	65.5		14.0	53.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	42.9	29.5		40.1	28.1	28.1	17.6	66.8		77.0	61.4	
Actuated g/C Ratio	0.31	0.21		0.29	0.20	0.20	0.13	0.48		0.55	0.44	
v/c Ratio	0.85	0.58		0.48	0.91	0.86	0.70	0.84		0.83	0.63	
Control Delay (s/veh)	73.2	38.2		41.4	72.2	43.8	85.5	20.6		68.2	38.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	73.2	38.2		41.4	72.2	43.8	85.5	20.6		68.2	38.6	
LOS	E	D		D	E	D	F	C		E	D	
Approach Delay (s/veh)		47.4			59.3			32.4			43.6	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	36.5	46.0		25.2	99.4	60.5	49.4	67.3		50.0	90.3	
Queue Length 95th (m)	#73.5	65.2		41.9	#132.7	#119.2	m64.5	166.3		#81.0	115.8	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	192	803		249	737	487	625	1653		241	1504	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.85	0.58		0.47	0.89	0.85	0.49	0.84		0.80	0.63	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 44.0	Intersection LOS: D

Intersection Capacity Utilization 95.4% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	162	254	205	116	652	411	306	1284	93	190	736	201
Future Volume (vph)	162	254	205	116	652	411	306	1284	93	190	736	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3306		1729	3610	1549	3502	3455		1787	3395	
Flt Permitted	0.14	1.00		0.32	1.00	1.00	0.95	1.00		0.07	1.00	
Satd. Flow (perm)	248	3306		583	3610	1549	3502	3455		137	3395	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	164	257	207	117	659	415	309	1297	94	192	743	203
RTOR Reduction (vph)	0	104	0	0	0	172	0	4	0	0	16	0
Lane Group Flow (vph)	164	360	0	117	659	243	309	1387	0	192	930	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	40.5	29.5		37.7	28.1	28.1	17.6	66.8		74.6	61.4	
Effective Green, g (s)	40.5	29.5		37.7	28.1	28.1	17.6	66.8		74.6	61.4	
Actuated g/C Ratio	0.29	0.21		0.27	0.20	0.20	0.13	0.48		0.53	0.44	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	696		235	724	310	440	1648		228	1488	
v/s Ratio Prot	c0.07	0.11		0.03	0.18		0.09	c0.40		c0.08	0.27	
v/s Ratio Perm	c0.18			0.10		0.16				0.37		
v/c Ratio	0.87	0.52		0.50	0.91	0.78	0.70	0.84		0.84	0.62	
Uniform Delay, d1	41.1	48.9		40.5	54.7	53.1	58.7	32.0		36.3	30.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.37	0.52		1.35	1.22	
Incremental Delay, d2	32.9	0.7		1.7	15.6	12.2	3.3	3.6		19.8	1.6	
Delay (s)	74.0	49.6		42.1	70.3	65.3	83.4	20.3		68.9	38.5	
Level of Service	E	D		D	E	E	F	C		E	D	
Approach Delay (s/veh)		56.0			65.8			31.8			43.7	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

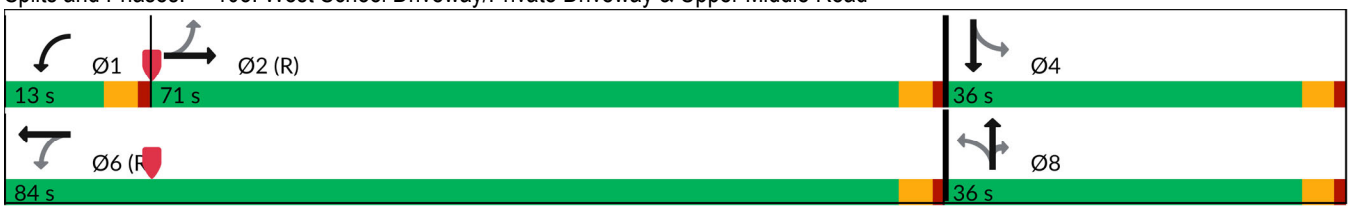
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	530	19	0	1169	0	51	0	11	2	0	3
Future Volume (vph)	2	530	19	0	1169	0	51	0	11	2	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.995							0.850		0.919	
Flt Protected	0.950							0.950			0.980	
Satd. Flow (prot)	1805	3542	0	1900	3574	0	0	1805	1615	0	1697	0
Flt Permitted	0.175							0.754			0.958	
Satd. Flow (perm)	331	3542	0	1900	3574	0	0	1431	1593	0	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5							45		45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	558	20	0	1231	0	54	0	12	2	0	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	2	578	0	0	1231	0	0	54	12	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	67.0	67.0		9.0	80.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
v/c Ratio	0.01	0.24			0.52			0.14	0.03		0.01	
Control Delay (s/veh)	7.0	8.2			18.6			34.9	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	7.0	8.2			18.6			34.9	0.1		0.0	
LOS	A	A			B			C	A		A	
Approach Delay (s/veh)		8.2			18.6			28.6				
Approach LOS		A			B			C				
Queue Length 50th (m)	0.2	27.3			104.6			10.2	0.0		0.0	
Queue Length 95th (m)	1.1	35.6			129.7			21.3	0.0		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	220	2363			2382			381	457		475	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.01	0.24			0.52			0.14	0.03		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 15.7	Intersection LOS: B

Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	530	19	0	1169	0	51	0	11	2	0	3
Future Volume (vph)	2	530	19	0	1169	0	51	0	11	2	0	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	0.99			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1800	3542			3574			1803	1593		1697	
Flt Permitted	0.17	1.00			1.00			0.75	1.00		0.96	
Satd. Flow (perm)	331	3542			3574			1432	1593		1659	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	558	20	0	1231	0	54	0	12	2	0	3
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	9	0	4	0
Lane Group Flow (vph)	2	576	0	0	1231	0	0	54	3	0	1	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Effective Green, g (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	220	2361			2382			381	424		442	
v/s Ratio Prot		0.16			c0.34							
v/s Ratio Perm	0.01							c0.04	0.00		0.00	
v/c Ratio	0.01	0.24			0.52			0.14	0.01		0.00	
Uniform Delay, d1	6.7	8.0			10.2			33.5	32.3		32.3	
Progression Factor	1.00	1.00			1.75			1.00	1.00		1.00	
Incremental Delay, d2	0.1	0.2			0.6			0.8	0.0		0.0	
Delay (s)	6.8	8.2			18.4			34.3	32.4		32.3	
Level of Service	A	A			B			C	C		C	
Approach Delay (s/veh)		8.2			18.4			34.0			32.3	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	545	7	14	1149	21	41
Future Volume (vph)	545	7	14	1149	21	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.95	0.95	1.00	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	3568	0	1570	3574	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	3568	0	1570	3574	1805	1568
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	580	7	15	1222	22	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	587	0	15	1222	22	44
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

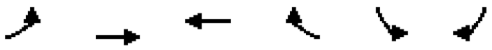
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	545	7	14	1149	21	41
Future Volume (Veh/h)	545	7	14	1149	21	41
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	580	7	15	1222	22	44
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			604		1242	311
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			480		1151	172
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			98		88	94
cM capacity (veh/h)			930		179	786

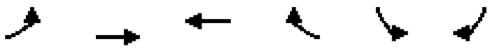
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	NB 2
Volume Total	387	200	15	611	611	22	44
Volume Left	0	0	15	0	0	22	0
Volume Right	0	7	0	0	0	0	44
cSH	1700	1700	930	1700	1700	179	786
Volume to Capacity	0.23	0.12	0.02	0.36	0.36	0.12	0.06
Queue Length 95th (m)	0.0	0.0	0.4	0.0	0.0	3.3	1.4
Control Delay (s/veh)	0.0	0.0	8.9	0.0	0.0	27.9	9.8
Lane LOS			A			D	A
Approach Delay (s/veh)	0.0		0.1			15.9	
Approach LOS						C	

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	115	464	1077	132	35	79
Future Volume (vph)	115	464	1077	132	35	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.906	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1805	3574	3517	0	1696	0
Flt Permitted	0.950				0.985	
Satd. Flow (perm)	1805	3574	3517	0	1696	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		235.5	
Travel Time (s)		7.1	17.4		21.2	
Confl. Peds. (#/hr)	13			13		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	120	483	1122	138	36	82
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	483	1260	0	118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

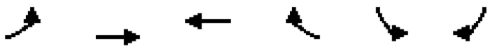
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			



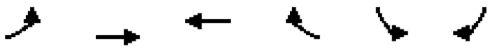
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	115	464	1077	132	35	79
Future Volume (Veh/h)	115	464	1077	132	35	79
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	120	483	1122	138	36	82
Pedestrians		1			13	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.67				0.67	0.67
vC, conflicting volume	1273				1686	644
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	433				1046	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	84				72	89
cM capacity (veh/h)	757				127	725

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	120	242	242	748	512	118
Volume Left	120	0	0	0	0	36
Volume Right	0	0	0	0	138	82
cSH	757	1700	1700	1700	1700	298
Volume to Capacity	0.16	0.14	0.14	0.44	0.30	0.40
Queue Length 95th (m)	4.5	0.0	0.0	0.0	0.0	14.6
Control Delay (s/veh)	10.7	0.0	0.0	0.0	0.0	24.8
Lane LOS	B					C
Approach Delay (s/veh)	2.1			0.0		24.8
Approach LOS						C

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	145	357	1062	397	158	126
Future Volume (vph)	145	357	1062	397	158	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor			0.99		0.99	
Frt			0.959		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1752	3574	3392	0	1711	0
Flt Permitted	0.059				0.973	
Satd. Flow (perm)	109	3574	3392	0	1705	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			70		33	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		321.0	
Travel Time (s)		17.4	14.7		28.9	
Confl. Peds. (#/hr)	8			8	5	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Adj. Flow (vph)	153	376	1118	418	166	133
Shared Lane Traffic (%)						
Lane Group Flow (vph)	153	376	1536	0	299	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	9.0	30.0	30.0		30.5	
Total Split (s)	14.0	83.0	69.0		37.0	
Total Split (%)	11.7%	69.2%	57.5%		30.8%	
Maximum Green (s)	10.0	79.0	65.0		33.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Recall Mode	None	C-Max	C-Max		Max	
Walk Time (s)		10.0	10.0		10.0	
Flash Don't Walk (s)		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	79.0	79.0	65.1		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
v/c Ratio	0.74	0.16	0.82		0.61	
Control Delay (s/veh)	60.0	7.6	26.2		39.6	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	60.0	7.6	26.2		39.6	
LOS	E	A	C		D	
Approach Delay (s/veh)		22.8	26.2		39.6	
Approach LOS		C	C		D	
Queue Length 50th (m)	28.2	15.4	153.6		57.5	
Queue Length 95th (m)	#55.3	20.5	187.6		88.8	
Internal Link Dist (m)		266.7	220.7		297.0	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	208	2352	1871		492	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.74	0.16	0.82		0.61	

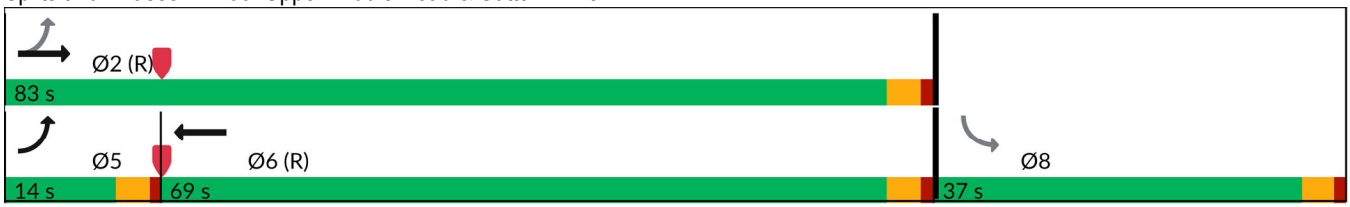
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 27.1	Intersection LOS: C

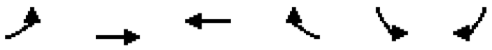
Intersection Capacity Utilization 82.0% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 106: Upper Middle Road & Sutton Drive

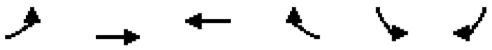




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	145	357	1062	397	158	126
Future Volume (vph)	145	357	1062	397	158	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.96		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1752	3574	3393		1704	
Flt Permitted	0.06	1.00	1.00		0.97	
Satd. Flow (perm)	109	3574	3393		1704	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	153	376	1118	418	166	133
RTOR Reduction (vph)	0	0	32	0	24	0
Lane Group Flow (vph)	153	376	1504	0	275	0
Confl. Peds. (#/hr)	8			8	5	2
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	79.0	79.0	65.1		33.0	
Effective Green, g (s)	79.0	79.0	65.1		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Lane Grp Cap (vph)	207	2352	1840		468	
v/s Ratio Prot	c0.06	0.11	c0.44			
v/s Ratio Perm	0.43				c0.16	
v/c Ratio	0.74	0.16	0.82		0.59	
Uniform Delay, d1	30.3	7.8	22.6		37.6	
Progression Factor	1.70	0.95	1.00		1.00	
Incremental Delay, d2	15.3	0.1	4.2		5.3	
Delay (s)	66.7	7.5	26.7		42.9	
Level of Service	E	A	C		D	
Approach Delay (s/veh)		24.7	26.7		42.9	
Approach LOS		C	C		D	

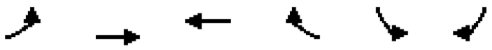
Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	476	1307	20	0	46
Future Volume (vph)	40	476	1307	20	0	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	3574	3568	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	3574	3568	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	42	501	1376	21	0	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	501	1397	0	0	48
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

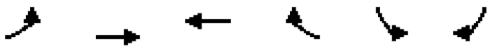
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	476	1307	20	0	46
Future Volume (Veh/h)	40	476	1307	20	0	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	42	501	1376	21	0	48
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.99	
vC, conflicting volume	1406				1730	708
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1406				1715	708
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				100	87
cM capacity (veh/h)	488				74	379

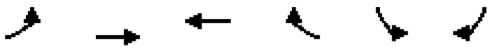
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	42	251	251	917	480	48
Volume Left	42	0	0	0	0	0
Volume Right	0	0	0	0	21	48
cSH	488	1700	1700	1700	1700	379
Volume to Capacity	0.09	0.15	0.15	0.54	0.28	0.13
Queue Length 95th (m)	2.2	0.0	0.0	0.0	0.0	3.4
Control Delay (s/veh)	13.1	0.0	0.0	0.0	0.0	15.9
Lane LOS	B					C
Approach Delay (s/veh)	1.0			0.0		15.9
Approach LOS						C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	8	471	1434	7	4	6
Future Volume (vph)	8	471	1434	7	4	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.919	
Flt Protected	0.950				0.980	
Satd. Flow (prot)	1805	3574	3571	0	1711	0
Flt Permitted	0.950				0.980	
Satd. Flow (perm)	1805	3574	3571	0	1711	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	9	501	1526	7	4	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	501	1533	0	10	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

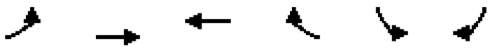
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.9%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	471	1434	7	4	6
Future Volume (Veh/h)	8	471	1434	7	4	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	9	501	1526	7	4	6
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1549				1814	783
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1549				1814	783
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				94	98
cM capacity (veh/h)	428				69	337

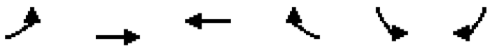
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	9	251	251	1017	516	10
Volume Left	9	0	0	0	0	4
Volume Right	0	0	0	0	7	6
cSH	428	1700	1700	1700	1700	132
Volume to Capacity	0.02	0.15	0.15	0.60	0.30	0.08
Queue Length 95th (m)	0.5	0.0	0.0	0.0	0.0	1.9
Control Delay (s/veh)	13.6	0.0	0.0	0.0	0.0	34.6
Lane LOS	B					D
Approach Delay (s/veh)	0.2			0.0		34.6
Approach LOS						D

Intersection Summary				
Average Delay	0.2			
Intersection Capacity Utilization	49.9%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	449	1436	107	46	32
Future Volume (vph)	28	449	1436	107	46	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.944	
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1805	3574	3541	0	1720	0
Flt Permitted	0.950				0.971	
Satd. Flow (perm)	1805	3574	3541	0	1720	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	30	488	1561	116	50	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	488	1677	0	85	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	449	1436	107	46	32
Future Volume (Veh/h)	28	449	1436	107	46	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	488	1561	116	50	35
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1691				1937	853
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1691				1937	853
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				7	88
cM capacity (veh/h)	378				54	297

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	30	244	244	1041	636	85
Volume Left	30	0	0	0	0	50
Volume Right	0	0	0	0	116	35
cSH	378	1700	1700	1700	1700	81
Volume to Capacity	0.08	0.14	0.14	0.61	0.37	1.05
Queue Length 95th (m)	2.1	0.0	0.0	0.0	0.0	47.3
Control Delay (s/veh)	15.3	0.0	0.0	0.0	0.0	206.7
Lane LOS	C					F
Approach Delay (s/veh)	0.9			0.0		206.7
Approach LOS						F

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	54.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	21	23	1512	17	27	458
Future Volume (vph)	21	23	1512	17	27	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.930		0.998			
Flt Protected	0.977				0.950	
Satd. Flow (prot)	1726	0	3568	0	1805	3574
Flt Permitted	0.977				0.950	
Satd. Flow (perm)	1726	0	3568	0	1805	3574
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			459.4
Travel Time (s)	14.5		7.6			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	22	24	1592	18	28	482
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	1610	0	28	482
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

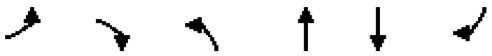
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.3%		ICU Level of Service A	
Analysis Period (min) 15			



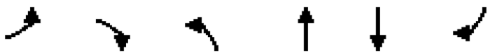
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	21	23	1512	17	27	458
Future Volume (Veh/h)	21	23	1512	17	27	458
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	22	24	1592	18	28	482
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1899	806			1611	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1899	806			1611	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	62	93			93	
cM capacity (veh/h)	58	329			410	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	46	1061	549	28	241	241
Volume Left	22	0	0	28	0	0
Volume Right	24	0	18	0	0	0
cSH	102	1700	1700	410	1700	1700
Volume to Capacity	0.45	0.62	0.32	0.07	0.14	0.14
Queue Length 95th (m)	15.5	0.0	0.0	1.7	0.0	0.0
Control Delay (s/veh)	66.6	0.0	0.0	14.4	0.0	0.0
Lane LOS	F			B		
Approach Delay (s/veh)	66.6	0.0		0.8		
Approach LOS	F					

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	293	474	1390	442	29
Future Volume (vph)	120	293	474	1390	442	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	1736	3574	3564	0
Flt Permitted	0.950		0.421			
Satd. Flow (perm)	1752	1583	767	3574	3564	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		322			8	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	132	322	521	1527	486	32
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	322	521	1527	518	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

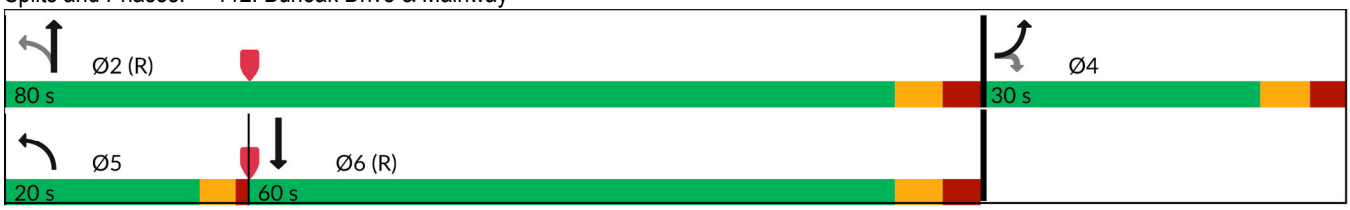


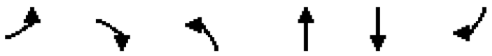
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	20.0	80.0	60.0	
Total Split (%)	27.3%	27.3%	18.2%	72.7%	54.5%	
Maximum Green (s)	23.0	23.0	16.0	73.0	53.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	13.6	13.6	85.4	82.4	62.0	
Actuated g/C Ratio	0.12	0.12	0.78	0.75	0.56	
v/c Ratio	0.61	0.68	0.70	0.57	0.26	
Control Delay (s/veh)	57.3	12.4	15.5	11.4	13.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	57.3	12.4	15.5	11.4	13.6	
LOS	E	B	B	B	B	
Approach Delay (s/veh)	25.4			12.5	13.6	
Approach LOS	C			B	B	
Queue Length 50th (m)	29.3	0.0	60.8	93.6	29.5	
Queue Length 95th (m)	47.7	26.1	105.3	137.5	47.6	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	366	585	752	2678	2010	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.36	0.55	0.69	0.57	0.26	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay (s/veh): 14.6	Intersection LOS: B

Intersection Capacity Utilization 72.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	293	474	1390	442	29
Future Volume (vph)	120	293	474	1390	442	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	1733	3574	3563	
Flt Permitted	0.95	1.00	0.42	1.00	1.00	
Satd. Flow (perm)	1752	1583	769	3574	3563	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	132	322	521	1527	486	32
RTOR Reduction (vph)	0	282	0	0	3	0
Lane Group Flow (vph)	132	40	521	1527	515	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	13.6	13.6	82.4	82.4	61.9	
Effective Green, g (s)	13.6	13.6	82.4	82.4	61.9	
Actuated g/C Ratio	0.12	0.12	0.75	0.75	0.56	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	195	720	2677	2004	
v/s Ratio Prot	c0.08		c0.11	0.43	0.14	
v/s Ratio Perm		0.03	c0.43			
v/c Ratio	0.61	0.20	0.72	0.57	0.26	
Uniform Delay, d1	45.7	43.3	5.3	6.0	12.3	
Progression Factor	1.00	1.00	2.64	1.64	1.00	
Incremental Delay, d2	5.0	0.5	2.4	0.6	0.3	
Delay (s)	50.7	43.9	16.5	10.5	12.6	
Level of Service	D	D	B	B	B	
Approach Delay (s/veh)	45.9			12.0	12.6	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	306	22	11	520	147	46
Future Volume (vph)	306	22	11	520	147	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.968	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	3415	0	0	3531	1719	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	3415	0	0	3531	1719	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	14%	9%	2%	4%	0%
Adj. Flow (vph)	364	26	13	619	175	55
Shared Lane Traffic (%)						
Lane Group Flow (vph)	390	0	0	632	230	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

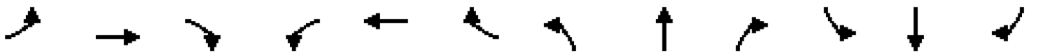
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.8%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	306	22	11	520	147	46
Future Volume (Veh/h)	306	22	11	520	147	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	364	26	13	619	175	55
Pedestrians					5	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			395		718	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			395		718	200
tC, single (s)			4.3		6.9	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		51	93
cM capacity (veh/h)			1107		354	810

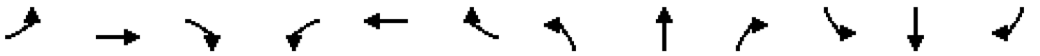
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	243	147	219	413	230
Volume Left	0	0	13	0	175
Volume Right	0	26	0	0	55
cSH	1700	1700	1107	1700	409
Volume to Capacity	0.14	0.09	0.01	0.24	0.56
Queue Length 95th (m)	0.0	0.0	0.3	0.0	26.8
Control Delay (s/veh)	0.0	0.0	0.6	0.0	24.5
Lane LOS			A		C
Approach Delay (s/veh)	0.0		0.2		24.5
Approach LOS					C

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	32	225	27	5	751	99	60	6	13	38	2	47
Future Volume (vph)	32	225	27	5	751	99	60	6	13	38	2	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.983			0.978			0.927	
Flt Protected		0.994						0.963			0.979	
Satd. Flow (prot)	0	3403	0	0	3483	0	0	1789	0	0	1702	0
Flt Permitted		0.994						0.963			0.979	
Satd. Flow (perm)	0	3403	0	0	3483	0	0	1789	0	0	1702	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	40	278	33	6	927	122	74	7	16	47	2	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	351	0	0	1055	0	0	97	0	0	107	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

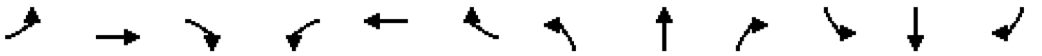


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	225	27	5	751	99	60	6	13	38	2	47
Future Volume (Veh/h)	32	225	27	5	751	99	60	6	13	38	2	47
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	40	278	33	6	927	122	74	7	16	47	2	58
Pedestrians		2			3			7			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1051			318			918	1445	166	1244	1400	529
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1051			318			918	1445	166	1244	1400	529
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	94			100			61	94	98	59	98	88
cM capacity (veh/h)	669			1246			188	124	849	115	132	498

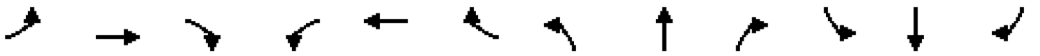
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	179	172	470	586	97	107
Volume Left	40	0	6	0	74	47
Volume Right	0	33	0	122	16	58
cSH	669	1700	1246	1700	207	198
Volume to Capacity	0.06	0.10	0.00*	0.34	0.47	0.54
Queue Length 95th (m)	1.5	0.0	0.1	0.0	18.2	22.7
Control Delay (s/veh)	2.9	0.0	0.2	0.0	36.8	42.9
Lane LOS	A		A		E	E
Approach Delay (s/veh)	1.5		0.1		36.8	42.9
Approach LOS					E	E

Intersection Summary				
Average Delay	5.4			
Intersection Capacity Utilization	47.2%	ICU Level of Service		A
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	145	139	125	582	200	317	1337	59	92	840	108
Future Volume (vph)	131	145	139	125	582	200	317	1337	59	92	840	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00			1.00	
Frt		0.927			0.962			0.994			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3115	0	1687	3383	0	1703	3505	0	1787	3465	0
Flt Permitted	0.134			0.425			0.141			0.067		
Satd. Flow (perm)	240	3115	0	752	3383	0	253	3505	0	126	3465	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		149			32			4			12	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	141	156	149	134	626	215	341	1438	63	99	903	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	305	0	134	841	0	341	1501	0	99	1019	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

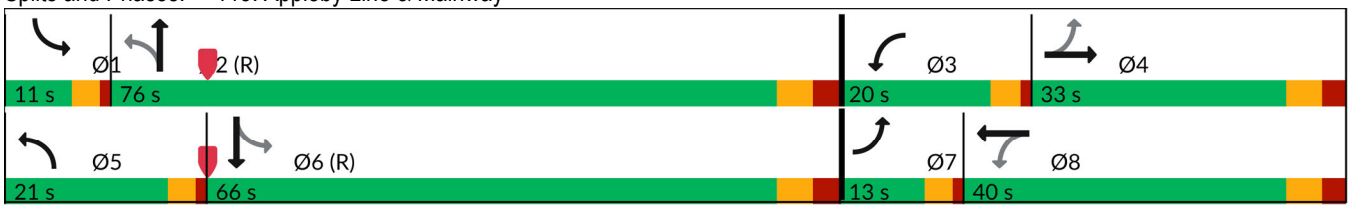


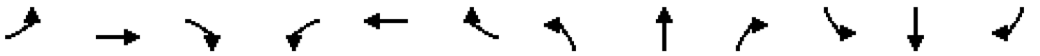
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	13.0	33.0		20.0	40.0		21.0	76.0		11.0	66.0	
Total Split (%)	9.3%	23.6%		14.3%	28.6%		15.0%	54.3%		7.9%	47.1%	
Maximum Green (s)	9.0	26.7		16.0	33.7		17.0	69.7		7.0	59.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	41.1	29.8		47.8	33.7		83.0	69.7		69.0	59.7	
Actuated g/C Ratio	0.29	0.21		0.34	0.24		0.59	0.50		0.49	0.43	
v/c Ratio	0.86	0.39		0.39	1.00		1.05	0.86		0.68	0.69	
Control Delay (s/veh)	77.0	25.8		35.9	82.5		84.0	22.1		48.5	23.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	77.0	25.8		35.9	82.5		84.0	22.1		48.5	23.5	
LOS	E	C		D	F		F	C		D	C	
Approach Delay (s/veh)		42.0			76.1			33.5			25.7	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	30.3	21.1		28.9	~128.4		~71.3	216.7		10.1	95.3	
Queue Length 95th (m)	#69.5	37.6		47.1	#175.9		m#118.2	190.3		#36.3	112.0	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	164	779		370	838		326	1746		145	1484	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.86	0.39		0.36	1.00		1.05	0.86		0.68	0.69	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 85 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay (s/veh): 41.9	Intersection LOS: D

Intersection Capacity Utilization 92.7% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

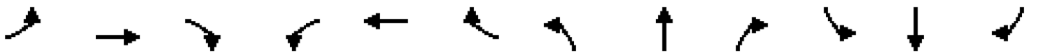




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	145	139	125	582	200	317	1337	59	92	840	108
Future Volume (vph)	131	145	139	125	582	200	317	1337	59	92	840	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1702	3114		1685	3382		1703	3504		1787	3465	
Flt Permitted	0.13	1.00		0.43	1.00		0.14	1.00		0.07	1.00	
Satd. Flow (perm)	241	3114		754	3382		253	3504		126	3465	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	141	156	149	134	626	215	341	1438	63	99	903	116
RTOR Reduction (vph)	0	117	0	0	24	0	0	2	0	0	7	0
Lane Group Flow (vph)	141	188	0	134	817	0	341	1499	0	99	1012	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.8	29.8		46.6	33.7		80.7	69.7		66.7	59.7	
Effective Green, g (s)	38.8	29.8		46.6	33.7		80.7	69.7		66.7	59.7	
Actuated g/C Ratio	0.28	0.21		0.33	0.24		0.58	0.50		0.48	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	662		336	814		321	1744		143	1477	
v/s Ratio Prot	c0.06	0.06		0.04	c0.24		c0.13	0.43		0.03	0.29	
v/s Ratio Perm	0.19			0.10			c0.48			0.29		
v/c Ratio	0.88	0.28		0.40	1.00		1.06	0.86		0.69	0.69	
Uniform Delay, d1	42.6	46.2		34.1	53.2		31.5	30.9		27.7	32.5	
Progression Factor	1.00	1.00		1.00	1.00		1.38	0.59		1.14	0.65	
Incremental Delay, d2	39.0	0.2		0.8	32.4		56.1	3.5		12.7	2.4	
Delay (s)	81.6	46.4		34.9	85.5		99.4	21.8		44.2	23.5	
Level of Service	F	D		C	F		F	C		D	C	
Approach Delay (s/veh)		57.5			78.6			36.2			25.4	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	9	40	78	16	106	39	1566	91	97	926	22
Future Volume (vph)	44	9	40	78	16	106	39	1566	91	97	926	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.98		0.99	1.00			1.00	
Frt		0.942			0.928			0.992			0.997	
Flt Protected		0.977			0.981		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1707	0	1641	3473	0	1805	3522	0
Flt Permitted		0.649			0.819		0.284			0.065		
Satd. Flow (perm)	0	1147	0	0	1421	0	487	3473	0	124	3522	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			38			7			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	47	10	43	83	17	113	41	1666	97	103	985	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	100	0	0	213	0	41	1763	0	103	1008	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		89.0	89.0		12.0	101.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%		63.6%	63.6%		8.6%	72.1%	
Maximum Green (s)	32.5	32.5		32.5	32.5		83.0	83.0		8.0	95.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		22.7			22.7		92.3	92.3		106.8	104.8	
Actuated g/C Ratio		0.16			0.16		0.66	0.66		0.76	0.75	
v/c Ratio		0.48			0.81		0.13	0.77		0.53	0.38	
Control Delay (s/veh)		45.8			68.6		5.3	9.4		23.9	8.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		45.8			68.6		5.3	9.4		23.9	8.2	
LOS		D			E		A	A		C	A	
Approach Delay (s/veh)		45.8			68.6			9.4			9.7	
Approach LOS		D			E			A			A	
Queue Length 50th (m)		19.9			50.2		1.9	41.9		12.4	49.3	
Queue Length 95th (m)		36.7			75.5		m2.4	m229.0		m31.2	103.3	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		285			359		320	2292		201	2636	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.35			0.59		0.13	0.77		0.51	0.38	

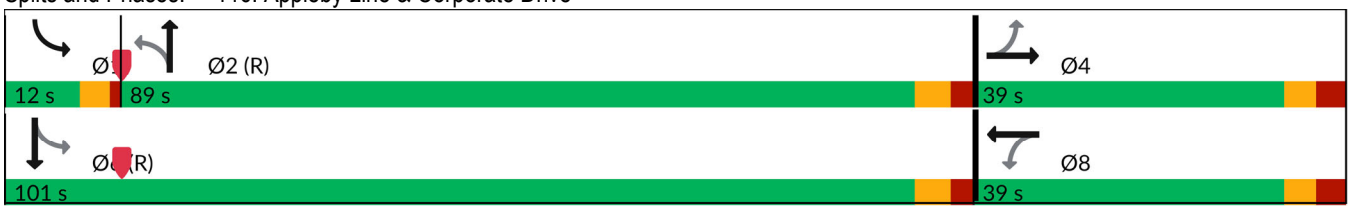
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 106 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 14.5	Intersection LOS: B

Intersection Capacity Utilization 83.7% ICU Level of Service E

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

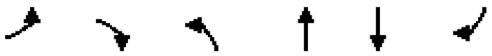
Splits and Phases: 116: Appleby Line & Corporate Drive



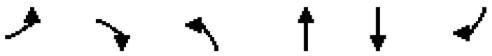
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	9	40	78	16	106	39	1566	91	97	926	22
Future Volume (vph)	44	9	40	78	16	106	39	1566	91	97	926	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.94			0.93		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1727			1702		1628	3472		1805	3521	
Flt Permitted		0.65			0.82		0.28	1.00		0.07	1.00	
Satd. Flow (perm)		1147			1422		487	3472		124	3521	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	10	43	83	17	113	41	1666	97	103	985	23
RTOR Reduction (vph)	0	21	0	0	32	0	0	2	0	0	1	0
Lane Group Flow (vph)	0	79	0	0	181	0	41	1761	0	103	1007	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.7			22.7		92.3	92.3		104.8	104.8	
Effective Green, g (s)		22.7			22.7		92.3	92.3		104.8	104.8	
Actuated g/C Ratio		0.16			0.16		0.66	0.66		0.75	0.75	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		185			230		321	2289		194	2635	
v/s Ratio Prot								c0.51		c0.03	0.29	
v/s Ratio Perm		0.07			c0.13		0.08			0.36		
v/c Ratio		0.43			0.79		0.13	0.77		0.53	0.38	
Uniform Delay, d1		52.8			56.3		8.9	16.5		19.1	6.2	
Progression Factor		1.00			1.00		0.42	0.45		1.45	1.14	
Incremental Delay, d2		1.6			16.2		0.4	1.2		2.3	0.3	
Delay (s)		54.4			72.5		4.1	8.6		29.9	7.4	
Level of Service		D			E		A	A		C	A	
Approach Delay (s/veh)		54.4			72.5			8.5			9.5	
Approach LOS		D			E			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	134	383	108	1697	771	25
Future Volume (vph)	134	383	108	1697	771	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	1671	3539	3512	0
Flt Permitted	0.950		0.262			
Satd. Flow (perm)	1787	1553	460	3539	3512	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		244			5	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	149	426	120	1886	857	28
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	426	120	1886	885	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

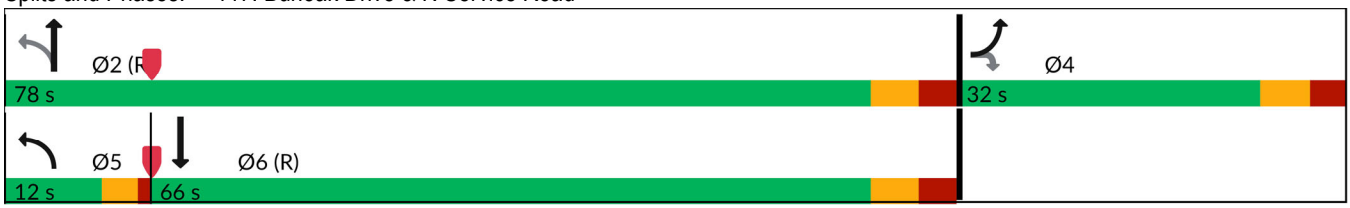


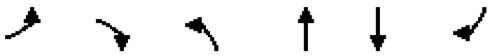
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.5	37.0	37.0	
Total Split (s)	32.0	32.0	12.0	78.0	66.0	
Total Split (%)	29.1%	29.1%	10.9%	70.9%	60.0%	
Maximum Green (s)	25.0	25.0	8.0	71.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	19.3	19.3	79.7	76.7	65.2	
Actuated g/C Ratio	0.18	0.18	0.72	0.70	0.59	
v/c Ratio	0.48	0.90	0.29	0.76	0.43	
Control Delay (s/veh)	44.5	41.2	7.9	14.1	8.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	44.5	41.2	7.9	14.1	8.6	
LOS	D	D	A	B	A	
Approach Delay (s/veh)	42.0			13.7	8.6	
Approach LOS	D			B	A	
Queue Length 50th (m)	30.1	42.9	9.2	97.4	27.3	
Queue Length 95th (m)	48.6	#92.0	m11.4	m111.3	44.0	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	406	541	421	2469	2082	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.37	0.79	0.29	0.76	0.43	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 88 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 17.1	Intersection LOS: B

Intersection Capacity Utilization 66.0% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	134	383	108	1697	771	25
Future Volume (vph)	134	383	108	1697	771	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	1671	3539	3513	
Flt Permitted	0.95	1.00	0.26	1.00	1.00	
Satd. Flow (perm)	1787	1553	461	3539	3513	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	426	120	1886	857	28
RTOR Reduction (vph)	0	201	0	0	2	0
Lane Group Flow (vph)	149	225	120	1886	883	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	19.3	19.3	76.7	76.7	65.1	
Effective Green, g (s)	19.3	19.3	76.7	76.7	65.1	
Actuated g/C Ratio	0.18	0.18	0.70	0.70	0.59	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	313	272	405	2467	2079	
v/s Ratio Prot	0.08		0.02	c0.53	0.25	
v/s Ratio Perm		c0.14	0.19			
v/c Ratio	0.48	0.83	0.30	0.76	0.42	
Uniform Delay, d1	40.8	43.7	6.4	10.8	12.2	
Progression Factor	1.00	1.00	1.32	1.07	0.60	
Incremental Delay, d2	1.1	18.2	0.1	0.8	0.6	
Delay (s)	41.9	61.9	8.5	12.4	8.0	
Level of Service	D	E	A	B	A	
Approach Delay (s/veh)	56.8			12.2	8.0	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1317	1246	667	0	0	1139
Future Volume (vph)	1317	1246	667	0	0	1139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.91
Ped Bike Factor						
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3355	1441	3505	0	0	5085
Flt Permitted	0.964					
Satd. Flow (perm)	3355	1441	3505	0	0	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	59	101				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	1416	1340	717	0	0	1225
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	1885	871	717	0	0	1225
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

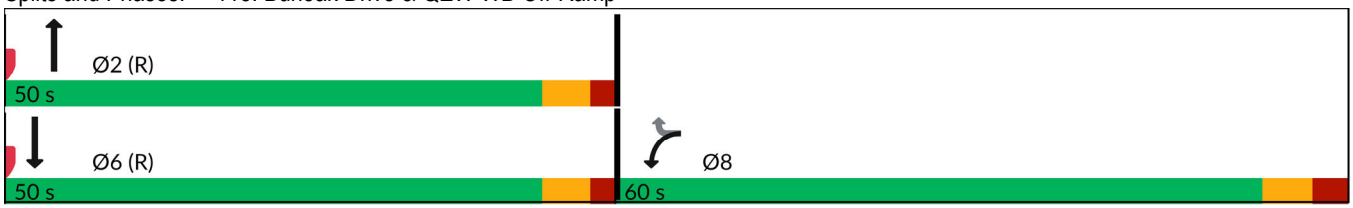


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	60.0	60.0	50.0			50.0
Total Split (%)	54.5%	54.5%	45.5%			45.5%
Maximum Green (s)	53.0	53.0	44.0			44.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
v/c Ratio	1.14	1.17	0.51			0.60
Control Delay (s/veh)	100.4	115.2	21.7			22.6
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	100.4	115.2	21.7			22.6
LOS	F	F	C			C
Approach Delay (s/veh)	105.1		21.7			22.6
Approach LOS	F		C			C
Queue Length 50th (m)	~258.7	~248.3	68.7			85.5
Queue Length 95th (m)	#303.9	#335.6	87.7			105.6
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1647	746	1402			2034
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.14	1.17	0.51			0.60

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay (s/veh): 70.9	Intersection LOS: E

Intersection Capacity Utilization 83.9% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

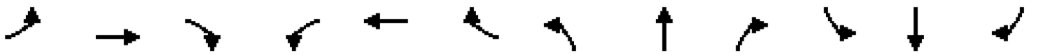




Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1317	1246	667	0	0	1139
Future Volume (vph)	1317	1246	667	0	0	1139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	0.95			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3353	1441	3505			5085
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3353	1441	3505			5085
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1416	1340	717	0	0	1225
RTOR Reduction (vph)	31	52	0	0	0	0
Lane Group Flow (vph)	1854	819	717	0	0	1225
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	53.0	53.0	44.0			44.0
Effective Green, g (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1615	694	1402			2034
v/s Ratio Prot	0.55		0.20			c0.24
v/s Ratio Perm		c0.57				
v/c Ratio	1.15	1.18	0.51			0.60
Uniform Delay, d1	28.5	28.5	24.9			26.1
Progression Factor	1.00	1.00	0.81			0.82
Incremental Delay, d2	74.4	95.3	1.3			1.1
Delay (s)	102.9	123.8	21.5			22.5
Level of Service	F	F	C			C
Approach Delay (s/veh)	109.5		21.5			22.5
Approach LOS	F		C			C

Intersection Summary			
HCM 2000 Control Delay (s/veh)	73.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	45	207	0	0	98	0	542	8	6	1865	0
Future Volume (vph)	81	45	207	0	0	98	0	542	8	6	1865	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.895	0.850			0.865		0.998				
Flt Protected	0.950											
Satd. Flow (prot)	1641	2950	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950										0.938	
Satd. Flow (perm)	1641	2950	1413	0	0	1596	0	5125	0	0	4817	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		109	109			376		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	85	47	218	0	0	103	0	571	8	6	1963	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	85	156	109	0	0	103	0	579	0	0	1969	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

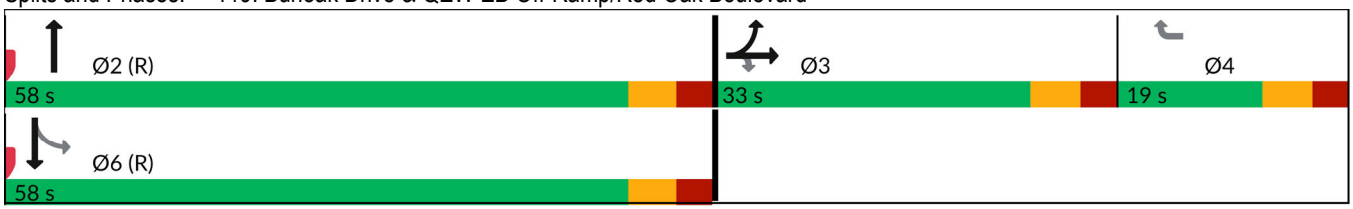


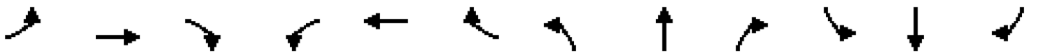
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			39.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		25.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	11.3	11.3	11.3			8.0		69.7			69.7	
Actuated g/C Ratio	0.10	0.10	0.10			0.07		0.63			0.63	
v/c Ratio	0.50	0.39	0.45			0.22		0.18			0.65	
Control Delay (s/veh)	56.4	18.5	14.5			1.1		8.8			8.2	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	56.4	18.5	14.5			1.1		8.8			8.2	
LOS	E	B	B			A		A			A	
Approach Delay (s/veh)		26.5			1.1			8.8			8.2	
Approach LOS		C			A			A			A	
Queue Length 50th (m)	19.9	5.7	0.0			0.0		18.1			68.4	
Queue Length 95th (m)	36.1	16.4	18.1			0.0		26.5			m77.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	387	780	417			509		3247			3051	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.22	0.20	0.26			0.20		0.18			0.65	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay (s/veh): 10.2	Intersection LOS: B

Intersection Capacity Utilization 58.5% ICU Level of Service B
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

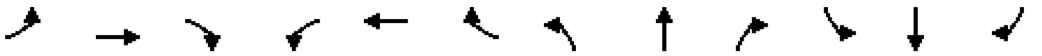




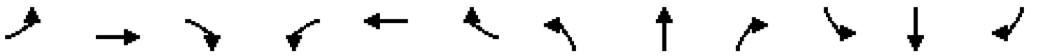
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	45	207	0	0	98	0	542	8	6	1865	0
Future Volume (vph)	81	45	207	0	0	98	0	542	8	6	1865	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.90	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1641	2951	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1641	2951	1413			1596		5125			4818	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	85	47	218	0	0	103	0	571	8	6	1963	0
RTOR Reduction (vph)	0	98	98	0	0	96	0	1	0	0	0	0
Lane Group Flow (vph)	85	58	11	0	0	7	0	578	0	0	1969	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	11.3	11.3	11.3			8.0		69.7			69.7	
Effective Green, g (s)	11.3	11.3	11.3			8.0		69.7			69.7	
Actuated g/C Ratio	0.10	0.10	0.10			0.07		0.63			0.63	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	168	303	145			116		3247			3052	
v/s Ratio Prot	c0.05	0.02						0.11				
v/s Ratio Perm			0.01			c0.00					c0.41	
v/c Ratio	0.51	0.19	0.08			0.06		0.18			0.65	
Uniform Delay, d1	46.7	45.2	44.6			47.5		8.3			12.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.59	
Incremental Delay, d2	2.4	0.3	0.2			0.2		0.1			0.5	
Delay (s)	49.1	45.5	44.9			47.7		8.4			7.8	
Level of Service	D	D	D			D		A			A	
Approach Delay (s/veh)		46.2			47.7			8.4			7.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	38	147	261	207	163	294	1549	135	51	1012	49
Future Volume (vph)	56	38	147	261	207	163	294	1549	135	51	1012	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.934			0.988			0.993	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1600	0	1770	1739	0	1736	3454	0	1805	3446	0
Flt Permitted	0.511			0.221			0.157			0.062		
Satd. Flow (perm)	951	1600	0	412	1739	0	287	3454	0	118	3446	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		117			29			10			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			156.9			629.5	
Travel Time (s)		21.2			8.8			9.4			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Adj. Flow (vph)	57	39	150	266	211	166	300	1581	138	52	1033	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	189	0	266	377	0	300	1719	0	52	1083	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

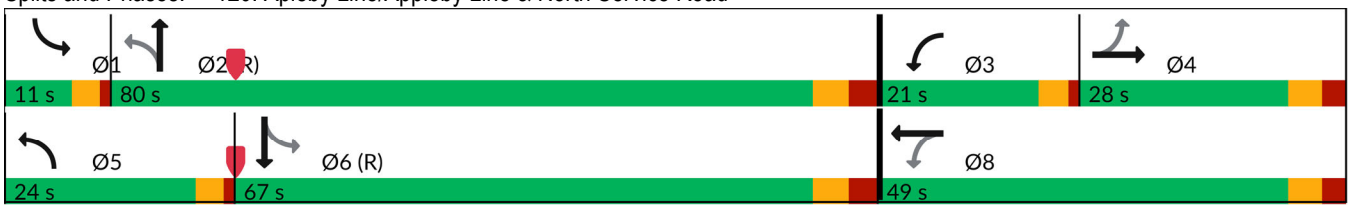


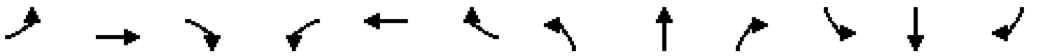
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	28.0	28.0		21.0	49.0		24.0	80.0		11.0	67.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%		17.1%	57.1%		7.9%	47.9%	
Maximum Green (s)	21.9	21.9		17.0	42.9		20.0	73.4		7.0	60.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	14.1	14.1		37.2	35.1		94.8	83.3		79.3	69.7	
Actuated g/C Ratio	0.10	0.10		0.27	0.25		0.68	0.60		0.57	0.50	
v/c Ratio	0.60	0.71		0.97	0.82		0.78	0.83		0.34	0.63	
Control Delay (s/veh)	83.5	38.1		92.5	60.7		29.3	19.1		20.8	38.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	
Total Delay (s/veh)	83.5	38.1		92.5	60.7		29.3	19.5		20.8	38.6	
LOS	F	D		F	E		C	B		C	D	
Approach Delay (s/veh)		48.6			73.9			21.0			37.7	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	16.5	20.7		68.9	98.7		37.7	132.4		7.0	165.5	
Queue Length 95th (m)	30.8	46.3		#104.8	128.5		m57.5	m247.0		m12.2	200.4	
Internal Link Dist (m)		329.6			122.5			132.9			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	148	348		274	552		412	2059		152	1716	
Starvation Cap Reductn	0	0		0	0		0	82		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.39	0.54		0.97	0.68		0.73	0.87		0.34	0.63	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 35.8	Intersection LOS: D

Intersection Capacity Utilization 99.6% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	38	147	261	207	163	294	1549	135	51	1012	49
Future Volume (vph)	56	38	147	261	207	163	294	1549	135	51	1012	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1600		1770	1739		1736	3454		1805	3446	
Flt Permitted	0.51	1.00		0.22	1.00		0.16	1.00		0.06	1.00	
Satd. Flow (perm)	952	1600		412	1739		286	3454		117	3446	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	57	39	150	266	211	166	300	1581	138	52	1033	50
RTOR Reduction (vph)	0	105	0	0	22	0	0	4	0	0	2	0
Lane Group Flow (vph)	57	84	0	266	355	0	300	1715	0	52	1081	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.1	14.1		35.1	35.1		92.2	82.5		75.4	69.7	
Effective Green, g (s)	14.1	14.1		35.1	35.1		92.2	82.5		75.4	69.7	
Actuated g/C Ratio	0.10	0.10		0.25	0.25		0.66	0.59		0.54	0.50	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	95	161		268	435		379	2035		131	1715	
v/s Ratio Prot		0.05		c0.12	0.20		c0.10	c0.50		0.02	0.31	
v/s Ratio Perm	0.06			c0.13			0.42			0.20		
v/c Ratio	0.60	0.52		0.99	0.82		0.79	0.84		0.40	0.63	
Uniform Delay, d1	60.3	59.7		48.0	49.4		19.7	23.5		22.0	25.7	
Progression Factor	1.00	1.00		1.00	1.00		1.46	0.68		1.20	1.35	
Incremental Delay, d2	10.2	3.0		52.7	11.3		4.9	2.0		1.6	1.4	
Delay (s)	70.5	62.8		100.6	60.7		33.7	18.0		27.9	36.1	
Level of Service	E	E		F	E		C	B		C	D	
Approach Delay (s/veh)		64.5			77.2			20.3			35.7	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	99.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	684	697	1299	0	0	1204
Future Volume (vph)	684	697	1299	0	0	1204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1553	3539	0	0	4988
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1553	3539	0	0	4988
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		57				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		182.8			39.1
Travel Time (s)	10.7		11.0			2.3
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Adj. Flow (vph)	705	719	1339	0	0	1241
Shared Lane Traffic (%)						
Lane Group Flow (vph)	705	719	1339	0	0	1241
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
v/c Ratio	0.68	1.39	0.62			0.41
Control Delay (s/veh)	46.3	223.0	16.1			9.3
Queue Delay	0.0	0.0	0.2			0.0
Total Delay (s/veh)	46.3	223.0	16.2			9.3
LOS	D	F	B			A
Approach Delay (s/veh)	135.5		16.2			9.3
Approach LOS	F		B			A
Queue Length 50th (m)	94.6	~275.7	130.5			36.6
Queue Length 95th (m)	117.4	#357.8	143.2			m42.0
Internal Link Dist (m)	154.1		158.8			15.1
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1044	516	2148			3028
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	2	184			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.68	1.40	0.68			0.41

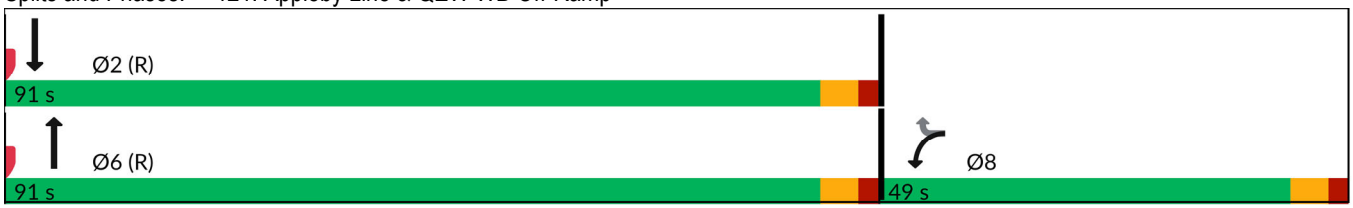
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.39			
Intersection Signal Delay (s/veh): 56.5		Intersection LOS: E	
Intersection Capacity Utilization 89.1%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

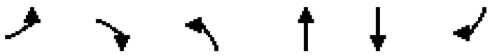
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



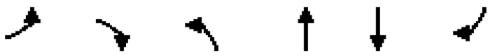


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	684	697	1299	0	0	1204
Future Volume (vph)	684	697	1299	0	0	1204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1553	3539			4988
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1553	3539			4988
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	705	719	1339	0	0	1241
RTOR Reduction (vph)	0	39	0	0	0	0
Lane Group Flow (vph)	705	680	1339	0	0	1241
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	43.0	43.0	85.0			85.0
Effective Green, g (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1044	476	2148			3028
v/s Ratio Prot	0.21		c0.38			0.25
v/s Ratio Perm		c0.44				
v/c Ratio	0.68	1.43	0.62			0.41
Uniform Delay, d1	42.4	48.5	17.4			14.4
Progression Factor	1.00	1.00	0.84			0.62
Incremental Delay, d2	1.7	204.3	1.3			0.3
Delay (s)	44.1	252.8	15.9			9.3
Level of Service	D	F	B			A
Approach Delay (s/veh)	149.5		15.9			9.3
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	61.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	367	309	0	1022	1527	0
Future Volume (vph)	367	309	0	1022	1527	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	3505	3438	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	3505	3438	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		62				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	141.4	
Travel Time (s)	13.2			21.2	8.5	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Adj. Flow (vph)	371	312	0	1032	1542	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	371	312	0	1032	1542	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

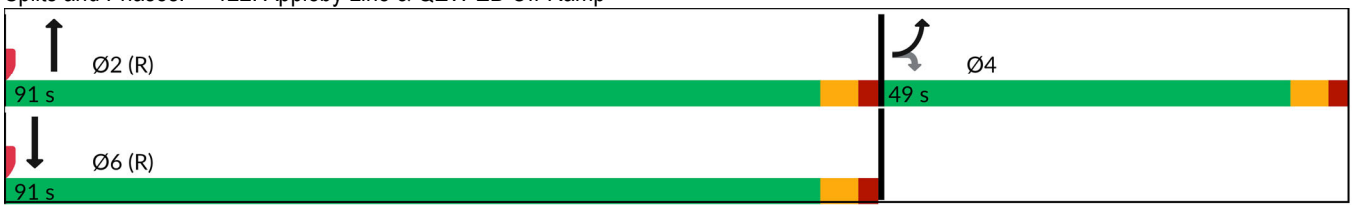


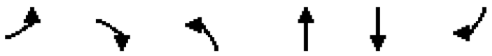
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	21.2	21.2		106.8	106.8	
Actuated g/C Ratio	0.15	0.15		0.76	0.76	
v/c Ratio	0.74	0.68		0.39	0.59	
Control Delay (s/veh)	65.4	52.1		6.6	5.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.4	52.1		6.6	5.8	
LOS	E	D		A	A	
Approach Delay (s/veh)	59.3			6.6	5.8	
Approach LOS	E			A	A	
Queue Length 50th (m)	55.9	41.5		47.8	17.0	
Queue Length 95th (m)	70.8	57.7		m71.1	141.1	
Internal Link Dist (m)	195.9			328.8	117.4	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1024	866		2673	2622	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.36	0.36		0.39	0.59	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 17.3		Intersection LOS: B	
Intersection Capacity Utilization 89.1%		ICU Level of Service E	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

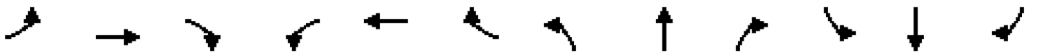
Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



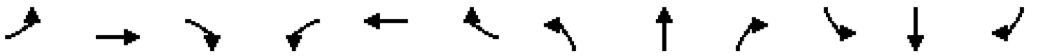


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	367	309	0	1022	1527	0
Future Volume (vph)	367	309	0	1022	1527	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		3505	3438	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		3505	3438	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	371	312	0	1032	1542	0
RTOR Reduction (vph)	0	53	0	0	0	0
Lane Group Flow (vph)	371	259	0	1032	1542	0
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	21.2	21.2		106.8	106.8	
Effective Green, g (s)	21.2	21.2		106.8	106.8	
Actuated g/C Ratio	0.15	0.15		0.76	0.76	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	505	406		2673	2622	
v/s Ratio Prot	c0.11			0.29	c0.45	
v/s Ratio Perm		0.10				
v/c Ratio	0.73	0.64		0.39	0.59	
Uniform Delay, d1	56.7	55.8		5.6	7.1	
Progression Factor	1.00	1.00		1.06	0.65	
Incremental Delay, d2	5.5	3.3		0.3	0.9	
Delay (s)	62.2	59.1		6.2	5.5	
Level of Service	E	E		A	A	
Approach Delay (s/veh)	60.8			6.2	5.5	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	277	236	160	405	513	326	91	783	165	140	1304	237
Future Volume (vph)	277	236	160	405	513	326	91	783	165	140	1304	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.939			0.942				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3225	0	1752	3296	0	1687	3539	1538	1736	3539	1404
Flt Permitted	0.201			0.220			0.070			0.223		
Satd. Flow (perm)	366	3225	0	404	3296	0	124	3539	1514	407	3539	1375
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		97			92				151			187
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Adj. Flow (vph)	283	241	163	413	523	333	93	799	168	143	1331	242
Shared Lane Traffic (%)												
Lane Group Flow (vph)	283	404	0	413	856	0	93	799	168	143	1331	242
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.6		31.0	29.6		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	42.3	19.9		56.0	29.6		67.7	58.4	58.4	75.1	62.7	62.7
Actuated g/C Ratio	0.30	0.14		0.40	0.21		0.48	0.42	0.42	0.54	0.45	0.45
v/c Ratio	0.93	0.75		0.92	1.11		0.67	0.54	0.23	0.44	0.84	0.34
Control Delay (s/veh)	75.1	53.2		62.5	112.6		55.5	39.7	13.8	17.9	35.1	6.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.1	53.2		62.5	112.6		55.5	39.7	13.8	17.9	35.1	6.9
LOS	E	D		E	F		E	D	B	B	D	A
Approach Delay (s/veh)		62.2			96.3			37.0			29.7	
Approach LOS		E			F			D			C	
Queue Length 50th (m)	66.6	47.5		96.4	~139.4		15.6	125.5	7.4	22.3	187.6	11.8
Queue Length 95th (m)	#125.9	#68.2		#159.8	#183.0		#42.0	149.8	39.0	25.1	164.6	19.8
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	305	541		460	769		138	1477	719	372	1584	719
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.75		0.90	1.11		0.67	0.54	0.23	0.38	0.84	0.34

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay (s/veh): 53.9	Intersection LOS: D

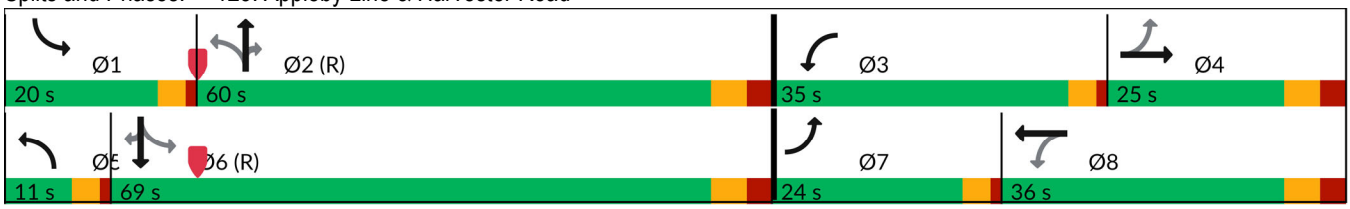
Intersection Capacity Utilization 100.0% ICU Level of Service F

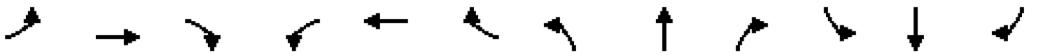
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

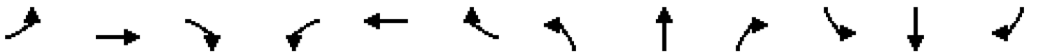




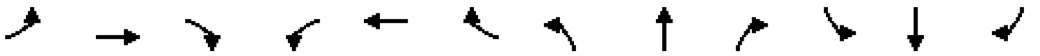
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	277	236	160	405	513	326	91	783	165	140	1304	237
Future Volume (vph)	277	236	160	405	513	326	91	783	165	140	1304	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1735	3227		1751	3295		1687	3539	1514	1735	3539	1375
Flt Permitted	0.20	1.00		0.22	1.00		0.07	1.00	1.00	0.22	1.00	1.00
Satd. Flow (perm)	367	3227		405	3295		124	3539	1514	408	3539	1375
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	283	241	163	413	523	333	93	799	168	143	1331	242
RTOR Reduction (vph)	0	83	0	0	73	0	0	0	88	0	0	103
Lane Group Flow (vph)	283	321	0	413	783	0	93	799	80	143	1331	139
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	39.9	19.9		53.6	29.6		65.4	58.4	58.4	73.7	62.7	62.7
Effective Green, g (s)	39.9	19.9		53.6	29.6		65.4	58.4	58.4	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.14		0.38	0.21		0.47	0.42	0.42	0.53	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	300	458		440	696		136	1476	631	321	1584	615
v/s Ratio Prot	0.13	0.10		c0.20	c0.24		c0.03	0.23		0.04	c0.38	
v/s Ratio Perm	0.13			0.16			0.29		0.05	0.20		0.10
v/c Ratio	0.94	0.70		0.94	1.13		0.68	0.54	0.13	0.45	0.84	0.23
Uniform Delay, d1	43.8	57.2		36.4	55.2		28.2	30.7	25.1	19.5	34.2	23.7
Progression Factor	1.00	1.00		1.00	1.00		1.44	1.22	2.42	0.88	0.88	0.92
Incremental Delay, d2	36.9	4.8		27.7	74.2		12.6	1.4	0.4	0.8	4.7	0.7
Delay (s)	80.7	62.0		64.2	129.4		53.1	38.9	61.0	18.0	34.7	22.6
Level of Service	F	E		E	F		D	D	E	B	C	C
Approach Delay (s/veh)		69.7			108.2			43.7			31.6	
Approach LOS		E			F			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	60.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	84	322	187	160	121	184	474	88	121	1011	777
Future Volume (vph)	347	84	322	187	160	121	184	474	88	121	1011	777
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.97		0.94	0.96		0.97			0.89	0.96		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1599	1736	1810	1468	1787	3574	1482	1626	3574	1599
Flt Permitted	0.950			0.700			0.145			0.471		
Satd. Flow (perm)	3314	1776	1508	1227	1810	1423	273	3574	1315	772	3574	1495
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			242			131			129			583
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Adj. Flow (vph)	361	88	335	195	167	126	192	494	92	126	1053	809
Shared Lane Traffic (%)												
Lane Group Flow (vph)	361	88	335	195	167	126	192	494	92	126	1053	809
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

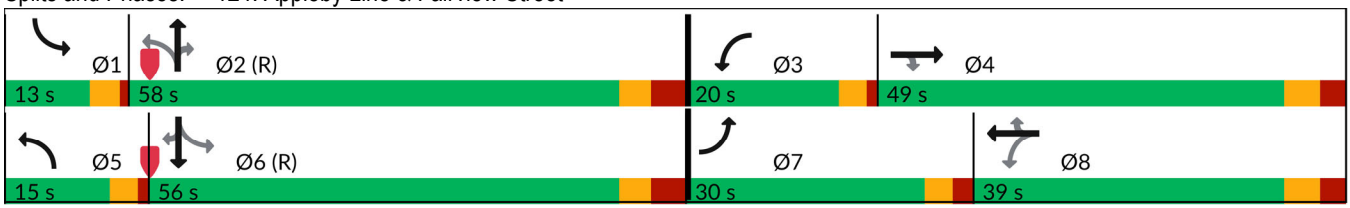


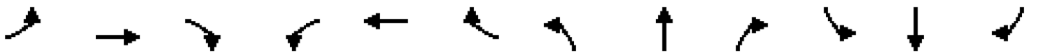
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	30.0	49.0	49.0	20.0	39.0	39.0	15.0	58.0	58.0	13.0	56.0	56.0
Total Split (%)	21.4%	35.0%	35.0%	14.3%	27.9%	27.9%	10.7%	41.4%	41.4%	9.3%	40.0%	40.0%
Maximum Green (s)	25.0	42.5	42.5	16.0	32.5	32.5	11.0	51.2	51.2	9.0	49.2	49.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	20.1	24.1	24.1	35.9	18.2	18.2	86.2	69.1	69.1	76.2	63.1	63.1
Actuated g/C Ratio	0.14	0.17	0.17	0.26	0.13	0.13	0.62	0.49	0.49	0.54	0.45	0.45
v/c Ratio	0.74	0.29	0.73	0.53	0.71	0.42	0.56	0.28	0.13	0.26	0.65	0.81
Control Delay (s/veh)	66.9	50.7	24.4	40.2	74.1	11.8	20.0	23.3	1.9	9.4	22.2	8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.9	50.7	24.4	40.2	74.1	11.8	20.0	23.3	1.9	9.4	22.2	8.2
LOS	E	D	C	D	E	B	B	C	A	A	C	A
Approach Delay (s/veh)		46.9			44.5			19.9			15.7	
Approach LOS		D			D			B			B	
Queue Length 50th (m)	53.8	23.9	25.5	44.3	49.0	0.0	23.0	43.6	0.0	10.4	72.3	9.2
Queue Length 95th (m)	69.1	37.7	57.2	58.6	72.4	18.3	44.1	69.9	5.1	m15.7	m156.4	m#169.4
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	607	539	626	380	420	430	344	1762	713	489	1610	994
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.16	0.54	0.51	0.40	0.29	0.56	0.28	0.13	0.26	0.65	0.81

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 26.0	Intersection LOS: C

Intersection Capacity Utilization 89.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street

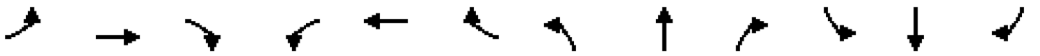




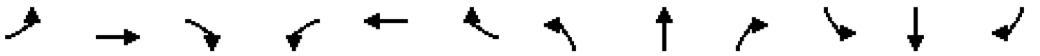
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	347	84	322	187	160	121	184	474	88	121	1011	777
Future Volume (vph)	347	84	322	187	160	121	184	474	88	121	1011	777
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.89	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1508	1687	1810	1423	1786	3574	1315	1592	3574	1495
Flt Permitted	0.95	1.00	1.00	0.70	1.00	1.00	0.14	1.00	1.00	0.47	1.00	1.00
Satd. Flow (perm)	3400	1776	1508	1243	1810	1423	272	3574	1315	790	3574	1495
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	361	88	335	195	167	126	192	494	92	126	1053	809
RTOR Reduction (vph)	0	0	200	0	0	110	0	0	47	0	0	320
Lane Group Flow (vph)	361	88	135	195	167	16	192	494	45	126	1053	489
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	20.1	24.1	24.1	33.4	18.2	18.2	83.4	69.1	69.1	73.4	63.1	63.1
Effective Green, g (s)	20.1	24.1	24.1	33.4	18.2	18.2	83.4	69.1	69.1	73.4	63.1	63.1
Actuated g/C Ratio	0.14	0.17	0.17	0.24	0.13	0.13	0.60	0.49	0.49	0.52	0.45	0.45
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	488	305	259	344	235	184	338	1764	649	473	1610	673
v/s Ratio Prot	c0.11	0.05		0.06	c0.09		c0.07	0.14		0.02	0.29	
v/s Ratio Perm			0.09	0.07		0.01	0.27		0.03	0.12		c0.33
v/c Ratio	0.74	0.29	0.52	0.57	0.71	0.09	0.57	0.28	0.07	0.27	0.65	0.73
Uniform Delay, d1	57.4	50.5	52.7	45.9	58.4	53.6	18.5	20.8	18.6	17.2	29.9	31.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.65	0.30
Incremental Delay, d2	5.8	0.5	1.8	2.1	9.7	0.2	2.2	0.4	0.2	0.2	1.2	3.8
Delay (s)	63.3	51.0	54.5	48.0	68.1	53.8	20.7	21.2	18.8	11.3	20.6	13.1
Level of Service	E	D	D	D	E	D	C	C	B	B	C	B
Approach Delay (s/veh)		58.1			56.4			20.8			17.0	
Approach LOS		E			E			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	89.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	731	299	480	1564	261	498	1018	403	329	752	238
Future Volume (vph)	185	731	299	480	1564	261	498	1018	403	329	752	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.98	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3428	5036	1523	3335	5085	1515	3475	5085	1521	3418	5085	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			277			269			345			161
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	191	754	308	495	1612	269	513	1049	415	339	775	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	754	308	495	1612	269	513	1049	415	339	775	245
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	17.0	50.0	50.0	35.0	68.0	68.0	21.0	34.0	34.0	21.0	34.0	34.0
Total Split (%)	12.1%	35.7%	35.7%	25.0%	48.6%	48.6%	15.0%	24.3%	24.3%	15.0%	24.3%	24.3%
Maximum Green (s)	12.0	42.6	42.6	30.0	60.6	60.6	16.0	26.6	26.6	16.0	26.6	26.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	11.9	39.6	39.6	27.0	54.7	54.7	22.1	30.2	30.2	18.4	26.6	26.6
Actuated g/C Ratio	0.09	0.28	0.28	0.19	0.39	0.39	0.16	0.22	0.22	0.13	0.19	0.19
v/c Ratio	0.66	0.53	0.49	0.76	0.81	0.36	0.93	0.96	0.69	0.75	0.80	0.58
Control Delay (s/veh)	73.4	43.7	9.0	61.6	41.6	4.1	65.5	66.1	27.2	69.6	61.5	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.4	43.7	9.0	61.6	41.6	4.1	65.5	66.1	27.2	69.6	61.5	23.9
LOS	E	D	A	E	D	A	E	E	C	E	E	C
Approach Delay (s/veh)		39.7			41.5			57.8			56.7	
Approach LOS		D			D			E			E	
Queue Length 50th (m)	28.6	70.0	6.8	72.3	153.5	0.0	79.6	~129.3	48.0	49.1	81.0	21.5
Queue Length 95th (m)	42.3	81.5	32.1	91.8	162.0	17.2	m#118.0	m#148.5	m62.9	#78.3	97.7	51.7
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	294	1532	656	721	2201	808	551	1098	599	451	966	423
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.49	0.47	0.69	0.73	0.33	0.93	0.96	0.69	0.75	0.80	0.58

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay (s/veh): 48.8	Intersection LOS: D

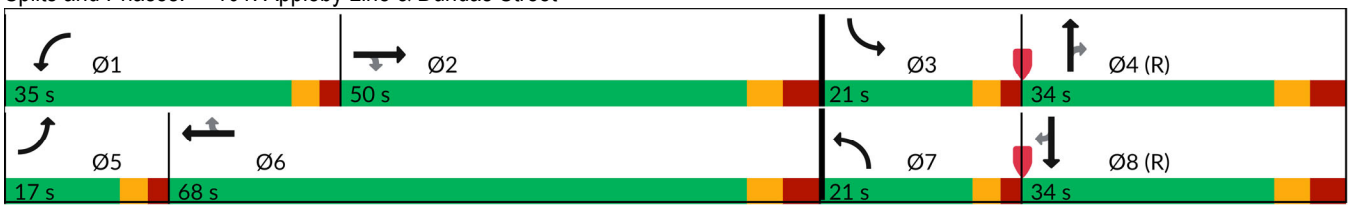
Intersection Capacity Utilization 107.2%	ICU Level of Service G
Analysis Period (min) 15	

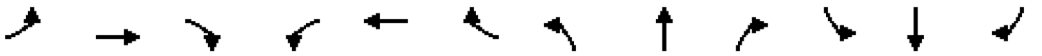
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Appleby Line & Dundas Street

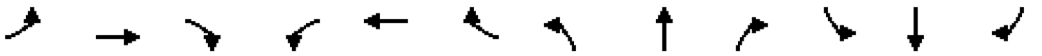




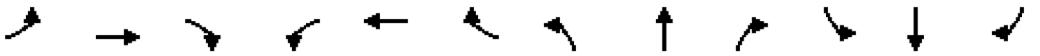
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	731	299	480	1564	261	498	1018	403	329	752	238
Future Volume (vph)	185	731	299	480	1564	261	498	1018	403	329	752	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	191	754	308	495	1612	269	513	1049	415	339	775	245
RTOR Reduction (vph)	0	0	199	0	0	164	0	0	271	0	0	131
Lane Group Flow (vph)	191	754	109	495	1612	105	513	1049	144	339	775	114
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	11.9	39.6	39.6	27.0	54.7	54.7	22.1	30.2	30.2	18.4	26.5	26.5
Effective Green, g (s)	11.9	39.6	39.6	27.0	54.7	54.7	22.1	30.2	30.2	18.4	26.5	26.5
Actuated g/C Ratio	0.09	0.28	0.28	0.19	0.39	0.39	0.16	0.22	0.22	0.13	0.19	0.19
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	291	1424	430	649	1986	591	552	1096	328	451	962	292
v/s Ratio Prot	0.06	0.15		c0.15	c0.32		c0.15	c0.21		0.10	0.15	
v/s Ratio Perm			0.07			0.07			0.09			0.07
v/c Ratio	0.66	0.53	0.25	0.76	0.81	0.18	0.93	0.96	0.44	0.75	0.81	0.39
Uniform Delay, d1	62.1	42.3	38.8	53.5	38.1	27.9	58.2	54.3	47.6	58.6	54.3	49.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.06	2.35	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.4	0.3	6.2	2.6	0.1	11.6	9.7	1.7	8.2	7.2	3.9
Delay (s)	69.1	42.7	39.1	59.7	40.7	28.1	64.2	67.1	113.7	66.8	61.5	53.6
Level of Service	E	D	D	E	D	C	E	E	F	E	E	D
Approach Delay (s/veh)		45.8			43.2			76.1			61.4	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	107.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	338	271	145	802	492	377	1594	131	246	918	243
Future Volume (vph)	196	338	271	145	802	492	377	1594	131	246	918	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.98		0.99		0.97	1.00	1.00			0.99	
Frt		0.933				0.850		0.989			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3306	0	1736	4560	1599	3502	4359	0	1787	4295	0
Flt Permitted	0.135			0.173			0.950			0.069		
Satd. Flow (perm)	246	3306	0	313	4560	1549	3488	4359	0	130	4295	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		131				199		11			42	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	198	341	274	146	810	497	381	1610	132	248	927	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	615	0	146	810	497	381	1742	0	248	1172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



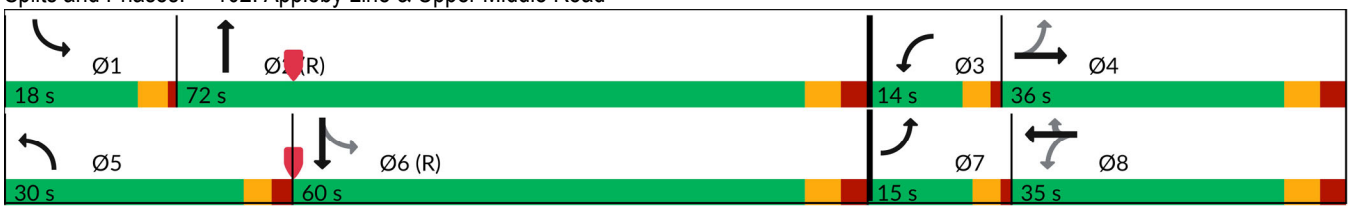
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	36.0		14.0	35.0	35.0	30.0	72.0		18.0	60.0	
Total Split (%)	10.7%	25.7%		10.0%	25.0%	25.0%	21.4%	51.4%		12.9%	42.9%	
Maximum Green (s)	11.0	29.6		10.0	28.6	28.6	25.0	65.5		14.0	53.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	43.0	29.6		41.0	28.6	28.6	20.4	65.5		74.6	58.1	
Actuated g/C Ratio	0.31	0.21		0.29	0.20	0.20	0.15	0.47		0.53	0.42	
v/c Ratio	1.03	0.77		0.76	0.87	1.05	0.75	0.85		1.06	0.65	
Control Delay (s/veh)	111.6	47.7		60.6	64.9	86.4	87.6	18.6		109.7	40.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	111.6	47.7		60.6	64.9	86.4	87.6	18.6		109.7	40.7	
LOS	F	D		E	E	F	F	B		F	D	
Approach Delay (s/veh)		63.3			71.9			31.0			52.8	
Approach LOS		E			E			C			D	
Queue Length 50th (m)	~46.8	71.4		32.1	96.1	~108.7	61.0	41.0		~71.2	91.6	
Queue Length 95th (m)	#99.6	94.6		#55.8	#117.5	#181.6	78.7	125.7		m#115.0	118.0	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	192	802		193	931	474	625	2045		234	1808	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.03	0.77		0.76	0.87	1.05	0.61	0.85		1.06	0.65	

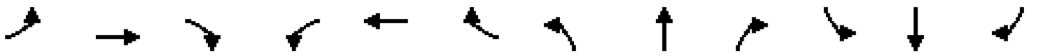
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 51.1	Intersection LOS: D

Intersection Capacity Utilization 94.0%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road

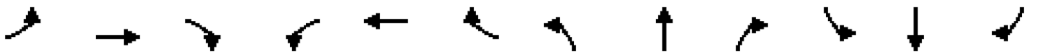




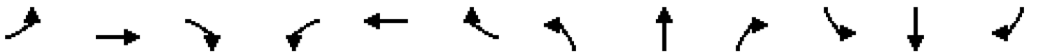
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	338	271	145	802	492	377	1594	131	246	918	243
Future Volume (vph)	196	338	271	145	802	492	377	1594	131	246	918	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3307		1734	4560	1549	3502	4357		1787	4293	
Flt Permitted	0.14	1.00		0.17	1.00	1.00	0.95	1.00		0.07	1.00	
Satd. Flow (perm)	247	3307		315	4560	1549	3502	4357		130	4293	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	198	341	274	146	810	497	381	1610	132	248	927	245
RTOR Reduction (vph)	0	103	0	0	0	158	0	6	0	0	25	0
Lane Group Flow (vph)	198	512	0	146	810	339	381	1736	0	248	1147	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	40.6	29.6		38.6	28.6	28.6	20.4	65.5		72.1	58.1	
Effective Green, g (s)	40.6	29.6		38.6	28.6	28.6	20.4	65.5		72.1	58.1	
Actuated g/C Ratio	0.29	0.21		0.28	0.20	0.20	0.15	0.47		0.52	0.42	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	699		188	931	316	510	2038		232	1781	
v/s Ratio Prot	c0.08	0.15		0.06	0.18		0.11	c0.40		c0.11	0.27	
v/s Ratio Perm	c0.22			0.16		0.22				c0.44		
v/c Ratio	1.05	0.73		0.78	0.87	1.07	0.75	0.85		1.07	0.64	
Uniform Delay, d1	43.3	51.5		41.3	53.9	55.7	57.3	33.0		43.1	32.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.42	0.47		1.17	1.23	
Incremental Delay, d2	80.4	4.0		18.0	8.9	71.0	4.0	3.2		69.0	1.3	
Delay (s)	123.6	55.5		59.4	62.8	126.7	85.4	18.6		119.5	41.3	
Level of Service	F	E		E	E	F	F	B		F	D	
Approach Delay (s/veh)		72.1			84.3			30.6			55.0	
Approach LOS		E			F			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	55.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	94.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	753	26	0	1638	0	70	0	15	3	0	4
Future Volume (vph)	3	753	26	0	1638	0	70	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.995							0.850		0.923	
Flt Protected	0.950							0.950			0.979	
Satd. Flow (prot)	1805	4475	0	1900	4515	0	0	1805	1615	0	1704	0
Flt Permitted	0.071							0.753			0.947	
Satd. Flow (perm)	135	4475	0	1900	4515	0	0	1429	1593	0	1647	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6							45		45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	793	27	0	1724	0	74	0	16	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	820	0	0	1724	0	0	74	16	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

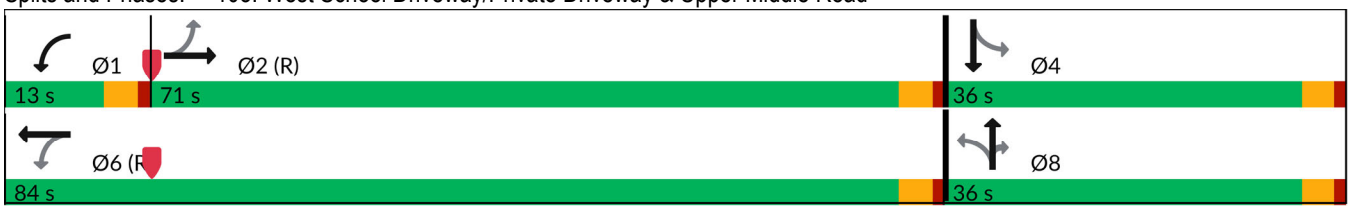


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	67.0	67.0		9.0	80.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
v/c Ratio	0.03	0.27			0.57			0.19	0.04		0.01	
Control Delay (s/veh)	8.0	8.4			19.7			35.8	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	8.0	8.4			19.7			35.8	0.1		0.0	
LOS	A	A			B			D	A		A	
Approach Delay (s/veh)		8.4			19.7			29.4				
Approach LOS		A			B			C				
Queue Length 50th (m)	0.2	31.6			122.0			14.2	0.0		0.0	
Queue Length 95th (m)	1.5	39.0			141.2			27.6	0.4		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	90	2985			3010			381	457		472	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.03	0.27			0.57			0.19	0.04		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay (s/veh): 16.5	Intersection LOS: B

Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	753	26	0	1638	0	70	0	15	3	0	4
Future Volume (vph)	3	753	26	0	1638	0	70	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1803	4476			4515			1803	1593		1703	
Flt Permitted	0.07	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	135	4476			4515			1429	1593		1646	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	793	27	0	1724	0	74	0	16	3	0	4
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	12	0	5	0
Lane Group Flow (vph)	3	818	0	0	1724	0	0	74	4	0	2	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Effective Green, g (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	90	2984			3010			381	424		438	
v/s Ratio Prot		0.18			c0.38							
v/s Ratio Perm	0.02							c0.05	0.00		0.00	
v/c Ratio	0.03	0.27			0.57			0.19	0.01		0.00	
Uniform Delay, d1	6.8	8.2			10.8			34.0	32.4		32.3	
Progression Factor	1.00	1.00			1.76			1.00	1.00		1.00	
Incremental Delay, d2	0.7	0.2			0.5			1.1	0.0		0.0	
Delay (s)	7.5	8.4			19.5			35.2	32.4		32.3	
Level of Service	A	A			B			D	C		C	
Approach Delay (s/veh)		8.4			19.5			34.7			32.3	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	774	9	19	1611	29	56
Future Volume (vph)	774	9	19	1611	29	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4506	0	1570	4515	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4506	0	1570	4515	1805	1568
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	823	10	20	1714	31	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	833	0	20	1714	31	60
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

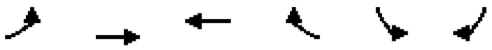
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	774	9	19	1611	29	56
Future Volume (Veh/h)	774	9	19	1611	29	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	823	10	20	1714	31	60
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.96		0.96	0.96
vC, conflicting volume			850		1456	296
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			692		1324	114
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			97		78	93
cM capacity (veh/h)			772		138	863

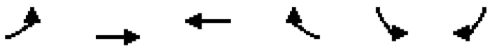
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	329	329	175	20	571	571	571	31	60
Volume Left	0	0	0	20	0	0	0	31	0
Volume Right	0	0	10	0	0	0	0	0	60
cSH	1700	1700	1700	772	1700	1700	1700	138	863
Volume to Capacity	0.19	0.19	0.10	0.03	0.34	0.34	0.34	0.22	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.6	0.0	0.0	0.0	6.6	1.8
Control Delay (s/veh)	0.0	0.0	0.0	9.8	0.0	0.0	0.0	38.5	9.5
Lane LOS				A				E	A
Approach Delay (s/veh)	0.0			0.1				19.4	
Approach LOS								C	

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	41.1%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	163	658	1509	186	50	112
Future Volume (vph)	163	658	1509	186	50	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.907	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1805	4515	4443	0	1697	0
Flt Permitted	0.950				0.985	
Satd. Flow (perm)	1805	4515	4443	0	1697	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		235.5	
Travel Time (s)		7.1	17.4		21.2	
Confl. Peds. (#/hr)	13			13		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	170	685	1572	194	52	117
Shared Lane Traffic (%)						
Lane Group Flow (vph)	170	685	1766	0	169	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

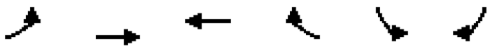
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



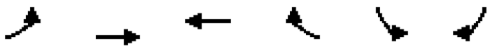
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	163	658	1509	186	50	112
Future Volume (Veh/h)	163	658	1509	186	50	112
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	170	685	1572	194	52	117
Pedestrians		1			13	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.67				0.67	0.67
vC, conflicting volume	1779				2250	635
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	411				1119	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	78				50	84
cM capacity (veh/h)	763				104	717

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	170	228	228	228	629	629	508	169
Volume Left	170	0	0	0	0	0	0	52
Volume Right	0	0	0	0	0	0	194	117
cSH	763	1700	1700	1700	1700	1700	1700	255
Volume to Capacity	0.22	0.13	0.13	0.13	0.37	0.37	0.30	0.66
Queue Length 95th (m)	6.8	0.0	0.0	0.0	0.0	0.0	0.0	33.8
Control Delay (s/veh)	11.1	0.0	0.0	0.0	0.0	0.0	0.0	43.0
Lane LOS	B							E
Approach Delay (s/veh)	2.2				0.0			43.0
Approach LOS								E

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	199	513	1494	543	216	173
Future Volume (vph)	199	513	1494	543	216	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor			0.99		0.99	
Frt			0.960		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1752	4515	4290	0	1711	0
Flt Permitted	0.058				0.973	
Satd. Flow (perm)	107	4515	4290	0	1705	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			116		33	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		321.0	
Travel Time (s)		17.4	14.7		28.9	
Confl. Peds. (#/hr)	8			8	5	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Adj. Flow (vph)	209	540	1573	572	227	182
Shared Lane Traffic (%)						
Lane Group Flow (vph)	209	540	2145	0	409	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	9.0	30.0	30.0		30.5	
Total Split (s)	14.0	83.0	69.0		37.0	
Total Split (%)	11.7%	69.2%	57.5%		30.8%	
Maximum Green (s)	10.0	79.0	65.0		33.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Recall Mode	None	C-Max	C-Max		Max	
Walk Time (s)		10.0	10.0		10.0	
Flash Don't Walk (s)		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	79.0	79.0	65.0		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
v/c Ratio	1.01	0.18	0.90		0.83	
Control Delay (s/veh)	109.7	7.6	29.9		53.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	109.7	7.6	29.9		53.3	
LOS	F	A	C		D	
Approach Delay (s/veh)		36.1	29.9		53.3	
Approach LOS		D	C		D	
Queue Length 50th (m)	~43.5	17.6	184.1		88.5	
Queue Length 95th (m)	#92.1	22.1	215.2		#141.3	
Internal Link Dist (m)		266.7	220.7		297.0	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	207	2972	2376		492	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	1.01	0.18	0.90		0.83	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay (s/veh): 34.2	Intersection LOS: C

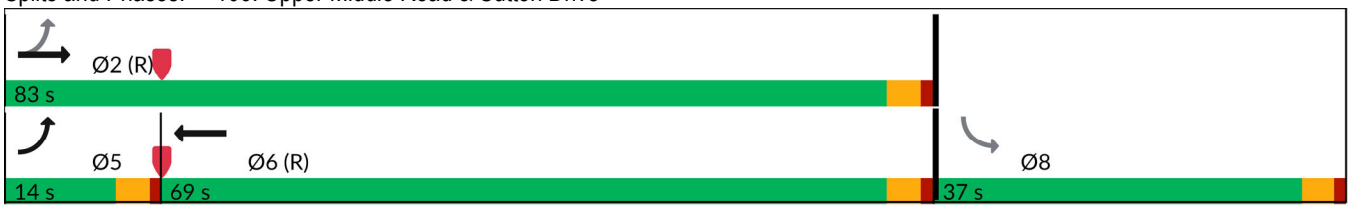
Intersection Capacity Utilization 84.9%	ICU Level of Service E
Analysis Period (min) 15	

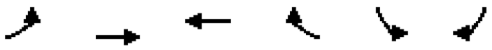
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 106: Upper Middle Road & Sutton Drive

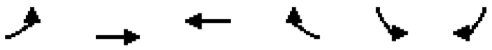




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	199	513	1494	543	216	173
Future Volume (vph)	199	513	1494	543	216	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.96		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1752	4515	4290		1704	
Flt Permitted	0.06	1.00	1.00		0.97	
Satd. Flow (perm)	107	4515	4290		1704	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	209	540	1573	572	227	182
RTOR Reduction (vph)	0	0	53	0	24	0
Lane Group Flow (vph)	209	540	2092	0	385	0
Confl. Peds. (#/hr)	8			8	5	2
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	79.0	79.0	65.0		33.0	
Effective Green, g (s)	79.0	79.0	65.0		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Lane Grp Cap (vph)	207	2972	2323		468	
v/s Ratio Prot	c0.08	0.12	0.49			
v/s Ratio Perm	c0.58				c0.23	
v/c Ratio	1.01	0.18	0.90		0.82	
Uniform Delay, d1	39.1	8.0	24.6		40.8	
Progression Factor	1.59	0.94	1.00		1.00	
Incremental Delay, d2	64.6	0.1	6.2		15.0	
Delay (s)	127.0	7.6	30.8		55.8	
Level of Service	F	A	C		E	
Approach Delay (s/veh)		40.9	30.8		55.8	
Approach LOS		D	C		E	

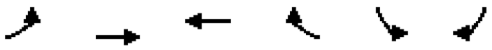
Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	84.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	675	1829	27	0	63
Future Volume (vph)	55	675	1829	27	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	4515	4506	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	4515	4506	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	58	711	1925	28	0	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	711	1953	0	0	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

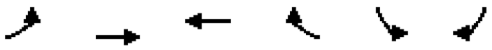
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	675	1829	27	0	63
Future Volume (Veh/h)	55	675	1829	27	0	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	58	711	1925	28	0	66
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					1.00	
vC, conflicting volume	1962				2301	665
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1962				2298	665
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	81				100	84
cM capacity (veh/h)	298				27	404

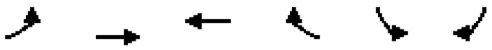
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	58	237	237	237	770	770	413	66
Volume Left	58	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	28	66
cSH	298	1700	1700	1700	1700	1700	1700	404
Volume to Capacity	0.19	0.14	0.14	0.14	0.45	0.45	0.24	0.16
Queue Length 95th (m)	5.7	0.0	0.0	0.0	0.0	0.0	0.0	4.6
Control Delay (s/veh)	20.0	0.0	0.0	0.0	0.0	0.0	0.0	15.6
Lane LOS	C							C
Approach Delay (s/veh)	1.5				0.0			15.6
Approach LOS								C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	669	2003	9	5	8
Future Volume (vph)	11	669	2003	9	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.913	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1805	4515	4511	0	1703	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1805	4515	4511	0	1703	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	12	712	2131	10	5	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	712	2141	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

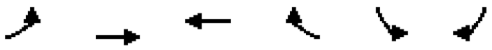
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	669	2003	9	5	8
Future Volume (Veh/h)	11	669	2003	9	5	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	712	2131	10	5	9
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2157				2413	731
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2157				2413	731
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				81	98
cM capacity (veh/h)	249				26	364

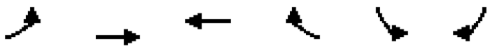
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	12	237	237	237	852	852	436	14
Volume Left	12	0	0	0	0	0	0	5
Volume Right	0	0	0	0	0	0	10	9
cSH	249	1700	1700	1700	1700	1700	1700	65
Volume to Capacity	0.05	0.14	0.14	0.14	0.50	0.50	0.26	0.22
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	0.0	0.0	5.9
Control Delay (s/veh)	20.2	0.0	0.0	0.0	0.0	0.0	0.0	74.9
Lane LOS	C							F
Approach Delay (s/veh)	0.3				0.0			74.9
Approach LOS								F

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	39	639	2006	147	63	44
Future Volume (vph)	39	639	2006	147	63	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.944	
Flt Protected	0.950				0.972	
Satd. Flow (prot)	1805	4515	4473	0	1722	0
Flt Permitted	0.950				0.972	
Satd. Flow (perm)	1805	4515	4473	0	1722	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	42	695	2180	160	68	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	695	2340	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	639	2006	147	63	44
Future Volume (Veh/h)	39	639	2006	147	63	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	695	2180	160	68	48
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2354				2590	821
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2354				2590	821
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	80				0	85
cM capacity (veh/h)	209				17	312

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	42	232	232	232	872	872	596	116
Volume Left	42	0	0	0	0	0	0	68
Volume Right	0	0	0	0	0	0	160	48
cSH	209	1700	1700	1700	1700	1700	1700	27
Volume to Capacity	0.20	0.14	0.14	0.14	0.51	0.51	0.35	4.22
Queue Length 95th (m)	5.8	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	26.5	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	D							F
Approach Delay (s/veh)	1.5				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	363.6		
Intersection Capacity Utilization	55.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	31	2110	23	37	651
Future Volume (vph)	29	31	2110	23	37	651
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.930		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1725	0	4506	0	1805	4515
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1725	0	4506	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			459.4
Travel Time (s)	14.5		7.6			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	31	33	2221	24	39	685
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	2245	0	39	685
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

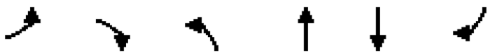
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



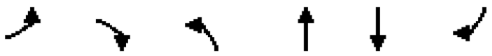
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	29	31	2110	23	37	651
Future Volume (Veh/h)	29	31	2110	23	37	651
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	31	33	2221	24	39	685
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2540	753			2246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2540	753			2246	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	91			83	
cM capacity (veh/h)	19	356			233	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	64	888	888	468	39	228	228	228
Volume Left	31	0	0	0	39	0	0	0
Volume Right	33	0	0	24	0	0	0	0
cSH	37	1700	1700	1700	233	1700	1700	1700
Volume to Capacity	1.72	0.52	0.52	0.28	0.17	0.13	0.13	0.13
Queue Length 95th (m)	54.8	0.0	0.0	0.0	4.7	0.0	0.0	0.0
Control Delay (s/veh)	582.7	0.0	0.0	0.0	23.5	0.0	0.0	0.0
Lane LOS	F				C			
Approach Delay (s/veh)	582.7	0.0			1.3			
Approach LOS	F							

Intersection Summary			
Average Delay	12.6		
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	164	403	654	1942	630	40
Future Volume (vph)	164	403	654	1942	630	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	1736	4515	4503	0
Flt Permitted	0.950		0.275			
Satd. Flow (perm)	1752	1583	501	4515	4503	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		375			11	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	180	443	719	2134	692	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	180	443	719	2134	736	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	20.0	80.0	60.0	
Total Split (%)	27.3%	27.3%	18.2%	72.7%	54.5%	
Maximum Green (s)	23.0	23.0	16.0	73.0	53.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.6	16.6	82.4	79.4	53.0	
Actuated g/C Ratio	0.15	0.15	0.75	0.72	0.48	
v/c Ratio	0.68	0.80	1.15	0.66	0.34	
Control Delay (s/veh)	56.7	19.3	107.9	13.2	17.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	56.7	19.3	107.9	13.2	17.9	
LOS	E	B	F	B	B	
Approach Delay (s/veh)	30.1			37.1	17.9	
Approach LOS	C			D	B	
Queue Length 50th (m)	39.9	14.0	~134.1	106.3	40.8	
Queue Length 95th (m)	60.0	50.1	#247.1	143.0	51.8	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	366	627	626	3258	2175	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.49	0.71	1.15	0.66	0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay (s/veh): 32.7		Intersection LOS: C	

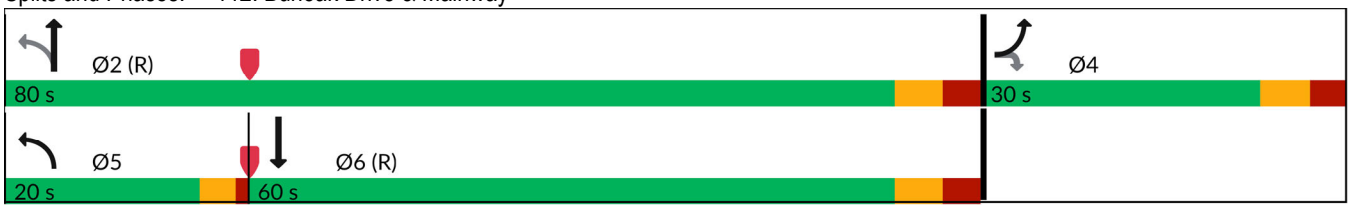
Intersection Capacity Utilization 85.3%	ICU Level of Service E
Analysis Period (min) 15	

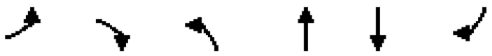
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	164	403	654	1942	630	40
Future Volume (vph)	164	403	654	1942	630	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	1735	4515	4503	
Flt Permitted	0.95	1.00	0.28	1.00	1.00	
Satd. Flow (perm)	1752	1583	502	4515	4503	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	180	443	719	2134	692	44
RTOR Reduction (vph)	0	318	0	0	6	0
Lane Group Flow (vph)	180	125	719	2134	730	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	16.6	16.6	79.4	79.4	53.0	
Effective Green, g (s)	16.6	16.6	79.4	79.4	53.0	
Actuated g/C Ratio	0.15	0.15	0.72	0.72	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	264	238	613	3259	2169	
v/s Ratio Prot	c0.10		c0.24	0.47	0.16	
v/s Ratio Perm		0.08	c0.61			
v/c Ratio	0.68	0.52	1.17	0.65	0.34	
Uniform Delay, d1	44.2	43.1	15.8	8.1	17.6	
Progression Factor	1.00	1.00	2.09	1.39	1.00	
Incremental Delay, d2	7.1	2.1	91.7	0.9	0.4	
Delay (s)	51.3	45.1	124.7	12.1	18.0	
Level of Service	D	D	F	B	B	
Approach Delay (s/veh)	46.9			40.5	18.0	
Approach LOS	D			D	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	342	25	12	586	164	51
Future Volume (vph)	342	25	12	586	164	51
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.968	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	3414	0	0	3531	1719	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	3414	0	0	3531	1719	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	14%	9%	2%	4%	0%
Adj. Flow (vph)	407	30	14	698	195	61
Shared Lane Traffic (%)						
Lane Group Flow (vph)	437	0	0	712	256	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

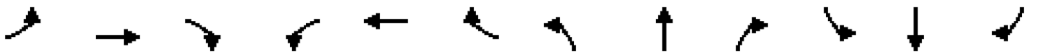
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	342	25	12	586	164	51
Future Volume (Veh/h)	342	25	12	586	164	51
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	407	30	14	698	195	61
Pedestrians					5	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			442		804	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		804	224
tC, single (s)			4.3		6.9	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		37	92
cM capacity (veh/h)			1062		311	783

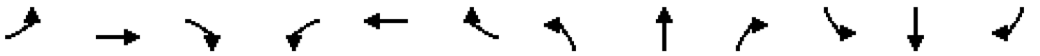
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	271	166	247	465	256
Volume Left	0	0	14	0	195
Volume Right	0	30	0	0	61
cSH	1700	1700	1062	1700	363
Volume to Capacity	0.16	0.10	0.01	0.27	0.70
Queue Length 95th (m)	0.0	0.0	0.3	0.0	41.4
Control Delay (s/veh)	0.0	0.0	0.6	0.0	35.4
Lane LOS			A		E
Approach Delay (s/veh)	0.0		0.2		35.4
Approach LOS					E

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	252	30	5	843	110	67	6	15	43	2	52
Future Volume (vph)	35	252	30	5	843	110	67	6	15	43	2	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.983			0.976			0.927	
Flt Protected		0.995						0.963			0.978	
Satd. Flow (prot)	0	3406	0	0	3483	0	0	1786	0	0	1700	0
Flt Permitted		0.995						0.963			0.978	
Satd. Flow (perm)	0	3406	0	0	3483	0	0	1786	0	0	1700	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	43	311	37	6	1041	136	83	7	19	53	2	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	391	0	0	1183	0	0	109	0	0	119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.1%		ICU Level of Service A	
Analysis Period (min) 15			

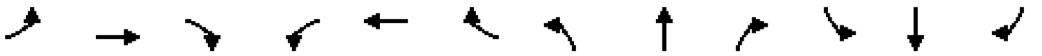


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	252	30	5	843	110	67	6	15	43	2	52
Future Volume (Veh/h)	35	252	30	5	843	110	67	6	15	43	2	52
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	43	311	37	6	1041	136	83	7	19	53	2	64
Pedestrians		2			3			7			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1179			355			1022	1614	184	1390	1564	593
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1179			355			1022	1614	184	1390	1564	593
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	93			100			45	93	98	39	98	86
cM capacity (veh/h)	599			1208			152	96	826	87	103	453

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	199	193	527	657	109	119
Volume Left	43	0	6	0	83	53
Volume Right	0	37	0	136	19	64
cSH	599	1700	1208	1700	170	154
Volume to Capacity	0.07	0.11	0.00*	0.39	0.64	0.77
Queue Length 95th (m)	1.9	0.0	0.1	0.0	29.1	38.6
Control Delay (s/veh)	3.2	0.0	0.1	0.0	58.1	80.5
Lane LOS	A		A		F	F
Approach Delay (s/veh)	1.6		0.1		58.1	80.5
Approach LOS					F	F

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	51.1%	ICU Level of Service		A
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	161	160	144	649	223	355	1607	67	103	1091	138
Future Volume (vph)	164	161	160	144	649	223	355	1607	67	103	1091	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00			1.00	
Frt		0.925			0.962			0.994			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3108	0	1687	3383	0	1703	4428	0	1787	4377	0
Flt Permitted	0.138			0.376			0.078			0.067		
Satd. Flow (perm)	247	3108	0	666	3383	0	140	4428	0	126	4377	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161			32			5			17	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	176	173	172	155	698	240	382	1728	72	111	1173	148
Shared Lane Traffic (%)												
Lane Group Flow (vph)	176	345	0	155	938	0	382	1800	0	111	1321	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	13.0	33.0		20.0	40.0		21.0	76.0		11.0	66.0	
Total Split (%)	9.3%	23.6%		14.3%	28.6%		15.0%	54.3%		7.9%	47.1%	
Maximum Green (s)	9.0	26.7		16.0	33.7		17.0	69.7		7.0	59.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	40.2	28.9		48.2	33.7		83.0	69.7		69.0	59.7	
Actuated g/C Ratio	0.29	0.21		0.34	0.24		0.59	0.50		0.49	0.43	
v/c Ratio	1.07	0.45		0.47	1.12		1.40	0.82		0.77	0.70	
Control Delay (s/veh)	127.8	27.8		37.8	115.7		230.7	16.8		60.1	25.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	127.8	27.8		37.8	115.7		230.7	16.8		60.1	25.2	
LOS	F	C		D	F		F	B		E	C	
Approach Delay (s/veh)		61.6			104.6			54.3			27.9	
Approach LOS		E			F			D			C	
Queue Length 50th (m)	~42.3	25.6		33.9	~163.8		~131.6	176.5		13.6	96.5	
Queue Length 95th (m)	#96.3	43.1		53.6	#208.3		m#187.7	141.2		m#45.3	112.7	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	164	770		349	838		272	2207		145	1876	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.07	0.45		0.44	1.12		1.40	0.82		0.77	0.70	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 85 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.40	
Intersection Signal Delay (s/veh): 58.3	Intersection LOS: E

Intersection Capacity Utilization 95.7%	ICU Level of Service F
Analysis Period (min) 15	

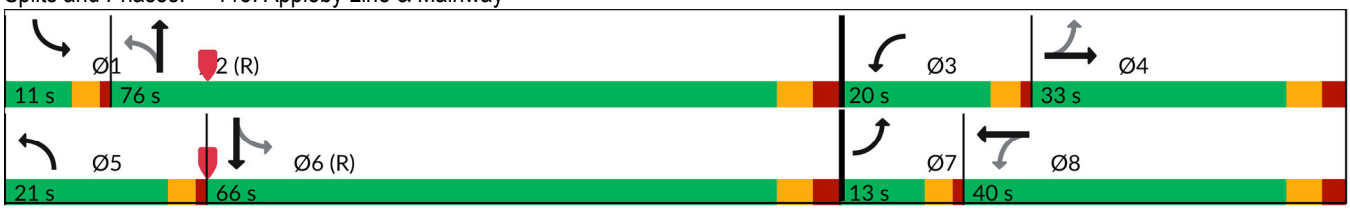
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

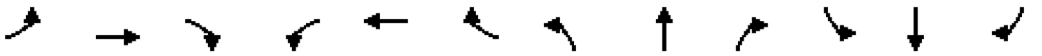
Splits and Phases: 115: Appleby Line & Mainway



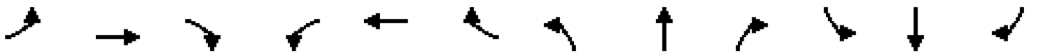
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	161	160	144	649	223	355	1607	67	103	1091	138
Future Volume (vph)	164	161	160	144	649	223	355	1607	67	103	1091	138
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3109		1685	3381		1703	4428		1787	4378	
Flt Permitted	0.14	1.00		0.38	1.00		0.08	1.00		0.07	1.00	
Satd. Flow (perm)	248	3109		668	3381		139	4428		126	4378	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	176	173	172	155	698	240	382	1728	72	111	1173	148
RTOR Reduction (vph)	0	128	0	0	24	0	0	3	0	0	10	0
Lane Group Flow (vph)	176	217	0	155	914	0	382	1797	0	111	1311	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.9	28.9		46.7	33.7		80.7	69.7		66.7	59.7	
Effective Green, g (s)	37.9	28.9		46.7	33.7		80.7	69.7		66.7	59.7	
Actuated g/C Ratio	0.27	0.21		0.33	0.24		0.58	0.50		0.48	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	641		323	813		270	2204		143	1866	
v/s Ratio Prot	c0.07	0.07		0.05	c0.27		c0.17	0.41		0.04	0.30	
v/s Ratio Perm	0.23			0.11			c0.64			0.33		
v/c Ratio	1.10	0.34		0.48	1.12		1.41	0.82		0.78	0.70	
Uniform Delay, d1	46.5	47.4		34.7	53.2		42.0	29.7		27.1	32.9	
Progression Factor	1.00	1.00		1.00	1.00		1.28	0.49		1.19	0.71	
Incremental Delay, d2	100.4	0.3		1.1	71.4		198.8	2.0		21.3	2.1	
Delay (s)	147.0	47.7		35.8	124.6		252.5	16.7		53.7	25.3	
Level of Service	F	D		D	F		F	B		D	C	
Approach Delay (s/veh)		81.2			112.0			58.0			27.5	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	63.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	10	45	87	18	119	44	1881	102	108	1203	25
Future Volume (vph)	49	10	45	87	18	119	44	1881	102	108	1203	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.98		0.99	1.00			1.00	
Frt		0.942			0.928			0.992			0.997	
Flt Protected		0.977			0.981		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1707	0	1641	4387	0	1805	4450	0
Flt Permitted		0.643			0.811		0.164			0.043		
Satd. Flow (perm)	0	1136	0	0	1407	0	282	4387	0	82	4450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			38			9			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	52	11	48	93	19	127	47	2001	109	115	1280	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	239	0	47	2110	0	115	1307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

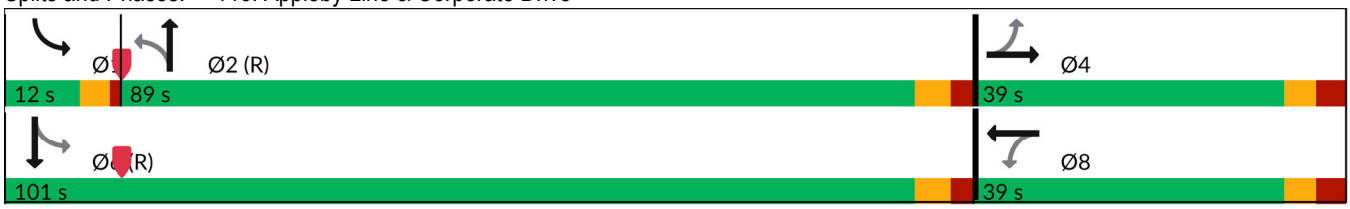


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		89.0	89.0		12.0	101.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%		63.6%	63.6%		8.6%	72.1%	
Maximum Green (s)	32.5	32.5		32.5	32.5		83.0	83.0		8.0	95.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		24.9			24.9		89.8	89.8		104.6	102.6	
Actuated g/C Ratio		0.18			0.18		0.64	0.64		0.75	0.73	
v/c Ratio		0.50			0.85		0.26	0.75		0.68	0.40	
Control Delay (s/veh)		45.7			71.9		7.1	9.8		38.6	9.5	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		45.7			71.9		7.1	9.8		38.6	9.5	
LOS		D			E		A	A		D	A	
Approach Delay (s/veh)		45.7			71.9			9.8			11.9	
Approach LOS		D			E			A			B	
Queue Length 50th (m)		22.3			57.7		2.2	40.1		20.0	56.8	
Queue Length 95th (m)		40.5			85.8		m2.6	m162.7		m#40.6	106.6	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		283			355		180	2817		172	3261	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.39			0.67		0.26	0.75		0.67	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 106 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 15.3	Intersection LOS: B

Intersection Capacity Utilization 77.5% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

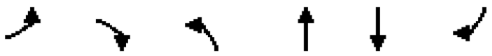
Splits and Phases: 116: Appleby Line & Corporate Drive



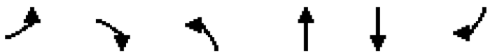
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	10	45	87	18	119	44	1881	102	108	1203	25
Future Volume (vph)	49	10	45	87	18	119	44	1881	102	108	1203	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.94			0.93		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1726			1702		1632	4388		1805	4449	
Flt Permitted		0.64			0.81		0.16	1.00		0.04	1.00	
Satd. Flow (perm)		1135			1407		283	4388		81	4449	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	52	11	48	93	19	127	47	2001	109	115	1280	27
RTOR Reduction (vph)	0	21	0	0	31	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	90	0	0	208	0	47	2107	0	115	1306	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		24.9			24.9		89.8	89.8		102.6	102.6	
Effective Green, g (s)		24.9			24.9		89.8	89.8		102.6	102.6	
Actuated g/C Ratio		0.18			0.18		0.64	0.64		0.73	0.73	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		201			250		181	2814		167	3260	
v/s Ratio Prot								c0.48		c0.04	0.29	
v/s Ratio Perm		0.08			c0.15		0.17			0.46		
v/c Ratio		0.45			0.83		0.26	0.75		0.69	0.40	
Uniform Delay, d1		51.4			55.5		10.8	17.3		33.6	7.1	
Progression Factor		1.00			1.00		0.38	0.48		0.88	1.20	
Incremental Delay, d2		1.6			20.3		1.6	0.9		8.6	0.3	
Delay (s)		53.0			75.9		5.8	9.2		38.0	8.8	
Level of Service		D			E		A	A		D	A	
Approach Delay (s/veh)		53.0			75.9			9.1			11.2	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	150	428	121	1937	886	28
Future Volume (vph)	150	428	121	1937	886	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	1671	4471	4436	0
Flt Permitted	0.950		0.190			
Satd. Flow (perm)	1787	1553	334	4471	4436	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		212			6	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	167	476	134	2152	984	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	476	134	2152	1015	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.5	37.0	37.0	
Total Split (s)	32.0	32.0	12.0	78.0	66.0	
Total Split (%)	29.1%	29.1%	10.9%	70.9%	60.0%	
Maximum Green (s)	25.0	25.0	8.0	71.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.6	23.6	75.4	72.4	60.6	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.55	
v/c Ratio	0.43	0.95	0.42	0.73	0.41	
Control Delay (s/veh)	40.9	54.2	8.0	12.7	9.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	40.9	54.2	8.0	12.7	9.1	
LOS	D	D	A	B	A	
Approach Delay (s/veh)	50.8			12.4	9.1	
Approach LOS	D			B	A	
Queue Length 50th (m)	32.6	64.6	10.7	91.9	27.3	
Queue Length 95th (m)	53.8	#131.6	m10.3	m61.1	38.1	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	406	516	325	2940	2447	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.41	0.92	0.41	0.73	0.41	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 88 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 17.8	Intersection LOS: B

Intersection Capacity Utilization 63.2% ICU Level of Service B

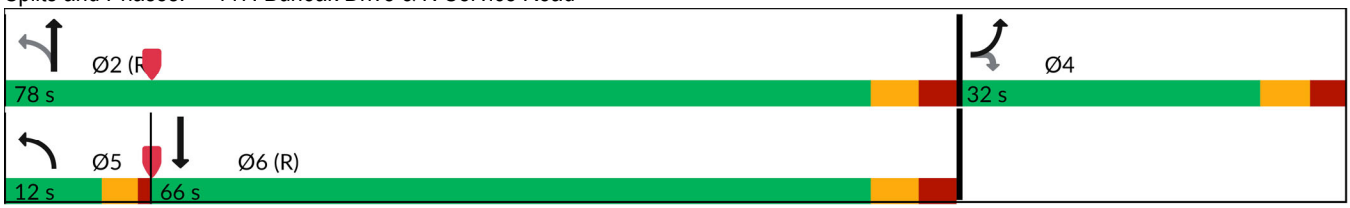
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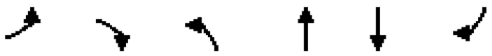
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	150	428	121	1937	886	28
Future Volume (vph)	150	428	121	1937	886	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	1671	4471	4438	
Flt Permitted	0.95	1.00	0.19	1.00	1.00	
Satd. Flow (perm)	1787	1553	334	4471	4438	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	476	134	2152	984	31
RTOR Reduction (vph)	0	167	0	0	3	0
Lane Group Flow (vph)	167	309	134	2152	1012	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.6	23.6	72.4	72.4	60.7	
Effective Green, g (s)	23.6	23.6	72.4	72.4	60.7	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.55	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	383	333	313	2942	2448	
v/s Ratio Prot	0.09		0.03	c0.48	0.23	
v/s Ratio Perm		c0.20	0.25			
v/c Ratio	0.44	0.93	0.43	0.73	0.41	
Uniform Delay, d1	37.4	42.4	8.0	12.4	14.3	
Progression Factor	1.00	1.00	1.20	0.97	0.59	
Incremental Delay, d2	0.8	31.3	0.1	0.1	0.5	
Delay (s)	38.2	73.6	9.6	12.1	8.9	
Level of Service	D	E	A	B	A	
Approach Delay (s/veh)	64.5			12.0	8.9	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1923	1824	1013	0	0	1688
Future Volume (vph)	1923	1824	1013	0	0	1688
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor						
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3355	1441	4427	0	0	4471
Flt Permitted	0.964					
Satd. Flow (perm)	3355	1441	4427	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	27	27				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2068	1961	1089	0	0	1815
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	2754	1275	1089	0	0	1815
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



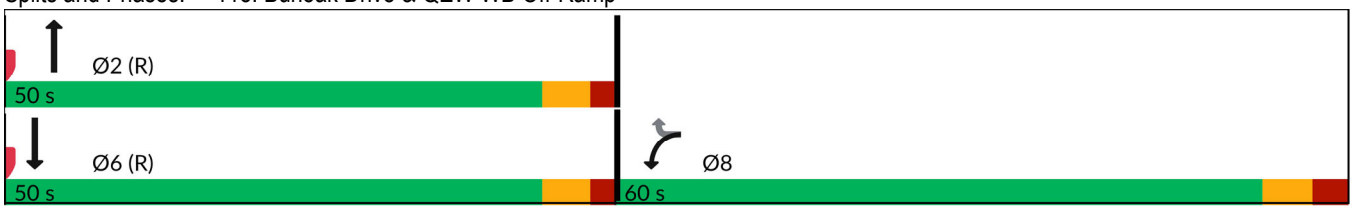
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	60.0	60.0	50.0			50.0
Total Split (%)	54.5%	54.5%	45.5%			45.5%
Maximum Green (s)	53.0	53.0	44.0			44.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
v/c Ratio	1.69	1.80	0.62			1.02
Control Delay (s/veh)	337.3	389.3	22.6			53.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	337.3	389.3	22.6			53.0
LOS	F	F	C			D
Approach Delay (s/veh)	353.7		22.6			53.0
Approach LOS	F		C			D
Queue Length 50th (m)	~481.1	~485.4	86.3			~184.8
Queue Length 95th (m)	#523.5	#579.1	49.8			m#220.5
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1630	708	1770			1788
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.69	1.80	0.62			1.02

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.80	
Intersection Signal Delay (s/veh): 223.0	Intersection LOS: F

Intersection Capacity Utilization 117.4%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

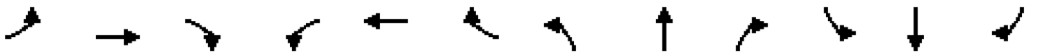




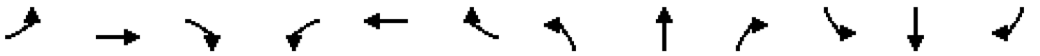
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1923	1824	1013	0	0	1688
Future Volume (vph)	1923	1824	1013	0	0	1688
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3353	1441	4427			4471
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3353	1441	4427			4471
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2068	1961	1089	0	0	1815
RTOR Reduction (vph)	14	14	0	0	0	0
Lane Group Flow (vph)	2740	1261	1089	0	0	1815
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	53.0	53.0	44.0			44.0
Effective Green, g (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1615	694	1770			1788
v/s Ratio Prot	0.82		0.25			c0.41
v/s Ratio Perm		c0.88				
v/c Ratio	1.70	1.82	0.62			1.02
Uniform Delay, d1	28.5	28.5	26.3			33.0
Progression Factor	1.00	1.00	0.79			0.86
Incremental Delay, d2	316.2	373.3	1.6			24.0
Delay (s)	344.7	401.8	22.4			52.3
Level of Service	F	F	C			D
Approach Delay (s/veh)	362.8		22.4			52.3
Approach LOS	F		C			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	228.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.45		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	117.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	65	302	0	0	143	0	831	11	9	2747	0
Future Volume (vph)	118	65	302	0	0	143	0	831	11	9	2747	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.895	0.850			0.865		0.998				
Flt Protected	0.950											
Satd. Flow (prot)	1641	2950	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950										0.936	
Satd. Flow (perm)	1641	2950	1413	0	0	1596	0	5125	0	0	4807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		159	159			556		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	124	68	318	0	0	151	0	875	12	9	2892	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	124	227	159	0	0	151	0	887	0	0	2901	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

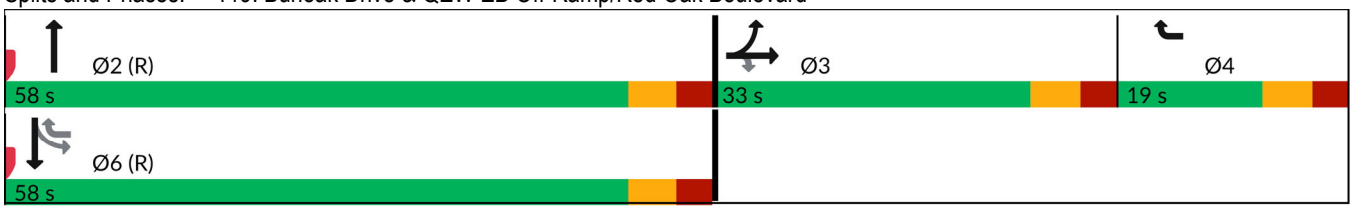


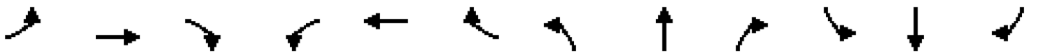
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			5.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			39.0		39.0		39.0	39.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		25.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	13.8	13.8	13.8			82.2		69.7			69.7	
Actuated g/C Ratio	0.13	0.13	0.13			0.75		0.63			0.63	
v/c Ratio	0.60	0.45	0.50			0.11		0.27			0.95	
Control Delay (s/veh)	57.1	16.7	12.2			0.2		9.6			18.5	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	57.1	16.7	12.2			0.2		9.6			18.5	
LOS	E	B	B			A		A			B	
Approach Delay (s/veh)		25.1			0.2			9.6			18.5	
Approach LOS		C			A			A			B	
Queue Length 50th (m)	28.9	8.0	0.0			0.0		29.9			170.1	
Queue Length 95th (m)	47.2	19.8	20.5			0.0		43.6			m130.7	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	387	818	455			1328		3248			3046	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.32	0.28	0.35			0.11		0.27			0.95	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay (s/veh): 16.9		Intersection LOS: B	

Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

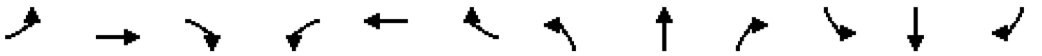




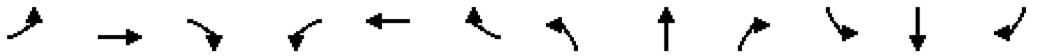
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	65	302	0	0	143	0	831	11	9	2747	0
Future Volume (vph)	118	65	302	0	0	143	0	831	11	9	2747	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.89	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1641	2950	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1641	2950	1413			1596		5125			4808	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	124	68	318	0	0	151	0	875	12	9	2892	0
RTOR Reduction (vph)	0	139	139	0	0	48	0	1	0	0	0	0
Lane Group Flow (vph)	124	88	20	0	0	103	0	886	0	0	2901	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Actuated Green, G (s)	13.8	13.8	13.8			75.2		69.7			69.7	
Effective Green, g (s)	13.8	13.8	13.8			75.2		69.7			69.7	
Actuated g/C Ratio	0.13	0.13	0.13			0.68		0.63			0.63	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	205	370	177			1192		3247			3046	
v/s Ratio Prot	c0.08	0.03				c0.00		0.17				
v/s Ratio Perm			0.01			0.06					c0.60	
v/c Ratio	0.60	0.24	0.11			0.09		0.27			0.95	
Uniform Delay, d1	45.5	43.4	42.7			5.9		8.9			18.6	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.86	
Incremental Delay, d2	5.0	0.3	0.3			0.0		0.2			1.0	
Delay (s)	50.5	43.7	43.0			5.9		9.1			17.1	
Level of Service	D	D	D			A		A			B	
Approach Delay (s/veh)		45.1			5.9			9.1			17.1	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	43	164	291	231	185	328	1868	151	58	1279	56
Future Volume (vph)	65	43	164	291	231	185	328	1868	151	58	1279	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1644	0	1770	1696	0	1805	4335	0	1736	4394	0
Flt Permitted	0.372			0.195			0.075			0.065		
Satd. Flow (perm)	692	1644	0	363	1696	0	142	4335	0	119	4394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		116			30			12			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Adj. Flow (vph)	66	44	167	297	236	189	335	1906	154	59	1305	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	211	0	297	425	0	335	2060	0	59	1362	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



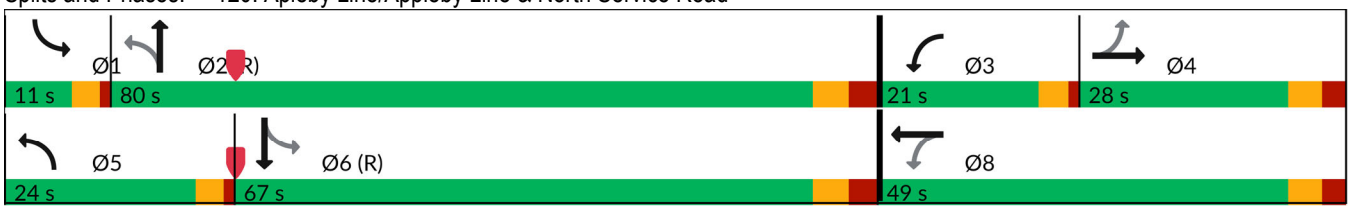
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	28.0	28.0		21.0	49.0		24.0	80.0		11.0	67.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%		17.1%	57.1%		7.9%	47.9%	
Maximum Green (s)	21.9	21.9		17.0	42.9		20.0	73.4		7.0	60.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.5	16.5		39.6	37.5		92.4	80.9		71.1	61.4	
Actuated g/C Ratio	0.12	0.12		0.28	0.27		0.66	0.58		0.51	0.44	
v/c Ratio	0.81	0.71		1.09	0.89		0.88	0.82		0.42	0.71	
Control Delay (s/veh)	116.3	39.1		120.8	67.1		44.7	17.0		24.8	45.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.4		0.0	0.0	
Total Delay (s/veh)	116.3	39.1		120.8	67.1		44.7	17.4		24.8	45.5	
LOS	F	D		F	E		D	B		C	D	
Approach Delay (s/veh)		57.5			89.2			21.2			44.7	
Approach LOS		E			F			C			D	
Queue Length 50th (m)	19.1	26.6		~77.8	113.4		74.3	149.5		8.7	174.0	
Queue Length 95th (m)	#41.0	54.2		#133.4	152.9		m#85.2	m140.8		m14.2	193.7	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	108	355		273	540		382	2511		141	1931	
Starvation Cap Reductn	0	0		0	0		0	115		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.61	0.59		1.09	0.79		0.88	0.86		0.42	0.71	

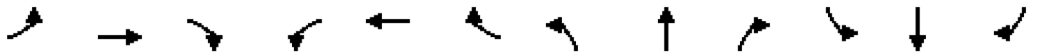
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 40.4	Intersection LOS: D

Intersection Capacity Utilization 94.5%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	43	164	291	231	185	328	1868	151	58	1279	56
Future Volume (vph)	65	43	164	291	231	185	328	1868	151	58	1279	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1645		1770	1697		1805	4334		1736	4393	
Flt Permitted	0.37	1.00		0.20	1.00		0.08	1.00		0.07	1.00	
Satd. Flow (perm)	692	1645		363	1697		143	4334		119	4393	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	66	44	167	297	236	189	335	1906	154	59	1305	57
RTOR Reduction (vph)	0	102	0	0	22	0	0	5	0	0	3	0
Lane Group Flow (vph)	66	109	0	297	403	0	335	2055	0	59	1359	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.5	16.5		37.5	37.5		89.8	80.2		67.1	61.5	
Effective Green, g (s)	16.5	16.5		37.5	37.5		89.8	80.2		67.1	61.5	
Actuated g/C Ratio	0.12	0.12		0.27	0.27		0.64	0.57		0.48	0.44	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	81	193		268	454		380	2482		121	1929	
v/s Ratio Prot		0.07		c0.13	0.24		c0.15	0.47		0.02	0.31	
v/s Ratio Perm	0.10			c0.16			c0.41			0.21		
v/c Ratio	0.81	0.56		1.11	0.89		0.88	0.83		0.49	0.70	
Uniform Delay, d1	60.3	58.3		46.1	49.2		40.9	24.3		23.8	31.9	
Progression Factor	1.00	1.00		1.00	1.00		1.14	0.65		1.12	1.36	
Incremental Delay, d2	44.4	3.7		87.1	18.5		2.5	0.3		2.3	1.7	
Delay (s)	104.7	62.1		133.3	67.8		49.2	16.1		29.1	45.0	
Level of Service	F	E		F	E		D	B		C	D	
Approach Delay (s/veh)		72.2			94.7			20.7			44.3	
Approach LOS		E			F			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	41.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	94.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	978	1041	1951	0	0	1806
Future Volume (vph)	978	1041	1951	0	0	1806
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1553	4385	0	0	4471
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1553	4385	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		12				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Adj. Flow (vph)	1008	1073	2011	0	0	1862
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1008	1073	2011	0	0	1862
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

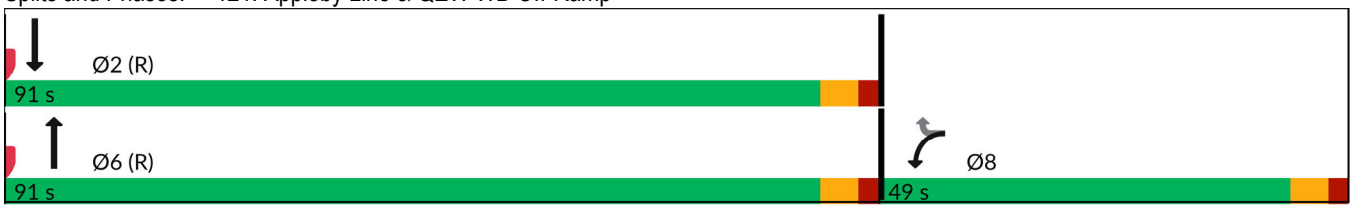


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
v/c Ratio	0.97	2.21	0.76			0.69
Control Delay (s/veh)	68.4	576.8	14.9			10.5
Queue Delay	0.0	0.0	0.1			0.0
Total Delay (s/veh)	68.4	576.8	15.0			10.6
LOS	E	F	B			B
Approach Delay (s/veh)	330.5		15.0			10.6
Approach LOS	F		B			B
Queue Length 50th (m)	152.5	~519.1	157.5			60.4
Queue Length 95th (m)	#198.6	#606.1	85.3			m65.6
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1044	485	2662			2714
Starvation Cap Reductn	0	0	0			28
Spillback Cap Reductn	0	0	82			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.97	2.21	0.78			0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.21			
Intersection Signal Delay (s/veh): 123.9		Intersection LOS: F	
Intersection Capacity Utilization 112.2%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

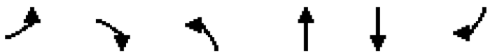
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



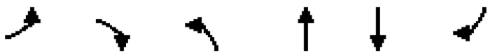


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	978	1041	1951	0	0	1806
Future Volume (vph)	978	1041	1951	0	0	1806
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1553	4385			4471
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1553	4385			4471
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1008	1073	2011	0	0	1862
RTOR Reduction (vph)	0	8	0	0	0	0
Lane Group Flow (vph)	1008	1065	2011	0	0	1862
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	43.0	43.0	85.0			85.0
Effective Green, g (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1044	476	2662			2714
v/s Ratio Prot	0.30		c0.46			0.42
v/s Ratio Perm		c0.69				
v/c Ratio	0.97	2.24	0.76			0.69
Uniform Delay, d1	47.8	48.5	20.0			18.5
Progression Factor	1.00	1.00	0.65			0.51
Incremental Delay, d2	19.8	563.3	1.8			1.0
Delay (s)	67.6	611.8	14.7			10.4
Level of Service	E	F	B			B
Approach Delay (s/veh)	348.2		14.7			10.4
Approach LOS	F		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	129.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	571	442	0	1510	2233	0
Future Volume (vph)	571	442	0	1510	2233	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	4343	4427	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	4343	4427	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		11				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Adj. Flow (vph)	577	446	0	1525	2256	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	577	446	0	1525	2256	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



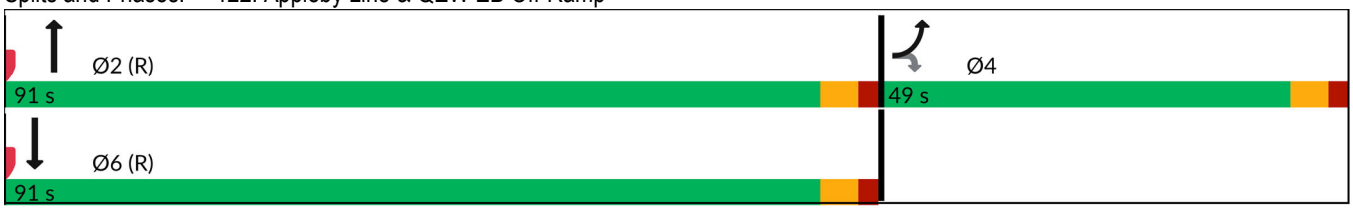
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	30.7	30.7		97.3	97.3	
Actuated g/C Ratio	0.22	0.22		0.70	0.70	
v/c Ratio	0.79	0.75		0.51	0.73	
Control Delay (s/veh)	59.7	57.6		10.9	8.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.7	57.6		10.9	8.2	
LOS	E	E		B	A	
Approach Delay (s/veh)	58.8			10.9	8.2	
Approach LOS	E			B	A	
Queue Length 50th (m)	85.6	70.9		82.8	93.8	
Queue Length 95th (m)	101.1	87.8		m82.5	m167.0	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1024	831		3019	3077	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.56	0.54		0.51	0.73	

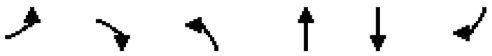
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 19.8		Intersection LOS: B	
Intersection Capacity Utilization 112.2%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	571	442	0	1510	2233	0
Future Volume (vph)	571	442	0	1510	2233	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		4343	4427	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		4343	4427	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	577	446	0	1525	2256	0
RTOR Reduction (vph)	0	9	0	0	0	0
Lane Group Flow (vph)	577	437	0	1525	2256	0
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	30.7	30.7		97.3	97.3	
Effective Green, g (s)	30.7	30.7		97.3	97.3	
Actuated g/C Ratio	0.22	0.22		0.70	0.70	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	731	588		3018	3076	
v/s Ratio Prot	c0.17			0.35	c0.51	
v/s Ratio Perm		0.16				
v/c Ratio	0.79	0.74		0.51	0.73	
Uniform Delay, d1	51.6	51.0		10.0	13.3	
Progression Factor	1.00	1.00		0.98	0.51	
Incremental Delay, d2	5.7	5.1		0.4	1.0	
Delay (s)	57.3	56.1		10.2	7.7	
Level of Service	E	E		B	A	
Approach Delay (s/veh)	56.7			10.2	7.7	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	263	179	452	572	381	102	897	184	167	1485	273
Future Volume (vph)	317	263	179	452	572	381	102	897	184	167	1485	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.939			0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	1736	3224	0	1736	4471	1404	1687	4471	1538
Flt Permitted	0.215			0.177			0.070			0.177		
Satd. Flow (perm)	396	3288	0	322	3224	0	128	4471	1382	314	4471	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		100			103				151			239
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Adj. Flow (vph)	323	268	183	461	584	389	104	915	188	170	1515	279
Shared Lane Traffic (%)												
Lane Group Flow (vph)	323	451	0	461	973	0	104	915	188	170	1515	279
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



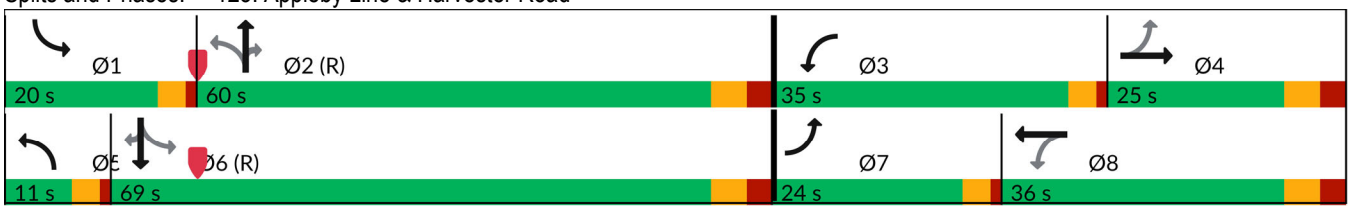
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.6		31.0	29.6		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	41.0	18.6		56.0	29.6		66.5	57.2	57.2	75.6	62.7	62.7
Actuated g/C Ratio	0.29	0.13		0.40	0.21		0.48	0.41	0.41	0.54	0.45	0.45
v/c Ratio	1.05	0.86		1.05	1.28		0.74	0.50	0.29	0.58	0.76	0.35
Control Delay (s/veh)	102.4	63.1		93.9	174.1		61.4	40.9	18.7	24.9	32.2	7.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	102.4	63.1		93.9	174.1		61.4	40.9	18.7	24.9	32.2	7.3
LOS	F	E		F	F		E	D	B	C	C	A
Approach Delay (s/veh)		79.5			148.3			39.2			28.1	
Approach LOS		E			F			D			C	
Queue Length 50th (m)	~84.7	54.5		~131.1	~179.6		18.1	116.3	15.1	25.3	130.3	10.5
Queue Length 95th (m)	#149.6	#83.1		#203.6	#224.8		m#40.6	134.2	m49.9	m39.2	136.8	23.8
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	309	523		441	762		141	1825	653	327	2002	806
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.86		1.05	1.28		0.74	0.50	0.29	0.52	0.76	0.35

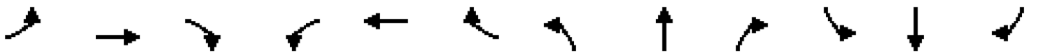
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay (s/veh): 70.0	Intersection LOS: E

Intersection Capacity Utilization 99.2%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road

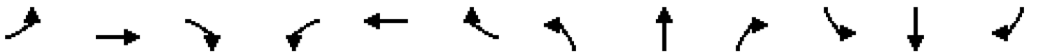




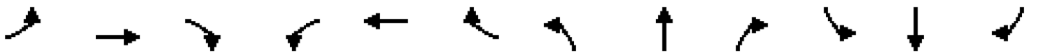
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	317	263	179	452	572	381	102	897	184	167	1485	273
Future Volume (vph)	317	263	179	452	572	381	102	897	184	167	1485	273
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3288		1735	3224		1736	4471	1382	1687	4471	1506
Flt Permitted	0.22	1.00		0.18	1.00		0.07	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	397	3288		323	3224		128	4471	1382	315	4471	1506
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	323	268	183	461	584	389	104	915	188	170	1515	279
RTOR Reduction (vph)	0	87	0	0	81	0	0	0	89	0	0	132
Lane Group Flow (vph)	323	364	0	461	892	0	104	915	99	170	1515	147
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.6	18.6		53.6	29.6		64.2	57.2	57.2	73.7	62.7	62.7
Effective Green, g (s)	38.6	18.6		53.6	29.6		64.2	57.2	57.2	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.13		0.38	0.21		0.46	0.41	0.41	0.53	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	436		436	681		139	1826	564	288	2002	674
v/s Ratio Prot	0.15	0.11		c0.23	c0.28		c0.04	0.20		c0.05	c0.34	
v/s Ratio Perm	0.14			0.17			0.31		0.07	0.26		0.10
v/c Ratio	1.07	0.84		1.06	1.31		0.75	0.50	0.17	0.59	0.76	0.22
Uniform Delay, d1	46.0	59.2		41.9	55.2		27.1	30.8	26.4	19.7	32.3	23.7
Progression Factor	1.00	1.00		1.00	1.00		1.41	1.27	2.49	1.16	0.93	1.42
Incremental Delay, d2	70.3	13.0		59.1	149.7		17.9	0.9	0.6	2.3	1.9	0.5
Delay (s)	116.3	72.2		101.0	204.9		56.0	40.1	66.2	25.0	31.9	34.0
Level of Service	F	E		F	F		E	D	E	C	C	C
Approach Delay (s/veh)		90.6			171.5			45.5			31.6	
Approach LOS		F			F			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	80.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	104	400	233	199	158	228	597	109	160	1268	976
Future Volume (vph)	440	104	400	233	199	158	228	597	109	160	1268	976
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97			0.89	0.96		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	1810	1468	1752	1776	1599	1626	5136	1599	1787	4515	1482
Flt Permitted	0.950			0.687			0.075			0.405		
Satd. Flow (perm)	3319	1810	1384	1217	1776	1550	128	5136	1420	734	4515	1385
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			214			165			129			527
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Adj. Flow (vph)	458	108	417	243	207	165	238	622	114	167	1321	1017
Shared Lane Traffic (%)												
Lane Group Flow (vph)	458	108	417	243	207	165	238	622	114	167	1321	1017
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	30.0	49.0	49.0	20.0	39.0	39.0	15.0	58.0	58.0	13.0	56.0	56.0
Total Split (%)	21.4%	35.0%	35.0%	14.3%	27.9%	27.9%	10.7%	41.4%	41.4%	9.3%	40.0%	40.0%
Maximum Green (s)	25.0	42.5	42.5	16.0	32.5	32.5	11.0	51.2	51.2	9.0	49.2	49.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	22.9	30.8	30.8	40.8	22.6	22.6	78.5	61.7	61.7	62.5	49.2	49.2
Actuated g/C Ratio	0.16	0.22	0.22	0.29	0.16	0.16	0.56	0.44	0.44	0.45	0.35	0.35
v/c Ratio	0.83	0.27	0.89	0.59	0.72	0.43	0.75	0.27	0.16	0.41	0.83	1.23
Control Delay (s/veh)	70.4	44.7	45.4	37.3	69.2	9.8	50.8	26.9	3.9	14.3	34.5	124.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.4	44.7	45.4	37.3	69.2	9.8	50.8	26.9	3.9	14.3	34.5	124.8
LOS	E	D	D	D	E	A	D	C	A	B	C	F
Approach Delay (s/veh)		57.0			40.6			30.0			69.8	
Approach LOS		E			D			C			E	
Queue Length 50th (m)	68.6	27.3	67.1	51.8	61.5	0.0	54.2	42.8	0.0	16.0	149.5	~315.3
Queue Length 95th (m)	88.6	41.1	105.8	65.2	83.4	19.2	#142.3	59.3	10.4	m21.7	m158.3	m#345.4
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	601	549	569	418	412	486	317	2264	698	409	1586	828
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.20	0.73	0.58	0.50	0.34	0.75	0.27	0.16	0.41	0.83	1.23

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay (s/veh): 56.1	Intersection LOS: E

Intersection Capacity Utilization 105.7% ICU Level of Service G

Analysis Period (min) 15

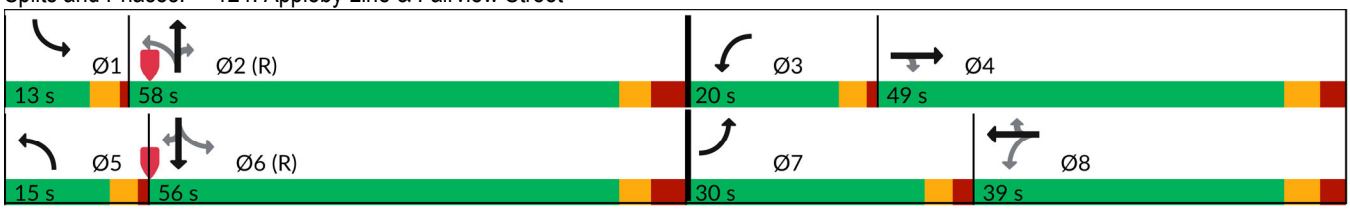
* User Entered Value

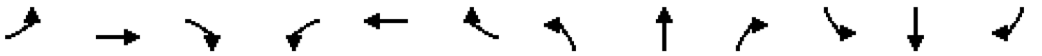
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street

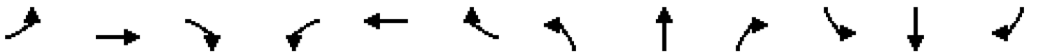




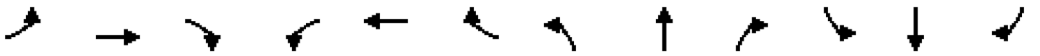
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	440	104	400	233	199	158	228	597	109	160	1268	976
Future Volume (vph)	440	104	400	233	199	158	228	597	109	160	1268	976
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.89	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	1810	1384	1706	1776	1550	1626	5136	1420	1761	4515	1385
Flt Permitted	0.95	1.00	1.00	0.69	1.00	1.00	0.08	1.00	1.00	0.41	1.00	1.00
Satd. Flow (perm)	3367	1810	1384	1234	1776	1550	129	5136	1420	751	4515	1385
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	458	108	417	243	207	165	238	622	114	167	1321	1017
RTOR Reduction (vph)	0	0	167	0	0	138	0	0	64	0	0	342
Lane Group Flow (vph)	458	108	250	243	207	27	238	622	50	167	1321	675
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	22.9	30.8	30.8	38.3	22.6	22.6	76.2	61.7	61.7	59.7	49.2	49.2
Effective Green, g (s)	22.9	30.8	30.8	38.3	22.6	22.6	76.2	61.7	61.7	59.7	49.2	49.2
Actuated g/C Ratio	0.16	0.22	0.22	0.27	0.16	0.16	0.54	0.44	0.44	0.43	0.35	0.35
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	550	398	304	390	286	250	316	2263	625	395	1586	486
v/s Ratio Prot	c0.14	0.06		0.07	0.12		c0.12	0.12		0.03	0.29	
v/s Ratio Perm			c0.18	0.10		0.02	0.29		0.04	0.15		c0.49
v/c Ratio	0.83	0.27	0.82	0.62	0.72	0.11	0.75	0.27	0.08	0.42	0.83	1.39
Uniform Delay, d1	56.7	45.3	52.0	43.1	55.7	50.1	38.9	24.9	22.7	25.4	41.6	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.73	0.50
Incremental Delay, d2	10.4	0.4	16.2	3.1	8.8	0.2	9.7	0.3	0.3	0.5	3.7	183.8
Delay (s)	67.1	45.7	68.2	46.2	64.5	50.3	48.6	25.2	23.0	17.5	34.2	206.4
Level of Service	E	D	E	D	E	D	D	C	C	B	C	F
Approach Delay (s/veh)		65.2			53.4			30.7			103.0	
Approach LOS		E			D			C			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	75.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	767	313	503	1643	275	522	1069	423	346	790	250
Future Volume (vph)	194	767	313	503	1643	275	522	1069	423	346	790	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.98	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5036	1523	3337	5085	1515	3476	5085	1521	3419	5085	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			274			284			342			160
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	200	791	323	519	1694	284	538	1102	436	357	814	258
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	791	323	519	1694	284	538	1102	436	357	814	258
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	17.0	50.0	50.0	35.0	68.0	68.0	21.0	34.0	34.0	21.0	34.0	34.0
Total Split (%)	12.1%	35.7%	35.7%	25.0%	48.6%	48.6%	15.0%	24.3%	24.3%	15.0%	24.3%	24.3%
Maximum Green (s)	12.0	42.6	42.6	30.0	60.6	60.6	16.0	26.6	26.6	16.0	26.6	26.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	11.9	41.0	41.0	27.5	56.5	56.5	20.1	28.7	28.7	18.0	26.6	26.6
Actuated g/C Ratio	0.09	0.29	0.29	0.20	0.40	0.40	0.14	0.21	0.21	0.13	0.19	0.19
v/c Ratio	0.68	0.54	0.51	0.79	0.83	0.36	1.07	1.06	0.75	0.81	0.84	0.61
Control Delay (s/veh)	74.8	43.0	10.2	62.5	41.1	4.0	94.5	87.8	29.2	74.1	63.7	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.8	43.0	10.2	62.5	41.1	4.0	94.5	87.8	29.2	74.1	63.7	26.2
LOS	E	D	B	E	D	A	F	F	C	E	E	C
Approach Delay (s/veh)		39.8			41.3			77.2			59.5	
Approach LOS		D			D			E			E	
Queue Length 50th (m)	30.1	73.0	10.7	75.8	160.6	0.0	~95.2	~141.4	55.0	53.1	86.0	25.7
Queue Length 95th (m)	44.2	85.8	38.3	96.4	173.8	17.8	m#117.5	m#155.9	m63.2	#84.6	103.1	57.4
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	294	1532	654	721	2201	816	503	1043	584	441	966	423
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.52	0.49	0.72	0.77	0.35	1.07	1.06	0.75	0.81	0.84	0.61

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 54.8	Intersection LOS: D

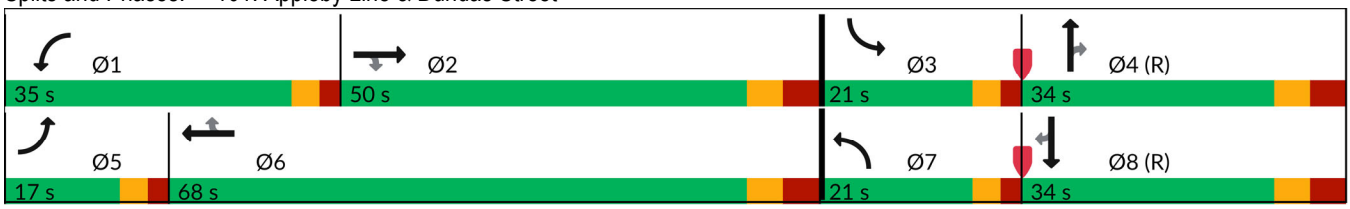
Intersection Capacity Utilization 108.9%	ICU Level of Service G
Analysis Period (min) 15	

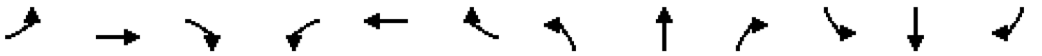
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Appleby Line & Dundas Street

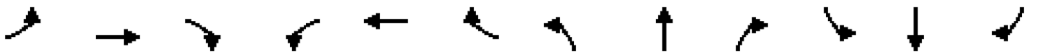




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	767	313	503	1643	275	522	1069	423	346	790	250
Future Volume (vph)	194	767	313	503	1643	275	522	1069	423	346	790	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	200	791	323	519	1694	284	538	1102	436	357	814	258
RTOR Reduction (vph)	0	0	194	0	0	169	0	0	272	0	0	130
Lane Group Flow (vph)	200	791	129	519	1694	115	538	1102	164	357	814	128
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	11.9	41.0	41.0	27.5	56.6	56.6	20.1	28.7	28.7	18.0	26.6	26.6
Effective Green, g (s)	11.9	41.0	41.0	27.5	56.6	56.6	20.1	28.7	28.7	18.0	26.6	26.6
Actuated g/C Ratio	0.09	0.29	0.29	0.20	0.40	0.40	0.14	0.21	0.21	0.13	0.19	0.19
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	291	1474	446	661	2055	612	502	1042	311	441	966	293
v/s Ratio Prot	0.06	0.16		c0.15	c0.33		c0.15	c0.22		0.10	0.16	
v/s Ratio Perm			0.08			0.08			0.11			0.08
v/c Ratio	0.69	0.54	0.29	0.79	0.82	0.19	1.07	1.06	0.53	0.81	0.84	0.44
Uniform Delay, d1	62.2	41.5	38.2	53.4	37.3	26.9	60.0	55.7	49.6	59.3	54.7	50.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.05	2.12	1.00	1.00	1.00
Incremental Delay, d2	8.4	0.4	0.4	7.1	2.8	0.1	44.5	33.6	2.0	11.9	8.9	4.7
Delay (s)	70.7	41.9	38.6	60.5	40.1	27.0	98.7	91.8	107.0	71.2	63.5	54.8
Level of Service	E	D	D	E	D	C	F	F	F	E	E	D
Approach Delay (s/veh)		45.5			42.8			96.8			63.9	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	62.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	108.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	353	283	152	842	517	396	1672	137	257	963	256
Future Volume (vph)	205	353	283	152	842	517	396	1672	137	257	963	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.98		0.99		0.97	1.00	1.00			0.99	
Frt		0.933				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3306	0	1736	4560	1599	3502	4359	0	1787	4290	0
Flt Permitted	0.135			0.149			0.950			0.069		
Satd. Flow (perm)	246	3306	0	270	4560	1549	3489	4359	0	130	4290	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		131				196		11			42	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	207	357	286	154	851	522	400	1689	138	260	973	259
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	643	0	154	851	522	400	1827	0	260	1232	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



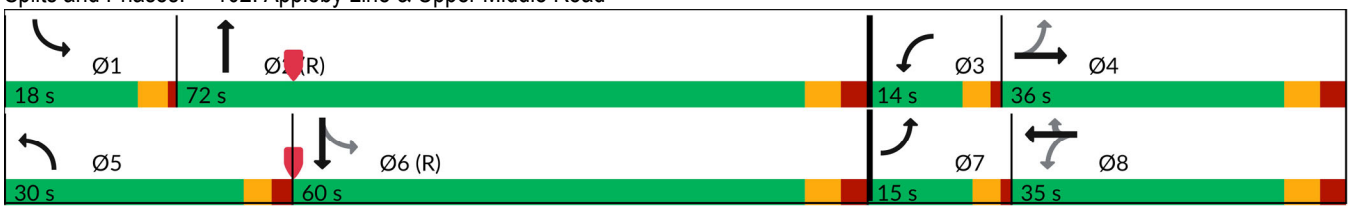
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	36.0		14.0	35.0	35.0	30.0	72.0		18.0	60.0	
Total Split (%)	10.7%	25.7%		10.0%	25.0%	25.0%	21.4%	51.4%		12.9%	42.9%	
Maximum Green (s)	11.0	29.6		10.0	28.6	28.6	25.0	65.5		14.0	53.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	43.0	29.6		41.0	28.6	28.6	20.9	65.5		74.1	57.6	
Actuated g/C Ratio	0.31	0.21		0.29	0.20	0.20	0.15	0.47		0.53	0.41	
v/c Ratio	1.08	0.80		0.84	0.91	1.11	0.76	0.89		1.11	0.69	
Control Delay (s/veh)	124.4	50.1		72.5	69.4	105.1	86.5	22.9		123.8	42.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	124.4	50.1		72.5	69.4	105.1	86.5	22.9		123.8	42.9	
LOS	F	D		E	E	F	F	C		F	D	
Approach Delay (s/veh)		68.2			81.9			34.3			57.0	
Approach LOS		E			F			C			E	
Queue Length 50th (m)	~50.9	76.5		34.0	102.0	~125.6	64.1	63.1		~71.8	100.2	
Queue Length 95th (m)	#105.9	100.5		#67.9	#130.8	#199.8	m80.9	167.3		m#118.7	124.5	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	192	802		183	931	472	625	2045		234	1789	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.08	0.80		0.84	0.91	1.11	0.64	0.89		1.11	0.69	

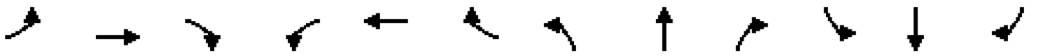
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay (s/veh): 56.5	Intersection LOS: E

Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



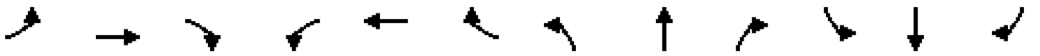


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	353	283	152	842	517	396	1672	137	257	963	256
Future Volume (vph)	205	353	283	152	842	517	396	1672	137	257	963	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3307		1734	4560	1549	3502	4357		1787	4292	
Flt Permitted	0.14	1.00		0.15	1.00	1.00	0.95	1.00		0.07	1.00	
Satd. Flow (perm)	247	3307		272	4560	1549	3502	4357		131	4292	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	207	357	286	154	851	522	400	1689	138	260	973	259
RTOR Reduction (vph)	0	103	0	0	0	156	0	6	0	0	25	0
Lane Group Flow (vph)	207	540	0	154	851	366	400	1821	0	260	1207	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	40.6	29.6		38.6	28.6	28.6	20.9	65.5		71.6	57.6	
Effective Green, g (s)	40.6	29.6		38.6	28.6	28.6	20.9	65.5		71.6	57.6	
Actuated g/C Ratio	0.29	0.21		0.28	0.20	0.20	0.15	0.47		0.51	0.41	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	699		179	931	316	522	2038		232	1765	
v/s Ratio Prot	c0.09	0.16		0.06	0.19		0.11	c0.42		c0.11	0.28	
v/s Ratio Perm	0.23			0.18		c0.24				c0.46		
v/c Ratio	1.10	0.77		0.86	0.91	1.16	0.77	0.89		1.12	0.68	
Uniform Delay, d1	43.5	52.0		41.8	54.5	55.7	57.2	34.1		43.5	33.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.41	0.54		1.15	1.24	
Incremental Delay, d2	95.3	5.3		31.9	13.1	100.7	4.1	4.1		84.7	1.4	
Delay (s)	138.8	57.3		73.7	67.6	156.4	84.7	22.6		134.7	43.4	
Level of Service	F	E		E	E	F	F	C		F	D	
Approach Delay (s/veh)		77.1			98.6			33.8			59.3	
Approach LOS		E			F			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	62.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	790	27	0	1720	0	73	0	15	3	0	4
Future Volume (vph)	3	790	27	0	1720	0	73	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.995							0.850		0.923	
Flt Protected	0.950							0.950			0.979	
Satd. Flow (prot)	1805	4476	0	1900	4515	0	0	1805	1615	0	1704	0
Flt Permitted	0.061							0.753			0.946	
Satd. Flow (perm)	116	4476	0	1900	4515	0	0	1429	1593	0	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6							45		45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	832	28	0	1811	0	77	0	16	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	860	0	0	1811	0	0	77	16	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

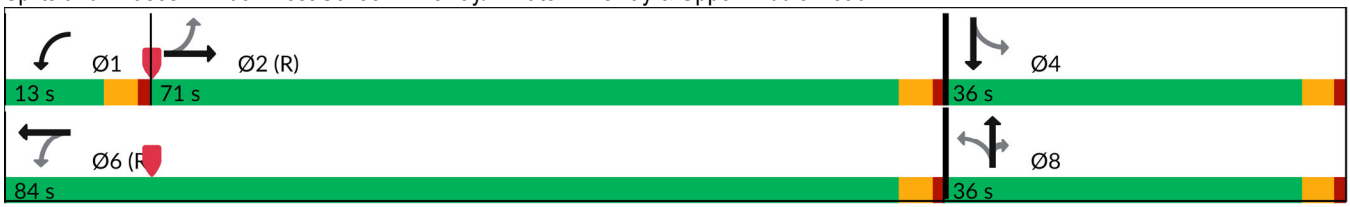


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	67.0	67.0		9.0	80.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
v/c Ratio	0.04	0.29			0.60			0.20	0.04		0.01	
Control Delay (s/veh)	8.3	8.5			20.4			35.9	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	8.3	8.5			20.4			35.9	0.1		0.0	
LOS	A	A			C			D	A		A	
Approach Delay (s/veh)		8.5			20.4			29.7				
Approach LOS		A			C			C				
Queue Length 50th (m)	0.3	33.5			132.4			14.8	0.0		0.0	
Queue Length 95th (m)	1.5	41.2			m144.6			28.3	0.4		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	77	2986			3010			381	457		471	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.04	0.29			0.60			0.20	0.04		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay (s/veh): 16.9	Intersection LOS: B

Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	790	27	0	1720	0	73	0	15	3	0	4
Future Volume (vph)	3	790	27	0	1720	0	73	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1803	4476			4515			1803	1593		1703	
Flt Permitted	0.06	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	116	4476			4515			1429	1593		1646	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	832	28	0	1811	0	77	0	16	3	0	4
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	12	0	5	0
Lane Group Flow (vph)	3	858	0	0	1811	0	0	77	4	0	2	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Effective Green, g (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	77	2984			3010			381	424		438	
v/s Ratio Prot		0.19			c0.40							
v/s Ratio Perm	0.03							c0.05	0.00		0.00	
v/c Ratio	0.04	0.29			0.60			0.20	0.01		0.00	
Uniform Delay, d1	6.8	8.2			11.1			34.1	32.4		32.3	
Progression Factor	1.00	1.00			1.76			1.00	1.00		1.00	
Incremental Delay, d2	0.9	0.2			0.5			1.2	0.0		0.0	
Delay (s)	7.8	8.5			20.1			35.3	32.4		32.3	
Level of Service	A	A			C			D	C		C	
Approach Delay (s/veh)		8.5			20.1			34.8			32.3	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	812	10	20	1692	31	59
Future Volume (vph)	812	10	20	1692	31	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4506	0	1570	4515	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4506	0	1570	4515	1805	1568
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	864	11	21	1800	33	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	875	0	21	1800	33	63
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

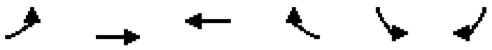
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	812	10	20	1692	31	59
Future Volume (Veh/h)	812	10	20	1692	31	59
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	864	11	21	1800	33	63
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			892		1529	311
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			713		1381	103
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			97		74	93
cM capacity (veh/h)			753		126	872

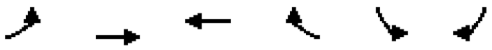
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	346	346	184	21	600	600	600	33	63
Volume Left	0	0	0	21	0	0	0	33	0
Volume Right	0	0	11	0	0	0	0	0	63
cSH	1700	1700	1700	753	1700	1700	1700	126	872
Volume to Capacity	0.20	0.20	0.11	0.03	0.35	0.35	0.35	0.26	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.7	0.0	0.0	0.0	7.9	1.9
Control Delay (s/veh)	0.0	0.0	0.0	9.9	0.0	0.0	0.0	43.6	9.4
Lane LOS				A				E	A
Approach Delay (s/veh)	0.0			0.1				21.2	
Approach LOS								C	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	171	690	1584	195	52	118
Future Volume (vph)	171	690	1584	195	52	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.906	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1805	4515	4443	0	1696	0
Flt Permitted	0.950				0.985	
Satd. Flow (perm)	1805	4515	4443	0	1696	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		235.5	
Travel Time (s)		7.1	17.4		21.2	
Confl. Peds. (#/hr)	13			13		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	178	719	1650	203	54	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	719	1853	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

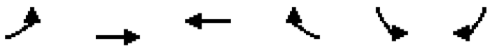
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.9%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			



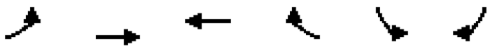
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	171	690	1584	195	52	118
Future Volume (Veh/h)	171	690	1584	195	52	118
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	178	719	1650	203	54	123
Pedestrians		1			13	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.62				0.62	0.62
vC, conflicting volume	1866				2360	666
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	233				1034	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	78				51	82
cM capacity (veh/h)	822				111	666

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	178	240	240	240	660	660	533	177
Volume Left	178	0	0	0	0	0	0	54
Volume Right	0	0	0	0	0	0	203	123
cSH	822	1700	1700	1700	1700	1700	1700	263
Volume to Capacity	0.22	0.14	0.14	0.14	0.39	0.39	0.31	0.67
Queue Length 95th (m)	6.6	0.0	0.0	0.0	0.0	0.0	0.0	35.0
Control Delay (s/veh)	10.6	0.0	0.0	0.0	0.0	0.0	0.0	42.8
Lane LOS	B							E
Approach Delay (s/veh)	2.1				0.0			42.8
Approach LOS								E

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	209	538	1568	571	227	182
Future Volume (vph)	209	538	1568	571	227	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor			0.99		0.99	
Frt			0.960		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1752	4515	4290	0	1711	0
Flt Permitted	0.058				0.973	
Satd. Flow (perm)	107	4515	4290	0	1705	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			117		33	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		321.0	
Travel Time (s)		17.4	14.7		28.9	
Confl. Peds. (#/hr)	8			8	5	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Adj. Flow (vph)	220	566	1651	601	239	192
Shared Lane Traffic (%)						
Lane Group Flow (vph)	220	566	2252	0	431	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

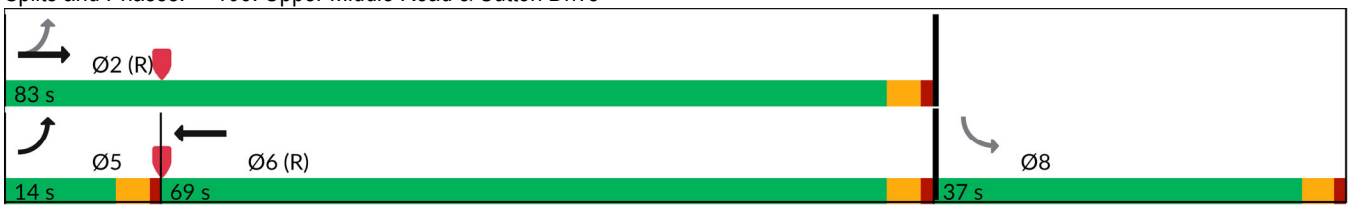


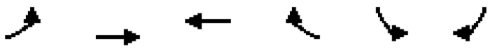
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	9.0	30.0	30.0		30.5	
Total Split (s)	14.0	83.0	69.0		37.0	
Total Split (%)	11.7%	69.2%	57.5%		30.8%	
Maximum Green (s)	10.0	79.0	65.0		33.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Recall Mode	None	C-Max	C-Max		Max	
Walk Time (s)		10.0	10.0		10.0	
Flash Don't Walk (s)		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	79.0	79.0	65.0		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
v/c Ratio	1.06	0.19	0.95		0.88	
Control Delay (s/veh)	123.0	7.7	34.6		58.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	123.0	7.7	34.6		58.3	
LOS	F	A	C		E	
Approach Delay (s/veh)		40.0	34.6		58.3	
Approach LOS		D	C		E	
Queue Length 50th (m)	~49.3	18.5	204.1		95.3	
Queue Length 95th (m)	#99.7	23.0	#247.2		#153.9	
Internal Link Dist (m)		266.7	220.7		297.0	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	207	2972	2377		492	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	1.06	0.19	0.95		0.88	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 38.8	Intersection LOS: D

Intersection Capacity Utilization 88.7%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Upper Middle Road & Sutton Drive

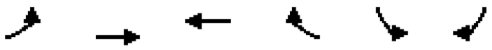




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	209	538	1568	571	227	182
Future Volume (vph)	209	538	1568	571	227	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.96		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1752	4515	4290		1704	
Flt Permitted	0.06	1.00	1.00		0.97	
Satd. Flow (perm)	107	4515	4290		1704	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	220	566	1651	601	239	192
RTOR Reduction (vph)	0	0	54	0	24	0
Lane Group Flow (vph)	220	566	2198	0	407	0
Confl. Peds. (#/hr)	8			8	5	2
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	79.0	79.0	65.0		33.0	
Effective Green, g (s)	79.0	79.0	65.0		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Lane Grp Cap (vph)	207	2972	2323		468	
v/s Ratio Prot	c0.09	0.13	0.51			
v/s Ratio Perm	c0.61				c0.24	
v/c Ratio	1.06	0.19	0.95		0.87	
Uniform Delay, d1	40.0	8.0	25.9		41.5	
Progression Factor	1.57	0.94	1.00		1.00	
Incremental Delay, d2	79.6	0.1	9.7		19.3	
Delay (s)	142.4	7.6	35.6		60.8	
Level of Service	F	A	D		E	
Approach Delay (s/veh)		45.4	35.6		60.8	
Approach LOS		D	D		E	

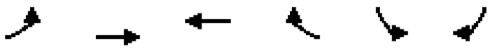
Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	88.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	709	1920	28	0	67
Future Volume (vph)	58	709	1920	28	0	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	4515	4506	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	4515	4506	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	61	746	2021	29	0	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	746	2050	0	0	71
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

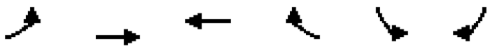
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	709	1920	28	0	67
Future Volume (Veh/h)	58	709	1920	28	0	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	61	746	2021	29	0	71
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.99	
vC, conflicting volume	2059				2415	697
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2059				2404	697
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	78				100	82
cM capacity (veh/h)	274				22	385

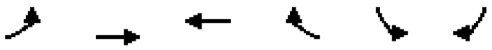
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	61	249	249	249	808	808	433	71
Volume Left	61	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	29	71
cSH	274	1700	1700	1700	1700	1700	1700	385
Volume to Capacity	0.22	0.15	0.15	0.15	0.48	0.48	0.25	0.18
Queue Length 95th (m)	6.7	0.0	0.0	0.0	0.0	0.0	0.0	5.3
Control Delay (s/veh)	21.9	0.0	0.0	0.0	0.0	0.0	0.0	16.4
Lane LOS	C							C
Approach Delay (s/veh)	1.7				0.0			16.4
Approach LOS								C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	702	2103	10	5	9
Future Volume (vph)	12	702	2103	10	5	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.910	
Flt Protected	0.950				0.984	
Satd. Flow (prot)	1805	4515	4511	0	1701	0
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	1805	4515	4511	0	1701	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	13	747	2237	11	5	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	747	2248	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

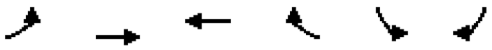
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	702	2103	10	5	9
Future Volume (Veh/h)	12	702	2103	10	5	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	13	747	2237	11	5	10
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2264				2534	767
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2264				2534	767
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				77	97
cM capacity (veh/h)	226				22	344

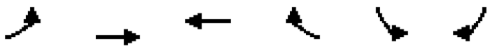
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	13	249	249	249	895	895	458	15
Volume Left	13	0	0	0	0	0	0	5
Volume Right	0	0	0	0	0	0	11	10
cSH	226	1700	1700	1700	1700	1700	1700	57
Volume to Capacity	0.06	0.15	0.15	0.15	0.53	0.53	0.27	0.26
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.0	0.0	0.0	7.3
Control Delay (s/veh)	21.9	0.0	0.0	0.0	0.0	0.0	0.0	88.7
Lane LOS	C							F
Approach Delay (s/veh)	0.4				0.0			88.7
Approach LOS								F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	670	2106	154	67	46
Future Volume (vph)	40	670	2106	154	67	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.945	
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1805	4515	4473	0	1722	0
Flt Permitted	0.950				0.971	
Satd. Flow (perm)	1805	4515	4473	0	1722	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	43	728	2289	167	73	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	728	2456	0	123	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	670	2106	154	67	46
Future Volume (Veh/h)	40	670	2106	154	67	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	728	2289	167	73	50
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2470				2715	861
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2470				2715	861
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	77				0	83
cM capacity (veh/h)	188				13	294

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	43	243	243	243	916	916	625	123
Volume Left	43	0	0	0	0	0	0	73
Volume Right	0	0	0	0	0	0	167	50
cSH	188	1700	1700	1700	1700	1700	1700	22
Volume to Capacity	0.23	0.14	0.14	0.14	0.54	0.54	0.37	5.70
Queue Length 95th (m)	6.8	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	29.7	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	D							F
Approach Delay (s/veh)	1.7				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	367.5		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	33	2215	24	39	683
Future Volume (vph)	31	33	2215	24	39	683
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.931		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1726	0	4506	0	1805	4515
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1726	0	4506	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			459.4
Travel Time (s)	14.5		7.6			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	33	35	2332	25	41	719
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	2357	0	41	719
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

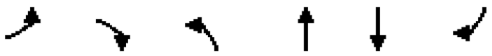
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



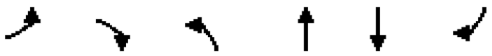
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	31	33	2215	24	39	683
Future Volume (Veh/h)	31	33	2215	24	39	683
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	33	35	2332	25	41	719
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2667	791			2358	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2667	791			2358	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	90			81	
cM capacity (veh/h)	15	337			210	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	68	933	933	491	41	240	240	240
Volume Left	33	0	0	0	41	0	0	0
Volume Right	35	0	0	25	0	0	0	0
cSH	30	1700	1700	1700	210	1700	1700	1700
Volume to Capacity	2.30	0.55	0.55	0.29	0.19	0.14	0.14	0.14
Queue Length 95th (m)	63.9	0.0	0.0	0.0	5.6	0.0	0.0	0.0
Control Delay (s/veh)	877.9	0.0	0.0	0.0	26.2	0.0	0.0	0.0
Lane LOS	F				D			
Approach Delay (s/veh)	877.9	0.0			1.4			
Approach LOS	F							

Intersection Summary			
Average Delay	19.1		
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	173	423	687	2039	661	42
Future Volume (vph)	173	423	687	2039	661	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	1736	4515	4503	0
Flt Permitted	0.950		0.260			
Satd. Flow (perm)	1752	1583	474	4515	4503	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		364			11	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	190	465	755	2241	726	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	190	465	755	2241	772	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

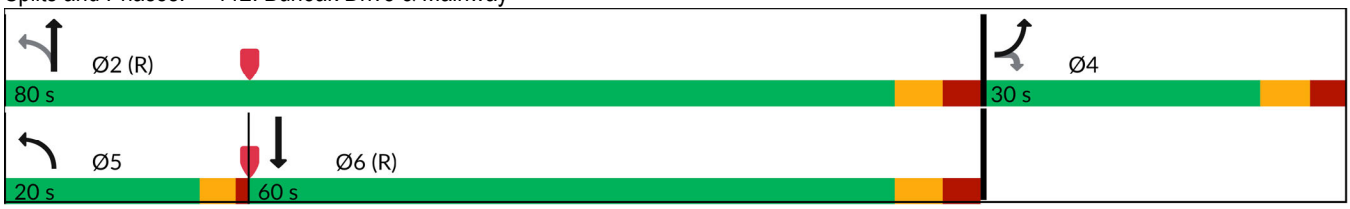


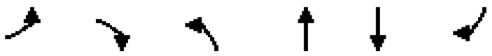
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	20.0	80.0	60.0	
Total Split (%)	27.3%	27.3%	18.2%	72.7%	54.5%	
Maximum Green (s)	23.0	23.0	16.0	73.0	53.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	17.2	17.2	81.8	78.8	53.0	
Actuated g/C Ratio	0.16	0.16	0.74	0.72	0.48	
v/c Ratio	0.70	0.84	1.25	0.69	0.35	
Control Delay (s/veh)	56.9	24.7	150.3	14.6	18.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	56.9	24.7	150.3	14.6	18.1	
LOS	E	C	F	B	B	
Approach Delay (s/veh)	34.0			48.8	18.1	
Approach LOS	C			D	B	
Queue Length 50th (m)	42.0	21.1	~134.3	116.8	43.3	
Queue Length 95th (m)	63.4	61.9	#318.7	156.6	54.6	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	366	618	603	3235	2175	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.52	0.75	1.25	0.69	0.35	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay (s/veh): 41.2	Intersection LOS: D

Intersection Capacity Utilization 87.6%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	173	423	687	2039	661	42
Future Volume (vph)	173	423	687	2039	661	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	1735	4515	4503	
Flt Permitted	0.95	1.00	0.26	1.00	1.00	
Satd. Flow (perm)	1752	1583	475	4515	4503	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	190	465	755	2241	726	46
RTOR Reduction (vph)	0	307	0	0	6	0
Lane Group Flow (vph)	190	158	755	2241	766	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	17.2	17.2	78.8	78.8	53.0	
Effective Green, g (s)	17.2	17.2	78.8	78.8	53.0	
Actuated g/C Ratio	0.16	0.16	0.72	0.72	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	273	247	589	3234	2169	
v/s Ratio Prot	c0.11		c0.25	0.50	0.17	
v/s Ratio Perm		0.10	c0.66			
v/c Ratio	0.70	0.64	1.28	0.69	0.35	
Uniform Delay, d1	43.9	43.5	16.6	8.8	17.8	
Progression Factor	1.00	1.00	1.89	1.41	1.00	
Incremental Delay, d2	7.5	5.4	137.0	1.0	0.5	
Delay (s)	51.4	48.8	168.3	13.4	18.3	
Level of Service	D	D	F	B	B	
Approach Delay (s/veh)	49.6			52.4	18.3	
Approach LOS	D			D	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	360	26	13	615	173	54
Future Volume (vph)	360	26	13	615	173	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.968	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	3414	0	0	3531	1719	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	3414	0	0	3531	1719	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	14%	9%	2%	4%	0%
Adj. Flow (vph)	429	31	15	732	206	64
Shared Lane Traffic (%)						
Lane Group Flow (vph)	460	0	0	747	270	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

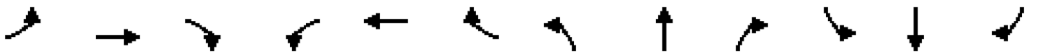
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	360	26	13	615	173	54
Future Volume (Veh/h)	360	26	13	615	173	54
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	429	31	15	732	206	64
Pedestrians					5	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			465		846	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			465		846	235
tC, single (s)			4.3		6.9	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		29	92
cM capacity (veh/h)			1040		292	770

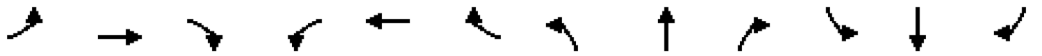
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	286	174	259	488	270
Volume Left	0	0	15	0	206
Volume Right	0	31	0	0	64
cSH	1700	1700	1040	1700	342
Volume to Capacity	0.17	0.10	0.01	0.29	0.79
Queue Length 95th (m)	0.0	0.0	0.4	0.0	52.0
Control Delay (s/veh)	0.0	0.0	0.6	0.0	45.3
Lane LOS			A		E
Approach Delay (s/veh)	0.0		0.2		45.3
Approach LOS					E

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	265	32	5	885	116	70	7	15	45	2	55
Future Volume (vph)	37	265	32	5	885	116	70	7	15	45	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.985			0.983			0.977			0.927	
Flt Protected		0.994						0.964			0.978	
Satd. Flow (prot)	0	3400	0	0	3483	0	0	1789	0	0	1700	0
Flt Permitted		0.994						0.964			0.978	
Satd. Flow (perm)	0	3400	0	0	3483	0	0	1789	0	0	1700	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	46	327	40	6	1093	143	86	9	19	56	2	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	413	0	0	1242	0	0	114	0	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	265	32	5	885	116	70	7	15	45	2	55
Future Volume (Veh/h)	37	265	32	5	885	116	70	7	15	45	2	55
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	46	327	40	6	1093	143	86	9	19	56	2	68
Pedestrians		2			3			7			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1238			374			1076	1696	194	1461	1645	622
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1238			374			1076	1696	194	1461	1645	622
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	92			99			36	89	98	25	98	84
cM capacity (veh/h)	569			1189			135	85	815	74	91	433

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	210	204	553	690	114	126
Volume Left	46	0	6	0	86	56
Volume Right	0	40	0	143	19	68
cSH	569	1700	1189	1700	149	135
Volume to Capacity	0.08	0.12	0.00*	0.41	0.77	0.93
Queue Length 95th (m)	2.1	0.0	0.1	0.0	37.8	50.6
Control Delay (s/veh)	3.4	0.0	0.1	0.0	82.1	123.4
Lane LOS	A		A		F	F
Approach Delay (s/veh)	1.7		0.1		82.1	123.4
Approach LOS					F	F

Intersection Summary				
Average Delay	13.6			
Intersection Capacity Utilization	53.5%	ICU Level of Service	A	
Analysis Period (min)	15			

* Value less than 0.01.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	170	168	152	682	234	373	1683	70	108	1138	144
Future Volume (vph)	171	170	168	152	682	234	373	1683	70	108	1138	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00			1.00	
Frt		0.925			0.962			0.994			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3108	0	1687	3383	0	1703	4429	0	1787	4377	0
Flt Permitted	0.139			0.356			0.067			0.067		
Satd. Flow (perm)	249	3108	0	630	3383	0	120	4429	0	126	4377	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		160			32			5			17	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	184	183	181	163	733	252	401	1810	75	116	1224	155
Shared Lane Traffic (%)												
Lane Group Flow (vph)	184	364	0	163	985	0	401	1885	0	116	1379	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

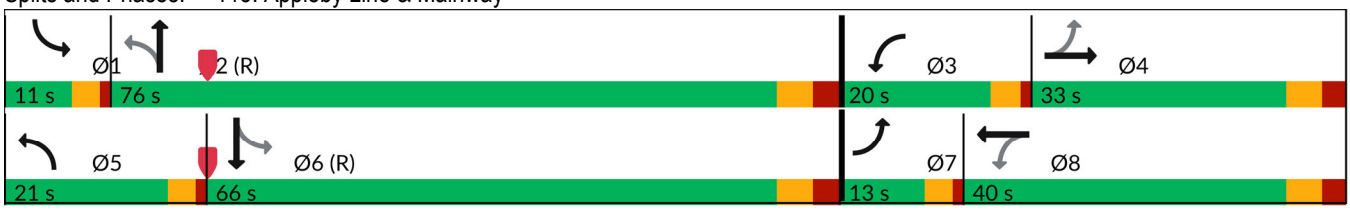


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	13.0	33.0		20.0	40.0		21.0	76.0		11.0	66.0	
Total Split (%)	9.3%	23.6%		14.3%	28.6%		15.0%	54.3%		7.9%	47.1%	
Maximum Green (s)	9.0	26.7		16.0	33.7		17.0	69.7		7.0	59.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	40.0	28.7		48.4	33.7		83.0	69.7		69.0	59.7	
Actuated g/C Ratio	0.29	0.21		0.35	0.24		0.59	0.50		0.49	0.43	
v/c Ratio	1.12	0.48		0.50	1.18		1.52	0.85		0.80	0.74	
Control Delay (s/veh)	141.6	29.6		38.7	135.9		281.2	17.5		65.6	27.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	141.6	29.6		38.7	135.9		281.2	17.5		65.6	27.1	
LOS	F	C		D	F		F	B		E	C	
Approach Delay (s/veh)		67.2			122.1			63.7			30.1	
Approach LOS		E			F			E			C	
Queue Length 50th (m)	~47.5	28.8		35.8	~179.2		~150.0	170.8		15.6	95.7	
Queue Length 95th (m)	#101.8	46.8		56.0	#224.1		m#190.4	166.7		m#48.4	120.6	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	164	763		341	838		263	2207		145	1876	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.12	0.48		0.48	1.18		1.52	0.85		0.80	0.74	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 85 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 67.1	Intersection LOS: E

Intersection Capacity Utilization 99.2% ICU Level of Service F
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

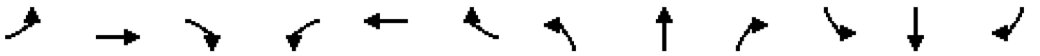


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	170	168	152	682	234	373	1683	70	108	1138	144
Future Volume (vph)	171	170	168	152	682	234	373	1683	70	108	1138	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3110		1685	3381		1703	4429		1787	4377	
Flt Permitted	0.14	1.00		0.36	1.00		0.07	1.00		0.07	1.00	
Satd. Flow (perm)	250	3110		631	3381		120	4429		126	4377	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	184	183	181	163	733	252	401	1810	75	116	1224	155
RTOR Reduction (vph)	0	127	0	0	24	0	0	3	0	0	10	0
Lane Group Flow (vph)	184	237	0	163	961	0	401	1882	0	116	1369	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.7	28.7		46.7	33.7		80.7	69.7		66.7	59.7	
Effective Green, g (s)	37.7	28.7		46.7	33.7		80.7	69.7		66.7	59.7	
Actuated g/C Ratio	0.27	0.21		0.33	0.24		0.58	0.50		0.48	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	637		315	813		261	2205		143	1866	
v/s Ratio Prot	c0.07	0.08		0.05	c0.28		c0.19	0.43		0.04	0.31	
v/s Ratio Perm	0.23			0.12			c0.70			0.35		
v/c Ratio	1.15	0.37		0.52	1.18		1.54	0.85		0.81	0.73	
Uniform Delay, d1	46.6	47.9		34.9	53.2		44.3	30.7		28.3	33.5	
Progression Factor	1.00	1.00		1.00	1.00		1.28	0.49		1.22	0.74	
Incremental Delay, d2	117.2	0.4		1.4	94.2		250.7	2.3		26.3	2.4	
Delay (s)	163.8	48.3		36.4	147.4		307.3	17.3		60.7	27.2	
Level of Service	F	D		D	F		F	B		E	C	
Approach Delay (s/veh)		87.1			131.6			68.2			29.8	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	72.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.44		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	99.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	11	47	92	19	125	46	1970	107	114	1256	26
Future Volume (vph)	51	11	47	92	19	125	46	1970	107	114	1256	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.98		1.00	1.00			1.00	
Frt		0.942			0.928			0.992			0.997	
Flt Protected		0.977			0.981		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1707	0	1641	4387	0	1805	4450	0
Flt Permitted		0.643			0.806		0.153			0.043		
Satd. Flow (perm)	0	1137	0	0	1398	0	263	4387	0	82	4450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			38			9			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	54	12	50	98	20	133	49	2096	114	121	1336	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	0	0	251	0	49	2210	0	121	1364	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		89.0	89.0		12.0	101.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%		63.6%	63.6%		8.6%	72.1%	
Maximum Green (s)	32.5	32.5		32.5	32.5		83.0	83.0		8.0	95.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		25.9			25.9		88.8	88.8		103.6	101.6	
Actuated g/C Ratio		0.19			0.19		0.63	0.63		0.74	0.73	
v/c Ratio		0.50			0.87		0.30	0.79		0.72	0.42	
Control Delay (s/veh)		46.2			73.9		7.6	10.7		41.3	11.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		46.2			73.9		7.6	10.7		41.3	11.0	
LOS		D			E		A	B		D	B	
Approach Delay (s/veh)		46.2			73.9			10.6			13.4	
Approach LOS		D			E			B			B	
Queue Length 50th (m)		23.7			61.2		2.3	244.6		21.6	73.2	
Queue Length 95th (m)		42.7			91.3		m2.6	m168.4		m#38.3	117.0	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		283			353		166	2786		171	3229	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.41			0.71		0.30	0.79		0.71	0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 106 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 16.5	Intersection LOS: B

Intersection Capacity Utilization 80.3% ICU Level of Service D

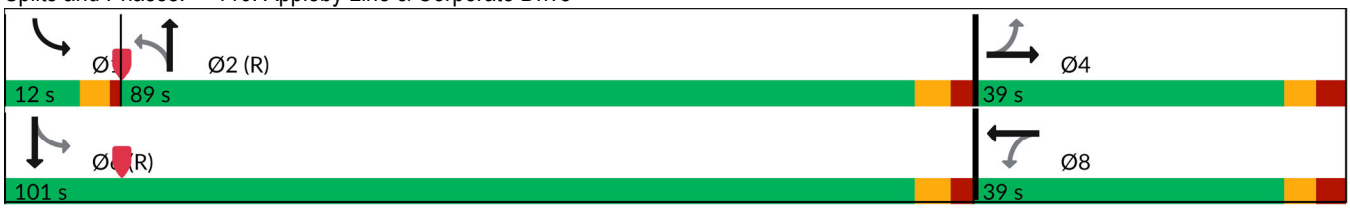
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

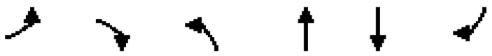
Splits and Phases: 116: Appleby Line & Corporate Drive



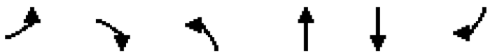
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	11	47	92	19	125	46	1970	107	114	1256	26
Future Volume (vph)	51	11	47	92	19	125	46	1970	107	114	1256	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.93		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1727			1703		1633	4388		1805	4449	
Flt Permitted		0.64			0.81		0.15	1.00		0.04	1.00	
Satd. Flow (perm)		1136			1400		264	4388		82	4449	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	54	12	50	98	20	133	49	2096	114	121	1336	28
RTOR Reduction (vph)	0	20	0	0	31	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	96	0	0	220	0	49	2207	0	121	1363	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.9			25.9		88.8	88.8		101.6	101.6	
Effective Green, g (s)		25.9			25.9		88.8	88.8		101.6	101.6	
Actuated g/C Ratio		0.19			0.19		0.63	0.63		0.73	0.73	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		210			259		167	2783		167	3228	
v/s Ratio Prot								c0.50		c0.05	0.31	
v/s Ratio Perm		0.08			c0.16		0.19			0.48		
v/c Ratio		0.46			0.85		0.29	0.79		0.72	0.42	
Uniform Delay, d1		50.8			55.2		11.5	18.8		36.2	7.6	
Progression Factor		1.00			1.00		0.38	0.48		0.86	1.30	
Incremental Delay, d2		1.6			22.0		1.8	1.0		10.5	0.3	
Delay (s)		52.3			77.2		6.2	10.1		41.5	10.2	
Level of Service		D			E		A	B		D	B	
Approach Delay (s/veh)		52.3			77.2			10.0			12.7	
Approach LOS		D			E			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	450	127	2033	929	30
Future Volume (vph)	157	450	127	2033	929	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	1671	4471	4436	0
Flt Permitted	0.950		0.173			
Satd. Flow (perm)	1787	1553	304	4471	4436	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		203			6	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	174	500	141	2259	1032	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	500	141	2259	1065	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.5	37.0	37.0	
Total Split (s)	32.0	32.0	12.0	78.0	66.0	
Total Split (%)	29.1%	29.1%	10.9%	70.9%	60.0%	
Maximum Green (s)	25.0	25.0	8.0	71.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	25.0	25.0	74.0	71.0	59.2	
Actuated g/C Ratio	0.23	0.23	0.67	0.65	0.54	
v/c Ratio	0.43	0.98	0.47	0.78	0.45	
Control Delay (s/veh)	40.3	61.8	7.6	13.0	9.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	40.3	61.8	7.6	13.0	9.8	
LOS	D	E	A	B	A	
Approach Delay (s/veh)	56.3			12.6	9.8	
Approach LOS	E			B	A	
Queue Length 50th (m)	34.1	75.0	11.3	102.0	30.3	
Queue Length 95th (m)	55.8	#147.9	m8.7	m57.9	41.0	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	406	509	303	2885	2391	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.43	0.98	0.47	0.78	0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 88 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 19.0	Intersection LOS: B

Intersection Capacity Utilization 64.5% ICU Level of Service C

Analysis Period (min) 15

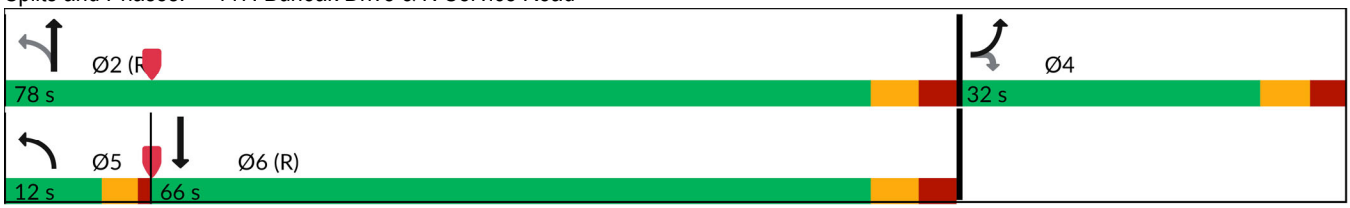
* User Entered Value

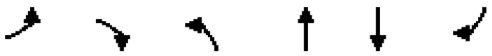
\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	450	127	2033	929	30
Future Volume (vph)	157	450	127	2033	929	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	1671	4471	4438	
Flt Permitted	0.95	1.00	0.17	1.00	1.00	
Satd. Flow (perm)	1787	1553	303	4471	4438	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	174	500	141	2259	1032	33
RTOR Reduction (vph)	0	157	0	0	3	0
Lane Group Flow (vph)	174	343	141	2259	1062	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	25.0	25.0	71.0	71.0	59.2	
Effective Green, g (s)	25.0	25.0	71.0	71.0	59.2	
Actuated g/C Ratio	0.23	0.23	0.65	0.65	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	406	352	292	2885	2388	
v/s Ratio Prot	0.10		0.03	c0.51	0.24	
v/s Ratio Perm		c0.22	0.28			
v/c Ratio	0.43	0.97	0.48	0.78	0.44	
Uniform Delay, d1	36.4	42.2	8.9	14.0	15.4	
Progression Factor	1.00	1.00	1.09	0.89	0.60	
Incremental Delay, d2	0.7	40.9	0.1	0.2	0.5	
Delay (s)	37.1	83.1	9.8	12.7	9.7	
Level of Service	D	F	A	B	A	
Approach Delay (s/veh)	71.2			12.5	9.7	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2284	2165	1196	0	0	2000
Future Volume (vph)	2284	2165	1196	0	0	2000
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor						
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3355	1441	4427	0	0	4471
Flt Permitted	0.964					
Satd. Flow (perm)	3355	1441	4427	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	13	13				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2456	2328	1286	0	0	2151
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	3271	1513	1286	0	0	2151
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	60.0	60.0	50.0			50.0
Total Split (%)	54.5%	54.5%	45.5%			45.5%
Maximum Green (s)	53.0	53.0	44.0			44.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
v/c Ratio	2.02	2.16	0.73			1.20
Control Delay (s/veh)	481.1	546.9	24.4			124.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	481.1	546.9	24.4			124.9
LOS	F	F	C			F
Approach Delay (s/veh)	501.9		24.4			124.9
Approach LOS	F		C			F
Queue Length 50th (m)	~612.7	~616.8	107.4			~253.2
Queue Length 95th (m)	#652.1	#712.0	58.2			m#283.3
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1623	701	1770			1788
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.02	2.16	0.73			1.20

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.16	
Intersection Signal Delay (s/veh): 328.6	Intersection LOS: F

Intersection Capacity Utilization 137.3%	ICU Level of Service H
Analysis Period (min) 15	

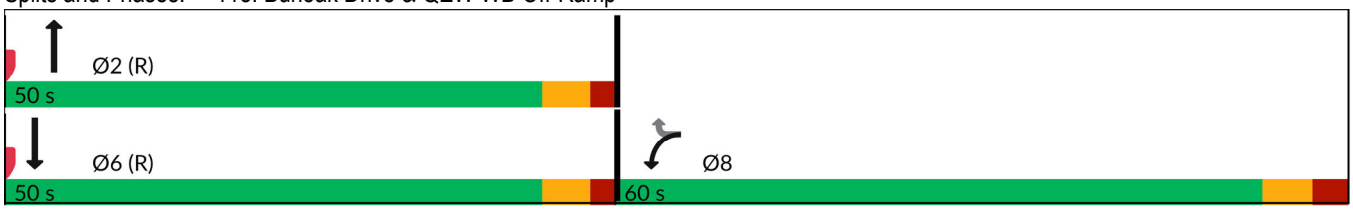
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

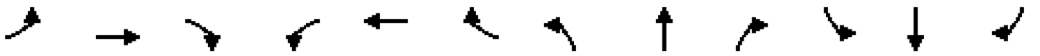




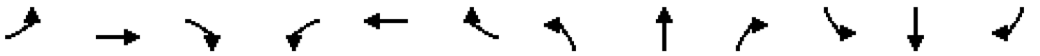
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2284	2165	1196	0	0	2000
Future Volume (vph)	2284	2165	1196	0	0	2000
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3353	1441	4427			4471
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3353	1441	4427			4471
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2456	2328	1286	0	0	2151
RTOR Reduction (vph)	7	7	0	0	0	0
Lane Group Flow (vph)	3264	1506	1286	0	0	2151
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	53.0	53.0	44.0			44.0
Effective Green, g (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1615	694	1770			1788
v/s Ratio Prot	0.97		0.29			c0.48
v/s Ratio Perm		c1.05				
v/c Ratio	2.02	2.17	0.73			1.20
Uniform Delay, d1	28.5	28.5	27.9			33.0
Progression Factor	1.00	1.00	0.77			0.88
Incremental Delay, d2	461.7	531.5	2.6			96.5
Delay (s)	490.2	560.0	24.1			125.5
Level of Service	F	F	C			F
Approach Delay (s/veh)	512.3		24.1			125.5
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	334.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.73		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	137.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	78	358	0	0	170	0	979	14	11	3258	0
Future Volume (vph)	140	78	358	0	0	170	0	979	14	11	3258	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.895	0.850			0.865		0.998				
Flt Protected	0.950											
Satd. Flow (prot)	1641	2950	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950										0.934	
Satd. Flow (perm)	1641	2950	1413	0	0	1596	0	5125	0	0	4797	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		189	188			490		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	147	82	377	0	0	179	0	1031	15	12	3429	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	147	271	188	0	0	179	0	1046	0	0	3441	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



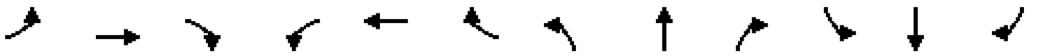
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			5.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			39.0		39.0		39.0	39.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		25.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	15.5	15.5	15.5			80.5		68.0			68.0	
Actuated g/C Ratio	0.14	0.14	0.14			0.73		0.62			0.62	
v/c Ratio	0.64	0.47	0.52			0.14		0.33			1.16	
Control Delay (s/veh)	56.4	15.9	11.2			0.2		10.9			94.1	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	56.4	15.9	11.2			0.2		10.9			94.1	
LOS	E	B	B			A		B			F	
Approach Delay (s/veh)		24.3			0.2			10.9			94.1	
Approach LOS		C			A			B			F	
Queue Length 50th (m)	34.2	9.6	0.0			0.0		38.3			~338.7	
Queue Length 95th (m)	53.7	21.8	21.5			0.0		55.1			m130.8	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	387	841	477			1294		3169			2966	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.38	0.32	0.39			0.14		0.33			1.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay (s/veh): 66.4		Intersection LOS: E	

Intersection Capacity Utilization 89.9% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

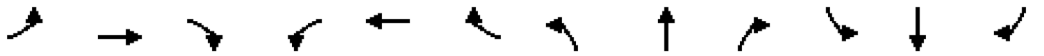




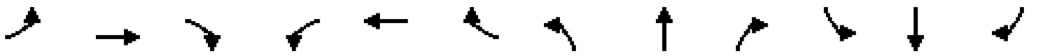
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	78	358	0	0	170	0	979	14	11	3258	0
Future Volume (vph)	140	78	358	0	0	170	0	979	14	11	3258	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.90	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1641	2951	1413			1596		5124			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1641	2951	1413			1596		5124			4795	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	147	82	377	0	0	179	0	1031	15	12	3429	0
RTOR Reduction (vph)	0	162	162	0	0	59	0	1	0	0	0	0
Lane Group Flow (vph)	147	109	26	0	0	120	0	1045	0	0	3441	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Actuated Green, G (s)	15.5	15.5	15.5			73.5		68.0			68.0	
Effective Green, g (s)	15.5	15.5	15.5			73.5		68.0			68.0	
Actuated g/C Ratio	0.14	0.14	0.14			0.67		0.62			0.62	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	231	415	199			1167		3167			2964	
v/s Ratio Prot	c0.09	0.04				c0.01		0.20				
v/s Ratio Perm			0.02			0.07					c0.72	
v/c Ratio	0.64	0.26	0.13			0.10		0.33			1.16	
Uniform Delay, d1	44.6	42.1	41.4			6.5		10.1			21.0	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.92	
Incremental Delay, d2	5.6	0.3	0.3			0.0		0.3			72.8	
Delay (s)	50.2	42.5	41.7			6.5		10.4			92.2	
Level of Service	D	D	D			A		B			F	
Approach Delay (s/veh)		44.1			6.5			10.4			92.2	
Approach LOS		D			A			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	67.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	89.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	45	173	306	243	194	345	1957	159	61	1337	59
Future Volume (vph)	69	45	173	306	243	194	345	1957	159	61	1337	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1644	0	1770	1696	0	1805	4335	0	1736	4394	0
Flt Permitted	0.322			0.186			0.062			0.066		
Satd. Flow (perm)	599	1644	0	346	1696	0	118	4335	0	121	4394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		117			30			12			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Adj. Flow (vph)	70	46	177	312	248	198	352	1997	162	62	1364	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	223	0	312	446	0	352	2159	0	62	1424	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

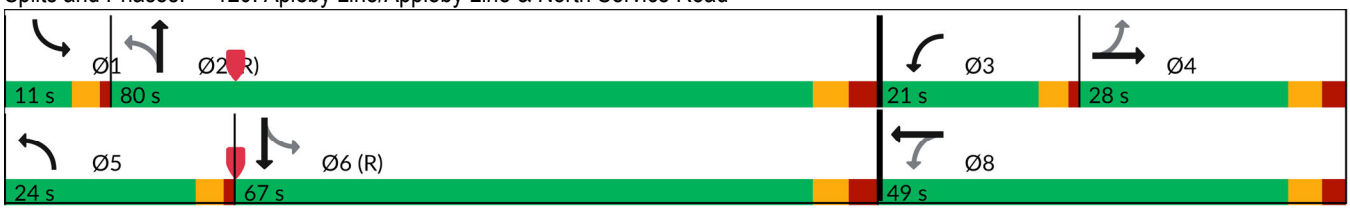


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	28.0	28.0		21.0	49.0		24.0	80.0		11.0	67.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%		17.1%	57.1%		7.9%	47.9%	
Maximum Green (s)	21.9	21.9		17.0	42.9		20.0	73.4		7.0	60.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.5	17.5		40.6	38.5		91.4	79.9		70.1	60.4	
Actuated g/C Ratio	0.13	0.13		0.29	0.28		0.65	0.57		0.50	0.43	
v/c Ratio	0.95	0.73		1.14	0.91		0.95	0.87		0.44	0.75	
Control Delay (s/veh)	148.1	40.8		137.5	69.6		49.6	23.2		25.0	47.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.9		0.0	0.0	
Total Delay (s/veh)	148.1	40.8		137.5	69.6		49.6	24.1		25.0	47.1	
LOS	F	D		F	E		D	C		C	D	
Approach Delay (s/veh)		66.4			97.5			27.7			46.2	
Approach LOS		E			F			C			D	
Queue Length 50th (m)	20.4	29.6		~85.6	118.9		~91.7	213.0		8.8	182.6	
Queue Length 95th (m)	#48.6	58.8		#145.5	#172.5		m72.4	m164.8		m14.5	202.5	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	93	355		273	540		370	2479		142	1898	
Starvation Cap Reductn	0	0		0	0		0	122		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.75	0.63		1.14	0.83		0.95	0.92		0.44	0.75	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay (s/veh): 45.8	Intersection LOS: D

Intersection Capacity Utilization 97.5% ICU Level of Service F
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	45	173	306	243	194	345	1957	159	61	1337	59
Future Volume (vph)	69	45	173	306	243	194	345	1957	159	61	1337	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1644		1770	1697		1805	4334		1736	4393	
Flt Permitted	0.32	1.00		0.19	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	599	1644		347	1697		118	4334		121	4393	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	70	46	177	312	248	198	352	1997	162	62	1364	60
RTOR Reduction (vph)	0	102	0	0	22	0	0	5	0	0	3	0
Lane Group Flow (vph)	70	121	0	312	424	0	352	2154	0	62	1421	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.5	17.5		38.5	38.5		88.8	79.1		66.1	60.4	
Effective Green, g (s)	17.5	17.5		38.5	38.5		88.8	79.1		66.1	60.4	
Actuated g/C Ratio	0.13	0.13		0.28	0.28		0.63	0.56		0.47	0.43	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	74	205		268	466		368	2448		122	1895	
v/s Ratio Prot		0.07		c0.14	0.25		c0.17	0.50		0.02	0.32	
v/s Ratio Perm	0.12			c0.18			c0.44			0.22		
v/c Ratio	0.95	0.59		1.16	0.91		0.96	0.88		0.51	0.75	
Uniform Delay, d1	60.8	57.8		45.3	49.1		45.3	26.3		25.9	33.5	
Progression Factor	1.00	1.00		1.00	1.00		1.04	0.82		1.10	1.34	
Incremental Delay, d2	85.3	4.3		106.8	21.8		6.6	0.5		2.4	2.0	
Delay (s)	146.1	62.1		152.1	70.9		53.6	22.2		30.8	46.8	
Level of Service	F	E		F	E		D	C		C	D	
Approach Delay (s/veh)		82.2			104.3			26.6			46.2	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	97.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1151	1217	2278	0	0	2109
Future Volume (vph)	1151	1217	2278	0	0	2109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1553	4385	0	0	4471
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1553	4385	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Adj. Flow (vph)	1187	1255	2348	0	0	2174
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1187	1255	2348	0	0	2174
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

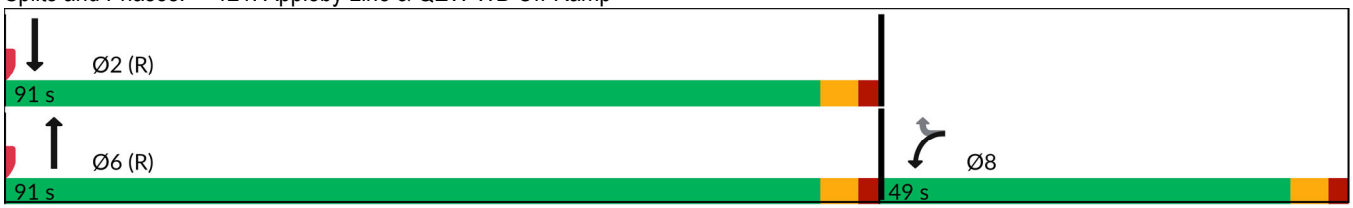


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
v/c Ratio	1.14	2.61	0.88			0.80
Control Delay (s/veh)	117.4	753.8	17.5			13.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	117.4	753.8	17.5			13.0
LOS	F	F	B			B
Approach Delay (s/veh)	444.4		17.5			13.0
Approach LOS	F		B			B
Queue Length 50th (m)	~211.6	~637.0	186.5			78.8
Queue Length 95th (m)	#256.2	#725.9	97.2			m84.0
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1044	480	2662			2714
Starvation Cap Reductn	0	0	0			11
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.14	2.61	0.88			0.80

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.61			
Intersection Signal Delay (s/veh): 165.8		Intersection LOS: F	
Intersection Capacity Utilization 129.4%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

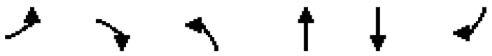
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



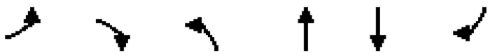


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1151	1217	2278	0	0	2109
Future Volume (vph)	1151	1217	2278	0	0	2109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1553	4385			4471
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1553	4385			4471
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1187	1255	2348	0	0	2174
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	1187	1252	2348	0	0	2174
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	43.0	43.0	85.0			85.0
Effective Green, g (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1044	476	2662			2714
v/s Ratio Prot	0.35		c0.54			0.49
v/s Ratio Perm		c0.81				
v/c Ratio	1.14	2.63	0.88			0.80
Uniform Delay, d1	48.5	48.5	23.3			21.0
Progression Factor	1.00	1.00	0.58			0.52
Incremental Delay, d2	73.6	739.2	3.7			1.9
Delay (s)	122.1	787.7	17.2			12.8
Level of Service	F	F	B			B
Approach Delay (s/veh)	464.2		17.2			12.8
Approach LOS	F		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	172.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.47		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	129.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	663	520	0	1767	2618	0
Future Volume (vph)	663	520	0	1767	2618	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	4343	4427	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	4343	4427	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		4				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Adj. Flow (vph)	670	525	0	1785	2644	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	670	525	0	1785	2644	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



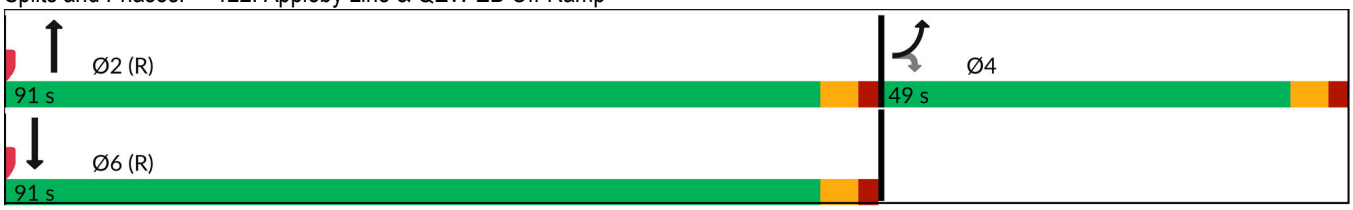
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	34.8	34.8		93.2	93.2	
Actuated g/C Ratio	0.25	0.25		0.67	0.67	
v/c Ratio	0.81	0.78		0.62	0.90	
Control Delay (s/veh)	57.3	57.1		14.3	15.4	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.3	57.1		14.3	15.4	
LOS	E	E		B	B	
Approach Delay (s/veh)	57.2			14.3	15.4	
Approach LOS	E			B	B	
Queue Length 50th (m)	98.3	84.3		98.0	174.9	
Queue Length 95th (m)	114.0	101.7		m95.8	m260.7	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1024	826		2890	2946	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.65	0.64		0.62	0.90	

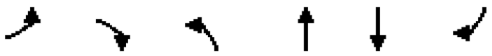
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.90			
Intersection Signal Delay (s/veh): 23.9		Intersection LOS: C	
Intersection Capacity Utilization 129.4%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

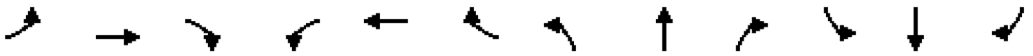




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	663	520	0	1767	2618	0
Future Volume (vph)	663	520	0	1767	2618	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		4343	4427	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		4343	4427	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	670	525	0	1785	2644	0
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	670	522	0	1785	2644	0
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	34.8	34.8		93.2	93.2	
Effective Green, g (s)	34.8	34.8		93.2	93.2	
Actuated g/C Ratio	0.25	0.25		0.67	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	828	666		2891	2947	
v/s Ratio Prot	c0.20			0.41	c0.60	
v/s Ratio Perm		0.19				
v/c Ratio	0.81	0.78		0.62	0.90	
Uniform Delay, d1	49.5	49.1		13.3	19.4	
Progression Factor	1.00	1.00		0.97	0.63	
Incremental Delay, d2	5.9	6.0		0.6	1.9	
Delay (s)	55.3	55.1		13.5	14.1	
Level of Service	E	E		B	B	
Approach Delay (s/veh)	55.2			13.5	14.1	
Approach LOS	E			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	129.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	333	277	188	475	602	400	107	942	194	175	1559	287
Future Volume (vph)	333	277	188	475	602	400	107	942	194	175	1559	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.939			0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	1736	3224	0	1736	4471	1404	1687	4471	1538
Flt Permitted	0.215			0.177			0.070			0.161		
Satd. Flow (perm)	396	3288	0	322	3224	0	128	4471	1382	286	4471	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98			102				151			239
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Adj. Flow (vph)	340	283	192	485	614	408	109	961	198	179	1591	293
Shared Lane Traffic (%)												
Lane Group Flow (vph)	340	475	0	485	1022	0	109	961	198	179	1591	293
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.6		31.0	29.6		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	41.0	18.6		56.0	29.6		66.1	56.8	56.8	75.6	62.7	62.7
Actuated g/C Ratio	0.29	0.13		0.40	0.21		0.47	0.41	0.41	0.54	0.45	0.45
v/c Ratio	1.10	0.91		1.10	1.34		0.77	0.53	0.30	0.63	0.79	0.36
Control Delay (s/veh)	118.5	70.0		110.4	200.3		64.7	42.0	19.5	26.4	34.8	9.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	118.5	70.0		110.4	200.3		64.7	42.0	19.5	26.4	34.8	9.0
LOS	F	E		F	F		E	D	B	C	C	A
Approach Delay (s/veh)		90.2			171.3			40.5			30.4	
Approach LOS		F			F			D			C	
Queue Length 50th (m)	~95.1	59.1		~146.2	~196.1		19.0	122.3	23.3	26.5	130.7	10.3
Queue Length 95th (m)	#161.6	#92.1		#220.0	#241.6		m#41.0	140.9	m50.8	m36.3	160.0	m25.6
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	309	521		441	762		141	1815	650	315	2002	806
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.91		1.10	1.34		0.77	0.53	0.30	0.57	0.79	0.36

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay (s/veh): 78.9	Intersection LOS: E

Intersection Capacity Utilization 101.9%	ICU Level of Service G
Analysis Period (min) 15	

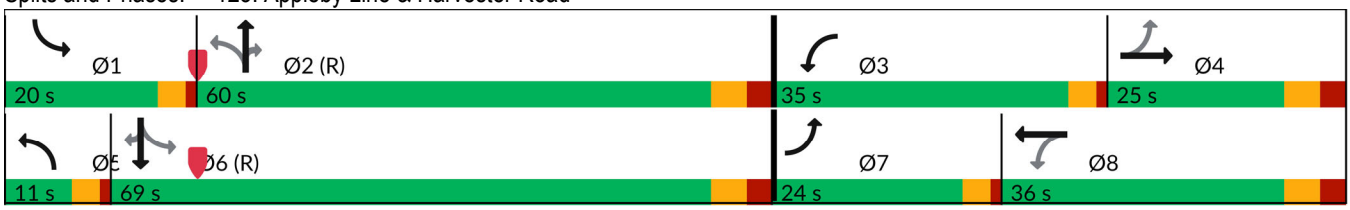
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

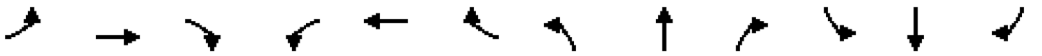
Splits and Phases: 123: Appleby Line & Harvester Road



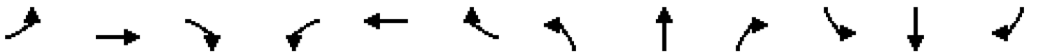
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	333	277	188	475	602	400	107	942	194	175	1559	287
Future Volume (vph)	333	277	188	475	602	400	107	942	194	175	1559	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3290		1735	3225		1736	4471	1382	1687	4471	1506
Flt Permitted	0.22	1.00		0.18	1.00		0.07	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	397	3290		323	3225		129	4471	1382	286	4471	1506
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	340	283	192	485	614	408	109	961	198	179	1591	293
RTOR Reduction (vph)	0	85	0	0	80	0	0	0	90	0	0	132
Lane Group Flow (vph)	340	390	0	485	942	0	109	961	108	179	1591	161
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.6	18.6		53.6	29.6		63.8	56.8	56.8	73.7	62.7	62.7
Effective Green, g (s)	38.6	18.6		53.6	29.6		63.8	56.8	56.8	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.13		0.38	0.21		0.46	0.41	0.41	0.53	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	437		436	681		139	1813	560	279	2002	674
v/s Ratio Prot	0.16	0.12		c0.25	c0.29		c0.04	0.21		c0.06	c0.36	
v/s Ratio Perm	0.15			0.18			0.32		0.08	0.28		0.11
v/c Ratio	1.12	0.89		1.11	1.38		0.78	0.53	0.19	0.64	0.79	0.24
Uniform Delay, d1	46.0	59.7		42.0	55.2		28.1	31.5	26.8	20.3	33.1	23.9
Progression Factor	1.00	1.00		1.00	1.00		1.37	1.28	2.31	1.28	0.99	1.58
Incremental Delay, d2	88.7	19.9		77.3	181.3		21.7	1.0	0.7	2.5	1.7	0.4
Delay (s)	134.8	79.7		119.3	236.5		60.3	41.3	62.6	28.5	34.5	38.1
Level of Service	F	E		F	F		E	D	E	C	C	D
Approach Delay (s/veh)		102.7			198.7			46.3			34.5	
Approach LOS		F			F			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	90.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	485	115	442	257	220	174	252	658	121	176	1399	1076
Future Volume (vph)	485	115	442	257	220	174	252	658	121	176	1399	1076
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97			0.89	0.97		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	1810	1468	1752	1776	1599	1626	5136	1599	1787	4515	1482
Flt Permitted	0.950			0.680			0.075			0.380		
Satd. Flow (perm)	3321	1810	1384	1205	1776	1550	128	5136	1420	691	4515	1385
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			204			171			129			507
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Adj. Flow (vph)	505	120	460	268	229	181	263	685	126	183	1457	1121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	505	120	460	268	229	181	263	685	126	183	1457	1121
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	30.0	49.0	49.0	20.0	39.0	39.0	15.0	58.0	58.0	13.0	56.0	56.0
Total Split (%)	21.4%	35.0%	35.0%	14.3%	27.9%	27.9%	10.7%	41.4%	41.4%	9.3%	40.0%	40.0%
Maximum Green (s)	25.0	42.5	42.5	16.0	32.5	32.5	11.0	51.2	51.2	9.0	49.2	49.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	23.9	34.7	34.7	44.1	25.7	25.7	74.0	58.0	58.0	62.1	49.2	49.2
Actuated g/C Ratio	0.17	0.25	0.25	0.32	0.18	0.18	0.53	0.41	0.41	0.44	0.35	0.35
v/c Ratio	0.88	0.27	0.93	0.61	0.70	0.43	0.98	0.32	0.19	0.48	0.92	1.38
Control Delay (s/veh)	73.6	42.0	53.4	35.6	64.6	10.6	88.8	29.5	5.2	16.5	40.5	190.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.6	42.0	53.4	35.6	64.6	10.6	88.8	29.5	5.2	16.5	40.5	190.4
LOS	E	D	D	D	E	B	F	C	A	B	D	F
Approach Delay (s/veh)		61.5			38.7			41.2			99.8	
Approach LOS		E			D			D			F	
Queue Length 50th (m)	76.2	28.8	84.5	53.7	65.8	2.4	~74.4	52.6	0.0	19.0	170.2	~353.0
Queue Length 95th (m)	#103.3	44.7	#143.1	72.2	92.5	22.7	#160.8	65.5	13.4	m23.9	m180.2	m#520.1
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	601	549	562	442	412	491	269	2127	663	386	1586	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.22	0.82	0.61	0.56	0.37	0.98	0.32	0.19	0.47	0.92	1.38

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.38	
Intersection Signal Delay (s/veh): 73.7	Intersection LOS: E

Intersection Capacity Utilization 113.9%	ICU Level of Service H
Analysis Period (min) 15	

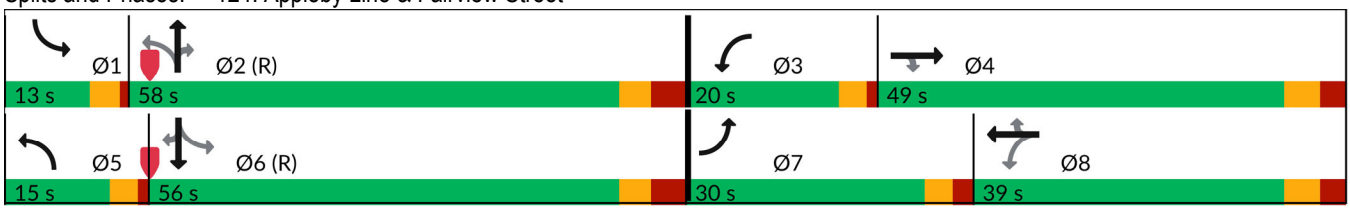
* User Entered Value

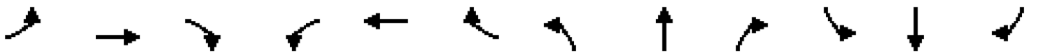
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



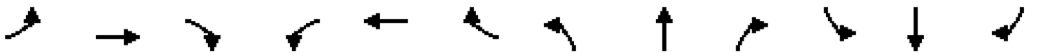


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	485	115	442	257	220	174	252	658	121	176	1399	1076
Future Volume (vph)	485	115	442	257	220	174	252	658	121	176	1399	1076
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.89	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	1810	1384	1707	1776	1550	1626	5136	1420	1765	4515	1385
Flt Permitted	0.95	1.00	1.00	0.68	1.00	1.00	0.08	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	3367	1810	1384	1222	1776	1550	129	5136	1420	705	4515	1385
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	505	120	460	268	229	181	262	685	126	183	1457	1121
RTOR Reduction (vph)	0	0	153	0	0	140	0	0	74	0	0	329
Lane Group Flow (vph)	505	120	307	268	229	41	263	685	52	183	1457	792
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	23.9	34.7	34.7	41.6	25.7	25.7	72.1	58.0	58.0	59.3	49.2	49.2
Effective Green, g (s)	23.9	34.7	34.7	41.6	25.7	25.7	72.1	58.0	58.0	59.3	49.2	49.2
Actuated g/C Ratio	0.17	0.25	0.25	0.30	0.18	0.18	0.52	0.41	0.41	0.42	0.35	0.35
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	574	448	343	418	326	284	268	2127	588	375	1586	486
v/s Ratio Prot	c0.15	0.07		0.07	0.13		c0.13	0.13		0.04	0.32	
v/s Ratio Perm			c0.22	0.12		0.03	0.37		0.04	0.17		c0.57
v/c Ratio	0.88	0.27	0.89	0.64	0.70	0.15	0.98	0.32	0.09	0.49	0.92	1.63
Uniform Delay, d1	56.6	42.4	50.9	41.1	53.6	47.9	45.1	27.7	24.9	26.0	43.5	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.75	0.46
Incremental Delay, d2	14.4	0.3	24.2	3.3	6.7	0.2	49.5	0.4	0.3	0.7	7.3	289.9
Delay (s)	71.0	42.7	75.0	44.4	60.3	48.2	94.6	28.1	25.2	18.0	40.1	310.7
Level of Service	E	D	E	D	E	D	F	C	C	B	D	F
Approach Delay (s/veh)		69.6			50.8			44.1			148.5	
Approach LOS		E			D			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	101.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	113.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	328	528	1726	289	547	1123	443	363	829	263
Future Volume (vph)	204	805	328	528	1726	289	547	1123	443	363	829	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.98	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5036	1523	3338	5085	1515	3478	5085	1521	3420	5085	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			272			298			339			159
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	210	830	338	544	1779	298	564	1158	457	374	855	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	830	338	544	1779	298	564	1158	457	374	855	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	17.0	50.0	50.0	35.0	68.0	68.0	21.0	34.0	34.0	21.0	34.0	34.0
Total Split (%)	12.1%	35.7%	35.7%	25.0%	48.6%	48.6%	15.0%	24.3%	24.3%	15.0%	24.3%	24.3%
Maximum Green (s)	12.0	42.6	42.6	30.0	60.6	60.6	16.0	26.6	26.6	16.0	26.6	26.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	12.0	41.9	41.9	28.0	58.0	58.0	18.6	27.6	27.6	17.7	26.6	26.6
Actuated g/C Ratio	0.09	0.30	0.30	0.20	0.41	0.41	0.13	0.20	0.20	0.13	0.19	0.19
v/c Ratio	0.71	0.55	0.52	0.81	0.84	0.37	1.21	1.16	0.80	0.86	0.89	0.64
Control Delay (s/veh)	76.4	42.7	11.7	63.4	41.3	3.9	143.2	121.9	28.8	79.8	67.0	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.4	42.7	11.7	63.4	41.3	3.9	143.2	121.9	28.8	79.8	67.0	28.8
LOS	E	D	B	E	D	A	F	F	C	E	E	C
Approach Delay (s/veh)		40.2			41.6			107.9			63.3	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	31.7	76.2	14.4	79.4	167.9	0.0	~112.3	~154.2	62.4	57.1	91.1	30.0
Queue Length 95th (m)	#46.9	90.5	44.2	101.4	186.6	18.0	m#117.4	m#155.8	m63.4	#90.3	#113.6	62.9
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	294	1532	652	721	2201	824	465	1001	571	433	966	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.54	0.52	0.75	0.81	0.36	1.21	1.16	0.80	0.86	0.89	0.64

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay (s/veh): 64.4	Intersection LOS: E

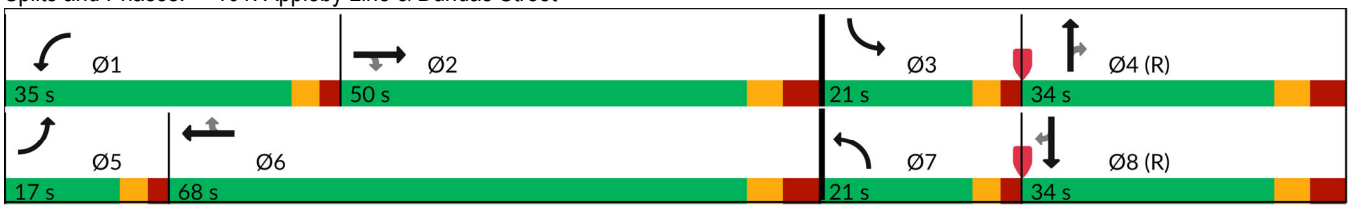
Intersection Capacity Utilization 110.6%	ICU Level of Service H
Analysis Period (min) 15	

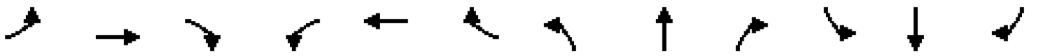
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Appleby Line & Dundas Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	328	528	1726	289	547	1123	443	363	829	263
Future Volume (vph)	204	805	328	528	1726	289	547	1123	443	363	829	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	210	830	338	544	1779	298	564	1158	457	374	855	271
RTOR Reduction (vph)	0	0	190	0	0	175	0	0	272	0	0	129
Lane Group Flow (vph)	210	830	148	544	1779	123	564	1158	185	374	855	142
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	12.0	42.0	42.0	28.0	58.0	58.0	18.6	27.5	27.5	17.7	26.6	26.6
Effective Green, g (s)	12.0	42.0	42.0	28.0	58.0	58.0	18.6	27.5	27.5	17.7	26.6	26.6
Actuated g/C Ratio	0.09	0.30	0.30	0.20	0.41	0.41	0.13	0.20	0.20	0.13	0.19	0.19
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	294	1510	456	673	2106	627	465	998	298	434	966	293
v/s Ratio Prot	0.06	0.16		c0.16	c0.35		c0.16	c0.23		0.11	0.17	
v/s Ratio Perm			0.10			0.08			0.12			0.09
v/c Ratio	0.71	0.55	0.32	0.81	0.84	0.20	1.21	1.16	0.62	0.86	0.89	0.49
Uniform Delay, d1	62.3	41.1	38.0	53.4	36.9	26.1	60.7	56.3	51.5	60.0	55.2	50.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.03	1.97	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.4	0.4	8.0	3.3	0.2	97.8	73.3	0.9	17.2	11.7	5.7
Delay (s)	72.1	41.5	38.4	61.5	40.2	26.3	152.3	131.4	102.1	77.2	66.9	56.2
Level of Service	E	D	D	E	D	C	F	F	F	E	E	E
Approach Delay (s/veh)		45.4			43.1			130.7			67.6	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	73.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	370	296	160	884	544	415	1754	143	270	1010	269
Future Volume (vph)	216	370	296	160	884	544	415	1754	143	270	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.98		0.99		0.97	1.00	1.00			0.99	
Frt		0.933				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3306	0	1736	4560	1599	3502	4359	0	1787	4290	0
Flt Permitted	0.135			0.140			0.950			0.070		
Satd. Flow (perm)	246	3306	0	254	4560	1549	3490	4359	0	132	4290	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132				194		11			43	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	218	374	299	162	893	549	419	1772	144	273	1020	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	673	0	162	893	549	419	1916	0	273	1292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



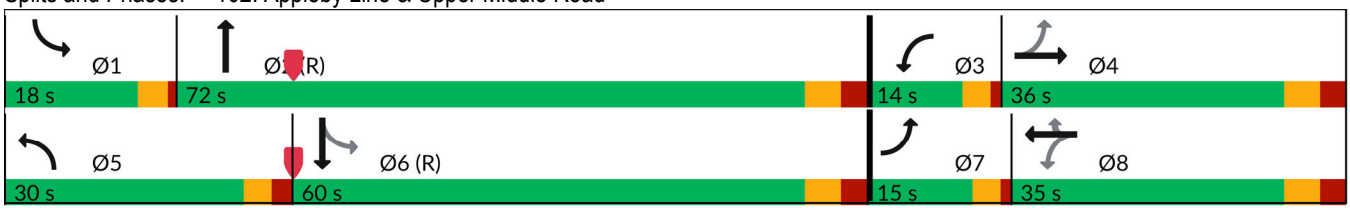
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	36.0		14.0	35.0	35.0	30.0	72.0		18.0	60.0	
Total Split (%)	10.7%	25.7%		10.0%	25.0%	25.0%	21.4%	51.4%		12.9%	42.9%	
Maximum Green (s)	11.0	29.6		10.0	28.6	28.6	25.0	65.5		14.0	53.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	43.0	29.6		41.0	28.6	28.6	21.5	65.5		73.5	57.0	
Actuated g/C Ratio	0.31	0.21		0.29	0.20	0.20	0.15	0.47		0.53	0.41	
v/c Ratio	1.14	0.84		0.90	0.96	1.17	0.78	0.94		1.17	0.73	
Control Delay (s/veh)	141.9	52.7		83.1	76.0	127.7	84.8	27.4		139.9	44.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	141.9	52.7		83.1	76.0	127.7	84.8	27.4		139.9	44.9	
LOS	F	D		F	E	F	F	C		F	D	
Approach Delay (s/veh)		74.5			94.4			37.7			61.5	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~57.6	81.7		35.9	108.4	~143.3	67.1	113.8		~79.8	108.5	
Queue Length 95th (m)	#114.1	106.4		#75.6	#141.6	#218.1	m80.1	#211.3		m#120.9	130.4	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	192	803		180	931	470	625	2045		234	1772	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.14	0.84		0.90	0.96	1.17	0.67	0.94		1.17	0.73	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay (s/veh): 62.9	Intersection LOS: E

Intersection Capacity Utilization 100.8%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road

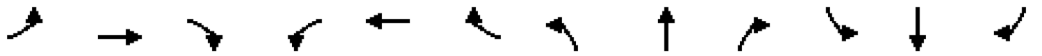


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	370	296	160	884	544	415	1754	143	270	1010	269
Future Volume (vph)	216	370	296	160	884	544	415	1754	143	270	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3307		1734	4560	1549	3502	4358		1787	4292	
Flt Permitted	0.14	1.00		0.14	1.00	1.00	0.95	1.00		0.07	1.00	
Satd. Flow (perm)	247	3307		255	4560	1549	3502	4358		132	4292	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	218	374	299	162	893	549	419	1772	144	273	1020	272
RTOR Reduction (vph)	0	104	0	0	0	154	0	6	0	0	25	0
Lane Group Flow (vph)	218	569	0	162	893	395	419	1910	0	273	1267	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	40.6	29.6		38.6	28.6	28.6	21.5	65.5		71.0	57.0	
Effective Green, g (s)	40.6	29.6		38.6	28.6	28.6	21.5	65.5		71.0	57.0	
Actuated g/C Ratio	0.29	0.21		0.28	0.20	0.20	0.15	0.47		0.51	0.41	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	699		175	931	316	537	2038		232	1747	
v/s Ratio Prot	c0.09	0.17		0.07	0.20		0.12	c0.44		c0.12	0.30	
v/s Ratio Perm	0.24			0.19		c0.25				c0.48		
v/c Ratio	1.16	0.81		0.93	0.96	1.25	0.78	0.94		1.18	0.72	
Uniform Delay, d1	43.7	52.6		43.0	55.1	55.7	57.0	35.3		43.9	34.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.39	0.60		1.13	1.25	
Incremental Delay, d2	115.2	7.2		46.7	20.0	135.6	4.0	5.8		103.7	1.6	
Delay (s)	158.9	59.8		89.7	75.1	191.3	83.1	27.1		153.6	45.4	
Level of Service	F	E		F	E	F	F	C		F	D	
Approach Delay (s/veh)		84.0			116.4			37.1			64.3	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	70.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	829	29	0	1806	0	77	0	16	3	0	5
Future Volume (vph)	3	829	29	0	1806	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.995							0.850		0.916	
Flt Protected	0.950							0.950			0.982	
Satd. Flow (prot)	1805	4475	0	1900	4515	0	0	1805	1615	0	1695	0
Flt Permitted	0.052							0.752			0.951	
Satd. Flow (perm)	99	4475	0	1900	4515	0	0	1427	1593	0	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6							45		45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	873	31	0	1901	0	81	0	17	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	904	0	0	1901	0	0	81	17	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

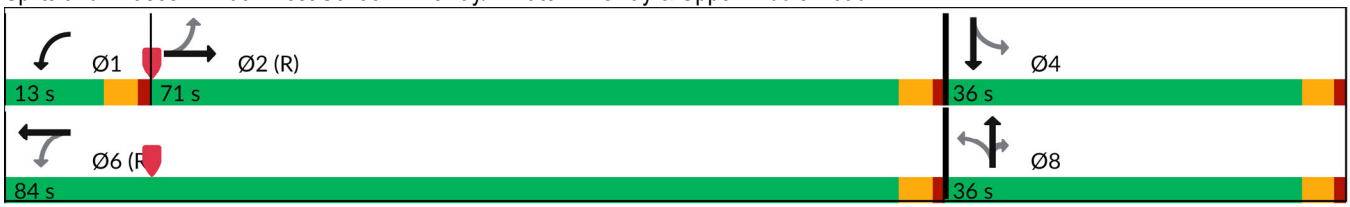


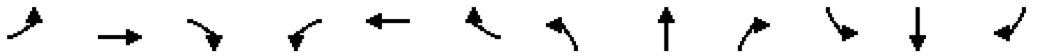
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	67.0	67.0		9.0	80.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
v/c Ratio	0.05	0.30			0.63			0.21	0.04		0.02	
Control Delay (s/veh)	9.0	8.6			21.0			36.1	0.5		0.1	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.0	8.6			21.0			36.1	0.5		0.1	
LOS	A	A			C			D	A		A	
Approach Delay (s/veh)		8.6			21.0			29.9			0.1	
Approach LOS		A			C			C			A	
Queue Length 50th (m)	0.3	35.6			143.3			15.6	0.0		0.0	
Queue Length 95th (m)	1.6	43.7			m146.4			29.6	0.7		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	66	2985			3010			380	457		470	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.05	0.30			0.63			0.21	0.04		0.02	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 17.4	Intersection LOS: B

Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	829	29	0	1806	0	77	0	16	3	0	5
Future Volume (vph)	3	829	29	0	1806	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	0.99			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1805	4474			4515			1803	1593		1693	
Flt Permitted	0.05	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	99	4474			4515			1428	1593		1641	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	873	31	0	1901	0	81	0	17	3	0	5
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	12	0	6	0
Lane Group Flow (vph)	3	902	0	0	1901	0	0	81	5	0	2	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Effective Green, g (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	66	2982			3010			380	424		437	
v/s Ratio Prot		0.20			c0.42							
v/s Ratio Perm	0.03							c0.06	0.00		0.00	
v/c Ratio	0.05	0.30			0.63			0.21	0.01		0.00	
Uniform Delay, d1	6.9	8.4			11.5			34.2	32.4		32.3	
Progression Factor	1.00	1.00			1.75			1.00	1.00		1.00	
Incremental Delay, d2	1.3	0.3			0.5			1.3	0.0		0.0	
Delay (s)	8.2	8.6			20.7			35.5	32.4		32.3	
Level of Service	A	A			C			D	C		C	
Approach Delay (s/veh)		8.6			20.7			35.0			32.3	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	852	10	21	1776	32	62
Future Volume (vph)	852	10	21	1776	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4506	0	1570	4515	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4506	0	1570	4515	1805	1568
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	906	11	22	1889	34	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	917	0	22	1889	34	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

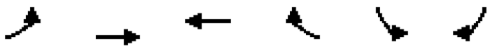
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.3%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	852	10	21	1776	32	62
Future Volume (Veh/h)	852	10	21	1776	32	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	906	11	22	1889	34	66
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.95		0.95	0.95
vC, conflicting volume			934		1602	325
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			734		1440	91
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			97		70	93
cM capacity (veh/h)			734		114	883

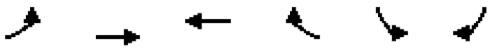
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	362	362	192	22	630	630	630	34	66
Volume Left	0	0	0	22	0	0	0	34	0
Volume Right	0	0	11	0	0	0	0	0	66
cSH	1700	1700	1700	734	1700	1700	1700	114	883
Volume to Capacity	0.21	0.21	0.11	0.03	0.37	0.37	0.37	0.30	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.7	0.0	0.0	0.0	9.1	1.9
Control Delay (s/veh)	0.0	0.0	0.0	10.1	0.0	0.0	0.0	49.5	9.4
Lane LOS				B				E	A
Approach Delay (s/veh)	0.0			0.1				23.0	
Approach LOS								C	

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	180	724	1663	205	55	124
Future Volume (vph)	180	724	1663	205	55	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.984		0.906	
Flt Protected	0.950				0.985	
Satd. Flow (prot)	1805	4515	4443	0	1696	0
Flt Permitted	0.950				0.985	
Satd. Flow (perm)	1805	4515	4443	0	1696	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		235.5	
Travel Time (s)		7.1	17.4		21.2	
Confl. Peds. (#/hr)	13			13		1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%
Adj. Flow (vph)	188	754	1732	214	57	129
Shared Lane Traffic (%)						
Lane Group Flow (vph)	188	754	1946	0	186	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

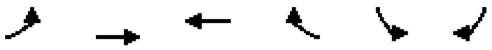
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			



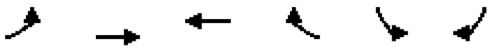
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	180	724	1663	205	55	124
Future Volume (Veh/h)	180	724	1663	205	55	124
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	188	754	1732	214	57	129
Pedestrians		1			13	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.57				0.57	0.57
vC, conflicting volume	1959				2479	698
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	52				962	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	79				50	79
cM capacity (veh/h)	886				114	616

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	188	251	251	251	693	693	560	186
Volume Left	188	0	0	0	0	0	0	57
Volume Right	0	0	0	0	0	0	214	129
cSH	886	1700	1700	1700	1700	1700	1700	263
Volume to Capacity	0.21	0.15	0.15	0.15	0.41	0.41	0.33	0.71
Queue Length 95th (m)	6.4	0.0	0.0	0.0	0.0	0.0	0.0	38.6
Control Delay (s/veh)	10.2	0.0	0.0	0.0	0.0	0.0	0.0	46.1
Lane LOS	B							E
Approach Delay (s/veh)	2.0				0.0			46.1
Approach LOS								E

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	220	564	1646	600	239	191
Future Volume (vph)	220	564	1646	600	239	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor			0.99		0.99	
Frt			0.960		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1752	4515	4290	0	1711	0
Flt Permitted	0.058				0.973	
Satd. Flow (perm)	107	4515	4290	0	1705	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			117		33	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		321.0	
Travel Time (s)		17.4	14.7		28.9	
Confl. Peds. (#/hr)	8			8	5	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Adj. Flow (vph)	232	594	1733	632	252	201
Shared Lane Traffic (%)						
Lane Group Flow (vph)	232	594	2365	0	453	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

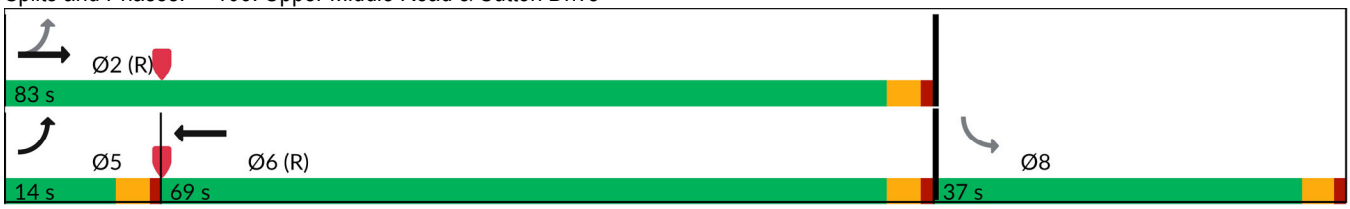


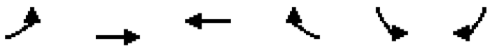
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	9.0	30.0	30.0		30.5	
Total Split (s)	14.0	83.0	69.0		37.0	
Total Split (%)	11.7%	69.2%	57.5%		30.8%	
Maximum Green (s)	10.0	79.0	65.0		33.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Recall Mode	None	C-Max	C-Max		Max	
Walk Time (s)		10.0	10.0		10.0	
Flash Don't Walk (s)		16.0	16.0		16.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	79.0	79.0	65.0		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
v/c Ratio	1.12	0.20	0.99		0.92	
Control Delay (s/veh)	139.9	7.7	43.6		64.8	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	139.9	7.7	43.6		64.8	
LOS	F	A	D		E	
Approach Delay (s/veh)		44.8	43.6		64.8	
Approach LOS		D	D		E	
Queue Length 50th (m)	~52.5	19.4	227.6		102.4	
Queue Length 95th (m)	#106.9	24.1	#283.3		#167.0	
Internal Link Dist (m)		266.7	220.7		297.0	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	207	2972	2377		492	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	1.12	0.20	0.99		0.92	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay (s/veh): 46.5	Intersection LOS: D

Intersection Capacity Utilization 92.7%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Upper Middle Road & Sutton Drive

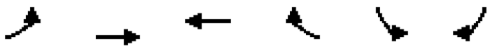




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	220	564	1646	600	239	191
Future Volume (vph)	220	564	1646	600	239	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.96		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1752	4515	4290		1705	
Flt Permitted	0.06	1.00	1.00		0.97	
Satd. Flow (perm)	107	4515	4290		1705	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	232	594	1733	632	252	201
RTOR Reduction (vph)	0	0	54	0	24	0
Lane Group Flow (vph)	232	594	2311	0	429	0
Confl. Peds. (#/hr)	8			8	5	2
Heavy Vehicles (%)	3%	1%	1%	1%	0%	2%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	79.0	79.0	65.0		33.0	
Effective Green, g (s)	79.0	79.0	65.0		33.0	
Actuated g/C Ratio	0.66	0.66	0.54		0.28	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0	5.0		5.0	
Lane Grp Cap (vph)	207	2972	2323		468	
v/s Ratio Prot	c0.09	0.13	0.54			
v/s Ratio Perm	c0.64				c0.25	
v/c Ratio	1.12	0.20	0.99		0.92	
Uniform Delay, d1	40.7	8.1	27.3		42.2	
Progression Factor	1.54	0.93	1.00		1.00	
Incremental Delay, d2	98.2	0.1	17.5		25.3	
Delay (s)	161.1	7.7	44.9		67.5	
Level of Service	F	A	D		E	
Approach Delay (s/veh)		50.8	44.9		67.5	
Approach LOS		D	D		E	

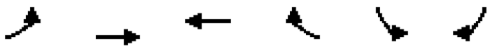
Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	61	744	2016	30	0	70
Future Volume (vph)	61	744	2016	30	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	4515	4506	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	4515	4506	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	64	783	2122	32	0	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	783	2154	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

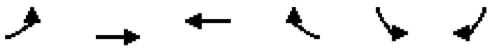
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	61	744	2016	30	0	70
Future Volume (Veh/h)	61	744	2016	30	0	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	64	783	2122	32	0	74
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					0.99	
vC, conflicting volume	2163				2536	732
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2163				2518	732
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	74				100	80
cM capacity (veh/h)	249				17	365

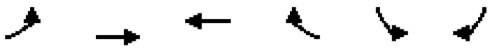
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	64	261	261	261	849	849	456	74
Volume Left	64	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	32	74
cSH	249	1700	1700	1700	1700	1700	1700	365
Volume to Capacity	0.26	0.15	0.15	0.15	0.50	0.50	0.27	0.20
Queue Length 95th (m)	8.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
Control Delay (s/veh)	24.4	0.0	0.0	0.0	0.0	0.0	0.0	17.3
Lane LOS	C							C
Approach Delay (s/veh)	1.8				0.0			17.3
Approach LOS								C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	737	2208	10	6	9
Future Volume (vph)	13	737	2208	10	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.916	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1805	4515	4511	0	1709	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1805	4515	4511	0	1709	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	14	784	2349	11	6	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	784	2360	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

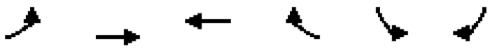
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	737	2208	10	6	9
Future Volume (Veh/h)	13	737	2208	10	6	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	784	2349	11	6	10
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2376				2660	805
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2376				2660	805
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				65	97
cM capacity (veh/h)	204				17	326

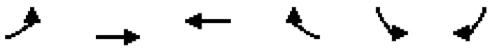
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	14	261	261	261	940	940	481	16
Volume Left	14	0	0	0	0	0	0	6
Volume Right	0	0	0	0	0	0	11	10
cSH	204	1700	1700	1700	1700	1700	1700	43
Volume to Capacity	0.07	0.15	0.15	0.15	0.55	0.55	0.28	0.38
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.0	0.0	0.0	10.4
Control Delay (s/veh)	23.9	0.0	0.0	0.0	0.0	0.0	0.0	133.5
Lane LOS	C							F
Approach Delay (s/veh)	0.4				0.0			133.5
Approach LOS								F

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	703	2212	162	70	48
Future Volume (vph)	43	703	2212	162	70	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.945	
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1805	4515	4473	0	1722	0
Flt Permitted	0.950				0.971	
Satd. Flow (perm)	1805	4515	4473	0	1722	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	47	764	2404	176	76	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	764	2580	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.9%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	703	2212	162	70	48
Future Volume (Veh/h)	43	703	2212	162	70	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	764	2404	176	76	52
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2594				2855	903
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2594				2855	903
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	72				0	81
cM capacity (veh/h)	168				10	275

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	47	255	255	255	962	962	657	128
Volume Left	47	0	0	0	0	0	0	76
Volume Right	0	0	0	0	0	0	176	52
cSH	168	1700	1700	1700	1700	1700	1700	16
Volume to Capacity	0.28	0.15	0.15	0.15	0.57	0.57	0.39	7.89
Queue Length 95th (m)	8.7	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	34.5	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	D							F
Approach Delay (s/veh)	2.0				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	364.2		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	34	2326	25	41	717
Future Volume (vph)	32	34	2326	25	41	717
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.931		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1726	0	4506	0	1805	4515
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1726	0	4506	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			459.4
Travel Time (s)	14.5		7.6			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	34	36	2448	26	43	755
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	2474	0	43	755
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

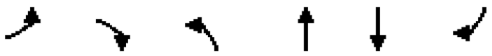
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



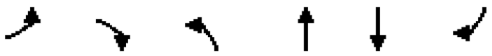
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	32	34	2326	25	41	717
Future Volume (Veh/h)	32	34	2326	25	41	717
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	34	36	2448	26	43	755
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2800	830			2475	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2800	830			2475	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	89			77	
cM capacity (veh/h)	12	317			189	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	70	979	979	516	43	252	252	252
Volume Left	34	0	0	0	43	0	0	0
Volume Right	36	0	0	26	0	0	0	0
cSH	23	1700	1700	1700	189	1700	1700	1700
Volume to Capacity	3.02	0.58	0.58	0.30	0.23	0.15	0.15	0.15
Queue Length 95th (m)	Err	0.0	0.0	0.0	6.7	0.0	0.0	0.0
Control Delay (s/veh)	Err	0.0	0.0	0.0	29.5	0.0	0.0	0.0
Lane LOS	F				D			
Approach Delay (s/veh)	Err	0.0			1.6			
Approach LOS	F							

Intersection Summary			
Average Delay	209.8		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	445	722	2141	693	44
Future Volume (vph)	182	445	722	2141	693	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	1736	4515	4503	0
Flt Permitted	0.950		0.245			
Satd. Flow (perm)	1752	1583	447	4515	4503	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		353			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	200	489	793	2353	762	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	489	793	2353	810	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

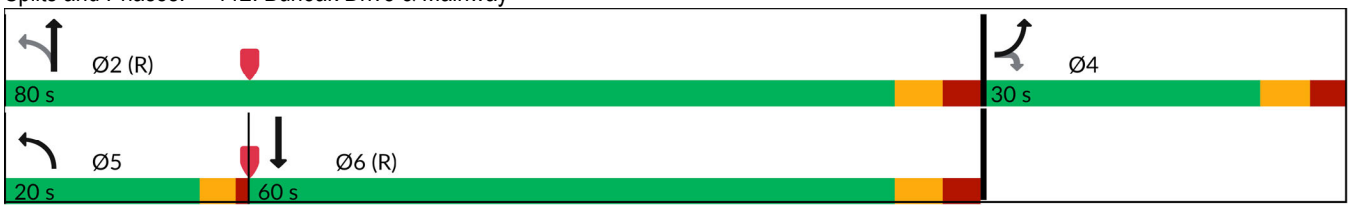


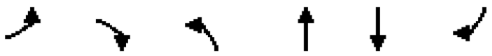
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	20.0	80.0	60.0	
Total Split (%)	27.3%	27.3%	18.2%	72.7%	54.5%	
Maximum Green (s)	23.0	23.0	16.0	73.0	53.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	18.2	18.2	80.8	77.8	53.0	
Actuated g/C Ratio	0.17	0.17	0.73	0.71	0.48	
v/c Ratio	0.69	0.88	1.39	0.74	0.37	
Control Delay (s/veh)	55.3	30.4	206.9	16.4	18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	55.3	30.4	206.9	16.4	18.4	
LOS	E	C	F	B	B	
Approach Delay (s/veh)	37.6			64.4	18.4	
Approach LOS	D			E	B	
Queue Length 50th (m)	43.9	31.1	~167.9	135.1	46.0	
Queue Length 95th (m)	66.6	#84.8	#342.5	168.9	57.7	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	366	610	572	3194	2174	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.55	0.80	1.39	0.74	0.37	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay (s/veh): 52.4	Intersection LOS: D

Intersection Capacity Utilization 90.1%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	445	722	2141	693	44
Future Volume (vph)	182	445	722	2141	693	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	1735	4515	4504	
Flt Permitted	0.95	1.00	0.24	1.00	1.00	
Satd. Flow (perm)	1752	1583	447	4515	4504	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	200	489	793	2353	762	48
RTOR Reduction (vph)	0	295	0	0	5	0
Lane Group Flow (vph)	200	194	793	2353	805	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	18.2	18.2	77.8	77.8	53.0	
Effective Green, g (s)	18.2	18.2	77.8	77.8	53.0	
Actuated g/C Ratio	0.17	0.17	0.71	0.71	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	289	261	559	3193	2170	
v/s Ratio Prot	0.11		c0.27	0.52	0.18	
v/s Ratio Perm		c0.12	c0.73			
v/c Ratio	0.69	0.74	1.42	0.74	0.37	
Uniform Delay, d1	43.3	43.7	17.2	9.8	18.0	
Progression Factor	1.00	1.00	1.75	1.40	1.00	
Incremental Delay, d2	7.0	11.0	196.3	1.2	0.5	
Delay (s)	50.2	54.6	226.5	15.0	18.5	
Level of Service	D	D	F	B	B	
Approach Delay (s/veh)	53.4			68.3	18.5	
Approach LOS	D			E	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	378	28	14	646	182	56
Future Volume (vph)	378	28	14	646	182	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.990				0.968	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	3414	0	0	3530	1719	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	3414	0	0	3530	1719	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		5	5			
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	4%	14%	9%	2%	4%	0%
Adj. Flow (vph)	450	33	17	769	217	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	483	0	0	786	284	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		



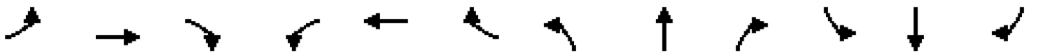
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	378	28	14	646	182	56
Future Volume (Veh/h)	378	28	14	646	182	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	450	33	17	769	217	67
Pedestrians					5	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			488		890	247
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			488		890	247
tC, single (s)			4.3		6.9	6.9
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			98		20	91
cM capacity (veh/h)			1019		273	757

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	300	183	273	513	284
Volume Left	0	0	17	0	217
Volume Right	0	33	0	0	67
cSH	1700	1700	1019	1700	321
Volume to Capacity	0.18	0.11	0.02	0.30	0.88
Queue Length 95th (m)	0.0	0.0	0.4	0.0	66.0
Control Delay (s/veh)	0.0	0.0	0.7	0.0	61.8
Lane LOS			A		F
Approach Delay (s/veh)	0.0		0.2		61.8
Approach LOS					F

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	278	33	6	930	122	74	7	16	47	2	57
Future Volume (vph)	39	278	33	6	930	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.983			0.977			0.927	
Flt Protected		0.994						0.963			0.978	
Satd. Flow (prot)	0	3403	0	0	3483	0	0	1788	0	0	1700	0
Flt Permitted		0.994						0.963			0.978	
Satd. Flow (perm)	0	3403	0	0	3483	0	0	1788	0	0	1700	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			754.0			107.7			112.1	
Travel Time (s)		25.6			45.2			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	48	343	41	7	1148	151	91	9	20	58	2	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	432	0	0	1306	0	0	120	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.9%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	278	33	6	930	122	74	7	16	47	2	57
Future Volume (Veh/h)	39	278	33	6	930	122	74	7	16	47	2	57
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	48	343	41	7	1148	151	91	9	20	58	2	70
Pedestrians		2			3			7			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1301			391			1128	1782	202	1535	1727	654
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1301			391			1128	1782	202	1535	1727	654
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			99			25	88	98	9	98	83
cM capacity (veh/h)	538			1172			121	74	805	64	81	413

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	220	213	581	725	120	130
Volume Left	48	0	7	0	91	58
Volume Right	0	41	0	151	20	70
cSH	538	1700	1172	1700	133	118
Volume to Capacity	0.09	0.13	0.00*	0.43	0.90	1.10
Queue Length 95th (m)	2.3	0.0	0.1	0.0	47.4	62.1
Control Delay (s/veh)	3.7	0.0	0.2	0.0	116.5	183.0
Lane LOS	A		A		F	F
Approach Delay (s/veh)	1.9		0.1		116.5	183.0
Approach LOS					F	F

Intersection Summary				
Average Delay	19.5			
Intersection Capacity Utilization	55.9%	ICU Level of Service	B	
Analysis Period (min)	15			

* Value less than 0.01.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	178	176	159	717	246	392	1763	73	114	1189	150
Future Volume (vph)	179	178	176	159	717	246	392	1763	73	114	1189	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00			1.00	
Frt		0.925			0.962			0.994			0.983	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3108	0	1687	3383	0	1703	4429	0	1787	4377	0
Flt Permitted	0.141			0.337			0.063			0.067		
Satd. Flow (perm)	252	3108	0	597	3383	0	113	4429	0	126	4377	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		158			32			5			16	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	192	191	189	171	771	265	422	1896	78	123	1278	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	380	0	171	1036	0	422	1974	0	123	1439	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	13.0	33.0		20.0	40.0		21.0	76.0		11.0	66.0	
Total Split (%)	9.3%	23.6%		14.3%	28.6%		15.0%	54.3%		7.9%	47.1%	
Maximum Green (s)	9.0	26.7		16.0	33.7		17.0	69.7		7.0	59.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	39.7	28.4		48.5	33.7		83.0	69.7		69.0	59.7	
Actuated g/C Ratio	0.28	0.20		0.35	0.24		0.59	0.50		0.49	0.43	
v/c Ratio	1.17	0.50		0.54	1.24		1.62	0.89		0.85	0.77	
Control Delay (s/veh)	157.4	31.3		39.8	159.3		321.2	18.3		73.7	29.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	157.4	31.3		39.8	159.3		321.2	18.3		73.7	29.3	
LOS	F	C		D	F		F	B		E	C	
Approach Delay (s/veh)		73.6			142.3			71.6			32.8	
Approach LOS		E			F			E			C	
Queue Length 50th (m)	~52.7	31.8		37.7	~195.9		~165.4	154.3		18.2	95.6	
Queue Length 95th (m)	#107.8	50.4		58.8	#241.1		m#189.0	202.1		m#53.3	129.5	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	164	756		333	838		260	2207		145	1875	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.17	0.50		0.51	1.24		1.62	0.89		0.85	0.77	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 85 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 76.1	Intersection LOS: E

Intersection Capacity Utilization 103.2%	ICU Level of Service G
Analysis Period (min) 15	

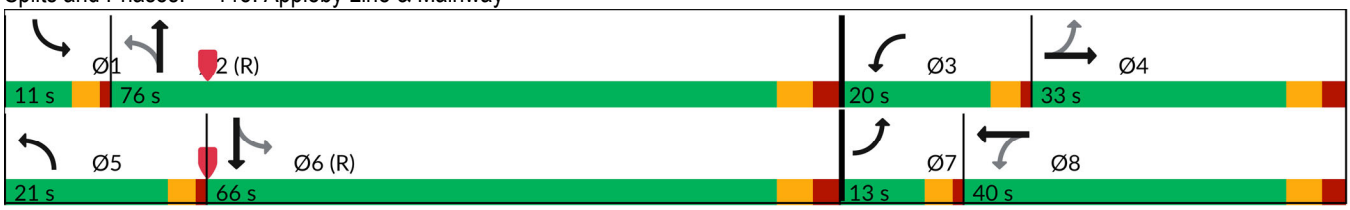
* User Entered Value

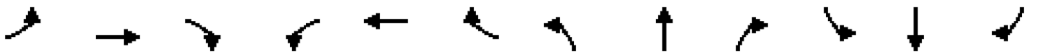
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway



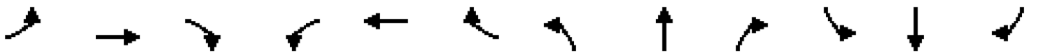


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	178	176	159	717	246	392	1763	73	114	1189	150
Future Volume (vph)	179	178	176	159	717	246	392	1763	73	114	1189	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3110		1686	3381		1703	4429		1787	4378	
Flt Permitted	0.14	1.00		0.34	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	252	3110		598	3381		113	4429		126	4378	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	192	191	189	171	771	265	422	1896	78	123	1278	161
RTOR Reduction (vph)	0	126	0	0	24	0	0	3	0	0	9	0
Lane Group Flow (vph)	192	254	0	171	1012	0	422	1971	0	123	1430	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	37.4	28.4		46.7	33.7		80.7	69.7		66.7	59.7	
Effective Green, g (s)	37.4	28.4		46.7	33.7		80.7	69.7		66.7	59.7	
Actuated g/C Ratio	0.27	0.20		0.33	0.24		0.58	0.50		0.48	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	630		310	813		258	2205		143	1866	
v/s Ratio Prot	c0.08	0.08		0.06	c0.30		c0.20	0.45		0.04	0.33	
v/s Ratio Perm	0.24			0.13			c0.75			0.37		
v/c Ratio	1.20	0.40		0.55	1.24		1.64	0.89		0.86	0.77	
Uniform Delay, d1	46.9	48.4		35.2	53.2		45.5	31.8		29.7	34.2	
Progression Factor	1.00	1.00		1.00	1.00		1.26	0.48		1.24	0.78	
Incremental Delay, d2	135.0	0.4		2.1	120.3		292.9	2.6		34.9	2.8	
Delay (s)	181.9	48.9		37.3	173.4		350.1	17.9		71.6	29.3	
Level of Service	F	D		D	F		F	B		E	C	
Approach Delay (s/veh)		93.5			154.2			76.5			32.6	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	82.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.53		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	97	20	131	48	2064	113	120	1311	28
Future Volume (vph)	54	11	49	97	20	131	48	2064	113	120	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.98		1.00	1.00			1.00	
Frt		0.942			0.929			0.992			0.997	
Flt Protected		0.977			0.981		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1709	0	1641	4387	0	1805	4450	0
Flt Permitted		0.639			0.804		0.142			0.044		
Satd. Flow (perm)	0	1130	0	0	1397	0	244	4387	0	84	4450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			38			9			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	57	12	52	103	21	139	51	2196	120	128	1395	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	263	0	51	2316	0	128	1425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		89.0	89.0		12.0	101.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%		63.6%	63.6%		8.6%	72.1%	
Maximum Green (s)	32.5	32.5		32.5	32.5		83.0	83.0		8.0	95.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		27.1			27.1		87.4	87.4		102.4	100.4	
Actuated g/C Ratio		0.19			0.19		0.62	0.62		0.73	0.72	
v/c Ratio		0.51			0.87		0.34	0.84		0.75	0.45	
Control Delay (s/veh)		46.1			74.1		8.0	12.4		43.2	12.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		46.1			74.1		8.0	12.4		43.2	12.8	
LOS		D			E		A	B		D	B	
Approach Delay (s/veh)		46.1			74.1			12.3			15.3	
Approach LOS		D			E			B			B	
Queue Length 50th (m)		24.9			64.4		2.4	290.2		23.1	85.0	
Queue Length 95th (m)		45.0			#98.3		m2.6	m196.2		m#37.5	128.2	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		281			353		152	2742		172	3191	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.43			0.75		0.34	0.84		0.74	0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 106 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 18.1	Intersection LOS: B

Intersection Capacity Utilization 83.1% ICU Level of Service E

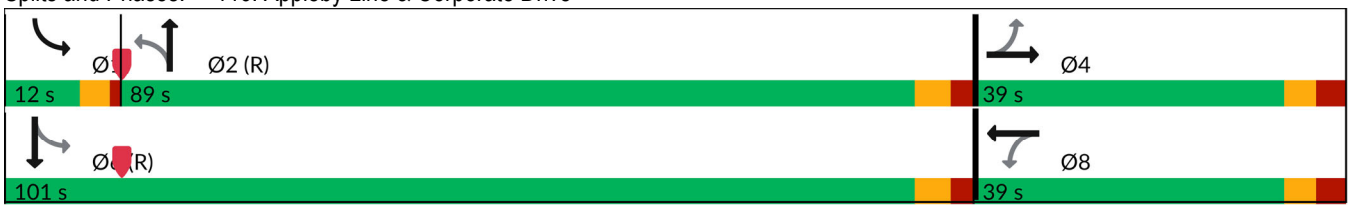
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

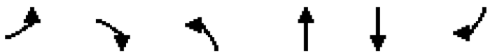
Splits and Phases: 116: Appleby Line & Corporate Drive



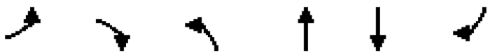
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	97	20	131	48	2064	113	120	1311	28
Future Volume (vph)	54	11	49	97	20	131	48	2064	113	120	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.93		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1727			1703		1634	4388		1805	4449	
Flt Permitted		0.64			0.80		0.14	1.00		0.04	1.00	
Satd. Flow (perm)		1129			1396		244	4388		83	4449	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	12	52	103	21	139	51	2196	120	128	1395	30
RTOR Reduction (vph)	0	20	0	0	31	0	0	3	0	0	1	0
Lane Group Flow (vph)	0	101	0	0	232	0	51	2313	0	128	1424	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.1			27.1		87.4	87.4		100.4	100.4	
Effective Green, g (s)		27.1			27.1		87.4	87.4		100.4	100.4	
Actuated g/C Ratio		0.19			0.19		0.62	0.62		0.72	0.72	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		218			270		152	2739		170	3190	
v/s Ratio Prot								c0.53		c0.05	0.32	
v/s Ratio Perm		0.09			c0.17		0.21			0.49		
v/c Ratio		0.46			0.86		0.34	0.84		0.75	0.45	
Uniform Delay, d1		50.0			54.6		12.5	20.9		39.0	8.2	
Progression Factor		1.00			1.00		0.37	0.50		0.87	1.41	
Incremental Delay, d2		1.6			23.3		1.9	1.1		11.8	0.3	
Delay (s)		51.6			77.9		6.6	11.6		45.6	11.9	
Level of Service		D			E		A	B		D	B	
Approach Delay (s/veh)		51.6			77.9			11.5			14.7	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	472	133	2135	976	31
Future Volume (vph)	166	472	133	2135	976	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.995	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	1671	4471	4436	0
Flt Permitted	0.950		0.158			
Satd. Flow (perm)	1787	1553	278	4471	4436	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		194			6	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	184	524	148	2372	1084	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	524	148	2372	1118	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.5	37.0	37.0	
Total Split (s)	32.0	32.0	12.0	78.0	66.0	
Total Split (%)	29.1%	29.1%	10.9%	70.9%	60.0%	
Maximum Green (s)	25.0	25.0	8.0	71.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	25.0	25.0	74.0	71.0	59.2	
Actuated g/C Ratio	0.23	0.23	0.67	0.65	0.54	
v/c Ratio	0.45	1.04	0.52	0.82	0.47	
Control Delay (s/veh)	40.8	79.2	7.8	12.8	10.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	40.8	79.2	7.8	12.8	10.1	
LOS	D	E	A	B	B	
Approach Delay (s/veh)	69.2			12.5	10.1	
Approach LOS	E			B	B	
Queue Length 50th (m)	36.3	~94.7	12.0	117.0	33.5	
Queue Length 95th (m)	59.0	#164.3	m6.6	m55.6	43.2	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	406	502	288	2885	2390	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.45	1.04	0.51	0.82	0.47	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 88 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay (s/veh): 21.2	Intersection LOS: C

Intersection Capacity Utilization 65.9%	ICU Level of Service C
Analysis Period (min) 15	

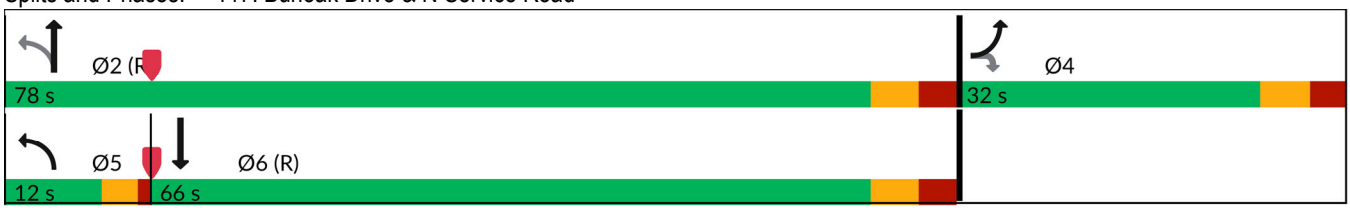
* User Entered Value

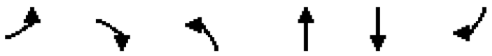
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	472	133	2135	976	31
Future Volume (vph)	166	472	133	2135	976	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	1671	4471	4438	
Flt Permitted	0.95	1.00	0.16	1.00	1.00	
Satd. Flow (perm)	1787	1553	278	4471	4438	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	184	524	148	2372	1084	34
RTOR Reduction (vph)	0	150	0	0	3	0
Lane Group Flow (vph)	184	374	148	2372	1115	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	25.0	25.0	71.0	71.0	59.2	
Effective Green, g (s)	25.0	25.0	71.0	71.0	59.2	
Actuated g/C Ratio	0.23	0.23	0.65	0.65	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	406	352	278	2885	2388	
v/s Ratio Prot	0.10		0.04	c0.53	0.25	
v/s Ratio Perm		c0.24	0.31			
v/c Ratio	0.45	1.06	0.53	0.82	0.47	
Uniform Delay, d1	36.6	42.5	9.3	14.7	15.7	
Progression Factor	1.00	1.00	1.10	0.83	0.61	
Incremental Delay, d2	0.8	65.5	0.2	0.3	0.6	
Delay (s)	37.4	108.0	10.3	12.5	10.1	
Level of Service	D	F	B	B	B	
Approach Delay (s/veh)	89.7			12.4	10.1	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2571	1413	0	0	2370
Future Volume (vph)	2713	2571	1413	0	0	2370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor						
Frt	0.963	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3355	1441	4427	0	0	4471
Flt Permitted	0.964					
Satd. Flow (perm)	3355	1441	4427	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6	6				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2917	2765	1519	0	0	2548
Shared Lane Traffic (%)		35%				
Lane Group Flow (vph)	3885	1797	1519	0	0	2548
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	60.0	60.0	50.0			50.0
Total Split (%)	54.5%	54.5%	45.5%			45.5%
Maximum Green (s)	53.0	53.0	44.0			44.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
v/c Ratio	2.40	2.58	0.86			1.43
Control Delay (s/veh)	651.2	732.9	28.2			221.5
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	651.2	732.9	28.2			221.5
LOS	F	F	C			F
Approach Delay (s/veh)	677.1		28.2			221.5
Approach LOS	F		C			F
Queue Length 50th (m)	~767.7	~770.7	135.5			~334.1
Queue Length 95th (m)	#802.9	#866.5	68.3			m#358.1
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1619	697	1770			1788
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.40	2.58	0.86			1.43

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.58			
Intersection Signal Delay (s/veh): 456.9		Intersection LOS: F	

Intersection Capacity Utilization 161.0%	ICU Level of Service H
Analysis Period (min) 15	

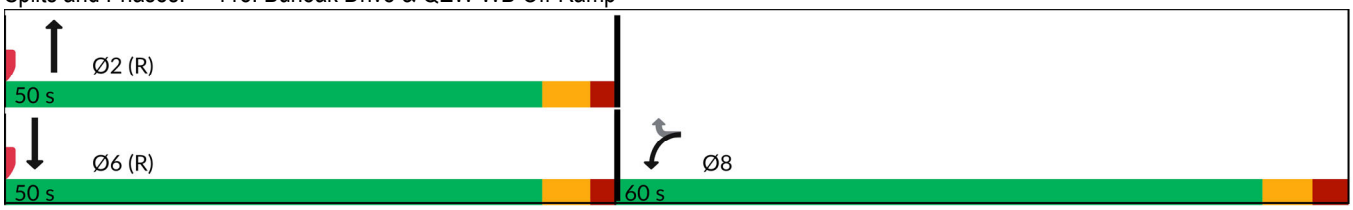
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

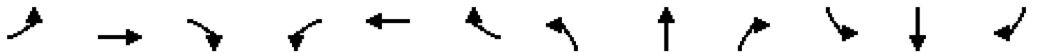




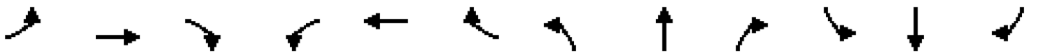
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2571	1413	0	0	2370
Future Volume (vph)	2713	2571	1413	0	0	2370
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3353	1441	4427			4471
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3353	1441	4427			4471
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2917	2765	1519	0	0	2548
RTOR Reduction (vph)	3	3	0	0	0	0
Lane Group Flow (vph)	3882	1794	1519	0	0	2548
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	53.0	53.0	44.0			44.0
Effective Green, g (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1615	694	1770			1788
v/s Ratio Prot	1.16		0.34			c0.57
v/s Ratio Perm		c1.25				
v/c Ratio	2.40	2.58	0.86			1.43
Uniform Delay, d1	28.5	28.5	30.1			33.0
Progression Factor	1.00	1.00	0.75			0.90
Incremental Delay, d2	633.5	717.4	5.4			194.4
Delay (s)	662.0	745.9	27.8			223.9
Level of Service	F	F	C			F
Approach Delay (s/veh)	688.6		27.8			223.9
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	464.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.06		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	161.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	92	426	0	0	202	0	1156	16	13	3865	0
Future Volume (vph)	167	92	426	0	0	202	0	1156	16	13	3865	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.895	0.850			0.865		0.998				
Flt Protected	0.950											
Satd. Flow (prot)	1641	2950	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950										0.931	
Satd. Flow (perm)	1641	2950	1413	0	0	1596	0	5125	0	0	4781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		208	208			417		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	176	97	448	0	0	213	0	1217	17	14	4068	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	176	321	224	0	0	213	0	1234	0	0	4082	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



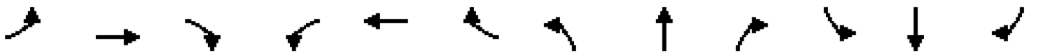
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			5.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			39.0		39.0		39.0	39.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		25.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	17.7	17.7	17.7			78.3		65.8			65.8	
Actuated g/C Ratio	0.16	0.16	0.16			0.71		0.60			0.60	
v/c Ratio	0.67	0.50	0.56			0.17		0.40			1.43	
Control Delay (s/veh)	55.1	16.6	12.3			0.3		12.8			214.9	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	55.1	16.6	12.3			0.3		12.8			214.9	
LOS	E	B	B			A		B			F	
Approach Delay (s/veh)		24.7			0.3			12.8			214.9	
Approach LOS		C			A			B			F	
Queue Length 50th (m)	40.4	12.9	3.5			0.0		51.0			~463.8	
Queue Length 95th (m)	61.1	25.8	27.2			0.0		72.2			m141.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	387	856	492			1250		3067			2860	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.45	0.38	0.46			0.17		0.40			1.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.43			
Intersection Signal Delay (s/veh): 145.7		Intersection LOS: F	

Intersection Capacity Utilization 104.5% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

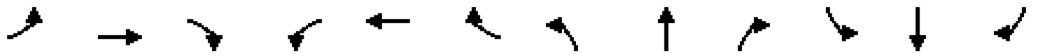




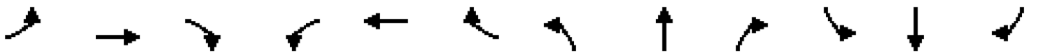
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	92	426	0	0	202	0	1156	16	13	3865	0
Future Volume (vph)	167	92	426	0	0	202	0	1156	16	13	3865	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.90	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1641	2951	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1641	2951	1413			1596		5125			4782	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	176	97	448	0	0	213	0	1217	17	14	4068	0
RTOR Reduction (vph)	0	175	175	0	0	75	0	1	0	0	0	0
Lane Group Flow (vph)	176	146	49	0	0	138	0	1233	0	0	4082	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Actuated Green, G (s)	17.7	17.7	17.7			71.3		65.8			65.8	
Effective Green, g (s)	17.7	17.7	17.7			71.3		65.8			65.8	
Actuated g/C Ratio	0.16	0.16	0.16			0.65		0.60			0.60	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	264	474	227			1136		3065			2860	
v/s Ratio Prot	c0.11	0.05				c0.01		0.24				
v/s Ratio Perm			0.04			0.08					c0.85	
v/c Ratio	0.67	0.31	0.22			0.12		0.40			1.43	
Uniform Delay, d1	43.4	40.8	40.1			7.4		11.7			22.1	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.93	
Incremental Delay, d2	6.2	0.4	0.5			0.0		0.4			192.5	
Delay (s)	49.6	41.1	40.6			7.4		12.1			212.9	
Level of Service	D	D	D			A		B			F	
Approach Delay (s/veh)		43.0			7.4			12.1			212.9	
Approach LOS		D			A			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	146.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2049	167	64	1397	62
Future Volume (vph)	72	47	182	322	255	204	362	2049	167	64	1397	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1644	0	1770	1696	0	1805	4335	0	1736	4394	0
Flt Permitted	0.289			0.192			0.062			0.066		
Satd. Flow (perm)	538	1644	0	358	1696	0	118	4335	0	121	4394	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			30			12			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Adj. Flow (vph)	73	48	186	329	260	208	369	2091	170	65	1426	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	234	0	329	468	0	369	2261	0	65	1489	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



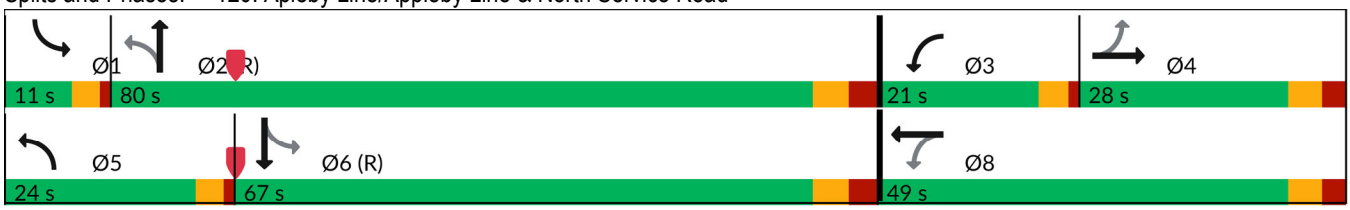
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	28.0	28.0		21.0	49.0		24.0	80.0		11.0	67.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%		17.1%	57.1%		7.9%	47.9%	
Maximum Green (s)	21.9	21.9		17.0	42.9		20.0	73.4		7.0	60.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	19.2	19.2		42.3	40.2		89.7	78.3		70.0	60.4	
Actuated g/C Ratio	0.14	0.14		0.30	0.29		0.64	0.56		0.50	0.43	
v/c Ratio	1.00	0.72		1.18	0.92		1.06	0.93		0.46	0.78	
Control Delay (s/veh)	162.4	40.6		148.7	69.6		72.9	29.2		25.1	47.8	
Queue Delay	0.0	0.1		0.0	0.0		0.0	4.1		0.0	0.9	
Total Delay (s/veh)	162.4	40.7		148.7	69.6		72.9	33.2		25.1	48.7	
LOS	F	D		F	E		E	C		C	D	
Approach Delay (s/veh)		69.6			102.3			38.8			47.7	
Approach LOS		E			F			D			D	
Queue Length 50th (m)	21.3	32.1		~91.3	124.5		~110.9	266.7		8.9	191.6	
Queue Length 95th (m)	#53.9	63.1		#155.8	#186.9		m61.1	m149.8		m14.4	211.8	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	84	356		279	540		349	2430		141	1898	
Starvation Cap Reductn	0	0		0	0		0	126		0	0	
Spillback Cap Reductn	0	4		0	0		0	0		0	177	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.87	0.66		1.18	0.87		1.06	0.98		0.46	0.87	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 52.8	Intersection LOS: D

Intersection Capacity Utilization 100.7%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2049	167	64	1397	62
Future Volume (vph)	72	47	182	322	255	204	362	2049	167	64	1397	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1644		1770	1697		1805	4334		1736	4393	
Flt Permitted	0.29	1.00		0.19	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	539	1644		357	1697		118	4334		121	4393	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	73	48	186	329	260	208	369	2091	170	65	1426	63
RTOR Reduction (vph)	0	102	0	0	21	0	0	5	0	0	3	0
Lane Group Flow (vph)	73	132	0	329	447	0	369	2256	0	65	1486	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.2	19.2		40.2	40.2		87.1	77.5		66.0	60.4	
Effective Green, g (s)	19.2	19.2		40.2	40.2		87.1	77.5		66.0	60.4	
Actuated g/C Ratio	0.14	0.14		0.29	0.29		0.62	0.55		0.47	0.43	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	73	225		274	487		346	2399		121	1895	
v/s Ratio Prot		0.08		c0.15	0.26		c0.17	0.52		0.02	0.34	
v/s Ratio Perm	0.14			c0.20			c0.49			0.23		
v/c Ratio	1.00	0.59		1.20	0.92		1.07	0.94		0.54	0.78	
Uniform Delay, d1	60.4	56.7		44.4	48.3		46.6	29.1		28.7	34.2	
Progression Factor	1.00	1.00		1.00	1.00		0.97	0.95		1.04	1.32	
Incremental Delay, d2	105.3	3.9		119.9	22.0		36.1	1.0		3.1	2.3	
Delay (s)	165.7	60.6		164.3	70.3		81.3	28.7		32.8	47.5	
Level of Service	F	E		F	E		F	C		C	D	
Approach Delay (s/veh)		85.6			109.1			36.1			46.9	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	100.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	2663	0	0	2466
Future Volume (vph)	1353	1424	2663	0	0	2466
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1553	4385	0	0	4471
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1553	4385	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Adj. Flow (vph)	1395	1468	2745	0	0	2542
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1395	1468	2745	0	0	2542
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

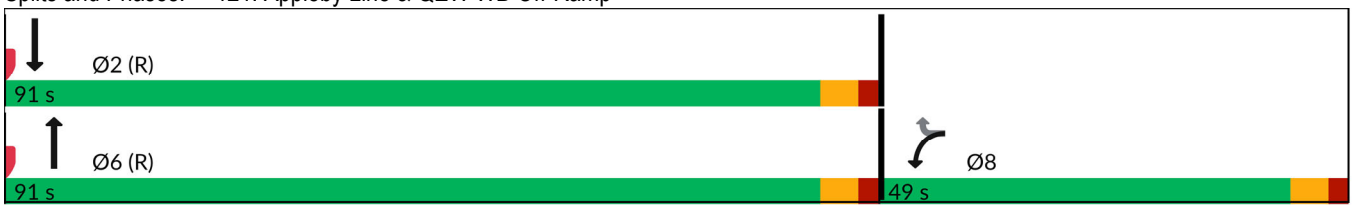


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
v/c Ratio	1.34	3.07	1.03			0.94
Control Delay (s/veh)	196.3	955.9	40.3			20.9
Queue Delay	0.0	0.0	20.3			0.1
Total Delay (s/veh)	196.3	955.9	60.7			21.1
LOS	F	F	E			C
Approach Delay (s/veh)	585.8		60.7			21.1
Approach LOS	F		E			C
Queue Length 50th (m)	~277.8	~772.7	~375.3			104.0
Queue Length 95th (m)	#322.7	#861.7	#394.6			m108.8
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1044	478	2662			2714
Starvation Cap Reductn	0	0	0			10
Spillback Cap Reductn	0	0	124			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.34	3.07	1.08			0.94

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.07			
Intersection Signal Delay (s/veh): 232.8		Intersection LOS: F	
Intersection Capacity Utilization 149.6%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

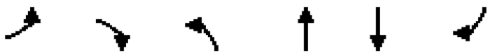
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



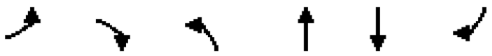


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	2663	0	0	2466
Future Volume (vph)	1353	1424	2663	0	0	2466
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1553	4385			4471
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1553	4385			4471
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1395	1468	2745	0	0	2542
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1395	1467	2745	0	0	2542
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	43.0	43.0	85.0			85.0
Effective Green, g (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1044	476	2662			2714
v/s Ratio Prot	0.41		c0.63			0.57
v/s Ratio Perm		c0.94				
v/c Ratio	1.34	3.08	1.03			0.94
Uniform Delay, d1	48.5	48.5	27.5			25.0
Progression Factor	1.00	1.00	0.59			0.57
Incremental Delay, d2	157.9	942.1	22.7			6.2
Delay (s)	206.4	990.6	39.0			20.4
Level of Service	F	F	D			C
Approach Delay (s/veh)	608.5		39.0			20.4
Approach LOS	F		D			C

Intersection Summary			
HCM 2000 Control Delay (s/veh)	233.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	149.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	772	611	0	2070	3070	0
Future Volume (vph)	772	611	0	2070	3070	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	4343	4427	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	4343	4427	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		1				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Adj. Flow (vph)	780	617	0	2091	3101	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	780	617	0	2091	3101	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

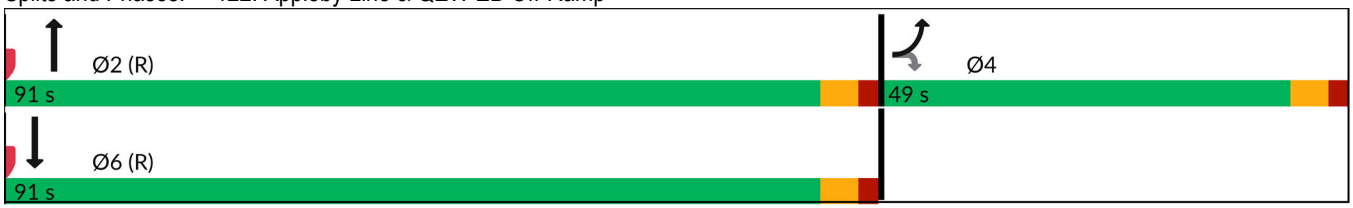


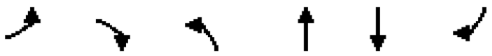
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	38.8	38.8		89.2	89.2	
Actuated g/C Ratio	0.28	0.28		0.64	0.64	
v/c Ratio	0.85	0.83		0.76	1.10	
Control Delay (s/veh)	56.9	57.7		20.4	67.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	56.9	57.7		20.4	67.2	
LOS	E	E		C	E	
Approach Delay (s/veh)	57.2			20.4	67.2	
Approach LOS	E			C	E	
Queue Length 50th (m)	113.4	98.9		264.2	~440.2	
Queue Length 95th (m)	135.6	122.7		m115.5	m#399.2	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1024	824		2768	2821	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.76	0.75		0.76	1.10	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay (s/veh): 50.3		Intersection LOS: D	
Intersection Capacity Utilization 149.6%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

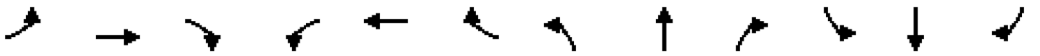




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	772	611	0	2070	3070	0
Future Volume (vph)	772	611	0	2070	3070	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		4343	4427	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		4343	4427	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	780	617	0	2091	3101	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	780	616	0	2091	3101	0
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	38.8	38.8		89.2	89.2	
Effective Green, g (s)	38.8	38.8		89.2	89.2	
Actuated g/C Ratio	0.28	0.28		0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	924	743		2767	2820	
v/s Ratio Prot	c0.23			0.48	c0.70	
v/s Ratio Perm		0.23				
v/c Ratio	0.84	0.83		0.76	1.10	
Uniform Delay, d1	47.7	47.5		17.8	25.4	
Progression Factor	1.00	1.00		1.02	0.80	
Incremental Delay, d2	7.1	7.6		1.3	45.5	
Delay (s)	54.9	55.1		19.5	65.9	
Level of Service	D	E		B	E	
Approach Delay (s/veh)	55.0			19.5	65.9	
Approach LOS	D			B	E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	48.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	149.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	291	198	499	632	419	113	988	203	183	1637	301
Future Volume (vph)	349	291	198	499	632	419	113	988	203	183	1637	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.939			0.940				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	1736	3224	0	1736	4471	1404	1687	4471	1538
Flt Permitted	0.215			0.177			0.071			0.146		
Satd. Flow (perm)	396	3288	0	322	3224	0	130	4471	1382	259	4471	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98			102				151			239
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Adj. Flow (vph)	356	297	202	509	645	428	115	1008	207	187	1670	307
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	499	0	509	1073	0	115	1008	207	187	1670	307
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.6		31.0	29.6		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	41.0	18.6		56.0	29.6		65.9	56.6	56.6	75.7	62.7	62.7
Actuated g/C Ratio	0.29	0.13		0.40	0.21		0.47	0.40	0.40	0.54	0.45	0.45
v/c Ratio	1.15	0.96		1.15	1.41		0.82	0.56	0.32	0.68	0.83	0.38
Control Delay (s/veh)	135.6	78.3		129.1	227.9		68.4	43.2	20.3	26.6	37.2	10.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	135.6	78.3		129.1	227.9		68.4	43.2	20.3	26.6	37.2	10.6
LOS	F	E		F	F		E	D	C	C	D	B
Approach Delay (s/veh)		102.2			196.1			41.8			32.5	
Approach LOS		F			F			D			C	
Queue Length 50th (m)	~104.8	63.4		~161.3	~212.9		19.7	127.9	25.5	31.6	151.7	19.5
Queue Length 95th (m)	#172.2	#100.5		#235.8	#258.4		m#42.6	m142.7	m50.7	m31.2	m136.3	m20.3
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	309	521		441	762		141	1806	648	303	2002	806
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.15	0.96		1.15	1.41		0.82	0.56	0.32	0.62	0.83	0.38

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay (s/veh): 88.3	Intersection LOS: F

Intersection Capacity Utilization 105.8%	ICU Level of Service G
Analysis Period (min) 15	

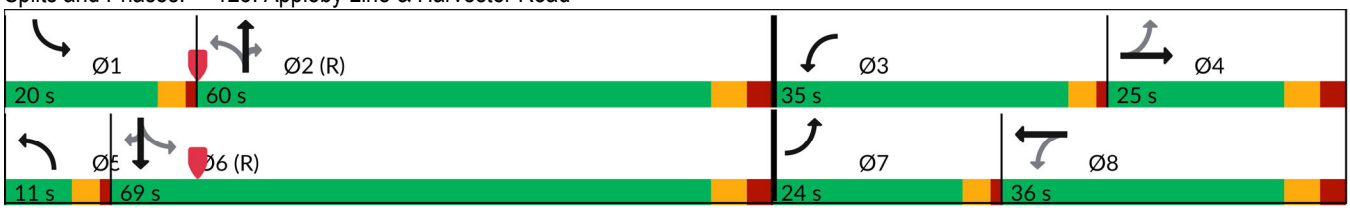
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

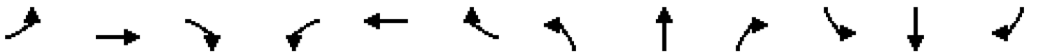
Splits and Phases: 123: Appleby Line & Harvester Road



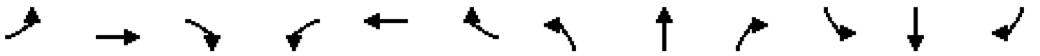
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	349	291	198	499	632	419	113	988	203	183	1637	301
Future Volume (vph)	349	291	198	499	632	419	113	988	203	183	1637	301
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3289		1735	3225		1736	4471	1382	1687	4471	1506
Flt Permitted	0.22	1.00		0.18	1.00		0.07	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	397	3289		323	3225		129	4471	1382	259	4471	1506
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	356	297	202	509	645	428	115	1008	207	187	1670	307
RTOR Reduction (vph)	0	85	0	0	80	0	0	0	90	0	0	132
Lane Group Flow (vph)	356	414	0	509	993	0	115	1008	117	187	1670	175
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.6	18.6		53.6	29.6		63.6	56.6	56.6	73.7	62.7	62.7
Effective Green, g (s)	38.6	18.6		53.6	29.6		63.6	56.6	56.6	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.13		0.38	0.21		0.45	0.40	0.40	0.53	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	436		436	681		138	1807	558	269	2002	674
v/s Ratio Prot	0.17	0.13		c0.26	c0.31		0.04	0.23		c0.06	c0.37	
v/s Ratio Perm	0.16			0.19			0.33		0.08	0.30		0.12
v/c Ratio	1.17	0.95		1.17	1.46		0.83	0.56	0.21	0.70	0.83	0.26
Uniform Delay, d1	46.0	60.2		42.0	55.2		29.2	32.1	27.1	21.1	34.1	24.1
Progression Factor	1.00	1.00		1.00	1.00		1.35	1.29	2.19	1.45	1.07	1.74
Incremental Delay, d2	107.8	30.2		97.6	214.0		28.1	1.0	0.7	0.7	0.4	0.1
Delay (s)	153.9	90.4		139.6	269.2		67.4	42.4	60.3	31.2	36.8	42.1
Level of Service	F	F		F	F		E	D	E	C	D	D
Approach Delay (s/veh)		116.8			227.5			47.4			37.0	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	101.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	105.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	534	127	488	284	243	191	278	726	133	193	1543	1187
Future Volume (vph)	534	127	488	284	243	191	278	726	133	193	1543	1187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97			0.89	0.97		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	1810	1468	1752	1776	1599	1626	5136	1599	1787	4515	1482
Flt Permitted	0.950			0.673			0.075			0.322		
Satd. Flow (perm)	3322	1810	1384	1194	1776	1550	128	5136	1420	588	4515	1385
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			159			139			488
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Adj. Flow (vph)	556	132	508	296	253	199	290	756	139	201	1607	1236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	556	132	508	296	253	199	290	756	139	201	1607	1236
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



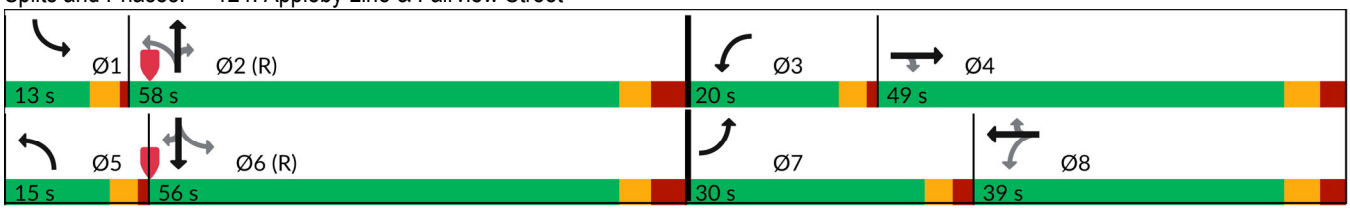
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	30.0	49.0	49.0	20.0	39.0	39.0	15.0	58.0	58.0	13.0	56.0	56.0
Total Split (%)	21.4%	35.0%	35.0%	14.3%	27.9%	27.9%	10.7%	41.4%	41.4%	9.3%	40.0%	40.0%
Maximum Green (s)	25.0	42.5	42.5	16.0	32.5	32.5	11.0	51.2	51.2	9.0	49.2	49.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	24.7	39.3	39.3	48.1	29.6	29.6	68.6	53.7	53.7	61.7	49.2	49.2
Actuated g/C Ratio	0.18	0.28	0.28	0.34	0.21	0.21	0.49	0.38	0.38	0.44	0.35	0.35
v/c Ratio	0.94	0.26	0.96	0.63	0.67	0.44	1.35	0.38	0.22	0.59	1.01	1.54
Control Delay (s/veh)	80.7	39.5	61.2	34.4	59.9	14.4	217.8	32.5	5.4	20.0	56.9	264.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	80.7	39.5	61.2	34.4	59.9	14.4	217.8	32.5	5.4	20.0	56.9	264.1
LOS	F	D	E	C	E	B	F	C	A	C	E	F
Approach Delay (s/veh)		67.9			37.7			74.6			138.6	
Approach LOS		E			D			E			F	
Queue Length 50th (m)	85.5	30.0	103.7	55.8	69.9	9.3	~115.9	60.2	0.0	22.0	~202.5	~536.9
Queue Length 95th (m)	#120.9	48.7	#181.3	80.2	102.2	32.5	#181.4	72.8	14.5	m26.1	m#224.1	m#586.3
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	601	549	555	473	412	481	215	1971	630	342	1586	803
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.24	0.92	0.63	0.61	0.41	1.35	0.38	0.22	0.59	1.01	1.54

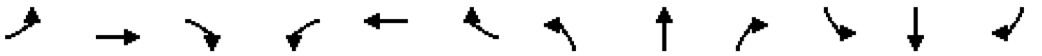
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay (s/veh): 100.4	Intersection LOS: F

Intersection Capacity Utilization 123.0%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street

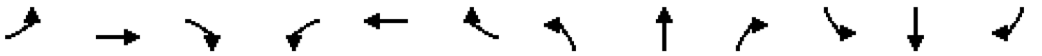




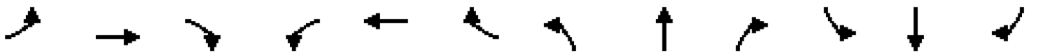
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	534	127	488	284	243	191	278	726	133	193	1543	1187
Future Volume (vph)	534	127	488	284	243	191	278	726	133	193	1543	1187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.89	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	1810	1384	1708	1776	1550	1626	5136	1420	1771	4515	1385
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	0.08	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	3367	1810	1384	1209	1776	1550	129	5136	1420	600	4515	1385
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	556	132	508	296	253	199	290	756	139	201	1607	1236
RTOR Reduction (vph)	0	0	140	0	0	125	0	0	86	0	0	317
Lane Group Flow (vph)	556	132	368	296	253	74	290	756	53	201	1607	919
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	24.7	39.3	39.3	45.6	29.6	29.6	67.4	53.7	53.7	58.9	49.2	49.2
Effective Green, g (s)	24.7	39.3	39.3	45.6	29.6	29.6	67.4	53.7	53.7	58.9	49.2	49.2
Actuated g/C Ratio	0.18	0.28	0.28	0.33	0.21	0.21	0.48	0.38	0.38	0.42	0.35	0.35
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	594	508	388	450	375	327	213	1970	544	333	1586	486
v/s Ratio Prot	c0.17	0.07		0.08	0.14		c0.14	0.15		0.04	0.36	
v/s Ratio Perm			c0.27	0.14		0.05	0.52		0.04	0.21		c0.66
v/c Ratio	0.94	0.26	0.95	0.66	0.67	0.23	1.36	0.38	0.10	0.60	1.01	1.89
Uniform Delay, d1	56.9	39.1	49.4	38.6	50.8	45.7	44.1	31.2	27.6	26.9	45.4	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.66	0.76	0.46
Incremental Delay, d2	22.2	0.3	32.5	3.5	4.7	0.4	189.9	0.6	0.4	2.1	22.0	406.7
Delay (s)	79.1	39.3	81.9	42.1	55.5	46.1	234.0	31.8	28.0	19.8	56.6	427.5
Level of Service	E	D	F	D	E	D	F	C	C	B	E	F
Approach Delay (s/veh)		75.9			47.7			80.8			204.8	
Approach LOS		E			D			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	137.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.41		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	123.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	731	313	489	1564	261	510	1072	415	329	784	238
Future Volume (vph)	185	731	313	489	1564	261	510	1072	415	329	784	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.98	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3428	5036	1523	3335	5085	1515	3476	5085	1521	3419	5085	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			276			269			345			161
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	191	754	323	504	1612	269	526	1105	428	339	808	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	191	754	323	504	1612	269	526	1105	428	339	808	245
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	17.0	50.0	50.0	35.0	68.0	68.0	21.0	34.0	34.0	21.0	34.0	34.0
Total Split (%)	12.1%	35.7%	35.7%	25.0%	48.6%	48.6%	15.0%	24.3%	24.3%	15.0%	24.3%	24.3%
Maximum Green (s)	12.0	42.6	42.6	30.0	60.6	60.6	16.0	26.6	26.6	16.0	26.6	26.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	11.9	39.4	39.4	27.2	54.7	54.7	22.1	30.2	30.2	18.4	26.6	26.6
Actuated g/C Ratio	0.09	0.28	0.28	0.19	0.39	0.39	0.16	0.22	0.22	0.13	0.19	0.19
v/c Ratio	0.66	0.53	0.52	0.77	0.81	0.36	0.95	1.01	0.71	0.75	0.84	0.58
Control Delay (s/veh)	73.4	43.9	10.3	61.9	41.6	4.1	66.9	73.3	27.7	69.6	63.3	23.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	73.4	43.9	10.3	61.9	41.6	4.1	66.9	73.3	27.7	69.6	63.3	23.9
LOS	E	D	B	E	D	A	E	E	C	E	E	C
Approach Delay (s/veh)		39.8			41.6			62.2			57.9	
Approach LOS		D			D			E			E	
Queue Length 50th (m)	28.6	70.3	10.4	73.6	153.5	0.0	82.3	~142.0	51.8	49.1	85.2	21.5
Queue Length 95th (m)	42.3	81.5	37.8	93.4	162.0	17.2	m#116.6	m#158.3	m62.0	#78.3	102.4	51.7
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	294	1532	655	721	2201	808	551	1098	599	451	966	423
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.49	0.49	0.70	0.73	0.33	0.95	1.01	0.71	0.75	0.84	0.58

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay (s/veh): 50.5	Intersection LOS: D

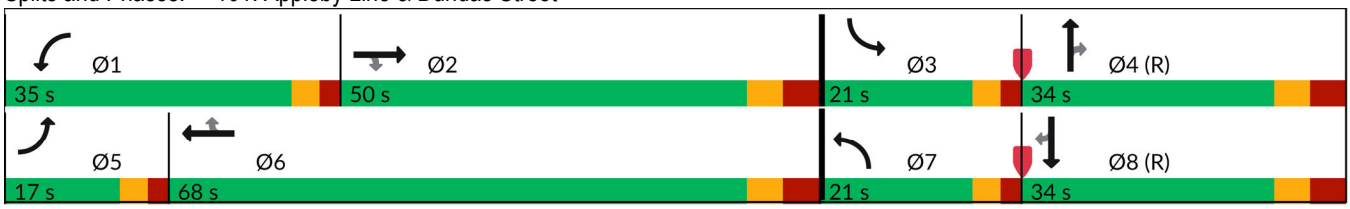
Intersection Capacity Utilization 107.8%	ICU Level of Service G
Analysis Period (min) 15	

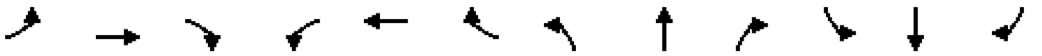
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Appleby Line & Dundas Street

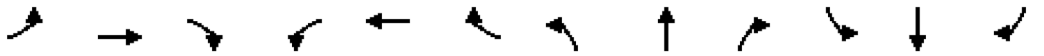




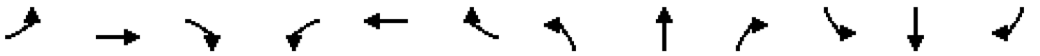
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	731	313	489	1564	261	510	1072	415	329	784	238
Future Volume (vph)	185	731	313	489	1564	261	510	1072	415	329	784	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	191	754	323	504	1612	269	526	1105	428	339	808	245
RTOR Reduction (vph)	0	0	198	0	0	164	0	0	271	0	0	131
Lane Group Flow (vph)	191	754	125	504	1612	105	526	1105	157	339	808	114
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	11.9	39.4	39.4	27.2	54.7	54.7	22.1	30.2	30.2	18.4	26.5	26.5
Effective Green, g (s)	11.9	39.4	39.4	27.2	54.7	54.7	22.1	30.2	30.2	18.4	26.5	26.5
Actuated g/C Ratio	0.09	0.28	0.28	0.19	0.39	0.39	0.16	0.22	0.22	0.13	0.19	0.19
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	291	1417	428	654	1986	591	552	1096	328	451	962	292
v/s Ratio Prot	0.06	0.15		c0.15	c0.32		c0.15	c0.22		0.10	0.16	
v/s Ratio Perm			0.08			0.07			0.10			0.07
v/c Ratio	0.66	0.53	0.29	0.77	0.81	0.18	0.95	1.01	0.48	0.75	0.84	0.39
Uniform Delay, d1	62.1	42.5	39.4	53.4	38.1	27.9	58.4	54.9	48.0	58.6	54.7	49.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.04	2.18	1.00	1.00	1.00
Incremental Delay, d2	7.0	0.4	0.4	6.5	2.6	0.1	13.2	17.9	1.7	8.2	8.8	3.9
Delay (s)	69.1	42.9	39.8	60.0	40.7	28.1	66.0	75.2	106.3	66.8	63.5	53.6
Level of Service	E	D	D	E	D	C	E	E	F	E	E	D
Approach Delay (s/veh)		46.0			43.3			79.3			62.5	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	398	274	145	856	521	383	1643	131	297	918	243
Future Volume (vph)	196	398	274	145	856	521	383	1643	131	297	918	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.98		0.99		0.97	1.00	1.00			0.99	
Frt		0.939				0.850		0.989			0.969	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3333	0	1736	4560	1599	3502	4359	0	1787	4295	0
Flt Permitted	0.135			0.140			0.950			0.069		
Satd. Flow (perm)	246	3333	0	254	4560	1549	3488	4359	0	130	4295	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		113				198		10			42	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	198	402	277	146	865	526	387	1660	132	300	927	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	679	0	146	865	526	387	1792	0	300	1172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



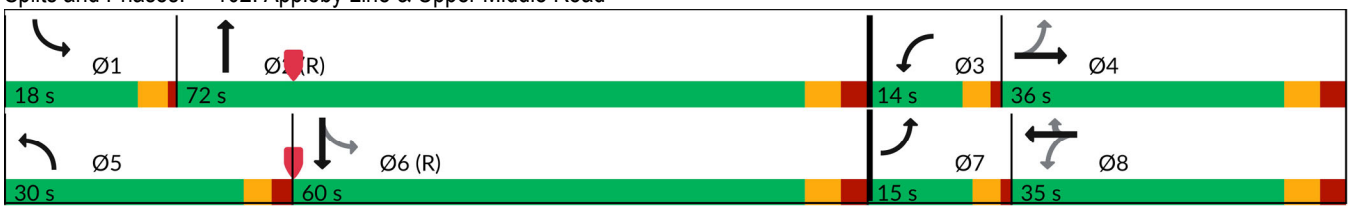
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	36.0		14.0	35.0	35.0	30.0	72.0		18.0	60.0	
Total Split (%)	10.7%	25.7%		10.0%	25.0%	25.0%	21.4%	51.4%		12.9%	42.9%	
Maximum Green (s)	11.0	29.6		10.0	28.6	28.6	25.0	65.5		14.0	53.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	43.0	29.6		41.0	28.6	28.6	20.5	65.5		74.5	58.0	
Actuated g/C Ratio	0.31	0.21		0.29	0.20	0.20	0.15	0.47		0.53	0.41	
v/c Ratio	1.03	0.86		0.81	0.93	1.11	0.75	0.88		1.28	0.65	
Control Delay (s/veh)	111.6	55.8		68.3	71.3	107.0	84.1	22.9		185.1	41.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	111.6	55.8		68.3	71.3	107.0	84.1	22.9		185.1	41.7	
LOS	F	E		E	E	F	F	C		F	D	
Approach Delay (s/veh)		68.4			83.2			33.8			70.9	
Approach LOS		E			F			C			E	
Queue Length 50th (m)	~46.8	85.8		32.1	104.1	~127.1	61.9	71.6		~96.6	94.1	
Queue Length 95th (m)	#99.6	#115.6		#63.9	#134.3	#200.6	m73.9	162.7		m#147.3	118.2	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	192	793		180	931	473	625	2044		234	1803	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.03	0.86		0.81	0.93	1.11	0.62	0.88		1.28	0.65	

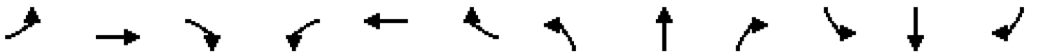
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.28			
Intersection Signal Delay (s/veh): 60.3		Intersection LOS: E	

Intersection Capacity Utilization 98.6%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



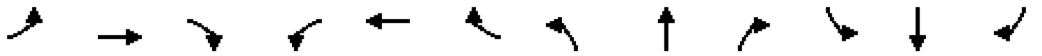


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	398	274	145	856	521	383	1643	131	297	918	243
Future Volume (vph)	196	398	274	145	856	521	383	1643	131	297	918	243
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3332		1734	4560	1549	3502	4359		1787	4293	
Flt Permitted	0.14	1.00		0.14	1.00	1.00	0.95	1.00		0.07	1.00	
Satd. Flow (perm)	247	3332		255	4560	1549	3502	4359		130	4293	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	198	402	277	146	865	526	387	1660	132	300	927	245
RTOR Reduction (vph)	0	89	0	0	0	158	0	5	0	0	25	0
Lane Group Flow (vph)	198	590	0	146	865	368	387	1787	0	300	1147	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	40.6	29.6		38.6	28.6	28.6	20.5	65.5		72.0	58.0	
Effective Green, g (s)	40.6	29.6		38.6	28.6	28.6	20.5	65.5		72.0	58.0	
Actuated g/C Ratio	0.29	0.21		0.28	0.20	0.20	0.15	0.47		0.51	0.41	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	704		175	931	316	512	2039		232	1778	
v/s Ratio Prot	c0.08	0.18		0.06	0.19		0.11	c0.41		c0.13	0.27	
v/s Ratio Perm	0.22			0.17		c0.24				c0.54		
v/c Ratio	1.05	0.84		0.83	0.93	1.17	0.76	0.88		1.29	0.65	
Uniform Delay, d1	43.6	52.9		41.8	54.7	55.7	57.3	33.6		43.4	32.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.38	0.58		1.14	1.25	
Incremental Delay, d2	80.4	8.6		27.5	15.0	103.6	3.4	3.1		151.8	1.2	
Delay (s)	123.9	61.5		69.3	69.7	159.3	82.6	22.7		201.5	42.3	
Level of Service	F	E		E	E	F	F	C		F	D	
Approach Delay (s/veh)		75.6			100.3			33.4			74.7	
Approach LOS		E			F			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	66.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	864	26	0	1721	0	70	0	15	3	0	4
Future Volume (vph)	3	864	26	0	1721	0	70	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.996							0.850		0.923	
Flt Protected	0.950							0.950			0.979	
Satd. Flow (prot)	1805	4482	0	1900	4515	0	0	1805	1615	0	1704	0
Flt Permitted	0.061							0.753			0.947	
Satd. Flow (perm)	116	4482	0	1900	4515	0	0	1429	1593	0	1647	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5							45		45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	909	27	0	1812	0	74	0	16	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	936	0	0	1812	0	0	74	16	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

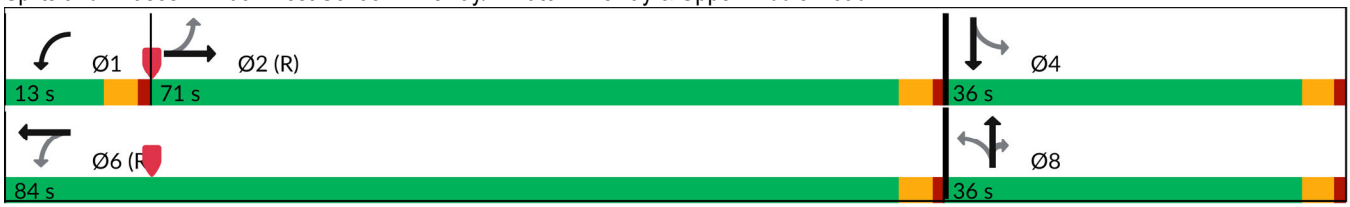


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	67.0	67.0		9.0	80.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
v/c Ratio	0.04	0.31			0.60			0.19	0.04		0.01	
Control Delay (s/veh)	8.3	8.7			19.8			35.8	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	8.3	8.7			19.8			35.8	0.1		0.0	
LOS	A	A			B			D	A		A	
Approach Delay (s/veh)		8.7			19.8			29.4				
Approach LOS		A			B			C				
Queue Length 50th (m)	0.3	37.2			133.6			14.2	0.0		0.0	
Queue Length 95th (m)	1.5	45.5			m142.7			27.6	0.4		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	77	2989			3010			381	457		472	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.04	0.31			0.60			0.19	0.04		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay (s/veh): 16.4	Intersection LOS: B

Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15
* User Entered Value
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	864	26	0	1721	0	70	0	15	3	0	4
Future Volume (vph)	3	864	26	0	1721	0	70	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1803	4480			4515			1803	1593		1703	
Flt Permitted	0.06	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	116	4480			4515			1429	1593		1646	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	909	27	0	1812	0	74	0	16	3	0	4
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	12	0	5	0
Lane Group Flow (vph)	3	934	0	0	1812	0	0	74	4	0	2	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Effective Green, g (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	77	2986			3010			381	424		438	
v/s Ratio Prot		0.21			c0.40							
v/s Ratio Perm	0.03							c0.05	0.00		0.00	
v/c Ratio	0.04	0.31			0.60			0.19	0.01		0.00	
Uniform Delay, d1	6.8	8.4			11.1			34.0	32.4		32.3	
Progression Factor	1.00	1.00			1.71			1.00	1.00		1.00	
Incremental Delay, d2	0.9	0.3			0.5			1.1	0.0		0.0	
Delay (s)	7.8	8.7			19.5			35.2	32.4		32.3	
Level of Service	A	A			B			D	C		C	
Approach Delay (s/veh)		8.7			19.5			34.7			32.3	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	885	9	19	1694	29	56
Future Volume (vph)	885	9	19	1694	29	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4506	0	1570	4515	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4506	0	1570	4515	1805	1568
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	941	10	20	1802	31	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	951	0	20	1802	31	60
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

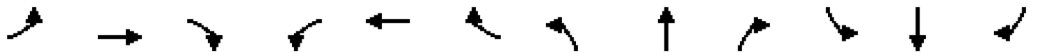
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	885	9	19	1694	29	56
Future Volume (Veh/h)	885	9	19	1694	29	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	941	10	20	1802	31	60
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			968		1604	336
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			749		1424	78
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			97		73	93
cM capacity (veh/h)			720		116	895

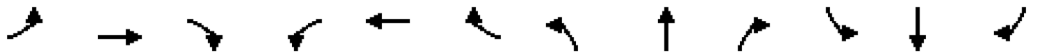
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	376	376	198	20	601	601	601	31	60
Volume Left	0	0	0	20	0	0	0	31	0
Volume Right	0	0	10	0	0	0	0	0	60
cSH	1700	1700	1700	720	1700	1700	1700	116	895
Volume to Capacity	0.22	0.22	0.12	0.03	0.35	0.35	0.35	0.27	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.7	0.0	0.0	0.0	8.0	1.7
Control Delay (s/veh)	0.0	0.0	0.0	10.1	0.0	0.0	0.0	46.8	9.3
Lane LOS				B				E	A
Approach Delay (s/veh)	0.0			0.1				22.1	
Approach LOS								C	

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	701	72	1	1578	186	14	0	1	50	0	112
Future Volume (vph)	163	701	72	1	1578	186	14	0	1	50	0	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.984			0.992			0.907	
Flt Protected	0.950							0.955			0.985	
Satd. Flow (prot)	1805	4448	0	0	4443	0	0	1765	0	0	1697	0
Flt Permitted	0.950							0.955			0.985	
Satd. Flow (perm)	1805	4448	0	0	4443	0	0	1765	0	0	1697	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			163.6			235.5	
Travel Time (s)		7.1			17.4			14.7			21.2	
Confl. Peds. (#/hr)	13					13						1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	170	730	75	1	1644	194	15	0	1	52	0	117
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	805	0	0	1839	0	0	16	0	0	169	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.0%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			

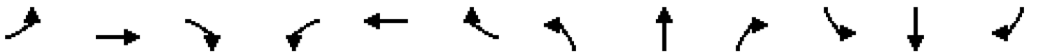


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	701	72	1	1578	186	14	0	1	50	0	112
Future Volume (Veh/h)	163	701	72	1	1578	186	14	0	1	50	0	112
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	170	730	75	1	1644	194	15	0	1	52	0	117
Pedestrians		1									13	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked	0.67						0.67	0.67		0.67	0.67	0.67
vC, conflicting volume	1851			805			1776	2961	281	2340	2901	659
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	520			805			406	2187	281	1255	2097	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			100			94	100	100	25	100	84
cM capacity (veh/h)	696			815			237	22	716	69	26	718

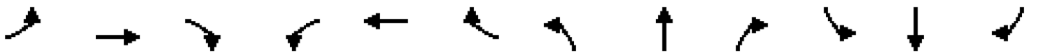
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	170	292	292	221	412	822	605	16	169
Volume Left	170	0	0	0	1	0	0	15	52
Volume Right	0	0	0	75	0	0	194	1	117
cSH	696	1700	1700	1700	815	1700	1700	247	184
Volume to Capacity	0.24	0.17	0.17	0.13	0.00*	0.48	0.36	0.06	0.92
Queue Length 95th (m)	7.7	0.0	0.0	0.0	0.0	0.0	0.0	1.6	56.5
Control Delay (s/veh)	11.8	0.0	0.0	0.0	0.0	0.0	0.0	20.6	97.7
Lane LOS	B				A			C	F
Approach Delay (s/veh)	2.1				0.0			20.6	97.7
Approach LOS								C	F

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	513	43	8	1494	543	69	5	5	216	2	174
Future Volume (vph)	200	513	43	8	1494	543	69	5	5	216	2	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						0.99	
Frt		0.988			0.960			0.992			0.940	
Flt Protected	0.950							0.958			0.973	
Satd. Flow (prot)	1752	4457	0	0	4290	0	0	1770	0	0	1711	0
Flt Permitted	0.058				0.937			0.593			0.799	
Satd. Flow (perm)	107	4457	0	0	4020	0	0	1096	0	0	1399	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			115			3			33	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			159.9			321.0	
Travel Time (s)		17.4			14.7			14.4			28.9	
Confl. Peds. (#/hr)	8					8				5		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	211	540	45	8	1573	572	73	5	5	227	2	183
Shared Lane Traffic (%)												
Lane Group Flow (vph)	211	585	0	0	2153	0	0	83	0	0	412	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

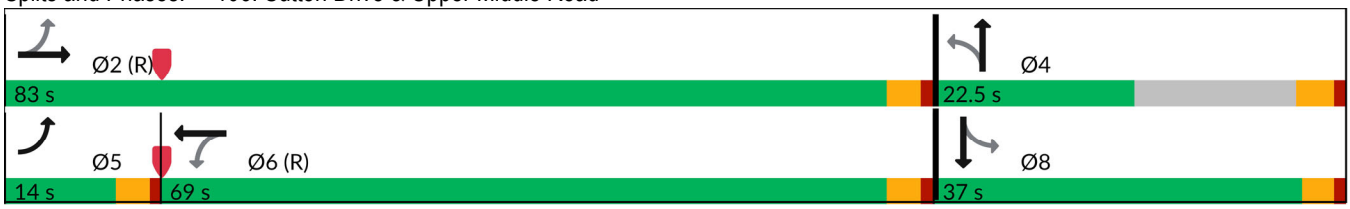


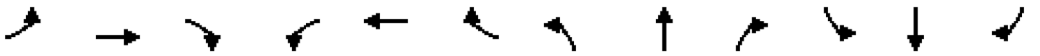
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	30.0		30.0	30.0		22.5	22.5		30.5	30.5	
Total Split (s)	14.0	83.0		69.0	69.0		22.5	22.5		37.0	37.0	
Total Split (%)	11.7%	69.2%		57.5%	57.5%		18.8%	18.8%		30.8%	30.8%	
Maximum Green (s)	10.0	79.0		65.0	65.0		18.0	18.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.5			4.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		5.0	5.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		Max	Max	
Walk Time (s)		10.0		10.0	10.0		7.0	7.0		10.0	10.0	
Flash Don't Walk (s)		16.0		16.0	16.0		11.0	11.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	79.0	79.0			65.0			32.5			33.0	
Actuated g/C Ratio	0.66	0.66			0.54			0.27			0.28	
v/c Ratio	1.02	0.20			0.97			0.28			1.01	
Control Delay (s/veh)	111.8	7.4			37.9			36.3			87.4	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	111.8	7.4			37.9			36.3			87.4	
LOS	F	A			D			D			F	
Approach Delay (s/veh)		35.1			37.9			36.3			87.4	
Approach LOS		D			D			D			F	
Queue Length 50th (m)	~44.9	18.2			199.2			15.9			~98.8	
Queue Length 95th (m)	#93.9	22.9			#253.9			31.0			#168.2	
Internal Link Dist (m)		266.7			220.7			135.9			297.0	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	207	2941			2230			299			408	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.02	0.20			0.97			0.28			1.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 43.1	Intersection LOS: D

Intersection Capacity Utilization 84.3%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Sutton Drive & Upper Middle Road

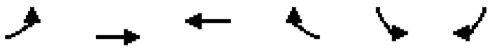




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	513	43	8	1494	543	69	5	5	216	2	174
Future Volume (vph)	200	513	43	8	1494	543	69	5	5	216	2	174
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.5			4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.99			0.94	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1752	4459			4290			1770			1704	
Flt Permitted	0.06	1.00			0.94			0.59			0.80	
Satd. Flow (perm)	107	4459			4022			1095			1399	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	540	45	8	1573	572	73	5	5	227	2	183
RTOR Reduction (vph)	0	7	0	0	53	0	0	2	0	0	24	0
Lane Group Flow (vph)	211	578	0	0	2100	0	0	81	0	0	388	0
Confl. Peds. (#/hr)	8					8				5		2
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	79.0	79.0			65.0			32.5			33.0	
Effective Green, g (s)	79.0	79.0			65.0			32.5			33.0	
Actuated g/C Ratio	0.66	0.66			0.54			0.27			0.28	
Clearance Time (s)	4.0	4.0			4.0			4.5			4.0	
Vehicle Extension (s)	5.0	5.0			5.0			3.0			5.0	
Lane Grp Cap (vph)	207	2935			2178			296			384	
v/s Ratio Prot	c0.08	0.13										
v/s Ratio Perm	c0.58				0.52			0.07			c0.28	
v/c Ratio	1.02	0.20			0.96			0.27			1.01	
Uniform Delay, d1	39.2	8.0			26.4			34.4			43.5	
Progression Factor	1.59	0.93			1.00			1.00			1.00	
Incremental Delay, d2	67.0	0.1			12.5			0.5			48.6	
Delay (s)	129.4	7.7			38.9			34.9			92.1	
Level of Service	F	A			D			C			F	
Approach Delay (s/veh)		39.9			38.9			34.9			92.1	
Approach LOS		D			D			C			F	

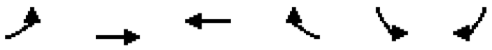
Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	84.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	680	1837	27	0	63
Future Volume (vph)	55	680	1837	27	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	4515	4506	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	4515	4506	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	58	716	1934	28	0	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	716	1962	0	0	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

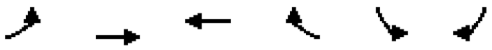
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	55	680	1837	27	0	63
Future Volume (Veh/h)	55	680	1837	27	0	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	58	716	1934	28	0	66
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked						
vC, conflicting volume	1971				2312	668
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1971				2312	668
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	80				100	84
cM capacity (veh/h)	296				26	403

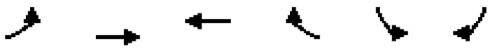
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	58	239	239	239	774	774	415	66
Volume Left	58	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	28	66
cSH	296	1700	1700	1700	1700	1700	1700	403
Volume to Capacity	0.20	0.14	0.14	0.14	0.46	0.46	0.24	0.16
Queue Length 95th (m)	5.7	0.0	0.0	0.0	0.0	0.0	0.0	4.6
Control Delay (s/veh)	20.1	0.0	0.0	0.0	0.0	0.0	0.0	15.7
Lane LOS	C							C
Approach Delay (s/veh)	1.5				0.0			15.7
Approach LOS								C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	674	2011	9	5	8
Future Volume (vph)	11	674	2011	9	5	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.913	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1805	4515	4511	0	1703	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1805	4515	4511	0	1703	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	12	717	2139	10	5	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	717	2149	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

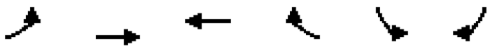
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 49.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	11	674	2011	9	5	8
Future Volume (Veh/h)	11	674	2011	9	5	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	12	717	2139	10	5	9
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2165				2423	734
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2165				2423	734
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				81	98
cM capacity (veh/h)	247				26	362

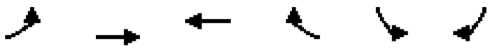
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	12	239	239	239	856	856	438	14
Volume Left	12	0	0	0	0	0	0	5
Volume Right	0	0	0	0	0	0	10	9
cSH	247	1700	1700	1700	1700	1700	1700	64
Volume to Capacity	0.05	0.14	0.14	0.14	0.50	0.50	0.26	0.22
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0	0.0	0.0	6.0
Control Delay (s/veh)	20.3	0.0	0.0	0.0	0.0	0.0	0.0	76.1
Lane LOS	C							F
Approach Delay (s/veh)	0.3				0.0			76.1
Approach LOS								F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	39	644	2014	147	63	44
Future Volume (vph)	39	644	2014	147	63	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.944	
Flt Protected	0.950				0.972	
Satd. Flow (prot)	1805	4515	4473	0	1722	0
Flt Permitted	0.950				0.972	
Satd. Flow (perm)	1805	4515	4473	0	1722	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	42	700	2189	160	68	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	42	700	2349	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	39	644	2014	147	63	44
Future Volume (Veh/h)	39	644	2014	147	63	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	42	700	2189	160	68	48
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2363				2600	824
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2363				2600	824
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	80				0	85
cM capacity (veh/h)	207				16	311

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	42	233	233	233	876	876	598	116
Volume Left	42	0	0	0	0	0	0	68
Volume Right	0	0	0	0	0	0	160	48
cSH	207	1700	1700	1700	1700	1700	1700	27
Volume to Capacity	0.20	0.14	0.14	0.14	0.52	0.52	0.35	4.30
Queue Length 95th (m)	5.9	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	26.7	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	D							F
Approach Delay (s/veh)	1.5				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	362.0		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	29	31	2118	23	37	656
Future Volume (vph)	29	31	2118	23	37	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.930		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1725	0	4506	0	1805	4515
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1725	0	4506	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			459.4
Travel Time (s)	14.5		7.6			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	31	33	2229	24	39	691
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	0	2253	0	39	691
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

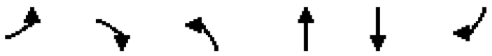
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



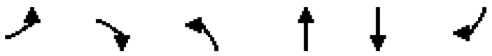
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	29	31	2118	23	37	656
Future Volume (Veh/h)	29	31	2118	23	37	656
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	31	33	2229	24	39	691
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2550	756			2254	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2550	756			2254	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	91			83	
cM capacity (veh/h)	19	355			231	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	64	892	892	470	39	230	230	230
Volume Left	31	0	0	0	39	0	0	0
Volume Right	33	0	0	24	0	0	0	0
cSH	37	1700	1700	1700	231	1700	1700	1700
Volume to Capacity	1.75	0.52	0.52	0.28	0.17	0.14	0.14	0.14
Queue Length 95th (m)	55.2	0.0	0.0	0.0	4.8	0.0	0.0	0.0
Control Delay (s/veh)	598.1	0.0	0.0	0.0	23.7	0.0	0.0	0.0
Lane LOS	F				C			
Approach Delay (s/veh)	598.1	0.0			1.3			
Approach LOS	F							

Intersection Summary			
Average Delay	12.9		
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	164	596	729	1950	635	40
Future Volume (vph)	164	596	729	1950	635	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	1736	4515	4503	0
Flt Permitted	0.950		0.273			
Satd. Flow (perm)	1752	1583	498	4515	4503	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		373			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	180	655	801	2143	698	44
Shared Lane Traffic (%)						
Lane Group Flow (vph)	180	655	801	2143	742	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	20.0	80.0	60.0	
Total Split (%)	27.3%	27.3%	18.2%	72.7%	54.5%	
Maximum Green (s)	23.0	23.0	16.0	73.0	53.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	53.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.48	
v/c Ratio	0.49	1.05	1.53	0.72	0.34	
Control Delay (s/veh)	43.7	68.0	270.1	17.2	18.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	43.7	68.0	270.1	17.2	18.0	
LOS	D	E	F	B	B	
Approach Delay (s/veh)	62.7			86.0	18.0	
Approach LOS	E			F	B	
Queue Length 50th (m)	36.9	~90.6	~181.7	122.4	41.2	
Queue Length 95th (m)	60.0	#164.1	#338.4	147.6	52.3	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	366	626	524	2996	2174	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.49	1.05	1.53	0.72	0.34	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.53	
Intersection Signal Delay (s/veh): 70.6	Intersection LOS: E

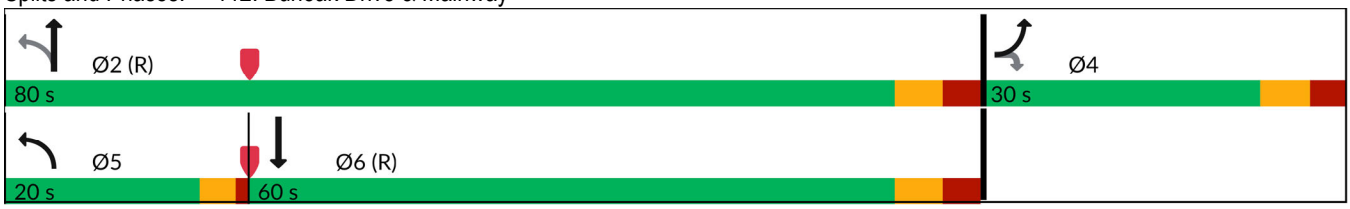
Intersection Capacity Utilization 89.5%	ICU Level of Service E
Analysis Period (min) 15	

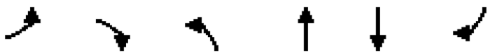
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

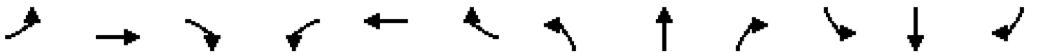




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	164	596	729	1950	635	40
Future Volume (vph)	164	596	729	1950	635	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	1735	4515	4504	
Flt Permitted	0.95	1.00	0.27	1.00	1.00	
Satd. Flow (perm)	1752	1583	498	4515	4504	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	180	655	801	2143	698	44
RTOR Reduction (vph)	0	295	0	0	5	0
Lane Group Flow (vph)	180	360	801	2143	737	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	53.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	53.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	366	330	510	2996	2170	
v/s Ratio Prot	0.10		c0.23	0.47	0.16	
v/s Ratio Perm		c0.23	c0.81			
v/c Ratio	0.49	1.09	1.57	0.72	0.34	
Uniform Delay, d1	38.3	43.5	12.1	11.8	17.7	
Progression Factor	1.00	1.00	2.68	1.33	1.00	
Incremental Delay, d2	1.0	76.1	264.2	1.2	0.4	
Delay (s)	39.4	119.6	296.5	16.9	18.1	
Level of Service	D	F	F	B	B	
Approach Delay (s/veh)	102.3			93.0	18.1	
Approach LOS	F			F	B	

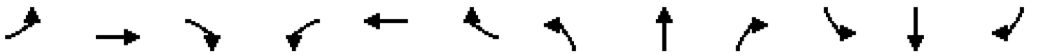
Intersection Summary			
HCM 2000 Control Delay (s/veh)	82.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	349	25	12	591	70	164	48	51	186	79	76
Future Volume (vph)	23	349	25	12	591	70	164	48	51	186	79	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.984			0.974			0.970	
Flt Protected		0.997			0.999			0.970			0.973	
Satd. Flow (prot)	0	3409	0	0	3475	0	0	1745	0	0	1758	0
Flt Permitted		0.997			0.999			0.970			0.973	
Satd. Flow (perm)	0	3409	0	0	3475	0	0	1745	0	0	1758	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		114.1			869.1			154.8			190.1	
Travel Time (s)		6.8			52.1			13.9			17.1	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Adj. Flow (vph)	27	415	30	14	704	83	195	57	61	221	94	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	472	0	0	801	0	0	313	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

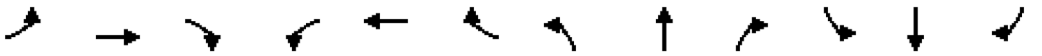
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.3%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	349	25	12	591	70	164	48	51	186	79	76
Future Volume (Veh/h)	23	349	25	12	591	70	164	48	51	186	79	76
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	27	415	30	14	704	83	195	57	61	221	94	90
Pedestrians								5				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	787			450			1006	1304	228	1125	1278	394
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	787			450			1006	1304	228	1125	1278	394
tC, single (s)	4.1			4.3			7.6	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			0	62	92	0	40	85
cM capacity (veh/h)	828			1054			83	151	778	101	157	606

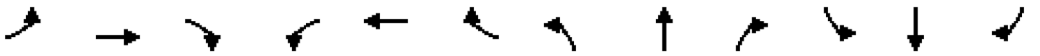
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	235	238	366	435	313	405
Volume Left	27	0	14	0	195	221
Volume Right	0	30	0	83	61	90
cSH	828	1700	1054	1700	111	137
Volume to Capacity	0.03	0.14	0.01	0.26	2.82	2.95
Queue Length 95th (m)	0.8	0.0	0.3	0.0	234.0	299.9
Control Delay (s/veh)	1.4	0.0	0.5	0.0	903.0	944.9
Lane LOS	A		A		F	F
Approach Delay (s/veh)	0.7		0.2		903.0	944.9
Approach LOS					F	F

Intersection Summary				
Average Delay	334.4			
Intersection Capacity Utilization	56.3%	ICU Level of Service		B
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	291	30	5	1021	110	67	6	15	43	2	52
Future Volume (vph)	35	291	30	5	1021	110	67	6	15	43	2	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.985			0.976			0.927	
Flt Protected		0.995						0.963			0.978	
Satd. Flow (prot)	0	3406	0	0	3490	0	0	1786	0	0	1700	0
Flt Permitted		0.995						0.963			0.978	
Satd. Flow (perm)	0	3406	0	0	3490	0	0	1786	0	0	1700	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			639.9			107.7			112.1	
Travel Time (s)		25.6			38.4			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	43	359	37	6	1260	136	83	7	19	53	2	64
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	439	0	0	1402	0	0	109	0	0	119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.0%		ICU Level of Service A	
Analysis Period (min) 15			



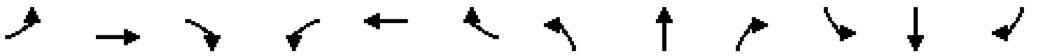
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	291	30	5	1021	110	67	6	15	43	2	52
Future Volume (Veh/h)	35	291	30	5	1021	110	67	6	15	43	2	52
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	43	359	37	6	1260	136	83	7	19	53	2	64
Pedestrians		2			3			7			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1398			403			1180	1881	208	1633	1831	702
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1398			403			1180	1881	208	1633	1831	702
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	91			99			25	89	98	3	97	83
cM capacity (veh/h)	494			1160			111	65	798	55	70	384

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	223	217	636	766	109	119
Volume Left	43	0	6	0	83	53
Volume Right	0	37	0	136	19	64
cSH	494	1700	1160	1700	124	102
Volume to Capacity	0.09	0.13	0.00*	0.45	0.88	1.16
Queue Length 95th (m)	2.3	0.0	0.1	0.0	44.3	62.5
Control Delay (s/veh)	3.5	0.0	0.1	0.0	118.0	217.7
Lane LOS	A		A		F	F
Approach Delay (s/veh)	1.8		0.1		118.0	217.7
Approach LOS					F	F

Intersection Summary				
Average Delay	19.2			
Intersection Capacity Utilization	52.0%	ICU Level of Service	A	
Analysis Period (min)	15			

* Value less than 0.01.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	177	160	220	702	272	355	1649	90	103	1119	159
Future Volume (vph)	193	177	160	220	702	272	355	1649	90	103	1119	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00			1.00	
Frt		0.929			0.958			0.992			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3122	0	1687	3367	0	1703	4415	0	1787	4366	0
Flt Permitted	0.147			0.346			0.068			0.067		
Satd. Flow (perm)	263	3122	0	613	3367	0	122	4415	0	126	4366	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		144			38			7			19	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	208	190	172	237	755	292	382	1773	97	111	1203	171
Shared Lane Traffic (%)												
Lane Group Flow (vph)	208	362	0	237	1047	0	382	1870	0	111	1374	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

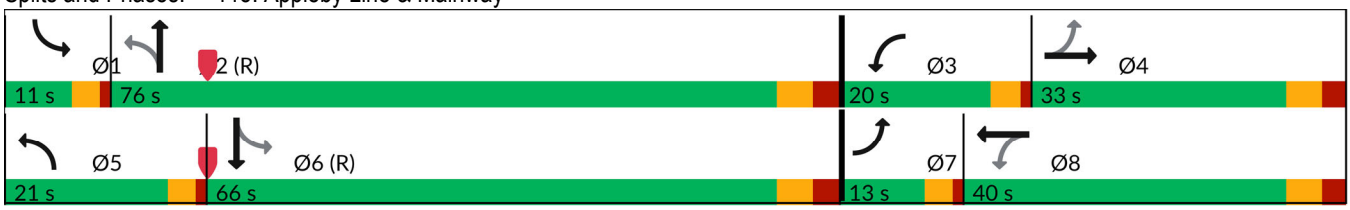


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	13.0	33.0		20.0	40.0		21.0	76.0		11.0	66.0	
Total Split (%)	9.3%	23.6%		14.3%	28.6%		15.0%	54.3%		7.9%	47.1%	
Maximum Green (s)	9.0	26.7		16.0	33.7		17.0	69.7		7.0	59.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	38.5	27.2		49.0	33.7		83.0	69.7		69.0	59.7	
Actuated g/C Ratio	0.28	0.19		0.35	0.24		0.59	0.50		0.49	0.43	
v/c Ratio	1.27	0.50		0.71	1.25		1.45	0.85		0.77	0.73	
Control Delay (s/veh)	192.6	32.5		47.9	163.6		249.3	17.6		59.3	26.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	192.6	32.5		47.9	163.6		249.3	17.6		59.3	26.5	
LOS	F	C		D	F		F	B		E	C	
Approach Delay (s/veh)		90.9			142.2			56.9			29.0	
Approach LOS		F			F			E			C	
Queue Length 50th (m)	~61.6	31.2		54.7	~198.6		~137.1	193.3		14.9	99.3	
Queue Length 95th (m)	#117.9	49.1		81.1	#243.8		m#184.0	160.7		m#42.3	117.6	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	164	722		337	839		264	2201		145	1872	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.27	0.50		0.70	1.25		1.45	0.85		0.77	0.73	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 85 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.45	
Intersection Signal Delay (s/veh): 72.5	Intersection LOS: E

Intersection Capacity Utilization 101.2% ICU Level of Service G
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

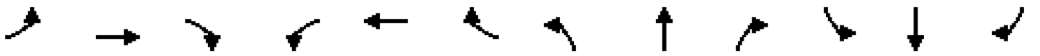


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	177	160	220	702	272	355	1649	90	103	1119	159
Future Volume (vph)	193	177	160	220	702	272	355	1649	90	103	1119	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3121		1686	3367		1703	4416		1787	4368	
Flt Permitted	0.15	1.00		0.35	1.00		0.07	1.00		0.07	1.00	
Satd. Flow (perm)	264	3121		614	3367		122	4416		126	4368	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	208	190	172	237	755	292	382	1773	97	111	1203	171
RTOR Reduction (vph)	0	116	0	0	29	0	0	4	0	0	11	0
Lane Group Flow (vph)	208	246	0	237	1018	0	382	1866	0	111	1363	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.2	27.2		46.7	33.7		80.7	69.7		66.7	59.7	
Effective Green, g (s)	36.2	27.2		46.7	33.7		80.7	69.7		66.7	59.7	
Actuated g/C Ratio	0.26	0.19		0.33	0.24		0.58	0.50		0.48	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	606		323	810		262	2198		143	1862	
v/s Ratio Prot	c0.08	0.08		0.08	c0.30		c0.18	0.42		0.04	0.31	
v/s Ratio Perm	0.25			0.16			c0.66			0.33		
v/c Ratio	1.30	0.41		0.73	1.26		1.46	0.85		0.78	0.73	
Uniform Delay, d1	47.7	49.3		36.8	53.2		44.1	30.6		27.9	33.5	
Progression Factor	1.00	1.00		1.00	1.00		1.27	0.49		1.19	0.73	
Incremental Delay, d2	173.0	0.4		8.4	125.6		217.2	2.4		20.8	2.3	
Delay (s)	220.7	49.8		45.1	178.8		273.3	17.5		54.0	26.6	
Level of Service	F	D		D	F		F	B		D	C	
Approach Delay (s/veh)		112.2			154.1			60.9			28.7	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	79.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.42		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	10	45	136	18	125	44	1930	173	111	1203	25
Future Volume (vph)	49	10	45	136	18	125	44	1930	173	111	1203	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		0.99	1.00			1.00	
Frt		0.942			0.940			0.988			0.997	
Flt Protected		0.977			0.976		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1724	0	1641	4367	0	1805	4450	0
Flt Permitted		0.703			0.781		0.163			0.045		
Satd. Flow (perm)	0	1243	0	0	1374	0	280	4367	0	86	4450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			27			16			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	52	11	48	145	19	133	47	2053	184	118	1280	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	297	0	47	2237	0	118	1307	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

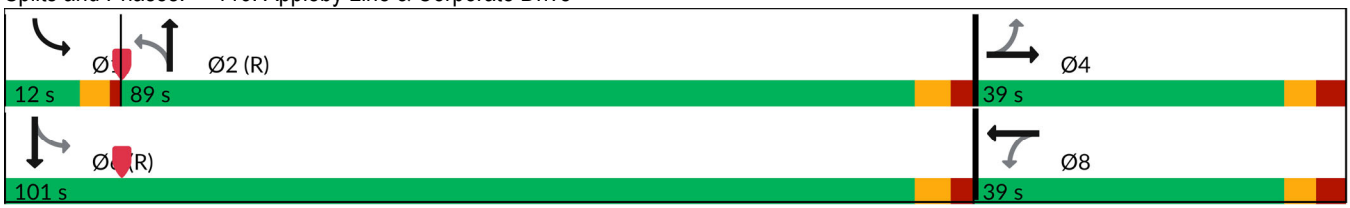


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		89.0	89.0		12.0	101.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%		63.6%	63.6%		8.6%	72.1%	
Maximum Green (s)	32.5	32.5		32.5	32.5		83.0	83.0		8.0	95.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		30.5			30.5		85.2	85.2		99.0	97.0	
Actuated g/C Ratio		0.22			0.22		0.61	0.61		0.71	0.69	
v/c Ratio		0.38			0.93		0.28	0.84		0.75	0.42	
Control Delay (s/veh)		38.9			83.7		8.1	14.4		46.5	11.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		38.9			83.7		8.1	14.4		46.5	11.6	
LOS		D			F		A	B		D	B	
Approach Delay (s/veh)		38.9			83.7			14.3			14.5	
Approach LOS		D			F			B			B	
Queue Length 50th (m)		20.7			77.3		2.5	267.7		20.7	68.4	
Queue Length 95th (m)		39.9			#131.4		m2.7	m175.3		m#38.3	106.7	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		308			339		170	2663		159	3085	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.36			0.88		0.28	0.84		0.74	0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 106 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 20.0	Intersection LOS: C

Intersection Capacity Utilization 83.8% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

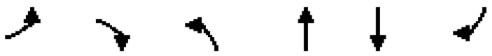
Splits and Phases: 116: Appleby Line & Corporate Drive



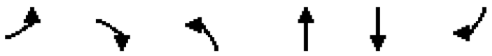
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	10	45	136	18	125	44	1930	173	111	1203	25
Future Volume (vph)	49	10	45	136	18	125	44	1930	173	111	1203	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		0.99	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1727			1717		1632	4365		1805	4449	
Flt Permitted		0.70			0.78		0.16	1.00		0.04	1.00	
Satd. Flow (perm)		1243			1374		280	4365		85	4449	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	52	11	48	145	19	133	47	2053	184	118	1280	27
RTOR Reduction (vph)	0	20	0	0	21	0	0	6	0	0	1	0
Lane Group Flow (vph)	0	91	0	0	276	0	47	2231	0	118	1306	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		30.5			30.5		85.1	85.1		97.0	97.0	
Effective Green, g (s)		30.5			30.5		85.1	85.1		97.0	97.0	
Actuated g/C Ratio		0.22			0.22		0.61	0.61		0.69	0.69	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		270			299		170	2653		155	3082	
v/s Ratio Prot								c0.51		c0.04	0.29	
v/s Ratio Perm		0.07			c0.20		0.17			0.48		
v/c Ratio		0.34			0.92		0.28	0.84		0.76	0.42	
Uniform Delay, d1		46.2			53.6		12.9	22.0		36.3	9.3	
Progression Factor		1.00			1.00		0.44	0.58		0.94	1.18	
Incremental Delay, d2		0.7			32.4		1.4	1.2		14.9	0.3	
Delay (s)		46.9			86.0		7.1	14.0		48.9	11.3	
Level of Service		D			F		A	B		D	B	
Approach Delay (s/veh)		46.9			86.0			13.9			14.4	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	150	488	158	2020	1084	28
Future Volume (vph)	150	488	158	2020	1084	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	1671	4471	4443	0
Flt Permitted	0.950		0.130			
Satd. Flow (perm)	1787	1553	228	4471	4443	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		177			5	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	167	542	176	2244	1204	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	167	542	176	2244	1235	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



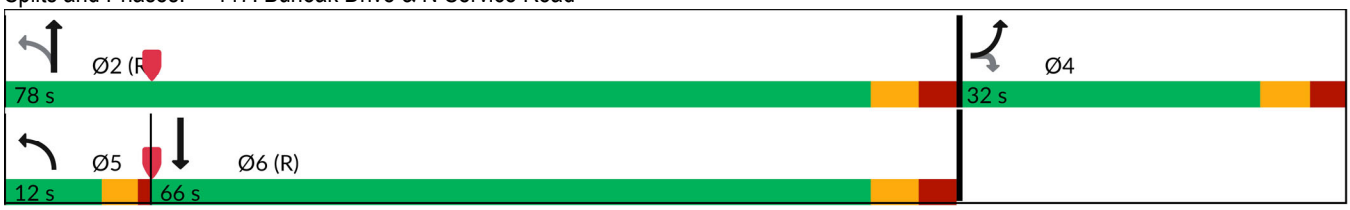
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.5	37.0	37.0	
Total Split (s)	32.0	32.0	12.0	78.0	66.0	
Total Split (%)	29.1%	29.1%	10.9%	70.9%	60.0%	
Maximum Green (s)	25.0	25.0	8.0	71.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	25.0	25.0	74.0	71.0	59.1	
Actuated g/C Ratio	0.23	0.23	0.67	0.65	0.54	
v/c Ratio	0.41	1.11	0.68	0.78	0.52	
Control Delay (s/veh)	39.9	101.5	15.7	13.9	12.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	39.9	101.5	15.7	13.9	12.7	
LOS	D	F	B	B	B	
Approach Delay (s/veh)	87.0			14.0	12.7	
Approach LOS	F			B	B	
Queue Length 50th (m)	32.6	~110.1	14.7	106.6	49.0	
Queue Length 95th (m)	53.8	#180.8	m13.3	m64.4	m51.7	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	406	489	258	2885	2389	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.41	1.11	0.68	0.78	0.52	

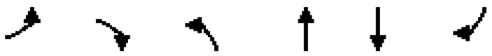
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 88 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay (s/veh): 25.5	Intersection LOS: C

Intersection Capacity Utilization 66.9%	ICU Level of Service C
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	150	488	158	2020	1084	28
Future Volume (vph)	150	488	158	2020	1084	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	1671	4471	4444	
Flt Permitted	0.95	1.00	0.13	1.00	1.00	
Satd. Flow (perm)	1787	1553	229	4471	4444	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	167	542	176	2244	1204	31
RTOR Reduction (vph)	0	137	0	0	2	0
Lane Group Flow (vph)	167	405	176	2244	1233	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	25.0	25.0	71.0	71.0	59.1	
Effective Green, g (s)	25.0	25.0	71.0	71.0	59.1	
Actuated g/C Ratio	0.23	0.23	0.65	0.65	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	406	352	251	2885	2387	
v/s Ratio Prot	0.09		0.05	c0.50	0.28	
v/s Ratio Perm		c0.26	0.40			
v/c Ratio	0.41	1.15	0.70	0.78	0.52	
Uniform Delay, d1	36.2	42.5	10.8	13.9	16.3	
Progression Factor	1.00	1.00	1.65	0.96	0.74	
Incremental Delay, d2	0.7	95.7	0.8	0.2	0.6	
Delay (s)	36.9	138.2	18.6	13.6	12.6	
Level of Service	D	F	B	B	B	
Approach Delay (s/veh)	114.4			13.9	12.6	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1923	1879	1078	0	0	1813
Future Volume (vph)	1923	1879	1078	0	0	1813
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor						
Frt	0.961	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3348	1441	4427	0	0	4471
Flt Permitted	0.964					
Satd. Flow (perm)	3348	1441	4427	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	21	21				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2068	2020	1159	0	0	1949
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	2795	1293	1159	0	0	1949
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	60.0	60.0	50.0			50.0
Total Split (%)	54.5%	54.5%	45.5%			45.5%
Maximum Green (s)	53.0	53.0	44.0			44.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
v/c Ratio	1.72	1.83	0.65			1.09
Control Delay (s/veh)	351.2	403.9	22.8			77.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	351.2	403.9	22.8			77.2
LOS	F	F	C			E
Approach Delay (s/veh)	367.9		22.8			77.2
Approach LOS	F		C			E
Queue Length 50th (m)	~492.6	~496.8	94.7			~213.0
Queue Length 95th (m)	#535.0	#590.4	55.6			m#228.7
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1624	705	1770			1788
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.72	1.83	0.65			1.09

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.83			
Intersection Signal Delay (s/veh): 233.6		Intersection LOS: F	

Intersection Capacity Utilization 120.4%	ICU Level of Service H
Analysis Period (min) 15	

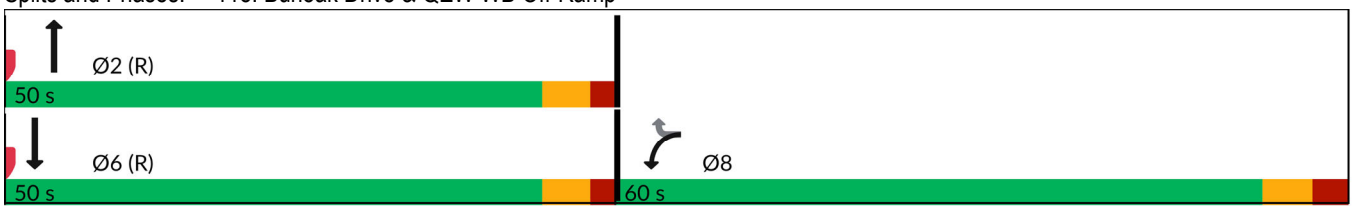
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

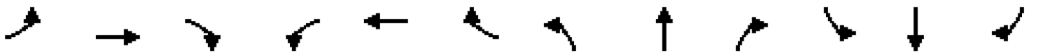




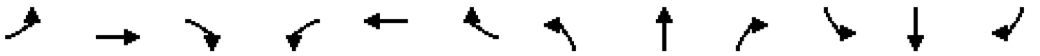
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1923	1879	1078	0	0	1813
Future Volume (vph)	1923	1879	1078	0	0	1813
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3349	1441	4427			4471
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3349	1441	4427			4471
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2068	2020	1159	0	0	1949
RTOR Reduction (vph)	11	11	0	0	0	0
Lane Group Flow (vph)	2784	1282	1159	0	0	1949
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	53.0	53.0	44.0			44.0
Effective Green, g (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1613	694	1770			1788
v/s Ratio Prot	0.83		0.26			c0.44
v/s Ratio Perm		c0.89				
v/c Ratio	1.73	1.85	0.65			1.09
Uniform Delay, d1	28.5	28.5	26.8			33.0
Progression Factor	1.00	1.00	0.77			0.86
Incremental Delay, d2	329.4	386.9	1.9			48.4
Delay (s)	357.9	415.4	22.6			76.9
Level of Service	F	F	C			E
Approach Delay (s/veh)	376.1		22.6			76.9
Approach LOS	F		C			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	238.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	120.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	65	302	0	0	143	0	854	11	9	2782	0
Future Volume (vph)	160	65	302	0	0	143	0	854	11	9	2782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.895	0.850			0.865		0.998				
Flt Protected	0.950											
Satd. Flow (prot)	1641	2950	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950										0.936	
Satd. Flow (perm)	1641	2950	1413	0	0	1596	0	5125	0	0	4807	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		159	159			436		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	168	68	318	0	0	151	0	899	12	9	2928	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	168	227	159	0	0	151	0	911	0	0	2937	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			5.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			39.0		39.0		39.0	39.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		25.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	16.7	16.7	16.7			79.3		66.8			66.8	
Actuated g/C Ratio	0.15	0.15	0.15			0.72		0.61			0.61	
v/c Ratio	0.68	0.39	0.46			0.12		0.29			1.01	
Control Delay (s/veh)	57.1	14.9	10.4			0.2		11.1			26.9	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	57.1	14.9	10.4			0.2		11.1			26.9	
LOS	E	B	B			A		B			C	
Approach Delay (s/veh)		26.4			0.2			11.1			26.9	
Approach LOS		C			A			B			C	
Queue Length 50th (m)	39.0	7.8	0.0			0.0		33.5			~202.4	
Queue Length 95th (m)	59.5	18.9	19.6			0.0		49.0			m124.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	387	818	455			1267		3114			2921	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.43	0.28	0.35			0.12		0.29			1.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay (s/veh): 22.8	Intersection LOS: C

Intersection Capacity Utilization 80.4% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

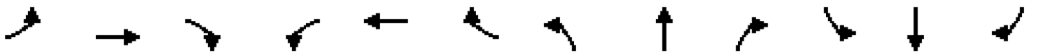
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



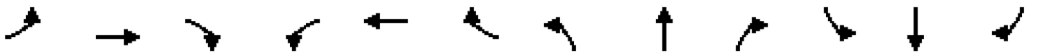
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	65	302	0	0	143	0	854	11	9	2782	0
Future Volume (vph)	160	65	302	0	0	143	0	854	11	9	2782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.89	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1641	2950	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1641	2950	1413			1596		5125			4808	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	168	68	318	0	0	151	0	899	12	9	2928	0
RTOR Reduction (vph)	0	135	135	0	0	52	0	1	0	0	0	0
Lane Group Flow (vph)	168	92	24	0	0	99	0	910	0	0	2937	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Actuated Green, G (s)	16.7	16.7	16.7			72.3		66.8			66.8	
Effective Green, g (s)	16.7	16.7	16.7			72.3		66.8			66.8	
Actuated g/C Ratio	0.15	0.15	0.15			0.66		0.61			0.61	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	249	447	214			1150		3112			2919	
v/s Ratio Prot	c0.10	0.03				c0.00		0.18				
v/s Ratio Perm			0.02			0.06					c0.61	
v/c Ratio	0.67	0.21	0.11			0.09		0.29			1.01	
Uniform Delay, d1	44.1	40.8	40.3			6.8		10.3			21.6	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.88	
Incremental Delay, d2	7.0	0.2	0.2			0.0		0.2			6.6	
Delay (s)	51.1	41.1	40.5			6.9		10.6			25.7	
Level of Service	D	D	D			A		B			C	
Approach Delay (s/veh)		44.0			6.9			10.6			25.7	
Approach LOS		D			A			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	43	164	291	231	185	328	1933	151	58	1383	56
Future Volume (vph)	65	43	164	291	231	185	328	1933	151	58	1383	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1644	0	1770	1696	0	1805	4335	0	1736	4395	0
Flt Permitted	0.372			0.195			0.062			0.066		
Satd. Flow (perm)	692	1644	0	363	1696	0	118	4335	0	121	4395	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		116			30			11			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Adj. Flow (vph)	66	44	167	297	236	189	335	1972	154	59	1411	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	66	211	0	297	425	0	335	2126	0	59	1468	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



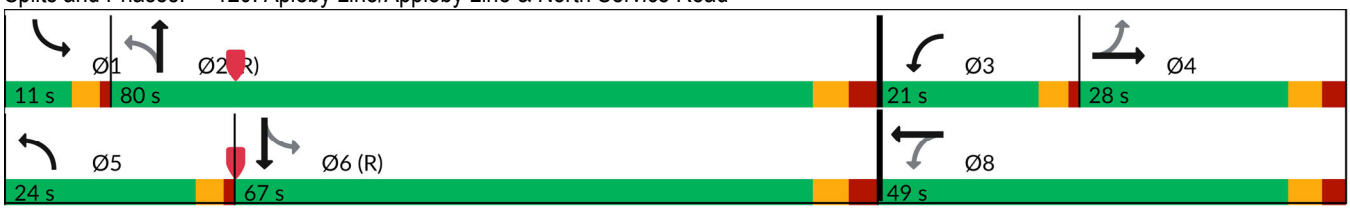
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	28.0	28.0		21.0	49.0		24.0	80.0		11.0	67.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%		17.1%	57.1%		7.9%	47.9%	
Maximum Green (s)	21.9	21.9		17.0	42.9		20.0	73.4		7.0	60.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.5	16.5		39.6	37.5		92.4	80.9		70.2	60.6	
Actuated g/C Ratio	0.12	0.12		0.28	0.27		0.66	0.58		0.50	0.43	
v/c Ratio	0.81	0.71		1.09	0.89		0.88	0.85		0.42	0.77	
Control Delay (s/veh)	116.3	39.1		120.8	67.1		47.3	18.5		23.9	44.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.5		0.0	0.0	
Total Delay (s/veh)	116.3	39.1		120.8	67.1		47.3	19.1		23.9	44.7	
LOS	F	D		F	E		D	B		C	D	
Approach Delay (s/veh)		57.5			89.2			22.9			43.9	
Approach LOS		E			F			C			D	
Queue Length 50th (m)	19.1	26.6		~77.8	113.4		78.4	174.2		8.5	187.7	
Queue Length 95th (m)	#41.0	54.2		#133.4	152.9		m#89.3	m150.8		m12.9	205.6	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	108	355		273	540		381	2511		142	1904	
Starvation Cap Reductn	0	0		0	0		0	113		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.61	0.59		1.09	0.79		0.88	0.89		0.42	0.77	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 40.8	Intersection LOS: D

Intersection Capacity Utilization 95.7%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	43	164	291	231	185	328	1933	151	58	1383	56
Future Volume (vph)	65	43	164	291	231	185	328	1933	151	58	1383	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1645		1770	1697		1805	4336		1736	4395	
Flt Permitted	0.37	1.00		0.20	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	692	1645		363	1697		118	4336		121	4395	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	66	44	167	297	236	189	335	1972	154	59	1411	57
RTOR Reduction (vph)	0	102	0	0	22	0	0	5	0	0	3	0
Lane Group Flow (vph)	66	109	0	297	403	0	335	2121	0	59	1465	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.5	16.5		37.5	37.5		89.8	80.2		66.2	60.6	
Effective Green, g (s)	16.5	16.5		37.5	37.5		89.8	80.2		66.2	60.6	
Actuated g/C Ratio	0.12	0.12		0.27	0.27		0.64	0.57		0.47	0.43	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	81	193		268	454		379	2483		121	1902	
v/s Ratio Prot		0.07		c0.13	0.24		c0.16	0.49		0.02	0.33	
v/s Ratio Perm	0.10			c0.16			c0.41			0.21		
v/c Ratio	0.81	0.56		1.11	0.89		0.88	0.85		0.49	0.77	
Uniform Delay, d1	60.3	58.3		46.1	49.2		43.7	25.0		24.8	33.8	
Progression Factor	1.00	1.00		1.00	1.00		1.12	0.68		1.12	1.25	
Incremental Delay, d2	44.4	3.7		87.1	18.5		2.5	0.4		2.1	2.2	
Delay (s)	104.7	62.1		133.3	67.8		51.3	17.4		30.0	44.4	
Level of Service	F	E		F	E		D	B		C	D	
Approach Delay (s/veh)		72.2			94.7			22.0			43.8	
Approach LOS		E			F			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	978	1041	2016	0	0	1885
Future Volume (vph)	978	1041	2016	0	0	1885
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1553	4385	0	0	4471
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1553	4385	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		10				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Adj. Flow (vph)	1008	1073	2078	0	0	1943
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1008	1073	2078	0	0	1943
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

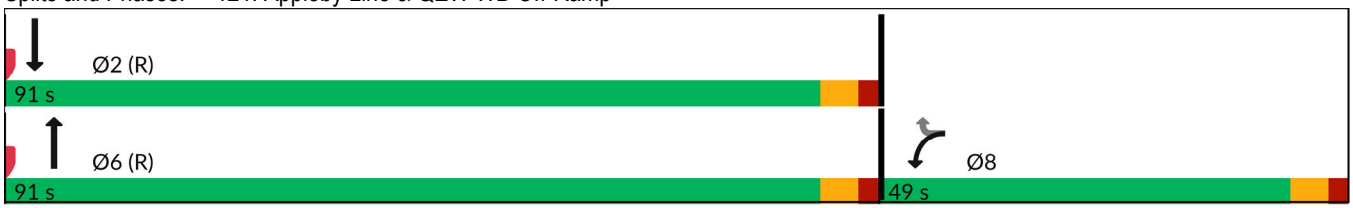


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
v/c Ratio	0.97	2.22	0.78			0.72
Control Delay (s/veh)	68.4	580.8	15.1			9.9
Queue Delay	0.0	0.0	0.2			0.0
Total Delay (s/veh)	68.4	580.8	15.3			10.0
LOS	E	F	B			A
Approach Delay (s/veh)	332.6		15.3			10.0
Approach LOS	F		B			A
Queue Length 50th (m)	152.5	~519.9	162.4			58.9
Queue Length 95th (m)	#198.6	#607.0	86.4			m63.7
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1044	483	2662			2714
Starvation Cap Reductn	0	0	0			29
Spillback Cap Reductn	0	0	115			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.97	2.22	0.82			0.72

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.22			
Intersection Signal Delay (s/veh): 121.8		Intersection LOS: F	
Intersection Capacity Utilization 113.4%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

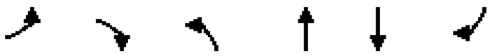
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



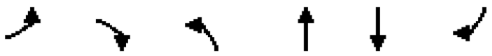


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	978	1041	2016	0	0	1885
Future Volume (vph)	978	1041	2016	0	0	1885
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1553	4385			4471
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1553	4385			4471
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1008	1073	2078	0	0	1943
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	1008	1066	2078	0	0	1943
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	43.0	43.0	85.0			85.0
Effective Green, g (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1044	476	2662			2714
v/s Ratio Prot	0.30		c0.47			0.43
v/s Ratio Perm		c0.69				
v/c Ratio	0.97	2.24	0.78			0.72
Uniform Delay, d1	47.8	48.5	20.5			19.1
Progression Factor	1.00	1.00	0.63			0.46
Incremental Delay, d2	19.8	564.6	2.0			1.0
Delay (s)	67.6	613.1	14.9			9.8
Level of Service	E	F	B			A
Approach Delay (s/veh)	348.9		14.9			9.8
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	127.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	580	442	0	1566	2312	0
Future Volume (vph)	580	442	0	1566	2312	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	4343	4427	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	4343	4427	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		9				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Adj. Flow (vph)	586	446	0	1582	2335	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	586	446	0	1582	2335	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



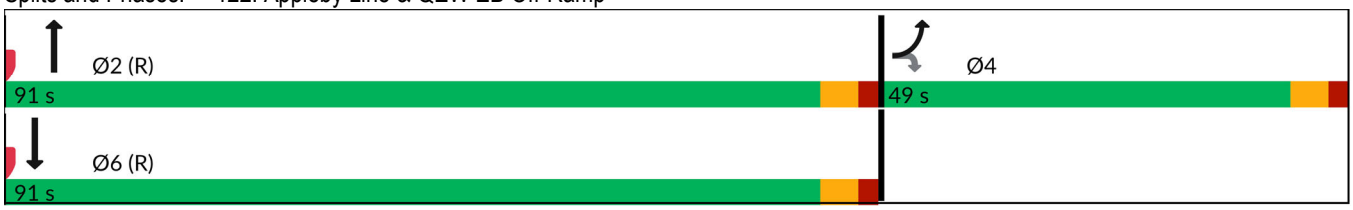
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	31.0	31.0		97.0	97.0	
Actuated g/C Ratio	0.22	0.22		0.69	0.69	
v/c Ratio	0.79	0.74		0.53	0.76	
Control Delay (s/veh)	59.6	57.3		11.1	10.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	59.6	57.3		11.1	10.2	
LOS	E	E		B	B	
Approach Delay (s/veh)	58.6			11.1	10.2	
Approach LOS	E			B	B	
Queue Length 50th (m)	86.9	71.0		85.8	123.0	
Queue Length 95th (m)	102.5	87.8		m84.7	m202.0	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1024	829		3008	3067	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.57	0.54		0.53	0.76	

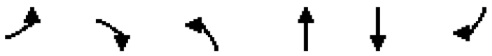
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 20.6		Intersection LOS: C	
Intersection Capacity Utilization 113.4%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	580	442	0	1566	2312	0
Future Volume (vph)	580	442	0	1566	2312	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		4343	4427	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		4343	4427	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	586	446	0	1582	2335	0
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	586	439	0	1582	2335	0
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	31.0	31.0		97.0	97.0	
Effective Green, g (s)	31.0	31.0		97.0	97.0	
Actuated g/C Ratio	0.22	0.22		0.69	0.69	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	738	593		3009	3067	
v/s Ratio Prot	c0.18			0.36	c0.53	
v/s Ratio Perm		0.16				
v/c Ratio	0.79	0.74		0.53	0.76	
Uniform Delay, d1	51.5	50.8		10.4	14.0	
Progression Factor	1.00	1.00		0.97	0.61	
Incremental Delay, d2	5.9	4.9		0.4	1.1	
Delay (s)	57.4	55.7		10.5	9.5	
Level of Service	E	E		B	A	
Approach Delay (s/veh)	56.6			10.5	9.5	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	113.4%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	326	263	179	452	572	399	102	926	184	192	1527	285
Future Volume (vph)	326	263	179	452	572	399	102	926	184	192	1527	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.939			0.938				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	1736	3216	0	1736	4471	1404	1687	4471	1538
Flt Permitted	0.215			0.177			0.071			0.165		
Satd. Flow (perm)	396	3288	0	322	3216	0	130	4471	1382	293	4471	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		100			114				151			243
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Adj. Flow (vph)	333	268	183	461	584	407	104	945	188	196	1558	291
Shared Lane Traffic (%)												
Lane Group Flow (vph)	333	451	0	461	991	0	104	945	188	196	1558	291
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



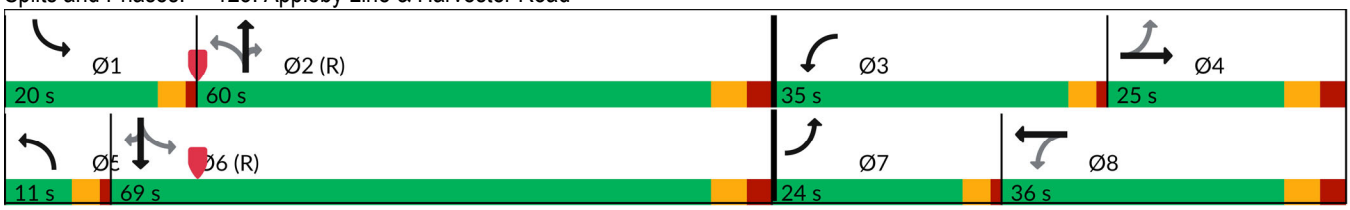
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.6		31.0	29.6		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	41.0	18.6		56.0	29.6		65.5	56.2	56.2	75.7	62.7	62.7
Actuated g/C Ratio	0.29	0.13		0.40	0.21		0.47	0.40	0.40	0.54	0.45	0.45
v/c Ratio	1.08	0.86		1.05	1.29		0.74	0.53	0.29	0.67	0.78	0.36
Control Delay (s/veh)	111.6	63.1		93.9	178.4		61.4	41.8	18.8	30.9	33.1	7.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	111.6	63.1		93.9	178.4		61.4	41.8	18.8	30.9	33.1	7.8
LOS	F	E		F	F		E	D	B	C	C	A
Approach Delay (s/veh)		83.7			151.5			39.9			29.3	
Approach LOS		F			F			D			C	
Queue Length 50th (m)	~90.8	54.5		~131.1	~183.0		18.0	120.4	17.4	28.9	129.6	10.8
Queue Length 95th (m)	#156.5	#83.1		#203.6	#228.5		m#38.5	138.5	m48.4	m50.7	149.0	m26.8
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	309	523		441	769		141	1795	645	318	2002	808
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.08	0.86		1.05	1.29		0.74	0.53	0.29	0.62	0.78	0.36

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.29	
Intersection Signal Delay (s/veh): 71.6	Intersection LOS: E

Intersection Capacity Utilization 101.6%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

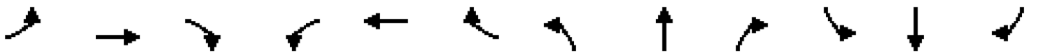
Splits and Phases: 123: Appleby Line & Harvester Road



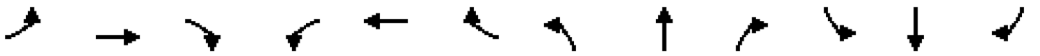
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	326	263	179	452	572	399	102	926	184	192	1527	285
Future Volume (vph)	326	263	179	452	572	399	102	926	184	192	1527	285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3288		1735	3217		1736	4471	1382	1687	4471	1506
Flt Permitted	0.22	1.00		0.18	1.00		0.07	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	397	3288		323	3217		130	4471	1382	292	4471	1506
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	333	268	183	461	584	407	104	945	188	196	1558	291
RTOR Reduction (vph)	0	87	0	0	90	0	0	0	90	0	0	134
Lane Group Flow (vph)	333	364	0	461	901	0	104	945	98	196	1558	157
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.6	18.6		53.6	29.6		63.2	56.2	56.2	73.7	62.7	62.7
Effective Green, g (s)	38.6	18.6		53.6	29.6		63.2	56.2	56.2	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.13		0.38	0.21		0.45	0.40	0.40	0.53	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	436		436	680		138	1794	554	288	2002	674
v/s Ratio Prot	0.16	0.11		c0.23	c0.28		0.04	0.21		c0.07	c0.35	
v/s Ratio Perm	0.15			0.17			0.30		0.07	0.29		0.10
v/c Ratio	1.10	0.84		1.06	1.33		0.75	0.53	0.18	0.68	0.78	0.23
Uniform Delay, d1	46.0	59.2		41.9	55.2		27.7	31.8	27.0	20.6	32.8	23.8
Progression Factor	1.00	1.00		1.00	1.00		1.41	1.26	2.46	1.36	0.94	1.42
Incremental Delay, d2	80.9	13.0		59.1	156.4		18.6	1.0	0.6	4.4	2.1	0.5
Delay (s)	126.9	72.2		101.0	211.6		57.6	41.1	67.1	32.5	32.8	34.5
Level of Service	F	E		F	F		E	D	E	C	C	C
Approach Delay (s/veh)		95.4			176.5			46.4			33.0	
Approach LOS		F			F			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	82.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	451	104	400	233	199	167	228	606	109	172	1280	994
Future Volume (vph)	451	104	400	233	199	167	228	606	109	172	1280	994
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97			0.89	0.96		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	1810	1468	1752	1776	1599	1626	5136	1599	1787	4515	1482
Flt Permitted	0.950			0.687			0.075			0.401		
Satd. Flow (perm)	3319	1810	1384	1217	1776	1550	128	5136	1420	727	4515	1385
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			214			174			129			527
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Adj. Flow (vph)	470	108	417	243	207	174	238	631	114	179	1333	1035
Shared Lane Traffic (%)												
Lane Group Flow (vph)	470	108	417	243	207	174	238	631	114	179	1333	1035
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	30.0	49.0	49.0	20.0	39.0	39.0	15.0	58.0	58.0	13.0	56.0	56.0
Total Split (%)	21.4%	35.0%	35.0%	14.3%	27.9%	27.9%	10.7%	41.4%	41.4%	9.3%	40.0%	40.0%
Maximum Green (s)	25.0	42.5	42.5	16.0	32.5	32.5	11.0	51.2	51.2	9.0	49.2	49.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	23.2	31.2	31.2	40.8	22.6	22.6	78.0	61.0	61.0	62.9	49.2	49.2
Actuated g/C Ratio	0.17	0.22	0.22	0.29	0.16	0.16	0.56	0.44	0.44	0.45	0.35	0.35
v/c Ratio	0.84	0.27	0.88	0.59	0.72	0.44	0.76	0.28	0.16	0.44	0.84	1.25
Control Delay (s/veh)	70.9	44.4	44.6	37.1	69.2	9.8	51.8	27.4	3.9	14.3	33.9	134.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.9	44.4	44.6	37.1	69.2	9.8	51.8	27.4	3.9	14.3	33.9	134.4
LOS	E	D	D	D	E	A	D	C	A	B	C	F
Approach Delay (s/veh)		57.0			40.1			30.6			73.4	
Approach LOS		E			D			C			E	
Queue Length 50th (m)	70.3	27.1	66.7	51.4	61.5	0.0	54.6	44.2	0.0	16.9	150.8	~327.2
Queue Length 95th (m)	91.1	41.1	105.8	65.2	83.4	19.7	#142.3	60.2	10.4	m22.7	m156.2	m#358.2
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	601	549	569	418	412	493	314	2237	691	411	1586	828
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.20	0.73	0.58	0.50	0.35	0.76	0.28	0.16	0.44	0.84	1.25

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay (s/veh): 58.0	Intersection LOS: E

Intersection Capacity Utilization 106.8%	ICU Level of Service G
Analysis Period (min) 15	

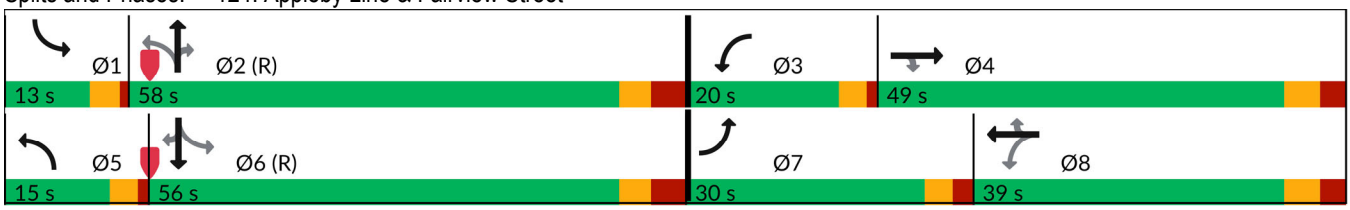
* User Entered Value

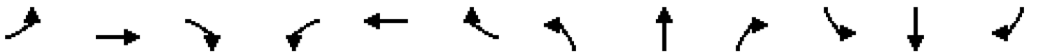
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	451	104	400	233	199	167	228	606	109	172	1280	994
Future Volume (vph)	451	104	400	233	199	167	228	606	109	172	1280	994
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.89	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	1810	1384	1706	1776	1550	1626	5136	1420	1761	4515	1385
Flt Permitted	0.95	1.00	1.00	0.69	1.00	1.00	0.08	1.00	1.00	0.40	1.00	1.00
Satd. Flow (perm)	3367	1810	1384	1234	1776	1550	129	5136	1420	744	4515	1385
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	470	108	417	243	207	174	238	631	114	179	1333	1035
RTOR Reduction (vph)	0	0	166	0	0	146	0	0	64	0	0	342
Lane Group Flow (vph)	470	108	251	243	207	28	238	631	50	179	1333	693
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	23.2	31.2	31.2	38.4	22.7	22.7	75.8	60.9	60.9	60.0	49.1	49.1
Effective Green, g (s)	23.2	31.2	31.2	38.4	22.7	22.7	75.8	60.9	60.9	60.0	49.1	49.1
Actuated g/C Ratio	0.17	0.22	0.22	0.27	0.16	0.16	0.54	0.44	0.44	0.43	0.35	0.35
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	557	403	308	391	287	251	312	2234	617	398	1583	485
v/s Ratio Prot	c0.14	0.06		0.07	0.12		c0.12	0.12		0.04	0.30	
v/s Ratio Perm			c0.18	0.10		0.02	0.29		0.03	0.16		c0.50
v/c Ratio	0.84	0.27	0.81	0.62	0.72	0.11	0.76	0.28	0.08	0.45	0.84	1.43
Uniform Delay, d1	56.6	45.0	51.6	43.0	55.6	50.1	39.2	25.5	23.2	25.4	41.9	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.72	0.52
Incremental Delay, d2	11.2	0.4	15.1	3.1	8.6	0.2	10.5	0.3	0.3	0.5	3.9	200.8
Delay (s)	67.8	45.3	66.7	46.1	64.3	50.3	49.7	25.8	23.4	17.0	33.8	224.2
Level of Service	E	D	E	D	E	D	D	C	C	B	C	F
Approach Delay (s/veh)		64.9			53.3			31.3			110.0	
Approach LOS		E			D			C			F	

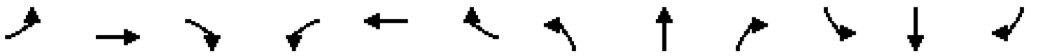
Intersection Summary			
HCM 2000 Control Delay (s/veh)	79.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	106.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	333	0	0	826	5	0	0	0	7	0	102
Future Volume (vph)	16	333	0	0	826	5	0	0	0	7	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.874	
Flt Protected		0.998									0.997	
Satd. Flow (prot)	0	3532	0	0	3536	0	0	1863	0	0	1623	0
Flt Permitted		0.998									0.997	
Satd. Flow (perm)	0	3532	0	0	3536	0	0	1863	0	0	1623	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		639.9			114.1			74.7			122.7	
Travel Time (s)		38.4			6.8			6.7			11.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	362	0	0	898	5	0	0	0	8	0	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	379	0	0	903	0	0	0	0	0	119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

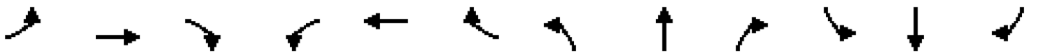
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.4%		ICU Level of Service A	
Analysis Period (min) 15			



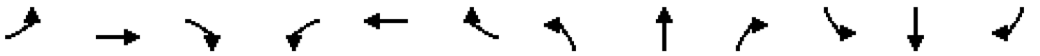
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	333	0	0	826	5	0	0	0	7	0	102
Future Volume (Veh/h)	16	333	0	0	826	5	0	0	0	7	0	102
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	362	0	0	898	5	0	0	0	8	0	111
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	903			362			956	1299	181	1116	1297	452
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	903			362			956	1299	181	1116	1297	452
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	95	100	80
cM capacity (veh/h)	749			1193			167	157	831	160	157	555

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	198	181	449	454	0	119
Volume Left	17	0	0	0	0	8
Volume Right	0	0	0	5	0	111
cSH	749	1700	1193	1700	1700	476
Volume to Capacity	0.02	0.11	0.00	0.27	0.00	0.25
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	7.8
Control Delay (s/veh)	1.1	0.0	0.0	0.0	0.0	15.1
Lane LOS	A				A	C
Approach Delay (s/veh)	0.6		0.0		0.0	15.1
Approach LOS					A	C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	36.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	767	327	512	1643	275	534	1123	435	346	822	250
Future Volume (vph)	194	767	327	512	1643	275	534	1123	435	346	822	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.98	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5036	1523	3337	5085	1515	3477	5085	1521	3420	5085	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			273			284			342			160
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	200	791	337	528	1694	284	551	1158	448	357	847	258
Shared Lane Traffic (%)												
Lane Group Flow (vph)	200	791	337	528	1694	284	551	1158	448	357	847	258
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	17.0	50.0	50.0	35.0	68.0	68.0	21.0	34.0	34.0	21.0	34.0	34.0
Total Split (%)	12.1%	35.7%	35.7%	25.0%	48.6%	48.6%	15.0%	24.3%	24.3%	15.0%	24.3%	24.3%
Maximum Green (s)	12.0	42.6	42.6	30.0	60.6	60.6	16.0	26.6	26.6	16.0	26.6	26.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	11.9	40.7	40.7	27.7	56.5	56.5	20.1	28.7	28.7	18.0	26.6	26.6
Actuated g/C Ratio	0.09	0.29	0.29	0.20	0.40	0.40	0.14	0.21	0.21	0.13	0.19	0.19
v/c Ratio	0.68	0.54	0.53	0.79	0.83	0.36	1.10	1.11	0.77	0.81	0.88	0.61
Control Delay (s/veh)	74.8	43.2	11.7	62.7	41.1	4.0	101.1	105.2	29.1	74.1	66.3	26.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.8	43.2	11.7	62.7	41.1	4.0	101.1	105.2	29.1	74.1	66.3	26.2
LOS	E	D	B	E	D	A	F	F	C	E	E	C
Approach Delay (s/veh)		39.9			41.4			88.3			61.1	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	30.1	73.3	14.2	77.1	160.6	0.0	~99.6	~154.2	58.6	53.1	90.1	25.7
Queue Length 95th (m)	44.2	85.8	43.6	98.3	173.8	17.8	m#116.4	m#160.9	m62.6	#84.6	#111.8	57.4
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	294	1532	653	721	2201	816	503	1043	584	441	966	423
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.52	0.52	0.73	0.77	0.35	1.10	1.11	0.77	0.81	0.88	0.61

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay (s/veh): 58.6	Intersection LOS: E

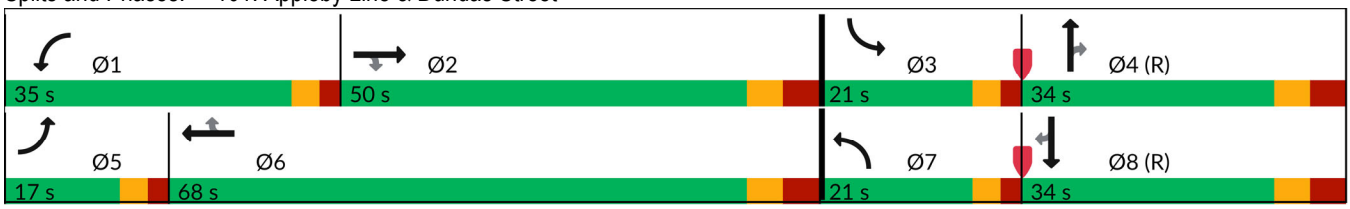
Intersection Capacity Utilization 109.5%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

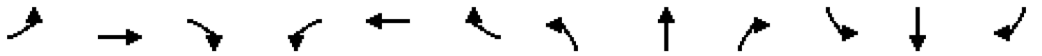
Splits and Phases: 101: Appleby Line & Dundas Street



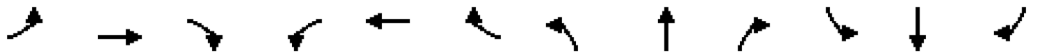
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	767	327	512	1643	275	534	1123	435	346	822	250
Future Volume (vph)	194	767	327	512	1643	275	534	1123	435	346	822	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	200	791	337	528	1694	284	551	1158	448	357	847	258
RTOR Reduction (vph)	0	0	194	0	0	169	0	0	272	0	0	129
Lane Group Flow (vph)	200	791	143	528	1694	115	551	1158	176	357	847	129
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	11.9	40.7	40.7	27.7	56.5	56.5	20.1	28.8	28.8	18.0	26.7	26.7
Effective Green, g (s)	11.9	40.7	40.7	27.7	56.5	56.5	20.1	28.8	28.8	18.0	26.7	26.7
Actuated g/C Ratio	0.09	0.29	0.29	0.20	0.40	0.40	0.14	0.21	0.21	0.13	0.19	0.19
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	291	1464	442	666	2052	611	502	1046	312	441	969	294
v/s Ratio Prot	0.06	0.16		c0.16	c0.33		c0.16	c0.23		0.10	0.17	
v/s Ratio Perm			0.09			0.08			0.12			0.08
v/c Ratio	0.69	0.54	0.32	0.79	0.83	0.19	1.10	1.11	0.57	0.81	0.87	0.44
Uniform Delay, d1	62.2	41.8	38.9	53.4	37.3	26.9	60.0	55.6	50.0	59.3	55.0	50.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.03	2.01	1.00	1.00	1.00
Incremental Delay, d2	8.4	0.4	0.4	7.4	2.9	0.1	52.4	52.3	1.9	11.9	10.8	4.7
Delay (s)	70.7	42.2	39.3	60.8	40.2	27.1	106.5	109.8	102.5	71.2	65.8	54.7
Level of Service	E	D	D	E	D	C	F	F	F	E	E	D
Approach Delay (s/veh)		45.7			43.0			107.4			65.2	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	66.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	109.5%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	413	286	152	896	546	402	1721	137	308	963	256
Future Volume (vph)	205	413	286	152	896	546	402	1721	137	308	963	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.98		0.99		0.97	1.00	1.00			0.99	
Frt		0.939				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3332	0	1736	4560	1599	3502	4359	0	1787	4290	0
Flt Permitted	0.135			0.140			0.950			0.070		
Satd. Flow (perm)	246	3332	0	254	4560	1549	3489	4359	0	132	4290	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		114				196		10			42	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	207	417	289	154	905	552	406	1738	138	311	973	259
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	706	0	154	905	552	406	1876	0	311	1232	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	36.0		14.0	35.0	35.0	30.0	72.0		18.0	60.0	
Total Split (%)	10.7%	25.7%		10.0%	25.0%	25.0%	21.4%	51.4%		12.9%	42.9%	
Maximum Green (s)	11.0	29.6		10.0	28.6	28.6	25.0	65.5		14.0	53.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	43.0	29.6		41.0	28.6	28.6	21.1	65.5		73.9	57.4	
Actuated g/C Ratio	0.31	0.21		0.29	0.20	0.20	0.15	0.47		0.53	0.41	
v/c Ratio	1.08	0.89		0.86	0.97	1.17	0.77	0.92		1.33	0.69	
Control Delay (s/veh)	124.4	59.1		75.1	78.5	128.1	82.4	26.6		201.7	43.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	124.4	59.1		75.1	78.5	128.1	82.4	26.6		201.7	43.7	
LOS	F	E		E	E	F	F	C		F	D	
Approach Delay (s/veh)		73.9			95.2			36.6			75.5	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~50.9	90.6		34.0	110.1	~144.2	65.0	113.0		~103.3	102.2	
Queue Length 95th (m)	#105.9	#124.7		#70.1	#144.6	#218.9	m73.2	194.0		m#148.7	124.2	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	192	794		180	931	472	625	2044		234	1783	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.08	0.89		0.86	0.97	1.17	0.65	0.92		1.33	0.69	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay (s/veh): 66.3	Intersection LOS: E

Intersection Capacity Utilization 101.7%	ICU Level of Service G
Analysis Period (min) 15	

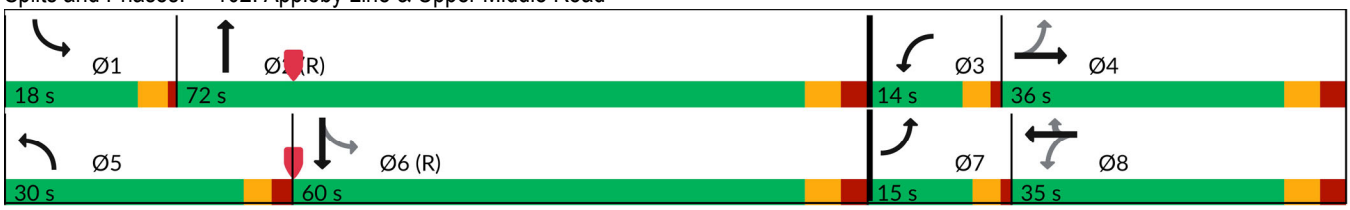
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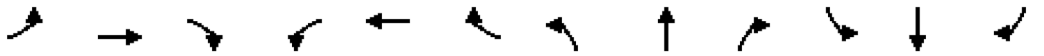
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



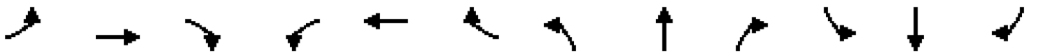


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	413	286	152	896	546	402	1721	137	308	963	256
Future Volume (vph)	205	413	286	152	896	546	402	1721	137	308	963	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3331		1734	4560	1549	3502	4359		1787	4292	
Flt Permitted	0.14	1.00		0.14	1.00	1.00	0.95	1.00		0.07	1.00	
Satd. Flow (perm)	247	3331		255	4560	1549	3502	4359		131	4292	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	207	417	289	154	905	552	406	1738	138	311	973	259
RTOR Reduction (vph)	0	90	0	0	0	156	0	5	0	0	25	0
Lane Group Flow (vph)	207	616	0	154	905	396	406	1871	0	311	1207	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	40.6	29.6		38.6	28.6	28.6	21.1	65.5		71.4	57.4	
Effective Green, g (s)	40.6	29.6		38.6	28.6	28.6	21.1	65.5		71.4	57.4	
Actuated g/C Ratio	0.29	0.21		0.28	0.20	0.20	0.15	0.47		0.51	0.41	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	704		175	931	316	527	2039		232	1759	
v/s Ratio Prot	c0.09	0.18		0.06	0.20		0.12	c0.43		c0.13	0.28	
v/s Ratio Perm	0.23			0.18		c0.26				c0.55		
v/c Ratio	1.10	0.88		0.88	0.97	1.25	0.77	0.92		1.34	0.69	
Uniform Delay, d1	43.8	53.4		42.2	55.3	55.7	57.1	34.7		43.8	33.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.36	0.64		1.13	1.26	
Incremental Delay, d2	95.3	11.7		36.4	22.8	137.4	3.2	4.0		170.4	1.4	
Delay (s)	139.1	65.2		78.6	78.1	193.1	81.1	26.3		219.9	44.3	
Level of Service	F	E		E	E	F	F	C		F	D	
Approach Delay (s/veh)		81.9			117.5			36.0			79.7	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	73.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	901	27	0	1803	0	73	0	15	3	0	4
Future Volume (vph)	3	901	27	0	1803	0	73	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.996							0.850		0.923	
Flt Protected	0.950							0.950			0.979	
Satd. Flow (prot)	1805	4482	0	1900	4515	0	0	1805	1615	0	1704	0
Flt Permitted	0.052							0.753			0.946	
Satd. Flow (perm)	99	4482	0	1900	4515	0	0	1429	1593	0	1645	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5							45		45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	948	28	0	1898	0	77	0	16	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	976	0	0	1898	0	0	77	16	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	67.0	67.0		9.0	80.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
v/c Ratio	0.05	0.33			0.63			0.20	0.04		0.01	
Control Delay (s/veh)	9.0	8.8			20.4			35.9	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.0	8.8			20.4			35.9	0.1		0.0	
LOS	A	A			C			D	A		A	
Approach Delay (s/veh)		8.8			20.4			29.7				
Approach LOS		A			C			C				
Queue Length 50th (m)	0.3	39.3			143.7			14.8	0.0		0.0	
Queue Length 95th (m)	1.6	47.7			m143.2			28.3	0.4		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	66	2989			3010			381	457		471	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.05	0.33			0.63			0.20	0.04		0.01	

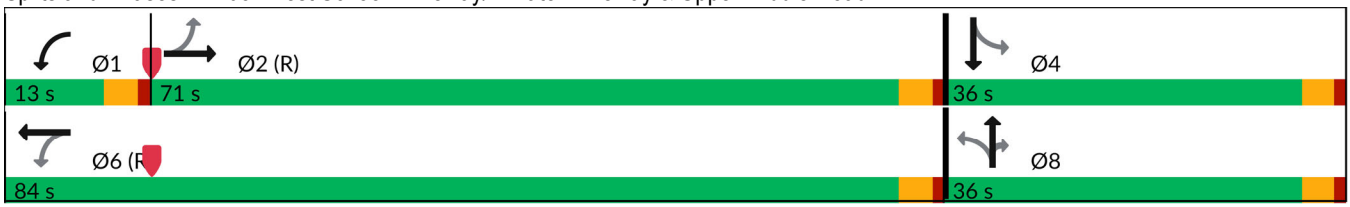
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 16.8	Intersection LOS: B

Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	901	27	0	1803	0	73	0	15	3	0	4
Future Volume (vph)	3	901	27	0	1803	0	73	0	15	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1805	4481			4515			1803	1593		1703	
Flt Permitted	0.05	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	100	4481			4515			1429	1593		1646	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	948	28	0	1898	0	77	0	16	3	0	4
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	12	0	5	0
Lane Group Flow (vph)	3	974	0	0	1898	0	0	77	4	0	2	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Effective Green, g (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	66	2987			3010			381	424		438	
v/s Ratio Prot		0.22			c0.42							
v/s Ratio Perm	0.03							c0.05	0.00		0.00	
v/c Ratio	0.05	0.33			0.63			0.20	0.01		0.00	
Uniform Delay, d1	6.9	8.5			11.5			34.1	32.4		32.3	
Progression Factor	1.00	1.00			1.70			1.00	1.00		1.00	
Incremental Delay, d2	1.3	0.3			0.5			1.2	0.0		0.0	
Delay (s)	8.2	8.8			20.1			35.3	32.4		32.3	
Level of Service	A	A			C			D	C		C	
Approach Delay (s/veh)		8.8			20.1			34.8			32.3	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	923	10	20	1775	31	59
Future Volume (vph)	923	10	20	1775	31	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4506	0	1570	4515	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4506	0	1570	4515	1805	1568
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	982	11	21	1888	33	63
Shared Lane Traffic (%)						
Lane Group Flow (vph)	993	0	21	1888	33	63
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

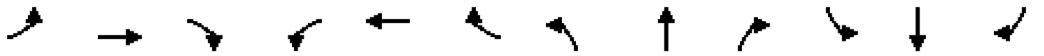
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.3%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	923	10	20	1775	31	59
Future Volume (Veh/h)	923	10	20	1775	31	59
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	982	11	21	1888	33	63
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.94		0.94	0.94
vC, conflicting volume			1010		1676	350
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			772		1483	66
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			97		69	93
cM capacity (veh/h)			701		106	905

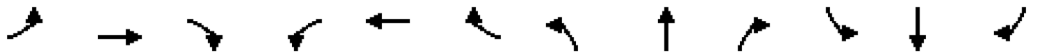
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	393	393	207	21	629	629	629	33	63
Volume Left	0	0	0	21	0	0	0	33	0
Volume Right	0	0	11	0	0	0	0	0	63
cSH	1700	1700	1700	701	1700	1700	1700	106	905
Volume to Capacity	0.23	0.23	0.12	0.03	0.37	0.37	0.37	0.31	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.7	0.0	0.0	0.0	9.6	1.8
Control Delay (s/veh)	0.0	0.0	0.0	10.3	0.0	0.0	0.0	53.9	9.3
Lane LOS				B				F	A
Approach Delay (s/veh)	0.0			0.1				24.6	
Approach LOS								C	

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	44.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	733	72	1	1653	195	14	0	1	52	0	118
Future Volume (vph)	171	733	72	1	1653	195	14	0	1	52	0	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.984			0.992			0.906	
Flt Protected	0.950							0.955			0.985	
Satd. Flow (prot)	1805	4452	0	0	4443	0	0	1765	0	0	1696	0
Flt Permitted	0.950							0.955			0.985	
Satd. Flow (perm)	1805	4452	0	0	4443	0	0	1765	0	0	1696	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			163.6			235.5	
Travel Time (s)		7.1			17.4			14.7			21.2	
Confl. Peds. (#/hr)	13					13						1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	178	764	75	1	1722	203	15	0	1	54	0	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	839	0	0	1926	0	0	16	0	0	177	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			
* User Entered Value			

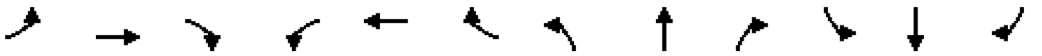


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	171	733	72	1	1653	195	14	0	1	52	0	118
Future Volume (Veh/h)	171	733	72	1	1653	195	14	0	1	52	0	118
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	178	764	75	1	1722	203	15	0	1	54	0	123
Pedestrians		1									13	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked	0.62						0.62	0.62		0.62	0.62	0.62
vC, conflicting volume	1938			839			1858	3098	292	2450	3034	690
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	348			839			217	2227	292	1178	2123	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			100			95	100	100	26	100	82
cM capacity (veh/h)	746			791			293	20	704	73	23	665

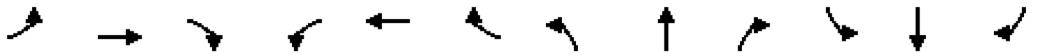
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	178	306	306	228	432	861	634	16	177
Volume Left	178	0	0	0	1	0	0	15	54
Volume Right	0	0	0	75	0	0	203	1	123
cSH	746	1700	1700	1700	791	1700	1700	304	192
Volume to Capacity	0.24	0.18	0.18	0.13	0.00*	0.51	0.37	0.05	0.92
Queue Length 95th (m)	7.4	0.0	0.0	0.0	0.0	0.0	0.0	1.3	58.2
Control Delay (s/veh)	11.3	0.0	0.0	0.0	0.0	0.0	0.0	17.5	96.3
Lane LOS	B				A			C	F
Approach Delay (s/veh)	2.0				0.0			17.5	96.3
Approach LOS								C	F

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	71.7%	ICU Level of Service		C
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	538	43	8	1568	571	69	5	5	227	2	183
Future Volume (vph)	210	538	43	8	1568	571	69	5	5	227	2	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						0.99	
Frt		0.989			0.960			0.992			0.940	
Flt Protected	0.950							0.958			0.973	
Satd. Flow (prot)	1752	4462	0	0	4290	0	0	1770	0	0	1711	0
Flt Permitted	0.058				0.937			0.592			0.799	
Satd. Flow (perm)	107	4462	0	0	4020	0	0	1094	0	0	1399	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			115			3			33	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			159.9			321.0	
Travel Time (s)		17.4			14.7			14.4			28.9	
Confl. Peds. (#/hr)	8					8				5		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	221	566	45	8	1651	601	73	5	5	239	2	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	221	611	0	0	2260	0	0	83	0	0	434	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

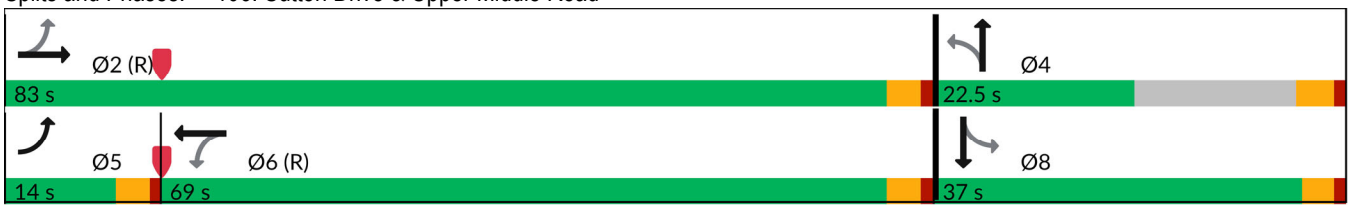


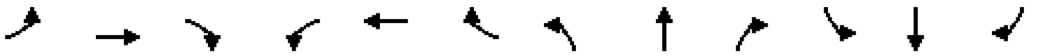
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	30.0		30.0	30.0		22.5	22.5		30.5	30.5	
Total Split (s)	14.0	83.0		69.0	69.0		22.5	22.5		37.0	37.0	
Total Split (%)	11.7%	69.2%		57.5%	57.5%		18.8%	18.8%		30.8%	30.8%	
Maximum Green (s)	10.0	79.0		65.0	65.0		18.0	18.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.5			4.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		5.0	5.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		Max	Max	
Walk Time (s)		10.0		10.0	10.0		7.0	7.0		10.0	10.0	
Flash Don't Walk (s)		16.0		16.0	16.0		11.0	11.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	79.0	79.0			65.0			32.5			33.0	
Actuated g/C Ratio	0.66	0.66			0.54			0.27			0.28	
v/c Ratio	1.07	0.21			1.01			0.28			1.06	
Control Delay (s/veh)	124.2	7.5			48.9			36.3			101.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	124.2	7.5			48.9			36.3			101.5	
LOS	F	A			D			D			F	
Approach Delay (s/veh)		38.5			48.9			36.3			101.5	
Approach LOS		D			D			D			F	
Queue Length 50th (m)	~47.0	19.2			~230.4			15.9			~113.9	
Queue Length 95th (m)	#100.3	23.9			#277.0			31.0			#180.9	
Internal Link Dist (m)		266.7			220.7			135.9			297.0	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	207	2943			2230			298			408	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.07	0.21			1.01			0.28			1.06	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 52.5	Intersection LOS: D

Intersection Capacity Utilization 88.0%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Sutton Drive & Upper Middle Road

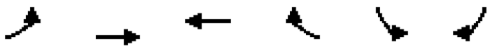




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	210	538	43	8	1568	571	69	5	5	227	2	183
Future Volume (vph)	210	538	43	8	1568	571	69	5	5	227	2	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.5			4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.99			0.94	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1752	4462			4290			1770			1704	
Flt Permitted	0.06	1.00			0.94			0.59			0.80	
Satd. Flow (perm)	107	4462			4022			1094			1399	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	221	566	45	8	1651	601	73	5	5	239	2	193
RTOR Reduction (vph)	0	6	0	0	53	0	0	2	0	0	24	0
Lane Group Flow (vph)	221	605	0	0	2207	0	0	81	0	0	410	0
Confl. Peds. (#/hr)	8					8				5		2
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	79.0	79.0			65.0			32.5			33.0	
Effective Green, g (s)	79.0	79.0			65.0			32.5			33.0	
Actuated g/C Ratio	0.66	0.66			0.54			0.27			0.28	
Clearance Time (s)	4.0	4.0			4.0			4.5			4.0	
Vehicle Extension (s)	5.0	5.0			5.0			3.0			5.0	
Lane Grp Cap (vph)	207	2937			2178			296			384	
v/s Ratio Prot	c0.09	0.14										
v/s Ratio Perm	c0.61				0.55			0.07			c0.29	
v/c Ratio	1.07	0.21			1.01			0.27			1.07	
Uniform Delay, d1	40.0	8.1			27.5			34.4			43.5	
Progression Factor	1.57	0.93			1.00			1.00			1.00	
Incremental Delay, d2	80.9	0.2			22.7			0.5			65.1	
Delay (s)	143.8	7.7			50.2			34.9			108.6	
Level of Service	F	A			D			C			F	
Approach Delay (s/veh)		43.9			50.2			34.9			108.6	
Approach LOS		D			D			C			F	

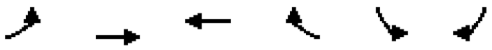
Intersection Summary			
HCM 2000 Control Delay (s/veh)	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	58	714	1928	28	0	67
Future Volume (vph)	58	714	1928	28	0	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	4515	4506	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	4515	4506	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	61	752	2029	29	0	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	752	2058	0	0	71
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

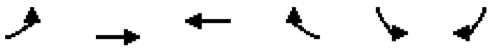
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	58	714	1928	28	0	67
Future Volume (Veh/h)	58	714	1928	28	0	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	61	752	2029	29	0	71
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked						
vC, conflicting volume	2067				2425	700
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2067				2425	700
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	78				100	81
cM capacity (veh/h)	272				21	384

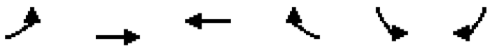
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	61	251	251	251	812	812	435	71
Volume Left	61	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	29	71
cSH	272	1700	1700	1700	1700	1700	1700	384
Volume to Capacity	0.22	0.15	0.15	0.15	0.48	0.48	0.26	0.19
Queue Length 95th (m)	6.7	0.0	0.0	0.0	0.0	0.0	0.0	5.4
Control Delay (s/veh)	22.0	0.0	0.0	0.0	0.0	0.0	0.0	16.5
Lane LOS	C							C
Approach Delay (s/veh)	1.7				0.0			16.5
Approach LOS								C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	48.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	12	707	2111	10	5	9
Future Volume (vph)	12	707	2111	10	5	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.910	
Flt Protected	0.950				0.984	
Satd. Flow (prot)	1805	4515	4511	0	1701	0
Flt Permitted	0.950				0.984	
Satd. Flow (perm)	1805	4515	4511	0	1701	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	13	752	2246	11	5	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	752	2257	0	15	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

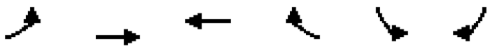
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	12	707	2111	10	5	9
Future Volume (Veh/h)	12	707	2111	10	5	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	13	752	2246	11	5	10
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2273				2544	770
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2273				2544	770
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				76	97
cM capacity (veh/h)	224				21	343

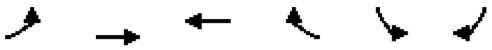
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	13	251	251	251	898	898	460	15
Volume Left	13	0	0	0	0	0	0	5
Volume Right	0	0	0	0	0	0	11	10
cSH	224	1700	1700	1700	1700	1700	1700	56
Volume to Capacity	0.06	0.15	0.15	0.15	0.53	0.53	0.27	0.27
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.0	0.0	0.0	7.4
Control Delay (s/veh)	22.0	0.0	0.0	0.0	0.0	0.0	0.0	90.4
Lane LOS	C							F
Approach Delay (s/veh)	0.4				0.0			90.4
Approach LOS								F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	675	2114	154	67	46
Future Volume (vph)	40	675	2114	154	67	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.945	
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1805	4515	4473	0	1722	0
Flt Permitted	0.950				0.971	
Satd. Flow (perm)	1805	4515	4473	0	1722	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	43	734	2298	167	73	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	734	2465	0	123	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.6%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	40	675	2114	154	67	46
Future Volume (Veh/h)	40	675	2114	154	67	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	43	734	2298	167	73	50
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2479				2726	864
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2479				2726	864
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	77				0	83
cM capacity (veh/h)	187				13	292

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	43	245	245	245	919	919	627	123
Volume Left	43	0	0	0	0	0	0	73
Volume Right	0	0	0	0	0	0	167	50
cSH	187	1700	1700	1700	1700	1700	1700	21
Volume to Capacity	0.23	0.14	0.14	0.14	0.54	0.54	0.37	5.81
Queue Length 95th (m)	6.9	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	30.0	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	D							F
Approach Delay (s/veh)	1.7				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	365.9		
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	31	33	2223	24	39	688
Future Volume (vph)	31	33	2223	24	39	688
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.931		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1726	0	4506	0	1805	4515
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1726	0	4506	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			459.4
Travel Time (s)	14.5		7.6			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	33	35	2340	25	41	724
Shared Lane Traffic (%)						
Lane Group Flow (vph)	68	0	2365	0	41	724
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

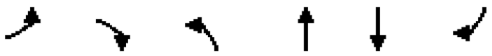
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



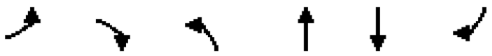
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	31	33	2223	24	39	688
Future Volume (Veh/h)	31	33	2223	24	39	688
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	33	35	2340	25	41	724
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2677	794			2366	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2677	794			2366	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	90			80	
cM capacity (veh/h)	15	335			209	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	68	936	936	493	41	241	241	241
Volume Left	33	0	0	0	41	0	0	0
Volume Right	35	0	0	25	0	0	0	0
cSH	29	1700	1700	1700	209	1700	1700	1700
Volume to Capacity	2.34	0.55	0.55	0.29	0.20	0.14	0.14	0.14
Queue Length 95th (m)	64.3	0.0	0.0	0.0	5.7	0.0	0.0	0.0
Control Delay (s/veh)	898.6	0.0	0.0	0.0	26.4	0.0	0.0	0.0
Lane LOS	F				D			
Approach Delay (s/veh)	898.6	0.0			1.4			
Approach LOS	F							

Intersection Summary			
Average Delay	19.4		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	173	616	762	2047	666	42
Future Volume (vph)	173	616	762	2047	666	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	1736	4515	4503	0
Flt Permitted	0.950		0.257			
Satd. Flow (perm)	1752	1583	468	4515	4503	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		362			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	190	677	837	2249	732	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	190	677	837	2249	778	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	20.0	80.0	60.0	
Total Split (%)	27.3%	27.3%	18.2%	72.7%	54.5%	
Maximum Green (s)	23.0	23.0	16.0	73.0	53.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	53.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.48	
v/c Ratio	0.52	1.10	1.65	0.75	0.36	
Control Delay (s/veh)	44.5	85.9	323.2	18.5	18.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	44.5	85.9	323.2	18.5	18.2	
LOS	D	F	F	B	B	
Approach Delay (s/veh)	76.8			101.1	18.2	
Approach LOS	E			F	B	
Queue Length 50th (m)	39.2	~105.6	~205.8	135.8	43.8	
Queue Length 95th (m)	63.4	#180.2	#360.7	160.3	55.1	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	366	617	507	2996	2174	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.52	1.10	1.65	0.75	0.36	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.65	
Intersection Signal Delay (s/veh): 83.0	Intersection LOS: F

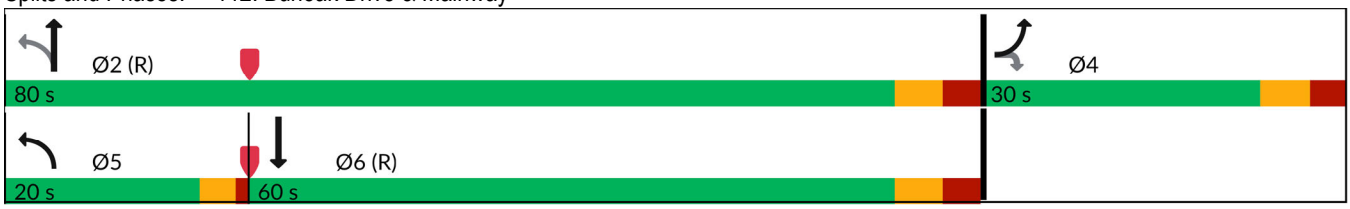
Intersection Capacity Utilization 91.8%	ICU Level of Service F
Analysis Period (min) 15	

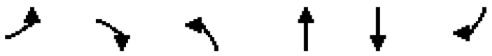
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

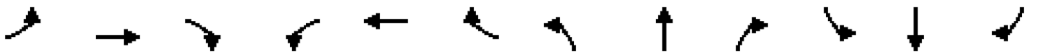




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	173	616	762	2047	666	42
Future Volume (vph)	173	616	762	2047	666	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	1735	4515	4504	
Flt Permitted	0.95	1.00	0.26	1.00	1.00	
Satd. Flow (perm)	1752	1583	470	4515	4504	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	190	677	837	2249	732	46
RTOR Reduction (vph)	0	286	0	0	5	0
Lane Group Flow (vph)	190	391	837	2249	773	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	53.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	53.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	366	330	495	2996	2170	
v/s Ratio Prot	0.11		c0.25	0.50	0.17	
v/s Ratio Perm		c0.25	c0.87			
v/c Ratio	0.52	1.18	1.69	0.75	0.36	
Uniform Delay, d1	38.6	43.5	13.2	12.4	17.8	
Progression Factor	1.00	1.00	2.37	1.35	1.00	
Incremental Delay, d2	1.2	109.3	317.5	1.4	0.5	
Delay (s)	39.8	152.8	348.6	18.1	18.3	
Level of Service	D	F	F	B	B	
Approach Delay (s/veh)	128.1			107.7	18.3	
Approach LOS	F			F	B	

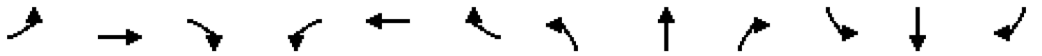
Intersection Summary			
HCM 2000 Control Delay (s/veh)	96.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.61		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	367	26	13	620	70	173	48	54	186	79	76
Future Volume (vph)	23	367	26	13	620	70	173	48	54	186	79	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.991			0.985			0.974			0.970	
Flt Protected		0.997			0.999			0.969			0.973	
Satd. Flow (prot)	0	3413	0	0	3478	0	0	1743	0	0	1758	0
Flt Permitted		0.997			0.999			0.969			0.973	
Satd. Flow (perm)	0	3413	0	0	3478	0	0	1743	0	0	1758	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		114.1			869.1			154.8			190.1	
Travel Time (s)		6.8			52.1			13.9			17.1	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Adj. Flow (vph)	27	437	31	15	738	83	206	57	64	221	94	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	495	0	0	836	0	0	327	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

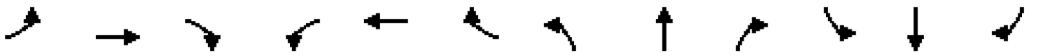
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	367	26	13	620	70	173	48	54	186	79	76
Future Volume (Veh/h)	23	367	26	13	620	70	173	48	54	186	79	76
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	27	437	31	15	738	83	206	57	64	221	94	90
Pedestrians								5				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	821			473			1048	1363	239	1175	1337	411
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	821			473			1048	1363	239	1175	1337	411
tC, single (s)	4.1			4.3			7.6	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			0	59	92	0	35	85
cM capacity (veh/h)	804			1033			70	139	765	88	144	590

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	246	250	384	452	327	405
Volume Left	27	0	15	0	206	221
Volume Right	0	31	0	83	64	90
cSH	804	1700	1033	1700	95	122
Volume to Capacity	0.03	0.15	0.01	0.27	3.45	3.31
Queue Length 95th (m)	0.8	0.0	0.4	0.0	Err	Err
Control Delay (s/veh)	1.4	0.0	0.5	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s/veh)	0.7		0.2		Err	Err
Approach LOS					F	F

Intersection Summary				
Average Delay	3548.1			
Intersection Capacity Utilization	57.1%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	304	32	5	1063	116	70	7	15	45	2	55
Future Volume (vph)	37	304	32	5	1063	116	70	7	15	45	2	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.985			0.977			0.927	
Flt Protected		0.995						0.964			0.978	
Satd. Flow (prot)	0	3407	0	0	3490	0	0	1789	0	0	1700	0
Flt Permitted		0.995						0.964			0.978	
Satd. Flow (perm)	0	3407	0	0	3490	0	0	1789	0	0	1700	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			639.9			107.7			112.1	
Travel Time (s)		25.6			38.4			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	46	375	40	6	1312	143	86	9	19	56	2	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	461	0	0	1461	0	0	114	0	0	126	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

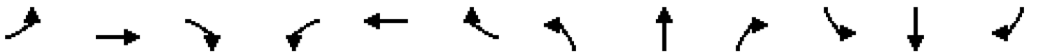
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	37	304	32	5	1063	116	70	7	15	45	2	55
Future Volume (Veh/h)	37	304	32	5	1063	116	70	7	15	45	2	55
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	46	375	40	6	1312	143	86	9	19	56	2	68
Pedestrians		2			3			7			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1457			422			1233	1963	218	1704	1912	732
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1457			422			1233	1963	218	1704	1912	732
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			99			12	84	98	0	97	81
cM capacity (veh/h)	469			1141			98	57	786	46	61	367

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	234	228	662	799	114	126
Volume Left	46	0	6	0	86	56
Volume Right	0	40	0	143	19	68
cSH	469	1700	1141	1700	107	88
Volume to Capacity	0.10	0.13	0.00*	0.47	1.06	1.44
Queue Length 95th (m)	2.6	0.0	0.1	0.0	55.7	77.3
Control Delay (s/veh)	3.9	0.0	0.1	0.0	179.7	334.0
Lane LOS	A		A		F	F
Approach Delay (s/veh)	2.0		0.1		179.7	334.0
Approach LOS					F	F

Intersection Summary				
Average Delay	29.4			
Intersection Capacity Utilization	54.4%	ICU Level of Service		A
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	186	168	228	735	283	373	1725	93	108	1166	165
Future Volume (vph)	200	186	168	228	735	283	373	1725	93	108	1166	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00			1.00	
Frt		0.929			0.958			0.992			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3122	0	1687	3367	0	1703	4415	0	1787	4366	0
Flt Permitted	0.148			0.325			0.063			0.067		
Satd. Flow (perm)	265	3122	0	576	3367	0	113	4415	0	126	4366	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		144			38			7			19	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	215	200	181	245	790	304	401	1855	100	116	1254	177
Shared Lane Traffic (%)												
Lane Group Flow (vph)	215	381	0	245	1094	0	401	1955	0	116	1431	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

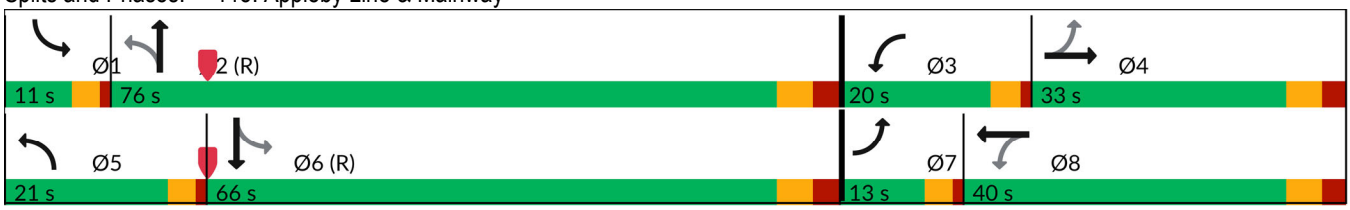


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	13.0	33.0		20.0	40.0		21.0	76.0		11.0	66.0	
Total Split (%)	9.3%	23.6%		14.3%	28.6%		15.0%	54.3%		7.9%	47.1%	
Maximum Green (s)	9.0	26.7		16.0	33.7		17.0	69.7		7.0	59.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	38.3	27.0		49.0	33.7		83.0	69.7		69.0	59.7	
Actuated g/C Ratio	0.27	0.19		0.35	0.24		0.59	0.50		0.49	0.43	
v/c Ratio	1.30	0.53		0.75	1.30		1.54	0.89		0.80	0.76	
Control Delay (s/veh)	206.7	34.1		51.0	186.0		288.4	18.7		64.3	28.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	206.7	34.1		51.0	186.0		288.4	18.7		64.3	28.2	
LOS	F	C		D	F		F	B		E	C	
Approach Delay (s/veh)		96.3			161.3			64.6			30.9	
Approach LOS		F			F			E			C	
Queue Length 50th (m)	~65.7	34.3		56.9	~214.0		~152.1	178.7		16.5	100.5	
Queue Length 95th (m)	#122.7	52.7		#87.5	#259.5		m#184.7	194.3		m#46.2	m126.3	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	165	718		328	839		260	2201		145	1872	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.30	0.53		0.75	1.30		1.54	0.89		0.80	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 85 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.54	
Intersection Signal Delay (s/veh): 81.1	Intersection LOS: F

Intersection Capacity Utilization 104.9% ICU Level of Service G
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

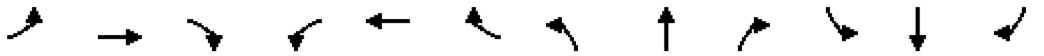


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	200	186	168	228	735	283	373	1725	93	108	1166	165
Future Volume (vph)	200	186	168	228	735	283	373	1725	93	108	1166	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3122		1686	3368		1703	4417		1787	4368	
Flt Permitted	0.15	1.00		0.32	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	266	3122		576	3368		113	4417		126	4368	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	215	200	181	245	790	304	401	1855	100	116	1254	177
RTOR Reduction (vph)	0	116	0	0	29	0	0	4	0	0	11	0
Lane Group Flow (vph)	215	265	0	245	1065	0	401	1951	0	116	1420	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.0	27.0		46.7	33.7		80.7	69.7		66.7	59.7	
Effective Green, g (s)	36.0	27.0		46.7	33.7		80.7	69.7		66.7	59.7	
Actuated g/C Ratio	0.26	0.19		0.33	0.24		0.58	0.50		0.48	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	602		316	810		258	2199		143	1862	
v/s Ratio Prot	c0.09	0.08		0.09	c0.32		c0.19	0.44		0.04	0.33	
v/s Ratio Perm	0.26			0.17			c0.71			0.35		
v/c Ratio	1.34	0.44		0.78	1.31		1.55	0.89		0.81	0.76	
Uniform Delay, d1	47.8	49.8		37.2	53.2		45.4	31.6		29.1	34.1	
Progression Factor	1.00	1.00		1.00	1.00		1.27	0.49		1.19	0.75	
Incremental Delay, d2	190.4	0.5		11.3	150.5		258.0	2.8		25.7	2.7	
Delay (s)	238.2	50.3		48.5	203.6		315.8	18.4		60.4	28.3	
Level of Service	F	D		D	F		F	B		E	C	
Approach Delay (s/veh)		118.1			175.2			69.0			30.7	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	88.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.50		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	11	47	141	19	131	46	2019	178	117	1256	26
Future Volume (vph)	51	11	47	141	19	131	46	2019	178	117	1256	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.942			0.939			0.988			0.997	
Flt Protected		0.977			0.976		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1722	0	1641	4367	0	1805	4450	0
Flt Permitted		0.700			0.778		0.149			0.045		
Satd. Flow (perm)	0	1238	0	0	1368	0	256	4367	0	86	4450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			27			15			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	54	12	50	150	20	139	49	2148	189	124	1336	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	0	0	309	0	49	2337	0	124	1364	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		89.0	89.0		12.0	101.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%		63.6%	63.6%		8.6%	72.1%	
Maximum Green (s)	32.5	32.5		32.5	32.5		83.0	83.0		8.0	95.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		31.3			31.3		84.3	84.3		98.2	96.2	
Actuated g/C Ratio		0.22			0.22		0.60	0.60		0.70	0.69	
v/c Ratio		0.39			0.94		0.32	0.89		0.79	0.45	
Control Delay (s/veh)		39.9			86.3		8.4	15.9		49.8	13.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		39.9			86.3		8.4	15.9		49.8	13.0	
LOS		D			F		A	B		D	B	
Approach Delay (s/veh)		39.9			86.3			15.7			16.0	
Approach LOS		D			F			B			B	
Queue Length 50th (m)		22.3			81.8		2.6	291.6		22.3	76.9	
Queue Length 95th (m)		42.1			#139.8		m2.7	m195.3		m#37.0	117.0	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		306			338		153	2635		158	3058	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.38			0.91		0.32	0.89		0.78	0.45	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 106 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay (s/veh): 21.6	Intersection LOS: C

Intersection Capacity Utilization 86.6% ICU Level of Service E

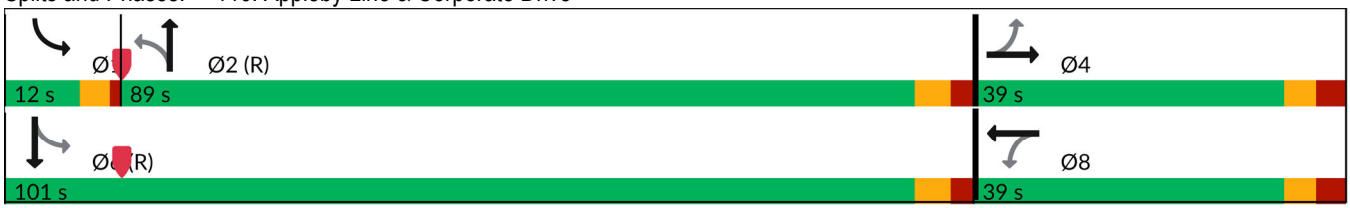
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

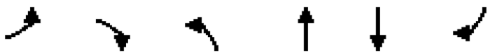
Splits and Phases: 116: Appleby Line & Corporate Drive



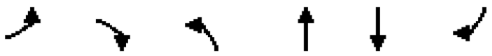
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	11	47	141	19	131	46	2019	178	117	1256	26
Future Volume (vph)	51	11	47	141	19	131	46	2019	178	117	1256	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728			1717		1633	4366		1805	4449	
Flt Permitted		0.70			0.78		0.15	1.00		0.05	1.00	
Satd. Flow (perm)		1238			1368		257	4366		86	4449	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	54	12	50	150	20	139	49	2148	189	124	1336	28
RTOR Reduction (vph)	0	19	0	0	21	0	0	6	0	0	1	0
Lane Group Flow (vph)	0	97	0	0	288	0	49	2331	0	124	1363	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		31.3			31.3		84.3	84.3		96.2	96.2	
Effective Green, g (s)		31.3			31.3		84.3	84.3		96.2	96.2	
Actuated g/C Ratio		0.22			0.22		0.60	0.60		0.69	0.69	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		276			305		154	2628		156	3057	
v/s Ratio Prot								c0.53		c0.04	0.31	
v/s Ratio Perm		0.08			c0.21		0.19			0.50		
v/c Ratio		0.35			0.94		0.32	0.89		0.79	0.45	
Uniform Delay, d1		45.8			53.5		13.7	23.8		39.1	9.9	
Progression Factor		1.00			1.00		0.43	0.59		0.92	1.25	
Incremental Delay, d2		0.8			36.7		1.5	1.4		17.2	0.3	
Delay (s)		46.6			90.2		7.4	15.4		53.1	12.7	
Level of Service		D			F		A	B		D	B	
Approach Delay (s/veh)		46.6			90.2			15.2			16.1	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	510	164	2116	1127	30
Future Volume (vph)	157	510	164	2116	1127	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	1671	4471	4443	0
Flt Permitted	0.950		0.119			
Satd. Flow (perm)	1787	1553	209	4471	4443	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		171			5	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	174	567	182	2351	1252	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	174	567	182	2351	1285	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



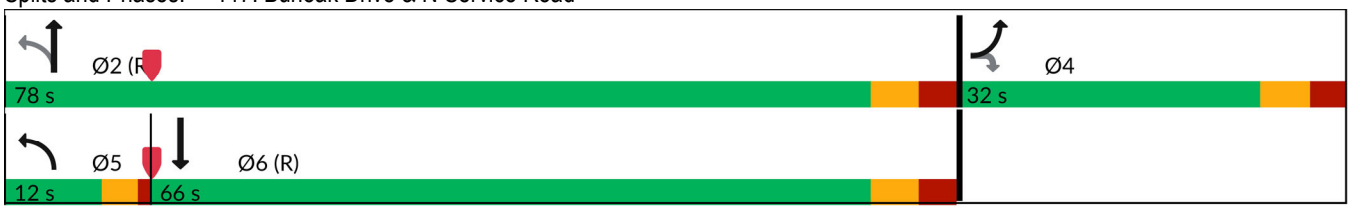
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.5	37.0	37.0	
Total Split (s)	32.0	32.0	12.0	78.0	66.0	
Total Split (%)	29.1%	29.1%	10.9%	70.9%	60.0%	
Maximum Green (s)	25.0	25.0	8.0	71.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	25.0	25.0	74.0	71.0	59.0	
Actuated g/C Ratio	0.23	0.23	0.67	0.65	0.54	
v/c Ratio	0.43	1.17	0.74	0.81	0.54	
Control Delay (s/veh)	40.3	124.1	18.7	13.7	13.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	40.3	124.1	18.7	13.7	13.0	
LOS	D	F	B	B	B	
Approach Delay (s/veh)	104.5			14.1	13.0	
Approach LOS	F			B	B	
Queue Length 50th (m)	34.1	~124.8	15.5	119.2	51.2	
Queue Length 95th (m)	55.8	#196.4	m10.7	m61.0	m52.6	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	406	485	246	2885	2386	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.43	1.17	0.74	0.81	0.54	

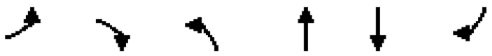
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 88 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay (s/veh): 28.5	Intersection LOS: C

Intersection Capacity Utilization 68.2%	ICU Level of Service C
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	157	510	164	2116	1127	30
Future Volume (vph)	157	510	164	2116	1127	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	1671	4471	4443	
Flt Permitted	0.95	1.00	0.12	1.00	1.00	
Satd. Flow (perm)	1787	1553	209	4471	4443	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	174	567	182	2351	1252	33
RTOR Reduction (vph)	0	132	0	0	2	0
Lane Group Flow (vph)	174	435	182	2351	1283	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	25.0	25.0	71.0	71.0	59.0	
Effective Green, g (s)	25.0	25.0	71.0	71.0	59.0	
Actuated g/C Ratio	0.23	0.23	0.65	0.65	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	406	352	241	2885	2383	
v/s Ratio Prot	0.10		0.05	c0.53	0.29	
v/s Ratio Perm		c0.28	0.43			
v/c Ratio	0.43	1.24	0.76	0.81	0.54	
Uniform Delay, d1	36.4	42.5	11.8	14.6	16.6	
Progression Factor	1.00	1.00	1.62	0.90	0.74	
Incremental Delay, d2	0.7	128.1	1.3	0.2	0.6	
Delay (s)	37.1	170.6	20.4	13.4	12.9	
Level of Service	D	F	C	B	B	
Approach Delay (s/veh)	139.3			13.9	12.9	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2284	2220	1261	0	0	2125
Future Volume (vph)	2284	2220	1261	0	0	2125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor						
Frt	0.961	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3348	1441	4427	0	0	4471
Flt Permitted	0.964					
Satd. Flow (perm)	3348	1441	4427	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	10	10				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2456	2387	1356	0	0	2285
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	3315	1528	1356	0	0	2285
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



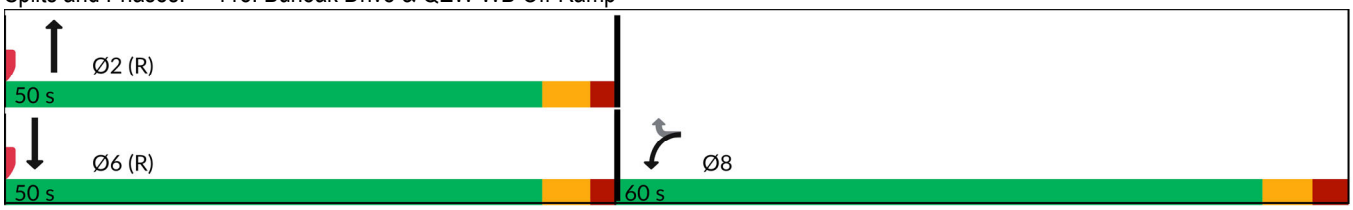
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	60.0	60.0	50.0			50.0
Total Split (%)	54.5%	54.5%	45.5%			45.5%
Maximum Green (s)	53.0	53.0	44.0			44.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
v/c Ratio	2.05	2.19	0.77			1.28
Control Delay (s/veh)	495.9	559.2	24.7			156.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	495.9	559.2	24.7			156.7
LOS	F	F	C			F
Approach Delay (s/veh)	515.8		24.7			156.7
Approach LOS	F		C			F
Queue Length 50th (m)	~624.5	~625.7	116.5			~281.1
Queue Length 95th (m)	#663.7	#720.9	64.0			m#291.5
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1618	699	1770			1788
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.05	2.19	0.77			1.28

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.19	
Intersection Signal Delay (s/veh): 340.6	Intersection LOS: F

Intersection Capacity Utilization 140.3%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



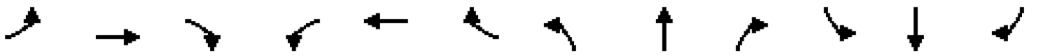


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2284	2220	1261	0	0	2125
Future Volume (vph)	2284	2220	1261	0	0	2125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3349	1441	4427			4471
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3349	1441	4427			4471
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2456	2387	1356	0	0	2285
RTOR Reduction (vph)	5	5	0	0	0	0
Lane Group Flow (vph)	3310	1523	1356	0	0	2285
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	53.0	53.0	44.0			44.0
Effective Green, g (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1613	694	1770			1788
v/s Ratio Prot	0.99		0.31			c0.51
v/s Ratio Perm		c1.06				
v/c Ratio	2.05	2.19	0.77			1.28
Uniform Delay, d1	28.5	28.5	28.5			33.0
Progression Factor	1.00	1.00	0.75			0.88
Incremental Delay, d2	475.6	542.1	3.1			128.7
Delay (s)	504.1	570.6	24.4			157.8
Level of Service	F	F	C			F
Approach Delay (s/veh)	525.1		24.4			157.8
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	346.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	140.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	78	358	0	0	170	0	1002	14	11	3293	0
Future Volume (vph)	182	78	358	0	0	170	0	1002	14	11	3293	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.895	0.850			0.865		0.998				
Flt Protected	0.950											
Satd. Flow (prot)	1641	2950	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950										0.933	
Satd. Flow (perm)	1641	2950	1413	0	0	1596	0	5125	0	0	4792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		189	188			381		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	192	82	377	0	0	179	0	1055	15	12	3466	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	192	271	188	0	0	179	0	1070	0	0	3478	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



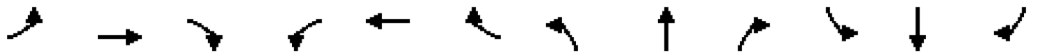
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			5.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			39.0		39.0		39.0	39.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		25.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	18.5	18.5	18.5			77.5		65.0			65.0	
Actuated g/C Ratio	0.17	0.17	0.17			0.70		0.59			0.59	
v/c Ratio	0.70	0.42	0.48			0.14		0.35			1.23	
Control Delay (s/veh)	55.7	14.1	9.5			0.2		12.7			125.6	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	55.7	14.1	9.5			0.2		12.7			125.6	
LOS	E	B	A			A		B			F	
Approach Delay (s/veh)		25.1			0.2			12.7			125.6	
Approach LOS		C			A			B			F	
Queue Length 50th (m)	44.5	9.2	0.0			0.0		42.7			~356.9	
Queue Length 95th (m)	65.4	20.7	20.4			0.0		62.2			m133.6	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	387	841	477			1231		3029			2831	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.50	0.32	0.39			0.15		0.35			1.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay (s/veh): 86.8	Intersection LOS: F

Intersection Capacity Utilization 92.9% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

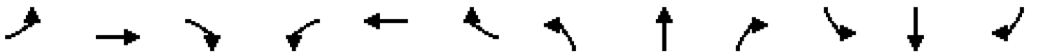




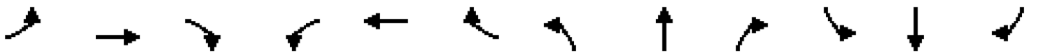
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	78	358	0	0	170	0	1002	14	11	3293	0
Future Volume (vph)	182	78	358	0	0	170	0	1002	14	11	3293	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.90	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1641	2951	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1641	2951	1413			1596		5125			4794	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	192	82	377	0	0	179	0	1055	15	12	3466	0
RTOR Reduction (vph)	0	157	156	0	0	64	0	1	0	0	0	0
Lane Group Flow (vph)	192	114	32	0	0	115	0	1069	0	0	3478	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Actuated Green, G (s)	18.5	18.5	18.5			70.5		65.0			65.0	
Effective Green, g (s)	18.5	18.5	18.5			70.5		65.0			65.0	
Actuated g/C Ratio	0.17	0.17	0.17			0.64		0.59			0.59	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	275	496	237			1124		3028			2832	
v/s Ratio Prot	c0.12	0.04				c0.01		0.21				
v/s Ratio Perm			0.02			0.07					c0.73	
v/c Ratio	0.70	0.23	0.13			0.10		0.35			1.23	
Uniform Delay, d1	43.1	39.6	38.9			7.6		11.6			22.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.91	
Incremental Delay, d2	7.5	0.2	0.3			0.0		0.3			103.0	
Delay (s)	50.6	39.8	39.2			7.6		12.0			123.4	
Level of Service	D	D	D			A		B			F	
Approach Delay (s/veh)		42.8			7.6			12.0			123.4	
Approach LOS		D			A			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	87.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	45	173	306	243	194	345	2022	159	61	1441	59
Future Volume (vph)	69	45	173	306	243	194	345	2022	159	61	1441	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1644	0	1770	1696	0	1805	4335	0	1736	4395	0
Flt Permitted	0.322			0.186			0.062			0.066		
Satd. Flow (perm)	599	1644	0	346	1696	0	118	4335	0	121	4395	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		117			30			11			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Adj. Flow (vph)	70	46	177	312	248	198	352	2063	162	62	1470	60
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	223	0	312	446	0	352	2225	0	62	1530	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	28.0	28.0		21.0	49.0		24.0	80.0		11.0	67.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%		17.1%	57.1%		7.9%	47.9%	
Maximum Green (s)	21.9	21.9		17.0	42.9		20.0	73.4		7.0	60.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.5	17.5		40.6	38.5		91.4	79.9		70.1	60.4	
Actuated g/C Ratio	0.13	0.13		0.29	0.28		0.65	0.57		0.50	0.43	
v/c Ratio	0.95	0.73		1.14	0.91		0.95	0.90		0.44	0.81	
Control Delay (s/veh)	148.1	40.8		137.5	69.6		49.5	24.6		23.9	45.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.5		0.0	0.0	
Total Delay (s/veh)	148.1	40.8		137.5	69.6		49.5	26.2		23.9	45.7	
LOS	F	D		F	E		D	C		C	D	
Approach Delay (s/veh)		66.4			97.5			29.4			44.8	
Approach LOS		E			F			C			D	
Queue Length 50th (m)	20.4	29.6		~85.6	118.9		~92.0	234.0		8.8	196.7	
Queue Length 95th (m)	#48.6	58.8		#145.5	#172.5		m70.4	m173.8		m12.6	214.7	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	93	355		273	540		370	2479		142	1898	
Starvation Cap Reductn	0	0		0	0		0	120		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.75	0.63		1.14	0.83		0.95	0.94		0.44	0.81	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay (s/veh): 46.1	Intersection LOS: D

Intersection Capacity Utilization 98.8%	ICU Level of Service F

Analysis Period (min) 15

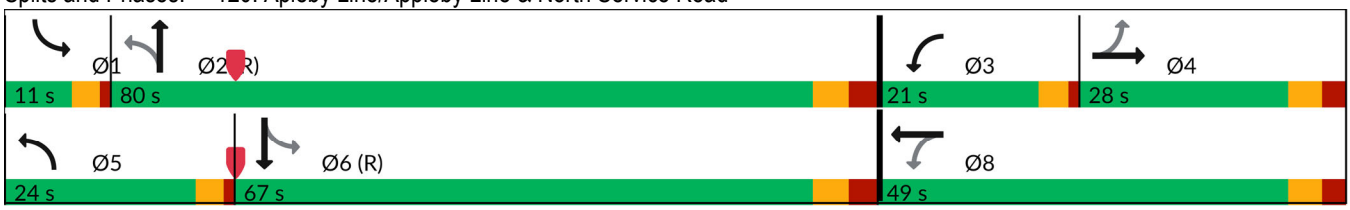
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	45	173	306	243	194	345	2022	159	61	1441	59
Future Volume (vph)	69	45	173	306	243	194	345	2022	159	61	1441	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1644		1770	1697		1805	4336		1736	4395	
Flt Permitted	0.32	1.00		0.19	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	599	1644		347	1697		118	4336		121	4395	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	70	46	177	312	248	198	352	2063	162	62	1470	60
RTOR Reduction (vph)	0	102	0	0	22	0	0	5	0	0	3	0
Lane Group Flow (vph)	70	121	0	312	424	0	352	2220	0	62	1527	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.5	17.5		38.5	38.5		88.8	79.1		66.1	60.4	
Effective Green, g (s)	17.5	17.5		38.5	38.5		88.8	79.1		66.1	60.4	
Actuated g/C Ratio	0.13	0.13		0.28	0.28		0.63	0.56		0.47	0.43	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	74	205		268	466		368	2449		122	1896	
v/s Ratio Prot		0.07		c0.14	0.25		c0.17	0.51		0.02	0.35	
v/s Ratio Perm	0.12			c0.18			c0.44			0.22		
v/c Ratio	0.95	0.59		1.16	0.91		0.96	0.91		0.51	0.81	
Uniform Delay, d1	60.8	57.8		45.3	49.1		45.7	27.2		27.0	34.7	
Progression Factor	1.00	1.00		1.00	1.00		1.03	0.85		1.06	1.24	
Incremental Delay, d2	85.3	4.3		106.8	21.8		6.6	0.6		2.2	2.5	
Delay (s)	146.1	62.1		152.1	70.9		53.8	23.7		30.8	45.4	
Level of Service	F	E		F	E		D	C		C	D	
Approach Delay (s/veh)		82.2			104.3			27.8			44.8	
Approach LOS		F			F			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	98.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1151	1217	2343	0	0	2188
Future Volume (vph)	1151	1217	2343	0	0	2188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1553	4385	0	0	4471
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1553	4385	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		4				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Adj. Flow (vph)	1187	1255	2415	0	0	2256
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1187	1255	2415	0	0	2256
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

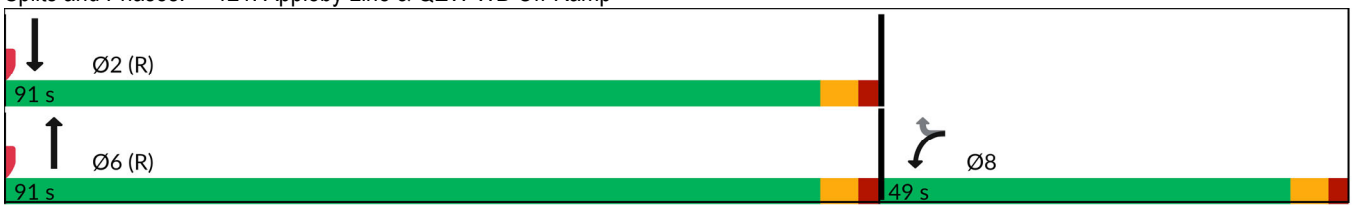


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
v/c Ratio	1.14	2.62	0.91			0.83
Control Delay (s/veh)	117.4	756.2	18.2			12.6
Queue Delay	0.0	0.0	0.2			0.0
Total Delay (s/veh)	117.4	756.2	18.4			12.7
LOS	F	F	B			B
Approach Delay (s/veh)	445.7		18.4			12.7
Approach LOS	F		B			B
Queue Length 50th (m)	~211.6	~637.4	191.1			77.2
Queue Length 95th (m)	#256.2	#726.4	99.7			m82.0
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1044	479	2662			2714
Starvation Cap Reductn	0	0	0			11
Spillback Cap Reductn	0	0	22			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.14	2.62	0.91			0.83

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.62			
Intersection Signal Delay (s/veh): 163.3		Intersection LOS: F	
Intersection Capacity Utilization 130.6%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

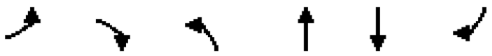
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



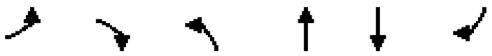


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1151	1217	2343	0	0	2188
Future Volume (vph)	1151	1217	2343	0	0	2188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1553	4385			4471
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1553	4385			4471
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1187	1255	2415	0	0	2256
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	1187	1252	2415	0	0	2256
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	43.0	43.0	85.0			85.0
Effective Green, g (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1044	476	2662			2714
v/s Ratio Prot	0.35		c0.55			0.50
v/s Ratio Perm		c0.81				
v/c Ratio	1.14	2.63	0.91			0.83
Uniform Delay, d1	48.5	48.5	24.1			21.8
Progression Factor	1.00	1.00	0.55			0.47
Incremental Delay, d2	73.6	739.9	4.5			2.1
Delay (s)	122.1	788.4	17.8			12.5
Level of Service	F	F	B			B
Approach Delay (s/veh)	464.5		17.8			12.5
Approach LOS	F		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	169.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.48		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	672	520	0	1823	2697	0
Future Volume (vph)	672	520	0	1823	2697	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	4343	4427	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	4343	4427	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		4				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Adj. Flow (vph)	679	525	0	1841	2724	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	679	525	0	1841	2724	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



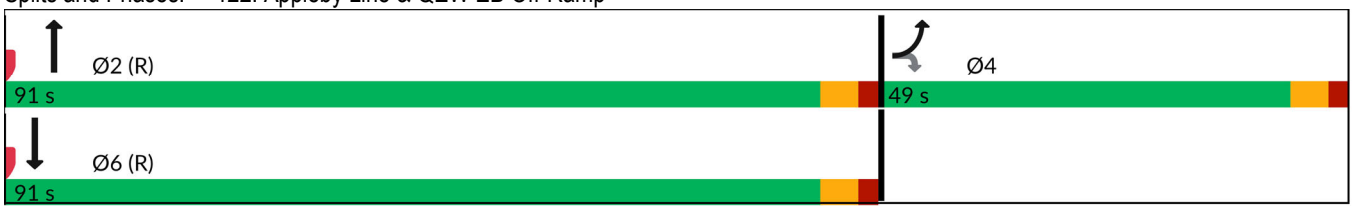
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	35.2	35.2		92.8	92.8	
Actuated g/C Ratio	0.25	0.25		0.66	0.66	
v/c Ratio	0.81	0.78		0.64	0.93	
Control Delay (s/veh)	57.2	56.3		14.8	18.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.2	56.3		14.8	18.5	
LOS	E	E		B	B	
Approach Delay (s/veh)	56.8			14.8	18.5	
Approach LOS	E			B	B	
Queue Length 50th (m)	99.6	83.9		101.0	220.9	
Queue Length 95th (m)	115.2	101.3		m98.0	m296.1	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1024	826		2878	2934	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.66	0.64		0.64	0.93	

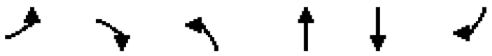
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay (s/veh): 25.3		Intersection LOS: C	
Intersection Capacity Utilization 130.6%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

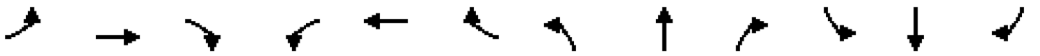




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	672	520	0	1823	2697	0
Future Volume (vph)	672	520	0	1823	2697	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		4343	4427	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		4343	4427	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	679	525	0	1841	2724	0
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	679	522	0	1841	2724	0
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	35.2	35.2		92.8	92.8	
Effective Green, g (s)	35.2	35.2		92.8	92.8	
Actuated g/C Ratio	0.25	0.25		0.66	0.66	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	838	674		2878	2934	
v/s Ratio Prot	c0.20			0.42	c0.62	
v/s Ratio Perm		0.19				
v/c Ratio	0.81	0.77		0.64	0.93	
Uniform Delay, d1	49.3	48.7		13.8	20.7	
Progression Factor	1.00	1.00		0.97	0.71	
Incremental Delay, d2	6.0	5.5		0.6	2.6	
Delay (s)	55.2	54.3		14.0	17.2	
Level of Service	E	D		B	B	
Approach Delay (s/veh)	54.8			14.0	17.2	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	130.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	277	188	475	602	418	107	971	194	200	1601	299
Future Volume (vph)	342	277	188	475	602	418	107	971	194	200	1601	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.939			0.938				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	1736	3216	0	1736	4471	1404	1687	4471	1538
Flt Permitted	0.215			0.177			0.071			0.149		
Satd. Flow (perm)	396	3288	0	322	3216	0	130	4471	1382	264	4471	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98			114				151			242
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Adj. Flow (vph)	349	283	192	485	614	427	109	991	198	204	1634	305
Shared Lane Traffic (%)												
Lane Group Flow (vph)	349	475	0	485	1041	0	109	991	198	204	1634	305
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



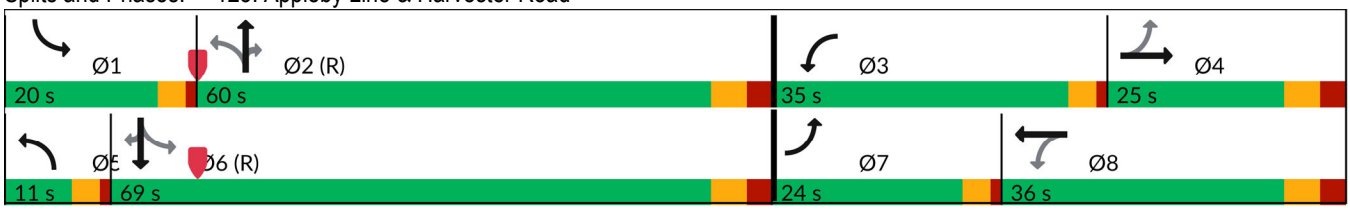
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.6		31.0	29.6		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	41.0	18.6		56.0	29.6		65.3	56.0	56.0	75.8	62.7	62.7
Actuated g/C Ratio	0.29	0.13		0.40	0.21		0.47	0.40	0.40	0.54	0.45	0.45
v/c Ratio	1.13	0.91		1.10	1.35		0.78	0.55	0.31	0.72	0.82	0.38
Control Delay (s/veh)	127.9	70.0		110.4	204.9		64.8	43.4	19.5	32.4	35.7	9.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	127.9	70.0		110.4	204.9		64.8	43.4	19.5	32.4	35.7	9.7
LOS	F	E		F	F		E	D	B	C	D	A
Approach Delay (s/veh)		94.5			174.8			41.5			31.7	
Approach LOS		F			F			D			C	
Queue Length 50th (m)	~100.6	59.1		~146.2	~199.5		18.6	126.5	24.2	33.4	141.9	13.7
Queue Length 95th (m)	#167.8	#92.1		#220.0	#245.0		m#40.0	144.6	m49.5	m45.8	m164.7	m26.4
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	309	521		441	769		140	1786	643	305	2002	808
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.13	0.91		1.10	1.35		0.78	0.55	0.31	0.67	0.82	0.38

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay (s/veh): 80.5	Intersection LOS: F

Intersection Capacity Utilization 104.4%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

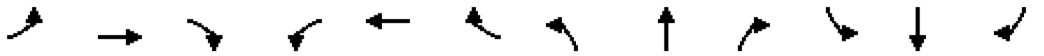
Splits and Phases: 123: Appleby Line & Harvester Road



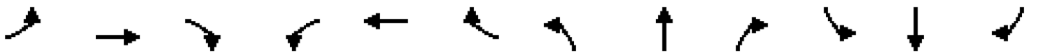
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	342	277	188	475	602	418	107	971	194	200	1601	299
Future Volume (vph)	342	277	188	475	602	418	107	971	194	200	1601	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3290		1735	3217		1736	4471	1382	1687	4471	1506
Flt Permitted	0.22	1.00		0.18	1.00		0.07	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	397	3290		323	3217		130	4471	1382	265	4471	1506
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	349	283	192	485	614	427	109	991	198	204	1634	305
RTOR Reduction (vph)	0	85	0	0	90	0	0	0	91	0	0	134
Lane Group Flow (vph)	349	390	0	485	951	0	109	991	107	204	1634	171
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.6	18.6		53.6	29.6		63.0	56.0	56.0	73.7	62.7	62.7
Effective Green, g (s)	38.6	18.6		53.6	29.6		63.0	56.0	56.0	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.13		0.38	0.21		0.45	0.40	0.40	0.53	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	437		436	680		138	1788	552	278	2002	674
v/s Ratio Prot	0.16	0.12		c0.25	c0.30		0.04	0.22		c0.07	c0.37	
v/s Ratio Perm	0.15			0.18			0.31		0.08	0.31		0.11
v/c Ratio	1.15	0.89		1.11	1.40		0.79	0.55	0.19	0.73	0.82	0.25
Uniform Delay, d1	46.0	59.7		42.0	55.2		28.7	32.4	27.3	21.4	33.6	24.1
Progression Factor	1.00	1.00		1.00	1.00		1.38	1.28	2.28	1.38	1.00	1.59
Incremental Delay, d2	99.3	19.9		77.3	188.3		22.2	1.1	0.7	4.5	1.7	0.4
Delay (s)	145.4	79.7		119.3	243.5		61.7	42.6	62.9	34.0	35.3	38.6
Level of Service	F	E		F	F		E	D	E	C	D	D
Approach Delay (s/veh)		107.5			204.0			47.3			35.7	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	92.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	496	115	442	257	220	183	252	667	121	188	1411	1094
Future Volume (vph)	496	115	442	257	220	183	252	667	121	188	1411	1094
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97			0.89	0.97		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	1810	1468	1752	1776	1599	1626	5136	1599	1787	4515	1482
Flt Permitted	0.950			0.680			0.075			0.376		
Satd. Flow (perm)	3321	1810	1384	1205	1776	1550	128	5136	1420	684	4515	1385
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			204			169			129			507
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Adj. Flow (vph)	517	120	460	268	229	191	263	695	126	196	1470	1140
Shared Lane Traffic (%)												
Lane Group Flow (vph)	517	120	460	268	229	191	263	695	126	196	1470	1140
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



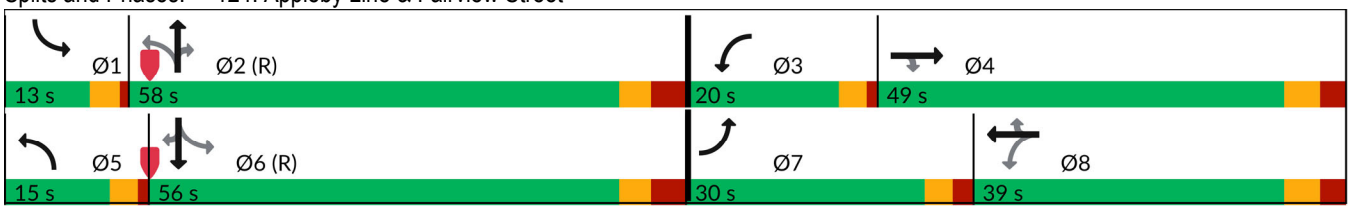
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	30.0	49.0	49.0	20.0	39.0	39.0	15.0	58.0	58.0	13.0	56.0	56.0
Total Split (%)	21.4%	35.0%	35.0%	14.3%	27.9%	27.9%	10.7%	41.4%	41.4%	9.3%	40.0%	40.0%
Maximum Green (s)	25.0	42.5	42.5	16.0	32.5	32.5	11.0	51.2	51.2	9.0	49.2	49.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	24.2	34.8	34.8	43.9	25.5	25.5	73.8	57.6	57.6	62.4	49.2	49.2
Actuated g/C Ratio	0.17	0.25	0.25	0.31	0.18	0.18	0.53	0.41	0.41	0.45	0.35	0.35
v/c Ratio	0.89	0.27	0.93	0.61	0.71	0.45	0.98	0.33	0.19	0.51	0.93	1.40
Control Delay (s/veh)	74.8	41.9	53.0	35.7	65.0	12.5	90.0	29.8	5.2	16.6	40.6	200.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.8	41.9	53.0	35.7	65.0	12.5	90.0	29.8	5.2	16.6	40.6	200.4
LOS	E	D	D	D	E	B	F	C	A	B	D	F
Approach Delay (s/veh)		62.0			39.0			41.5			103.8	
Approach LOS		E			D			D			F	
Queue Length 50th (m)	78.4	28.8	84.5	53.7	65.8	5.4	~74.7	53.8	0.0	20.0	173.0	~365.7
Queue Length 95th (m)	#107.5	44.7	#143.1	72.2	92.5	26.5	#160.8	66.6	13.4	m24.9	m178.0	m#532.2
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	601	549	562	441	412	489	268	2113	660	386	1586	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.22	0.82	0.61	0.56	0.39	0.98	0.33	0.19	0.51	0.93	1.40

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.40	
Intersection Signal Delay (s/veh): 76.0	Intersection LOS: E

Intersection Capacity Utilization 115.0%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



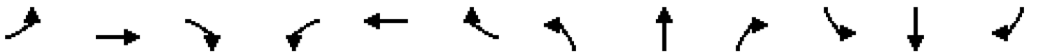
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	496	115	442	257	220	183	252	667	121	188	1411	1094
Future Volume (vph)	496	115	442	257	220	183	252	667	121	188	1411	1094
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.89	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	1810	1384	1707	1776	1550	1626	5136	1420	1765	4515	1385
Flt Permitted	0.95	1.00	1.00	0.68	1.00	1.00	0.08	1.00	1.00	0.38	1.00	1.00
Satd. Flow (perm)	3367	1810	1384	1222	1776	1550	129	5136	1420	698	4515	1385
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	517	120	460	268	229	191	262	695	126	196	1470	1140
RTOR Reduction (vph)	0	0	153	0	0	138	0	0	74	0	0	329
Lane Group Flow (vph)	517	120	307	268	229	53	263	695	52	196	1470	811
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	24.2	34.8	34.8	41.4	25.5	25.5	72.0	57.6	57.6	59.6	49.2	49.2
Effective Green, g (s)	24.2	34.8	34.8	41.4	25.5	25.5	72.0	57.6	57.6	59.6	49.2	49.2
Actuated g/C Ratio	0.17	0.25	0.25	0.30	0.18	0.18	0.51	0.41	0.41	0.43	0.35	0.35
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	582	449	344	416	323	282	267	2113	584	376	1586	486
v/s Ratio Prot	c0.15	0.07		0.07	0.13		c0.13	0.14		0.04	0.33	
v/s Ratio Perm			c0.22	0.12		0.03	0.37		0.04	0.18		c0.59
v/c Ratio	0.89	0.27	0.89	0.64	0.71	0.19	0.99	0.33	0.09	0.52	0.93	1.67
Uniform Delay, d1	56.6	42.3	50.8	41.2	53.8	48.5	45.2	28.0	25.2	26.0	43.7	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.65	0.74	0.42
Incremental Delay, d2	15.2	0.3	23.8	3.4	7.0	0.3	50.5	0.4	0.3	0.9	7.8	307.1
Delay (s)	71.8	42.7	74.6	44.7	60.7	48.8	95.7	28.5	25.5	17.7	40.2	326.4
Level of Service	E	D	E	D	E	D	F	C	C	B	D	F
Approach Delay (s/veh)		69.8			51.2			44.4			154.9	
Approach LOS		E			D			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	104.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	349	0	0	864	5	0	0	0	7	0	102
Future Volume (vph)	16	349	0	0	864	5	0	0	0	7	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.874	
Flt Protected		0.998									0.997	
Satd. Flow (prot)	0	3532	0	0	3536	0	0	1863	0	0	1623	0
Flt Permitted		0.998									0.997	
Satd. Flow (perm)	0	3532	0	0	3536	0	0	1863	0	0	1623	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		639.9			114.1			74.7			122.7	
Travel Time (s)		38.4			6.8			6.7			11.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	379	0	0	939	5	0	0	0	8	0	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	396	0	0	944	0	0	0	0	0	119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

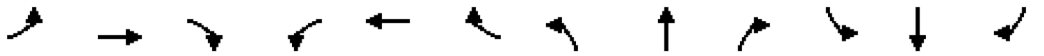
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.4%		ICU Level of Service A	
Analysis Period (min) 15			



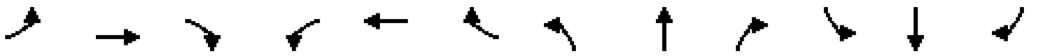
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	349	0	0	864	5	0	0	0	7	0	102
Future Volume (Veh/h)	16	349	0	0	864	5	0	0	0	7	0	102
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	379	0	0	939	5	0	0	0	8	0	111
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	944			379			994	1357	190	1165	1355	472
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	944			379			994	1357	190	1165	1355	472
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	95	100	79
cM capacity (veh/h)	722			1176			156	144	820	147	145	538

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	207	190	470	475	0	119
Volume Left	17	0	0	0	0	8
Volume Right	0	0	0	5	0	111
cSH	722	1700	1176	1700	1700	456
Volume to Capacity	0.02	0.11	0.00	0.28	0.00	0.26
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	8.3
Control Delay (s/veh)	1.1	0.0	0.0	0.0	0.0	15.6
Lane LOS	A				A	C
Approach Delay (s/veh)	0.6		0.0		0.0	15.6
Approach LOS					A	C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	37.4%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Future Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.98	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5036	1523	3338	5085	1515	3479	5085	1521	3421	5085	1545
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271			298			339			159
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	210	830	353	554	1779	298	576	1213	469	374	888	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	830	353	554	1779	298	576	1213	469	374	888	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	17.0	50.0	50.0	35.0	68.0	68.0	21.0	34.0	34.0	21.0	34.0	34.0
Total Split (%)	12.1%	35.7%	35.7%	25.0%	48.6%	48.6%	15.0%	24.3%	24.3%	15.0%	24.3%	24.3%
Maximum Green (s)	12.0	42.6	42.6	30.0	60.6	60.6	16.0	26.6	26.6	16.0	26.6	26.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	12.0	41.7	41.7	28.3	58.0	58.0	18.6	27.6	27.6	17.7	26.6	26.6
Actuated g/C Ratio	0.09	0.30	0.30	0.20	0.41	0.41	0.13	0.20	0.20	0.13	0.19	0.19
v/c Ratio	0.71	0.55	0.55	0.81	0.84	0.37	1.24	1.21	0.82	0.86	0.92	0.64
Control Delay (s/veh)	76.4	42.9	13.2	63.6	41.3	3.9	153.7	143.8	29.3	79.8	70.6	28.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	76.4	42.9	13.2	63.6	41.3	3.9	153.7	143.8	29.3	79.8	70.6	28.8
LOS	E	D	B	E	D	A	F	F	C	E	E	C
Approach Delay (s/veh)		40.4			41.8			122.6			65.5	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	31.7	76.2	18.0	81.2	167.9	0.0	~116.1	~166.7	66.2	57.1	95.3	30.0
Queue Length 95th (m)	#46.9	90.5	50.2	103.4	186.6	18.0	m#115.6	m#160.6	m62.8	#90.3	#121.2	62.9
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	294	1532	651	721	2201	824	465	1001	571	433	966	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.54	0.54	0.77	0.81	0.36	1.24	1.21	0.82	0.86	0.92	0.64

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 59 (42%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay (s/veh): 69.5	Intersection LOS: E

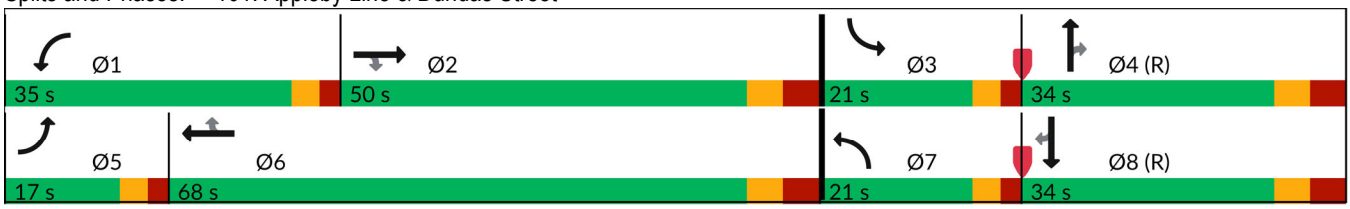
Intersection Capacity Utilization 111.2%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

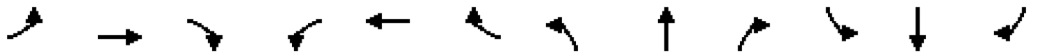
Splits and Phases: 101: Appleby Line & Dundas Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Future Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1523	3367	5085	1515	3502	5085	1521	3433	5085	1545
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	210	830	353	554	1779	298	576	1213	469	374	888	271
RTOR Reduction (vph)	0	0	190	0	0	175	0	0	272	0	0	129
Lane Group Flow (vph)	210	830	163	554	1779	123	576	1213	197	374	888	142
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	12.0	41.7	41.7	28.3	58.0	58.0	18.6	27.5	27.5	17.7	26.6	26.6
Effective Green, g (s)	12.0	41.7	41.7	28.3	58.0	58.0	18.6	27.5	27.5	17.7	26.6	26.6
Actuated g/C Ratio	0.09	0.30	0.30	0.20	0.41	0.41	0.13	0.20	0.20	0.13	0.19	0.19
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	294	1500	453	680	2106	627	465	998	298	434	966	293
v/s Ratio Prot	0.06	0.16		c0.16	c0.35		c0.16	c0.24		0.11	0.17	
v/s Ratio Perm			0.11			0.08			0.13			0.09
v/c Ratio	0.71	0.55	0.36	0.81	0.84	0.20	1.24	1.22	0.66	0.86	0.92	0.49
Uniform Delay, d1	62.3	41.3	38.6	53.3	36.9	26.1	60.7	56.3	51.9	60.0	55.6	50.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.90	1.02	1.89	1.00	1.00	1.00
Incremental Delay, d2	9.8	0.4	0.5	8.4	3.3	0.2	109.2	97.9	1.0	17.2	15.0	5.7
Delay (s)	72.1	41.8	39.1	61.7	40.2	26.3	163.6	155.3	99.4	77.2	70.7	56.2
Level of Service	E	D	D	E	D	C	F	F	F	E	E	E
Approach Delay (s/veh)		45.7			43.2			145.8			69.7	
Approach LOS		D			D			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	78.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Future Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.98		0.99		0.97	1.00	1.00			0.99	
Frt		0.938				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3329	0	1736	4560	1599	3502	4359	0	1787	4290	0
Flt Permitted	0.135			0.140			0.950			0.070		
Satd. Flow (perm)	246	3329	0	254	4560	1549	3490	4359	0	132	4290	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		115				193		10			43	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	218	434	302	162	947	579	425	1821	144	324	1020	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	736	0	162	947	579	425	1965	0	324	1292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	36.0		14.0	35.0	35.0	30.0	72.0		18.0	60.0	
Total Split (%)	10.7%	25.7%		10.0%	25.0%	25.0%	21.4%	51.4%		12.9%	42.9%	
Maximum Green (s)	11.0	29.6		10.0	28.6	28.6	25.0	65.5		14.0	53.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	43.0	29.6		41.0	28.6	28.6	21.7	65.5		73.3	56.8	
Actuated g/C Ratio	0.31	0.21		0.29	0.20	0.20	0.16	0.47		0.52	0.41	
v/c Ratio	1.14	0.93		0.90	1.02	1.23	0.79	0.96		1.38	0.73	
Control Delay (s/veh)	141.9	64.0		83.1	88.3	152.5	80.6	31.5		222.5	45.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	141.9	64.0		83.1	88.3	152.5	80.6	31.5		222.5	45.6	
LOS	F	E		F	F	F	F	C		F	D	
Approach Delay (s/veh)		81.8			109.8			40.3			81.1	
Approach LOS		F			F			D			F	
Queue Length 50th (m)	~57.6	96.3		35.9	~121.2	~162.3	68.0	158.3		~111.8	110.5	
Queue Length 95th (m)	#114.1	#134.6		#75.6	#155.7	#238.3	m72.9	m#271.9		m#152.2	m128.9	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	192	794		180	931	470	625	2044		234	1767	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.14	0.93		0.90	1.02	1.23	0.68	0.96		1.38	0.73	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.38	
Intersection Signal Delay (s/veh): 73.8	Intersection LOS: E

Intersection Capacity Utilization 105.3%	ICU Level of Service G
Analysis Period (min) 15	

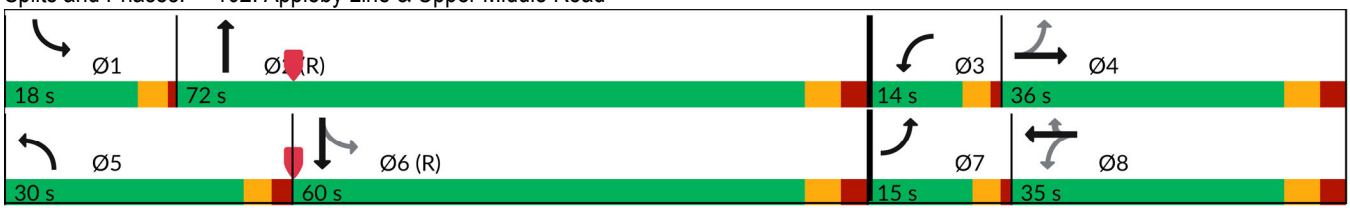
* User Entered Value

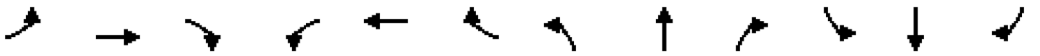
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road

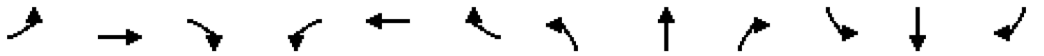




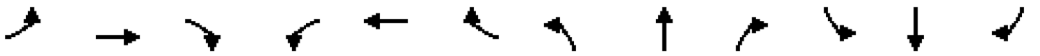
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Future Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3330		1735	4560	1549	3502	4360		1787	4292	
Flt Permitted	0.14	1.00		0.14	1.00	1.00	0.95	1.00		0.07	1.00	
Satd. Flow (perm)	247	3330		255	4560	1549	3502	4360		132	4292	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	218	434	302	162	947	579	425	1821	144	324	1020	272
RTOR Reduction (vph)	0	91	0	0	0	154	0	5	0	0	26	0
Lane Group Flow (vph)	218	645	0	162	947	425	425	1960	0	324	1266	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	40.6	29.6		38.6	28.6	28.6	21.7	65.5		70.8	56.8	
Effective Green, g (s)	40.6	29.6		38.6	28.6	28.6	21.7	65.5		70.8	56.8	
Actuated g/C Ratio	0.29	0.21		0.28	0.20	0.20	0.16	0.47		0.51	0.41	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	188	704		176	931	316	542	2039		232	1741	
v/s Ratio Prot	c0.09	0.19		0.07	0.21		0.12	c0.45		c0.14	0.30	
v/s Ratio Perm	0.24			0.19		c0.27				c0.56		
v/c Ratio	1.16	0.92		0.92	1.02	1.35	0.78	0.96		1.40	0.73	
Uniform Delay, d1	44.0	54.0		43.5	55.7	55.7	56.9	36.0		44.2	35.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.35	0.70		1.11	1.27	
Incremental Delay, d2	115.2	16.7		45.5	33.9	175.5	2.8	6.0		193.0	1.6	
Delay (s)	159.2	70.7		88.9	89.6	231.2	79.4	31.1		242.0	46.2	
Level of Service	F	E		F	F	F	E	C		F	D	
Approach Delay (s/veh)		90.9			138.1			39.7			85.5	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	83.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.32		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	105.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Future Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	1.00	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.995							0.850		0.916	
Flt Protected	0.950							0.950			0.982	
Satd. Flow (prot)	1805	4477	0	1900	4515	0	0	1805	1615	0	1695	0
Flt Permitted	0.050							0.752			0.951	
Satd. Flow (perm)	95	4477	0	1900	4515	0	0	1427	1593	0	1641	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5							45		45	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	989	31	0	1988	0	81	0	17	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1020	0	0	1988	0	0	81	17	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	71.0	71.0		13.0	84.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	59.2%	59.2%		10.8%	70.0%		30.0%	30.0%	30.0%	30.0%	30.0%	
Maximum Green (s)	67.0	67.0		9.0	80.0		32.0	32.0	32.0	32.0	32.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
v/c Ratio	0.05	0.34			0.66			0.21	0.04		0.02	
Control Delay (s/veh)	9.0	9.0			20.9			36.1	0.5		0.1	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.0	9.0			20.9			36.1	0.5		0.1	
LOS	A	A			C			D	A		A	
Approach Delay (s/veh)		9.0			20.9			29.9			0.1	
Approach LOS		A			C			C			A	
Queue Length 50th (m)	0.3	41.7			152.5			15.6	0.0		0.0	
Queue Length 95th (m)	1.6	50.4			m144.2			29.6	0.7		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	63	2986			3010			380	457		470	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.05	0.34			0.66			0.21	0.04		0.02	

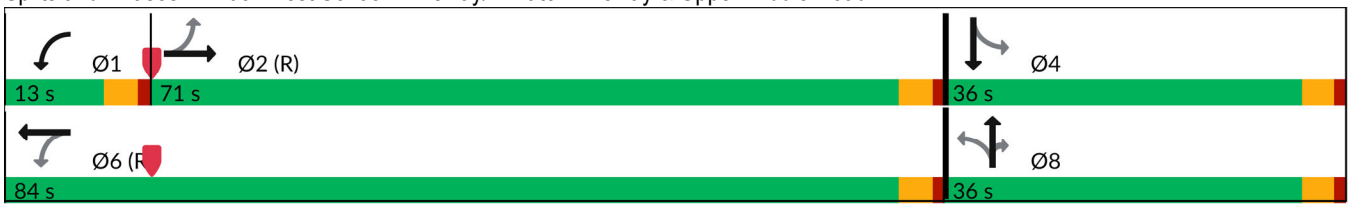
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 68 (57%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay (s/veh): 17.2	Intersection LOS: B

Intersection Capacity Utilization 75.0%	ICU Level of Service D
Analysis Period (min) 15	

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Future Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1805	4479			4515			1803	1593		1693	
Flt Permitted	0.05	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	95	4479			4515			1428	1593		1641	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	989	31	0	1988	0	81	0	17	3	0	5
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	12	0	6	0
Lane Group Flow (vph)	3	1018	0	0	1988	0	0	81	5	0	2	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Effective Green, g (s)	80.0	80.0			80.0			32.0	32.0		32.0	
Actuated g/C Ratio	0.67	0.67			0.67			0.27	0.27		0.27	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	63	2986			3010			380	424		437	
v/s Ratio Prot		0.23			c0.44							
v/s Ratio Perm	0.03							c0.06	0.00		0.00	
v/c Ratio	0.05	0.34			0.66			0.21	0.01		0.00	
Uniform Delay, d1	6.9	8.6			11.9			34.2	32.4		32.3	
Progression Factor	1.00	1.00			1.69			1.00	1.00		1.00	
Incremental Delay, d2	1.4	0.3			0.4			1.3	0.0		0.0	
Delay (s)	8.3	8.9			20.6			35.5	32.4		32.3	
Level of Service	A	A			C			D	C		C	
Approach Delay (s/veh)		8.9			20.6			35.0			32.3	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	963	10	21	1859	32	62
Future Volume (vph)	963	10	21	1859	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	*0.80	0.91	1.00	*0.80	1.00	1.00
Ped Bike Factor						
Frt	0.998					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4506	0	1570	4515	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4506	0	1570	4515	1805	1568
Link Speed (k/h)	60			60	40	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	11.9	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	1024	11	22	1978	34	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1035	0	22	1978	34	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

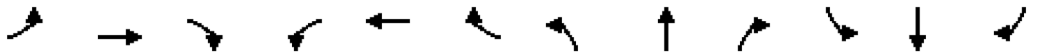
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.9%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	963	10	21	1859	32	62
Future Volume (Veh/h)	963	10	21	1859	32	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1024	11	22	1978	34	66
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257					
pX, platoon unblocked			0.93		0.93	0.93
vC, conflicting volume			1052		1750	364
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			793		1543	53
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			97		64	93
cM capacity (veh/h)			683		96	917

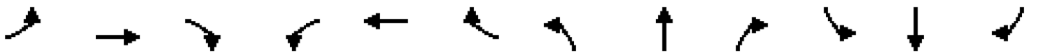
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	410	410	216	22	659	659	659	34	66
Volume Left	0	0	0	22	0	0	0	34	0
Volume Right	0	0	11	0	0	0	0	0	66
cSH	1700	1700	1700	683	1700	1700	1700	96	917
Volume to Capacity	0.24	0.24	0.13	0.03	0.39	0.39	0.39	0.36	0.07
Queue Length 95th (m)	0.0	0.0	0.0	0.8	0.0	0.0	0.0	11.2	1.9
Control Delay (s/veh)	0.0	0.0	0.0	10.4	0.0	0.0	0.0	62.1	9.2
Lane LOS				B				F	A
Approach Delay (s/veh)	0.0			0.1				27.2	
Approach LOS								D	

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	767	72	1	1732	205	14	0	1	55	0	124
Future Volume (vph)	180	767	72	1	1732	205	14	0	1	55	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.984			0.992			0.906	
Flt Protected	0.950							0.955			0.985	
Satd. Flow (prot)	1805	4452	0	0	4443	0	0	1765	0	0	1696	0
Flt Permitted	0.950							0.955			0.985	
Satd. Flow (perm)	1805	4452	0	0	4443	0	0	1765	0	0	1696	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			163.6			235.5	
Travel Time (s)		7.1			17.4			14.7			21.2	
Confl. Peds. (#/hr)	13					13						1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	188	799	75	1	1804	214	15	0	1	57	0	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	874	0	0	2019	0	0	16	0	0	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.6%		ICU Level of Service D	
Analysis Period (min) 15			
* User Entered Value			

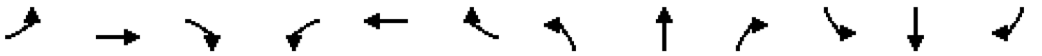


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	767	72	1	1732	205	14	0	1	55	0	124
Future Volume (Veh/h)	180	767	72	1	1732	205	14	0	1	55	0	124
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	188	799	75	1	1804	214	15	0	1	57	0	129
Pedestrians		1									13	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked	0.57						0.57	0.57		0.57	0.57	0.57
vC, conflicting volume	2031			874			1946	3246	304	2569	3176	722
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	177			874			28	2303	304	1120	2182	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	76			100			96	100	100	24	100	79
cM capacity (veh/h)	797			768			358	16	692	75	20	616

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	188	320	320	235	452	902	665	16	186
Volume Left	188	0	0	0	1	0	0	15	57
Volume Right	0	0	0	75	0	0	214	1	129
cSH	797	1700	1700	1700	768	1700	1700	369	192
Volume to Capacity	0.24	0.19	0.19	0.14	0.00*	0.53	0.39	0.04	0.97
Queue Length 95th (m)	7.3	0.0	0.0	0.0	0.0	0.0	0.0	1.1	64.0
Control Delay (s/veh)	10.9	0.0	0.0	0.0	0.0	0.0	0.0	15.2	107.8
Lane LOS	B				A			C	F
Approach Delay (s/veh)	1.9				0.0			15.2	107.8
Approach LOS								C	F

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Future Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						0.99	
Frt		0.989			0.960			0.992			0.940	
Flt Protected	0.950							0.958			0.973	
Satd. Flow (prot)	1752	4462	0	0	4290	0	0	1770	0	0	1711	0
Flt Permitted	0.058				0.937			0.593			0.799	
Satd. Flow (perm)	107	4462	0	0	4020	0	0	1096	0	0	1399	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			116			3			33	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			159.9			321.0	
Travel Time (s)		17.4			14.7			14.4			28.9	
Confl. Peds. (#/hr)	8					8				5		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	233	594	45	8	1733	632	73	5	5	252	2	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	639	0	0	2373	0	0	83	0	0	456	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

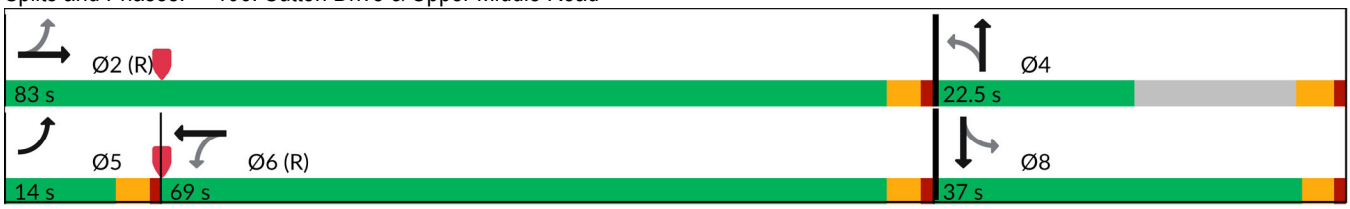


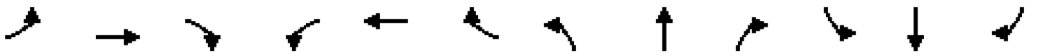
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	30.0		30.0	30.0		22.5	22.5		30.5	30.5	
Total Split (s)	14.0	83.0		69.0	69.0		22.5	22.5		37.0	37.0	
Total Split (%)	11.7%	69.2%		57.5%	57.5%		18.8%	18.8%		30.8%	30.8%	
Maximum Green (s)	10.0	79.0		65.0	65.0		18.0	18.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.5	3.5		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.5			4.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		5.0	5.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		Max	Max	
Walk Time (s)		10.0		10.0	10.0		7.0	7.0		10.0	10.0	
Flash Don't Walk (s)		16.0		16.0	16.0		11.0	11.0		16.0	16.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	79.0	79.0			65.0			32.5			33.0	
Actuated g/C Ratio	0.66	0.66			0.54			0.27			0.28	
v/c Ratio	1.13	0.22			1.06			0.28			1.12	
Control Delay (s/veh)	141.3	7.5			65.3			36.3			118.4	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	141.3	7.5			65.3			36.3			118.4	
LOS	F	A			E			D			F	
Approach Delay (s/veh)		43.3			65.3			36.3			118.4	
Approach LOS		D			E			D			F	
Queue Length 50th (m)	~53.2	20.2			~266.7			15.9			~125.6	
Queue Length 95th (m)	#109.1	24.9			#301.5			31.0			#193.2	
Internal Link Dist (m)		266.7			220.7			135.9			297.0	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	207	2943			2230			299			408	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.13	0.22			1.06			0.28			1.12	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 76 (63%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay (s/veh): 66.0	Intersection LOS: E

Intersection Capacity Utilization 91.9%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Sutton Drive & Upper Middle Road

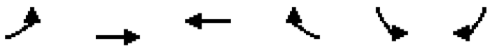




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Future Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.5			4.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.99			1.00			0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.96			0.99			0.94	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1752	4464			4290			1770			1704	
Flt Permitted	0.06	1.00			0.94			0.59			0.80	
Satd. Flow (perm)	107	4464			4021			1096			1398	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	233	594	45	8	1733	632	73	5	5	252	2	202
RTOR Reduction (vph)	0	6	0	0	53	0	0	2	0	0	24	0
Lane Group Flow (vph)	233	633	0	0	2320	0	0	81	0	0	432	0
Confl. Peds. (#/hr)	8					8				5		2
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	79.0	79.0			65.0			32.5			33.0	
Effective Green, g (s)	79.0	79.0			65.0			32.5			33.0	
Actuated g/C Ratio	0.66	0.66			0.54			0.27			0.28	
Clearance Time (s)	4.0	4.0			4.0			4.5			4.0	
Vehicle Extension (s)	5.0	5.0			5.0			3.0			5.0	
Lane Grp Cap (vph)	207	2938			2178			296			384	
v/s Ratio Prot	c0.09	0.14										
v/s Ratio Perm	c0.65				0.58			0.07			c0.31	
v/c Ratio	1.13	0.22			1.07			0.27			1.13	
Uniform Delay, d1	40.7	8.2			27.5			34.4			43.5	
Progression Factor	1.55	0.93			1.00			1.00			1.00	
Incremental Delay, d2	99.6	0.2			39.4			0.5			84.4	
Delay (s)	162.7	7.7			66.9			34.9			127.9	
Level of Service	F	A			E			C			F	
Approach Delay (s/veh)		49.2			66.9			34.9			127.9	
Approach LOS		D			E			C			F	

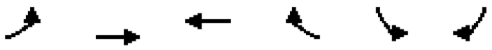
Intersection Summary			
HCM 2000 Control Delay (s/veh)	69.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	91.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	61	749	2024	30	0	70
Future Volume (vph)	61	749	2024	30	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	4515	4506	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	4515	4506	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	64	788	2131	32	0	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	788	2163	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

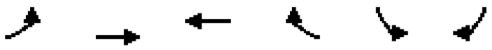
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	61	749	2024	30	0	70
Future Volume (Veh/h)	61	749	2024	30	0	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	64	788	2131	32	0	74
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245				
pX, platoon unblocked					1.00	
vC, conflicting volume	2172				2547	735
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2172				2540	735
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	74				100	80
cM capacity (veh/h)	247				17	364

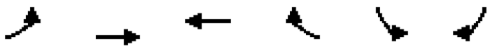
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	64	263	263	263	852	852	458	74
Volume Left	64	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	32	74
cSH	247	1700	1700	1700	1700	1700	1700	364
Volume to Capacity	0.26	0.15	0.15	0.15	0.50	0.50	0.27	0.20
Queue Length 95th (m)	8.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
Control Delay (s/veh)	24.6	0.0	0.0	0.0	0.0	0.0	0.0	17.4
Lane LOS	C							C
Approach Delay (s/veh)	1.8				0.0			17.4
Approach LOS								C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	742	2216	10	6	9
Future Volume (vph)	13	742	2216	10	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.916	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1805	4515	4511	0	1709	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1805	4515	4511	0	1709	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	14	789	2357	11	6	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	789	2368	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

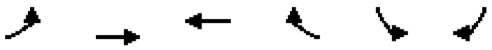
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	742	2216	10	6	9
Future Volume (Veh/h)	13	742	2216	10	6	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	789	2357	11	6	10
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2384				2670	807
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2384				2670	807
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				65	97
cM capacity (veh/h)	203				17	324

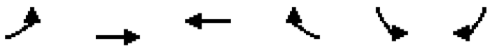
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	14	263	263	263	943	943	482	16
Volume Left	14	0	0	0	0	0	0	6
Volume Right	0	0	0	0	0	0	11	10
cSH	203	1700	1700	1700	1700	1700	1700	42
Volume to Capacity	0.07	0.15	0.15	0.15	0.55	0.55	0.28	0.38
Queue Length 95th (m)	1.8	0.0	0.0	0.0	0.0	0.0	0.0	10.5
Control Delay (s/veh)	24.0	0.0	0.0	0.0	0.0	0.0	0.0	136.3
Lane LOS	C							F
Approach Delay (s/veh)	0.4				0.0			136.3
Approach LOS								F

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	708	2220	162	70	48
Future Volume (vph)	43	708	2220	162	70	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.945	
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1805	4515	4473	0	1722	0
Flt Permitted	0.950				0.971	
Satd. Flow (perm)	1805	4515	4473	0	1722	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	47	770	2413	176	76	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	770	2589	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.1%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	43	708	2220	162	70	48
Future Volume (Veh/h)	43	708	2220	162	70	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	47	770	2413	176	76	52
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2603				2866	906
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2603				2866	906
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	72				0	81
cM capacity (veh/h)	167				10	274

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	47	257	257	257	965	965	659	128
Volume Left	47	0	0	0	0	0	0	76
Volume Right	0	0	0	0	0	0	176	52
cSH	167	1700	1700	1700	1700	1700	1700	16
Volume to Capacity	0.28	0.15	0.15	0.15	0.57	0.57	0.39	8.06
Queue Length 95th (m)	8.8	0.0	0.0	0.0	0.0	0.0	0.0	Err
Control Delay (s/veh)	34.9	0.0	0.0	0.0	0.0	0.0	0.0	Err
Lane LOS	D							F
Approach Delay (s/veh)	2.0				0.0			Err
Approach LOS								F

Intersection Summary			
Average Delay	362.6		
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	34	2334	25	41	722
Future Volume (vph)	32	34	2334	25	41	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.931		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1726	0	4506	0	1805	4515
Flt Permitted	0.976				0.950	
Satd. Flow (perm)	1726	0	4506	0	1805	4515
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			459.4
Travel Time (s)	14.5		7.6			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	34	36	2457	26	43	760
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	2483	0	43	760
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

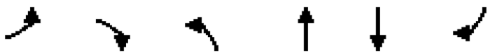
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.2%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			



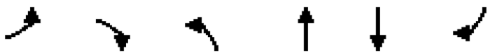
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	32	34	2334	25	41	722
Future Volume (Veh/h)	32	34	2334	25	41	722
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	34	36	2457	26	43	760
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	2810	833			2484	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2810	833			2484	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	89			77	
cM capacity (veh/h)	11	316			188	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	70	983	983	517	43	253	253	253
Volume Left	34	0	0	0	43	0	0	0
Volume Right	36	0	0	26	0	0	0	0
cSH	23	1700	1700	1700	188	1700	1700	1700
Volume to Capacity	3.08	0.58	0.58	0.30	0.23	0.15	0.15	0.15
Queue Length 95th (m)	Err	0.0	0.0	0.0	6.8	0.0	0.0	0.0
Control Delay (s/veh)	Err	0.0	0.0	0.0	29.8	0.0	0.0	0.0
Lane LOS	F				D			
Approach Delay (s/veh)	Err	0.0			1.6			
Approach LOS	F							

Intersection Summary			
Average Delay	208.9		
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	638	797	2149	698	44
Future Volume (vph)	182	638	797	2149	698	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	1736	4515	4503	0
Flt Permitted	0.950		0.243			
Satd. Flow (perm)	1752	1583	443	4515	4503	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		352			10	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	200	701	876	2362	767	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	701	876	2362	815	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



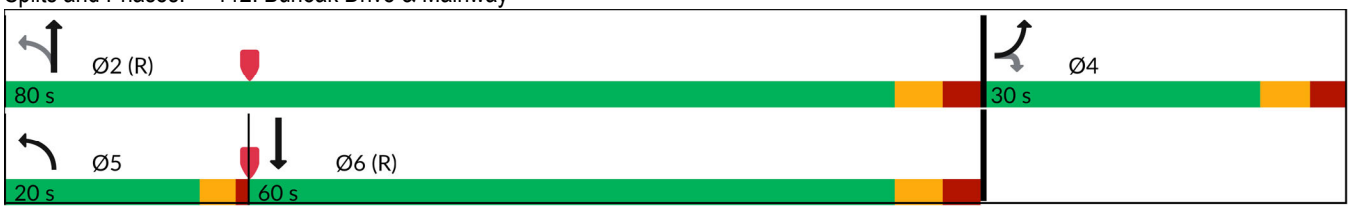
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	30.0	30.0	20.0	80.0	60.0	
Total Split (%)	27.3%	27.3%	18.2%	72.7%	54.5%	
Maximum Green (s)	23.0	23.0	16.0	73.0	53.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0	76.0	73.0	53.0	
Actuated g/C Ratio	0.21	0.21	0.69	0.66	0.48	
v/c Ratio	0.55	1.15	1.77	0.79	0.37	
Control Delay (s/veh)	45.3	106.8	376.6	19.7	18.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	45.3	106.8	376.6	19.7	18.4	
LOS	D	F	F	B	B	
Approach Delay (s/veh)	93.1			116.3	18.4	
Approach LOS	F			F	B	
Queue Length 50th (m)	41.5	~121.3	~304.1	147.7	46.3	
Queue Length 95th (m)	66.6	#196.3	m#380.3	172.4	58.2	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	366	609	494	2996	2174	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.55	1.15	1.77	0.79	0.37	

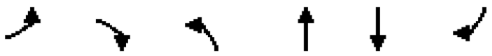
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 75 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.77	
Intersection Signal Delay (s/veh): 96.0	Intersection LOS: F

Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 112: Burloak Drive & Mainway

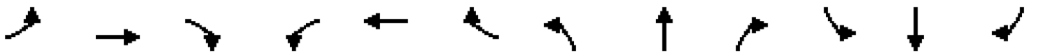




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	638	797	2149	698	44
Future Volume (vph)	182	638	797	2149	698	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	1735	4515	4504	
Flt Permitted	0.95	1.00	0.24	1.00	1.00	
Satd. Flow (perm)	1752	1583	443	4515	4504	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	200	701	876	2362	767	48
RTOR Reduction (vph)	0	278	0	0	5	0
Lane Group Flow (vph)	200	423	876	2362	810	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	23.0	23.0	73.0	73.0	53.0	
Effective Green, g (s)	23.0	23.0	73.0	73.0	53.0	
Actuated g/C Ratio	0.21	0.21	0.66	0.66	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	366	330	481	2996	2170	
v/s Ratio Prot	0.11		c0.26	0.52	0.18	
v/s Ratio Perm		c0.27	c0.94			
v/c Ratio	0.55	1.28	1.82	0.79	0.37	
Uniform Delay, d1	38.8	43.5	14.3	13.1	18.0	
Progression Factor	1.00	1.00	2.11	1.36	1.00	
Incremental Delay, d2	1.7	147.6	375.5	1.6	0.5	
Delay (s)	40.5	191.1	405.8	19.3	18.5	
Level of Service	D	F	F	B	B	
Approach Delay (s/veh)	157.7			123.9	18.5	
Approach LOS	F			F	B	

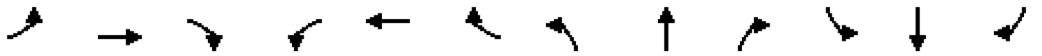
Intersection Summary			
HCM 2000 Control Delay (s/veh)	112.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	94.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	385	28	14	651	70	182	48	56	186	79	76
Future Volume (vph)	23	385	28	14	651	70	182	48	56	186	79	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.990			0.986			0.973			0.970	
Flt Protected		0.997			0.999			0.969			0.973	
Satd. Flow (prot)	0	3409	0	0	3482	0	0	1741	0	0	1758	0
Flt Permitted		0.997			0.999			0.969			0.973	
Satd. Flow (perm)	0	3409	0	0	3482	0	0	1741	0	0	1758	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		114.1			869.1			154.8			190.1	
Travel Time (s)		6.8			52.1			13.9			17.1	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Adj. Flow (vph)	27	458	33	17	775	83	217	57	67	221	94	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	518	0	0	875	0	0	341	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

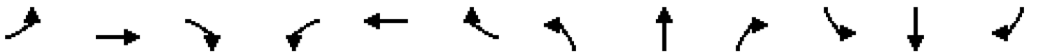
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.5%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	385	28	14	651	70	182	48	56	186	79	76
Future Volume (Veh/h)	23	385	28	14	651	70	182	48	56	186	79	76
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	27	458	33	17	775	83	217	57	67	221	94	90
Pedestrians								5				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	858			496			1092	1426	251	1229	1401	429
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	858			496			1092	1426	251	1229	1401	429
tC, single (s)	4.1			4.3			7.6	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			98			0	55	91	0	29	84
cM capacity (veh/h)	779			1012			56	127	752	76	131	574

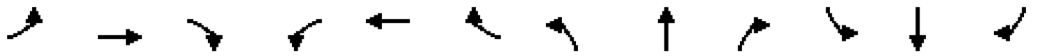
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	256	262	405	471	341	405
Volume Left	27	0	17	0	217	221
Volume Right	0	33	0	83	67	90
cSH	779	1700	1012	1700	78	107
Volume to Capacity	0.03	0.15	0.02	0.28	4.38	3.78
Queue Length 95th (m)	0.9	0.0	0.4	0.0	Err	Err
Control Delay (s/veh)	1.4	0.0	0.5	0.0	Err	Err
Lane LOS	A		A		F	F
Approach Delay (s/veh)	0.7		0.3		Err	Err
Approach LOS					F	F

Intersection Summary				
Average Delay	3487.5			
Intersection Capacity Utilization	58.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	317	33	6	1108	122	74	7	16	47	2	57
Future Volume (vph)	39	317	33	6	1108	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.985			0.977			0.927	
Flt Protected		0.995						0.963			0.978	
Satd. Flow (prot)	0	3407	0	0	3490	0	0	1788	0	0	1700	0
Flt Permitted		0.995						0.963			0.978	
Satd. Flow (perm)	0	3407	0	0	3490	0	0	1788	0	0	1700	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			639.9			107.7			112.1	
Travel Time (s)		25.6			38.4			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	48	391	41	7	1368	151	91	9	20	58	2	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	480	0	0	1526	0	0	120	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.8%		ICU Level of Service B	
Analysis Period (min) 15			

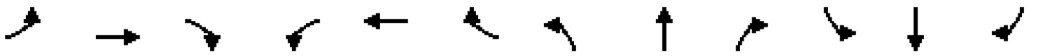


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	39	317	33	6	1108	122	74	7	16	47	2	57
Future Volume (Veh/h)	39	317	33	6	1108	122	74	7	16	47	2	57
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	48	391	41	7	1368	151	91	9	20	58	2	70
Pedestrians		2			3			7			2	
Lane Width (m)		3.6			3.6			3.6			3.6	
Walking Speed (m/s)		1.2			1.2			1.2			1.2	
Percent Blockage		0			0			1			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1521			439			1286	2050	226	1779	1995	764
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1521			439			1286	2050	226	1779	1995	764
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.6	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	89			99			0	82	97	0	96	80
cM capacity (veh/h)	444			1125			87	50	777	39	54	350

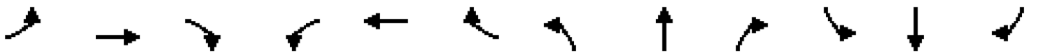
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	244	237	691	835	120	130
Volume Left	48	0	7	0	91	58
Volume Right	0	41	0	151	20	70
cSH	444	1700	1125	1700	96	76
Volume to Capacity	0.11	0.14	0.00*	0.49	1.26	1.72
Queue Length 95th (m)	2.9	0.0	0.2	0.0	67.3	89.3
Control Delay (s/veh)	4.2	0.0	0.2	0.0	257.3	465.6
Lane LOS	A		A		F	F
Approach Delay (s/veh)	2.1		0.1		257.3	465.6
Approach LOS					F	F

Intersection Summary				
Average Delay	41.0			
Intersection Capacity Utilization	56.8%	ICU Level of Service	B	
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Future Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00			1.00	
Frt		0.929			0.958			0.992			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3122	0	1687	3367	0	1703	4416	0	1787	4371	0
Flt Permitted	0.149			0.306			0.063			0.067		
Satd. Flow (perm)	267	3122	0	542	3367	0	113	4416	0	126	4371	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		146			38			7			19	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	224	209	189	253	828	317	422	1941	103	123	1309	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	398	0	253	1145	0	422	2044	0	123	1493	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

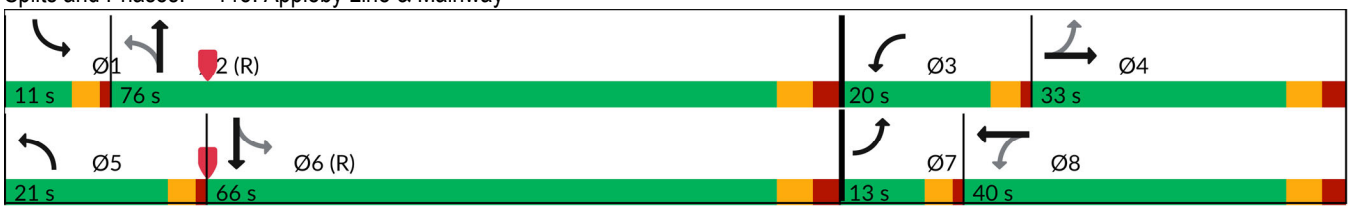


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	13.0	33.0		20.0	40.0		21.0	76.0		11.0	66.0	
Total Split (%)	9.3%	23.6%		14.3%	28.6%		15.0%	54.3%		7.9%	47.1%	
Maximum Green (s)	9.0	26.7		16.0	33.7		17.0	69.7		7.0	59.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	38.2	26.9		49.0	33.7		83.0	69.7		69.0	59.7	
Actuated g/C Ratio	0.27	0.19		0.35	0.24		0.59	0.50		0.49	0.43	
v/c Ratio	1.37	0.56		0.79	1.36		1.62	0.93		0.85	0.80	
Control Delay (s/veh)	228.4	35.2		54.7	210.8		320.5	19.8		72.1	30.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	228.4	35.2		54.7	210.8		320.5	19.8		72.1	30.5	
LOS	F	D		D	F		F	B		E	C	
Approach Delay (s/veh)		104.7			182.5			71.2			33.7	
Approach LOS		F			F			E			C	
Queue Length 50th (m)	~71.0	36.7		59.1	~230.7		~165.9	174.9		18.5	109.0	
Queue Length 95th (m)	#129.5	55.6		#96.9	#276.2		m#181.0	m218.9		m#51.6	m135.3	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	164	716		320	839		260	2202		145	1874	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.37	0.56		0.79	1.36		1.62	0.93		0.85	0.80	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 85 (61%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 90.2	Intersection LOS: F

Intersection Capacity Utilization 108.9% ICU Level of Service G
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

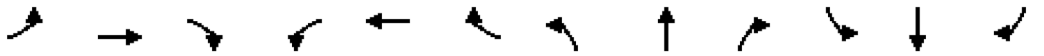
Splits and Phases: 115: Appleby Line & Mainway



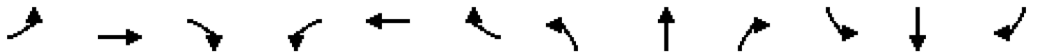
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Future Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3122		1686	3368		1703	4418		1787	4369	
Flt Permitted	0.15	1.00		0.31	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	266	3122		544	3368		113	4418		126	4369	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	224	209	189	253	828	317	422	1941	103	123	1309	184
RTOR Reduction (vph)	0	118	0	0	29	0	0	4	0	0	11	0
Lane Group Flow (vph)	224	280	0	253	1116	0	422	2040	0	123	1482	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	35.9	26.9		46.7	33.7		80.7	69.7		66.7	59.7	
Effective Green, g (s)	35.9	26.9		46.7	33.7		80.7	69.7		66.7	59.7	
Actuated g/C Ratio	0.26	0.19		0.33	0.24		0.58	0.50		0.48	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	160	599		310	810		258	2199		143	1863	
v/s Ratio Prot	c0.09	0.09		0.09	c0.33		c0.20	0.46		0.04	0.34	
v/s Ratio Perm	0.27			0.18			c0.75			0.37		
v/c Ratio	1.40	0.47		0.82	1.38		1.64	0.93		0.86	0.80	
Uniform Delay, d1	47.9	50.2		37.8	53.2		45.7	32.8		30.5	34.9	
Progression Factor	1.00	1.00		1.00	1.00		1.26	0.49		1.21	0.79	
Incremental Delay, d2	213.2	0.6		15.2	177.8		292.2	3.3		34.0	3.2	
Delay (s)	261.1	50.8		53.0	231.0		349.7	19.3		70.9	30.6	
Level of Service	F	D		D	F		F	B		E	C	
Approach Delay (s/veh)		126.5			198.8			75.8			33.7	
Approach LOS		F			F			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	98.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	108.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Future Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.942			0.939			0.988			0.997	
Flt Protected		0.977			0.976		0.950			0.950		
Satd. Flow (prot)	0	1733	0	0	1722	0	1641	4367	0	1805	4450	0
Flt Permitted		0.690			0.776		0.136			0.046		
Satd. Flow (perm)	0	1220	0	0	1364	0	234	4367	0	87	4450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		25			28			15			4	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	57	12	52	155	21	146	51	2248	196	131	1395	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	322	0	51	2444	0	131	1425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		89.0	89.0		12.0	101.0	
Total Split (%)	27.9%	27.9%		27.9%	27.9%		63.6%	63.6%		8.6%	72.1%	
Maximum Green (s)	32.5	32.5		32.5	32.5		83.0	83.0		8.0	95.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		32.0			32.0		83.5	83.5		97.5	95.5	
Actuated g/C Ratio		0.23			0.23		0.60	0.60		0.70	0.68	
v/c Ratio		0.41			0.97		0.37	0.94		0.82	0.47	
Control Delay (s/veh)		40.6			90.3		7.9	16.7		52.8	14.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		40.6			90.3		7.9	16.7		52.8	14.6	
LOS		D			F		A	B		D	B	
Approach Delay (s/veh)		40.6			90.3			16.5			17.9	
Approach LOS		D			F			B			B	
Queue Length 50th (m)		23.7			86.4		2.7	305.2		24.0	89.0	
Queue Length 95th (m)		44.3			#148.8		m2.9	m248.7		m#36.8	m127.3	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		302			338		139	2611		159	3037	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.40			0.95		0.37	0.94		0.82	0.47	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 106 (76%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 22.9	Intersection LOS: C

Intersection Capacity Utilization 89.4% ICU Level of Service E

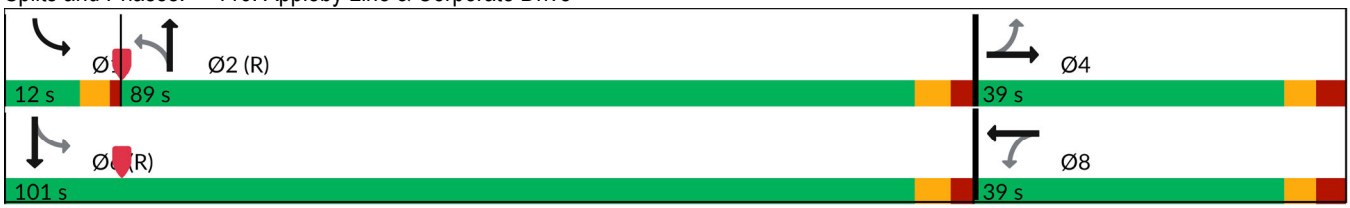
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

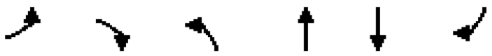
Splits and Phases: 116: Appleby Line & Corporate Drive



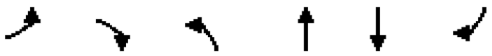
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Future Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728			1716		1634	4367		1805	4449	
Flt Permitted		0.69			0.78		0.14	1.00		0.05	1.00	
Satd. Flow (perm)		1221			1364		234	4367		87	4449	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	12	52	155	21	146	51	2248	196	131	1395	30
RTOR Reduction (vph)	0	19	0	0	22	0	0	6	0	0	1	0
Lane Group Flow (vph)	0	102	0	0	300	0	51	2438	0	131	1424	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		32.0			32.0		83.5	83.5		95.5	95.5	
Effective Green, g (s)		32.0			32.0		83.5	83.5		95.5	95.5	
Actuated g/C Ratio		0.23			0.23		0.60	0.60		0.68	0.68	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		279			311		139	2604		157	3034	
v/s Ratio Prot								c0.56		c0.05	0.32	
v/s Ratio Perm		0.08			c0.22		0.22			0.52		
v/c Ratio		0.36			0.97		0.37	0.94		0.83	0.47	
Uniform Delay, d1		45.4			53.5		14.6	25.8		42.0	10.4	
Progression Factor		1.00			1.00		0.43	0.59		0.92	1.36	
Incremental Delay, d2		0.8			41.5		0.7	0.9		20.9	0.3	
Delay (s)		46.3			94.9		6.9	16.2		59.4	14.5	
Level of Service		D			F		A	B		E	B	
Approach Delay (s/veh)		46.3			94.9			16.0			18.3	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	532	170	2218	1174	31
Future Volume (vph)	166	532	170	2218	1174	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	1671	4471	4443	0
Flt Permitted	0.950		0.108			
Satd. Flow (perm)	1787	1553	190	4471	4443	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		166			5	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	184	591	189	2464	1304	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	591	189	2464	1338	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



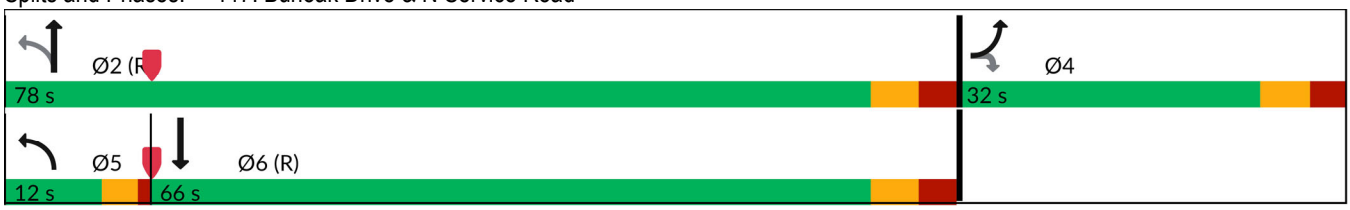
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.5	37.0	37.0	
Total Split (s)	32.0	32.0	12.0	78.0	66.0	
Total Split (%)	29.1%	29.1%	10.9%	70.9%	60.0%	
Maximum Green (s)	25.0	25.0	8.0	71.0	59.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	25.0	25.0	74.0	71.0	59.0	
Actuated g/C Ratio	0.23	0.23	0.67	0.65	0.54	
v/c Ratio	0.45	1.23	0.80	0.85	0.56	
Control Delay (s/veh)	40.8	147.8	22.5	13.7	13.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	40.8	147.8	22.5	13.7	13.2	
LOS	D	F	C	B	B	
Approach Delay (s/veh)	122.4			14.3	13.2	
Approach LOS	F			B	B	
Queue Length 50th (m)	36.3	~138.6	20.0	137.6	53.5	
Queue Length 95th (m)	59.0	#211.2	m8.5	m58.7	m53.7	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	406	481	235	2885	2385	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.45	1.23	0.80	0.85	0.56	

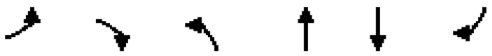
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 88 (80%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay (s/veh): 31.6	Intersection LOS: C

Intersection Capacity Utilization 69.6%	ICU Level of Service C
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	532	170	2218	1174	31
Future Volume (vph)	166	532	170	2218	1174	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	1671	4471	4444	
Flt Permitted	0.95	1.00	0.11	1.00	1.00	
Satd. Flow (perm)	1787	1553	191	4471	4444	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	184	591	189	2464	1304	34
RTOR Reduction (vph)	0	128	0	0	2	0
Lane Group Flow (vph)	184	463	189	2464	1336	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	25.0	25.0	71.0	71.0	59.0	
Effective Green, g (s)	25.0	25.0	71.0	71.0	59.0	
Actuated g/C Ratio	0.23	0.23	0.65	0.65	0.54	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	406	352	230	2885	2383	
v/s Ratio Prot	0.10		0.06	c0.55	0.30	
v/s Ratio Perm		c0.30	0.47			
v/c Ratio	0.45	1.31	0.82	0.85	0.56	
Uniform Delay, d1	36.6	42.5	13.4	15.4	16.9	
Progression Factor	1.00	1.00	1.57	0.85	0.74	
Incremental Delay, d2	0.8	160.4	2.2	0.3	0.6	
Delay (s)	37.4	202.9	23.2	13.4	13.1	
Level of Service	D	F	C	B	B	
Approach Delay (s/veh)	163.6			14.1	13.1	
Approach LOS	F			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2626	1478	0	0	2495
Future Volume (vph)	2713	2626	1478	0	0	2495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor						
Frt	0.961	0.850				
Flt Protected	0.964					
Satd. Flow (prot)	3348	1441	4427	0	0	4471
Flt Permitted	0.964					
Satd. Flow (perm)	3348	1441	4427	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	4	4				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2917	2824	1589	0	0	2683
Shared Lane Traffic (%)		36%				
Lane Group Flow (vph)	3934	1807	1589	0	0	2683
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



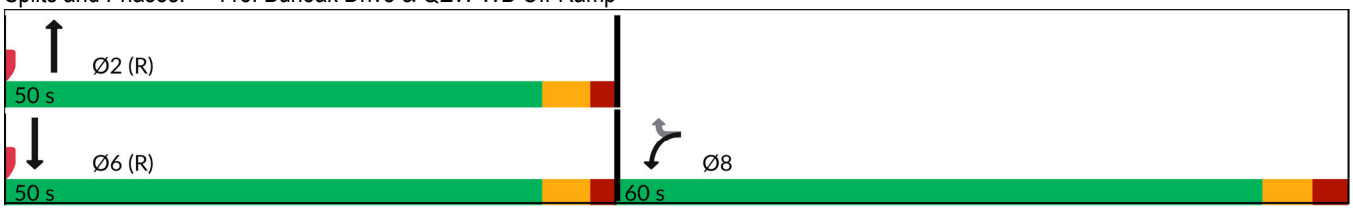
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	60.0	60.0	50.0			50.0
Total Split (%)	54.5%	54.5%	45.5%			45.5%
Maximum Green (s)	53.0	53.0	44.0			44.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
v/c Ratio	2.44	2.60	0.90			1.50
Control Delay (s/veh)	667.4	740.9	30.3			254.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	667.4	740.9	30.3			254.2
LOS	F	F	C			F
Approach Delay (s/veh)	690.5		30.3			254.2
Approach LOS	F		C			F
Queue Length 50th (m)	~780.7	~776.7	145.5			~362.0
Queue Length 95th (m)	#815.4	#872.4	74.0			m#366.8
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1615	696	1770			1788
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.44	2.60	0.90			1.50

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 14 (13%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.60			
Intersection Signal Delay (s/veh): 468.8		Intersection LOS: F	

Intersection Capacity Utilization 163.9%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

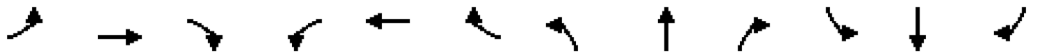




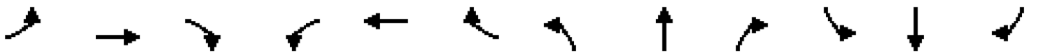
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2626	1478	0	0	2495
Future Volume (vph)	2713	2626	1478	0	0	2495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.96	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3349	1441	4427			4471
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3349	1441	4427			4471
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2917	2824	1589	0	0	2683
RTOR Reduction (vph)	2	2	0	0	0	0
Lane Group Flow (vph)	3932	1805	1589	0	0	2683
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	53.0	53.0	44.0			44.0
Effective Green, g (s)	53.0	53.0	44.0			44.0
Actuated g/C Ratio	0.48	0.48	0.40			0.40
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1613	694	1770			1788
v/s Ratio Prot	1.17		0.36			c0.60
v/s Ratio Perm		c1.25				
v/c Ratio	2.44	2.60	0.90			1.50
Uniform Delay, d1	28.5	28.5	30.9			33.0
Progression Factor	1.00	1.00	0.73			0.89
Incremental Delay, d2	648.8	724.5	7.2			227.8
Delay (s)	677.3	753.0	29.7			257.3
Level of Service	F	F	C			F
Approach Delay (s/veh)	701.2		29.7			257.3
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	475.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	2.10		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	163.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Future Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.895	0.850			0.865		0.998				
Flt Protected	0.950											
Satd. Flow (prot)	1641	2950	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950										0.931	
Satd. Flow (perm)	1641	2950	1413	0	0	1596	0	5125	0	0	4781	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		208	208			325		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	220	97	448	0	0	213	0	1241	17	14	4105	0
Shared Lane Traffic (%)			50%									
Lane Group Flow (vph)	220	321	224	0	0	213	0	1258	0	0	4119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



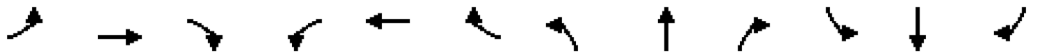
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			5.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			39.0		39.0		39.0	39.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		25.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	20.1	20.1	20.1			75.9		63.4			63.4	
Actuated g/C Ratio	0.18	0.18	0.18			0.69		0.58			0.58	
v/c Ratio	0.74	0.45	0.52			0.18		0.43			1.49	
Control Delay (s/veh)	56.7	15.3	11.0			0.3		14.2			245.2	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	56.7	15.3	11.0			0.3		14.2			245.2	
LOS	E	B	B			A		B			F	
Approach Delay (s/veh)		26.0			0.3			14.2			245.2	
Approach LOS		C			A			B			F	
Queue Length 50th (m)	50.4	12.5	3.4			0.0		56.3			~481.3	
Queue Length 95th (m)	74.9	25.5	26.8			0.0		75.7			m135.6	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	387	856	492			1196		2956			2757	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.57	0.38	0.46			0.18		0.43			1.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 15 (14%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.49	
Intersection Signal Delay (s/veh): 164.9	Intersection LOS: F

Intersection Capacity Utilization 107.5% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

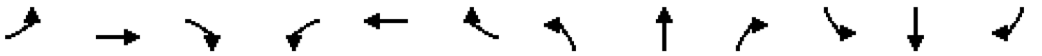




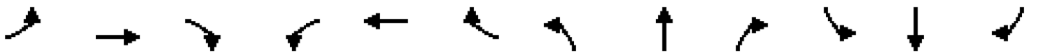
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Future Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.90	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1641	2951	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1641	2951	1413			1596		5125			4781	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	220	97	448	0	0	213	0	1241	17	14	4105	0
RTOR Reduction (vph)	0	170	170	0	0	80	0	1	0	0	0	0
Lane Group Flow (vph)	220	151	54	0	0	133	0	1257	0	0	4119	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			custom		NA		Perm	NA	
Protected Phases	3	3				4		2			6	
Permitted Phases			3			6				6		
Actuated Green, G (s)	20.1	20.1	20.1			68.9		63.4			63.4	
Effective Green, g (s)	20.1	20.1	20.1			68.9		63.4			63.4	
Actuated g/C Ratio	0.18	0.18	0.18			0.63		0.58			0.58	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	299	539	258			1101		2953			2755	
v/s Ratio Prot	c0.13	0.05				c0.01		0.25				
v/s Ratio Perm			0.04			0.08					c0.86	
v/c Ratio	0.74	0.28	0.21			0.12		0.43			1.50	
Uniform Delay, d1	42.4	38.7	38.2			8.3		13.1			23.3	
Progression Factor	1.00	1.00	1.00			1.00		1.00			0.91	
Incremental Delay, d2	9.1	0.3	0.4			0.0		0.5			223.0	
Delay (s)	51.5	39.0	38.6			8.4		13.5			244.3	
Level of Service	D	D	D			A		B			F	
Approach Delay (s/veh)		42.5			8.4			13.5			244.3	
Approach LOS		D			A			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	166.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Future Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1644	0	1770	1696	0	1805	4335	0	1736	4395	0
Flt Permitted	0.289			0.192			0.062			0.066		
Satd. Flow (perm)	538	1644	0	358	1696	0	118	4335	0	121	4395	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		118			30			11			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Adj. Flow (vph)	73	48	186	329	260	208	369	2157	170	65	1532	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	234	0	329	468	0	369	2327	0	65	1595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



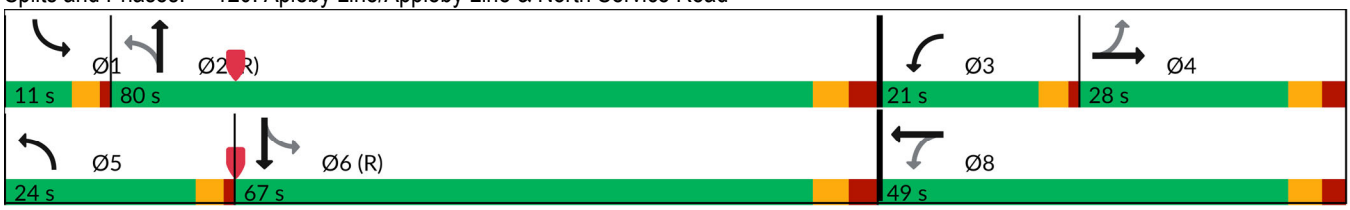
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	28.0	28.0		21.0	49.0		24.0	80.0		11.0	67.0	
Total Split (%)	20.0%	20.0%		15.0%	35.0%		17.1%	57.1%		7.9%	47.9%	
Maximum Green (s)	21.9	21.9		17.0	42.9		20.0	73.4		7.0	60.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	19.2	19.2		42.3	40.2		89.7	78.3		70.0	60.4	
Actuated g/C Ratio	0.14	0.14		0.30	0.29		0.64	0.56		0.50	0.43	
v/c Ratio	1.00	0.72		1.18	0.92		1.06	0.96		0.46	0.84	
Control Delay (s/veh)	162.4	40.6		148.7	69.6		73.0	30.5		24.0	46.7	
Queue Delay	0.0	0.1		0.0	0.0		0.0	8.3		0.0	1.8	
Total Delay (s/veh)	162.4	40.6		148.7	69.6		73.0	38.8		24.0	48.5	
LOS	F	D		F	E		E	D		C	D	
Approach Delay (s/veh)		69.6			102.3			43.5			47.6	
Approach LOS		E			F			D			D	
Queue Length 50th (m)	21.3	32.1		~91.3	124.5		~111.0	~306.8		9.5	206.0	
Queue Length 95th (m)	#53.9	63.1		#155.8	#186.9		m60.0	m152.0		m12.3	224.9	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	84	356		279	540		349	2430		141	1898	
Starvation Cap Reductn	0	0		0	0		0	123		0	0	
Spillback Cap Reductn	0	3		0	0		0	0		0	163	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.87	0.66		1.18	0.87		1.06	1.01		0.46	0.92	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 54.8	Intersection LOS: D

Intersection Capacity Utilization 102.0%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Future Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1644		1770	1697		1805	4335		1736	4395	
Flt Permitted	0.29	1.00		0.19	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	539	1644		357	1697		118	4335		121	4395	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	73	48	186	329	260	208	369	2157	170	65	1532	63
RTOR Reduction (vph)	0	102	0	0	21	0	0	5	0	0	3	0
Lane Group Flow (vph)	73	132	0	329	447	0	369	2322	0	65	1592	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	1%	2%	2%	3%	5%	0%	4%	2%	4%	3%	4%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	19.2	19.2		40.2	40.2		87.1	77.5		66.0	60.4	
Effective Green, g (s)	19.2	19.2		40.2	40.2		87.1	77.5		66.0	60.4	
Actuated g/C Ratio	0.14	0.14		0.29	0.29		0.62	0.55		0.47	0.43	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	73	225		274	487		346	2399		121	1896	
v/s Ratio Prot		0.08		c0.15	0.26		c0.17	0.54		0.02	0.36	
v/s Ratio Perm	0.14			c0.20			c0.49			0.23		
v/c Ratio	1.00	0.59		1.20	0.92		1.07	0.97		0.54	0.84	
Uniform Delay, d1	60.4	56.7		44.4	48.3		46.9	30.1		29.9	35.5	
Progression Factor	1.00	1.00		1.00	1.00		0.98	0.96		1.01	1.22	
Incremental Delay, d2	105.3	3.9		119.9	22.0		36.1	1.8		2.8	2.9	
Delay (s)	165.7	60.6		164.3	70.3		81.9	30.6		33.2	46.4	
Level of Service	F	E		F	E		F	C		C	D	
Approach Delay (s/veh)		85.6			109.1			37.6			45.9	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	102.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	2728	0	0	2545
Future Volume (vph)	1353	1424	2728	0	0	2545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1553	4385	0	0	4471
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1553	4385	0	0	4471
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Adj. Flow (vph)	1395	1468	2812	0	0	2624
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1395	1468	2812	0	0	2624
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

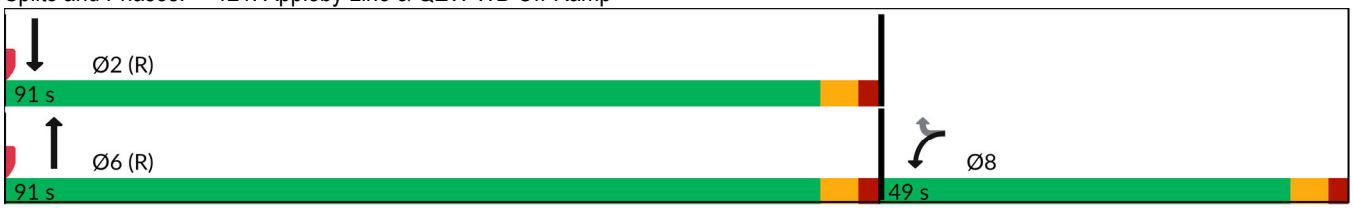


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
v/c Ratio	1.34	3.07	1.06			0.97
Control Delay (s/veh)	196.3	955.9	49.6			22.9
Queue Delay	0.0	0.0	18.6			0.3
Total Delay (s/veh)	196.3	955.9	68.2			23.3
LOS	F	F	E			C
Approach Delay (s/veh)	585.8		68.2			23.3
Approach LOS	F		E			C
Queue Length 50th (m)	~277.8	~772.7	~386.8			102.0
Queue Length 95th (m)	#322.7	#861.7	#412.0			m106.7
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1044	478	2662			2714
Starvation Cap Reductn	0	0	0			10
Spillback Cap Reductn	0	0	192			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.34	3.07	1.14			0.97

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 3.07			
Intersection Signal Delay (s/veh): 232.5		Intersection LOS: F	
Intersection Capacity Utilization 150.9%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

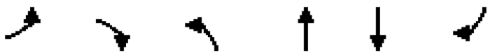
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



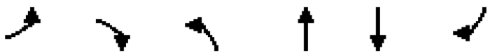


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	2728	0	0	2545
Future Volume (vph)	1353	1424	2728	0	0	2545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1553	4385			4471
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1553	4385			4471
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1395	1468	2812	0	0	2624
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1395	1467	2812	0	0	2624
Heavy Vehicles (%)	3%	4%	4%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	43.0	43.0	85.0			85.0
Effective Green, g (s)	43.0	43.0	85.0			85.0
Actuated g/C Ratio	0.31	0.31	0.61			0.61
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1044	476	2662			2714
v/s Ratio Prot	0.41		c0.64			0.59
v/s Ratio Perm		c0.94				
v/c Ratio	1.34	3.08	1.06			0.97
Uniform Delay, d1	48.5	48.5	27.5			26.2
Progression Factor	1.00	1.00	0.60			0.51
Incremental Delay, d2	157.9	942.1	31.5			8.8
Delay (s)	206.4	990.6	48.0			22.2
Level of Service	F	F	D			C
Approach Delay (s/veh)	608.5		48.0			22.2
Approach LOS	F		D			C

Intersection Summary			
HCM 2000 Control Delay (s/veh)	233.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	150.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	781	611	0	2126	3149	0
Future Volume (vph)	781	611	0	2126	3149	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	4343	4427	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	4343	4427	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		1				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Adj. Flow (vph)	789	617	0	2147	3181	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	789	617	0	2147	3181	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

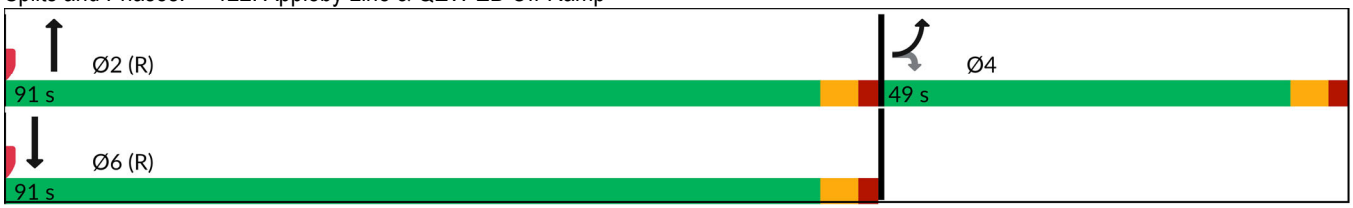


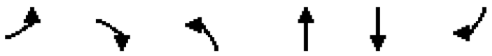
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	39.0	39.0		89.0	89.0	
Actuated g/C Ratio	0.28	0.28		0.64	0.64	
v/c Ratio	0.85	0.83		0.78	1.13	
Control Delay (s/veh)	57.1	57.1		20.8	82.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.1	57.1		20.8	82.2	
LOS	E	E		C	F	
Approach Delay (s/veh)	57.1			20.8	82.2	
Approach LOS	E			C	F	
Queue Length 50th (m)	114.7	98.6		272.3	~462.7	
Queue Length 95th (m)	137.4	122.7		m117.7	m#419.2	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1024	824		2760	2814	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.77	0.75		0.78	1.13	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.13			
Intersection Signal Delay (s/veh): 57.4		Intersection LOS: E	
Intersection Capacity Utilization 150.9%		ICU Level of Service H	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

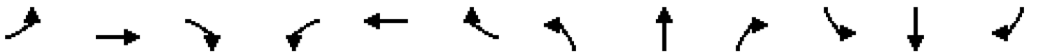




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	781	611	0	2126	3149	0
Future Volume (vph)	781	611	0	2126	3149	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		4343	4427	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		4343	4427	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	789	617	0	2147	3181	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	789	616	0	2147	3181	0
Heavy Vehicles (%)	5%	6%	0%	5%	3%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	39.0	39.0		89.0	89.0	
Effective Green, g (s)	39.0	39.0		89.0	89.0	
Actuated g/C Ratio	0.28	0.28		0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	929	747		2760	2814	
v/s Ratio Prot	c0.24			0.49	c0.72	
v/s Ratio Perm		0.23				
v/c Ratio	0.85	0.83		0.78	1.13	
Uniform Delay, d1	47.7	47.3		18.4	25.5	
Progression Factor	1.00	1.00		1.01	0.84	
Incremental Delay, d2	7.3	7.4		1.4	59.2	
Delay (s)	55.1	54.7		19.9	80.6	
Level of Service	E	D		B	F	
Approach Delay (s/veh)	54.9			19.9	80.6	
Approach LOS	D			B	F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	55.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	150.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Future Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.939			0.939				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	1736	3219	0	1736	4471	1404	1687	4471	1538
Flt Permitted	0.215			0.177			0.072			0.134		
Satd. Flow (perm)	396	3288	0	322	3219	0	132	4471	1382	238	4471	1506
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98			113				151			242
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Adj. Flow (vph)	365	297	202	509	645	446	115	1038	207	212	1713	319
Shared Lane Traffic (%)												
Lane Group Flow (vph)	365	499	0	509	1091	0	115	1038	207	212	1713	319
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.6		31.0	29.6		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	41.0	18.6		56.0	29.6		64.8	55.5	55.5	75.9	62.7	62.7
Actuated g/C Ratio	0.29	0.13		0.40	0.21		0.46	0.40	0.40	0.54	0.45	0.45
v/c Ratio	1.18	0.96		1.15	1.42		0.82	0.59	0.32	0.77	0.86	0.39
Control Delay (s/veh)	145.9	78.3		129.1	231.9		68.2	44.2	20.4	31.8	38.1	11.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	145.9	78.3		129.1	231.9		68.2	44.2	20.4	31.8	38.1	11.1
LOS	F	E		F	F		E	D	C	C	D	B
Approach Delay (s/veh)		106.9			199.2			42.6			33.6	
Approach LOS		F			F			D			C	
Queue Length 50th (m)	~110.3	63.4		~161.3	~216.1		19.5	132.8	26.6	41.1	158.7	21.5
Queue Length 95th (m)	#178.5	#100.5		#235.8	#262.0		m#41.2	m145.3	m49.8	m38.7	m136.2	m20.6
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	309	521		441	769		141	1772	639	294	2002	808
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.96		1.15	1.42		0.82	0.59	0.32	0.72	0.86	0.39

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 89.7	Intersection LOS: F

Intersection Capacity Utilization 107.7%	ICU Level of Service G
Analysis Period (min) 15	

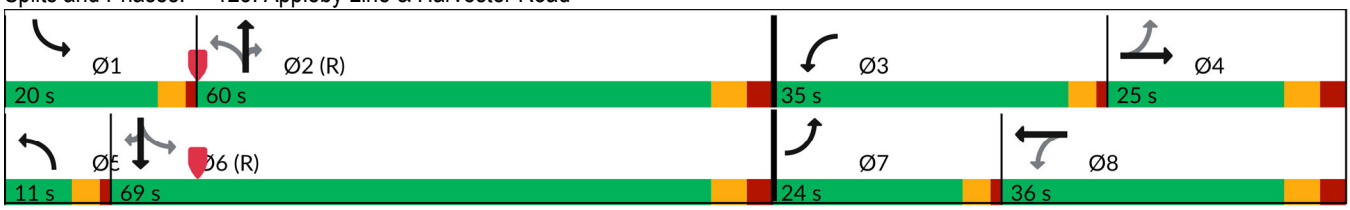
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

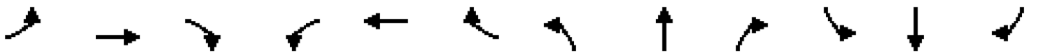
Splits and Phases: 123: Appleby Line & Harvester Road



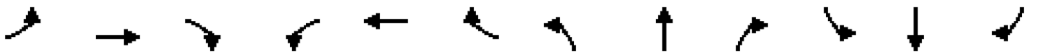
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Future Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1752	3289		1735	3218		1736	4471	1382	1687	4471	1506
Flt Permitted	0.22	1.00		0.18	1.00		0.07	1.00	1.00	0.13	1.00	1.00
Satd. Flow (perm)	397	3289		323	3218		132	4471	1382	238	4471	1506
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	365	297	202	509	645	446	115	1038	207	212	1713	319
RTOR Reduction (vph)	0	85	0	0	89	0	0	0	91	0	0	134
Lane Group Flow (vph)	365	414	0	509	1002	0	115	1038	116	212	1713	185
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	3%	1%	4%	4%	3%	6%	4%	2%	15%	7%	2%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.6	18.6		53.6	29.6		62.5	55.5	55.5	73.7	62.7	62.7
Effective Green, g (s)	38.6	18.6		53.6	29.6		62.5	55.5	55.5	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.13		0.38	0.21		0.45	0.40	0.40	0.53	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	303	436		436	680		139	1772	547	272	2002	674
v/s Ratio Prot	0.17	0.13		c0.26	c0.31		0.04	0.23		c0.08	c0.38	
v/s Ratio Perm	0.16			0.19			0.33		0.08	0.33		0.12
v/c Ratio	1.20	0.95		1.17	1.47		0.83	0.59	0.21	0.78	0.86	0.28
Uniform Delay, d1	46.0	60.2		42.0	55.2		29.9	33.2	27.8	22.4	34.6	24.3
Progression Factor	1.00	1.00		1.00	1.00		1.34	1.28	2.17	1.47	1.07	1.72
Incremental Delay, d2	119.1	30.2		97.6	221.0		26.5	1.1	0.7	1.3	0.5	0.1
Delay (s)	165.1	90.4		139.6	276.2		66.5	43.6	61.1	34.4	37.6	41.9
Level of Service	F	F		F	F		E	D	E	C	D	D
Approach Delay (s/veh)		122.0			232.7			48.2			37.9	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	103.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Future Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97			0.89	0.97		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	1810	1468	1752	1776	1599	1626	5136	1599	1787	4515	1482
Flt Permitted	0.950			0.673			0.075			0.316		
Satd. Flow (perm)	3322	1810	1384	1194	1776	1550	128	5136	1420	577	4515	1385
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			157			139			488
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Adj. Flow (vph)	568	132	508	296	253	208	290	766	139	214	1620	1255
Shared Lane Traffic (%)												
Lane Group Flow (vph)	568	132	508	296	253	208	290	766	139	214	1620	1255
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	30.0	49.0	49.0	20.0	39.0	39.0	15.0	58.0	58.0	13.0	56.0	56.0
Total Split (%)	21.4%	35.0%	35.0%	14.3%	27.9%	27.9%	10.7%	41.4%	41.4%	9.3%	40.0%	40.0%
Maximum Green (s)	25.0	42.5	42.5	16.0	32.5	32.5	11.0	51.2	51.2	9.0	49.2	49.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	24.9	39.3	39.3	47.8	29.3	29.3	68.6	53.7	53.7	61.8	49.2	49.2
Actuated g/C Ratio	0.18	0.28	0.28	0.34	0.21	0.21	0.49	0.38	0.38	0.44	0.35	0.35
v/c Ratio	0.95	0.26	0.96	0.63	0.68	0.46	1.35	0.39	0.22	0.63	1.02	1.56
Control Delay (s/veh)	82.5	39.5	61.2	34.5	60.3	16.3	217.8	32.6	5.4	21.0	58.6	274.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	82.5	39.5	61.2	34.5	60.3	16.3	217.8	32.6	5.4	21.0	58.6	274.4
LOS	F	D	E	C	E	B	F	C	A	C	E	F
Approach Delay (s/veh)		68.8			38.1			74.4			143.7	
Approach LOS		E			D			E			F	
Queue Length 50th (m)	87.7	30.0	103.7	55.8	69.9	12.0	~115.9	61.1	0.0	23.1	~210.3	~549.0
Queue Length 95th (m)	#124.8	48.7	#181.3	80.2	102.2	36.2	#181.4	73.7	14.5	m27.1	m#227.3	m#599.0
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	601	549	555	471	412	480	215	1968	630	339	1586	803
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.24	0.92	0.63	0.61	0.43	1.35	0.39	0.22	0.63	1.02	1.56

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 71 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.56	
Intersection Signal Delay (s/veh): 103.2	Intersection LOS: F

Intersection Capacity Utilization 124.1% ICU Level of Service H

Analysis Period (min) 15

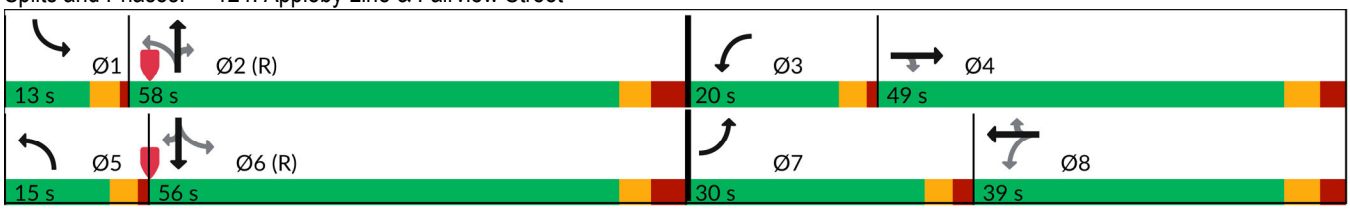
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Future Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.91	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.89	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	1810	1384	1708	1776	1550	1626	5136	1420	1772	4515	1385
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	0.08	1.00	1.00	0.32	1.00	1.00
Satd. Flow (perm)	3367	1810	1384	1209	1776	1550	129	5136	1420	589	4515	1385
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	568	132	508	296	253	208	290	766	139	214	1620	1255
RTOR Reduction (vph)	0	0	140	0	0	124	0	0	86	0	0	317
Lane Group Flow (vph)	568	132	368	296	253	84	290	766	53	214	1620	938
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	4%	5%	10%	3%	7%	1%	11%	1%	1%	1%	1%	9%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	24.9	39.3	39.3	45.4	29.4	29.4	67.4	53.6	53.6	59.0	49.2	49.2
Effective Green, g (s)	24.9	39.3	39.3	45.4	29.4	29.4	67.4	53.6	53.6	59.0	49.2	49.2
Actuated g/C Ratio	0.18	0.28	0.28	0.32	0.21	0.21	0.48	0.38	0.38	0.42	0.35	0.35
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	598	508	388	449	372	325	213	1966	543	331	1586	486
v/s Ratio Prot	c0.17	0.07		0.08	0.14		c0.14	0.15		0.05	0.36	
v/s Ratio Perm			c0.27	0.14		0.05	0.52		0.04	0.23		c0.68
v/c Ratio	0.95	0.26	0.95	0.66	0.68	0.26	1.36	0.39	0.10	0.65	1.02	1.93
Uniform Delay, d1	56.9	39.1	49.4	38.8	51.0	46.2	44.1	31.3	27.7	27.4	45.4	45.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.64	0.76	0.43
Incremental Delay, d2	24.6	0.3	32.5	3.5	5.0	0.4	189.9	0.6	0.4	2.9	24.1	424.1
Delay (s)	81.6	39.3	81.9	42.3	56.0	46.6	234.0	31.9	28.1	20.5	58.4	443.6
Level of Service	F	D	F	D	E	D	F	C	C	C	E	F
Approach Delay (s/veh)		77.1			48.1			80.5			212.3	
Approach LOS		E			D			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	141.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	124.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

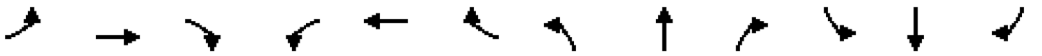
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	365	0	0	904	5	0	0	0	7	0	102
Future Volume (vph)	16	365	0	0	904	5	0	0	0	7	0	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.999						0.874	
Flt Protected		0.998									0.997	
Satd. Flow (prot)	0	3532	0	0	3536	0	0	1863	0	0	1623	0
Flt Permitted		0.998									0.997	
Satd. Flow (perm)	0	3532	0	0	3536	0	0	1863	0	0	1623	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		639.9			114.1			74.7			122.7	
Travel Time (s)		38.4			6.8			6.7			11.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	397	0	0	983	5	0	0	0	8	0	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	414	0	0	988	0	0	0	0	0	119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.5%		ICU Level of Service A	
Analysis Period (min) 15			

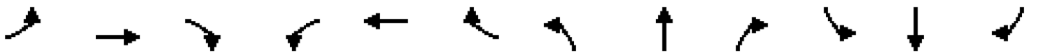
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	365	0	0	904	5	0	0	0	7	0	102
Future Volume (Veh/h)	16	365	0	0	904	5	0	0	0	7	0	102
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	397	0	0	983	5	0	0	0	8	0	111
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	988			397			1034	1419	199	1218	1417	494
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	988			397			1034	1419	199	1218	1417	494
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			100			100	100	100	94	100	79
cM capacity (veh/h)	695			1158			144	132	809	134	133	521

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	216	199	492	497	0	119
Volume Left	17	0	0	0	0	8
Volume Right	0	0	0	5	0	111
cSH	695	1700	1158	1700	1700	436
Volume to Capacity	0.02	0.12	0.00	0.29	0.00	0.27
Queue Length 95th (m)	0.6	0.0	0.0	0.0	0.0	8.8
Control Delay (s/veh)	1.1	0.0	0.0	0.0	0.0	16.3
Lane LOS	A				A	C
Approach Delay (s/veh)	0.6		0.0		0.0	16.3
Approach LOS					A	C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	38.5%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	609	291	371	673	186	393	600	262	360	663	214
Future Volume (vph)	193	609	291	371	673	186	393	600	262	360	663	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.99		0.98	0.99		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3483	5136	1577	3438	5136	1528	3495	5136	1562	3435	5136	1588
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			277			190			267			218
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	197	621	297	379	687	190	401	612	267	367	677	218
Shared Lane Traffic (%)												
Lane Group Flow (vph)	197	621	297	379	687	190	401	612	267	367	677	218
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0
Total Split (%)	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%
Maximum Green (s)	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.7	24.0	24.0	17.0	26.3	26.3	24.1	51.7	51.7	22.5	50.0	50.0
Actuated g/C Ratio	0.11	0.17	0.17	0.12	0.19	0.19	0.17	0.37	0.37	0.16	0.36	0.36
v/c Ratio	0.54	0.70	0.59	0.90	0.71	0.43	0.67	0.32	0.36	0.66	0.37	0.31
Control Delay (s/veh)	64.6	58.9	12.2	85.7	57.6	9.2	59.7	33.6	5.5	60.8	35.2	5.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.6	58.9	12.2	85.7	57.6	9.2	59.7	33.6	5.5	60.8	35.2	5.6
LOS	E	E	B	F	E	A	E	C	A	E	D	A
Approach Delay (s/veh)		47.4			58.8			35.9			37.5	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	28.4	64.1	5.0	57.4	70.8	0.0	56.7	46.4	0.0	52.7	53.4	0.0
Queue Length 95th (m)	41.2	74.1	32.0	#86.8	82.2	21.2	73.1	65.7	21.3	67.6	73.0	19.6
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	425	1489	654	420	1489	578	603	1895	744	557	1835	707
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.42	0.45	0.90	0.46	0.33	0.67	0.32	0.36	0.66	0.37	0.31

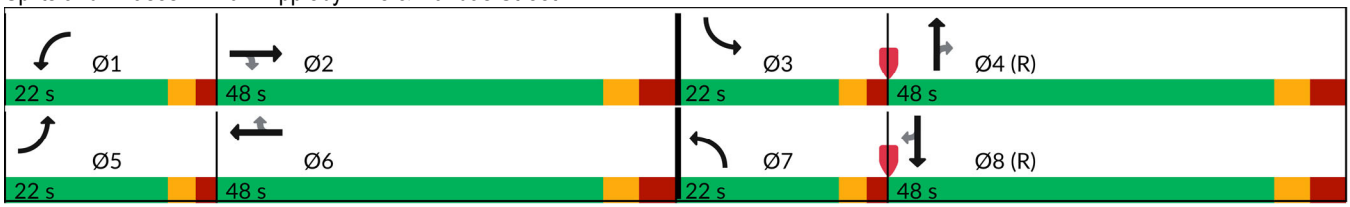
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 118 (84%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 44.8	Intersection LOS: D

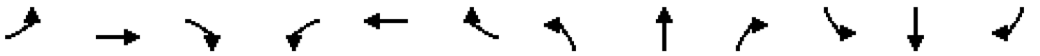
Intersection Capacity Utilization 95.3% ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

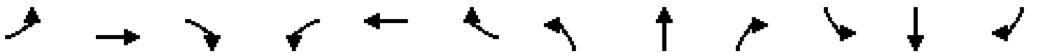




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	193	609	291	371	673	186	393	600	262	360	663	214
Future Volume (vph)	193	609	291	371	673	186	393	600	262	360	663	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	197	621	297	379	687	190	401	612	267	367	677	218
RTOR Reduction (vph)	0	0	230	0	0	154	0	0	168	0	0	140
Lane Group Flow (vph)	197	621	67	379	687	36	401	612	99	367	677	78
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.7	24.0	24.0	17.0	26.3	26.3	24.1	51.7	51.7	22.5	50.1	50.1
Effective Green, g (s)	14.7	24.0	24.0	17.0	26.3	26.3	24.1	51.7	51.7	22.5	50.1	50.1
Actuated g/C Ratio	0.11	0.17	0.17	0.12	0.19	0.19	0.17	0.37	0.37	0.16	0.36	0.36
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	367	880	270	420	964	287	602	1896	576	557	1837	568
v/s Ratio Prot	0.06	0.12		c0.11	c0.13		c0.11	0.12		0.11	c0.13	
v/s Ratio Perm			0.04			0.02			0.06			0.05
v/c Ratio	0.54	0.71	0.25	0.90	0.71	0.12	0.67	0.32	0.17	0.66	0.37	0.14
Uniform Delay, d1	59.4	54.7	50.2	60.7	53.3	47.3	54.2	31.6	29.7	55.1	33.2	30.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.7	2.6	0.5	23.3	2.5	0.2	3.7	0.5	0.6	3.8	0.6	0.5
Delay (s)	62.2	57.3	50.7	84.0	55.8	47.5	57.9	32.1	30.4	58.9	33.8	30.9
Level of Service	E	E	D	F	E	D	E	C	C	E	C	C
Approach Delay (s/veh)		56.4			63.1			39.8			40.6	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	95.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	204	246	165	408	360	229	1018	96	205	859	189
Future Volume (vph)	203	204	246	165	408	360	229	1018	96	205	859	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.918				0.850		0.987			0.973	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3256	0	1787	3574	1615	3502	3518	0	1787	3462	0
Flt Permitted	0.354			0.304			0.950			0.123		
Satd. Flow (perm)	649	3256	0	569	3574	1575	3485	3518	0	231	3462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		251				214		11			26	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	207	208	251	168	416	367	234	1039	98	209	877	193
Shared Lane Traffic (%)												
Lane Group Flow (vph)	207	459	0	168	416	367	234	1137	0	209	1070	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	12.0	35.0		12.0	35.0	35.0	19.0	51.0		12.0	44.0	
Total Split (%)	10.9%	31.8%		10.9%	31.8%	31.8%	17.3%	46.4%		10.9%	40.0%	
Maximum Green (s)	8.0	28.6		8.0	28.6	28.6	14.0	44.5		8.0	37.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	30.4	20.0		30.4	20.0	20.0	12.2	48.0		63.5	47.9	
Actuated g/C Ratio	0.28	0.18		0.28	0.18	0.18	0.11	0.44		0.58	0.44	
v/c Ratio	0.80	0.58		0.69	0.64	0.80	0.60	0.74		0.66	0.70	
Control Delay (s/veh)	53.3	20.2		43.3	45.6	30.2	58.2	20.0		28.4	29.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	53.3	20.2		43.3	45.6	30.2	58.2	20.0		28.4	29.3	
LOS	D	C		D	D	C	E	C		C	C	
Approach Delay (s/veh)		30.5			39.3			26.6			29.2	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	37.6	22.1		29.3	47.1	34.0	21.9	126.1		18.7	98.5	
Queue Length 95th (m)	51.8	35.0		41.7	57.3	63.6	33.9	155.4		#77.0	#158.2	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	259	1032		245	929	567	445	1541		318	1522	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.80	0.44		0.69	0.45	0.65	0.53	0.74		0.66	0.70	

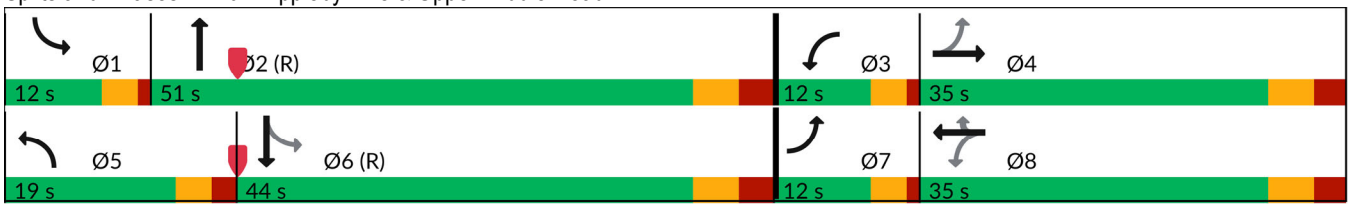
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay (s/veh): 30.8	Intersection LOS: C

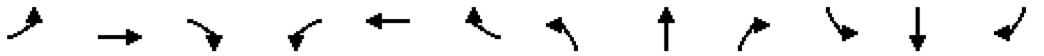
Intersection Capacity Utilization 86.3% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road

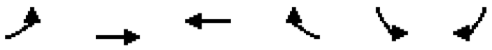




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	204	246	165	408	360	229	1018	96	205	859	189
Future Volume (vph)	203	204	246	165	408	360	229	1018	96	205	859	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1749	3255		1785	3574	1575	3502	3518		1787	3462	
Flt Permitted	0.35	1.00		0.30	1.00	1.00	0.95	1.00		0.12	1.00	
Satd. Flow (perm)	652	3255		570	3574	1575	3502	3518		232	3462	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	207	208	251	168	416	367	234	1039	98	209	877	193
RTOR Reduction (vph)	0	205	0	0	0	175	0	6	0	0	15	0
Lane Group Flow (vph)	207	254	0	168	416	192	234	1131	0	209	1055	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	28.0	20.0		28.0	20.0	20.0	12.2	48.0		61.0	47.9	
Effective Green, g (s)	28.0	20.0		28.0	20.0	20.0	12.2	48.0		61.0	47.9	
Actuated g/C Ratio	0.25	0.18		0.25	0.18	0.18	0.11	0.44		0.55	0.44	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	245	591		233	649	286	388	1535		313	1507	
v/s Ratio Prot	c0.06	0.08		0.05	0.12		0.07	c0.32		c0.08	0.30	
v/s Ratio Perm	c0.15			0.13		0.12				0.29		
v/c Ratio	0.84	0.43		0.72	0.64	0.67	0.60	0.74		0.67	0.70	
Uniform Delay, d1	36.8	39.9		34.5	41.7	41.9	46.6	25.8		17.2	25.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.14	0.66		1.00	1.00	
Incremental Delay, d2	22.5	0.5		10.5	2.2	6.1	2.2	2.6		5.3	2.7	
Delay (s)	59.3	40.4		45.0	43.8	48.0	55.0	19.5		22.5	28.0	
Level of Service	E	D		D	D	D	E	B		C	C	
Approach Delay (s/veh)		46.3			45.6			25.6			27.1	
Approach LOS		D			D			C			C	

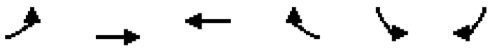
Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	81	395	786	46	37	67
Future Volume (vph)	81	395	786	46	37	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.992		0.913	
Flt Protected	0.950				0.983	
Satd. Flow (prot)	1787	3574	3548	0	1705	0
Flt Permitted	0.950				0.983	
Satd. Flow (perm)	1787	3574	3548	0	1705	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	18			18		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	85	416	827	48	39	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	416	875	0	110	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

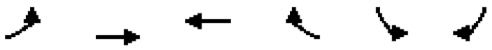
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.2%		ICU Level of Service A	
Analysis Period (min) 15			



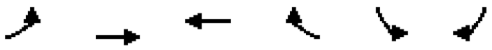
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	81	395	786	46	37	67
Future Volume (Veh/h)	81	395	786	46	37	67
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	85	416	827	48	39	71
Pedestrians		1			18	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.88				0.88	0.88
vC, conflicting volume	893				1247	457
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	616				1017	122
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				79	91
cM capacity (veh/h)	842				186	794

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	85	208	208	551	324	110
Volume Left	85	0	0	0	0	39
Volume Right	0	0	0	0	48	71
cSH	842	1700	1700	1700	1700	367
Volume to Capacity	0.10	0.12	0.12	0.32	0.19	0.30
Queue Length 95th (m)	2.7	0.0	0.0	0.0	0.0	9.9
Control Delay (s/veh)	9.8	0.0	0.0	0.0	0.0	18.9
Lane LOS	A					C
Approach Delay (s/veh)	1.7			0.0		18.9
Approach LOS						C

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	94	319	717	152	144	116
Future Volume (vph)	94	319	717	152	144	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt			0.974		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1770	3574	3456	0	1715	0
Flt Permitted	0.242				0.973	
Satd. Flow (perm)	449	3574	3456	0	1715	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			33		48	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	12			12		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Adj. Flow (vph)	98	332	747	158	150	121
Shared Lane Traffic (%)						
Lane Group Flow (vph)	98	332	905	0	271	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

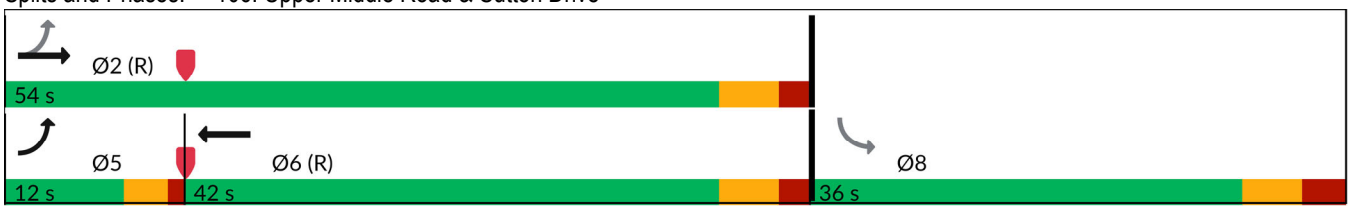


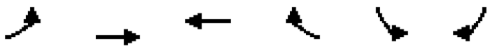
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	12.0	54.0	42.0		36.0	
Total Split (%)	13.3%	60.0%	46.7%		40.0%	
Maximum Green (s)	8.0	48.0	36.0		29.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	61.7	59.7	50.4		17.3	
Actuated g/C Ratio	0.69	0.66	0.56		0.19	
v/c Ratio	0.24	0.14	0.46		0.73	
Control Delay (s/veh)	17.1	17.0	13.9		39.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	17.1	17.0	13.9		39.3	
LOS	B	B	B		D	
Approach Delay (s/veh)		17.0	13.9		39.3	
Approach LOS		B	B		D	
Queue Length 50th (m)	10.6	22.1	49.1		38.5	
Queue Length 95th (m)	27.7	39.2	79.3		59.6	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	424	2368	1951		585	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.23	0.14	0.46		0.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.73	
Intersection Signal Delay (s/veh): 19.1	Intersection LOS: B

Intersection Capacity Utilization 60.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 106: Upper Middle Road & Sutton Drive

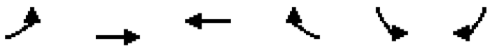




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	94	319	717	152	144	116
Future Volume (vph)	94	319	717	152	144	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.97		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1768	3574	3456		1714	
Flt Permitted	0.24	1.00	1.00		0.97	
Satd. Flow (perm)	450	3574	3456		1714	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	98	332	747	158	150	121
RTOR Reduction (vph)	0	0	15	0	39	0
Lane Group Flow (vph)	98	332	890	0	232	0
Confl. Peds. (#/hr)	12			12		
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	59.7	59.7	49.7		17.3	
Effective Green, g (s)	59.7	59.7	49.7		17.3	
Actuated g/C Ratio	0.66	0.66	0.55		0.19	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	386	2370	1908		329	
v/s Ratio Prot	c0.02	0.09	c0.26			
v/s Ratio Perm	0.15				c0.14	
v/c Ratio	0.25	0.14	0.47		0.71	
Uniform Delay, d1	6.4	5.6	12.2		34.0	
Progression Factor	2.67	2.62	1.00		1.00	
Incremental Delay, d2	0.3	0.1	0.8		6.7	
Delay (s)	17.5	14.9	13.0		40.7	
Level of Service	B	B	B		D	
Approach Delay (s/veh)		15.5	13.0		40.7	
Approach LOS		B	B		D	

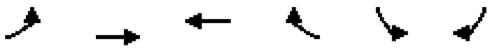
Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	60.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	420	804	57	43	23
Future Volume (vph)	25	420	804	57	43	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.953	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1805	3610	3574	0	1729	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1805	3610	3574	0	1729	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	26	442	846	60	45	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	26	442	906	0	69	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.5%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	420	804	57	43	23
Future Volume (Veh/h)	25	420	804	57	43	23
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	26	442	846	60	45	24
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	913				1156	460
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	913				1156	460
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				76	96
cM capacity (veh/h)	750				185	540

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	26	221	221	564	342	69
Volume Left	26	0	0	0	0	45
Volume Right	0	0	0	0	60	24
cSH	750	1700	1700	1700	1700	240
Volume to Capacity	0.03	0.13	0.13	0.33	0.20	0.29
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	9.2
Control Delay (s/veh)	10.0	0.0	0.0	0.0	0.0	25.9
Lane LOS	A					D
Approach Delay (s/veh)	0.6			0.0		25.9
Approach LOS						D

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	36	29	825	37	11	456
Future Volume (vph)	36	29	825	37	11	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.940		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1738	0	3588	0	1805	3610
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1738	0	3588	0	1805	3610
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	39	31	887	40	12	490
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	927	0	12	490
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

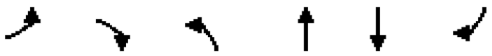
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 34.4%		ICU Level of Service A	
Analysis Period (min) 15			



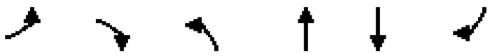
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	36	29	825	37	11	456
Future Volume (Veh/h)	36	29	825	37	11	456
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	39	31	887	40	12	490
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1177	465			928	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1177	465			928	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	79	94			98	
cM capacity (veh/h)	184	549			744	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	70	591	336	12	245	245
Volume Left	39	0	0	12	0	0
Volume Right	31	0	40	0	0	0
cSH	261	1700	1700	744	1700	1700
Volume to Capacity	0.27	0.35	0.20	0.02	0.14	0.14
Queue Length 95th (m)	8.4	0.0	0.0	0.4	0.0	0.0
Control Delay (s/veh)	23.8	0.0	0.0	9.9	0.0	0.0
Lane LOS	C			A		
Approach Delay (s/veh)	23.8	0.0		0.2		
Approach LOS	C					

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	96	256	805	451	32
Future Volume (vph)	53	96	256	805	451	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1787	3610	3570	0
Flt Permitted	0.950		0.427			
Satd. Flow (perm)	1805	1615	801	3610	3570	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		101			11	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	56	101	269	847	475	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	56	101	269	847	509	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

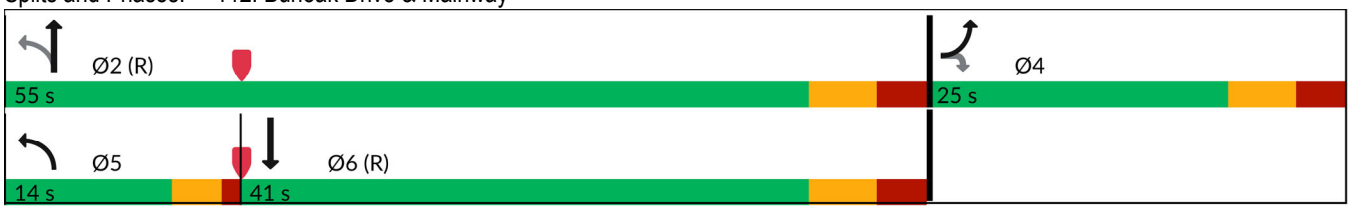


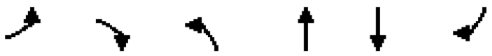
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	25.0	25.0	14.0	55.0	41.0	
Total Split (%)	31.3%	31.3%	17.5%	68.8%	51.3%	
Maximum Green (s)	18.0	18.0	10.0	48.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.7	8.7	63.3	61.7	47.2	
Actuated g/C Ratio	0.11	0.11	0.79	0.77	0.59	
v/c Ratio	0.29	0.38	0.36	0.30	0.24	
Control Delay (s/veh)	36.4	11.8	5.7	5.9	9.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.4	11.8	5.7	5.9	9.4	
LOS	D	B	A	A	A	
Approach Delay (s/veh)	20.5			5.9	9.4	
Approach LOS	C			A	A	
Queue Length 50th (m)	8.5	0.0	9.4	24.4	19.4	
Queue Length 95th (m)	18.9	13.4	26.0	45.8	33.4	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	406	441	761	2783	2109	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.23	0.35	0.30	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 54 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay (s/veh): 8.2		Intersection LOS: A	

Intersection Capacity Utilization 60.8% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	53	96	256	805	451	32
Future Volume (vph)	53	96	256	805	451	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1785	3610	3570	
Flt Permitted	0.95	1.00	0.43	1.00	1.00	
Satd. Flow (perm)	1805	1615	803	3610	3570	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	56	101	269	847	475	34
RTOR Reduction (vph)	0	92	0	0	5	0
Lane Group Flow (vph)	56	9	269	847	504	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	7.1	7.1	58.9	58.9	45.8	
Effective Green, g (s)	7.1	7.1	58.9	58.9	45.8	
Actuated g/C Ratio	0.09	0.09	0.74	0.74	0.57	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	160	143	702	2657	2043	
v/s Ratio Prot	c0.03		c0.04	0.23	0.14	
v/s Ratio Perm		0.01	c0.24			
v/c Ratio	0.35	0.06	0.38	0.32	0.25	
Uniform Delay, d1	34.3	33.4	3.4	3.6	8.5	
Progression Factor	1.00	1.00	1.54	1.47	1.00	
Incremental Delay, d2	1.3	0.2	0.3	0.3	0.3	
Delay (s)	35.6	33.6	5.6	5.6	8.8	
Level of Service	D	C	A	A	A	
Approach Delay (s/veh)	34.3			5.6	8.8	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	114	12	5	251	18	8
Future Volume (vph)	114	12	5	251	18	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.986				0.958	
Flt Protected				0.999	0.967	
Satd. Flow (prot)	3559	0	0	3606	1760	0
Flt Permitted				0.999	0.967	
Satd. Flow (perm)	3559	0	0	3606	1760	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	116	12	5	256	18	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	128	0	0	261	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			

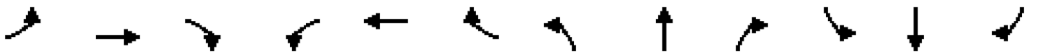


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	114	12	5	251	18	8
Future Volume (Veh/h)	114	12	5	251	18	8
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	116	12	5	256	18	8
Pedestrians					3	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			131		263	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			131		263	67
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1463		705	987

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	77	51	90	171	26
Volume Left	0	0	5	0	18
Volume Right	0	12	0	0	8
cSH	1700	1700	1463	1700	773
Volume to Capacity	0.05	0.03	0.00*	0.10	0.03
Queue Length 95th (m)	0.0	0.0	0.1	0.0	0.8
Control Delay (s/veh)	0.0	0.0	0.4	0.0	9.8
Lane LOS			A		A
Approach Delay (s/veh)	0.0		0.2		9.8
Approach LOS					A

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	20.5%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	63	149	63	191	74	163	1109	46	58	1069	85
Future Volume (vph)	108	63	149	63	191	74	163	1109	46	58	1069	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00			1.00	
Frt		0.895			0.958			0.994			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3182	0	1770	3397	0	1805	3550	0	1770	3521	0
Flt Permitted	0.451			0.617			0.145			0.186		
Satd. Flow (perm)	856	3182	0	1148	3397	0	276	3550	0	346	3521	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		151			54			4			8	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	109	64	151	64	193	75	165	1120	46	59	1080	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	109	215	0	64	268	0	165	1166	0	59	1166	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

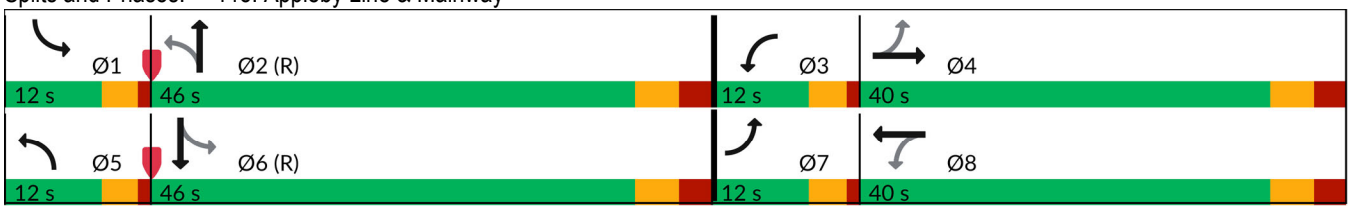


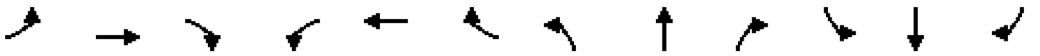
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	12.0	40.0		12.0	40.0		12.0	46.0		12.0	46.0	
Total Split (%)	10.9%	36.4%		10.9%	36.4%		10.9%	41.8%		10.9%	41.8%	
Maximum Green (s)	8.0	33.7		8.0	33.7		8.0	39.7		8.0	39.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	23.5	14.8		22.4	12.4		74.9	64.1		68.1	58.5	
Actuated g/C Ratio	0.21	0.13		0.20	0.11		0.68	0.58		0.62	0.53	
v/c Ratio	0.44	0.39		0.23	0.62		0.49	0.56		0.19	0.62	
Control Delay (s/veh)	38.7	16.6		33.9	43.1		20.0	5.5		10.6	21.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	38.7	16.6		33.9	43.1		20.0	5.5		10.6	21.6	
LOS	D	B		C	D		B	A		B	C	
Approach Delay (s/veh)		24.0			41.3			7.3			21.1	
Approach LOS		C			D			A			C	
Queue Length 50th (m)	19.9	7.1		11.6	24.8		0.0	11.5		3.4	63.0	
Queue Length 95th (m)	33.8	18.3		22.2	37.7		22.8	14.3		14.5	127.2	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	251	1079		282	1078		335	2069		320	1877	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.43	0.20		0.23	0.25		0.49	0.56		0.18	0.62	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 46 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 17.8	Intersection LOS: B

Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 115: Appleby Line & Mainway

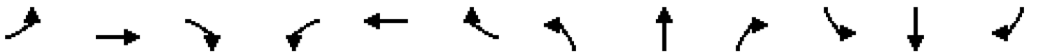




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	63	149	63	191	74	163	1109	46	58	1069	85
Future Volume (vph)	108	63	149	63	191	74	163	1109	46	58	1069	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1804	3181		1769	3397		1805	3550		1770	3521	
Flt Permitted	0.45	1.00		0.62	1.00		0.15	1.00		0.19	1.00	
Satd. Flow (perm)	857	3181		1149	3397		276	3550		346	3521	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	109	64	151	64	193	75	165	1120	46	59	1080	86
RTOR Reduction (vph)	0	131	0	0	47	0	0	2	0	0	4	0
Lane Group Flow (vph)	109	84	0	64	221	0	165	1164	0	59	1162	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.6	14.8		19.6	13.3		72.3	62.4		63.6	57.7	
Effective Green, g (s)	22.6	14.8		19.6	13.3		72.3	62.4		63.6	57.7	
Actuated g/C Ratio	0.21	0.13		0.18	0.12		0.66	0.57		0.58	0.52	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	243	427		240	410		328	2013		276	1846	
v/s Ratio Prot	c0.03	0.03		0.02	c0.06		c0.05	0.33		0.01	c0.33	
v/s Ratio Perm	0.06			0.03			0.28			0.11		
v/c Ratio	0.45	0.20		0.27	0.54		0.50	0.58		0.21	0.63	
Uniform Delay, d1	37.0	42.3		38.5	45.5		11.4	15.3		11.1	18.6	
Progression Factor	1.00	1.00		1.00	1.00		2.35	0.29		1.37	1.06	
Incremental Delay, d2	1.3	0.2		0.6	1.4		1.1	1.1		0.3	1.5	
Delay (s)	38.3	42.5		39.1	46.8		28.0	5.6		15.5	21.1	
Level of Service	D	D		D	D		C	A		B	C	
Approach Delay (s/veh)		41.1			45.3			8.3			20.8	
Approach LOS		D			D			A			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	15	32	92	13	77	27	1203	91	69	1166	15
Future Volume (vph)	35	15	32	92	13	77	27	1203	91	69	1166	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.947			0.943			0.989			0.998	
Flt Protected		0.979			0.975		0.950			0.950		
Satd. Flow (prot)	0	1732	0	0	1715	0	1805	3530	0	1805	3566	0
Flt Permitted		0.758			0.817		0.216			0.129		
Satd. Flow (perm)	0	1337	0	0	1436	0	410	3530	0	245	3566	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			34			10			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	37	16	34	98	14	82	29	1280	97	73	1240	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	87	0	0	194	0	29	1377	0	73	1256	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		59.0	59.0		12.0	71.0	
Total Split (%)	35.5%	35.5%		35.5%	35.5%		53.6%	53.6%		10.9%	64.5%	
Maximum Green (s)	32.5	32.5		32.5	32.5		53.0	53.0		8.0	65.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		18.0			18.0		70.3	70.3		81.5	79.5	
Actuated g/C Ratio		0.16			0.16		0.64	0.64		0.74	0.72	
v/c Ratio		0.36			0.74		0.11	0.61		0.26	0.49	
Control Delay (s/veh)		29.8			51.6		5.6	6.4		3.9	7.3	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		29.8			51.6		5.6	6.4		3.9	7.3	
LOS		C			D		A	A		A	A	
Approach Delay (s/veh)		29.8			51.6			6.3			7.1	
Approach LOS		C			D			A			A	
Queue Length 50th (m)		11.4			34.9		1.1	28.3		3.2	97.2	
Queue Length 95th (m)		24.7			55.9		m2.2	33.7		m3.3	105.5	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		416			448		262	2260		296	2577	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.21			0.43		0.11	0.61		0.25	0.49	

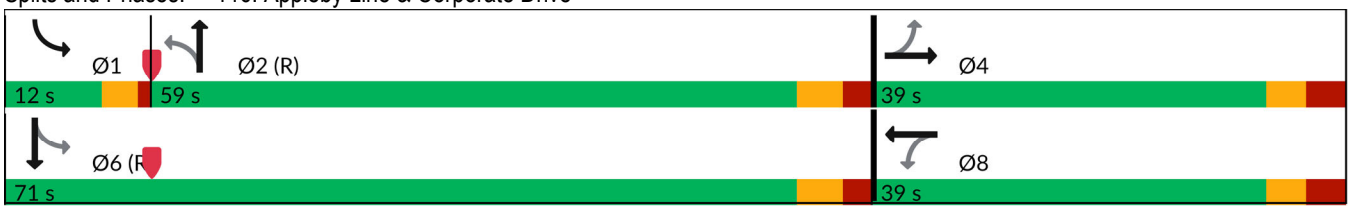
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 61 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay (s/veh): 10.3	Intersection LOS: B

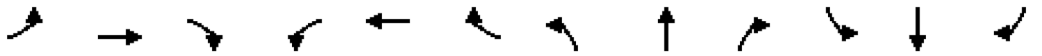
Intersection Capacity Utilization 73.3% ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 116: Appleby Line & Corporate Drive

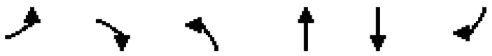




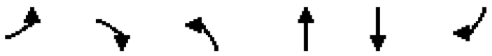
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	15	32	92	13	77	27	1203	91	69	1166	15
Future Volume (vph)	35	15	32	92	13	77	27	1203	91	69	1166	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1728			1714		1801	3532		1805	3566	
Flt Permitted		0.76			0.82		0.22	1.00		0.13	1.00	
Satd. Flow (perm)		1338			1436		410	3532		245	3566	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	37	16	34	98	14	82	29	1280	97	73	1240	16
RTOR Reduction (vph)	0	25	0	0	28	0	0	4	0	0	1	0
Lane Group Flow (vph)	0	62	0	0	166	0	29	1373	0	73	1255	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0		69.5	69.5		79.5	79.5	
Effective Green, g (s)		18.0			18.0		69.5	69.5		79.5	79.5	
Actuated g/C Ratio		0.16			0.16		0.63	0.63		0.72	0.72	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		218			234		259	2231		262	2577	
v/s Ratio Prot								c0.39		0.02	c0.35	
v/s Ratio Perm		0.05			c0.12		0.07			0.19		
v/c Ratio		0.28			0.71		0.11	0.62		0.28	0.49	
Uniform Delay, d1		40.3			43.5		8.0	12.2		8.0	6.5	
Progression Factor		1.00			1.00		0.42	0.39		0.46	0.92	
Incremental Delay, d2		0.7			9.4		0.8	1.1		0.4	0.5	
Delay (s)		41.1			52.9		4.2	5.8		4.1	6.5	
Level of Service		D			D		A	A		A	A	
Approach Delay (s/veh)		41.1			52.9			5.8			6.4	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	45	112	1024	553	10
Future Volume (vph)	11	45	112	1024	553	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95
Ped Bike Factor			0.99		1.00	
Frt		0.850			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	1736	3610	3590	0
Flt Permitted	0.950		0.394			
Satd. Flow (perm)	1805	1509	716	3610	3590	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		48			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	12	48	119	1089	588	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	12	48	119	1089	599	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	26.0	26.0	14.0	54.0	40.0	
Total Split (%)	32.5%	32.5%	17.5%	67.5%	50.0%	
Maximum Green (s)	19.0	19.0	10.0	47.0	33.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.1	8.1	66.9	66.7	54.9	
Actuated g/C Ratio	0.10	0.10	0.84	0.83	0.69	
v/c Ratio	0.07	0.24	0.17	0.36	0.24	
Control Delay (s/veh)	33.4	14.0	4.0	4.4	2.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.4	14.0	4.0	4.4	2.7	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	17.9			4.3	2.7	
Approach LOS	B			A	A	
Queue Length 50th (m)	1.8	0.0	6.5	38.0	5.8	
Queue Length 95th (m)	6.7	10.2	m9.5	m43.8	11.5	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	428	394	726	3009	2465	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.12	0.16	0.36	0.24	

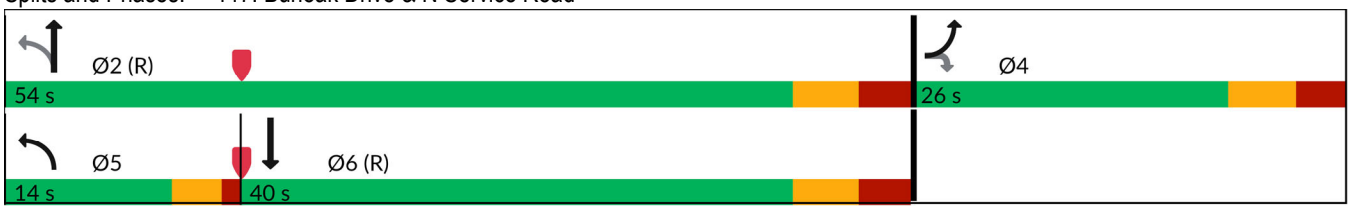
Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.36	
Intersection Signal Delay (s/veh): 4.3	Intersection LOS: A

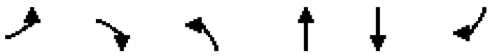
Intersection Capacity Utilization 52.9% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	11	45	112	1024	553	10
Future Volume (vph)	11	45	112	1024	553	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	1732	3610	3591	
Flt Permitted	0.95	1.00	0.39	1.00	1.00	
Satd. Flow (perm)	1805	1509	718	3610	3591	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	12	48	119	1089	588	11
RTOR Reduction (vph)	0	45	0	0	1	0
Lane Group Flow (vph)	12	3	119	1089	598	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	4.9	4.9	61.1	61.1	49.9	
Effective Green, g (s)	4.9	4.9	61.1	61.1	49.9	
Actuated g/C Ratio	0.06	0.06	0.76	0.76	0.62	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	110	92	639	2757	2239	
v/s Ratio Prot	c0.01		0.02	c0.30	0.17	
v/s Ratio Perm		0.00	0.13			
v/c Ratio	0.11	0.03	0.19	0.39	0.27	
Uniform Delay, d1	35.5	35.3	2.5	3.2	6.8	
Progression Factor	1.00	1.00	1.68	1.30	0.34	
Incremental Delay, d2	0.4	0.1	0.2	0.3	0.3	
Delay (s)	35.9	35.5	4.5	4.5	2.6	
Level of Service	D	D	A	A	A	
Approach Delay (s/veh)	35.6			4.5	2.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	52.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1042	720	425	0	0	579
Future Volume (vph)	1042	720	425	0	0	579
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.91	0.95	1.00	1.00	0.91
Ped Bike Factor	1.00					
Frt	0.979	0.850				
Flt Protected	0.959					
Satd. Flow (prot)	3398	1455	3610	0	0	5136
Flt Permitted	0.959					
Satd. Flow (perm)	3395	1455	3610	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	27	325				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	1085	750	443	0	0	603
Shared Lane Traffic (%)		24%				
Lane Group Flow (vph)	1265	570	443	0	0	603
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

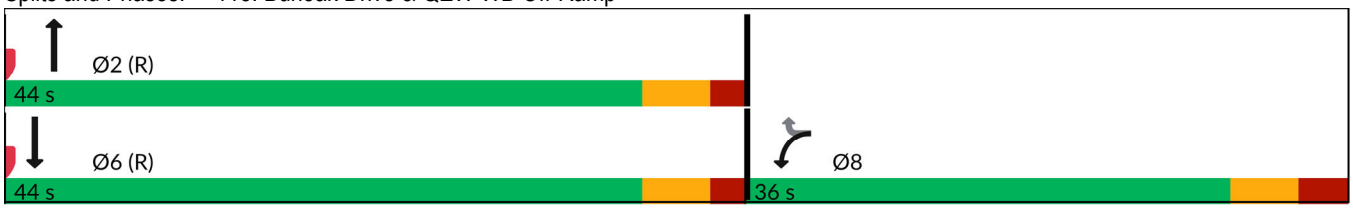


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	36.0	36.0	44.0			44.0
Total Split (%)	45.0%	45.0%	55.0%			55.0%
Maximum Green (s)	29.0	29.0	38.0			38.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
v/c Ratio	1.01	0.78	0.26			0.25
Control Delay (s/veh)	55.4	18.2	13.1			5.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	55.4	18.2	13.1			5.3
LOS	E	B	B			A
Approach Delay (s/veh)	43.9		13.1			5.3
Approach LOS	D		B			A
Queue Length 50th (m)	~105.3	36.8	21.2			3.7
Queue Length 95th (m)	#152.6	#93.7	30.8			5.8
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1248	734	1714			2439
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.01	0.78	0.26			0.25

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay (s/veh): 31.0	Intersection LOS: C

Intersection Capacity Utilization 59.8% ICU Level of Service B
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

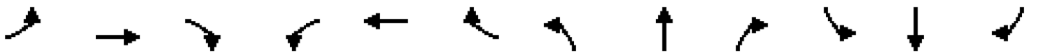




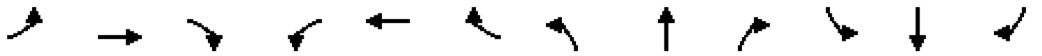
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1042	720	425	0	0	579
Future Volume (vph)	1042	720	425	0	0	579
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	0.95			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.98	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3396	1455	3610			5136
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3396	1455	3610			5136
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1085	750	443	0	0	603
RTOR Reduction (vph)	17	207	0	0	0	0
Lane Group Flow (vph)	1248	363	443	0	0	603
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	29.0	29.0	38.0			38.0
Effective Green, g (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1231	527	1714			2439
v/s Ratio Prot	c0.37		c0.12			0.12
v/s Ratio Perm		0.25				
v/c Ratio	1.01	0.69	0.26			0.25
Uniform Delay, d1	25.5	21.7	12.6			12.5
Progression Factor	1.00	1.00	1.00			0.40
Incremental Delay, d2	29.1	3.7	0.4			0.2
Delay (s)	54.6	25.4	12.9			5.2
Level of Service	D	C	B			A
Approach Delay (s/veh)	45.5		12.9			5.2
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	59.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



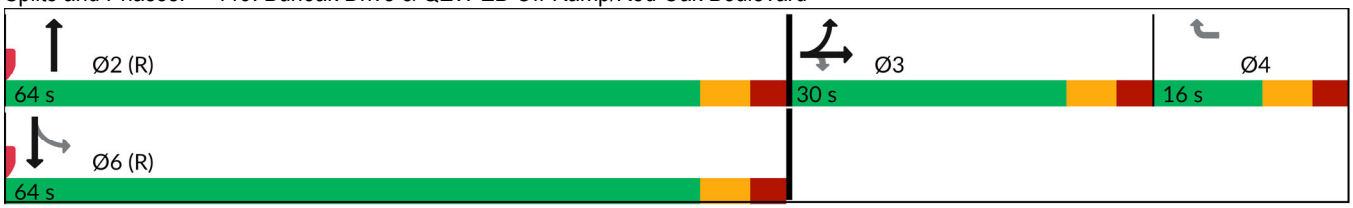
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	95	133	0	0	153	0	382	12	8	1252	0
Future Volume (vph)	57	95	133	0	0	153	0	382	12	8	1252	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.941	0.850			0.865		0.995				
Flt Protected	0.950											
Satd. Flow (prot)	1805	3209	1441	0	0	1611	0	5112	0	0	5136	0
Flt Permitted	0.950										0.937	
Satd. Flow (perm)	1805	3209	1441	0	0	1611	0	5112	0	0	4812	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65	109			499		6				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	61	101	141	0	0	163	0	406	13	9	1332	0
Shared Lane Traffic (%)			46%									
Lane Group Flow (vph)	61	166	76	0	0	163	0	419	0	0	1341	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	

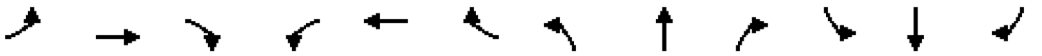


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	30.0	30.0	30.0			16.0		64.0		64.0	64.0	
Total Split (%)	27.3%	27.3%	27.3%			14.5%		58.2%		58.2%	58.2%	
Maximum Green (s)	23.0	23.0	23.0			9.0		57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	9.6	9.6	9.6			8.0		71.4			71.4	
Actuated g/C Ratio	0.09	0.09	0.09			0.07		0.65			0.65	
v/c Ratio	0.39	0.49	0.34			0.28		0.13			0.43	
Control Delay (s/veh)	54.1	33.5	7.6			1.2		7.6			10.1	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	54.1	33.5	7.6			1.2		7.6			10.1	
LOS	D	C	A			A		A			B	
Approach Delay (s/veh)		31.2			1.2			7.6			10.1	
Approach LOS		C			A			A			B	
Queue Length 50th (m)	13.3	12.1	0.0			0.0		11.8			48.9	
Queue Length 95th (m)	26.4	23.1	7.6			0.0		17.7			64.6	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	377	722	387			589		3319			3122	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.16	0.23	0.20			0.28		0.13			0.43	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.49			
Intersection Signal Delay (s/veh): 11.8		Intersection LOS: B	
Intersection Capacity Utilization 48.0%		ICU Level of Service A	
Analysis Period (min) 15			

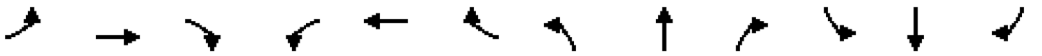
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



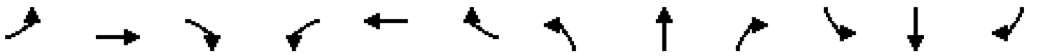


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	57	95	133	0	0	153	0	382	12	8	1252	0
Future Volume (vph)	57	95	133	0	0	153	0	382	12	8	1252	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1805	3210	1441			1611		5113			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1805	3210	1441			1611		5113			4810	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	61	101	141	0	0	163	0	406	13	9	1332	0
RTOR Reduction (vph)	0	59	69	0	0	151	0	2	0	0	0	0
Lane Group Flow (vph)	61	107	7	0	0	12	0	417	0	0	1341	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	9.6	9.6	9.6			8.0		71.4			71.4	
Effective Green, g (s)	9.6	9.6	9.6			8.0		71.4			71.4	
Actuated g/C Ratio	0.09	0.09	0.09			0.07		0.65			0.65	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	157	280	125			117		3318			3122	
v/s Ratio Prot	c0.03	0.03						0.08				
v/s Ratio Perm			0.00			c0.01					c0.28	
v/c Ratio	0.39	0.38	0.05			0.10		0.13			0.43	
Uniform Delay, d1	47.4	47.4	46.0			47.6		7.4			9.4	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	1.6	0.9	0.2			0.4		0.1			0.4	
Delay (s)	49.0	48.3	46.2			48.0		7.5			9.8	
Level of Service	D	D	D			D		A			A	
Approach Delay (s/veh)		47.9			48.0			7.5			9.8	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	12	45	81	32	43	33	1161	63	35	1197	36
Future Volume (vph)	43	12	45	81	32	43	33	1161	63	35	1197	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.882			0.913			0.992			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1589	0	1787	1722	0	1656	3543	0	1805	3561	0
Flt Permitted	0.706			0.483			0.165			0.168		
Satd. Flow (perm)	1340	1589	0	909	1722	0	288	3543	0	319	3561	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47			45			6			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			155.9			629.4	
Travel Time (s)		22.0			10.1			9.4			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	45	13	47	84	33	45	34	1209	66	36	1247	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	45	60	0	84	78	0	34	1275	0	36	1285	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	49.0		11.0	49.0	
Total Split (%)	35.5%	35.5%		10.0%	45.5%		10.0%	44.5%		10.0%	44.5%	
Maximum Green (s)	32.9	32.9		7.0	43.9		7.0	42.4		7.0	42.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	9.8	9.8		20.1	18.6		81.8	76.3		81.7	76.2	
Actuated g/C Ratio	0.09	0.09		0.18	0.17		0.74	0.69		0.74	0.69	
v/c Ratio	0.38	0.33		0.38	0.24		0.11	0.52		0.11	0.52	
Control Delay (s/veh)	55.9	22.6		41.3	20.1		4.3	8.2		4.5	15.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	55.9	22.6		41.3	20.1		4.3	8.2		4.5	15.0	
LOS	E	C		D	C		A	A		A	B	
Approach Delay (s/veh)		36.9			31.1			8.1			14.7	
Approach LOS		D			C			A			B	
Queue Length 50th (m)	9.8	2.8		16.1	6.3		2.2	66.0		3.1	146.7	
Queue Length 95th (m)	21.1	15.5		29.2	18.9		m4.5	65.4		m3.1	169.6	
Internal Link Dist (m)		342.3			144.7			131.9			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	400	508		221	714		301	2458		331	2469	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.12		0.38	0.11		0.11	0.52		0.11	0.52	

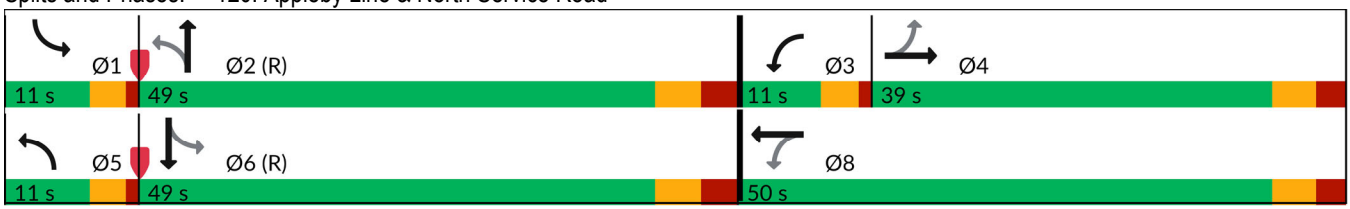
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 13.4	Intersection LOS: B

Intersection Capacity Utilization 56.4% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	12	45	81	32	43	33	1161	63	35	1197	36
Future Volume (vph)	43	12	45	81	32	43	33	1161	63	35	1197	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1590		1787	1722		1656	3544		1805	3559	
Flt Permitted	0.71	1.00		0.48	1.00		0.17	1.00		0.17	1.00	
Satd. Flow (perm)	1341	1590		908	1722		288	3544		318	3559	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	45	12	47	84	33	45	34	1209	66	36	1247	38
RTOR Reduction (vph)	0	43	0	0	38	0	0	2	0	0	1	0
Lane Group Flow (vph)	45	17	0	84	40	0	34	1273	0	36	1284	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.2	8.2		17.8	17.8		75.5	71.3		75.5	71.3	
Effective Green, g (s)	8.2	8.2		17.8	17.8		75.5	71.3		75.5	71.3	
Actuated g/C Ratio	0.07	0.07		0.16	0.16		0.69	0.65		0.69	0.65	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	99	118		191	278		249	2297		275	2306	
v/s Ratio Prot		0.01		c0.02	0.02		c0.01	0.36		0.00	c0.36	
v/s Ratio Perm	0.03			c0.05			0.09			0.08		
v/c Ratio	0.45	0.14		0.44	0.14		0.14	0.55		0.13	0.56	
Uniform Delay, d1	48.8	47.6		40.6	39.6		6.9	10.6		6.9	10.7	
Progression Factor	1.00	1.00		1.00	1.00		0.72	0.64		0.79	1.22	
Incremental Delay, d2	3.3	0.5		1.6	0.2		0.2	0.9		0.2	0.8	
Delay (s)	52.0	48.1		42.2	39.8		5.2	7.7		5.6	13.8	
Level of Service	D	D		D	D		A	A		A	B	
Approach Delay (s/veh)		49.8			41.1			7.7			13.6	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



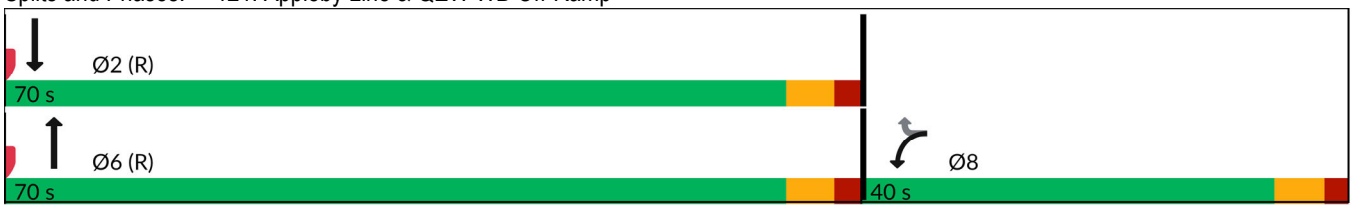
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	319	210	1063	0	0	948
Future Volume (vph)	319	210	1063	0	0	948
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1583	3610	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1583	3610	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		80				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		177.3			43.5
Travel Time (s)	20.9		10.6			2.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	343	226	1143	0	0	1019
Shared Lane Traffic (%)						
Lane Group Flow (vph)	343	226	1143	0	0	1019
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		0.0			0.0
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	70.0			70.0
Total Split (%)	36.4%	36.4%	63.6%			63.6%
Maximum Green (s)	34.0	34.0	64.0			64.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	17.5	17.5	80.5			80.5
Actuated g/C Ratio	0.16	0.16	0.73			0.73
v/c Ratio	0.63	0.71	0.43			0.27
Control Delay (s/veh)	48.1	39.8	6.0			2.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	48.1	39.8	6.0			2.2
LOS	D	D	A			A
Approach Delay (s/veh)	44.8		6.0			2.2
Approach LOS	D		A			A
Queue Length 50th (m)	39.0	32.3	34.2			6.7
Queue Length 95th (m)	49.8	55.0	67.2			9.3
Internal Link Dist (m)	323.7		153.3			19.5
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1050	544	2641			3757
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.33	0.42	0.43			0.27

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 12.6		Intersection LOS: B	
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			

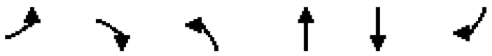
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



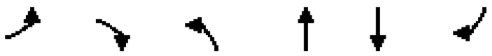


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	319	210	1063	0	0	948
Future Volume (vph)	319	210	1063	0	0	948
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1583	3610			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1583	3610			5136
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	343	226	1143	0	0	1019
RTOR Reduction (vph)	0	67	0	0	0	0
Lane Group Flow (vph)	343	159	1143	0	0	1019
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	17.5	17.5	80.5			80.5
Effective Green, g (s)	17.5	17.5	80.5			80.5
Actuated g/C Ratio	0.16	0.16	0.73			0.73
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	540	251	2641			3758
v/s Ratio Prot	c0.10		c0.32			0.20
v/s Ratio Perm		0.10				
v/c Ratio	0.64	0.63	0.43			0.27
Uniform Delay, d1	43.3	43.2	5.8			4.9
Progression Factor	1.00	1.00	0.85			0.38
Incremental Delay, d2	2.4	5.1	0.5			0.2
Delay (s)	45.7	48.4	5.4			2.0
Level of Service	D	D	A			A
Approach Delay (s/veh)	46.8		5.4			2.0
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	364	251	0	924	950	0
Future Volume (vph)	364	251	0	924	950	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	3574	3574	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	3574	3574	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		206				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	142.5	
Travel Time (s)	16.4			21.0	8.6	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	375	259	0	953	979	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	375	259	0	953	979	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

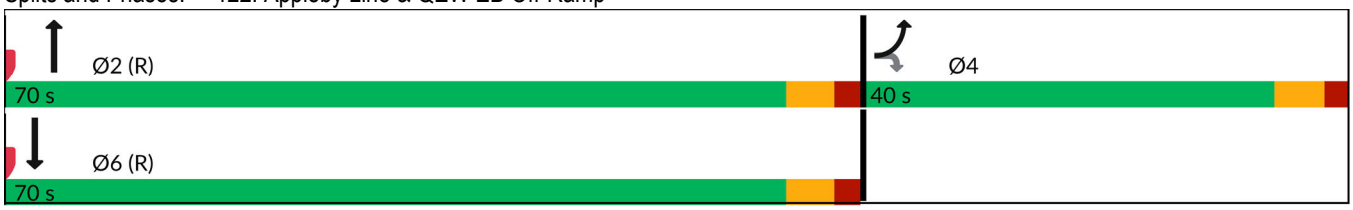


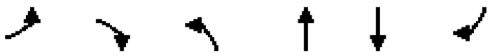
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	40.0	40.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	17.3	17.3		80.7	80.7	
Actuated g/C Ratio	0.16	0.16		0.73	0.73	
v/c Ratio	0.68	0.42		0.36	0.37	
Control Delay (s/veh)	49.9	11.9		2.6	11.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	49.9	11.9		2.6	11.5	
LOS	D	B		A	B	
Approach Delay (s/veh)	34.3			2.6	11.5	
Approach LOS	C			A	B	
Queue Length 50th (m)	41.7	5.9		13.0	74.3	
Queue Length 95th (m)	54.5	17.9		18.2	99.7	
Internal Link Dist (m)	249.0			325.5	118.5	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1082	1012		2620	2620	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.35	0.26		0.36	0.37	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 73 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay (s/veh): 13.8	Intersection LOS: B

Intersection Capacity Utilization 52.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



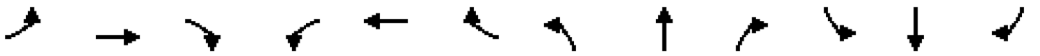


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	364	251	0	924	950	0
Future Volume (vph)	364	251	0	924	950	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		3574	3574	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		3574	3574	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	375	259	0	953	979	0
RTOR Reduction (vph)	0	174	0	0	0	0
Lane Group Flow (vph)	375	85	0	953	979	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	17.3	17.3		80.7	80.7	
Effective Green, g (s)	17.3	17.3		80.7	80.7	
Actuated g/C Ratio	0.16	0.16		0.73	0.73	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	550	442		2622	2622	
v/s Ratio Prot	c0.11			0.27	c0.27	
v/s Ratio Perm		0.03				
v/c Ratio	0.68	0.19		0.36	0.37	
Uniform Delay, d1	43.8	40.3		5.3	5.4	
Progression Factor	1.00	1.00		0.40	1.91	
Incremental Delay, d2	3.5	0.2		0.3	0.4	
Delay (s)	47.2	40.5		2.4	10.7	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	44.5			2.4	10.7	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	61	104	463	300	122	68	1045	238	90	819	90
Future Volume (vph)	112	61	104	463	300	122	68	1045	238	90	819	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00		0.99
Frt		0.905			0.957				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3354	0	1736	3574	1599	1805	3574	1553
Flt Permitted	0.350			0.569			0.277			0.183		
Satd. Flow (perm)	639	3218	0	1069	3354	0	506	3574	1575	348	3574	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		106			59				156			113
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	114	62	106	472	306	124	69	1066	243	92	836	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	114	168	0	472	430	0	69	1066	243	92	836	92
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	12.0	40.0		14.0	42.0		12.0	44.0	44.0	12.0	44.0	44.0
Total Split (%)	10.9%	36.4%		12.7%	38.2%		10.9%	40.0%	40.0%	10.9%	40.0%	40.0%
Maximum Green (s)	8.0	33.6		10.0	35.6		8.0	37.7	37.7	8.0	37.7	37.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	25.9	15.7		30.2	17.8		66.2	57.7	57.7	67.3	58.2	58.2
Actuated g/C Ratio	0.24	0.14		0.27	0.16		0.60	0.52	0.52	0.61	0.53	0.53
v/c Ratio	0.50	0.31		1.32	0.73		0.18	0.57	0.27	0.29	0.44	0.11
Control Delay (s/veh)	36.8	17.5		193.4	44.7		7.6	18.5	4.6	11.7	15.7	2.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.8	17.5		193.4	44.7		7.6	18.5	4.6	11.7	15.7	2.9
LOS	D	B		F	D		A	B	A	B	B	A
Approach Delay (s/veh)		25.3			122.5			15.5			14.2	
Approach LOS		C			F			B			B	
Queue Length 50th (m)	20.0	6.5		~138.9	43.3		2.7	101.5	3.5	6.8	41.8	0.9
Queue Length 95th (m)	33.1	15.8		#191.7	58.2		m6.5	140.1	8.9	17.0	66.6	4.2
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	231	1056		358	1125		398	1874	900	327	1891	864
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.16		1.32	0.38		0.17	0.57	0.27	0.28	0.44	0.11

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 65 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.32	
Intersection Signal Delay (s/veh): 42.9	Intersection LOS: D

Intersection Capacity Utilization 85.6% ICU Level of Service E

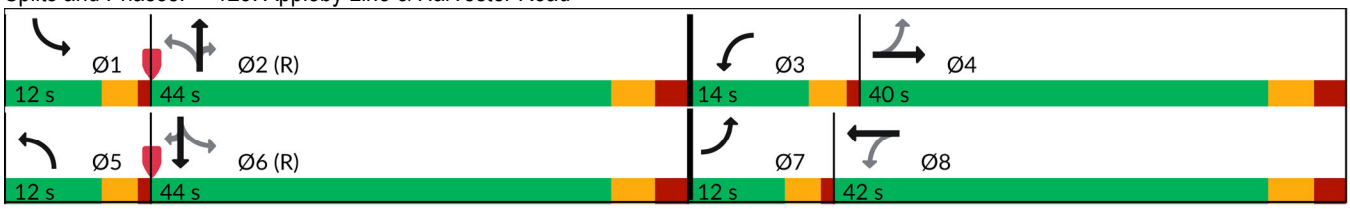
Analysis Period (min) 15

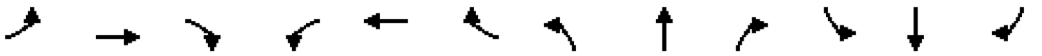
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	61	104	463	300	122	68	1045	238	90	819	90
Future Volume (vph)	112	61	104	463	300	122	68	1045	238	90	819	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.96		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3219		1786	3353		1735	3574	1575	1805	3574	1533
Flt Permitted	0.35	1.00		0.57	1.00		0.28	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	639	3219		1070	3353		505	3574	1575	348	3574	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	114	62	106	472	306	124	69	1066	243	92	836	92
RTOR Reduction (vph)	0	91	0	0	49	0	0	0	75	0	0	44
Lane Group Flow (vph)	114	77	0	472	381	0	69	1066	168	92	836	48
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	23.6	15.7		27.8	17.8		63.1	56.9	56.9	64.1	57.4	57.4
Effective Green, g (s)	23.6	15.7		27.8	17.8		63.1	56.9	56.9	64.1	57.4	57.4
Actuated g/C Ratio	0.21	0.14		0.25	0.16		0.57	0.52	0.52	0.58	0.52	0.52
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215	459		335	542		359	1848	814	291	1864	799
v/s Ratio Prot	0.04	0.02		c0.13	0.11		0.01	c0.30		c0.02	0.23	
v/s Ratio Perm	0.08			c0.23			0.10		0.11	0.16		0.03
v/c Ratio	0.53	0.17		1.41	0.70		0.19	0.58	0.21	0.32	0.45	0.06
Uniform Delay, d1	36.4	41.4		39.9	43.6		10.9	18.3	14.3	11.9	16.4	13.0
Progression Factor	1.00	1.00		1.00	1.00		0.77	0.89	0.59	1.09	0.86	1.28
Incremental Delay, d2	2.5	0.2		201.0	4.1		0.2	1.1	0.5	0.6	0.7	0.1
Delay (s)	38.9	41.6		240.9	47.7		8.6	17.4	9.0	13.7	14.8	16.7
Level of Service	D	D		F	D		A	B	A	B	B	B
Approach Delay (s/veh)		40.5			148.8			15.5			14.9	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	85.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	71	266	107	69	113	216	927	75	83	1046	296
Future Volume (vph)	332	71	266	107	69	113	216	927	75	83	1046	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	3574	1615
Flt Permitted	0.950			0.709			0.113			0.277		
Satd. Flow (perm)	3496	1792	1577	1234	1792	1533	215	3574	1414	505	3574	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			268			167			164			305
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	342	73	274	110	71	116	223	956	77	86	1078	305
Shared Lane Traffic (%)												
Lane Group Flow (vph)	342	73	274	110	71	116	223	956	77	86	1078	305
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	24.0	45.0	45.0	11.0	32.0	32.0	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	21.8%	40.9%	40.9%	10.0%	29.1%	29.1%	10.9%	38.2%	38.2%	10.9%	38.2%	38.2%
Maximum Green (s)	19.0	38.5	38.5	7.0	25.5	25.5	8.0	35.2	35.2	8.0	35.2	35.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.7	19.8	19.8	19.6	10.1	10.1	68.7	56.0	56.0	55.0	44.1	44.1
Actuated g/C Ratio	0.14	0.18	0.18	0.18	0.09	0.09	0.62	0.51	0.51	0.50	0.40	0.40
v/c Ratio	0.69	0.23	0.54	0.44	0.43	0.40	0.57	0.53	0.10	0.25	0.75	0.37
Control Delay (s/veh)	51.9	38.5	9.1	35.2	54.8	6.1	21.0	21.2	0.2	10.5	31.0	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	51.9	38.5	9.1	35.2	54.8	6.1	21.0	21.2	0.2	10.5	31.0	6.0
LOS	D	D	A	D	D	A	C	C	A	B	C	A
Approach Delay (s/veh)		33.5			28.5			19.9			24.6	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	38.2	14.9	1.1	19.6	16.2	0.0	20.9	76.2	0.0	7.8	100.4	8.7
Queue Length 95th (m)	52.0	26.8	22.5	31.9	30.6	5.9	50.4	114.1	0.0	m13.1	m126.2	m14.2
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	604	627	726	248	415	483	391	1818	800	350	1431	819
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.57	0.12	0.38	0.44	0.17	0.24	0.57	0.53	0.10	0.25	0.75	0.37

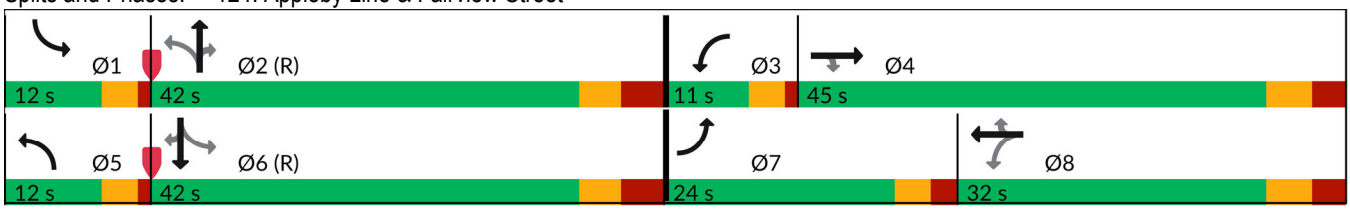
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 22 (20%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 25.0	Intersection LOS: C

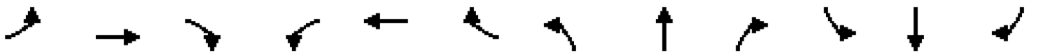
Intersection Capacity Utilization 74.4% ICU Level of Service D

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street

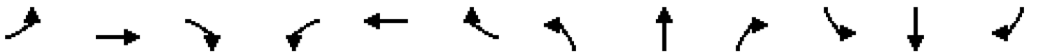




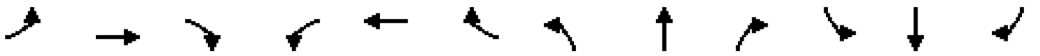
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	332	71	266	107	69	113	216	927	75	83	1046	296
Future Volume (vph)	332	71	266	107	69	113	216	927	75	83	1046	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	1792	1577	1659	1792	1533	1805	3574	1414	1735	3574	1589
Flt Permitted	0.95	1.00	1.00	0.71	1.00	1.00	0.11	1.00	1.00	0.28	1.00	1.00
Satd. Flow (perm)	3502	1792	1577	1239	1792	1533	215	3574	1414	505	3574	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	342	73	274	110	71	116	223	956	77	86	1078	305
RTOR Reduction (vph)	0	0	220	0	0	105	0	0	38	0	0	183
Lane Group Flow (vph)	342	73	54	110	71	11	223	956	39	86	1078	122
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	15.7	19.8	19.8	17.1	10.1	10.1	65.9	55.2	55.2	50.8	44.1	44.1
Effective Green, g (s)	15.7	19.8	19.8	17.1	10.1	10.1	65.9	55.2	55.2	50.8	44.1	44.1
Actuated g/C Ratio	0.14	0.18	0.18	0.16	0.09	0.09	0.60	0.50	0.50	0.46	0.40	0.40
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	499	322	283	219	164	140	386	1793	709	308	1432	637
v/s Ratio Prot	c0.10	0.04		0.03	0.04		c0.09	0.27		0.02	c0.30	
v/s Ratio Perm			0.03	c0.05		0.01	0.25		0.03	0.11		0.08
v/c Ratio	0.69	0.23	0.19	0.50	0.43	0.08	0.58	0.53	0.05	0.28	0.75	0.19
Uniform Delay, d1	44.8	38.6	38.3	42.0	47.2	45.7	17.0	18.6	14.0	16.8	28.3	21.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.89	0.95	1.64
Incremental Delay, d2	3.9	0.4	0.3	1.8	1.8	0.2	2.1	1.1	0.1	0.4	2.7	0.5
Delay (s)	48.7	38.9	38.6	43.8	49.1	45.9	19.1	19.8	14.2	15.3	29.5	35.5
Level of Service	D	D	D	D	D	D	B	B	B	B	C	D
Approach Delay (s/veh)		43.7			45.9			19.3			29.9	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	703	348	437	771	207	463	686	315	402	754	238
Future Volume (vph)	218	703	348	437	771	207	463	686	315	402	754	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3485	5136	1577	3452	5136	1528	3496	5136	1562	3439	5136	1588
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			266			211			270			243
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	222	717	355	446	787	211	472	700	321	410	769	243
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	717	355	446	787	211	472	700	321	410	769	243
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0
Total Split (%)	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%
Maximum Green (s)	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.4	27.4	27.4	17.0	29.1	29.1	28.6	46.4	46.4	24.4	42.1	42.1
Actuated g/C Ratio	0.11	0.20	0.20	0.12	0.21	0.21	0.20	0.33	0.33	0.17	0.30	0.30
v/c Ratio	0.58	0.71	0.68	1.06	0.74	0.44	0.66	0.41	0.46	0.68	0.50	0.38
Control Delay (s/veh)	65.3	56.4	19.9	118.6	56.3	8.3	56.9	38.1	9.8	60.5	41.8	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.3	56.4	19.9	118.6	56.3	8.3	56.9	38.1	9.8	60.5	41.8	6.1
LOS	E	E	B	F	E	A	E	D	A	E	D	A
Approach Delay (s/veh)		47.9			68.5			38.0			41.1	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	32.0	72.6	22.6	~73.9	80.2	0.0	65.4	59.0	10.4	58.1	68.7	0.0
Queue Length 95th (m)	45.7	82.9	56.3	#109.6	91.6	21.3	#89.5	75.7	38.7	78.1	83.5	20.5
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	425	1489	646	420	1489	592	715	1701	698	603	1546	647
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.48	0.55	1.06	0.53	0.36	0.66	0.41	0.46	0.68	0.50	0.38

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 118 (84%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 48.8	Intersection LOS: D

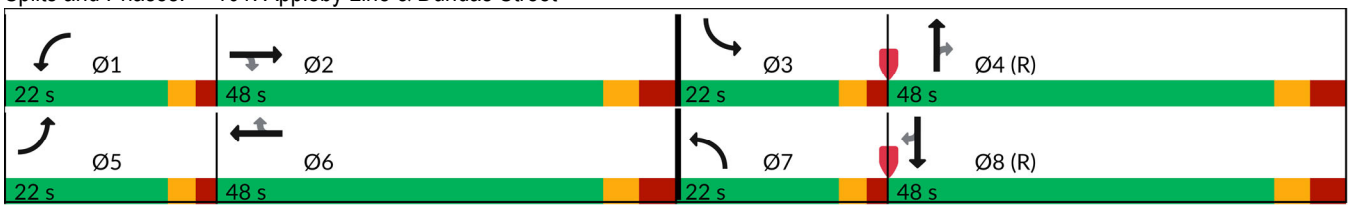
Intersection Capacity Utilization 99.9% ICU Level of Service F

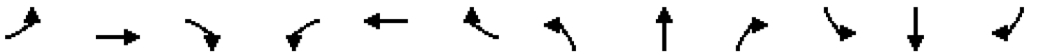
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

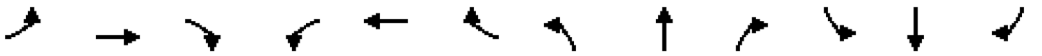




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	703	348	437	771	207	463	686	315	402	754	238
Future Volume (vph)	218	703	348	437	771	207	463	686	315	402	754	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	222	717	355	446	787	211	472	700	321	410	769	243
RTOR Reduction (vph)	0	0	214	0	0	167	0	0	181	0	0	170
Lane Group Flow (vph)	222	717	141	446	787	44	472	700	140	410	769	73
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.4	27.5	27.5	17.0	29.1	29.1	28.6	46.3	46.3	24.4	42.1	42.1
Effective Green, g (s)	15.4	27.5	27.5	17.0	29.1	29.1	28.6	46.3	46.3	24.4	42.1	42.1
Actuated g/C Ratio	0.11	0.20	0.20	0.12	0.21	0.21	0.20	0.33	0.33	0.17	0.30	0.30
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	385	1008	309	420	1067	317	715	1698	516	604	1544	477
v/s Ratio Prot	0.06	0.14		c0.13	c0.15		c0.13	c0.14		0.12	c0.15	
v/s Ratio Perm			0.09			0.03			0.09			0.05
v/c Ratio	0.58	0.71	0.46	1.06	0.74	0.14	0.66	0.41	0.27	0.68	0.50	0.15
Uniform Delay, d1	59.2	52.5	49.7	61.5	51.9	45.2	51.2	36.3	34.5	54.1	40.3	35.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	2.4	1.1	61.3	2.7	0.2	3.0	0.7	1.3	3.9	1.2	0.7
Delay (s)	62.5	54.9	50.7	122.8	54.6	45.4	54.3	37.0	35.8	58.1	41.4	36.6
Level of Service	E	D	D	F	D	D	D	D	D	E	D	D
Approach Delay (s/veh)		55.1			74.3			42.2			45.4	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	278	323	205	511	432	290	1284	134	264	1074	229
Future Volume (vph)	245	278	323	205	511	432	290	1284	134	264	1074	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.919				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3260	0	1787	4515	1615	3502	4438	0	1787	4378	0
Flt Permitted	0.324			0.204			0.950			0.093		
Satd. Flow (perm)	594	3260	0	382	4515	1575	3495	4438	0	175	4378	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		224				188		16			36	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	250	284	330	209	521	441	296	1310	137	269	1096	234
Shared Lane Traffic (%)												
Lane Group Flow (vph)	250	614	0	209	521	441	296	1447	0	269	1330	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	12.0	35.0		12.0	35.0	35.0	19.0	51.0		12.0	44.0	
Total Split (%)	10.9%	31.8%		10.9%	31.8%	31.8%	17.3%	46.4%		10.9%	40.0%	
Maximum Green (s)	8.0	28.6		8.0	28.6	28.6	14.0	44.5		8.0	37.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	34.5	24.1		34.5	24.1	24.1	13.2	44.5		56.4	42.8	
Actuated g/C Ratio	0.31	0.22		0.31	0.22	0.22	0.12	0.40		0.51	0.39	
v/c Ratio	0.93	0.69		0.95	0.53	0.90	0.70	0.80		0.99	0.77	
Control Delay (s/veh)	69.8	28.3		77.4	39.2	45.2	54.4	19.7		83.9	33.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	69.8	28.3		77.4	39.2	45.2	54.4	19.7		83.9	33.5	
LOS	E	C		E	D	D	D	B		F	C	
Approach Delay (s/veh)		40.3			48.3			25.6			42.0	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	41.2	41.1		33.0	42.0	56.4	27.3	100.6		~61.4	113.7	
Queue Length 95th (m)	#80.9	59.8		#64.5	54.5	#108.0	42.9	126.3		#120.9	138.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	270	1013		221	1173	548	448	1804		273	1725	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.93	0.61		0.95	0.44	0.80	0.66	0.80		0.99	0.77	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 37.8	Intersection LOS: D

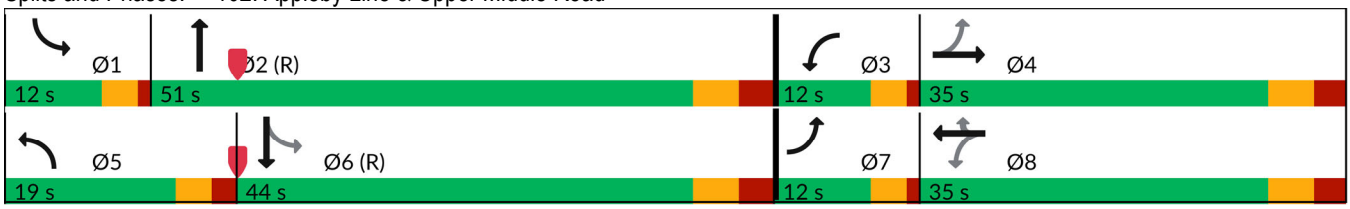
Intersection Capacity Utilization 91.1%	ICU Level of Service F
Analysis Period (min) 15	

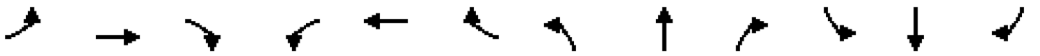
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road

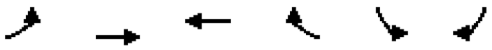




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	278	323	205	511	432	290	1284	134	264	1074	229
Future Volume (vph)	245	278	323	205	511	432	290	1284	134	264	1074	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	3261		1786	4515	1575	3502	4437		1787	4377	
Flt Permitted	0.32	1.00		0.20	1.00	1.00	0.95	1.00		0.09	1.00	
Satd. Flow (perm)	597	3261		383	4515	1575	3502	4437		176	4377	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	250	284	330	209	521	441	296	1310	137	269	1096	234
RTOR Reduction (vph)	0	175	0	0	0	147	0	10	0	0	22	0
Lane Group Flow (vph)	250	439	0	209	521	294	296	1437	0	269	1308	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	32.1	24.1		32.1	24.1	24.1	13.2	44.5		55.3	42.8	
Effective Green, g (s)	32.1	24.1		32.1	24.1	24.1	13.2	44.5		55.3	42.8	
Actuated g/C Ratio	0.29	0.22		0.29	0.22	0.22	0.12	0.40		0.50	0.39	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	258	714		213	989	345	420	1794		271	1703	
v/s Ratio Prot	0.07	0.13		c0.07	0.12		0.08	0.32		c0.11	0.30	
v/s Ratio Perm	0.21			c0.21		0.19				c0.39		
v/c Ratio	0.97	0.61		0.98	0.53	0.85	0.70	0.80		0.99	0.77	
Uniform Delay, d1	35.8	38.8		35.2	37.9	41.2	46.5	28.9		30.9	29.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.57		1.00	1.00	
Incremental Delay, d2	46.8	1.6		56.0	0.5	18.0	4.4	3.2		52.4	3.4	
Delay (s)	82.7	40.3		91.2	38.4	59.3	50.9	19.7		83.3	32.7	
Level of Service	F	D		F	D	E	D	B		F	C	
Approach Delay (s/veh)		52.6			55.7			25.0			41.2	
Approach LOS		D			E			C			D	

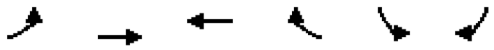
Intersection Summary			
HCM 2000 Control Delay (s/veh)	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	91.1%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	117	563	1110	68	53	96
Future Volume (vph)	117	563	1110	68	53	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.991		0.913	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1787	4515	4477	0	1703	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1787	4515	4477	0	1703	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	18			18		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	123	593	1168	72	56	101
Shared Lane Traffic (%)						
Lane Group Flow (vph)	123	593	1240	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

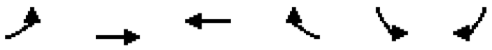
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 48.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



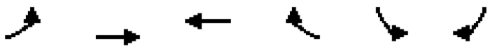
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	117	563	1110	68	53	96
Future Volume (Veh/h)	117	563	1110	68	53	96
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	123	593	1168	72	56	101
Pedestrians		1			18	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.87				0.87	0.87
vC, conflicting volume	1258				1666	444
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	753				1224	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	83				55	89
cM capacity (veh/h)	732				124	929

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	123	198	198	198	467	467	306	157
Volume Left	123	0	0	0	0	0	0	56
Volume Right	0	0	0	0	0	0	72	101
cSH	732	1700	1700	1700	1700	1700	1700	279
Volume to Capacity	0.17	0.12	0.12	0.12	0.27	0.27	0.18	0.56
Queue Length 95th (m)	4.8	0.0	0.0	0.0	0.0	0.0	0.0	25.5
Control Delay (s/veh)	10.9	0.0	0.0	0.0	0.0	0.0	0.0	33.2
Lane LOS	B							D
Approach Delay (s/veh)	1.9				0.0			33.2
Approach LOS								D

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	461	1021	208	197	159
Future Volume (vph)	129	461	1021	208	197	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt			0.975		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1770	4515	4371	0	1715	0
Flt Permitted	0.105				0.973	
Satd. Flow (perm)	195	4515	4371	0	1715	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			46		48	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	12			12		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Adj. Flow (vph)	134	480	1064	217	205	166
Shared Lane Traffic (%)						
Lane Group Flow (vph)	134	480	1281	0	371	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

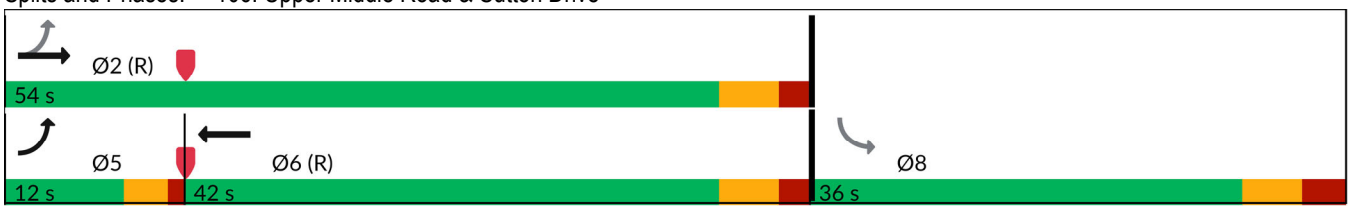


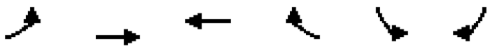
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	12.0	54.0	42.0		36.0	
Total Split (%)	13.3%	60.0%	46.7%		40.0%	
Maximum Green (s)	8.0	48.0	36.0		29.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	56.7	54.7	42.8		22.3	
Actuated g/C Ratio	0.63	0.61	0.48		0.25	
v/c Ratio	0.51	0.17	0.61		0.81	
Control Delay (s/veh)	32.2	21.3	19.4		40.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	32.2	21.3	19.4		40.9	
LOS	C	C	B		D	
Approach Delay (s/veh)		23.7	19.4		40.9	
Approach LOS		C	B		D	
Queue Length 50th (m)	20.7	29.0	67.8		55.4	
Queue Length 95th (m)	42.5	45.6	97.5		80.5	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	268	2745	2100		585	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.50	0.17	0.61		0.63	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 24.1	Intersection LOS: C

Intersection Capacity Utilization 66.5%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 106: Upper Middle Road & Sutton Drive

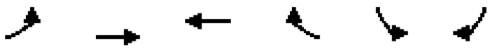




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	461	1021	208	197	159
Future Volume (vph)	129	461	1021	208	197	159
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.97		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1769	4515	4369		1714	
Flt Permitted	0.10	1.00	1.00		0.97	
Satd. Flow (perm)	195	4515	4369		1714	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	134	480	1064	217	205	166
RTOR Reduction (vph)	0	0	24	0	36	0
Lane Group Flow (vph)	134	480	1257	0	335	0
Confl. Peds. (#/hr)	12			12		
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	54.7	54.7	42.7		22.3	
Effective Green, g (s)	54.7	54.7	42.7		22.3	
Actuated g/C Ratio	0.61	0.61	0.47		0.25	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	258	2744	2072		424	
v/s Ratio Prot	c0.05	0.11	c0.29			
v/s Ratio Perm	0.27				c0.20	
v/c Ratio	0.52	0.17	0.61		0.79	
Uniform Delay, d1	10.6	7.7	17.5		31.7	
Progression Factor	2.66	2.47	1.00		1.00	
Incremental Delay, d2	1.7	0.1	1.3		9.5	
Delay (s)	29.9	19.3	18.8		41.1	
Level of Service	C	B	B		D	
Approach Delay (s/veh)		21.6	18.8		41.1	
Approach LOS		C	B		D	

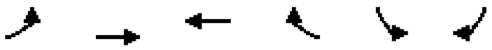
Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	599	1140	78	59	31
Future Volume (vph)	34	599	1140	78	59	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.953	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1805	4560	4514	0	1729	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1805	4560	4514	0	1729	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	36	631	1200	82	62	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	631	1282	0	95	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	599	1140	78	59	31
Future Volume (Veh/h)	34	599	1140	78	59	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	631	1200	82	62	33
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1289				1530	448
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1289				1530	448
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				39	94
cM capacity (veh/h)	542				102	549

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	36	210	210	210	480	480	322	95
Volume Left	36	0	0	0	0	0	0	62
Volume Right	0	0	0	0	0	0	82	33
cSH	542	1700	1700	1700	1700	1700	1700	142
Volume to Capacity	0.07	0.12	0.12	0.12	0.28	0.28	0.19	0.67
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.0	0.0	0.0	29.7
Control Delay (s/veh)	12.1	0.0	0.0	0.0	0.0	0.0	0.0	70.6
Lane LOS	B							F
Approach Delay (s/veh)	0.7				0.0			70.6
Approach LOS								F

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	40	1169	51	15	648
Future Volume (vph)	49	40	1169	51	15	648
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.940		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1738	0	4533	0	1805	4560
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1738	0	4533	0	1805	4560
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	53	43	1257	55	16	697
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	1312	0	16	697
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

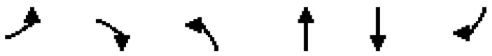
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



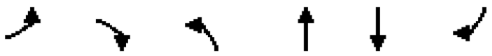
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	40	1169	51	15	648
Future Volume (Veh/h)	49	40	1169	51	15	648
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	53	43	1257	55	16	697
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1550	448			1313	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1550	448			1313	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	49	92			97	
cM capacity (veh/h)	103	564			533	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	96	503	503	306	16	232	232	232
Volume Left	53	0	0	0	16	0	0	0
Volume Right	43	0	0	55	0	0	0	0
cSH	163	1700	1700	1700	533	1700	1700	1700
Volume to Capacity	0.59	0.30	0.30	0.18	0.03	0.14	0.14	0.14
Queue Length 95th (m)	25.1	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Control Delay (s/veh)	54.7	0.0	0.0	0.0	12.0	0.0	0.0	0.0
Lane LOS	F				B			
Approach Delay (s/veh)	54.7	0.0			0.3			
Approach LOS	F							

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	73	135	357	1141	641	44
Future Volume (vph)	73	135	357	1141	641	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	0.0		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1787	4560	4509	0
Flt Permitted	0.950		0.294			
Satd. Flow (perm)	1805	1615	552	4560	4509	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		142			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	77	142	376	1201	675	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	142	376	1201	721	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

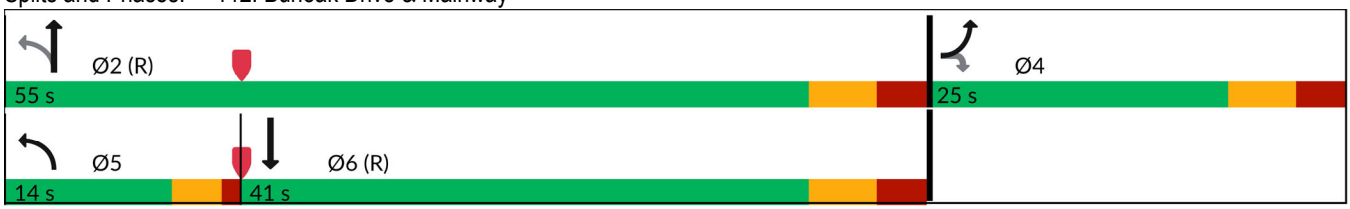


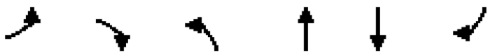
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	25.0	25.0	14.0	55.0	41.0	
Total Split (%)	31.3%	31.3%	17.5%	68.8%	51.3%	
Maximum Green (s)	18.0	18.0	10.0	48.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.4	9.4	59.6	56.6	40.7	
Actuated g/C Ratio	0.12	0.12	0.75	0.71	0.51	
v/c Ratio	0.36	0.45	0.63	0.37	0.31	
Control Delay (s/veh)	37.1	11.0	12.0	5.3	12.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.1	11.0	12.0	5.3	12.4	
LOS	D	B	B	A	B	
Approach Delay (s/veh)	20.2			6.9	12.4	
Approach LOS	C			A	B	
Queue Length 50th (m)	11.6	0.0	18.9	19.1	25.1	
Queue Length 95th (m)	23.7	15.3	50.0	47.4	41.8	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	406	473	599	3227	2301	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.30	0.63	0.37	0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 54 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay (s/veh): 9.7		Intersection LOS: A	

Intersection Capacity Utilization 66.4%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	73	135	357	1141	641	44
Future Volume (vph)	73	135	357	1141	641	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1786	4560	4511	
Flt Permitted	0.95	1.00	0.29	1.00	1.00	
Satd. Flow (perm)	1805	1615	554	4560	4511	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	142	376	1201	675	46
RTOR Reduction (vph)	0	125	0	0	7	0
Lane Group Flow (vph)	77	17	376	1201	714	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.4	9.4	56.6	56.6	40.7	
Effective Green, g (s)	9.4	9.4	56.6	56.6	40.7	
Actuated g/C Ratio	0.12	0.12	0.71	0.71	0.51	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	212	189	575	3226	2294	
v/s Ratio Prot	c0.04		c0.10	0.26	0.16	
v/s Ratio Perm		0.01	c0.37			
v/c Ratio	0.36	0.09	0.65	0.37	0.31	
Uniform Delay, d1	32.5	31.5	4.7	4.6	11.5	
Progression Factor	1.00	1.00	1.97	1.03	1.00	
Incremental Delay, d2	1.1	0.2	2.6	0.3	0.4	
Delay (s)	33.6	31.7	11.9	5.1	11.8	
Level of Service	C	C	B	A	B	
Approach Delay (s/veh)	32.4			6.7	11.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	131	14	5	286	20	9
Future Volume (vph)	131	14	5	286	20	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.986				0.958	
Flt Protected				0.999	0.967	
Satd. Flow (prot)	3559	0	0	3606	1760	0
Flt Permitted				0.999	0.967	
Satd. Flow (perm)	3559	0	0	3606	1760	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	134	14	5	292	20	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	148	0	0	297	29	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

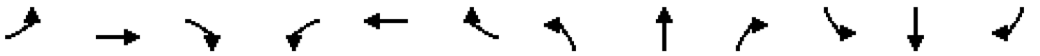
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.5%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	131	14	5	286	20	9
Future Volume (Veh/h)	131	14	5	286	20	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	134	14	5	292	20	9
Pedestrians					3	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			151		300	77
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			151		300	77
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1439		669	972

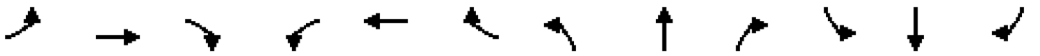
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	89	59	102	195	29
Volume Left	0	0	5	0	20
Volume Right	0	14	0	0	9
cSH	1700	1700	1439	1700	741
Volume to Capacity	0.05	0.03	0.00*	0.11	0.04
Queue Length 95th (m)	0.0	0.0	0.1	0.0	1.0
Control Delay (s/veh)	0.0	0.0	0.4	0.0	10.1
Lane LOS			A		B
Approach Delay (s/veh)	0.0		0.1		10.1
Approach LOS					B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	71	172	77	213	82	186	1366	55	65	1357	112
Future Volume (vph)	139	71	172	77	213	82	186	1366	55	65	1357	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00		1.00	1.00	
Frt		0.894			0.958			0.994			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3179	0	1770	3397	0	1805	4484	0	1770	4447	0
Flt Permitted	0.410			0.599			0.072			0.112		
Satd. Flow (perm)	778	3179	0	1115	3397	0	137	4484	0	209	4447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		174			53			5			11	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	140	72	174	78	215	83	188	1380	56	66	1371	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	246	0	78	298	0	188	1436	0	66	1484	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

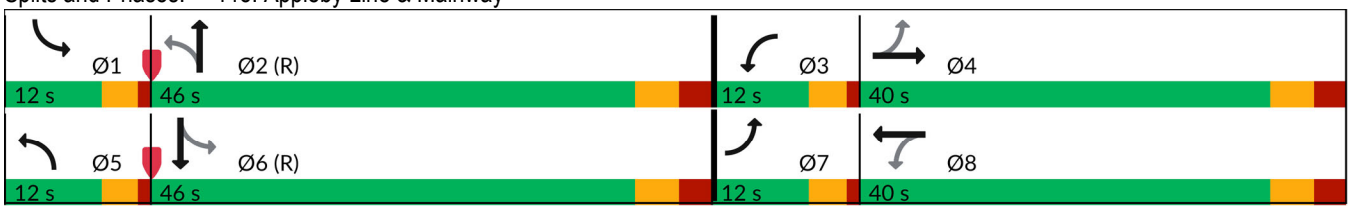


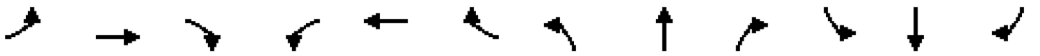
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	12.0	40.0		12.0	40.0		12.0	46.0		12.0	46.0	
Total Split (%)	10.9%	36.4%		10.9%	36.4%		10.9%	41.8%		10.9%	41.8%	
Maximum Green (s)	8.0	33.7		8.0	33.7		8.0	39.7		8.0	39.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	24.5	15.8		23.5	13.4		74.3	62.8		64.9	55.2	
Actuated g/C Ratio	0.22	0.14		0.21	0.12		0.68	0.57		0.59	0.50	
v/c Ratio	0.56	0.41		0.27	0.65		0.66	0.56		0.29	0.66	
Control Delay (s/veh)	42.6	15.9		33.8	44.1		43.3	6.2		14.8	24.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	42.6	15.9		33.8	44.1		43.3	6.2		14.8	24.7	
LOS	D	B		C	D		D	A		B	C	
Approach Delay (s/veh)		25.6			41.9			10.5			24.3	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	25.8	7.9		14.0	28.4		24.6	8.3		3.9	72.8	
Queue Length 95th (m)	41.4	19.6		25.7	41.6		44.6	32.9		19.2	132.5	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	248	1094		288	1077		286	2560		239	2237	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.22		0.27	0.28		0.66	0.56		0.28	0.66	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 46 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay (s/veh): 20.4	Intersection LOS: C

Intersection Capacity Utilization 73.0%	ICU Level of Service D
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 115: Appleby Line & Mainway

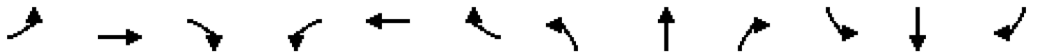




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	71	172	77	213	82	186	1366	55	65	1357	112
Future Volume (vph)	139	71	172	77	213	82	186	1366	55	65	1357	112
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3179		1769	3398		1805	4484		1770	4445	
Flt Permitted	0.41	1.00		0.60	1.00		0.07	1.00		0.11	1.00	
Satd. Flow (perm)	778	3179		1115	3398		136	4484		208	4445	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	140	72	174	78	215	83	188	1380	56	66	1371	113
RTOR Reduction (vph)	0	149	0	0	46	0	0	2	0	0	6	0
Lane Group Flow (vph)	140	97	0	78	252	0	188	1434	0	66	1478	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	23.8	15.8		20.6	14.2		71.2	61.2		60.4	54.4	
Effective Green, g (s)	23.8	15.8		20.6	14.2		71.2	61.2		60.4	54.4	
Actuated g/C Ratio	0.22	0.14		0.19	0.13		0.65	0.56		0.55	0.49	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	243	456		246	438		282	2494		199	2198	
v/s Ratio Prot	c0.04	0.03		0.02	0.07		c0.08	0.32		0.02	0.33	
v/s Ratio Perm	c0.08			0.04			c0.35			0.16		
v/c Ratio	0.58	0.21		0.32	0.57		0.67	0.57		0.33	0.67	
Uniform Delay, d1	36.7	41.6		38.0	45.1		23.5	15.9		12.4	21.1	
Progression Factor	1.00	1.00		1.00	1.00		1.69	0.33		1.54	1.09	
Incremental Delay, d2	3.3	0.2		0.7	1.8		5.2	0.9		0.9	1.5	
Delay (s)	40.0	41.8		38.8	46.9		44.9	6.2		20.0	24.4	
Level of Service	D	D		D	D		D	A		B	C	
Approach Delay (s/veh)		41.2			45.2			10.7			24.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	17	35	103	15	86	30	1489	102	77	1482	17
Future Volume (vph)	40	17	35	103	15	86	30	1489	102	77	1482	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	0.0			0.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.949			0.943			0.990			0.998	
Flt Protected		0.979			0.975		0.950			0.950		
Satd. Flow (prot)	0	1736	0	0	1715	0	1805	4464	0	1805	4505	0
Flt Permitted		0.745			0.803		0.111			0.066		
Satd. Flow (perm)	0	1318	0	0	1411	0	211	4464	0	125	4505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			34			12			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	43	18	37	110	16	91	32	1584	109	82	1577	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	217	0	32	1693	0	82	1595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		59.0	59.0		12.0	71.0	
Total Split (%)	35.5%	35.5%		35.5%	35.5%		53.6%	53.6%		10.9%	64.5%	
Maximum Green (s)	32.5	32.5		32.5	32.5		53.0	53.0		8.0	65.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		19.9			19.9		68.2	68.2		79.6	77.6	
Actuated g/C Ratio		0.18			0.18		0.62	0.62		0.72	0.71	
v/c Ratio		0.38			0.77		0.25	0.61		0.40	0.50	
Control Delay (s/veh)		30.5			52.9		10.1	6.8		11.4	5.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		30.5			52.9		10.1	6.8		11.4	5.6	
LOS		C			D		B	A		B	A	
Approach Delay (s/veh)		30.5			52.9			6.8			5.9	
Approach LOS		C			D			A			A	
Queue Length 50th (m)		13.8			39.8		1.2	27.5		1.8	5.9	
Queue Length 95th (m)		27.4			61.6		m2.6	49.9		m4.5	m119.1	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		409			440		130	2771		217	3178	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.24			0.49		0.25	0.61		0.38	0.50	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 61 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 9.7	Intersection LOS: A

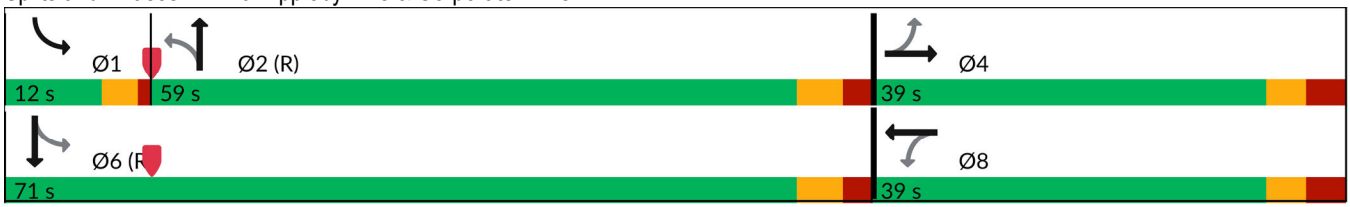
Intersection Capacity Utilization 69.8% ICU Level of Service C

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

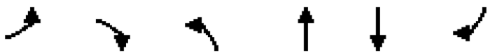
Splits and Phases: 116: Appleby Line & Corporate Drive



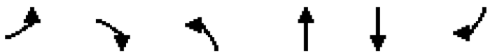
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	17	35	103	15	86	30	1489	102	77	1482	17
Future Volume (vph)	40	17	35	103	15	86	30	1489	102	77	1482	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1732			1715		1803	4466		1805	4506	
Flt Permitted		0.74			0.80		0.11	1.00		0.07	1.00	
Satd. Flow (perm)		1318			1412		211	4466		126	4506	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	18	37	110	16	91	32	1584	109	82	1577	18
RTOR Reduction (vph)	0	23	0	0	28	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	75	0	0	189	0	32	1688	0	82	1594	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		19.9			19.9		67.4	67.4		77.6	77.6	
Effective Green, g (s)		19.9			19.9		67.4	67.4		77.6	77.6	
Actuated g/C Ratio		0.18			0.18		0.61	0.61		0.71	0.71	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		238			255		129	2736		183	3178	
v/s Ratio Prot								c0.38		0.03	c0.35	
v/s Ratio Perm		0.06			c0.13		0.15			0.29		
v/c Ratio		0.32			0.74		0.25	0.62		0.45	0.50	
Uniform Delay, d1		39.1			42.6		9.7	13.3		10.1	7.4	
Progression Factor		1.00			1.00		0.41	0.40		0.97	0.64	
Incremental Delay, d2		0.8			11.0		4.0	0.9		1.1	0.4	
Delay (s)		39.9			53.7		7.9	6.2		10.9	5.1	
Level of Service		D			D		A	A		B	A	
Approach Delay (s/veh)		39.9			53.7			6.2			5.4	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	50	125	1188	645	11
Future Volume (vph)	12	50	125	1188	645	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			0.99		1.00	
Frt		0.850			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	1736	4560	4536	0
Flt Permitted	0.950		0.314			
Satd. Flow (perm)	1805	1509	571	4560	4536	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		53			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	13	53	133	1264	686	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	53	133	1264	698	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	26.0	26.0	14.0	54.0	40.0	
Total Split (%)	32.5%	32.5%	17.5%	67.5%	50.0%	
Maximum Green (s)	19.0	19.0	10.0	47.0	33.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.2	8.2	66.8	66.6	54.7	
Actuated g/C Ratio	0.10	0.10	0.84	0.83	0.68	
v/c Ratio	0.07	0.26	0.22	0.33	0.22	
Control Delay (s/veh)	33.3	13.9	3.6	3.5	2.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.3	13.9	3.6	3.5	2.4	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	17.7			3.5	2.4	
Approach LOS	B			A	A	
Queue Length 50th (m)	1.9	0.0	7.0	30.5	4.7	
Queue Length 95th (m)	7.2	10.7	m8.0	m27.7	9.3	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	428	398	624	3798	3103	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.13	0.21	0.33	0.22	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.33			
Intersection Signal Delay (s/veh): 3.6		Intersection LOS: A	

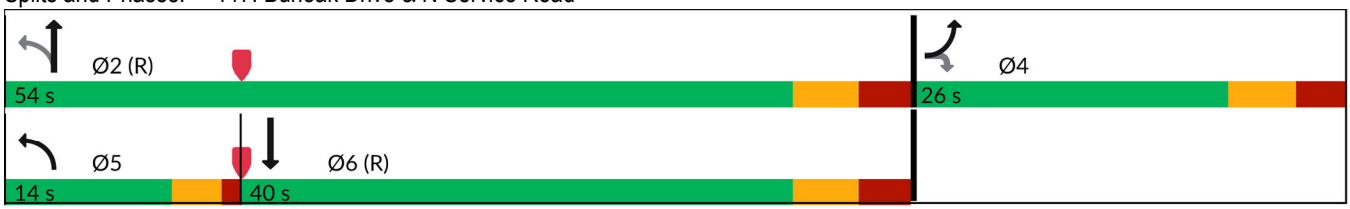
Intersection Capacity Utilization 53.6% ICU Level of Service A

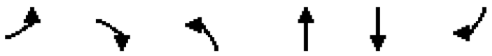
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	50	125	1188	645	11
Future Volume (vph)	12	50	125	1188	645	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	1733	4560	4538	
Flt Permitted	0.95	1.00	0.31	1.00	1.00	
Satd. Flow (perm)	1805	1509	573	4560	4538	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	13	53	133	1264	686	12
RTOR Reduction (vph)	0	50	0	0	1	0
Lane Group Flow (vph)	13	3	133	1264	697	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	5.0	5.0	61.0	61.0	49.7	
Effective Green, g (s)	5.0	5.0	61.0	61.0	49.7	
Actuated g/C Ratio	0.06	0.06	0.76	0.76	0.62	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	112	94	542	3477	2819	
v/s Ratio Prot	c0.01		0.02	c0.28	0.15	
v/s Ratio Perm		0.00	0.16			
v/c Ratio	0.12	0.04	0.25	0.36	0.25	
Uniform Delay, d1	35.4	35.2	2.6	3.1	6.8	
Progression Factor	1.00	1.00	1.54	1.15	0.31	
Incremental Delay, d2	0.5	0.2	0.2	0.1	0.2	
Delay (s)	35.9	35.4	4.1	3.7	2.3	
Level of Service	D	D	A	A	A	
Approach Delay (s/veh)	35.5			3.7	2.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1522	1056	661	0	0	874
Future Volume (vph)	1522	1056	661	0	0	874
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor	1.00					
Frt	0.979	0.850				
Flt Protected	0.959					
Satd. Flow (prot)	3398	1455	4560	0	0	4515
Flt Permitted	0.959					
Satd. Flow (perm)	3395	1455	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	27	162				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	1585	1100	689	0	0	910
Shared Lane Traffic (%)		24%				
Lane Group Flow (vph)	1849	836	689	0	0	910
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

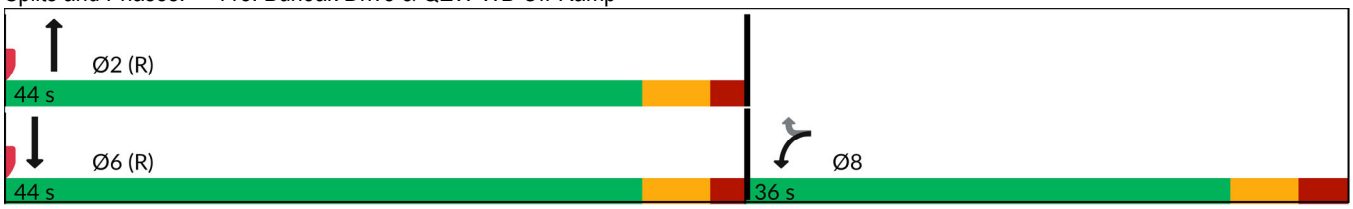


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	36.0	36.0	44.0			44.0
Total Split (%)	45.0%	45.0%	55.0%			55.0%
Maximum Green (s)	29.0	29.0	38.0			38.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
v/c Ratio	1.48	1.33	0.32			0.42
Control Delay (s/veh)	245.6	180.0	13.5			6.8
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	245.6	180.0	13.5			6.8
LOS	F	F	B			A
Approach Delay (s/veh)	225.2		13.5			6.8
Approach LOS	F		B			A
Queue Length 50th (m)	~217.5	~176.4	27.0			11.4
Queue Length 95th (m)	#261.5	#254.7	36.4			15.2
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1248	630	2166			2144
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.48	1.33	0.32			0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay (s/veh): 144.7	Intersection LOS: F

Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

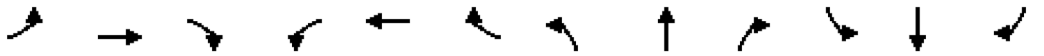




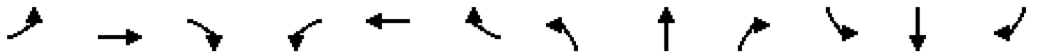
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1522	1056	661	0	0	874
Future Volume (vph)	1522	1056	661	0	0	874
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.98	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3396	1455	4560			4515
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3396	1455	4560			4515
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1585	1100	689	0	0	910
RTOR Reduction (vph)	17	103	0	0	0	0
Lane Group Flow (vph)	1832	733	689	0	0	910
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	29.0	29.0	38.0			38.0
Effective Green, g (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1231	527	2166			2144
v/s Ratio Prot	c0.54		0.15			c0.20
v/s Ratio Perm		0.50				
v/c Ratio	1.49	1.39	0.32			0.42
Uniform Delay, d1	25.5	25.5	13.0			13.8
Progression Factor	1.00	1.00	1.00			0.45
Incremental Delay, d2	224.0	187.1	0.4			0.6
Delay (s)	249.5	212.6	13.4			6.8
Level of Service	F	F	B			A
Approach Delay (s/veh)	238.0		13.4			6.8
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	152.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



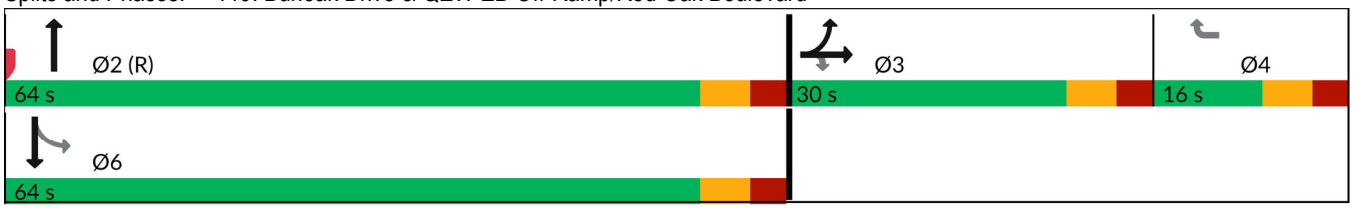
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	139	194	0	0	224	0	598	17	11	1855	0
Future Volume (vph)	84	139	194	0	0	224	0	598	17	11	1855	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.941	0.850			0.865		0.996				
Flt Protected	0.950											
Satd. Flow (prot)	1805	3209	1441	0	0	1611	0	5116	0	0	5136	0
Flt Permitted	0.950										0.934	
Satd. Flow (perm)	1805	3209	1441	0	0	1611	0	5116	0	0	4797	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95	111			338		6				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	89	148	206	0	0	238	0	636	18	12	1973	0
Shared Lane Traffic (%)			46%									
Lane Group Flow (vph)	89	243	111	0	0	238	0	654	0	0	1985	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		0	1		2			2	
Detector Template	Left	Thru	Right			Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		0.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	

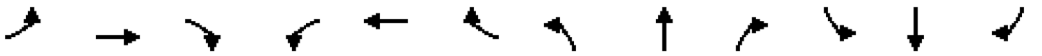


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	30.0	30.0	30.0			16.0		64.0		64.0	64.0	
Total Split (%)	27.3%	27.3%	27.3%			14.5%		58.2%		58.2%	58.2%	
Maximum Green (s)	23.0	23.0	23.0			9.0		57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		Max	Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	11.2	11.2	11.2			8.0		69.8			69.8	
Actuated g/C Ratio	0.10	0.10	0.10			0.07		0.63			0.63	
v/c Ratio	0.48	0.59	0.45			0.55		0.20			0.65	
Control Delay (s/veh)	54.8	34.0	14.4			5.6		8.8			14.2	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	54.8	34.0	14.4			5.6		8.8			14.2	
LOS	D	C	B			A		A			B	
Approach Delay (s/veh)		33.3			5.6			8.8			14.2	
Approach LOS		C			A			A			B	
Queue Length 50th (m)	19.4	17.8	0.0			0.0		20.5			93.8	
Queue Length 95th (m)	34.4	30.4	18.0			1.5		30.2			125.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	377	746	389			442		3247			3043	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.24	0.33	0.29			0.54		0.20			0.65	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 15.1		Intersection LOS: B	
Intersection Capacity Utilization 61.7%		ICU Level of Service B	
Analysis Period (min) 15			

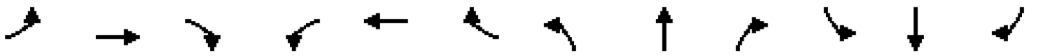
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



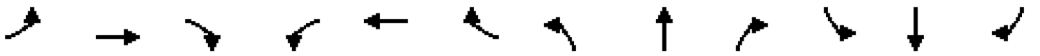


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	139	194	0	0	224	0	598	17	11	1855	0
Future Volume (vph)	84	139	194	0	0	224	0	598	17	11	1855	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1805	3211	1441			1611		5116			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1805	3211	1441			1611		5116			4798	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	89	148	206	0	0	238	0	636	18	12	1973	0
RTOR Reduction (vph)	0	85	100	0	0	221	0	2	0	0	0	0
Lane Group Flow (vph)	89	158	11	0	0	17	0	652	0	0	1985	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	11.2	11.2	11.2			8.0		69.8			69.8	
Effective Green, g (s)	11.2	11.2	11.2			8.0		69.8			69.8	
Actuated g/C Ratio	0.10	0.10	0.10			0.07		0.63			0.63	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	183	326	146			117		3246			3044	
v/s Ratio Prot	c0.05	0.05						0.13				
v/s Ratio Perm			0.01			c0.01					c0.41	
v/c Ratio	0.49	0.48	0.08			0.15		0.20			0.65	
Uniform Delay, d1	46.7	46.7	44.7			47.8		8.4			12.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	2.0	1.1	0.2			0.6		0.1			1.1	
Delay (s)	48.7	47.8	45.0			48.4		8.6			13.6	
Level of Service	D	D	D			D		A			B	
Approach Delay (s/veh)		47.3			48.4			8.6			13.6	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	14	50	91	35	51	36	1451	71	42	1502	43
Future Volume (vph)	51	14	50	91	35	51	36	1451	71	42	1502	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.884			0.911			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1593	0	1787	1717	0	1656	4480	0	1805	4498	0
Flt Permitted	0.699			0.489			0.087			0.090		
Satd. Flow (perm)	1327	1593	0	920	1717	0	152	4480	0	171	4498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			53			7			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	53	15	52	95	36	53	38	1511	74	44	1565	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	67	0	95	89	0	38	1585	0	44	1610	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	49.0		11.0	49.0	
Total Split (%)	35.5%	35.5%		10.0%	45.5%		10.0%	44.5%		10.0%	44.5%	
Maximum Green (s)	32.9	32.9		7.0	43.9		7.0	42.4		7.0	42.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.3	10.3		20.6	19.1		81.2	75.7		81.2	75.7	
Actuated g/C Ratio	0.09	0.09		0.19	0.17		0.74	0.69		0.74	0.69	
v/c Ratio	0.43	0.34		0.42	0.26		0.18	0.51		0.19	0.52	
Control Delay (s/veh)	57.0	22.0		41.9	19.0		5.4	7.4		5.6	14.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.0	22.0		41.9	19.0		5.4	7.4		5.6	14.3	
LOS	E	C		D	B		A	A		A	B	
Approach Delay (s/veh)		37.4			30.8			7.4			14.1	
Approach LOS		D			C			A			B	
Queue Length 50th (m)	11.6	3.2		18.2	6.8		2.0	53.8		3.2	146.7	
Queue Length 95th (m)	24.0	16.4		31.9	20.0		m3.2	66.4		m2.9	165.2	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	396	512		227	717		208	3083		231	3095	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.13		0.42	0.12		0.18	0.51		0.19	0.52	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay (s/veh): 12.7	Intersection LOS: B

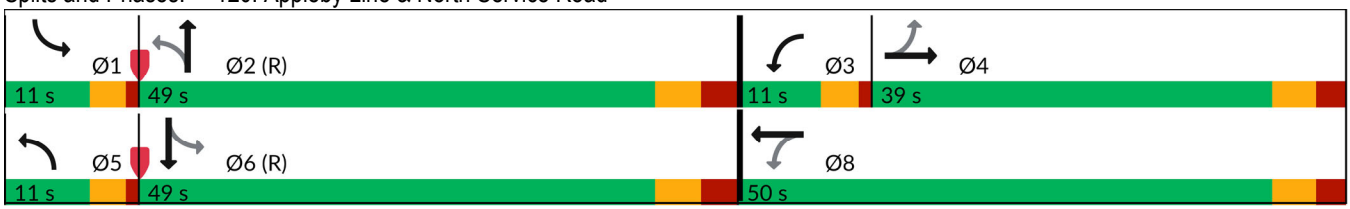
Intersection Capacity Utilization 57.6% ICU Level of Service B

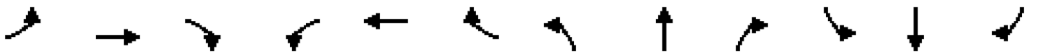
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	14	50	91	35	51	36	1451	71	42	1502	43
Future Volume (vph)	51	14	50	91	35	51	36	1451	71	42	1502	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1592		1787	1717		1656	4480		1805	4497	
Flt Permitted	0.70	1.00		0.49	1.00		0.09	1.00		0.09	1.00	
Satd. Flow (perm)	1327	1592		919	1717		151	4480		172	4497	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	53	15	52	95	36	53	38	1511	74	44	1565	45
RTOR Reduction (vph)	0	48	0	0	44	0	0	3	0	0	1	0
Lane Group Flow (vph)	53	19	0	95	45	0	38	1582	0	44	1609	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.7	8.7		18.3	18.3		75.0	70.7		75.0	70.7	
Effective Green, g (s)	8.7	8.7		18.3	18.3		75.0	70.7		75.0	70.7	
Actuated g/C Ratio	0.08	0.08		0.17	0.17		0.68	0.64		0.68	0.64	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	104	125		197	285		161	2879		181	2890	
v/s Ratio Prot		0.01		c0.02	0.03		0.01	0.35		c0.01	c0.36	
v/s Ratio Perm	0.04			c0.06			0.15			0.16		
v/c Ratio	0.51	0.15		0.48	0.16		0.24	0.55		0.24	0.56	
Uniform Delay, d1	48.6	47.2		40.4	39.2		7.3	10.9		7.2	10.9	
Progression Factor	1.00	1.00		1.00	1.00		0.74	0.59		0.77	1.16	
Incremental Delay, d2	3.9	0.6		1.9	0.3		0.6	0.6		0.6	0.6	
Delay (s)	52.5	47.8		42.3	39.5		6.0	6.9		6.1	13.3	
Level of Service	D	D		D	D		A	A		A	B	
Approach Delay (s/veh)		49.9			41.0			6.9			13.1	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	455	346	1629	0	0	1455
Future Volume (vph)	455	346	1629	0	0	1455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1583	4560	0	0	4515
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1583	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		18				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	489	372	1752	0	0	1565
Shared Lane Traffic (%)						
Lane Group Flow (vph)	489	372	1752	0	0	1565
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

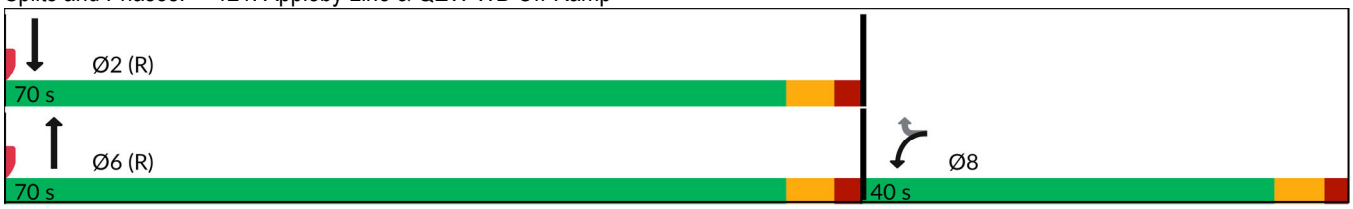


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	70.0			70.0
Total Split (%)	36.4%	36.4%	63.6%			63.6%
Maximum Green (s)	34.0	34.0	64.0			64.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.2	29.2	68.8			68.8
Actuated g/C Ratio	0.27	0.27	0.63			0.63
v/c Ratio	0.54	0.86	0.61			0.55
Control Delay (s/veh)	36.4	55.7	14.7			5.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	36.4	55.7	14.7			5.2
LOS	D	E	B			A
Approach Delay (s/veh)	44.7		14.7			5.2
Approach LOS	D		B			A
Queue Length 50th (m)	48.8	76.0	97.9			11.5
Queue Length 95th (m)	62.9	110.6	157.2			14.2
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1050	501	2853			2824
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.47	0.74	0.61			0.55

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 17.4		Intersection LOS: B	
Intersection Capacity Utilization 62.9%		ICU Level of Service B	
Analysis Period (min) 15			

* User Entered Value

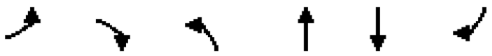
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



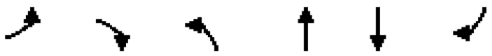


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	455	346	1629	0	0	1455
Future Volume (vph)	455	346	1629	0	0	1455
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1583	4560			4515
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1583	4560			4515
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	489	372	1752	0	0	1565
RTOR Reduction (vph)	0	13	0	0	0	0
Lane Group Flow (vph)	489	359	1752	0	0	1565
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	29.2	29.2	68.8			68.8
Effective Green, g (s)	29.2	29.2	68.8			68.8
Actuated g/C Ratio	0.27	0.27	0.63			0.63
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	902	420	2852			2823
v/s Ratio Prot	0.14		c0.38			0.35
v/s Ratio Perm		c0.23				
v/c Ratio	0.54	0.85	0.61			0.55
Uniform Delay, d1	34.7	38.4	12.5			11.8
Progression Factor	1.00	1.00	1.03			0.36
Incremental Delay, d2	0.7	15.4	0.9			0.7
Delay (s)	35.3	53.8	13.8			4.9
Level of Service	D	D	B			A
Approach Delay (s/veh)	43.3		13.8			4.9
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	567	359	0	1384	1420	0
Future Volume (vph)	567	359	0	1384	1420	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		0.0			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	4515	4515	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	4515	4515	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		64				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	585	370	0	1427	1464	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	585	370	0	1427	1464	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

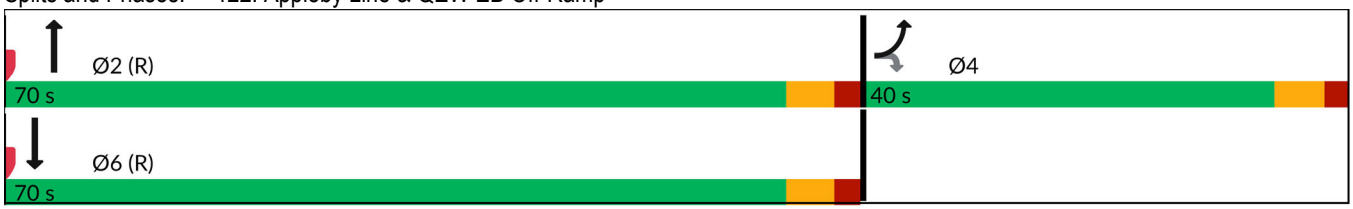


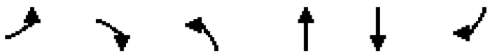
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	40.0	40.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	24.5	24.5		73.5	73.5	
Actuated g/C Ratio	0.22	0.22		0.67	0.67	
v/c Ratio	0.75	0.55		0.47	0.49	
Control Delay (s/veh)	46.0	33.5		3.8	17.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	46.0	33.5		3.8	17.7	
LOS	D	C		A	B	
Approach Delay (s/veh)	41.1			3.8	17.7	
Approach LOS	D			A	B	
Queue Length 50th (m)	63.9	35.0		17.8	86.7	
Queue Length 95th (m)	77.7	48.2		24.4	111.9	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1082	914		3016	3016	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.54	0.40		0.47	0.49	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 73 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 18.4	Intersection LOS: B

Intersection Capacity Utilization 62.9%	ICU Level of Service B
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

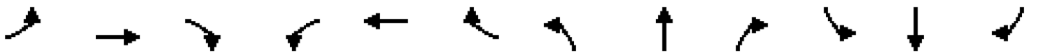




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	567	359	0	1384	1420	0
Future Volume (vph)	567	359	0	1384	1420	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		4515	4515	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		4515	4515	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	585	370	0	1427	1464	0
RTOR Reduction (vph)	0	50	0	0	0	0
Lane Group Flow (vph)	585	320	0	1427	1464	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.5	24.5		73.5	73.5	
Effective Green, g (s)	24.5	24.5		73.5	73.5	
Actuated g/C Ratio	0.22	0.22		0.67	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	779	626		3016	3016	
v/s Ratio Prot	c0.17			0.32	c0.32	
v/s Ratio Perm		0.11				
v/c Ratio	0.75	0.51		0.47	0.49	
Uniform Delay, d1	39.9	37.5		8.9	9.0	
Progression Factor	1.00	1.00		0.36	1.80	
Incremental Delay, d2	4.1	0.7		0.4	0.5	
Delay (s)	44.0	38.2		3.6	16.6	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	41.8			3.6	16.6	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	68	117	516	335	167	76	1189	265	124	944	109
Future Volume (vph)	133	68	117	516	335	167	76	1189	265	124	944	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00		0.99
Frt		0.905			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3330	0	1736	4515	1599	1805	4515	1553
Flt Permitted	0.272			0.570			0.217			0.119		
Satd. Flow (perm)	497	3218	0	1071	3330	0	396	4515	1575	226	4515	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		119			83				193			113
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	136	69	119	527	342	170	78	1213	270	127	963	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	188	0	527	512	0	78	1213	270	127	963	111
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	12.0	40.0		14.0	42.0		12.0	44.0	44.0	12.0	44.0	44.0
Total Split (%)	10.9%	36.4%		12.7%	38.2%		10.9%	40.0%	40.0%	10.9%	40.0%	40.0%
Maximum Green (s)	8.0	33.6		10.0	35.6		8.0	37.7	37.7	8.0	37.7	37.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	28.4	18.0		32.4	20.0		62.0	51.8	51.8	66.0	55.6	55.6
Actuated g/C Ratio	0.26	0.16		0.29	0.18		0.56	0.47	0.47	0.60	0.51	0.51
v/c Ratio	0.62	0.30		1.39	0.76		0.24	0.57	0.32	0.47	0.42	0.13
Control Delay (s/veh)	41.2	16.3		220.7	43.1		14.3	25.1	11.9	23.0	19.5	7.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	41.2	16.3		220.7	43.1		14.3	25.1	11.9	23.0	19.5	7.5
LOS	D	B		F	D		B	C	B	C	B	A
Approach Delay (s/veh)		26.7			133.2			22.3			18.8	
Approach LOS		C			F			C			B	
Queue Length 50th (m)	23.5	7.1		~159.8	50.2		7.3	63.3	9.5	10.7	40.7	0.7
Queue Length 95th (m)	37.1	16.4		#214.3	65.6		m17.1	102.1	m40.0	32.5	86.3	15.1
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	218	1065		380	1133		327	2127	844	275	2283	831
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.18		1.39	0.45		0.24	0.57	0.32	0.46	0.42	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 65 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay (s/veh): 49.5	Intersection LOS: D

Intersection Capacity Utilization 87.3% ICU Level of Service E

Analysis Period (min) 15

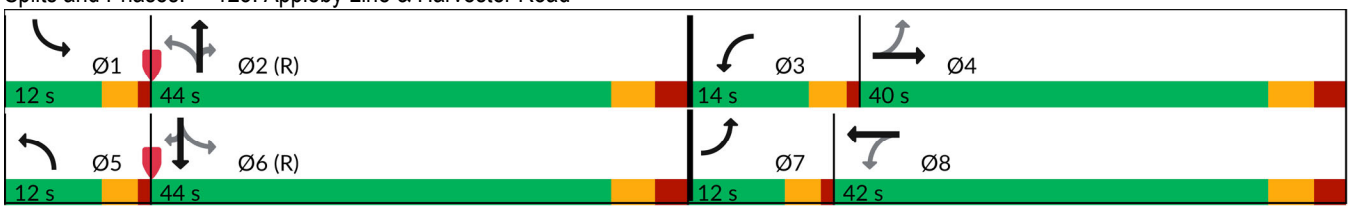
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

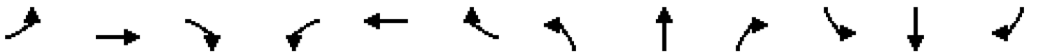
Splits and Phases: 123: Appleby Line & Harvester Road



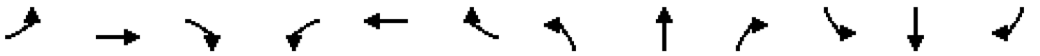
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	68	117	516	335	167	76	1189	265	124	944	109
Future Volume (vph)	133	68	117	516	335	167	76	1189	265	124	944	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3218		1786	3330		1736	4515	1575	1805	4515	1533
Flt Permitted	0.27	1.00		0.57	1.00		0.22	1.00	1.00	0.12	1.00	1.00
Satd. Flow (perm)	496	3218		1071	3330		396	4515	1575	226	4515	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	136	69	119	527	342	170	78	1213	270	127	963	111
RTOR Reduction (vph)	0	100	0	0	68	0	0	0	102	0	0	56
Lane Group Flow (vph)	136	88	0	527	444	0	78	1213	168	127	963	55
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	26.0	18.0		30.0	20.0		58.3	51.8	51.8	64.3	54.8	54.8
Effective Green, g (s)	26.0	18.0		30.0	20.0		58.3	51.8	51.8	64.3	54.8	54.8
Actuated g/C Ratio	0.24	0.16		0.27	0.18		0.53	0.47	0.47	0.58	0.50	0.50
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	526		357	605		289	2126	741	268	2249	763
v/s Ratio Prot	0.05	0.03		c0.13	0.13		0.02	c0.27		c0.04	0.21	
v/s Ratio Perm	0.11			c0.27			0.13		0.11	0.24		0.04
v/c Ratio	0.66	0.17		1.48	0.73		0.27	0.57	0.23	0.47	0.43	0.07
Uniform Delay, d1	35.1	39.6		38.7	42.5		13.0	21.1	17.2	12.9	17.6	14.4
Progression Factor	1.00	1.00		1.00	1.00		1.31	1.09	1.72	1.82	1.02	2.03
Incremental Delay, d2	7.3	0.2		228.9	4.6		0.4	0.8	0.5	1.2	0.5	0.2
Delay (s)	42.4	39.7		267.6	47.1		17.3	23.7	30.2	24.7	18.5	29.3
Level of Service	D	D		F	D		B	C	C	C	B	C
Approach Delay (s/veh)		40.8			159.0			24.5			20.2	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	87.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	89	331	133	86	149	268	1161	93	113	1312	377
Future Volume (vph)	420	89	331	133	86	149	268	1161	93	113	1312	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	4515	1615
Flt Permitted	0.950			0.697			0.101			0.161		
Satd. Flow (perm)	3498	1792	1577	1214	1792	1533	192	3574	1414	294	4515	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			251			167			164			389
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	433	92	341	137	89	154	276	1197	96	116	1353	389
Shared Lane Traffic (%)												
Lane Group Flow (vph)	433	92	341	137	89	154	276	1197	96	116	1353	389
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	24.0	45.0	45.0	11.0	32.0	32.0	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	21.8%	40.9%	40.9%	10.0%	29.1%	29.1%	10.9%	38.2%	38.2%	10.9%	38.2%	38.2%
Maximum Green (s)	19.0	38.5	38.5	7.0	25.5	25.5	8.0	35.2	35.2	8.0	35.2	35.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	17.5	22.6	22.6	20.6	11.1	11.1	65.9	49.9	49.9	47.6	35.6	35.6
Actuated g/C Ratio	0.16	0.21	0.21	0.19	0.10	0.10	0.60	0.45	0.45	0.43	0.32	0.32
v/c Ratio	0.78	0.25	0.65	0.54	0.49	0.51	0.60	0.74	0.13	0.47	0.93	0.50
Control Delay (s/veh)	54.6	36.9	16.9	37.3	55.6	11.7	27.6	29.5	0.5	21.0	48.2	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.6	36.9	16.9	37.3	55.6	11.7	27.6	29.5	0.5	21.0	48.2	10.5
LOS	D	D	B	D	E	B	C	C	A	C	D	B
Approach Delay (s/veh)		37.9			31.2			27.4			38.6	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	48.2	18.1	17.1	23.5	20.2	0.0	37.6	115.5	0.0	10.3	115.8	5.6
Queue Length 95th (m)	65.7	31.8	46.2	37.6	36.3	16.5	#76.7	#176.5	0.8	m23.4	m139.0	m29.0
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	604	627	715	256	415	483	459	1621	731	252	1461	777
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.15	0.48	0.54	0.21	0.32	0.60	0.74	0.13	0.46	0.93	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 34.1	Intersection LOS: C

Intersection Capacity Utilization 76.8% ICU Level of Service D

Analysis Period (min) 15

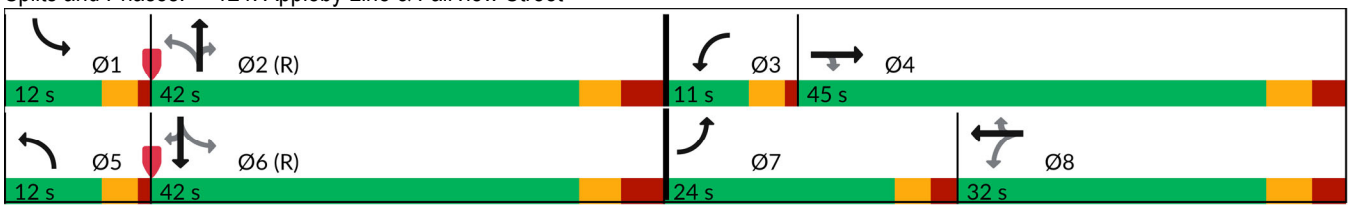
* User Entered Value

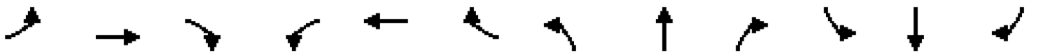
\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



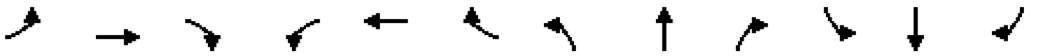


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	420	89	331	133	86	149	268	1161	93	113	1312	377
Future Volume (vph)	420	89	331	133	86	149	268	1161	93	113	1312	377
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	1792	1577	1660	1792	1533	1805	3574	1414	1735	4515	1589
Flt Permitted	0.95	1.00	1.00	0.70	1.00	1.00	0.10	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	3502	1792	1577	1218	1792	1533	192	3574	1414	294	4515	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	433	92	341	137	89	154	276	1197	96	116	1353	389
RTOR Reduction (vph)	0	0	199	0	0	138	0	0	52	0	0	263
Lane Group Flow (vph)	433	92	142	137	89	16	276	1197	44	116	1353	126
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	17.5	22.6	22.6	18.1	11.1	11.1	63.1	49.9	49.9	44.8	35.6	35.6
Effective Green, g (s)	17.5	22.6	22.6	18.1	11.1	11.1	63.1	49.9	49.9	44.8	35.6	35.6
Actuated g/C Ratio	0.16	0.21	0.21	0.16	0.10	0.10	0.57	0.45	0.45	0.41	0.32	0.32
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	557	368	324	228	180	154	454	1621	641	240	1461	514
v/s Ratio Prot	c0.12	0.05		0.04	0.05		c0.13	c0.33		0.04	c0.30	
v/s Ratio Perm			0.09	c0.06		0.01	0.22		0.03	0.16		0.08
v/c Ratio	0.78	0.25	0.44	0.60	0.49	0.10	0.61	0.74	0.07	0.48	0.93	0.24
Uniform Delay, d1	44.4	36.6	38.1	41.9	46.8	44.9	24.1	24.7	16.9	21.5	35.9	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.27	1.07	2.94
Incremental Delay, d2	6.7	0.4	0.9	4.4	2.1	0.3	2.3	3.1	0.2	1.2	9.4	0.9
Delay (s)	51.1	37.0	39.1	46.3	48.9	45.2	26.4	27.7	17.1	28.4	47.7	81.3
Level of Service	D	D	D	D	D	D	C	C	B	C	D	F
Approach Delay (s/veh)		44.9			46.5			26.9			53.6	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	737	364	458	810	218	485	720	330	422	792	250
Future Volume (vph)	229	737	364	458	810	218	485	720	330	422	792	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3486	5136	1577	3453	5136	1528	3496	5136	1562	3440	5136	1588
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			263			222			266			255
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	234	752	371	467	827	222	495	735	337	431	808	255
Shared Lane Traffic (%)												
Lane Group Flow (vph)	234	752	371	467	827	222	495	735	337	431	808	255
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0
Total Split (%)	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%
Maximum Green (s)	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.6	28.8	28.8	17.0	30.1	30.1	28.8	43.9	43.9	25.5	40.6	40.6
Actuated g/C Ratio	0.11	0.21	0.21	0.12	0.22	0.22	0.21	0.31	0.31	0.18	0.29	0.29
v/c Ratio	0.60	0.71	0.70	1.11	0.75	0.44	0.69	0.46	0.50	0.68	0.54	0.40
Control Delay (s/veh)	65.8	55.4	21.7	132.7	55.8	8.1	57.7	40.2	12.0	59.9	43.5	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.8	55.4	21.7	132.7	55.8	8.1	57.7	40.2	12.0	59.9	43.5	6.2
LOS	E	E	C	F	E	A	E	D	B	E	D	A
Approach Delay (s/veh)		48.0			72.5			39.7			41.9	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	33.7	75.7	28.4	~80.5	84.3	0.0	69.6	64.5	15.2	60.8	73.4	0.0
Queue Length 95th (m)	48.1	86.3	63.0	#116.5	95.4	21.3	#104.1	79.6	45.8	83.1	88.2	20.8
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	425	1489	644	420	1489	600	721	1610	672	632	1489	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.51	0.58	1.11	0.56	0.37	0.69	0.46	0.50	0.68	0.54	0.40

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 118 (84%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay (s/veh): 50.5	Intersection LOS: D

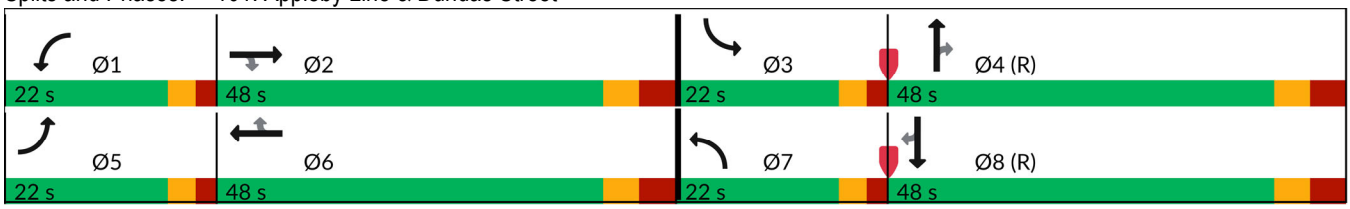
Intersection Capacity Utilization 101.6% ICU Level of Service G

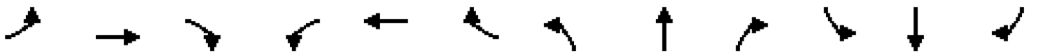
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

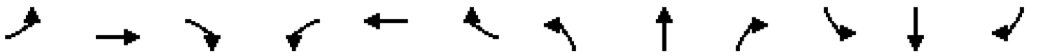




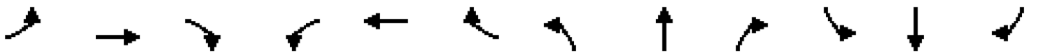
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	737	364	458	810	218	485	720	330	422	792	250
Future Volume (vph)	229	737	364	458	810	218	485	720	330	422	792	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	234	752	371	467	827	222	495	735	337	431	808	255
RTOR Reduction (vph)	0	0	209	0	0	174	0	0	183	0	0	181
Lane Group Flow (vph)	234	752	162	467	827	48	495	735	154	431	808	74
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.6	28.8	28.8	17.0	30.2	30.2	28.8	43.9	43.9	25.5	40.6	40.6
Effective Green, g (s)	15.6	28.8	28.8	17.0	30.2	30.2	28.8	43.9	43.9	25.5	40.6	40.6
Actuated g/C Ratio	0.11	0.21	0.21	0.12	0.22	0.22	0.21	0.31	0.31	0.18	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	390	1056	324	420	1107	329	720	1610	489	631	1489	460
v/s Ratio Prot	0.07	0.15		c0.13	c0.16		c0.14	c0.14		0.12	c0.16	
v/s Ratio Perm			0.10			0.03			0.10			0.05
v/c Ratio	0.60	0.71	0.50	1.11	0.75	0.15	0.69	0.46	0.32	0.68	0.54	0.16
Uniform Delay, d1	59.2	51.7	49.2	61.5	51.3	44.5	51.4	38.5	36.6	53.5	41.9	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	2.3	1.2	77.9	2.8	0.2	3.5	0.9	1.7	3.9	1.4	0.7
Delay (s)	63.0	54.0	50.4	139.4	54.1	44.7	55.0	39.4	38.3	57.4	43.3	37.8
Level of Service	E	D	D	F	D	D	D	D	D	E	D	D
Approach Delay (s/veh)		54.6			79.0			44.1			46.4	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	101.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	290	339	215	536	454	304	1347	140	276	1126	240
Future Volume (vph)	258	290	339	215	536	454	304	1347	140	276	1126	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.919				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3260	0	1787	4515	1615	3502	4438	0	1787	4378	0
Flt Permitted	0.311			0.196			0.950			0.096		
Satd. Flow (perm)	571	3260	0	367	4515	1575	3495	4438	0	180	4378	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		220				183		16			36	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	263	296	346	219	547	463	310	1374	143	282	1149	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	263	642	0	219	547	463	310	1517	0	282	1394	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

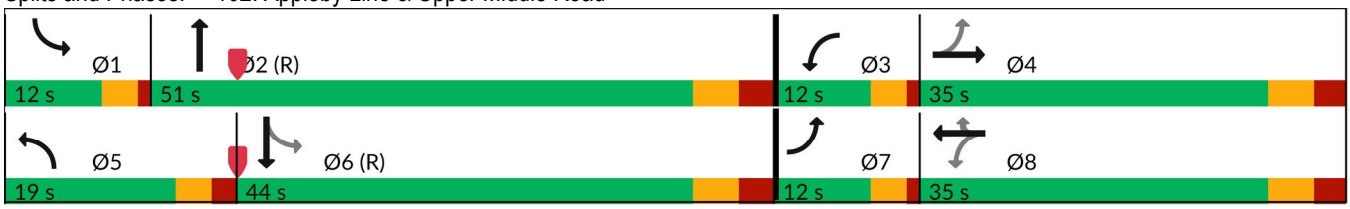


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	12.0	35.0		12.0	35.0	35.0	19.0	51.0		12.0	44.0	
Total Split (%)	10.9%	31.8%		10.9%	31.8%	31.8%	17.3%	46.4%		10.9%	40.0%	
Maximum Green (s)	8.0	28.6		8.0	28.6	28.6	14.0	44.5		8.0	37.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	35.7	25.3		35.7	25.3	25.3	13.3	44.5		54.4	41.5	
Actuated g/C Ratio	0.32	0.23		0.32	0.23	0.23	0.12	0.40		0.49	0.38	
v/c Ratio	0.97	0.70		0.99	0.53	0.92	0.73	0.84		1.11	0.83	
Control Delay (s/veh)	78.9	28.9		87.2	38.5	49.4	55.8	20.2		121.4	36.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	78.9	28.9		87.2	38.5	49.4	55.8	20.2		121.4	36.7	
LOS	E	C		F	D	D	E	C		F	D	
Approach Delay (s/veh)		43.4			51.3			26.2			51.0	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	42.9	44.4		34.1	43.7	62.9	28.5	109.7		~72.1	123.2	
Queue Length 95th (m)	#90.7	64.6		#71.7	57.2	#121.3	45.8	111.0		#127.3	#158.5	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	271	1010		222	1173	544	445	1804		253	1674	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.97	0.64		0.99	0.47	0.85	0.70	0.84		1.11	0.83	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay (s/veh): 41.8	Intersection LOS: D

Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

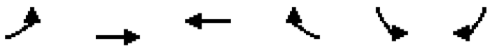
Splits and Phases: 102: Appleby Line & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	290	339	215	536	454	304	1347	140	276	1126	240
Future Volume (vph)	258	290	339	215	536	454	304	1347	140	276	1126	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	3261		1786	4515	1575	3502	4437		1787	4377	
Flt Permitted	0.31	1.00		0.20	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	573	3261		368	4515	1575	3502	4437		181	4377	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	263	296	346	219	547	463	310	1374	143	282	1149	245
RTOR Reduction (vph)	0	169	0	0	0	141	0	10	0	0	22	0
Lane Group Flow (vph)	263	473	0	219	547	322	310	1507	0	282	1372	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	33.3	25.3		33.3	25.3	25.3	13.3	44.5		52.8	41.5	
Effective Green, g (s)	33.3	25.3		33.3	25.3	25.3	13.3	44.5		52.8	41.5	
Actuated g/C Ratio	0.30	0.23		0.30	0.23	0.23	0.12	0.40		0.48	0.38	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	259	750		214	1038	362	423	1794		251	1651	
v/s Ratio Prot	0.07	0.14		c0.07	0.12		0.09	c0.34		c0.12	0.31	
v/s Ratio Perm	0.23			c0.23		0.20				c0.42		
v/c Ratio	1.02	0.63		1.02	0.53	0.89	0.73	0.84		1.12	0.83	
Uniform Delay, d1	35.7	38.1		34.8	37.1	41.0	46.6	29.5		30.1	31.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.01	0.55		1.00	1.00	
Incremental Delay, d2	59.9	1.7		67.7	0.5	22.4	5.1	3.9		94.1	5.0	
Delay (s)	95.6	39.9		102.5	37.6	63.4	52.1	20.1		124.2	36.1	
Level of Service	F	D		F	D	E	D	C		F	D	
Approach Delay (s/veh)		56.1			58.9			25.6			50.9	
Approach LOS		E			E			C			D	

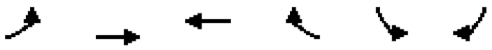
Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	123	591	1165	72	56	100
Future Volume (vph)	123	591	1165	72	56	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.991		0.914	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1787	4515	4477	0	1705	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1787	4515	4477	0	1705	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	18			18		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	129	622	1226	76	59	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	622	1302	0	164	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

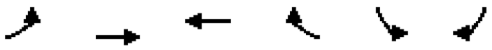
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



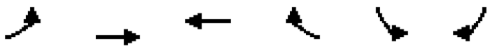
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	123	591	1165	72	56	100
Future Volume (Veh/h)	123	591	1165	72	56	100
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	129	622	1226	76	59	105
Pedestrians		1			18	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.85				0.85	0.85
vC, conflicting volume	1320				1747	466
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	737				1243	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	82				49	88
cM capacity (veh/h)	725				116	907

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	129	207	207	207	490	490	321	164
Volume Left	129	0	0	0	0	0	0	59
Volume Right	0	0	0	0	0	0	76	105
cSH	725	1700	1700	1700	1700	1700	1700	263
Volume to Capacity	0.18	0.12	0.12	0.12	0.29	0.29	0.19	0.62
Queue Length 95th (m)	5.1	0.0	0.0	0.0	0.0	0.0	0.0	30.5
Control Delay (s/veh)	11.0	0.0	0.0	0.0	0.0	0.0	0.0	39.0
Lane LOS	B							E
Approach Delay (s/veh)	1.9				0.0			39.0
Approach LOS								E

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	136	483	1071	219	207	167
Future Volume (vph)	136	483	1071	219	207	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt			0.975		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1770	4515	4371	0	1715	0
Flt Permitted	0.090				0.973	
Satd. Flow (perm)	167	4515	4371	0	1715	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			46		48	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	12			12		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Adj. Flow (vph)	142	503	1116	228	216	174
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	503	1344	0	390	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

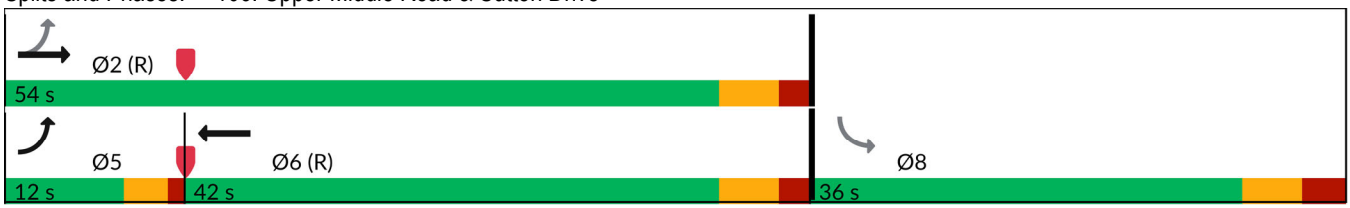


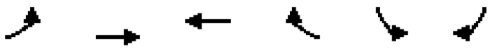
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	12.0	54.0	42.0		36.0	
Total Split (%)	13.3%	60.0%	46.7%		40.0%	
Maximum Green (s)	8.0	48.0	36.0		29.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	56.0	54.0	41.8		23.0	
Actuated g/C Ratio	0.62	0.60	0.46		0.26	
v/c Ratio	0.57	0.19	0.65		0.82	
Control Delay (s/veh)	35.9	22.1	20.8		41.8	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	35.9	22.1	20.8		41.8	
LOS	D	C	C		D	
Approach Delay (s/veh)		25.2	20.8		41.8	
Approach LOS		C	C		D	
Queue Length 50th (m)	22.9	31.3	75.1		58.6	
Queue Length 95th (m)	#45.3	47.7	104.2		85.9	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	254	2708	2056		585	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.56	0.19	0.65		0.67	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 25.4	Intersection LOS: C

Intersection Capacity Utilization 69.2%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Upper Middle Road & Sutton Drive

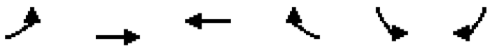




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	136	483	1071	219	207	167
Future Volume (vph)	136	483	1071	219	207	167
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.97		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1769	4515	4369		1714	
Flt Permitted	0.09	1.00	1.00		0.97	
Satd. Flow (perm)	167	4515	4369		1714	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	142	503	1116	228	216	174
RTOR Reduction (vph)	0	0	25	0	36	0
Lane Group Flow (vph)	142	503	1319	0	354	0
Confl. Peds. (#/hr)	12			12		
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	54.0	54.0	41.9		23.0	
Effective Green, g (s)	54.0	54.0	41.9		23.0	
Actuated g/C Ratio	0.60	0.60	0.47		0.26	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	244	2709	2034		438	
v/s Ratio Prot	c0.05	0.11	c0.30			
v/s Ratio Perm	0.30				c0.21	
v/c Ratio	0.58	0.19	0.65		0.81	
Uniform Delay, d1	12.0	8.1	18.4		31.4	
Progression Factor	2.25	2.46	1.00		1.00	
Incremental Delay, d2	3.4	0.1	1.6		10.5	
Delay (s)	30.4	20.1	20.0		42.0	
Level of Service	C	C	C		D	
Approach Delay (s/veh)		22.4	20.0		42.0	
Approach LOS		C	C		D	

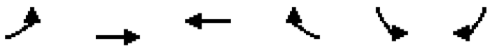
Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	36	629	1196	82	62	33
Future Volume (vph)	36	629	1196	82	62	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.953	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1805	4560	4514	0	1730	0
Flt Permitted	0.950				0.969	
Satd. Flow (perm)	1805	4560	4514	0	1730	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	38	662	1259	86	65	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	662	1345	0	100	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	629	1196	82	62	33
Future Volume (Veh/h)	36	629	1196	82	62	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	38	662	1259	86	65	35
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1352				1606	470
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1352				1606	470
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				28	93
cM capacity (veh/h)	513				90	532

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	38	221	221	221	504	504	338	100
Volume Left	38	0	0	0	0	0	0	65
Volume Right	0	0	0	0	0	0	86	35
cSH	513	1700	1700	1700	1700	1700	1700	127
Volume to Capacity	0.07	0.13	0.13	0.13	0.30	0.30	0.20	0.79
Queue Length 95th (m)	1.9	0.0	0.0	0.0	0.0	0.0	0.0	37.3
Control Delay (s/veh)	12.6	0.0	0.0	0.0	0.0	0.0	0.0	96.5
Lane LOS	B							F
Approach Delay (s/veh)	0.7				0.0			96.5
Approach LOS								F

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	42	1227	54	15	680
Future Volume (vph)	51	42	1227	54	15	680
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.939		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1736	0	4533	0	1805	4560
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1736	0	4533	0	1805	4560
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	55	45	1319	58	16	731
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	0	1377	0	16	731
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

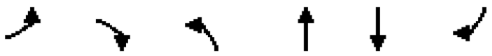
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



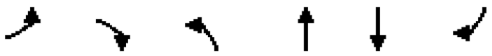
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	42	1227	54	15	680
Future Volume (Veh/h)	51	42	1227	54	15	680
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	55	45	1319	58	16	731
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1625	470			1378	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1625	470			1378	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	40	92			97	
cM capacity (veh/h)	92	545			504	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	100	528	528	322	16	244	244	244
Volume Left	55	0	0	0	16	0	0	0
Volume Right	45	0	0	58	0	0	0	0
cSH	147	1700	1700	1700	504	1700	1700	1700
Volume to Capacity	0.68	0.31	0.31	0.19	0.03	0.14	0.14	0.14
Queue Length 95th (m)	30.8	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Control Delay (s/veh)	70.1	0.0	0.0	0.0	12.4	0.0	0.0	0.0
Lane LOS	F				B			
Approach Delay (s/veh)	70.1	0.0			0.3			
Approach LOS	F							

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	37.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	77	142	375	1197	673	46
Future Volume (vph)	77	142	375	1197	673	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	0.0		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1787	4560	4509	0
Flt Permitted	0.950		0.277			
Satd. Flow (perm)	1805	1615	520	4560	4509	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		149			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	81	149	395	1260	708	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	149	395	1260	756	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

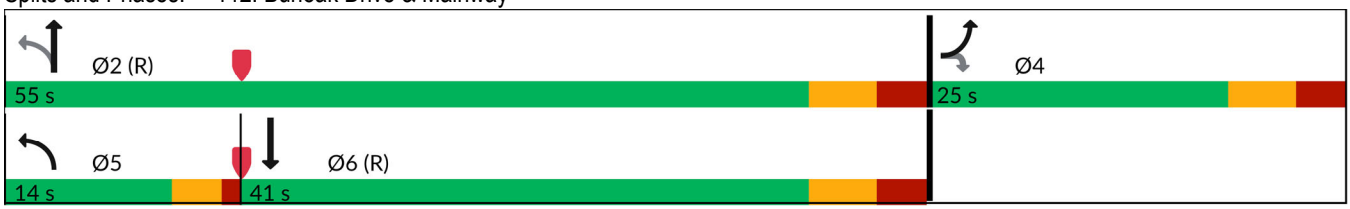


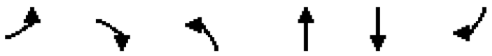
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	25.0	25.0	14.0	55.0	41.0	
Total Split (%)	31.3%	31.3%	17.5%	68.8%	51.3%	
Maximum Green (s)	18.0	18.0	10.0	48.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.5	9.5	59.5	56.5	39.8	
Actuated g/C Ratio	0.12	0.12	0.74	0.71	0.50	
v/c Ratio	0.38	0.46	0.67	0.39	0.34	
Control Delay (s/veh)	37.3	10.9	13.5	5.4	13.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.3	10.9	13.5	5.4	13.1	
LOS	D	B	B	A	B	
Approach Delay (s/veh)	20.2			7.4	13.1	
Approach LOS	C			A	B	
Queue Length 50th (m)	12.3	0.0	20.5	19.8	27.6	
Queue Length 95th (m)	24.4	15.7	54.8	52.0	44.0	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	406	478	589	3220	2250	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.31	0.67	0.39	0.34	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 54 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 10.1		Intersection LOS: B	

Intersection Capacity Utilization 67.4%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	77	142	375	1197	673	46
Future Volume (vph)	77	142	375	1197	673	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1786	4560	4512	
Flt Permitted	0.95	1.00	0.28	1.00	1.00	
Satd. Flow (perm)	1805	1615	521	4560	4512	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	149	395	1260	708	48
RTOR Reduction (vph)	0	131	0	0	7	0
Lane Group Flow (vph)	81	18	395	1260	749	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.5	9.5	56.5	56.5	39.8	
Effective Green, g (s)	9.5	9.5	56.5	56.5	39.8	
Actuated g/C Ratio	0.12	0.12	0.71	0.71	0.50	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	214	191	568	3220	2244	
v/s Ratio Prot	c0.04		c0.11	0.28	0.17	
v/s Ratio Perm		0.01	c0.38			
v/c Ratio	0.38	0.09	0.70	0.39	0.33	
Uniform Delay, d1	32.5	31.4	5.0	4.8	12.1	
Progression Factor	1.00	1.00	1.75	1.01	1.00	
Incremental Delay, d2	1.1	0.2	3.6	0.3	0.4	
Delay (s)	33.6	31.6	12.4	5.2	12.5	
Level of Service	C	C	B	A	B	
Approach Delay (s/veh)	32.3			6.9	12.5	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	137	14	5	300	21	10
Future Volume (vph)	137	14	5	300	21	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.986				0.956	
Flt Protected				0.999	0.967	
Satd. Flow (prot)	3559	0	0	3606	1756	0
Flt Permitted				0.999	0.967	
Satd. Flow (perm)	3559	0	0	3606	1756	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	140	14	5	306	21	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	154	0	0	311	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

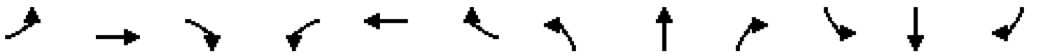
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 21.8%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	137	14	5	300	21	10
Future Volume (Veh/h)	137	14	5	300	21	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	140	14	5	306	21	10
Pedestrians					3	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			157		313	80
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			157		313	80
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1432		657	968

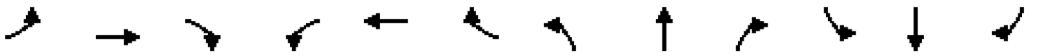
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	93	61	107	204	31
Volume Left	0	0	5	0	21
Volume Right	0	14	0	0	10
cSH	1700	1700	1432	1700	733
Volume to Capacity	0.05	0.04	0.00*	0.12	0.04
Queue Length 95th (m)	0.0	0.0	0.1	0.0	1.1
Control Delay (s/veh)	0.0	0.0	0.4	0.0	10.1
Lane LOS			A		B
Approach Delay (s/veh)	0.0		0.1		10.1
Approach LOS					B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	74	181	80	224	86	195	1429	58	68	1417	117
Future Volume (vph)	145	74	181	80	224	86	195	1429	58	68	1417	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00			1.00	
Frt		0.894			0.958			0.994			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3179	0	1770	3397	0	1805	4484	0	1770	4447	0
Flt Permitted	0.393			0.592			0.070			0.100		
Satd. Flow (perm)	746	3179	0	1102	3397	0	133	4484	0	186	4447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		183			53			5			11	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	146	75	183	81	226	87	197	1443	59	69	1431	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	146	258	0	81	313	0	197	1502	0	69	1549	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	12.0	40.0		12.0	40.0		12.0	46.0		12.0	46.0	
Total Split (%)	10.9%	36.4%		10.9%	36.4%		10.9%	41.8%		10.9%	41.8%	
Maximum Green (s)	8.0	33.7		8.0	33.7		8.0	39.7		8.0	39.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	25.0	16.3		24.0	13.9		73.8	62.2		63.3	53.5	
Actuated g/C Ratio	0.23	0.15		0.22	0.13		0.67	0.57		0.58	0.49	
v/c Ratio	0.59	0.41		0.28	0.66		0.66	0.59		0.32	0.71	
Control Delay (s/veh)	43.5	15.5		33.6	44.3		44.5	6.4		16.9	27.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	43.5	15.5		33.6	44.3		44.5	6.4		16.9	27.8	
LOS	D	B		C	D		D	A		B	C	
Approach Delay (s/veh)		25.7			42.1			10.8			27.4	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	26.8	8.2		14.5	30.2		26.4	17.2		4.8	86.2	
Queue Length 95th (m)	42.7	20.0		26.2	43.5		47.3	38.8		m20.9	143.0	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	246	1100		291	1077		300	2536		225	2169	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.59	0.23		0.28	0.29		0.66	0.59		0.31	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 46 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay (s/veh): 21.8	Intersection LOS: C

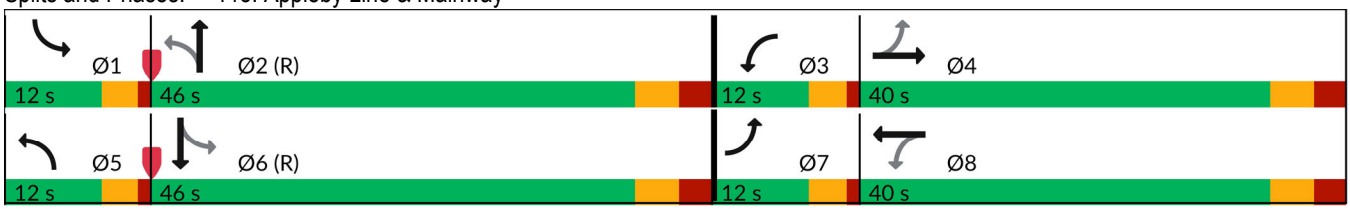
Intersection Capacity Utilization 75.5% ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	74	181	80	224	86	195	1429	58	68	1417	117
Future Volume (vph)	145	74	181	80	224	86	195	1429	58	68	1417	117
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3178		1769	3398		1805	4484		1770	4445	
Flt Permitted	0.39	1.00		0.59	1.00		0.07	1.00		0.10	1.00	
Satd. Flow (perm)	746	3178		1103	3398		134	4484		186	4445	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	146	75	183	81	226	87	197	1443	59	69	1431	118
RTOR Reduction (vph)	0	156	0	0	46	0	0	2	0	0	6	0
Lane Group Flow (vph)	146	102	0	81	267	0	197	1500	0	69	1543	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.3	16.3		21.1	14.7		70.7	60.6		58.9	52.8	
Effective Green, g (s)	24.3	16.3		21.1	14.7		70.7	60.6		58.9	52.8	
Actuated g/C Ratio	0.22	0.15		0.19	0.13		0.64	0.55		0.54	0.48	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	241	470		250	454		297	2470		187	2133	
v/s Ratio Prot	c0.04	0.03		0.02	0.08		c0.08	0.33		0.02	c0.35	
v/s Ratio Perm	c0.09			0.04			0.34			0.18		
v/c Ratio	0.61	0.22		0.32	0.59		0.66	0.61		0.37	0.72	
Uniform Delay, d1	36.4	41.2		37.6	44.8		25.3	16.7		13.3	22.8	
Progression Factor	1.00	1.00		1.00	1.00		1.67	0.33		1.61	1.12	
Incremental Delay, d2	4.3	0.2		0.8	2.0		4.6	0.9		1.1	1.9	
Delay (s)	40.7	41.5		38.4	46.8		46.9	6.4		22.5	27.5	
Level of Service	D	D		D	D		D	A		C	C	
Approach Delay (s/veh)		41.2			45.0			11.1			27.3	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	17	37	108	15	91	32	1558	107	81	1548	17
Future Volume (vph)	42	17	37	108	15	91	32	1558	107	81	1548	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	0.0			0.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.948			0.943			0.990			0.998	
Flt Protected		0.978			0.975		0.950			0.950		
Satd. Flow (prot)	0	1732	0	0	1715	0	1805	4464	0	1805	4505	0
Flt Permitted		0.741			0.800		0.099			0.057		
Satd. Flow (perm)	0	1309	0	0	1406	0	188	4464	0	108	4505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			34			12			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	45	18	39	115	16	97	34	1657	114	86	1647	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	228	0	34	1771	0	86	1665	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

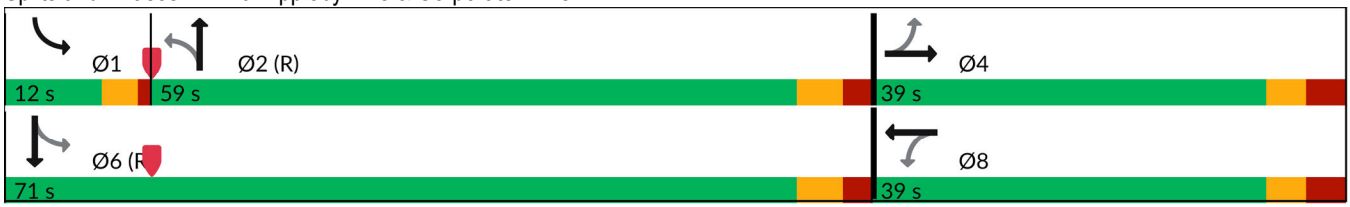


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		59.0	59.0		12.0	71.0	
Total Split (%)	35.5%	35.5%		35.5%	35.5%		53.6%	53.6%		10.9%	64.5%	
Maximum Green (s)	32.5	32.5		32.5	32.5		53.0	53.0		8.0	65.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		20.8			20.8		67.2	67.2		78.7	76.7	
Actuated g/C Ratio		0.19			0.19		0.61	0.61		0.72	0.70	
v/c Ratio		0.38			0.78		0.30	0.65		0.44	0.53	
Control Delay (s/veh)		31.9			53.2		13.0	7.8		15.9	5.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		31.9			53.2		13.0	7.8		15.9	5.7	
LOS		C			D		B	A		B	A	
Approach Delay (s/veh)		31.9			53.2			7.9			6.2	
Approach LOS		C			D			A			A	
Queue Length 50th (m)		15.4			42.3		1.4	31.7		2.8	9.6	
Queue Length 95th (m)		29.0			64.4		m2.7	91.9		m5.3	m132.8	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		403			439		114	2730		207	3142	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.52		0.30	0.65		0.42	0.53	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 61 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay (s/veh): 10.4	Intersection LOS: B

Intersection Capacity Utilization 71.7% ICU Level of Service C
Analysis Period (min) 15
* User Entered Value
m Volume for 95th percentile queue is metered by upstream signal.

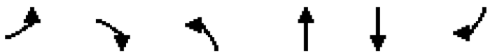
Splits and Phases: 116: Appleby Line & Corporate Drive



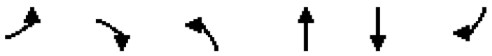
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	17	37	108	15	91	32	1558	107	81	1548	17
Future Volume (vph)	42	17	37	108	15	91	32	1558	107	81	1548	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730			1713		1803	4466		1805	4506	
Flt Permitted		0.74			0.80		0.10	1.00		0.06	1.00	
Satd. Flow (perm)		1310			1404		188	4466		108	4506	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	18	39	115	16	97	34	1657	114	86	1647	18
RTOR Reduction (vph)	0	19	0	0	28	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	83	0	0	200	0	34	1766	0	86	1664	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.8			20.8		66.3	66.3		76.7	76.7	
Effective Green, g (s)		20.8			20.8		66.3	66.3		76.7	76.7	
Actuated g/C Ratio		0.19			0.19		0.60	0.60		0.70	0.70	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		247			265		113	2691		174	3141	
v/s Ratio Prot								c0.40		0.03	c0.37	
v/s Ratio Perm		0.06			c0.14		0.18			0.32		
v/c Ratio		0.33			0.76		0.30	0.66		0.49	0.53	
Uniform Delay, d1		38.6			42.2		10.6	14.4		12.3	8.0	
Progression Factor		1.00			1.00		0.42	0.42		1.09	0.60	
Incremental Delay, d2		0.8			11.6		5.8	1.1		1.3	0.4	
Delay (s)		39.4			53.8		10.3	7.2		14.6	5.1	
Level of Service		D			D		B	A		B	A	
Approach Delay (s/veh)		39.4			53.8			7.2			5.6	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	52	131	1246	677	12
Future Volume (vph)	13	52	131	1246	677	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	1736	4560	4536	0
Flt Permitted	0.950		0.301			
Satd. Flow (perm)	1805	1509	547	4560	4536	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		55			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	14	55	139	1326	720	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	55	139	1326	733	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	26.0	26.0	14.0	54.0	40.0	
Total Split (%)	32.5%	32.5%	17.5%	67.5%	50.0%	
Maximum Green (s)	19.0	19.0	10.0	47.0	33.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.2	8.2	66.8	66.6	50.9	
Actuated g/C Ratio	0.10	0.10	0.84	0.83	0.64	
v/c Ratio	0.08	0.27	0.24	0.35	0.25	
Control Delay (s/veh)	33.4	13.7	3.2	3.3	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.4	13.7	3.2	3.3	2.6	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	17.7			3.3	2.6	
Approach LOS	B			A	A	
Queue Length 50th (m)	2.1	0.0	7.1	31.0	5.0	
Queue Length 95th (m)	7.5	10.8	m7.6	m25.1	9.7	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	428	400	607	3797	2889	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.14	0.23	0.35	0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.35			
Intersection Signal Delay (s/veh): 3.5		Intersection LOS: A	

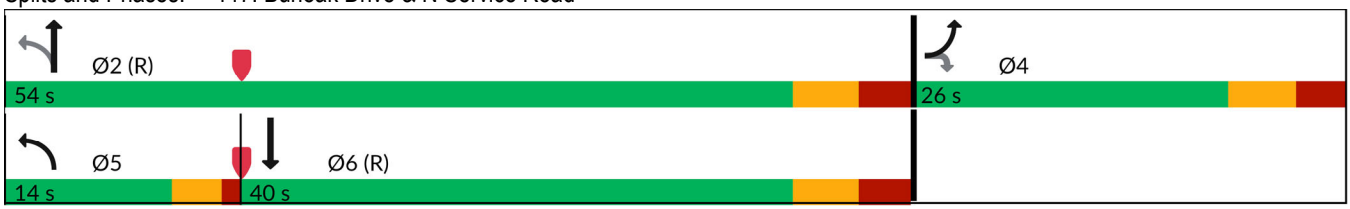
Intersection Capacity Utilization 53.9% ICU Level of Service A

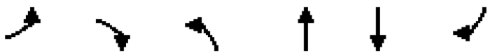
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	52	131	1246	677	12
Future Volume (vph)	13	52	131	1246	677	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	1733	4560	4537	
Flt Permitted	0.95	1.00	0.30	1.00	1.00	
Satd. Flow (perm)	1805	1509	549	4560	4537	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	14	55	139	1326	720	13
RTOR Reduction (vph)	0	52	0	0	1	0
Lane Group Flow (vph)	14	3	139	1326	732	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	5.0	5.0	61.0	61.0	48.1	
Effective Green, g (s)	5.0	5.0	61.0	61.0	48.1	
Actuated g/C Ratio	0.06	0.06	0.76	0.76	0.60	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	112	94	550	3477	2727	
v/s Ratio Prot	c0.01		0.03	c0.29	0.16	
v/s Ratio Perm		0.00	0.16			
v/c Ratio	0.13	0.04	0.25	0.38	0.27	
Uniform Delay, d1	35.4	35.2	2.6	3.2	7.6	
Progression Factor	1.00	1.00	1.43	1.05	0.31	
Incremental Delay, d2	0.5	0.2	0.0	0.0	0.2	
Delay (s)	35.9	35.4	3.7	3.4	2.6	
Level of Service	D	D	A	A	A	
Approach Delay (s/veh)	35.5			3.4	2.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1807	1253	777	0	0	1032
Future Volume (vph)	1807	1253	777	0	0	1032
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor	1.00					
Frt	0.979	0.850				
Flt Protected	0.959					
Satd. Flow (prot)	3398	1455	4560	0	0	4515
Flt Permitted	0.959					
Satd. Flow (perm)	3395	1455	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	27	115				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	1882	1305	809	0	0	1075
Shared Lane Traffic (%)		24%				
Lane Group Flow (vph)	2195	992	809	0	0	1075
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

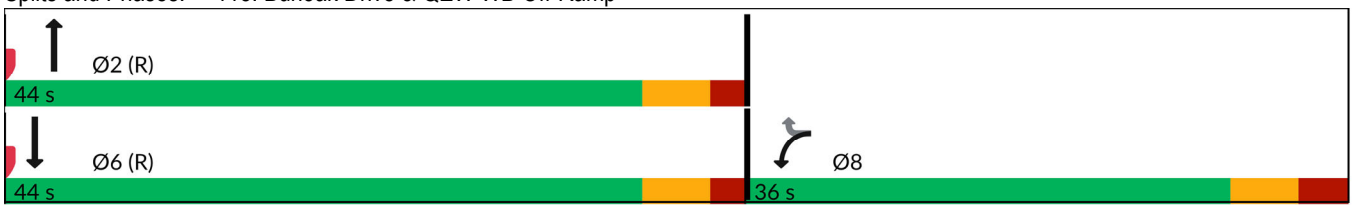


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	36.0	36.0	44.0			44.0
Total Split (%)	45.0%	45.0%	55.0%			55.0%
Maximum Green (s)	29.0	29.0	38.0			38.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
v/c Ratio	1.76	1.65	0.37			0.50
Control Delay (s/veh)	367.6	323.3	14.0			8.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	367.6	323.3	14.0			8.0
LOS	F	F	B			A
Approach Delay (s/veh)	353.8		14.0			8.0
Approach LOS	F		B			A
Queue Length 50th (m)	~280.2	~248.1	32.7			22.4
Queue Length 95th (m)	#324.8	#330.2	43.2			21.5
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1248	600	2166			2144
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.76	1.65	0.37			0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.76	
Intersection Signal Delay (s/veh): 226.3	Intersection LOS: F

Intersection Capacity Utilization 95.4%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

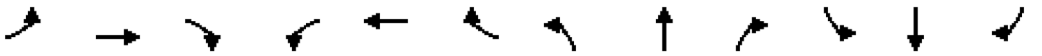




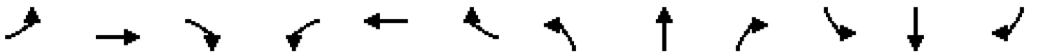
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1807	1253	777	0	0	1032
Future Volume (vph)	1807	1253	777	0	0	1032
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.98	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3396	1455	4560			4515
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3396	1455	4560			4515
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1882	1305	809	0	0	1075
RTOR Reduction (vph)	17	73	0	0	0	0
Lane Group Flow (vph)	2178	919	809	0	0	1075
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	29.0	29.0	38.0			38.0
Effective Green, g (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1231	527	2166			2144
v/s Ratio Prot	c0.64		0.18			c0.24
v/s Ratio Perm		0.63				
v/c Ratio	1.77	1.74	0.37			0.50
Uniform Delay, d1	25.5	25.5	13.4			14.5
Progression Factor	1.00	1.00	1.00			0.49
Incremental Delay, d2	349.4	342.3	0.5			0.8
Delay (s)	374.9	367.8	13.9			7.9
Level of Service	F	F	B			A
Approach Delay (s/veh)	372.7		13.9			7.9
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	238.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	95.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	165	230	0	0	266	0	702	20	14	2198	0
Future Volume (vph)	99	165	230	0	0	266	0	702	20	14	2198	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.941	0.850			0.865		0.996				
Flt Protected	0.950											
Satd. Flow (prot)	1805	3209	1441	0	0	1611	0	5116	0	0	5136	0
Flt Permitted	0.950										0.932	
Satd. Flow (perm)	1805	3209	1441	0	0	1611	0	5116	0	0	4787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102	132			282		5				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	105	176	245	0	0	283	0	747	21	15	2338	0
Shared Lane Traffic (%)			46%									
Lane Group Flow (vph)	105	289	132	0	0	283	0	768	0	0	2353	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		0	1		2			2	
Detector Template	Left	Thru	Right			Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		0.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	

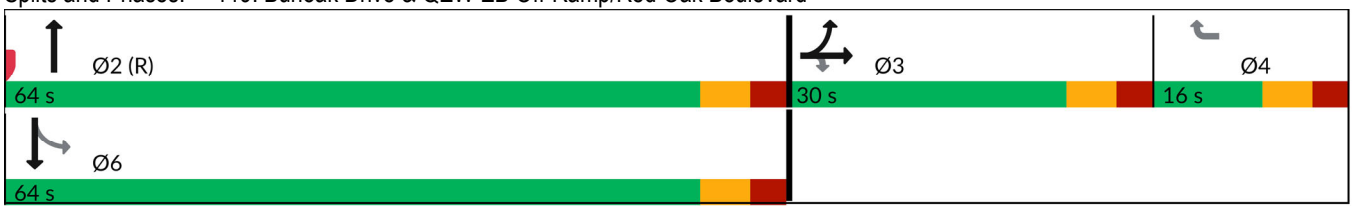


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	30.0	30.0	30.0			16.0		64.0		64.0	64.0	
Total Split (%)	27.3%	27.3%	27.3%			14.5%		58.2%		58.2%	58.2%	
Maximum Green (s)	23.0	23.0	23.0			9.0		57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		Max	Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	12.2	12.2	12.2			9.8		67.0			67.0	
Actuated g/C Ratio	0.11	0.11	0.11			0.09		0.61			0.61	
v/c Ratio	0.53	0.65	0.48			0.71		0.25			0.81	
Control Delay (s/veh)	54.9	36.6	13.4			15.9		10.8			20.5	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	54.9	36.6	13.4			15.9		10.8			20.5	
LOS	D	D	B			B		B			C	
Approach Delay (s/veh)		34.4			15.9			10.8			20.5	
Approach LOS		C			B			B			C	
Queue Length 50th (m)	22.8	22.4	0.0			0.2		25.6			132.4	
Queue Length 95th (m)	38.8	35.9	19.2			25.6		43.3			#223.9	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	377	751	405			406		3119			2917	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.28	0.38	0.33			0.70		0.25			0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 20.1		Intersection LOS: C	
Intersection Capacity Utilization 70.8%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

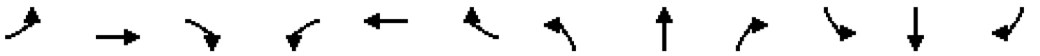
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	165	230	0	0	266	0	702	20	14	2198	0
Future Volume (vph)	99	165	230	0	0	266	0	702	20	14	2198	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1805	3211	1441			1611		5116			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1805	3211	1441			1611		5116			4784	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	105	176	245	0	0	283	0	747	21	15	2338	0
RTOR Reduction (vph)	0	91	117	0	0	257	0	2	0	0	0	0
Lane Group Flow (vph)	105	198	15	0	0	26	0	766	0	0	2353	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	12.2	12.2	12.2			9.8		67.0			67.0	
Effective Green, g (s)	12.2	12.2	12.2			9.8		67.0			67.0	
Actuated g/C Ratio	0.11	0.11	0.11			0.09		0.61			0.61	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	200	356	159			143		3116			2913	
v/s Ratio Prot	0.06	c0.06						0.15				
v/s Ratio Perm			0.01			c0.02					c0.49	
v/c Ratio	0.53	0.56	0.09			0.18		0.25			0.81	
Uniform Delay, d1	46.2	46.3	43.9			46.4		9.9			16.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	2.5	1.9	0.3			0.6		0.2			2.5	
Delay (s)	48.6	48.2	44.2			47.0		10.1			19.1	
Level of Service	D	D	D			D		B			B	
Approach Delay (s/veh)		47.3			47.0			10.1			19.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	70.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	14	52	95	37	53	38	1517	74	44	1570	45
Future Volume (vph)	53	14	52	95	37	53	38	1517	74	44	1570	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.883			0.912			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1720	0	1656	4480	0	1805	4498	0
Flt Permitted	0.696			0.491			0.075			0.074		
Satd. Flow (perm)	1321	1591	0	924	1720	0	131	4480	0	141	4498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			55			7			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	55	15	54	99	39	55	40	1580	77	46	1635	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	69	0	99	94	0	40	1657	0	46	1682	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	49.0		11.0	49.0	
Total Split (%)	35.5%	35.5%		10.0%	45.5%		10.0%	44.5%		10.0%	44.5%	
Maximum Green (s)	32.9	32.9		7.0	43.9		7.0	42.4		7.0	42.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.5	10.5		21.4	19.3		77.4	69.2		78.2	71.4	
Actuated g/C Ratio	0.10	0.10		0.19	0.18		0.70	0.63		0.71	0.65	
v/c Ratio	0.44	0.35		0.41	0.27		0.21	0.59		0.22	0.58	
Control Delay (s/veh)	57.2	21.5		41.3	19.1		7.4	10.9		6.7	15.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.2	21.5		41.3	19.1		7.4	10.9		6.7	15.1	
LOS	E	C		D	B		A	B		A	B	
Approach Delay (s/veh)		37.3			30.5			10.8			14.9	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	12.0	3.2		19.0	7.4		1.9	58.4		2.8	153.6	
Queue Length 95th (m)	24.6	16.4		33.0	21.0		m3.9	88.8		m2.4	175.0	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	395	513		239	719		190	2819		207	2919	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.13		0.41	0.13		0.21	0.59		0.22	0.58	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 14.6	Intersection LOS: B

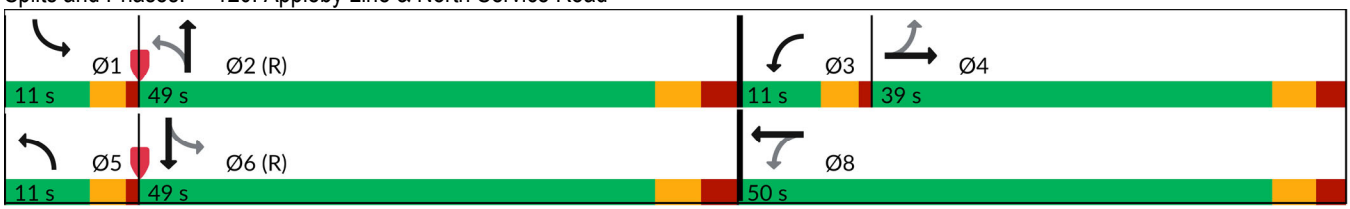
Intersection Capacity Utilization 59.5% ICU Level of Service B

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	14	52	95	37	53	38	1517	74	44	1570	45
Future Volume (vph)	53	14	52	95	37	53	38	1517	74	44	1570	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1590		1787	1720		1656	4480		1805	4497	
Flt Permitted	0.70	1.00		0.49	1.00		0.08	1.00		0.07	1.00	
Satd. Flow (perm)	1321	1590		924	1720		132	4480		140	4497	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	55	15	54	99	39	55	40	1580	77	46	1635	47
RTOR Reduction (vph)	0	50	0	0	45	0	0	3	0	0	2	0
Lane Group Flow (vph)	55	19	0	99	49	0	40	1654	0	46	1680	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		20.5	20.5		71.4	67.1		74.2	68.5	
Effective Green, g (s)	8.9	8.9		20.5	20.5		71.4	67.1		74.2	68.5	
Actuated g/C Ratio	0.08	0.08		0.19	0.19		0.65	0.61		0.67	0.62	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	128		231	320		145	2732		180	2800	
v/s Ratio Prot		0.01		c0.03	0.03		0.01	0.37		c0.01	c0.37	
v/s Ratio Perm	0.04			c0.05			0.17			0.16		
v/c Ratio	0.52	0.15		0.43	0.15		0.28	0.61		0.26	0.60	
Uniform Delay, d1	48.5	47.0		38.6	37.5		8.9	13.3		8.7	12.5	
Progression Factor	1.00	1.00		1.00	1.00		1.09	0.75		0.89	1.12	
Incremental Delay, d2	4.2	0.6		1.3	0.2		0.6	0.6		0.6	0.7	
Delay (s)	52.7	47.6		39.9	37.7		10.4	10.6		8.4	14.8	
Level of Service	D	D		D	D		B	B		A	B	
Approach Delay (s/veh)		49.9			38.8			10.6			14.6	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	536	399	1897	0	0	1694
Future Volume (vph)	536	399	1897	0	0	1694
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1583	4560	0	0	4515
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1583	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		9				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	576	429	2040	0	0	1822
Shared Lane Traffic (%)						
Lane Group Flow (vph)	576	429	2040	0	0	1822
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

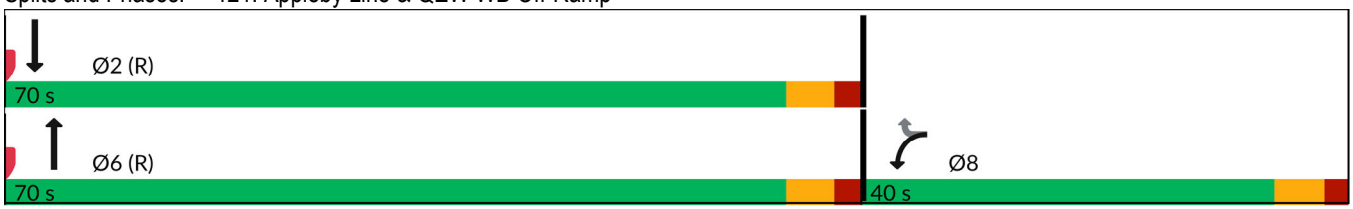


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	70.0			70.0
Total Split (%)	36.4%	36.4%	63.6%			63.6%
Maximum Green (s)	34.0	34.0	64.0			64.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.1	32.1	65.9			65.9
Actuated g/C Ratio	0.29	0.29	0.60			0.60
v/c Ratio	0.58	0.92	0.75			0.67
Control Delay (s/veh)	35.5	62.6	20.0			9.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	35.5	62.6	20.0			9.0
LOS	D	E	B			A
Approach Delay (s/veh)	47.1		20.0			9.0
Approach LOS	D		B			A
Queue Length 50th (m)	56.8	90.8	158.3			14.6
Queue Length 95th (m)	75.0	#149.3	187.0			17.4
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1050	495	2732			2704
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	0.87	0.75			0.67

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 21.4		Intersection LOS: C	
Intersection Capacity Utilization 71.4%		ICU Level of Service C	
Analysis Period (min) 15			

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

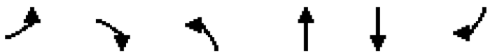
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



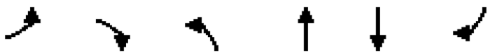


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	536	399	1897	0	0	1694
Future Volume (vph)	536	399	1897	0	0	1694
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1583	4560			4515
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1583	4560			4515
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	576	429	2040	0	0	1822
RTOR Reduction (vph)	0	6	0	0	0	0
Lane Group Flow (vph)	576	423	2040	0	0	1822
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	32.1	32.1	65.9			65.9
Effective Green, g (s)	32.1	32.1	65.9			65.9
Actuated g/C Ratio	0.29	0.29	0.60			0.60
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	992	461	2731			2704
v/s Ratio Prot	0.17		c0.45			0.40
v/s Ratio Perm		c0.27				
v/c Ratio	0.58	0.92	0.75			0.67
Uniform Delay, d1	33.2	37.7	16.0			14.8
Progression Factor	1.00	1.00	1.10			0.51
Incremental Delay, d2	0.9	22.9	1.6			1.2
Delay (s)	34.1	60.5	19.2			8.6
Level of Service	C	E	B			A
Approach Delay (s/veh)	45.4		19.2			8.6
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	659	422	0	1617	1660	0
Future Volume (vph)	659	422	0	1617	1660	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		0.0			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	4515	4515	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	4515	4515	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		35				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	679	435	0	1667	1711	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	679	435	0	1667	1711	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

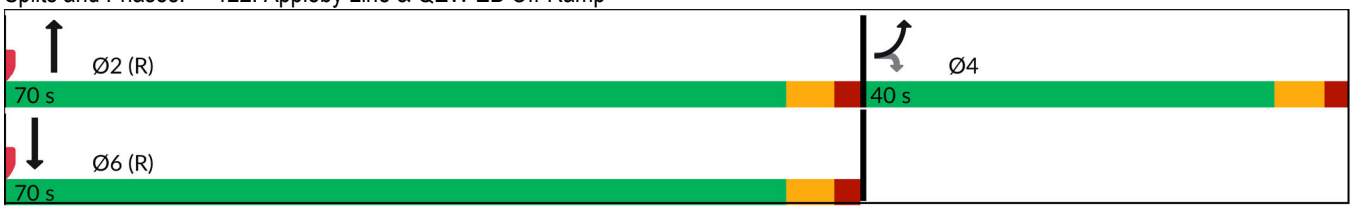


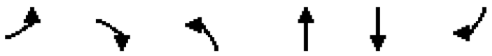
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	40.0	40.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	27.5	27.5		70.5	70.5	
Actuated g/C Ratio	0.25	0.25		0.64	0.64	
v/c Ratio	0.78	0.60		0.58	0.59	
Control Delay (s/veh)	44.5	36.2		4.9	23.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.5	36.2		4.9	23.0	
LOS	D	D		A	C	
Approach Delay (s/veh)	41.3			4.9	23.0	
Approach LOS	D			A	C	
Queue Length 50th (m)	73.9	45.7		22.8	115.9	
Queue Length 95th (m)	87.5	59.1		30.8	155.4	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1082	893		2892	2892	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.63	0.49		0.58	0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 73 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay (s/veh): 20.8	Intersection LOS: C

Intersection Capacity Utilization 71.4%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



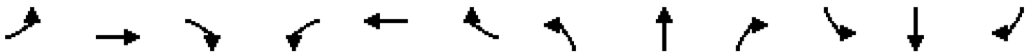


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	659	422	0	1617	1660	0
Future Volume (vph)	659	422	0	1617	1660	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		4515	4515	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		4515	4515	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	679	435	0	1667	1711	0
RTOR Reduction (vph)	0	26	0	0	0	0
Lane Group Flow (vph)	679	409	0	1667	1711	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	27.5	27.5		70.5	70.5	
Effective Green, g (s)	27.5	27.5		70.5	70.5	
Actuated g/C Ratio	0.25	0.25		0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	875	703		2893	2893	
v/s Ratio Prot	c0.19			0.37	c0.38	
v/s Ratio Perm		0.15				
v/c Ratio	0.78	0.58		0.58	0.59	
Uniform Delay, d1	38.4	36.2		11.2	11.4	
Progression Factor	1.00	1.00		0.34	1.82	
Incremental Delay, d2	4.4	1.2		0.7	0.7	
Delay (s)	42.7	37.4		4.6	21.4	
Level of Service	D	D		A	C	
Approach Delay (s/veh)	40.7			4.6	21.4	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	71	122	542	352	174	80	1249	279	129	990	114
Future Volume (vph)	139	71	122	542	352	174	80	1249	279	129	990	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00		0.99
Frt		0.905			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3330	0	1736	4515	1599	1805	4515	1553
Flt Permitted	0.257			0.569			0.199			0.102		
Satd. Flow (perm)	470	3218	0	1069	3330	0	363	4515	1575	194	4515	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		124			82				194			116
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	142	72	124	553	359	178	82	1274	285	132	1010	116
Shared Lane Traffic (%)												
Lane Group Flow (vph)	142	196	0	553	537	0	82	1274	285	132	1010	116
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	12.0	40.0		14.0	42.0		12.0	44.0	44.0	12.0	44.0	44.0
Total Split (%)	10.9%	36.4%		12.7%	38.2%		10.9%	40.0%	40.0%	10.9%	40.0%	40.0%
Maximum Green (s)	8.0	33.6		10.0	35.6		8.0	37.7	37.7	8.0	37.7	37.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	29.4	19.0		33.4	21.0		60.9	50.6	50.6	65.2	54.5	54.5
Actuated g/C Ratio	0.27	0.17		0.30	0.19		0.55	0.46	0.46	0.59	0.50	0.50
v/c Ratio	0.65	0.30		1.42	0.77		0.27	0.61	0.34	0.51	0.45	0.14
Control Delay (s/veh)	42.2	15.7		234.2	42.9		16.1	28.3	14.3	26.1	25.2	10.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	42.2	15.7		234.2	42.9		16.1	28.3	14.3	26.1	25.2	10.4
LOS	D	B		F	D		B	C	B	C	C	B
Approach Delay (s/veh)		26.8			139.9			25.3			24.0	
Approach LOS		C			F			C			C	
Queue Length 50th (m)	24.3	7.3		~170.4	53.2		9.2	75.5	17.2	15.8	57.5	4.8
Queue Length 95th (m)	37.6	16.6		#223.8	68.1		m16.8	109.6	m37.4	37.8	101.1	18.6
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	217	1069		389	1133		308	2075	828	261	2236	817
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.65	0.18		1.42	0.47		0.27	0.61	0.34	0.51	0.45	0.14

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 65 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay (s/veh): 53.9	Intersection LOS: D

Intersection Capacity Utilization 89.0%	ICU Level of Service E
Analysis Period (min) 15	

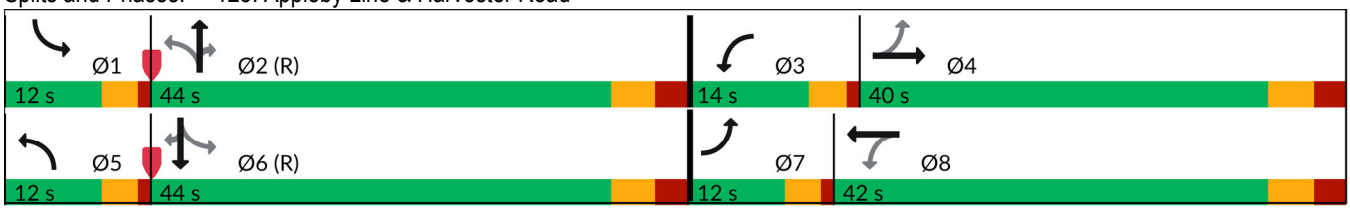
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

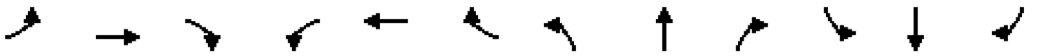
Splits and Phases: 123: Appleby Line & Harvester Road



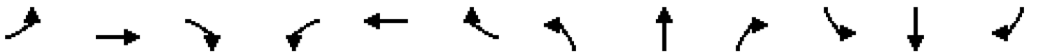
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	139	71	122	542	352	174	80	1249	279	129	990	114
Future Volume (vph)	139	71	122	542	352	174	80	1249	279	129	990	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3218		1786	3331		1736	4515	1575	1805	4515	1533
Flt Permitted	0.26	1.00		0.57	1.00		0.20	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	470	3218		1069	3331		364	4515	1575	193	4515	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	142	72	124	553	359	178	82	1274	285	132	1010	116
RTOR Reduction (vph)	0	103	0	0	66	0	0	0	105	0	0	59
Lane Group Flow (vph)	142	93	0	553	471	0	82	1274	180	132	1010	57
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.0	19.0		31.0	21.0		57.1	50.5	50.5	63.5	53.7	53.7
Effective Green, g (s)	27.0	19.0		31.0	21.0		57.1	50.5	50.5	63.5	53.7	53.7
Actuated g/C Ratio	0.25	0.17		0.28	0.19		0.52	0.46	0.46	0.58	0.49	0.49
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	207	555		366	635		271	2072	723	255	2204	748
v/s Ratio Prot	0.05	0.03		c0.14	0.14		0.02	c0.28		c0.05	0.22	
v/s Ratio Perm	0.12			c0.29			0.14		0.11	0.25		0.04
v/c Ratio	0.69	0.17		1.51	0.74		0.30	0.61	0.25	0.52	0.46	0.08
Uniform Delay, d1	34.5	38.8		38.2	41.9		13.7	22.4	18.2	14.2	18.6	15.0
Progression Factor	1.00	1.00		1.00	1.00		1.41	1.15	1.83	1.75	1.25	2.67
Incremental Delay, d2	9.1	0.1		243.6	4.7		0.4	0.8	0.5	1.5	0.6	0.2
Delay (s)	43.5	38.9		281.8	46.6		19.6	26.7	33.8	26.3	23.8	40.1
Level of Service	D	D		F	D		B	C	C	C	C	D
Approach Delay (s/veh)		40.9			165.9			27.6			25.6	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	62.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	89.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	463	98	366	147	94	163	296	1281	103	124	1448	415
Future Volume (vph)	463	98	366	147	94	163	296	1281	103	124	1448	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99			0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	4515	1615
Flt Permitted	0.950			0.692			0.102			0.114		
Satd. Flow (perm)	3498	1792	1577	1205	1792	1533	194	3574	1414	208	4515	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			244			167			164			428
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	477	101	377	152	97	168	305	1321	106	128	1493	428
Shared Lane Traffic (%)												
Lane Group Flow (vph)	477	101	377	152	97	168	305	1321	106	128	1493	428
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	24.0	45.0	45.0	11.0	32.0	32.0	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	21.8%	40.9%	40.9%	10.0%	29.1%	29.1%	10.9%	38.2%	38.2%	10.9%	38.2%	38.2%
Maximum Green (s)	19.0	38.5	38.5	7.0	25.5	25.5	8.0	35.2	35.2	8.0	35.2	35.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.1	23.7	23.7	21.0	11.5	11.5	64.8	48.2	48.2	47.9	35.2	35.2
Actuated g/C Ratio	0.16	0.22	0.22	0.19	0.10	0.10	0.59	0.44	0.44	0.44	0.32	0.32
v/c Ratio	0.83	0.26	0.71	0.59	0.52	0.54	0.68	0.84	0.15	0.56	1.03	0.54
Control Delay (s/veh)	57.4	36.5	21.3	39.2	55.9	13.8	32.3	35.1	1.2	27.3	70.9	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.4	36.5	21.3	39.2	55.9	13.8	32.3	35.1	1.2	27.3	70.9	11.0
LOS	E	D	C	D	E	B	C	D	A	C	E	B
Approach Delay (s/veh)		40.9			32.8			32.5			55.7	
Approach LOS		D			C			C			E	
Queue Length 50th (m)	53.8	19.8	26.6	26.0	22.1	0.2	45.0	137.9	0.0	14.9	~139.0	10.1
Queue Length 95th (m)	#74.1	34.1	59.1	40.9	38.7	20.2	#95.0	#214.8	3.0	m26.2	m#159.3	m32.6
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	604	627	710	259	415	483	448	1565	711	230	1444	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.16	0.53	0.59	0.23	0.35	0.68	0.84	0.15	0.56	1.03	0.54

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 43.3	Intersection LOS: D

Intersection Capacity Utilization 80.5% ICU Level of Service D

Analysis Period (min) 15

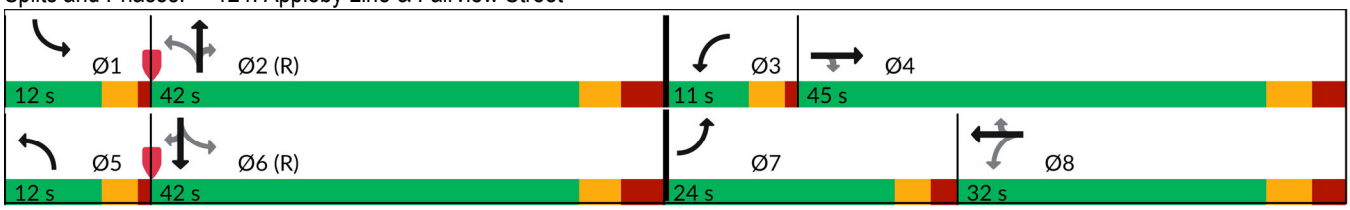
* User Entered Value

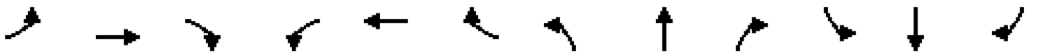
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



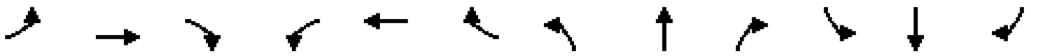


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	463	98	366	147	94	163	296	1281	103	124	1448	415
Future Volume (vph)	463	98	366	147	94	163	296	1281	103	124	1448	415
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	1792	1577	1660	1792	1533	1805	3574	1414	1735	4515	1589
Flt Permitted	0.95	1.00	1.00	0.69	1.00	1.00	0.10	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3502	1792	1577	1209	1792	1533	194	3574	1414	208	4515	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	477	101	377	152	97	168	305	1321	106	128	1493	428
RTOR Reduction (vph)	0	0	191	0	0	149	0	0	60	0	0	291
Lane Group Flow (vph)	477	101	186	152	97	19	305	1321	46	128	1493	137
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	18.1	23.7	23.7	18.6	11.6	11.6	62.0	48.1	48.1	45.1	35.2	35.2
Effective Green, g (s)	18.1	23.7	23.7	18.6	11.6	11.6	62.0	48.1	48.1	45.1	35.2	35.2
Actuated g/C Ratio	0.16	0.22	0.22	0.17	0.11	0.11	0.56	0.44	0.44	0.41	0.32	0.32
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	576	386	339	233	188	161	443	1562	618	222	1444	508
v/s Ratio Prot	c0.14	0.06		0.04	0.05		c0.14	c0.37		0.05	c0.33	
v/s Ratio Perm			c0.12	0.07		0.01	0.25		0.03	0.18		0.09
v/c Ratio	0.83	0.26	0.55	0.65	0.52	0.12	0.69	0.85	0.08	0.58	1.03	0.27
Uniform Delay, d1	44.4	35.9	38.4	41.9	46.5	44.6	26.8	27.6	18.0	23.0	37.4	27.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.20	1.10	3.16
Incremental Delay, d2	9.5	0.4	1.8	6.4	2.4	0.3	4.4	5.8	0.2	2.8	30.3	1.0
Delay (s)	54.0	36.2	40.2	48.3	48.9	44.9	31.2	33.5	18.2	30.5	71.6	88.9
Level of Service	D	D	D	D	D	D	C	C	B	C	E	F
Approach Delay (s/veh)		46.7			47.1			32.1			72.7	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	52.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	80.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	382	480	850	229	509	756	346	444	831	263
Future Volume (vph)	241	774	382	480	850	229	509	756	346	444	831	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3487	5136	1577	3453	5136	1528	3496	5136	1562	3441	5136	1588
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			260			234			263			258
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	246	790	390	490	867	234	519	771	353	453	848	268
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	790	390	490	867	234	519	771	353	453	848	268
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0
Total Split (%)	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%
Maximum Green (s)	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.8	30.2	30.2	17.0	31.4	31.4	27.4	41.9	41.9	26.1	40.6	40.6
Actuated g/C Ratio	0.11	0.22	0.22	0.12	0.22	0.22	0.20	0.30	0.30	0.19	0.29	0.29
v/c Ratio	0.62	0.71	0.72	1.17	0.75	0.45	0.76	0.50	0.54	0.70	0.57	0.42
Control Delay (s/veh)	66.4	54.3	23.7	150.3	55.0	7.7	61.6	42.1	14.1	60.2	44.1	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.4	54.3	23.7	150.3	55.0	7.7	61.6	42.1	14.1	60.2	44.1	7.1
LOS	E	D	C	F	E	A	E	D	B	E	D	A
Approach Delay (s/veh)		48.0			77.4			42.2			42.4	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.5	79.1	35.0	~87.7	88.3	0.0	74.6	69.4	19.8	64.3	77.7	2.1
Queue Length 95th (m)	50.3	89.3	70.6	#124.7	98.9	21.7	#118.9	83.9	52.6	#98.6	92.9	24.4
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	425	1489	641	420	1489	609	685	1535	651	647	1489	643
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.53	0.61	1.17	0.58	0.38	0.76	0.50	0.54	0.70	0.57	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 118 (84%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.17	
Intersection Signal Delay (s/veh): 52.6	Intersection LOS: D

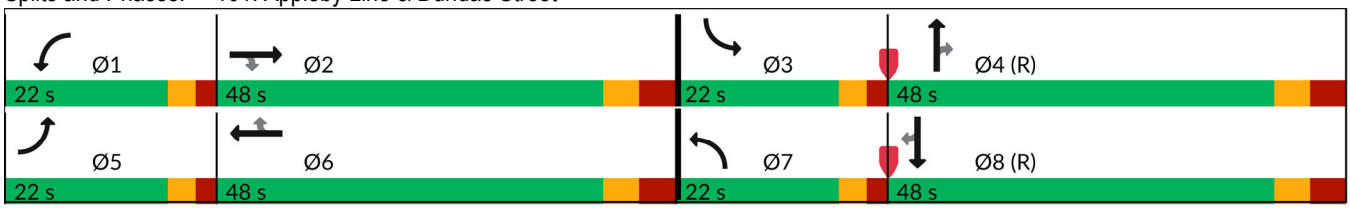
Intersection Capacity Utilization 103.4% ICU Level of Service G

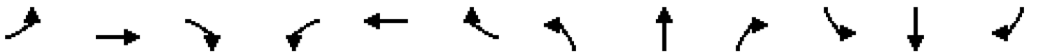
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

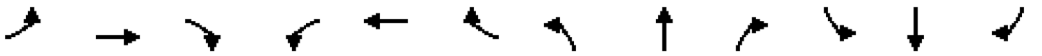




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	382	480	850	229	509	756	346	444	831	263
Future Volume (vph)	241	774	382	480	850	229	509	756	346	444	831	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	246	790	390	490	867	234	519	771	353	453	848	268
RTOR Reduction (vph)	0	0	204	0	0	182	0	0	184	0	0	183
Lane Group Flow (vph)	246	790	186	490	867	52	519	771	169	453	848	85
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.8	30.2	30.2	17.0	31.4	31.4	27.4	41.9	41.9	26.1	40.6	40.6
Effective Green, g (s)	15.8	30.2	30.2	17.0	31.4	31.4	27.4	41.9	41.9	26.1	40.6	40.6
Actuated g/C Ratio	0.11	0.22	0.22	0.12	0.22	0.22	0.20	0.30	0.30	0.19	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	395	1107	340	420	1151	342	685	1537	467	646	1489	460
v/s Ratio Prot	0.07	0.15		c0.14	c0.17		c0.15	0.15		0.13	c0.17	
v/s Ratio Perm			0.12			0.03			0.11			0.05
v/c Ratio	0.62	0.71	0.55	1.17	0.75	0.15	0.76	0.50	0.36	0.70	0.57	0.18
Uniform Delay, d1	59.3	50.9	48.8	61.5	50.7	43.6	53.2	40.4	38.5	53.3	42.3	37.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	2.2	1.8	98.0	2.8	0.2	5.7	1.2	2.2	4.3	1.6	0.9
Delay (s)	63.5	53.1	50.6	159.5	53.5	43.8	58.9	41.6	40.7	57.6	43.9	38.2
Level of Service	E	D	D	F	D	D	E	D	D	E	D	D
Approach Delay (s/veh)		54.2			84.7			46.9			46.9	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	103.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	303	354	225	562	477	318	1412	146	289	1182	252
Future Volume (vph)	271	303	354	225	562	477	318	1412	146	289	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.919				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3260	0	1787	4515	1615	3502	4438	0	1787	4378	0
Flt Permitted	0.301			0.193			0.950			0.101		
Satd. Flow (perm)	552	3260	0	362	4515	1575	3496	4438	0	190	4378	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		217				179		16			36	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	277	309	361	230	573	487	324	1441	149	295	1206	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	670	0	230	573	487	324	1590	0	295	1463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	12.0	35.0		12.0	35.0	35.0	19.0	51.0		12.0	44.0	
Total Split (%)	10.9%	31.8%		10.9%	31.8%	31.8%	17.3%	46.4%		10.9%	40.0%	
Maximum Green (s)	8.0	28.6		8.0	28.6	28.6	14.0	44.5		8.0	37.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	37.3	26.9		37.3	26.9	26.9	13.4	44.5		51.9	39.7	
Actuated g/C Ratio	0.34	0.24		0.34	0.24	0.24	0.12	0.40		0.47	0.36	
v/c Ratio	1.01	0.70		1.02	0.52	0.94	0.76	0.88		1.28	0.91	
Control Delay (s/veh)	88.9	29.1		94.6	37.5	52.6	57.6	22.1		183.5	43.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	88.9	29.1		94.6	37.5	52.6	57.6	22.1		183.5	43.1	
LOS	F	C		F	D	D	E	C		F	D	
Approach Delay (s/veh)		46.6			53.4			28.1			66.7	
Approach LOS		D			D			C			E	
Queue Length 50th (m)	45.6	48.4		36.1	46.1	71.2	30.6	129.9		~76.6	132.5	
Queue Length 95th (m)	#101.3	69.4		#78.8	60.0	#135.7	47.9	103.0		#132.7	#172.6	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	274	1008		226	1173	541	445	1804		230	1604	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	0.66		1.02	0.49	0.90	0.73	0.88		1.28	0.91	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay (s/veh): 48.1	Intersection LOS: D

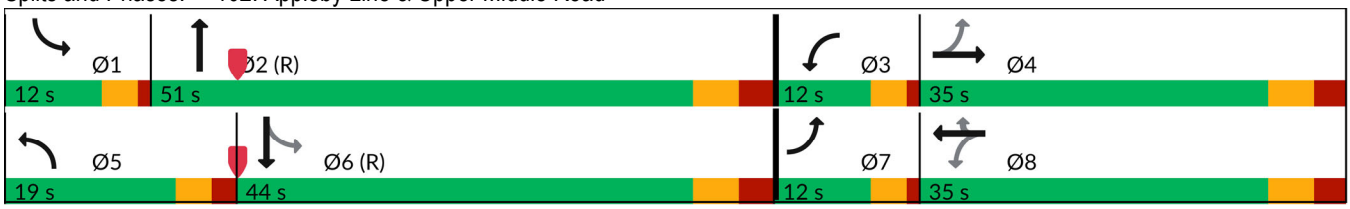
Intersection Capacity Utilization 97.6%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

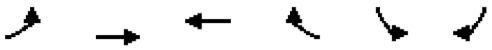
Splits and Phases: 102: Appleby Line & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	303	354	225	562	477	318	1412	146	289	1182	252
Future Volume (vph)	271	303	354	225	562	477	318	1412	146	289	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.92		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	3261		1786	4515	1575	3502	4437		1787	4377	
Flt Permitted	0.30	1.00		0.19	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	554	3261		362	4515	1575	3502	4437		189	4377	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	277	309	361	230	573	487	324	1441	149	295	1206	257
RTOR Reduction (vph)	0	164	0	0	0	135	0	10	0	0	23	0
Lane Group Flow (vph)	277	506	0	230	573	352	324	1580	0	295	1440	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	34.9	26.9		34.9	26.9	26.9	13.4	44.5		49.5	39.8	
Effective Green, g (s)	34.9	26.9		34.9	26.9	26.9	13.4	44.5		49.5	39.8	
Actuated g/C Ratio	0.32	0.24		0.32	0.24	0.24	0.12	0.40		0.45	0.36	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	262	797		218	1104	385	426	1794		225	1583	
v/s Ratio Prot	c0.08	0.16		0.08	0.13		0.09	c0.36		c0.12	0.33	
v/s Ratio Perm	c0.26			0.26		0.22				c0.47		
v/c Ratio	1.06	0.63		1.06	0.52	0.91	0.76	0.88		1.31	0.91	
Uniform Delay, d1	34.7	37.2		33.9	36.0	40.4	46.7	30.3		28.3	33.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.03	0.55		1.00	1.00	
Incremental Delay, d2	71.5	1.7		76.2	0.4	25.6	5.9	5.1		168.1	9.3	
Delay (s)	106.2	38.8		110.1	36.4	66.0	54.3	21.8		196.4	42.7	
Level of Service	F	D		F	D	E	D	C		F	D	
Approach Delay (s/veh)		58.5			60.7			27.3			68.5	
Approach LOS		E			E			C			E	

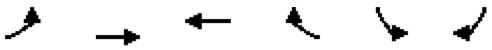
Intersection Summary			
HCM 2000 Control Delay (s/veh)	51.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	620	1223	75	58	105
Future Volume (vph)	129	620	1223	75	58	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.991		0.913	
Flt Protected	0.950				0.983	
Satd. Flow (prot)	1787	4515	4477	0	1705	0
Flt Permitted	0.950				0.983	
Satd. Flow (perm)	1787	4515	4477	0	1705	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		118.7	290.7		285.4	
Travel Time (s)		7.1	17.4		25.7	
Confl. Peds. (#/hr)	18			18		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%
Adj. Flow (vph)	136	653	1287	79	61	111
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	653	1366	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

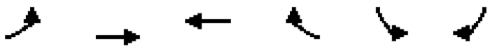
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



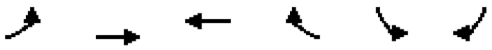
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	129	620	1223	75	58	105
Future Volume (Veh/h)	129	620	1223	75	58	105
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	136	653	1287	79	61	111
Pedestrians		1			18	
Lane Width (m)		3.6			3.6	
Walking Speed (m/s)		1.2			1.2	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		376	291			
pX, platoon unblocked	0.82				0.82	0.82
vC, conflicting volume	1384				1834	488
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	713				1260	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	81				44	87
cM capacity (veh/h)	721				109	883

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	136	218	218	218	515	515	336	172
Volume Left	136	0	0	0	0	0	0	61
Volume Right	0	0	0	0	0	0	79	111
cSH	721	1700	1700	1700	1700	1700	1700	250
Volume to Capacity	0.19	0.13	0.13	0.13	0.30	0.30	0.20	0.69
Queue Length 95th (m)	5.5	0.0	0.0	0.0	0.0	0.0	0.0	36.1
Control Delay (s/veh)	11.2	0.0	0.0	0.0	0.0	0.0	0.0	46.0
Lane LOS	B							E
Approach Delay (s/veh)	1.9				0.0			46.0
Approach LOS								E

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	143	507	1124	230	217	176
Future Volume (vph)	143	507	1124	230	217	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor	1.00		0.99			
Frt			0.974		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1770	4515	4367	0	1715	0
Flt Permitted	0.089				0.973	
Satd. Flow (perm)	166	4515	4367	0	1715	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			46		48	
Link Speed (k/h)		60	60		40	
Link Distance (m)		290.7	244.7		244.6	
Travel Time (s)		17.4	14.7		22.0	
Confl. Peds. (#/hr)	12			12		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Adj. Flow (vph)	149	528	1171	240	226	183
Shared Lane Traffic (%)						
Lane Group Flow (vph)	149	528	1411	0	409	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

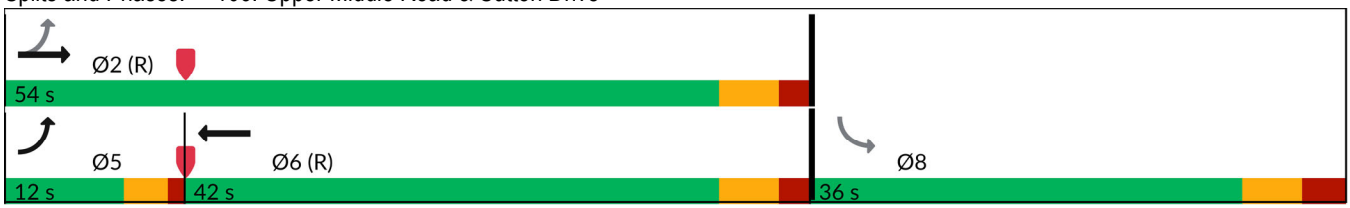


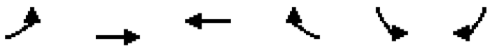
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Detector Phase	5	2	6		8	
Switch Phase						
Minimum Initial (s)	7.0	8.0	8.0		8.0	
Minimum Split (s)	11.5	31.0	31.0		34.0	
Total Split (s)	12.0	54.0	42.0		36.0	
Total Split (%)	13.3%	60.0%	46.7%		40.0%	
Maximum Green (s)	8.0	48.0	36.0		29.0	
Yellow Time (s)	3.0	4.0	4.0		4.0	
All-Red Time (s)	1.0	2.0	2.0		3.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0	6.0		7.0	
Lead/Lag	Lead		Lag			
Lead-Lag Optimize?	Yes		Yes			
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	None	C-Max	C-Max		None	
Walk Time (s)		7.0	7.0		7.0	
Flash Don't Walk (s)		18.0	18.0		20.0	
Pedestrian Calls (#/hr)		0	0		0	
Act Effct Green (s)	55.2	53.2	41.1		23.8	
Actuated g/C Ratio	0.61	0.59	0.46		0.26	
v/c Ratio	0.61	0.20	0.70		0.84	
Control Delay (s/veh)	38.2	23.0	22.1		42.8	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	38.2	23.0	22.1		42.8	
LOS	D	C	C		D	
Approach Delay (s/veh)		26.3	22.1		42.8	
Approach LOS		C	C		D	
Queue Length 50th (m)	24.6	34.0	83.4		61.6	
Queue Length 95th (m)	#49.2	49.9	111.9		91.2	
Internal Link Dist (m)		266.7	220.7		220.6	
Turn Bay Length (m)	60.0					
Base Capacity (vph)	251	2671	2021		585	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.59	0.20	0.70		0.70	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 26.7	Intersection LOS: C

Intersection Capacity Utilization 71.9%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 106: Upper Middle Road & Sutton Drive

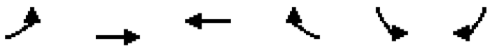




Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	143	507	1124	230	217	176
Future Volume (vph)	143	507	1124	230	217	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0	6.0		7.0	
Lane Util. Factor	1.00	*0.80	*0.80		1.00	
Frpb, ped/bikes	1.00	1.00	0.99		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.97		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1769	4515	4369		1714	
Flt Permitted	0.09	1.00	1.00		0.97	
Satd. Flow (perm)	165	4515	4369		1714	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	149	528	1171	240	226	183
RTOR Reduction (vph)	0	0	25	0	35	0
Lane Group Flow (vph)	149	528	1386	0	374	0
Confl. Peds. (#/hr)	12			12		
Heavy Vehicles (%)	2%	1%	1%	1%	0%	3%
Turn Type	pm+pt	NA	NA		Perm	
Protected Phases	5	2	6			
Permitted Phases	2				8	
Actuated Green, G (s)	53.2	53.2	41.1		23.8	
Effective Green, g (s)	53.2	53.2	41.1		23.8	
Actuated g/C Ratio	0.59	0.59	0.46		0.26	
Clearance Time (s)	4.0	6.0	6.0		7.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	241	2668	1995		453	
v/s Ratio Prot	c0.06	0.12	c0.32			
v/s Ratio Perm	0.31				c0.22	
v/c Ratio	0.62	0.20	0.69		0.82	
Uniform Delay, d1	13.1	8.5	19.5		31.1	
Progression Factor	2.19	2.46	1.00		1.00	
Incremental Delay, d2	4.5	0.2	2.0		11.6	
Delay (s)	33.3	21.1	21.5		42.8	
Level of Service	C	C	C		D	
Approach Delay (s/veh)		23.8	21.5		42.8	
Approach LOS		C	C		D	

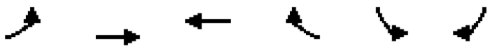
Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	660	1255	86	66	34
Future Volume (vph)	38	660	1255	86	66	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.954	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1805	4560	4514	0	1731	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1805	4560	4514	0	1731	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	40	695	1321	91	69	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	695	1412	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	660	1255	86	66	34
Future Volume (Veh/h)	38	660	1255	86	66	34
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	40	695	1321	91	69	36
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1419				1685	493
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1419				1685	493
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				13	93
cM capacity (veh/h)	483				79	513

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	40	232	232	232	528	528	355	105
Volume Left	40	0	0	0	0	0	0	69
Volume Right	0	0	0	0	0	0	91	36
cSH	483	1700	1700	1700	1700	1700	1700	111
Volume to Capacity	0.08	0.14	0.14	0.14	0.31	0.31	0.21	0.94
Queue Length 95th (m)	2.2	0.0	0.0	0.0	0.0	0.0	0.0	47.1
Control Delay (s/veh)	13.1	0.0	0.0	0.0	0.0	0.0	0.0	142.2
Lane LOS	B							F
Approach Delay (s/veh)	0.7				0.0			142.2
Approach LOS								F

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	54	44	1287	56	16	714
Future Volume (vph)	54	44	1287	56	16	714
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.940		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1738	0	4533	0	1805	4560
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1738	0	4533	0	1805	4560
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	58	47	1384	60	17	768
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	1444	0	17	768
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

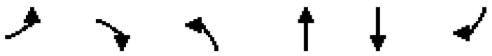
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.5%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



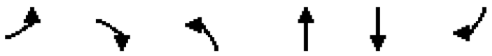
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	44	1287	56	16	714
Future Volume (Veh/h)	54	44	1287	56	16	714
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	58	47	1384	60	17	768
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1705	492			1445	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1705	492			1445	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	28	91			96	
cM capacity (veh/h)	81	527			475	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	105	554	554	337	17	256	256	256
Volume Left	58	0	0	0	17	0	0	0
Volume Right	47	0	0	60	0	0	0	0
cSH	130	1700	1700	1700	475	1700	1700	1700
Volume to Capacity	0.80	0.33	0.33	0.20	0.04	0.15	0.15	0.15
Queue Length 95th (m)	39.1	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Control Delay (s/veh)	97.9	0.0	0.0	0.0	12.9	0.0	0.0	0.0
Lane LOS	F				B			
Approach Delay (s/veh)	97.9	0.0			0.3			
Approach LOS	F							

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	38.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	149	393	1256	706	48
Future Volume (vph)	80	149	393	1256	706	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	0.0		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1787	4560	4509	0
Flt Permitted	0.950		0.258			
Satd. Flow (perm)	1805	1615	485	4560	4509	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		157			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	84	157	414	1322	743	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	157	414	1322	794	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

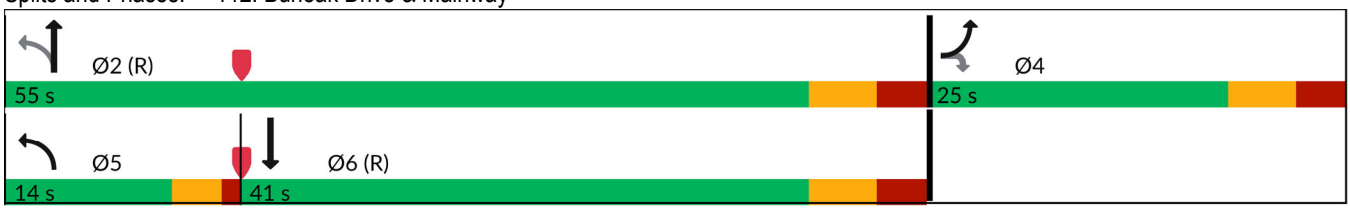


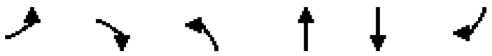
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	25.0	25.0	14.0	55.0	41.0	
Total Split (%)	31.3%	31.3%	17.5%	68.8%	51.3%	
Maximum Green (s)	18.0	18.0	10.0	48.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.6	9.6	59.4	56.4	38.3	
Actuated g/C Ratio	0.12	0.12	0.74	0.71	0.48	
v/c Ratio	0.39	0.47	0.70	0.41	0.37	
Control Delay (s/veh)	37.4	10.8	15.0	5.5	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.4	10.8	15.0	5.5	14.2	
LOS	D	B	B	A	B	
Approach Delay (s/veh)	20.0			7.8	14.2	
Approach LOS	C			A	B	
Queue Length 50th (m)	12.7	0.0	22.5	20.9	31.2	
Queue Length 95th (m)	25.1	16.0	60.3	57.4	46.5	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	406	485	590	3215	2163	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.32	0.70	0.41	0.37	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 54 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay (s/veh): 10.7	Intersection LOS: B

Intersection Capacity Utilization 68.4%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	149	393	1256	706	48
Future Volume (vph)	80	149	393	1256	706	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1786	4560	4511	
Flt Permitted	0.95	1.00	0.26	1.00	1.00	
Satd. Flow (perm)	1805	1615	484	4560	4511	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	157	414	1322	743	51
RTOR Reduction (vph)	0	138	0	0	7	0
Lane Group Flow (vph)	84	19	414	1322	787	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.6	9.6	56.4	56.4	38.3	
Effective Green, g (s)	9.6	9.6	56.4	56.4	38.3	
Actuated g/C Ratio	0.12	0.12	0.71	0.71	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	193	570	3214	2159	
v/s Ratio Prot	c0.05		c0.13	0.29	0.17	
v/s Ratio Perm		0.01	c0.38			
v/c Ratio	0.39	0.10	0.73	0.41	0.36	
Uniform Delay, d1	32.5	31.3	5.5	4.9	13.2	
Progression Factor	1.00	1.00	1.57	1.00	1.00	
Incremental Delay, d2	1.2	0.2	4.5	0.4	0.5	
Delay (s)	33.7	31.6	13.0	5.3	13.6	
Level of Service	C	C	B	A	B	
Approach Delay (s/veh)	32.3			7.1	13.6	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	144	15	6	315	22	10
Future Volume (vph)	144	15	6	315	22	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Ped Bike Factor						
Frt	0.986				0.958	
Flt Protected				0.999	0.967	
Satd. Flow (prot)	3559	0	0	3606	1760	0
Flt Permitted				0.999	0.967	
Satd. Flow (perm)	3559	0	0	3606	1760	0
Link Speed (k/h)	60			60	40	
Link Distance (m)	754.0			869.1	154.8	
Travel Time (s)	45.2			52.1	13.9	
Confl. Peds. (#/hr)		3	3			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	147	15	6	321	22	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	162	0	0	327	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	0.0			0.0	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 23.0%		ICU Level of Service A	
Analysis Period (min) 15			

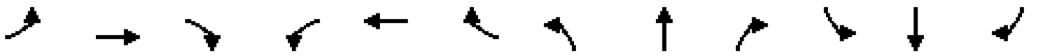


Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	144	15	6	315	22	10
Future Volume (Veh/h)	144	15	6	315	22	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	147	15	6	321	22	10
Pedestrians					3	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume			165		330	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			165		330	84
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	99
cM capacity (veh/h)			1422		640	962

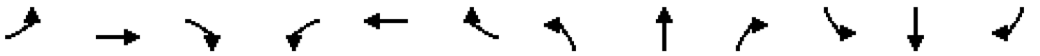
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	98	64	113	214	32
Volume Left	0	0	6	0	22
Volume Right	0	15	0	0	10
cSH	1700	1700	1422	1700	715
Volume to Capacity	0.06	0.04	0.00*	0.13	0.04
Queue Length 95th (m)	0.0	0.0	0.1	0.0	1.1
Control Delay (s/veh)	0.0	0.0	0.4	0.0	10.3
Lane LOS			A		B
Approach Delay (s/veh)	0.0		0.1		10.3
Approach LOS					B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	23.0%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	78	190	84	236	91	205	1496	60	71	1481	122
Future Volume (vph)	151	78	190	84	236	91	205	1496	60	71	1481	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00			1.00	
Frt		0.894			0.958			0.994			0.989	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3179	0	1770	3397	0	1805	4484	0	1770	4447	0
Flt Permitted	0.376			0.581			0.073			0.088		
Satd. Flow (perm)	714	3179	0	1081	3397	0	139	4484	0	164	4447	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192			53			5			11	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	153	79	192	85	238	92	207	1511	61	72	1496	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	271	0	85	330	0	207	1572	0	72	1619	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	12.0	40.0		12.0	40.0		12.0	46.0		12.0	46.0	
Total Split (%)	10.9%	36.4%		10.9%	36.4%		10.9%	41.8%		10.9%	41.8%	
Maximum Green (s)	8.0	33.7		8.0	33.7		8.0	39.7		8.0	39.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	25.6	16.9		24.6	14.5		73.2	61.5		61.3	51.5	
Actuated g/C Ratio	0.23	0.15		0.22	0.13		0.67	0.56		0.56	0.47	
v/c Ratio	0.62	0.42		0.29	0.67		0.63	0.63		0.36	0.78	
Control Delay (s/veh)	44.8	15.3		33.3	44.6		43.3	7.6		19.3	31.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.8	15.3		33.3	44.6		43.3	7.6		19.3	31.9	
LOS	D	B		C	D		D	A		B	C	
Approach Delay (s/veh)		25.9			42.2			11.7			31.4	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	27.9	8.5		15.1	32.2		26.7	16.9		6.2	99.4	
Queue Length 95th (m)	44.0	20.5		27.1	45.9		48.3	45.5		m21.7	154.2	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	245	1107		293	1077		326	2511		212	2086	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.62	0.24		0.29	0.31		0.63	0.63		0.34	0.78	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 46 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay (s/veh): 23.8	Intersection LOS: C

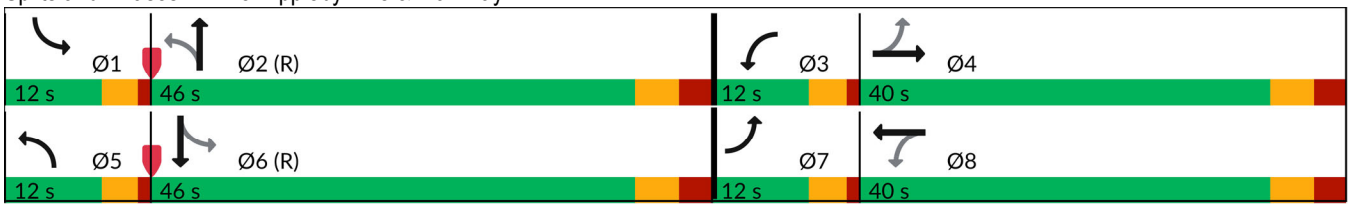
Intersection Capacity Utilization 78.2% ICU Level of Service D

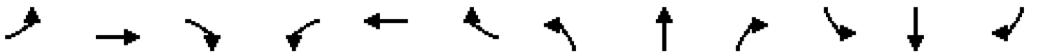
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	78	190	84	236	91	205	1496	60	71	1481	122
Future Volume (vph)	151	78	190	84	236	91	205	1496	60	71	1481	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3178		1769	3397		1805	4485		1770	4445	
Flt Permitted	0.38	1.00		0.58	1.00		0.07	1.00		0.09	1.00	
Satd. Flow (perm)	713	3178		1081	3397		139	4485		164	4445	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	153	79	192	85	238	92	207	1511	61	72	1496	123
RTOR Reduction (vph)	0	163	0	0	46	0	0	2	0	0	6	0
Lane Group Flow (vph)	153	108	0	85	284	0	207	1570	0	72	1613	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.9	16.9		21.7	15.3		70.1	59.9		56.9	50.7	
Effective Green, g (s)	24.9	16.9		21.7	15.3		70.1	59.9		56.9	50.7	
Actuated g/C Ratio	0.23	0.15		0.20	0.14		0.64	0.54		0.52	0.46	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	240	488		253	472		321	2442		175	2048	
v/s Ratio Prot	c0.05	0.03		0.02	0.08		c0.09	0.35		0.02	c0.36	
v/s Ratio Perm	c0.10			0.05			0.32			0.19		
v/c Ratio	0.64	0.22		0.34	0.60		0.64	0.64		0.41	0.79	
Uniform Delay, d1	36.1	40.8		37.2	44.5		25.8	17.6		14.5	25.1	
Progression Factor	1.00	1.00		1.00	1.00		1.69	0.37		1.54	1.16	
Incremental Delay, d2	5.5	0.2		0.8	2.2		3.6	1.1		1.3	2.7	
Delay (s)	41.6	41.0		38.0	46.7		47.2	7.6		23.8	31.9	
Level of Service	D	D		D	D		D	A		C	C	
Approach Delay (s/veh)		41.2			44.9			12.2			31.5	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	114	16	95	33	1630	113	85	1618	18
Future Volume (vph)	44	18	39	114	16	95	33	1630	113	85	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	0.0			0.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.948			0.943			0.990			0.998	
Flt Protected		0.979			0.975		0.950			0.950		
Satd. Flow (prot)	0	1734	0	0	1715	0	1805	4464	0	1805	4505	0
Flt Permitted		0.740			0.794		0.087			0.058		
Satd. Flow (perm)	0	1308	0	0	1395	0	165	4464	0	110	4505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			34			12			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	47	19	41	121	17	101	35	1734	120	90	1721	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	239	0	35	1854	0	90	1740	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		59.0	59.0		12.0	71.0	
Total Split (%)	35.5%	35.5%		35.5%	35.5%		53.6%	53.6%		10.9%	64.5%	
Maximum Green (s)	32.5	32.5		32.5	32.5		53.0	53.0		8.0	65.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		21.7			21.7		66.2	66.2		77.8	75.8	
Actuated g/C Ratio		0.20			0.20		0.60	0.60		0.71	0.69	
v/c Ratio		0.39			0.79		0.35	0.69		0.45	0.56	
Control Delay (s/veh)		33.3			53.7		16.5	8.6		15.5	5.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		33.3			53.7		16.5	8.6		15.5	5.8	
LOS		C			D		B	A		B	A	
Approach Delay (s/veh)		33.3			53.7			8.8			6.3	
Approach LOS		C			D			A			A	
Queue Length 50th (m)		17.0			44.7		1.4	32.8		3.0	27.7	
Queue Length 95th (m)		30.9			67.2		m2.6	109.9		m5.3	m137.5	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		400			436		99	2690		207	3104	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.27			0.55		0.35	0.69		0.43	0.56	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 61 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 10.9	Intersection LOS: B

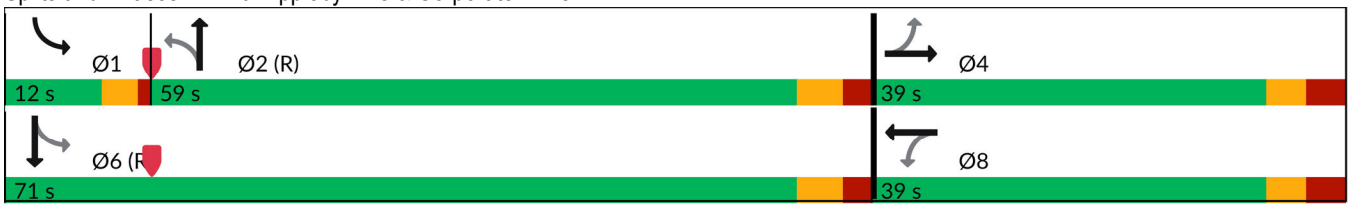
Intersection Capacity Utilization 73.7% ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

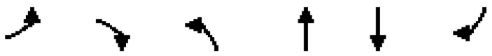
Splits and Phases: 116: Appleby Line & Corporate Drive



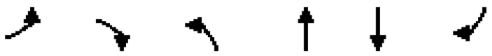
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	114	16	95	33	1630	113	85	1618	18
Future Volume (vph)	44	18	39	114	16	95	33	1630	113	85	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730			1714		1803	4465		1805	4506	
Flt Permitted		0.74			0.79		0.09	1.00		0.06	1.00	
Satd. Flow (perm)		1309			1395		165	4465		110	4506	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	19	41	121	17	101	35	1734	120	90	1721	19
RTOR Reduction (vph)	0	16	0	0	27	0	0	5	0	0	1	0
Lane Group Flow (vph)	0	91	0	0	212	0	35	1849	0	90	1739	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		21.7			21.7		65.4	65.4		75.8	75.8	
Effective Green, g (s)		21.7			21.7		65.4	65.4		75.8	75.8	
Actuated g/C Ratio		0.20			0.20		0.59	0.59		0.69	0.69	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		258			275		98	2654		174	3105	
v/s Ratio Prot								c0.41		0.03	c0.39	
v/s Ratio Perm		0.07			c0.15		0.21			0.33		
v/c Ratio		0.35			0.77		0.36	0.70		0.52	0.56	
Uniform Delay, d1		38.1			41.8		11.5	15.4		13.8	8.7	
Progression Factor		1.00			1.00		0.42	0.43		1.03	0.56	
Incremental Delay, d2		0.8			12.2		8.2	1.3		1.3	0.4	
Delay (s)		38.9			54.0		13.1	7.9		15.5	5.2	
Level of Service		D			D		B	A		B	A	
Approach Delay (s/veh)		38.9			54.0			7.9			5.7	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	55	138	1307	710	13
Future Volume (vph)	14	55	138	1307	710	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	1736	4560	4535	0
Flt Permitted	0.950		0.288			
Satd. Flow (perm)	1805	1509	524	4560	4535	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		59			4	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	15	59	147	1390	755	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	59	147	1390	769	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	26.0	26.0	14.0	54.0	40.0	
Total Split (%)	32.5%	32.5%	17.5%	67.5%	50.0%	
Maximum Green (s)	19.0	19.0	10.0	47.0	33.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.2	8.2	66.8	66.6	50.8	
Actuated g/C Ratio	0.10	0.10	0.84	0.83	0.64	
v/c Ratio	0.08	0.28	0.26	0.37	0.27	
Control Delay (s/veh)	33.4	13.6	2.9	3.0	2.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.4	13.6	2.9	3.0	2.6	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	17.6			3.0	2.6	
Approach LOS	B			A	A	
Queue Length 50th (m)	2.2	0.0	7.3	31.6	5.2	
Queue Length 95th (m)	7.8	11.3	m6.6	m23.1	10.1	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	428	403	591	3796	2883	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.15	0.25	0.37	0.27	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.37		
Intersection Signal Delay (s/veh): 3.3	Intersection LOS: A	

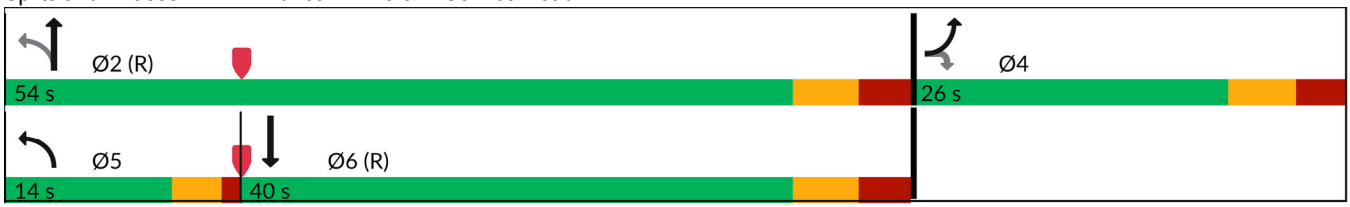
Intersection Capacity Utilization 54.3% ICU Level of Service A

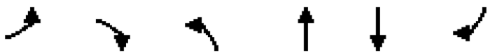
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	55	138	1307	710	13
Future Volume (vph)	14	55	138	1307	710	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	1734	4560	4536	
Flt Permitted	0.95	1.00	0.29	1.00	1.00	
Satd. Flow (perm)	1805	1509	526	4560	4536	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	59	147	1390	755	14
RTOR Reduction (vph)	0	55	0	0	2	0
Lane Group Flow (vph)	15	4	147	1390	767	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	5.0	5.0	61.0	61.0	48.0	
Effective Green, g (s)	5.0	5.0	61.0	61.0	48.0	
Actuated g/C Ratio	0.06	0.06	0.76	0.76	0.60	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	112	94	536	3477	2721	
v/s Ratio Prot	c0.01		0.03	c0.30	0.17	
v/s Ratio Perm		0.00	0.18			
v/c Ratio	0.13	0.04	0.27	0.40	0.28	
Uniform Delay, d1	35.5	35.2	2.6	3.2	7.7	
Progression Factor	1.00	1.00	1.29	0.95	0.30	
Incremental Delay, d2	0.5	0.2	0.1	0.0	0.2	
Delay (s)	36.0	35.4	3.4	3.1	2.6	
Level of Service	D	D	A	A	A	
Approach Delay (s/veh)	35.5			3.1	2.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	4.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1488	916	0	0	1221
Future Volume (vph)	2146	1488	916	0	0	1221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor	1.00					
Frt	0.979	0.850				
Flt Protected	0.959					
Satd. Flow (prot)	3398	1455	4560	0	0	4515
Flt Permitted	0.959					
Satd. Flow (perm)	3395	1455	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	27	75				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	2235	1550	954	0	0	1272
Shared Lane Traffic (%)		24%				
Lane Group Flow (vph)	2607	1178	954	0	0	1272
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	36.0	36.0	44.0			44.0
Total Split (%)	45.0%	45.0%	55.0%			55.0%
Maximum Green (s)	29.0	29.0	38.0			38.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
v/c Ratio	2.09	2.05	0.44			0.59
Control Delay (s/veh)	513.5	498.2	14.8			9.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	513.5	498.2	14.8			9.4
LOS	F	F	B			A
Approach Delay (s/veh)	508.7		14.8			9.4
Approach LOS	F		B			A
Queue Length 50th (m)	~354.9	~329.5	40.2			30.6
Queue Length 95th (m)	#399.5	#415.1	52.3			40.9
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1248	575	2166			2144
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.09	2.05	0.44			0.59

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.09			
Intersection Signal Delay (s/veh): 324.7		Intersection LOS: F	

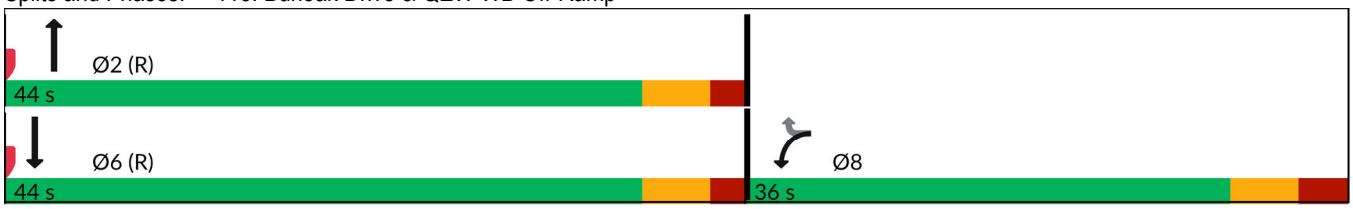
Intersection Capacity Utilization 111.2%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

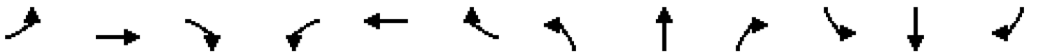




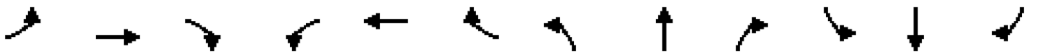
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1488	916	0	0	1221
Future Volume (vph)	2146	1488	916	0	0	1221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.98	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3396	1455	4560			4515
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3396	1455	4560			4515
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2235	1550	954	0	0	1272
RTOR Reduction (vph)	17	48	0	0	0	0
Lane Group Flow (vph)	2590	1130	954	0	0	1272
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	29.0	29.0	38.0			38.0
Effective Green, g (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1231	527	2166			2144
v/s Ratio Prot	0.76		0.21			c0.28
v/s Ratio Perm		c0.78				
v/c Ratio	2.10	2.14	0.44			0.59
Uniform Delay, d1	25.5	25.5	13.9			15.4
Progression Factor	1.00	1.00	1.00			0.53
Incremental Delay, d2	499.5	521.4	0.7			1.2
Delay (s)	525.0	546.9	14.6			9.3
Level of Service	F	F	B			A
Approach Delay (s/veh)	531.8		14.6			9.3
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	339.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	196	274	0	0	316	0	827	24	16	2606	0
Future Volume (vph)	118	196	274	0	0	316	0	827	24	16	2606	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.941	0.850			0.865		0.996				
Flt Protected	0.950											
Satd. Flow (prot)	1805	3209	1441	0	0	1611	0	5117	0	0	5136	0
Flt Permitted	0.950										0.929	
Satd. Flow (perm)	1805	3209	1441	0	0	1611	0	5117	0	0	4771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		103	149			227		6				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	126	209	291	0	0	336	0	880	26	17	2772	0
Shared Lane Traffic (%)			46%									
Lane Group Flow (vph)	126	343	157	0	0	336	0	906	0	0	2789	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		0	1		2			2	
Detector Template	Left	Thru	Right			Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		0.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	



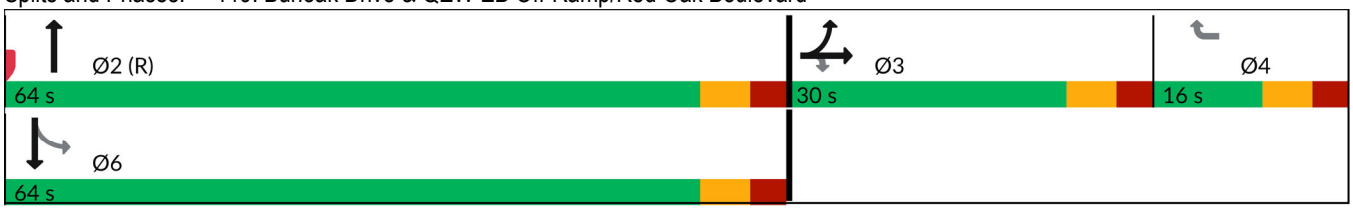
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	30.0	30.0	30.0			16.0		64.0		64.0	64.0	
Total Split (%)	27.3%	27.3%	27.3%			14.5%		58.2%		58.2%	58.2%	
Maximum Green (s)	23.0	23.0	23.0			9.0		57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		Max	Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	14.1	14.1	14.1			15.5		59.4			59.4	
Actuated g/C Ratio	0.13	0.13	0.13			0.14		0.54			0.54	
v/c Ratio	0.55	0.68	0.50			0.80		0.33			1.08	
Control Delay (s/veh)	53.0	38.5	13.6			30.7		14.8			71.1	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	53.0	38.5	13.6			30.7		14.8			71.1	
LOS	D	D	B			C		B			E	
Approach Delay (s/veh)		35.2			30.7			14.8			71.1	
Approach LOS		D			C			B			E	
Queue Length 50th (m)	27.2	28.9	1.7			22.8		42.1			~270.0	
Queue Length 95th (m)	44.4	43.1	22.4			#77.6		51.7			#299.2	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	377	752	419			421		2765			2575	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.33	0.46	0.37			0.80		0.33			1.08	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay (s/veh): 52.4		Intersection LOS: D	
Intersection Capacity Utilization 81.4%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

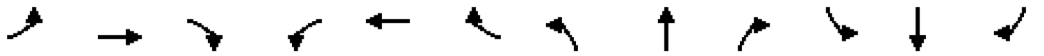
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

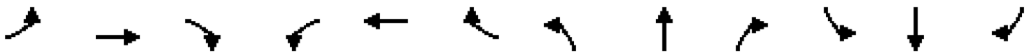


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	196	274	0	0	316	0	827	24	16	2606	0
Future Volume (vph)	118	196	274	0	0	316	0	827	24	16	2606	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1805	3211	1441			1611		5115			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1805	3211	1441			1611		5115			4771	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	126	209	291	0	0	336	0	880	26	17	2772	0
RTOR Reduction (vph)	0	90	130	0	0	195	0	3	0	0	0	0
Lane Group Flow (vph)	126	253	27	0	0	141	0	903	0	0	2789	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	14.1	14.1	14.1			15.5		59.4			59.4	
Effective Green, g (s)	14.1	14.1	14.1			15.5		59.4			59.4	
Actuated g/C Ratio	0.13	0.13	0.13			0.14		0.54			0.54	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	231	411	184			227		2762			2576	
v/s Ratio Prot	0.07	c0.08						0.18				
v/s Ratio Perm			0.02			c0.09					c0.58	
v/c Ratio	0.55	0.62	0.15			0.62		0.33			1.08	
Uniform Delay, d1	44.9	45.4	42.6			44.5		14.1			25.3	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	2.6	2.7	0.4			5.2		0.3			44.8	
Delay (s)	47.6	48.1	43.0			49.7		14.5			70.1	
Level of Service	D	D	D			D		B			E	
Approach Delay (s/veh)		46.7			49.7			14.5			70.1	
Approach LOS		D			D			B			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1586	78	46	1642	47
Future Volume (vph)	56	15	55	100	39	56	40	1586	78	46	1642	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.883			0.912			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1719	0	1656	4480	0	1805	4498	0
Flt Permitted	0.693			0.493			0.065			0.064		
Satd. Flow (perm)	1315	1591	0	927	1719	0	113	4480	0	122	4498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			58			7			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	58	16	57	104	41	58	42	1652	81	48	1710	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	73	0	104	99	0	42	1733	0	48	1759	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	49.0		11.0	49.0	
Total Split (%)	35.5%	35.5%		10.0%	45.5%		10.0%	44.5%		10.0%	44.5%	
Maximum Green (s)	32.9	32.9		7.0	43.9		7.0	42.4		7.0	42.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.7	10.7		21.6	19.5		77.2	68.9		78.0	71.1	
Actuated g/C Ratio	0.10	0.10		0.20	0.18		0.70	0.63		0.71	0.65	
v/c Ratio	0.46	0.35		0.43	0.28		0.24	0.62		0.25	0.60	
Control Delay (s/veh)	57.6	21.3		41.5	18.9		9.6	14.2		8.2	15.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.6	21.3		41.5	18.9		9.6	14.2		8.2	15.2	
LOS	E	C		D	B		A	B		A	B	
Approach Delay (s/veh)		37.3			30.5			14.1			15.0	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	12.7	3.4		19.9	7.7		3.1	59.7		2.5	161.0	
Queue Length 95th (m)	25.4	16.9		34.1	21.6		m4.1	m105.5		m2.2	182.8	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	393	515		241	720		178	2808		195	2908	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.14		0.43	0.14		0.24	0.62		0.25	0.60	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 16.2	Intersection LOS: B

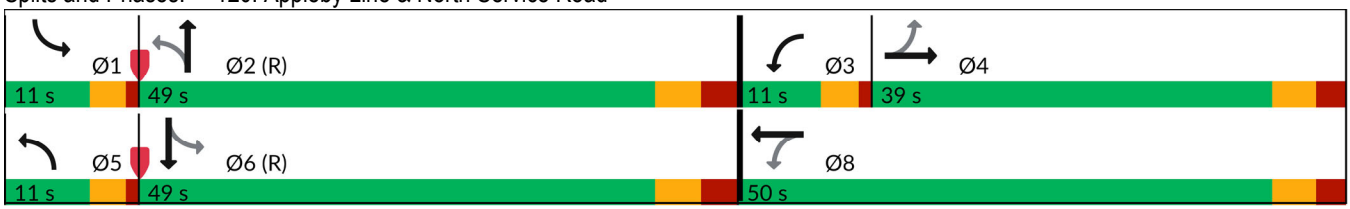
Intersection Capacity Utilization 61.4% ICU Level of Service B

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1586	78	46	1642	47
Future Volume (vph)	56	15	55	100	39	56	40	1586	78	46	1642	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1591		1787	1720		1656	4480		1805	4497	
Flt Permitted	0.69	1.00		0.49	1.00		0.07	1.00		0.06	1.00	
Satd. Flow (perm)	1315	1591		927	1720		114	4480		121	4497	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	58	16	57	104	41	58	42	1652	81	48	1710	49
RTOR Reduction (vph)	0	52	0	0	47	0	0	3	0	0	2	0
Lane Group Flow (vph)	58	21	0	104	52	0	42	1730	0	48	1757	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.1	9.1		20.7	20.7		71.2	66.9		74.0	68.3	
Effective Green, g (s)	9.1	9.1		20.7	20.7		71.2	66.9		74.0	68.3	
Actuated g/C Ratio	0.08	0.08		0.19	0.19		0.65	0.61		0.67	0.62	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	108	131		233	323		134	2724		168	2792	
v/s Ratio Prot		0.01		c0.03	0.03		0.01	0.39		c0.01	c0.39	
v/s Ratio Perm	0.04			c0.05			0.19			0.18		
v/c Ratio	0.54	0.16		0.45	0.16		0.31	0.64		0.29	0.63	
Uniform Delay, d1	48.4	46.9		38.6	37.4		9.6	13.8		9.5	13.0	
Progression Factor	1.00	1.00		1.00	1.00		1.50	0.96		1.08	1.08	
Incremental Delay, d2	5.1	0.6		1.4	0.2		0.5	0.4		0.7	0.8	
Delay (s)	53.5	47.5		39.9	37.6		15.0	13.7		10.9	14.8	
Level of Service	D	D		D	D		B	B		B	B	
Approach Delay (s/veh)		50.1			38.8			13.7			14.7	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2212	0	0	1975
Future Volume (vph)	630	461	2212	0	0	1975
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1583	4560	0	0	4515
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1583	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		4				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	677	496	2378	0	0	2124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	677	496	2378	0	0	2124
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

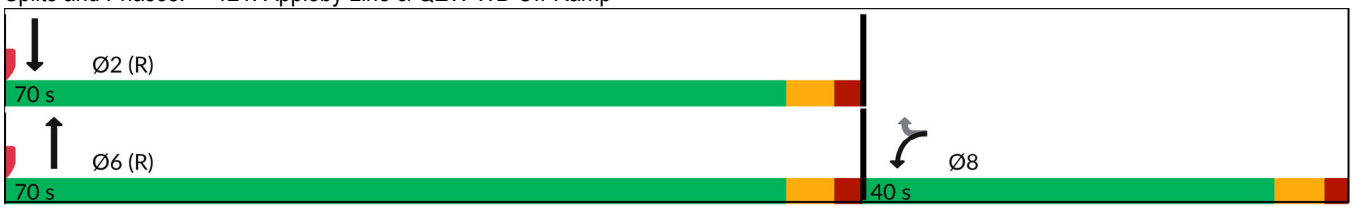


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	70.0			70.0
Total Split (%)	36.4%	36.4%	63.6%			63.6%
Maximum Green (s)	34.0	34.0	64.0			64.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	64.0			64.0
Actuated g/C Ratio	0.31	0.31	0.58			0.58
v/c Ratio	0.64	1.01	0.90			0.81
Control Delay (s/veh)	36.2	81.1	26.2			15.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	36.2	81.1	26.2			15.0
LOS	D	F	C			B
Approach Delay (s/veh)	55.2		26.2			15.0
Approach LOS	E		C			B
Queue Length 50th (m)	69.1	~114.5	197.9			201.2
Queue Length 95th (m)	90.0	#186.6	227.0			28.5
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1050	492	2653			2626
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.64	1.01	0.90			0.81

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 28.0		Intersection LOS: C	
Intersection Capacity Utilization 81.3%		ICU Level of Service D	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

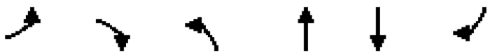
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



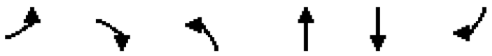


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2212	0	0	1975
Future Volume (vph)	630	461	2212	0	0	1975
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1583	4560			4515
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1583	4560			4515
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	677	496	2378	0	0	2124
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	677	493	2378	0	0	2124
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	64.0			64.0
Effective Green, g (s)	34.0	34.0	64.0			64.0
Actuated g/C Ratio	0.31	0.31	0.58			0.58
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1050	489	2653			2626
v/s Ratio Prot	0.20		c0.52			0.47
v/s Ratio Perm		c0.31				
v/c Ratio	0.64	1.01	0.90			0.81
Uniform Delay, d1	32.8	38.0	20.1			18.2
Progression Factor	1.00	1.00	1.09			0.68
Incremental Delay, d2	1.4	42.9	3.7			2.5
Delay (s)	34.2	80.9	25.7			14.8
Level of Service	C	F	C			B
Approach Delay (s/veh)	53.9		25.7			14.8
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	767	496	0	1891	1941	0
Future Volume (vph)	767	496	0	1891	1941	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		0.0			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	4515	4515	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	4515	4515	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		17				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	791	511	0	1949	2001	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	791	511	0	1949	2001	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

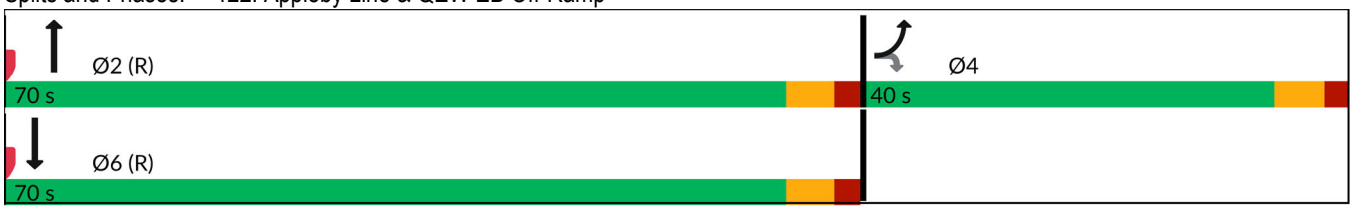


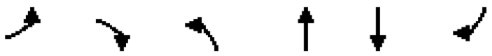
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	40.0	40.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	30.6	30.6		67.4	67.4	
Actuated g/C Ratio	0.28	0.28		0.61	0.61	
v/c Ratio	0.81	0.64		0.70	0.72	
Control Delay (s/veh)	44.2	37.4		8.5	27.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.2	37.4		8.5	27.1	
LOS	D	D		A	C	
Approach Delay (s/veh)	41.5			8.5	27.1	
Approach LOS	D			A	C	
Queue Length 50th (m)	85.0	55.5		128.0	168.0	
Queue Length 95th (m)	104.5	73.4		42.6	196.7	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1082	881		2766	2766	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.73	0.58		0.70	0.72	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 73 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 23.8	Intersection LOS: C

Intersection Capacity Utilization 81.3%	ICU Level of Service D
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

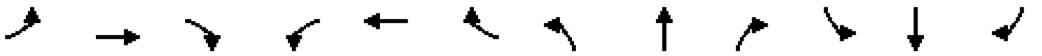




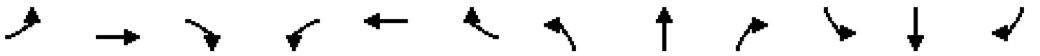
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	767	496	0	1891	1941	0
Future Volume (vph)	767	496	0	1891	1941	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		4515	4515	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		4515	4515	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	791	511	0	1949	2001	0
RTOR Reduction (vph)	0	12	0	0	0	0
Lane Group Flow (vph)	791	499	0	1949	2001	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	30.6	30.6		67.4	67.4	
Effective Green, g (s)	30.6	30.6		67.4	67.4	
Actuated g/C Ratio	0.28	0.28		0.61	0.61	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	974	782		2766	2766	
v/s Ratio Prot	c0.23			0.43	c0.44	
v/s Ratio Perm		0.18				
v/c Ratio	0.81	0.64		0.70	0.72	
Uniform Delay, d1	37.0	34.8		14.5	14.8	
Progression Factor	1.00	1.00		0.47	1.67	
Incremental Delay, d2	5.2	1.7		1.3	1.0	
Delay (s)	42.3	36.6		8.2	25.8	
Level of Service	D	D		A	C	
Approach Delay (s/veh)	40.0			8.2	25.8	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	81.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	75	129	570	370	182	84	1311	293	134	1039	119
Future Volume (vph)	146	75	129	570	370	182	84	1311	293	134	1039	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00		0.99
Frt		0.905			0.951				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3333	0	1736	4515	1599	1805	4515	1553
Flt Permitted	0.241			0.564			0.180			0.086		
Satd. Flow (perm)	440	3218	0	1059	3333	0	329	4515	1575	163	4515	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			81				193			121
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	149	77	132	582	378	186	86	1338	299	137	1060	121
Shared Lane Traffic (%)												
Lane Group Flow (vph)	149	209	0	582	564	0	86	1338	299	137	1060	121
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

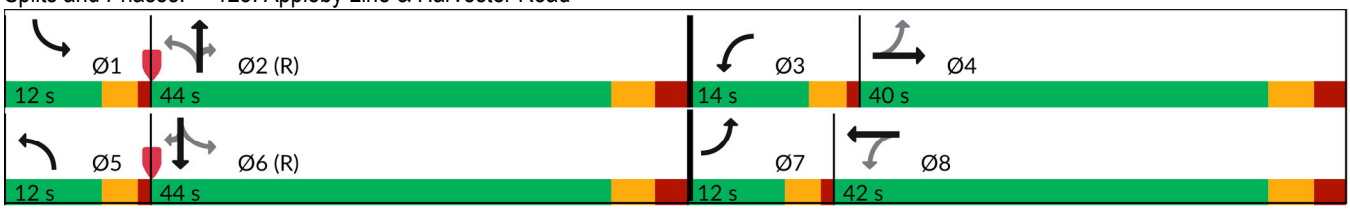


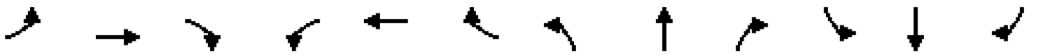
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	12.0	40.0		14.0	42.0		12.0	44.0	44.0	12.0	44.0	44.0
Total Split (%)	10.9%	36.4%		12.7%	38.2%		10.9%	40.0%	40.0%	10.9%	40.0%	40.0%
Maximum Green (s)	8.0	33.6		10.0	35.6		8.0	37.7	37.7	8.0	37.7	37.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	30.3	19.9		34.3	21.9		59.8	49.3	49.3	64.3	53.4	53.4
Actuated g/C Ratio	0.28	0.18		0.31	0.20		0.54	0.45	0.45	0.58	0.49	0.49
v/c Ratio	0.69	0.30		1.47	0.77		0.30	0.66	0.37	0.56	0.48	0.15
Control Delay (s/veh)	44.4	15.3		253.9	42.8		18.0	32.0	17.1	27.6	29.8	11.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.4	15.3		253.9	42.8		18.0	32.0	17.1	27.6	29.8	11.4
LOS	D	B		F	D		B	C	B	C	C	B
Approach Delay (s/veh)		27.4			150.0			28.7			27.9	
Approach LOS		C			F			C			C	
Queue Length 50th (m)	25.3	7.7		~182.4	56.3		11.0	87.8	24.3	19.7	77.2	6.2
Queue Length 95th (m)	38.6	17.2		#236.7	71.1		m16.6	m114.5	m37.0	m34.3	108.7	m14.3
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	215	1074		396	1133		290	2025	812	248	2191	806
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.19		1.47	0.50		0.30	0.66	0.37	0.55	0.48	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 65 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.47			
Intersection Signal Delay (s/veh): 59.0		Intersection LOS: E	

Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road



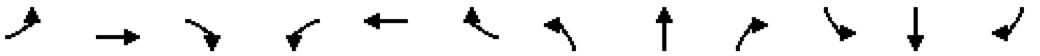


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	146	75	129	570	370	182	84	1311	293	134	1039	119
Future Volume (vph)	146	75	129	570	370	182	84	1311	293	134	1039	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3219		1786	3331		1736	4515	1575	1805	4515	1533
Flt Permitted	0.24	1.00		0.56	1.00		0.18	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	441	3219		1060	3331		329	4515	1575	163	4515	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	149	77	132	582	378	186	86	1338	299	137	1060	121
RTOR Reduction (vph)	0	108	0	0	65	0	0	0	106	0	0	63
Lane Group Flow (vph)	149	101	0	582	499	0	86	1338	193	137	1060	58
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.9	19.9		31.9	21.9		56.2	49.4	49.4	62.6	52.6	52.6
Effective Green, g (s)	27.9	19.9		31.9	21.9		56.2	49.4	49.4	62.6	52.6	52.6
Actuated g/C Ratio	0.25	0.18		0.29	0.20		0.51	0.45	0.45	0.57	0.48	0.48
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	206	582		373	663		255	2027	707	242	2158	733
v/s Ratio Prot	0.05	0.03		c0.14	0.15		0.02	c0.30		c0.05	0.23	
v/s Ratio Perm	0.13			c0.31			0.15		0.12	0.27		0.04
v/c Ratio	0.72	0.17		1.56	0.75		0.34	0.66	0.27	0.57	0.49	0.08
Uniform Delay, d1	34.0	38.1		37.7	41.5		14.3	23.7	19.0	15.9	19.6	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.53	1.23	1.98	1.45	1.40	2.85
Incremental Delay, d2	11.8	0.1		264.9	4.8		0.3	0.7	0.4	2.1	0.6	0.1
Delay (s)	45.8	38.2		302.6	46.3		22.3	30.0	38.1	25.2	28.1	44.5
Level of Service	D	D		F	D		C	C	D	C	C	D
Approach Delay (s/veh)		41.4			176.5			31.0			29.3	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	68.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	108	404	162	104	180	327	1413	113	135	1597	458
Future Volume (vph)	511	108	404	162	104	180	327	1413	113	135	1597	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99			0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	4515	1615
Flt Permitted	0.950			0.685			0.102			0.114		
Satd. Flow (perm)	3498	1792	1577	1193	1792	1533	194	3574	1414	208	4515	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			238			167			164			447
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	527	111	416	167	107	186	337	1457	116	139	1646	472
Shared Lane Traffic (%)												
Lane Group Flow (vph)	527	111	416	167	107	186	337	1457	116	139	1646	472
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



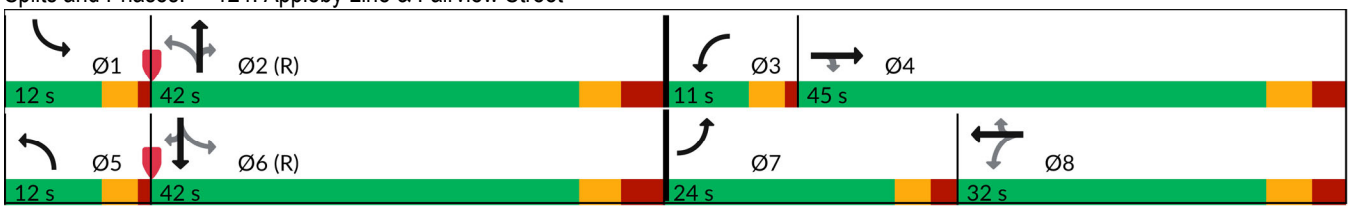
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	24.0	45.0	45.0	11.0	32.0	32.0	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	21.8%	40.9%	40.9%	10.0%	29.1%	29.1%	10.9%	38.2%	38.2%	10.9%	38.2%	38.2%
Maximum Green (s)	19.0	38.5	38.5	7.0	25.5	25.5	8.0	35.2	35.2	8.0	35.2	35.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.7	25.4	25.4	22.3	12.8	12.8	62.3	46.0	46.0	48.3	35.2	35.2
Actuated g/C Ratio	0.17	0.23	0.23	0.20	0.12	0.12	0.57	0.42	0.42	0.44	0.32	0.32
v/c Ratio	0.89	0.27	0.76	0.62	0.52	0.57	0.81	0.97	0.17	0.60	1.14	0.58
Control Delay (s/veh)	62.9	35.0	25.5	39.2	53.5	16.0	43.3	50.9	1.9	29.0	109.3	13.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	62.9	35.0	25.5	39.2	53.5	16.0	43.3	50.9	1.9	29.0	109.3	13.1
LOS	E	D	C	D	D	B	D	D	A	C	F	B
Approach Delay (s/veh)		45.2			33.2			46.6			84.3	
Approach LOS		D			C			D			F	
Queue Length 50th (m)	60.4	21.7	38.3	28.6	24.3	4.1	53.6	165.6	0.0	17.2	~176.1	22.1
Queue Length 95th (m)	#89.0	34.7	69.7	41.5	39.8	24.5	#133.9	#265.3	5.3	m30.8	m#188.1	m35.3
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	604	627	706	271	415	483	418	1495	687	236	1444	812
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.18	0.59	0.62	0.26	0.39	0.81	0.97	0.17	0.59	1.14	0.58

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay (s/veh): 60.2	Intersection LOS: E

Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

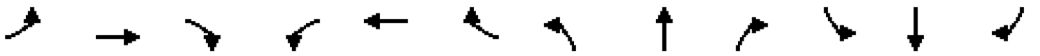
Splits and Phases: 124: Appleby Line & Fairview Street



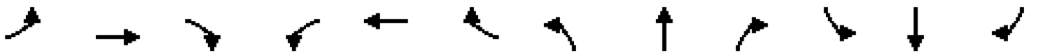
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	511	108	404	162	104	180	327	1413	113	135	1597	458
Future Volume (vph)	511	108	404	162	104	180	327	1413	113	135	1597	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	1792	1577	1660	1792	1533	1805	3574	1414	1736	4515	1589
Flt Permitted	0.95	1.00	1.00	0.69	1.00	1.00	0.10	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3502	1792	1577	1198	1792	1533	194	3574	1414	208	4515	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	527	111	416	167	107	186	337	1457	116	139	1646	472
RTOR Reduction (vph)	0	0	183	0	0	148	0	0	68	0	0	304
Lane Group Flow (vph)	527	111	233	167	107	38	337	1457	48	139	1646	168
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	18.7	25.5	25.5	19.8	12.8	12.8	60.2	45.9	45.9	45.4	35.1	35.1
Effective Green, g (s)	18.7	25.5	25.5	19.8	12.8	12.8	60.2	45.9	45.9	45.4	35.1	35.1
Actuated g/C Ratio	0.17	0.23	0.23	0.18	0.12	0.12	0.55	0.42	0.42	0.41	0.32	0.32
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	595	415	365	245	208	178	415	1491	590	228	1440	507
v/s Ratio Prot	c0.15	0.06		0.04	0.06		c0.16	c0.41		0.06	c0.36	
v/s Ratio Perm			c0.15	0.08		0.03	0.29		0.03	0.19		0.11
v/c Ratio	0.89	0.27	0.64	0.68	0.51	0.22	0.81	0.98	0.08	0.61	1.14	0.33
Uniform Delay, d1	44.6	34.6	38.1	41.3	45.7	44.1	29.9	31.5	19.3	25.1	37.5	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.22	1.14	2.91
Incremental Delay, d2	14.7	0.3	3.7	7.6	2.1	0.6	11.5	18.5	0.3	3.6	71.5	1.4
Delay (s)	59.3	34.9	41.7	48.9	47.8	44.7	41.4	50.0	19.6	34.2	114.1	84.4
Level of Service	E	C	D	D	D	D	D	D	B	C	F	F
Approach Delay (s/veh)		49.8			46.9			46.6			103.0	
Approach LOS		D			D			D			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	69.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	703	360	442	771	207	469	714	322	402	782	238
Future Volume (vph)	218	703	360	442	771	207	469	714	322	402	782	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3485	5136	1577	3452	5136	1528	3496	5136	1562	3440	5136	1588
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			264			211			270			243
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	222	717	367	451	787	211	479	729	329	410	798	243
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	717	367	451	787	211	479	729	329	410	798	243
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0
Total Split (%)	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%
Maximum Green (s)	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.4	27.6	27.6	17.0	29.3	29.3	29.1	46.2	46.2	24.4	41.5	41.5
Actuated g/C Ratio	0.11	0.20	0.20	0.12	0.21	0.21	0.21	0.33	0.33	0.17	0.30	0.30
v/c Ratio	0.58	0.71	0.70	1.07	0.73	0.43	0.66	0.43	0.47	0.68	0.52	0.38
Control Delay (s/veh)	65.3	56.1	21.9	121.8	56.0	8.3	56.6	38.5	10.6	60.5	42.7	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.3	56.1	21.9	121.8	56.0	8.3	56.6	38.5	10.6	60.5	42.7	6.1
LOS	E	E	C	F	E	A	E	D	B	E	D	A
Approach Delay (s/veh)		48.1			69.5			38.1			41.6	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	32.0	72.6	27.2	~75.5	80.2	0.0	66.2	61.9	12.1	58.1	72.1	0.0
Queue Length 95th (m)	45.7	82.9	61.6	#111.2	91.6	21.3	#92.5	78.9	41.5	78.1	87.1	20.5
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	425	1489	644	420	1489	592	728	1694	696	603	1521	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.48	0.57	1.07	0.53	0.36	0.66	0.43	0.47	0.68	0.52	0.38

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 118 (84%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.07	
Intersection Signal Delay (s/veh): 49.2	Intersection LOS: D

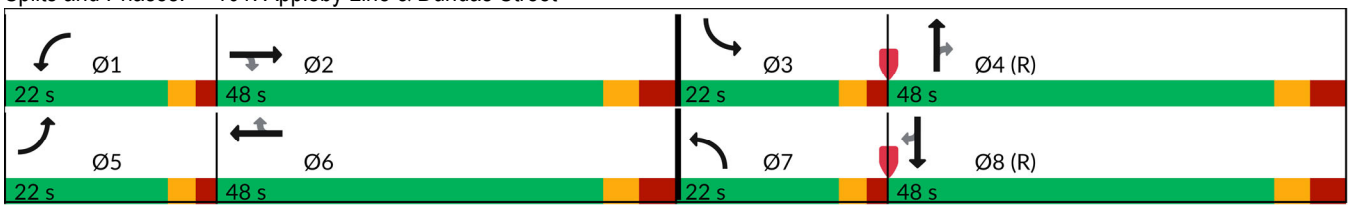
Intersection Capacity Utilization 100.2% ICU Level of Service G

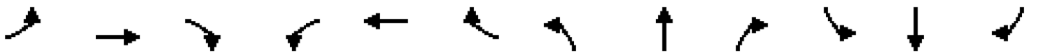
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

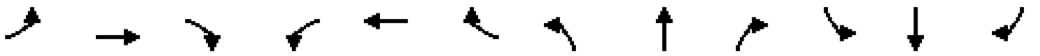




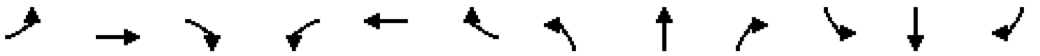
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	218	703	360	442	771	207	469	714	322	402	782	238
Future Volume (vph)	218	703	360	442	771	207	469	714	322	402	782	238
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	222	717	367	451	787	211	479	729	329	410	798	243
RTOR Reduction (vph)	0	0	212	0	0	167	0	0	181	0	0	171
Lane Group Flow (vph)	222	717	155	451	787	44	479	729	148	410	798	72
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.4	27.7	27.7	17.0	29.3	29.3	29.1	46.1	46.1	24.4	41.4	41.4
Effective Green, g (s)	15.4	27.7	27.7	17.0	29.3	29.3	29.1	46.1	46.1	24.4	41.4	41.4
Actuated g/C Ratio	0.11	0.20	0.20	0.12	0.21	0.21	0.21	0.33	0.33	0.17	0.30	0.30
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	385	1016	312	420	1074	319	727	1691	514	604	1518	469
v/s Ratio Prot	0.06	0.14		c0.13	c0.15		c0.14	c0.14		0.12	c0.16	
v/s Ratio Perm			0.10			0.03			0.09			0.05
v/c Ratio	0.58	0.71	0.50	1.07	0.73	0.14	0.66	0.43	0.29	0.68	0.53	0.15
Uniform Delay, d1	59.2	52.3	50.0	61.5	51.7	45.1	50.9	36.7	34.8	54.1	41.1	36.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	2.3	1.2	65.1	2.6	0.2	2.9	0.8	1.4	3.9	1.3	0.7
Delay (s)	62.5	54.6	51.2	126.6	54.3	45.3	53.8	37.5	36.2	58.1	42.4	37.1
Level of Service	E	D	D	F	D	D	D	D	D	E	D	D
Approach Delay (s/veh)		55.0			75.5			42.3			45.9	
Approach LOS		D			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	100.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	333	326	205	540	462	293	1295	134	306	1074	229
Future Volume (vph)	245	333	326	205	540	462	293	1295	134	306	1074	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.926				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3290	0	1787	4515	1615	3502	4438	0	1787	4378	0
Flt Permitted	0.311			0.178			0.950			0.097		
Satd. Flow (perm)	571	3290	0	334	4515	1575	3495	4438	0	182	4378	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		217				187		16			36	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	250	340	333	209	551	471	299	1321	137	312	1096	234
Shared Lane Traffic (%)												
Lane Group Flow (vph)	250	673	0	209	551	471	299	1458	0	312	1330	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	12.0	35.0		12.0	35.0	35.0	19.0	51.0		12.0	44.0	
Total Split (%)	10.9%	31.8%		10.9%	31.8%	31.8%	17.3%	46.4%		10.9%	40.0%	
Maximum Green (s)	8.0	28.6		8.0	28.6	28.6	14.0	44.5		8.0	37.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	36.2	25.8		36.2	25.8	25.8	13.1	44.5		53.9	41.2	
Actuated g/C Ratio	0.33	0.23		0.33	0.23	0.23	0.12	0.40		0.49	0.37	
v/c Ratio	0.92	0.72		0.97	0.52	0.92	0.72	0.81		1.26	0.80	
Control Delay (s/veh)	66.7	30.2		83.9	38.2	49.1	61.0	16.8		174.5	35.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	66.7	30.2		83.9	38.2	49.1	61.0	16.8		174.5	35.3	
LOS	E	C		F	D	D	E	B		F	D	
Approach Delay (s/veh)		40.0			50.1			24.3			61.7	
Approach LOS		D			D			C			E	
Queue Length 50th (m)	40.4	48.6		32.4	44.1	64.4	27.2	102.2		~86.3	114.9	
Queue Length 95th (m)	#82.8	69.5		#70.9	57.7	#124.2	43.8	85.2		#143.4	138.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	273	1015		215	1173	547	445	1804		247	1662	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.92	0.66		0.97	0.47	0.86	0.67	0.81		1.26	0.80	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.26			
Intersection Signal Delay (s/veh): 43.7		Intersection LOS: D	

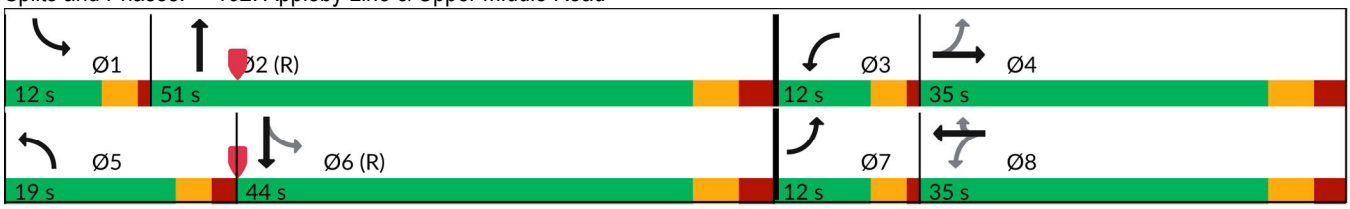
Intersection Capacity Utilization 94.8%	ICU Level of Service F
Analysis Period (min) 15	

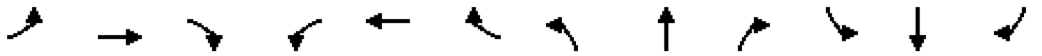
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road





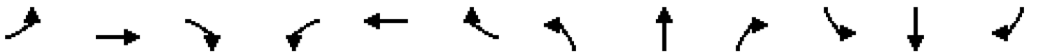
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	245	333	326	205	540	462	293	1295	134	306	1074	229
Future Volume (vph)	245	333	326	205	540	462	293	1295	134	306	1074	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	3289		1786	4515	1575	3502	4437		1787	4377	
Flt Permitted	0.31	1.00		0.18	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	572	3289		334	4515	1575	3502	4437		183	4377	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	250	340	333	209	551	471	299	1321	137	312	1096	234
RTOR Reduction (vph)	0	166	0	0	0	143	0	10	0	0	23	0
Lane Group Flow (vph)	250	507	0	209	551	328	299	1448	0	312	1307	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	33.8	25.8		33.8	25.8	25.8	13.1	44.5		52.0	41.2	
Effective Green, g (s)	33.8	25.8		33.8	25.8	25.8	13.1	44.5		52.0	41.2	
Actuated g/C Ratio	0.31	0.23		0.31	0.23	0.23	0.12	0.40		0.47	0.37	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	261	771		208	1058	369	417	1794		243	1639	
v/s Ratio Prot	0.07	0.15		c0.07	0.12		0.09	c0.33		c0.13	0.30	
v/s Ratio Perm	0.22			c0.24		0.21				c0.48		
v/c Ratio	0.96	0.66		1.00	0.52	0.89	0.72	0.81		1.28	0.80	
Uniform Delay, d1	34.5	38.1		34.2	36.7	40.7	46.7	29.0		29.3	30.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.15	0.48		1.00	1.00	
Incremental Delay, d2	43.7	2.0		63.6	0.5	21.9	4.2	2.9		155.3	4.1	
Delay (s)	78.2	40.1		97.9	37.2	62.6	57.8	16.8		184.6	34.8	
Level of Service	E	D		F	D	E	E	B		F	C	
Approach Delay (s/veh)		50.4			57.2			23.8			63.3	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	600	63	1	1148	68	21	0	1	53	0	96
Future Volume (vph)	117	600	63	1	1148	68	21	0	1	53	0	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			0.0			7.5			0.0		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.992			0.994			0.913	
Flt Protected	0.950							0.954			0.982	
Satd. Flow (prot)	1787	4447	0	0	4481	0	0	1766	0	0	1703	0
Flt Permitted	0.950							0.954			0.982	
Satd. Flow (perm)	1787	4447	0	0	4481	0	0	1766	0	0	1703	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			128.2			285.4	
Travel Time (s)		7.1			17.4			11.5			25.7	
Confl. Peds. (#/hr)	18					18						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	123	632	66	1	1208	72	22	0	1	56	0	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	123	698	0	0	1281	0	0	23	0	0	157	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			

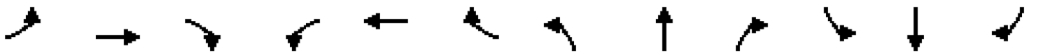


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	600	63	1	1148	68	21	0	1	53	0	96
Future Volume (Veh/h)	117	600	63	1	1148	68	21	0	1	53	0	96
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	123	632	66	1	1208	72	22	0	1	56	0	101
Pedestrians		1									18	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked	0.85						0.85	0.85		0.85	0.85	0.85
vC, conflicting volume	1298			698			1418	2211	244	1722	2208	458
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	746			698			886	1816	244	1243	1813	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	83			100			86	100	100	42	100	89
cM capacity (veh/h)	726			894			156	54	757	96	54	916

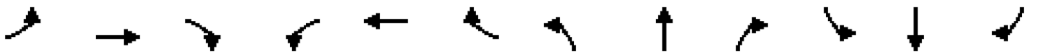
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	123	253	253	192	303	604	374	23	157
Volume Left	123	0	0	0	1	0	0	22	56
Volume Right	0	0	0	66	0	0	72	1	101
cSH	726	1700	1700	1700	894	1700	1700	161	226
Volume to Capacity	0.17	0.15	0.15	0.11	0.00*	0.36	0.22	0.14	0.69
Queue Length 95th (m)	4.9	0.0	0.0	0.0	0.0	0.0	0.0	3.9	35.8
Control Delay (s/veh)	11.0	0.0	0.0	0.0	0.0	0.0	0.0	31.0	50.6
Lane LOS	B				A			D	F
Approach Delay (s/veh)	1.6				0.0			31.0	50.6
Approach LOS								D	F

Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	55.1%	ICU Level of Service		B
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	461	37	7	1021	208	38	2	8	197	2	160
Future Volume (vph)	130	461	37	7	1021	208	38	2	8	197	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			0.0			7.5			0.0		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.989			0.975			0.978			0.940	
Flt Protected	0.950							0.962			0.973	
Satd. Flow (prot)	1770	4462	0	0	4371	0	0	1753	0	0	1715	0
Flt Permitted	0.095				0.936			0.691			0.802	
Satd. Flow (perm)	177	4462	0	0	4091	0	0	1259	0	0	1413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			45			8			48	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			125.2			244.6	
Travel Time (s)		17.4			14.7			11.3			22.0	
Confl. Peds. (#/hr)	12					12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	135	480	39	7	1064	217	40	2	8	205	2	167
Shared Lane Traffic (%)												
Lane Group Flow (vph)	135	519	0	0	1288	0	0	50	0	0	374	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		8.0	8.0		5.0	5.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		31.0	31.0		22.5	22.5		34.0	34.0	
Total Split (s)	12.0	54.0		42.0	42.0		22.5	22.5		36.0	36.0	
Total Split (%)	13.3%	60.0%		46.7%	46.7%		25.0%	25.0%		40.0%	40.0%	
Maximum Green (s)	8.0	48.0		36.0	36.0		18.0	18.0		29.0	29.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.5	3.5		4.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	1.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	6.0			6.0			4.5			7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		18.0		18.0	18.0		11.0	11.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	53.9	51.9			40.1			27.6			25.1	
Actuated g/C Ratio	0.60	0.58			0.45			0.31			0.28	
v/c Ratio	0.56	0.20			0.70			0.13			0.87	
Control Delay (s/veh)	36.1	23.7			22.8			18.8			48.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	36.1	23.7			22.8			18.8			48.1	
LOS	D	C			C			B			D	
Approach Delay (s/veh)		26.2			22.8			18.8			48.1	
Approach LOS		C			C			B			D	
Queue Length 50th (m)	22.7	34.2			78.9			5.3			56.0	
Queue Length 95th (m)	42.8	48.6			101.9			13.4			#100.0	
Internal Link Dist (m)		266.7			220.7			101.2			220.6	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	249	2580			1846			445			487	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.54	0.20			0.70			0.11			0.77	

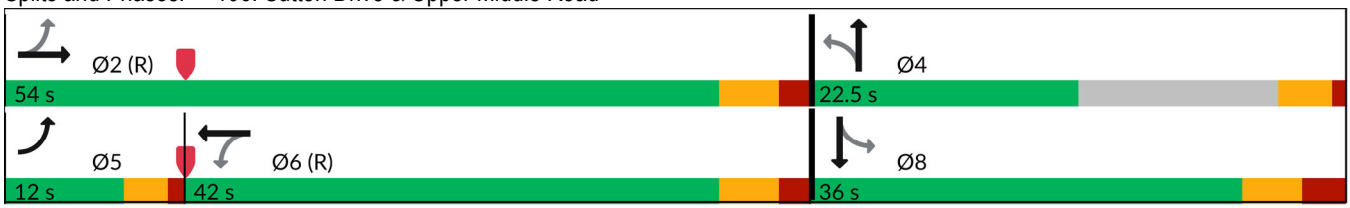
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 27.6	Intersection LOS: C

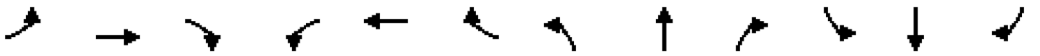
Intersection Capacity Utilization 71.2%	ICU Level of Service C
Analysis Period (min) 15	

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 106: Sutton Drive & Upper Middle Road

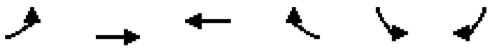




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	461	37	7	1021	208	38	2	8	197	2	160
Future Volume (vph)	130	461	37	7	1021	208	38	2	8	197	2	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			4.5			7.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.99			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.97			0.98			0.94	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1769	4461			4369			1752			1715	
Flt Permitted	0.10	1.00			0.94			0.69			0.80	
Satd. Flow (perm)	177	4461			4092			1259			1413	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	135	480	39	7	1064	217	40	2	8	205	2	167
RTOR Reduction (vph)	0	8	0	0	25	0	0	6	0	0	35	0
Lane Group Flow (vph)	135	511	0	0	1263	0	0	44	0	0	339	0
Confl. Peds. (#/hr)	12					12						
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	51.9	51.9			40.1			27.6			25.1	
Effective Green, g (s)	51.9	51.9			40.1			27.6			25.1	
Actuated g/C Ratio	0.58	0.58			0.45			0.31			0.28	
Clearance Time (s)	4.0	6.0			6.0			4.5			7.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	240	2572			1823			386			394	
v/s Ratio Prot	c0.05	0.11										
v/s Ratio Perm	0.28				c0.31			0.04			c0.24	
v/c Ratio	0.56	0.20			0.69			0.12			0.86	
Uniform Delay, d1	12.3	9.1			20.0			22.4			30.8	
Progression Factor	2.41	2.48			1.00			1.00			1.00	
Incremental Delay, d2	2.9	0.2			2.2			0.1			17.3	
Delay (s)	32.6	22.8			22.2			22.6			48.1	
Level of Service	C	C			C			C			D	
Approach Delay (s/veh)		24.8			22.2			22.6			48.1	
Approach LOS		C			C			C			D	

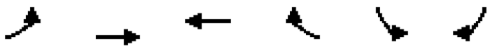
Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	34	607	1147	78	59	31
Future Volume (vph)	34	607	1147	78	59	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.953	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1805	4560	4514	0	1729	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1805	4560	4514	0	1729	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	36	639	1207	82	62	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	36	639	1289	0	95	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 40.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	607	1147	78	59	31
Future Volume (Veh/h)	34	607	1147	78	59	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	36	639	1207	82	62	33
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1296				1540	450
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1296				1540	450
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				38	94
cM capacity (veh/h)	538				100	548

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	36	213	213	213	483	483	323	95
Volume Left	36	0	0	0	0	0	0	62
Volume Right	0	0	0	0	0	0	82	33
cSH	538	1700	1700	1700	1700	1700	1700	140
Volume to Capacity	0.07	0.13	0.13	0.13	0.28	0.28	0.19	0.68
Queue Length 95th (m)	1.7	0.0	0.0	0.0	0.0	0.0	0.0	30.3
Control Delay (s/veh)	12.2	0.0	0.0	0.0	0.0	0.0	0.0	72.6
Lane LOS	B							F
Approach Delay (s/veh)	0.6				0.0			72.6
Approach LOS								F

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	40.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	49	40	1176	51	15	656
Future Volume (vph)	49	40	1176	51	15	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.940		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1738	0	4533	0	1805	4560
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1738	0	4533	0	1805	4560
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	53	43	1265	55	16	705
Shared Lane Traffic (%)						
Lane Group Flow (vph)	96	0	1320	0	16	705
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

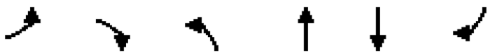
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.7%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



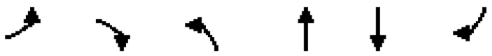
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	49	40	1176	51	15	656
Future Volume (Veh/h)	49	40	1176	51	15	656
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	53	43	1265	55	16	705
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1561	450			1321	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1561	450			1321	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	48	92			97	
cM capacity (veh/h)	102	561			529	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	96	506	506	308	16	235	235	235
Volume Left	53	0	0	0	16	0	0	0
Volume Right	43	0	0	55	0	0	0	0
cSH	160	1700	1700	1700	529	1700	1700	1700
Volume to Capacity	0.60	0.30	0.30	0.18	0.03	0.14	0.14	0.14
Queue Length 95th (m)	25.6	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Control Delay (s/veh)	56.2	0.0	0.0	0.0	12.0	0.0	0.0	0.0
Lane LOS	F				B			
Approach Delay (s/veh)	56.2	0.0			0.3			
Approach LOS	F							

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	35.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	73	232	427	1148	649	44
Future Volume (vph)	73	232	427	1148	649	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	0.0		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1787	4560	4514	0
Flt Permitted	0.950		0.283			
Satd. Flow (perm)	1805	1615	531	4560	4514	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		244			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	77	244	449	1208	683	46
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	244	449	1208	729	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

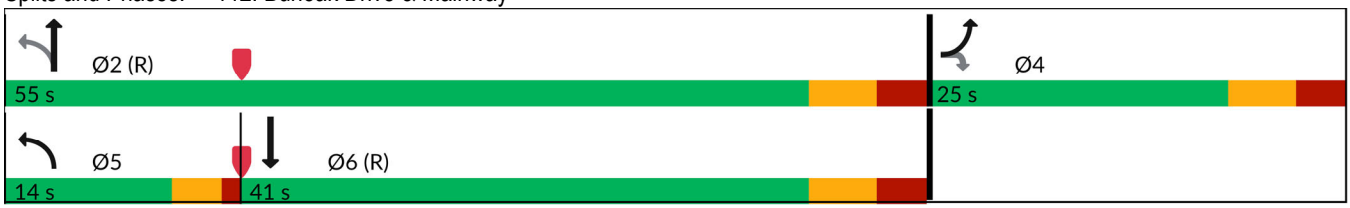


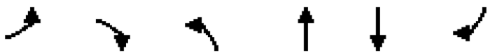
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	25.0	25.0	14.0	55.0	41.0	
Total Split (%)	31.3%	31.3%	17.5%	68.8%	51.3%	
Maximum Green (s)	18.0	18.0	10.0	48.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.6	9.6	59.4	56.4	37.5	
Actuated g/C Ratio	0.12	0.12	0.74	0.71	0.47	
v/c Ratio	0.36	0.60	0.71	0.38	0.34	
Control Delay (s/veh)	36.5	11.2	17.0	6.3	14.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.5	11.2	17.0	6.3	14.3	
LOS	D	B	B	A	B	
Approach Delay (s/veh)	17.3			9.2	14.3	
Approach LOS	B			A	B	
Queue Length 50th (m)	11.6	0.0	28.3	20.6	28.7	
Queue Length 95th (m)	23.3	19.2	#77.4	58.4	42.3	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	406	552	629	3216	2121	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.19	0.44	0.71	0.38	0.34	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 54 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.71	
Intersection Signal Delay (s/veh): 11.5	Intersection LOS: B

Intersection Capacity Utilization 70.3%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 112: Burloak Drive & Mainway

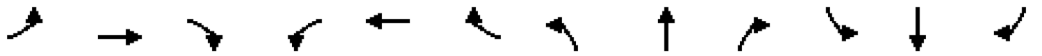




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	73	232	427	1148	649	44
Future Volume (vph)	73	232	427	1148	649	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1786	4560	4512	
Flt Permitted	0.95	1.00	0.28	1.00	1.00	
Satd. Flow (perm)	1805	1615	532	4560	4512	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	77	244	449	1208	683	46
RTOR Reduction (vph)	0	215	0	0	7	0
Lane Group Flow (vph)	77	29	449	1208	722	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.6	9.6	56.4	56.4	37.4	
Effective Green, g (s)	9.6	9.6	56.4	56.4	37.4	
Actuated g/C Ratio	0.12	0.12	0.71	0.71	0.47	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	216	193	610	3214	2109	
v/s Ratio Prot	c0.04		c0.14	0.26	0.16	
v/s Ratio Perm		0.02	c0.38			
v/c Ratio	0.36	0.15	0.74	0.38	0.34	
Uniform Delay, d1	32.4	31.6	5.4	4.7	13.5	
Progression Factor	1.00	1.00	2.04	1.20	1.00	
Incremental Delay, d2	1.0	0.4	4.5	0.3	0.4	
Delay (s)	33.4	31.9	15.4	6.0	13.9	
Level of Service	C	C	B	A	B	
Approach Delay (s/veh)	32.3			8.6	13.9	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	136	14	5	290	66	20	40	9	92	43	17
Future Volume (vph)	17	136	14	5	290	66	20	40	9	92	43	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.973			0.983			0.985	
Flt Protected		0.995			0.999			0.986			0.971	
Satd. Flow (prot)	0	3542	0	0	3496	0	0	1820	0	0	1782	0
Flt Permitted		0.995			0.999			0.986			0.971	
Satd. Flow (perm)	0	3542	0	0	3496	0	0	1820	0	0	1782	0
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		121.5			869.1			154.8			140.4	
Travel Time (s)		7.3			52.1			13.9			10.1	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	17	139	14	5	296	67	20	41	9	94	44	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	170	0	0	368	0	0	70	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

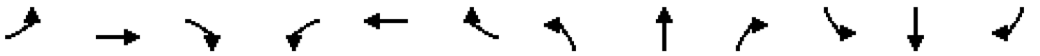
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.4%		ICU Level of Service A	
Analysis Period (min) 15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	136	14	5	290	66	20	40	9	92	43	17
Future Volume (Veh/h)	17	136	14	5	290	66	20	40	9	92	43	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	17	139	14	5	296	67	20	41	9	94	44	17
Pedestrians								3				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	363			156			380	556	80	473	530	182
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	363			156			380	556	80	473	530	182
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	90	99	78	90	98
cM capacity (veh/h)	1192			1433			496	429	969	429	444	830

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	87	84	153	215	70	155
Volume Left	17	0	5	0	20	94
Volume Right	0	14	0	67	9	17
cSH	1192	1700	1433	1700	482	458
Volume to Capacity	0.01	0.05	0.00*	0.13	0.15	0.34
Queue Length 95th (m)	0.3	0.0	0.1	0.0	4.0	11.8
Control Delay (s/veh)	1.7	0.0	0.3	0.0	13.7	16.8
Lane LOS	A		A		B	C
Approach Delay (s/veh)	0.9		0.1		13.7	16.8
Approach LOS					B	C

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	39.4%	ICU Level of Service		A
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	84	172	94	224	93	186	1397	72	65	1397	140
Future Volume (vph)	166	84	172	94	224	93	186	1397	72	65	1397	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00			1.00	
Frt		0.899			0.956			0.993			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3196	0	1770	3390	0	1805	4478	0	1770	4430	0
Flt Permitted	0.383			0.592			0.069			0.101		
Satd. Flow (perm)	727	3196	0	1102	3390	0	131	4478	0	188	4430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		174			60			7			14	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	168	85	174	95	226	94	188	1411	73	66	1411	141
Shared Lane Traffic (%)												
Lane Group Flow (vph)	168	259	0	95	320	0	188	1484	0	66	1552	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	12.0	40.0		12.0	40.0		12.0	46.0		12.0	46.0	
Total Split (%)	10.9%	36.4%		10.9%	36.4%		10.9%	41.8%		10.9%	41.8%	
Maximum Green (s)	8.0	33.7		8.0	33.7		8.0	39.7		8.0	39.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	25.1	16.4		24.1	14.0		73.7	62.2		64.3	54.6	
Actuated g/C Ratio	0.23	0.15		0.22	0.13		0.67	0.57		0.58	0.50	
v/c Ratio	0.69	0.42		0.33	0.66		0.66	0.59		0.31	0.70	
Control Delay (s/veh)	49.4	16.9		34.5	43.6		44.1	6.5		17.7	31.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	49.4	16.9		34.5	43.6		44.1	6.5		17.7	31.9	
LOS	D	B		C	D		D	A		B	C	
Approach Delay (s/veh)		29.7			41.5			10.7			31.4	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	31.2	9.3		17.1	30.2		25.2	8.1		6.5	106.3	
Queue Length 95th (m)	48.5	21.1		29.9	43.7		45.1	45.0		m18.8	152.7	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	244	1099		291	1080		283	2535		228	2205	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.69	0.24		0.33	0.30		0.66	0.59		0.29	0.70	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 46 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay (s/veh): 23.9		Intersection LOS: C	

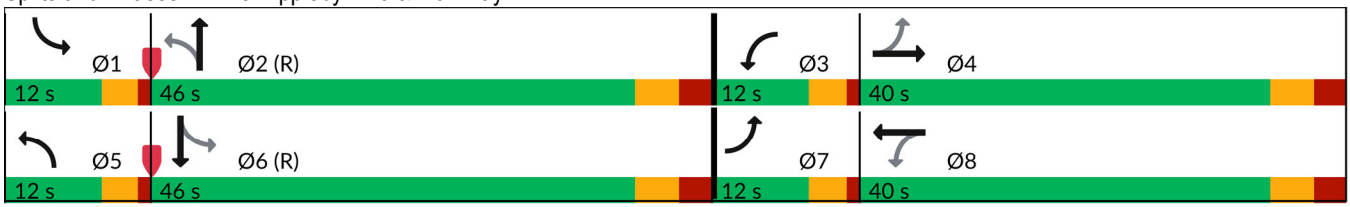
Intersection Capacity Utilization 76.5% ICU Level of Service D

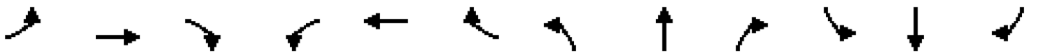
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

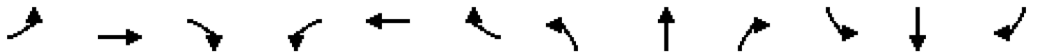




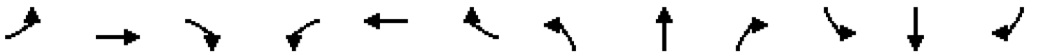
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	84	172	94	224	93	186	1397	72	65	1397	140
Future Volume (vph)	166	84	172	94	224	93	186	1397	72	65	1397	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3197		1769	3390		1805	4476		1770	4432	
Flt Permitted	0.38	1.00		0.59	1.00		0.07	1.00		0.10	1.00	
Satd. Flow (perm)	728	3197		1102	3390		131	4476		189	4432	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	168	85	174	95	226	94	188	1411	73	66	1411	141
RTOR Reduction (vph)	0	148	0	0	52	0	0	3	0	0	7	0
Lane Group Flow (vph)	168	111	0	95	268	0	188	1481	0	66	1545	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	24.4	16.4		21.2	14.8		70.6	60.6		59.8	53.8	
Effective Green, g (s)	24.4	16.4		21.2	14.8		70.6	60.6		59.8	53.8	
Actuated g/C Ratio	0.22	0.15		0.19	0.13		0.64	0.55		0.54	0.49	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	239	476		251	456		278	2465		188	2167	
v/s Ratio Prot	c0.05	0.03		0.02	0.08		c0.08	0.33		0.02	c0.35	
v/s Ratio Perm	c0.10			0.05			0.35			0.17		
v/c Ratio	0.70	0.23		0.38	0.59		0.68	0.60		0.35	0.71	
Uniform Delay, d1	37.3	41.3		37.9	44.7		24.9	16.6		12.9	22.0	
Progression Factor	1.00	1.00		1.00	1.00		1.62	0.34		1.79	1.35	
Incremental Delay, d2	9.0	0.3		1.0	1.9		5.6	1.0		1.0	1.7	
Delay (s)	46.3	41.5		38.8	46.7		46.1	6.5		24.1	31.5	
Level of Service	D	D		D	D		D	A		C	C	
Approach Delay (s/veh)		43.4			44.9			11.0			31.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	17	35	171	15	89	30	1500	160	80	1482	17
Future Volume (vph)	40	17	35	171	15	89	30	1500	160	80	1482	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	0.0			0.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.949			0.956			0.986			0.998	
Flt Protected		0.979			0.970		0.950			0.950		
Satd. Flow (prot)	0	1736	0	0	1729	0	1805	4443	0	1805	4505	0
Flt Permitted		0.782			0.772		0.103			0.061		
Satd. Flow (perm)	0	1384	0	0	1375	0	195	4443	0	116	4505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		28			22			19			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	43	18	37	182	16	95	32	1596	170	85	1577	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	0	0	293	0	32	1766	0	85	1595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		59.0	59.0		12.0	71.0	
Total Split (%)	35.5%	35.5%		35.5%	35.5%		53.6%	53.6%		10.9%	64.5%	
Maximum Green (s)	32.5	32.5		32.5	32.5		53.0	53.0		8.0	65.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		26.2			26.2		62.0	62.0		73.3	71.3	
Actuated g/C Ratio		0.24			0.24		0.56	0.56		0.67	0.65	
v/c Ratio		0.28			0.85		0.29	0.70		0.44	0.55	
Control Delay (s/veh)		24.7			58.8		14.5	10.8		13.3	9.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.7			58.8		14.5	10.8		13.3	9.1	
LOS		C			E		B	B		B	A	
Approach Delay (s/veh)		24.7			58.8			10.9			9.3	
Approach LOS		C			E			B			A	
Queue Length 50th (m)		12.6			58.4		1.3	96.6		3.1	108.7	
Queue Length 95th (m)		25.7			87.2		m2.8	125.9		m6.5	m127.6	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		428			421		109	2511		200	2919	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.23			0.70		0.29	0.70		0.43	0.55	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 61 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 14.2	Intersection LOS: B

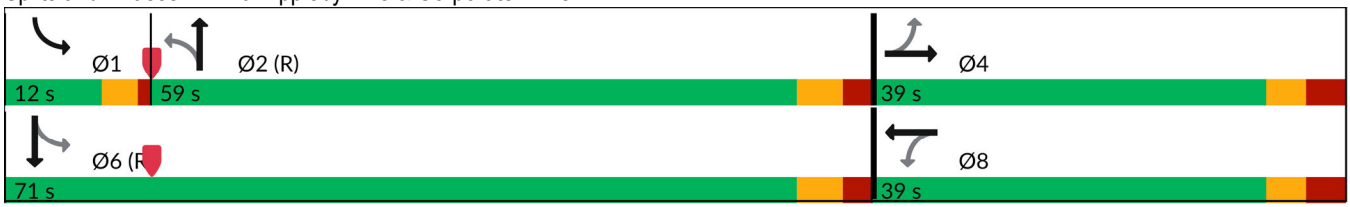
Intersection Capacity Utilization 75.8% ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

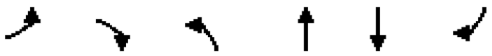
Splits and Phases: 116: Appleby Line & Corporate Drive



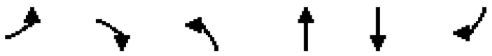
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	17	35	171	15	89	30	1500	160	80	1482	17
Future Volume (vph)	40	17	35	171	15	89	30	1500	160	80	1482	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1732			1727		1803	4441		1805	4506	
Flt Permitted		0.78			0.77		0.10	1.00		0.06	1.00	
Satd. Flow (perm)		1383			1375		196	4441		117	4506	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	43	18	37	182	16	95	32	1596	170	85	1577	18
RTOR Reduction (vph)	0	21	0	0	17	0	0	8	0	0	1	0
Lane Group Flow (vph)	0	77	0	0	276	0	32	1758	0	85	1594	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.2			26.2		61.2	61.2		71.3	71.3	
Effective Green, g (s)		26.2			26.2		61.2	61.2		71.3	71.3	
Actuated g/C Ratio		0.24			0.24		0.56	0.56		0.65	0.65	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		329			327		109	2470		169	2920	
v/s Ratio Prot								c0.40		0.03	c0.35	
v/s Ratio Perm		0.06			c0.20		0.16			0.30		
v/c Ratio		0.23			0.84		0.29	0.71		0.50	0.55	
Uniform Delay, d1		33.8			40.0		12.9	17.9		14.5	10.5	
Progression Factor		1.00			1.00		0.46	0.49		0.78	0.76	
Incremental Delay, d2		0.4			17.8		5.7	1.5		1.4	0.5	
Delay (s)		34.2			57.7		11.7	10.2		12.7	8.4	
Level of Service		C			E		B	B		B	A	
Approach Delay (s/veh)		34.2			57.7			10.3			8.6	
Approach LOS		C			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	83	156	1265	750	11
Future Volume (vph)	12	83	156	1265	750	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	1736	4560	4542	0
Flt Permitted	0.950		0.268			
Satd. Flow (perm)	1805	1509	488	4560	4542	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		88			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	13	88	166	1346	798	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	88	166	1346	810	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	26.0	26.0	14.0	54.0	40.0	
Total Split (%)	32.5%	32.5%	17.5%	67.5%	50.0%	
Maximum Green (s)	19.0	19.0	10.0	47.0	33.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.4	8.4	63.6	62.0	47.1	
Actuated g/C Ratio	0.11	0.11	0.80	0.78	0.59	
v/c Ratio	0.07	0.37	0.31	0.38	0.30	
Control Delay (s/veh)	32.8	12.9	4.3	4.6	3.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	32.8	12.9	4.3	4.6	3.8	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	15.5			4.6	3.8	
Approach LOS	B			A	A	
Queue Length 50th (m)	1.9	0.0	8.9	32.9	7.6	
Queue Length 95th (m)	7.0	13.5	m10.1	m29.9	14.6	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	428	425	548	3535	2677	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.21	0.30	0.38	0.30	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.38	
Intersection Signal Delay (s/veh): 4.8	Intersection LOS: A

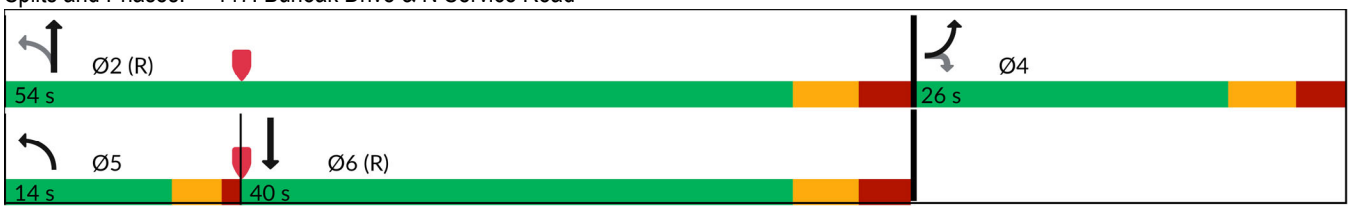
Intersection Capacity Utilization 55.3% ICU Level of Service B

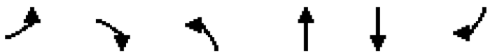
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	83	156	1265	750	11
Future Volume (vph)	12	83	156	1265	750	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	1734	4560	4541	
Flt Permitted	0.95	1.00	0.27	1.00	1.00	
Satd. Flow (perm)	1805	1509	490	4560	4541	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	13	88	166	1346	798	12
RTOR Reduction (vph)	0	81	0	0	1	0
Lane Group Flow (vph)	13	7	166	1346	809	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	6.8	6.8	59.2	59.2	45.7	
Effective Green, g (s)	6.8	6.8	59.2	59.2	45.7	
Actuated g/C Ratio	0.09	0.09	0.74	0.74	0.57	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	153	128	510	3374	2594	
v/s Ratio Prot	c0.01		0.04	c0.30	0.18	
v/s Ratio Perm		0.00	0.20			
v/c Ratio	0.08	0.06	0.33	0.40	0.31	
Uniform Delay, d1	33.7	33.7	3.2	3.8	8.9	
Progression Factor	1.00	1.00	1.53	1.14	0.38	
Incremental Delay, d2	0.2	0.2	0.2	0.1	0.3	
Delay (s)	34.0	33.8	5.1	4.4	3.7	
Level of Service	C	C	A	A	A	
Approach Delay (s/veh)	33.9			4.5	3.7	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1522	1106	719	0	0	943
Future Volume (vph)	1522	1106	719	0	0	943
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor	1.00					
Frt	0.976	0.850				
Flt Protected	0.960					
Satd. Flow (prot)	3391	1455	4560	0	0	4515
Flt Permitted	0.960					
Satd. Flow (perm)	3389	1455	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	32	136				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	1585	1152	749	0	0	982
Shared Lane Traffic (%)		26%				
Lane Group Flow (vph)	1885	852	749	0	0	982
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

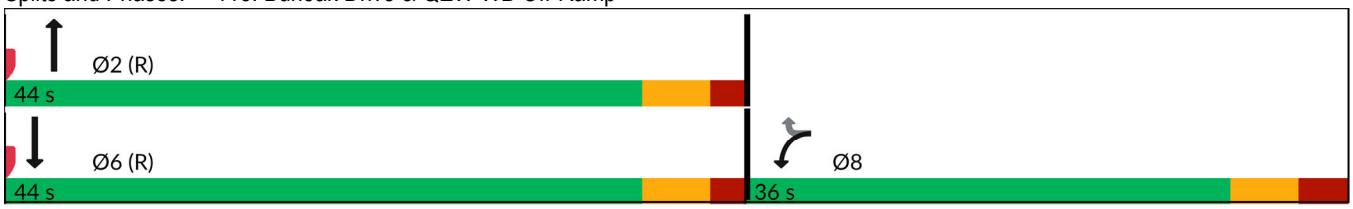


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	36.0	36.0	44.0			44.0
Total Split (%)	45.0%	45.0%	55.0%			55.0%
Maximum Green (s)	29.0	29.0	38.0			38.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
v/c Ratio	1.51	1.39	0.35			0.46
Control Delay (s/veh)	257.6	206.8	13.8			5.9
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	257.6	206.8	13.8			5.9
LOS	F	F	B			A
Approach Delay (s/veh)	241.8		13.8			5.9
Approach LOS	F		B			A
Queue Length 50th (m)	~223.7	~189.1	29.8			10.4
Queue Length 95th (m)	#267.7	#267.8	39.8			14.4
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1249	614	2166			2144
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.51	1.39	0.35			0.46

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.51	
Intersection Signal Delay (s/veh): 151.7	Intersection LOS: F

Intersection Capacity Utilization 84.1%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

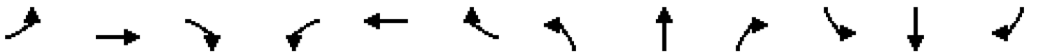




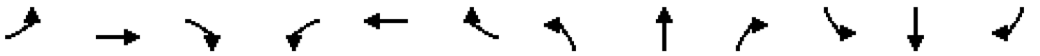
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1522	1106	719	0	0	943
Future Volume (vph)	1522	1106	719	0	0	943
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.98	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3390	1455	4560			4515
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3390	1455	4560			4515
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1585	1152	749	0	0	982
RTOR Reduction (vph)	20	87	0	0	0	0
Lane Group Flow (vph)	1865	765	749	0	0	982
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	29.0	29.0	38.0			38.0
Effective Green, g (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1228	527	2166			2144
v/s Ratio Prot	c0.55		0.16			c0.22
v/s Ratio Perm		0.53				
v/c Ratio	1.52	1.45	0.35			0.46
Uniform Delay, d1	25.5	25.5	13.2			14.1
Progression Factor	1.00	1.00	1.00			0.37
Incremental Delay, d2	237.5	213.9	0.4			0.7
Delay (s)	263.0	239.4	13.6			5.9
Level of Service	F	F	B			A
Approach Delay (s/veh)	255.7		13.6			5.9
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	160.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



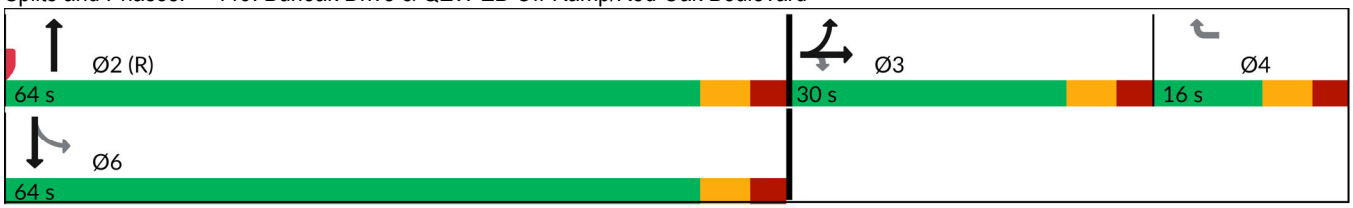
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	139	194	0	0	224	0	617	17	11	1875	0
Future Volume (vph)	123	139	194	0	0	224	0	617	17	11	1875	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.941	0.850			0.865		0.996				
Flt Protected	0.950											
Satd. Flow (prot)	1805	3209	1441	0	0	1611	0	5116	0	0	5136	0
Flt Permitted	0.950										0.934	
Satd. Flow (perm)	1805	3209	1441	0	0	1611	0	5116	0	0	4797	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		95	111			289		5				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	131	148	206	0	0	238	0	656	18	12	1995	0
Shared Lane Traffic (%)			46%									
Lane Group Flow (vph)	131	243	111	0	0	238	0	674	0	0	2007	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		0	1		2			2	
Detector Template	Left	Thru	Right			Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		0.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	30.0	30.0	30.0			16.0		64.0		64.0	64.0	
Total Split (%)	27.3%	27.3%	27.3%			14.5%		58.2%		58.2%	58.2%	
Maximum Green (s)	23.0	23.0	23.0			9.0		57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		Max	Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	13.4	13.4	13.4			8.5		67.1			67.1	
Actuated g/C Ratio	0.12	0.12	0.12			0.08		0.61			0.61	
v/c Ratio	0.60	0.51	0.41			0.61		0.22			0.69	
Control Delay (s/veh)	56.2	30.3	12.4			9.3		10.3			16.7	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	56.2	30.3	12.4			9.3		10.3			16.7	
LOS	E	C	B			A		B			B	
Approach Delay (s/veh)		33.2			9.3			10.3			16.7	
Approach LOS		C			A			B			B	
Queue Length 50th (m)	28.5	17.3	0.0			0.0		22.8			102.7	
Queue Length 95th (m)	46.0	29.2	17.3			12.2		35.7			146.8	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	377	746	389			401		3121			2925	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.35	0.33	0.29			0.59		0.22			0.69	

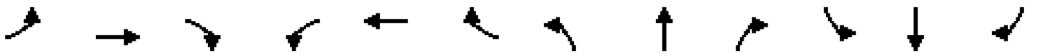
Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay (s/veh): 17.3		Intersection LOS: B	
Intersection Capacity Utilization 62.3%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

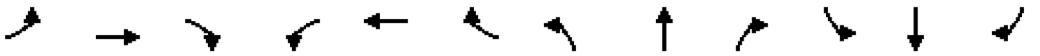


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	139	194	0	0	224	0	617	17	11	1875	0
Future Volume (vph)	123	139	194	0	0	224	0	617	17	11	1875	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1805	3211	1441			1611		5116			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1805	3211	1441			1611		5116			4797	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	131	148	206	0	0	238	0	656	18	12	1995	0
RTOR Reduction (vph)	0	83	97	0	0	220	0	2	0	0	0	0
Lane Group Flow (vph)	131	160	14	0	0	18	0	672	0	0	2007	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	13.4	13.4	13.4			8.5		67.1			67.1	
Effective Green, g (s)	13.4	13.4	13.4			8.5		67.1			67.1	
Actuated g/C Ratio	0.12	0.12	0.12			0.08		0.61			0.61	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	219	391	175			124		3120			2926	
v/s Ratio Prot	c0.07	0.05						0.13				
v/s Ratio Perm			0.01			c0.01					c0.42	
v/c Ratio	0.60	0.41	0.08			0.15		0.22			0.69	
Uniform Delay, d1	45.7	44.6	42.8			47.4		9.6			14.4	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	4.3	0.7	0.2			0.6		0.2			1.3	
Delay (s)	50.1	45.3	43.0			47.9		9.8			15.7	
Level of Service	D	D	D			D		A			B	
Approach Delay (s/veh)		46.1			47.9			9.8			15.7	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	14	50	91	35	51	36	1499	71	42	1559	43
Future Volume (vph)	51	14	50	91	35	51	36	1499	71	42	1559	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.884			0.911			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1593	0	1787	1717	0	1656	4480	0	1805	4498	0
Flt Permitted	0.699			0.489			0.079			0.083		
Satd. Flow (perm)	1327	1593	0	920	1717	0	138	4480	0	158	4498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52			53			6			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	53	15	52	95	36	53	38	1561	74	44	1624	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	53	67	0	95	89	0	38	1635	0	44	1669	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	49.0		11.0	49.0	
Total Split (%)	35.5%	35.5%		10.0%	45.5%		10.0%	44.5%		10.0%	44.5%	
Maximum Green (s)	32.9	32.9		7.0	43.9		7.0	42.4		7.0	42.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.3	10.3		20.6	19.1		81.2	75.7		81.2	75.7	
Actuated g/C Ratio	0.09	0.09		0.19	0.17		0.74	0.69		0.74	0.69	
v/c Ratio	0.43	0.34		0.42	0.26		0.19	0.53		0.20	0.54	
Control Delay (s/veh)	57.0	22.0		41.9	19.0		6.6	7.9		5.9	15.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.0	22.0		41.9	19.0		6.6	7.9		5.9	15.2	
LOS	E	C		D	B		A	A		A	B	
Approach Delay (s/veh)		37.4			30.8			7.9			14.9	
Approach LOS		D			C			A			B	
Queue Length 50th (m)	11.6	3.2		18.2	6.8		2.0	55.2		2.8	150.6	
Queue Length 95th (m)	24.0	16.4		31.9	20.0		m3.4	72.2		m2.4	171.2	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	396	512		227	717		199	3083		222	3095	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.13		0.42	0.12		0.19	0.53		0.20	0.54	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 13.2	Intersection LOS: B

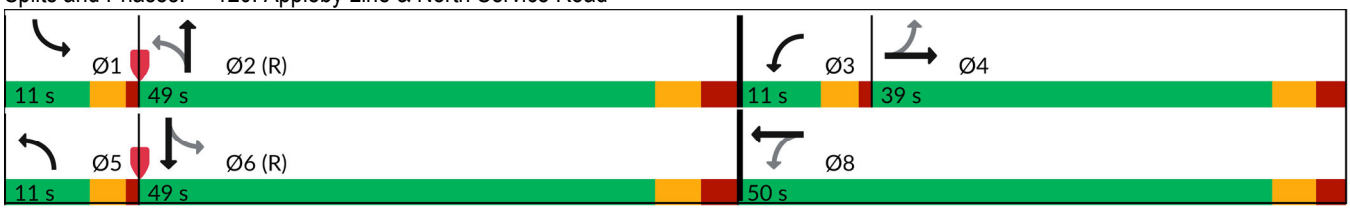
Intersection Capacity Utilization 57.6% ICU Level of Service B

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	14	50	91	35	51	36	1499	71	42	1559	43
Future Volume (vph)	51	14	50	91	35	51	36	1499	71	42	1559	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1592		1787	1717		1656	4481		1805	4498	
Flt Permitted	0.70	1.00		0.49	1.00		0.08	1.00		0.08	1.00	
Satd. Flow (perm)	1327	1592		919	1717		137	4481		158	4498	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	53	15	52	95	36	53	38	1561	74	44	1624	45
RTOR Reduction (vph)	0	48	0	0	44	0	0	2	0	0	1	0
Lane Group Flow (vph)	53	19	0	95	45	0	38	1633	0	44	1668	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.7	8.7		18.3	18.3		75.0	70.7		75.0	70.7	
Effective Green, g (s)	8.7	8.7		18.3	18.3		75.0	70.7		75.0	70.7	
Actuated g/C Ratio	0.08	0.08		0.17	0.17		0.68	0.64		0.68	0.64	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	104	125		197	285		152	2880		172	2890	
v/s Ratio Prot		0.01		c0.02	0.03		0.01	0.36		c0.01	c0.37	
v/s Ratio Perm	0.04			c0.06			0.16			0.16		
v/c Ratio	0.51	0.15		0.48	0.16		0.25	0.57		0.26	0.58	
Uniform Delay, d1	48.6	47.2		40.4	39.2		7.6	11.0		7.4	11.2	
Progression Factor	1.00	1.00		1.00	1.00		0.94	0.61		0.83	1.20	
Incremental Delay, d2	3.9	0.6		1.9	0.3		0.7	0.6		0.6	0.7	
Delay (s)	52.5	47.8		42.3	39.5		7.8	7.4		6.8	14.1	
Level of Service	D	D		D	D		A	A		A	B	
Approach Delay (s/veh)		49.9			41.0			7.4			13.9	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	57.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	455	346	1677	0	0	1499
Future Volume (vph)	455	346	1677	0	0	1499
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1583	4560	0	0	4515
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1583	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		16				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	489	372	1803	0	0	1612
Shared Lane Traffic (%)						
Lane Group Flow (vph)	489	372	1803	0	0	1612
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

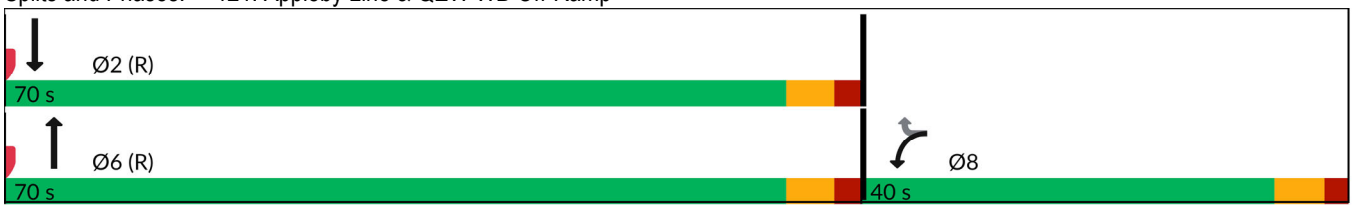


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	70.0			70.0
Total Split (%)	36.4%	36.4%	63.6%			63.6%
Maximum Green (s)	34.0	34.0	64.0			64.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.3	29.3	68.7			68.7
Actuated g/C Ratio	0.27	0.27	0.62			0.62
v/c Ratio	0.54	0.86	0.63			0.57
Control Delay (s/veh)	36.3	55.9	15.0			5.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	36.3	55.9	15.0			5.3
LOS	D	E	B			A
Approach Delay (s/veh)	44.8		15.0			5.3
Approach LOS	D		B			A
Queue Length 50th (m)	48.7	76.2	106.5			11.5
Queue Length 95th (m)	62.9	111.0	162.2			14.1
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1050	500	2849			2821
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.47	0.74	0.63			0.57

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 17.3		Intersection LOS: B	
Intersection Capacity Utilization 63.8%		ICU Level of Service B	
Analysis Period (min) 15			

* User Entered Value

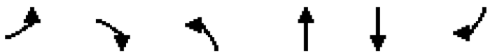
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



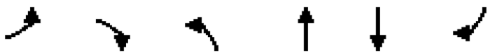


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	455	346	1677	0	0	1499
Future Volume (vph)	455	346	1677	0	0	1499
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1583	4560			4515
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1583	4560			4515
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	489	372	1803	0	0	1612
RTOR Reduction (vph)	0	12	0	0	0	0
Lane Group Flow (vph)	489	360	1803	0	0	1612
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	29.3	29.3	68.7			68.7
Effective Green, g (s)	29.3	29.3	68.7			68.7
Actuated g/C Ratio	0.27	0.27	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	905	421	2847			2819
v/s Ratio Prot	0.14		c0.40			0.36
v/s Ratio Perm		c0.23				
v/c Ratio	0.54	0.86	0.63			0.57
Uniform Delay, d1	34.6	38.3	12.8			12.1
Progression Factor	1.00	1.00	1.02			0.35
Incremental Delay, d2	0.7	15.5	1.0			0.7
Delay (s)	35.2	53.9	14.0			5.0
Level of Service	D	D	B			A
Approach Delay (s/veh)	43.3		14.0			5.0
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	573	359	0	1426	1464	0
Future Volume (vph)	573	359	0	1426	1464	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		0.0			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	4515	4515	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	4515	4515	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		57				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	591	370	0	1470	1509	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	591	370	0	1470	1509	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

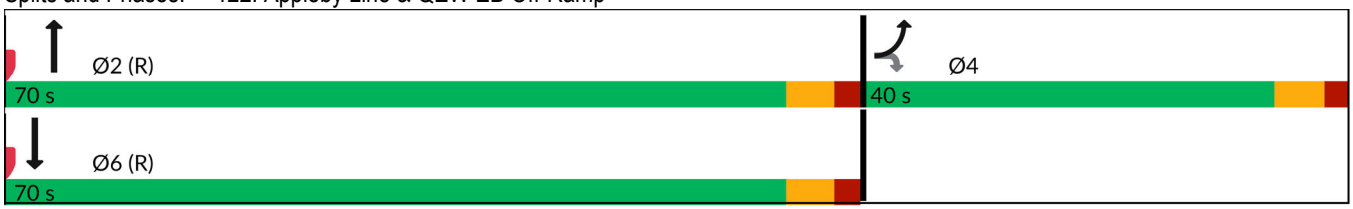


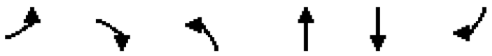
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	40.0	40.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	24.7	24.7		73.3	73.3	
Actuated g/C Ratio	0.22	0.22		0.67	0.67	
v/c Ratio	0.75	0.55		0.49	0.50	
Control Delay (s/veh)	45.9	34.2		4.1	18.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	45.9	34.2		4.1	18.2	
LOS	D	C		A	B	
Approach Delay (s/veh)	41.4			4.1	18.2	
Approach LOS	D			A	B	
Queue Length 50th (m)	64.6	35.8		19.2	91.6	
Queue Length 95th (m)	78.4	49.0		26.4	117.1	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1082	909		3009	3009	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.55	0.41		0.49	0.50	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 73 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 18.6	Intersection LOS: B

Intersection Capacity Utilization 63.8%	ICU Level of Service B
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

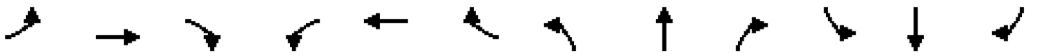




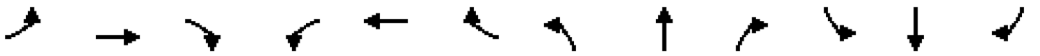
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	573	359	0	1426	1464	0
Future Volume (vph)	573	359	0	1426	1464	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		4515	4515	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		4515	4515	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	591	370	0	1470	1509	0
RTOR Reduction (vph)	0	44	0	0	0	0
Lane Group Flow (vph)	591	326	0	1470	1509	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.7	24.7		73.3	73.3	
Effective Green, g (s)	24.7	24.7		73.3	73.3	
Actuated g/C Ratio	0.22	0.22		0.67	0.67	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	786	631		3008	3008	
v/s Ratio Prot	c0.17			0.33	c0.33	
v/s Ratio Perm		0.12				
v/c Ratio	0.75	0.52		0.49	0.50	
Uniform Delay, d1	39.8	37.4		9.1	9.2	
Progression Factor	1.00	1.00		0.37	1.80	
Incremental Delay, d2	4.1	0.7		0.5	0.5	
Delay (s)	43.9	38.1		3.8	17.0	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	41.7			3.8	17.0	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	68	117	516	335	184	76	1209	265	137	968	116
Future Volume (vph)	138	68	117	516	335	184	76	1209	265	137	968	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00		0.99
Frt		0.905			0.947				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3319	0	1736	4515	1599	1805	4515	1553
Flt Permitted	0.255			0.571			0.210			0.110		
Satd. Flow (perm)	466	3218	0	1073	3319	0	384	4515	1575	209	4515	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		119			100				190			118
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	141	69	119	527	342	188	78	1234	270	140	988	118
Shared Lane Traffic (%)												
Lane Group Flow (vph)	141	188	0	527	530	0	78	1234	270	140	988	118
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

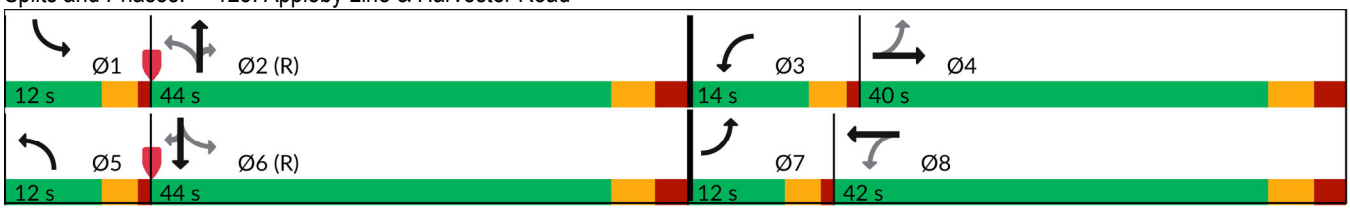


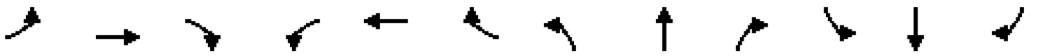
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	12.0	40.0		14.0	42.0		12.0	44.0	44.0	12.0	44.0	44.0
Total Split (%)	10.9%	36.4%		12.7%	38.2%		10.9%	40.0%	40.0%	10.9%	40.0%	40.0%
Maximum Green (s)	8.0	33.6		10.0	35.6		8.0	37.7	37.7	8.0	37.7	37.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	28.7	18.3		32.7	20.3		61.1	50.9	50.9	66.3	55.3	55.3
Actuated g/C Ratio	0.26	0.17		0.30	0.18		0.56	0.46	0.46	0.60	0.50	0.50
v/c Ratio	0.66	0.30		1.38	0.77		0.25	0.59	0.33	0.51	0.44	0.14
Control Delay (s/veh)	43.3	16.0		215.7	41.7		14.9	26.4	12.8	25.8	20.5	8.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	43.3	16.0		215.7	41.7		14.9	26.4	12.8	25.8	20.5	8.0
LOS	D	B		F	D		B	C	B	C	C	A
Approach Delay (s/veh)		27.7			128.4			23.6			19.9	
Approach LOS		C			F			C			B	
Queue Length 50th (m)	24.4	7.1		~159.5	50.4		7.5	66.7	11.0	13.9	43.2	0.7
Queue Length 95th (m)	37.8	16.2		#211.6	65.4		m17.2	105.0	m39.8	38.3	89.8	16.5
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	213	1065		383	1141		318	2087	830	276	2270	829
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.18		1.38	0.46		0.25	0.59	0.33	0.51	0.44	0.14

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 65 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.38	
Intersection Signal Delay (s/veh): 49.1	Intersection LOS: D

Intersection Capacity Utilization 88.1% ICU Level of Service E
Analysis Period (min) 15
* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road

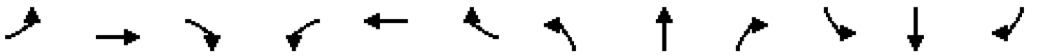




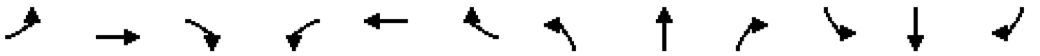
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	68	117	516	335	184	76	1209	265	137	968	116
Future Volume (vph)	138	68	117	516	335	184	76	1209	265	137	968	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3218		1786	3318		1736	4515	1575	1805	4515	1533
Flt Permitted	0.25	1.00		0.57	1.00		0.21	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	466	3218		1073	3318		384	4515	1575	209	4515	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	141	69	119	527	342	188	78	1234	270	140	988	118
RTOR Reduction (vph)	0	99	0	0	82	0	0	0	102	0	0	60
Lane Group Flow (vph)	141	89	0	527	448	0	78	1234	168	140	988	58
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	26.3	18.3		30.3	20.3		57.3	50.8	50.8	64.7	54.5	54.5
Effective Green, g (s)	26.3	18.3		30.3	20.3		57.3	50.8	50.8	64.7	54.5	54.5
Actuated g/C Ratio	0.24	0.17		0.28	0.18		0.52	0.46	0.46	0.59	0.50	0.50
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	203	535		360	612		279	2085	727	270	2236	759
v/s Ratio Prot	0.05	0.03		c0.13	0.14		0.02	c0.27		c0.05	0.22	
v/s Ratio Perm	0.12			c0.27			0.13		0.11	0.26		0.04
v/c Ratio	0.69	0.17		1.46	0.73		0.28	0.59	0.23	0.52	0.44	0.08
Uniform Delay, d1	35.0	39.3		38.6	42.3		13.4	21.9	17.8	13.5	17.9	14.6
Progression Factor	1.00	1.00		1.00	1.00		1.32	1.09	1.72	1.81	1.05	2.07
Incremental Delay, d2	9.9	0.1		223.5	4.5		0.4	0.9	0.5	1.5	0.6	0.2
Delay (s)	44.9	39.5		262.0	46.8		18.2	24.8	31.3	26.1	19.3	30.4
Level of Service	D	D		F	D		B	C	C	C	B	C
Approach Delay (s/veh)		41.8			154.1			25.6			21.1	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	57.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	429	89	331	133	86	154	268	1167	93	120	1319	387
Future Volume (vph)	429	89	331	133	86	154	268	1167	93	120	1319	387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	4515	1615
Flt Permitted	0.950			0.697			0.102			0.153		
Satd. Flow (perm)	3498	1792	1577	1214	1792	1533	194	3574	1414	280	4515	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			251			167			164			399
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	442	92	341	137	89	159	276	1203	96	124	1360	399
Shared Lane Traffic (%)												
Lane Group Flow (vph)	442	92	341	137	89	159	276	1203	96	124	1360	399
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	24.0	45.0	45.0	11.0	32.0	32.0	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	21.8%	40.9%	40.9%	10.0%	29.1%	29.1%	10.9%	38.2%	38.2%	10.9%	38.2%	38.2%
Maximum Green (s)	19.0	38.5	38.5	7.0	25.5	25.5	8.0	35.2	35.2	8.0	35.2	35.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	17.7	22.8	22.8	20.6	11.1	11.1	65.7	49.3	49.3	47.9	35.5	35.5
Actuated g/C Ratio	0.16	0.21	0.21	0.19	0.10	0.10	0.60	0.45	0.45	0.44	0.32	0.32
v/c Ratio	0.79	0.25	0.65	0.54	0.49	0.52	0.60	0.75	0.13	0.50	0.93	0.51
Control Delay (s/veh)	54.9	36.8	16.8	37.3	55.6	12.6	27.5	30.4	0.6	22.4	49.5	10.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.9	36.8	16.8	37.3	55.6	12.6	27.5	30.4	0.6	22.4	49.5	10.8
LOS	D	D	B	D	E	B	C	C	A	C	D	B
Approach Delay (s/veh)		38.2			31.3			28.1			39.5	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	49.2	18.0	17.0	23.4	20.2	0.0	37.5	118.0	0.0	12.2	117.1	5.5
Queue Length 95th (m)	67.1	31.8	46.2	37.6	36.3	17.9	#76.4	#180.6	0.8	m26.0	m140.3	m30.6
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	604	627	715	256	415	483	459	1601	724	252	1455	782
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.15	0.48	0.54	0.21	0.33	0.60	0.75	0.13	0.49	0.93	0.51

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 34.8	Intersection LOS: C

Intersection Capacity Utilization 77.0% ICU Level of Service D

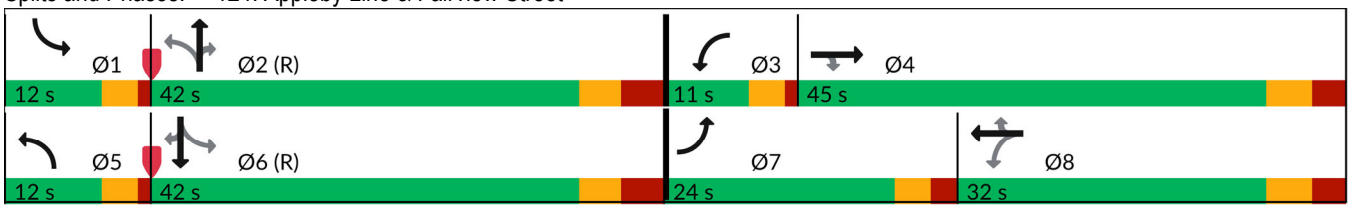
Analysis Period (min) 15

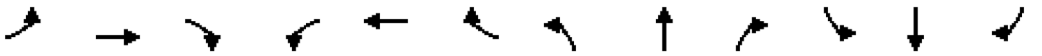
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street





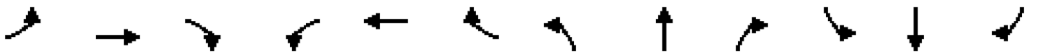
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	429	89	331	133	86	154	268	1167	93	120	1319	387
Future Volume (vph)	429	89	331	133	86	154	268	1167	93	120	1319	387
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	1792	1577	1660	1792	1533	1805	3574	1414	1735	4515	1589
Flt Permitted	0.95	1.00	1.00	0.70	1.00	1.00	0.10	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	3502	1792	1577	1218	1792	1533	193	3574	1414	280	4515	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	442	92	341	137	89	159	276	1203	96	124	1360	399
RTOR Reduction (vph)	0	0	199	0	0	143	0	0	53	0	0	271
Lane Group Flow (vph)	442	92	142	137	89	16	276	1203	43	124	1360	128
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	17.7	22.8	22.8	18.1	11.1	11.1	62.9	49.3	49.3	45.0	35.4	35.4
Effective Green, g (s)	17.7	22.8	22.8	18.1	11.1	11.1	62.9	49.3	49.3	45.0	35.4	35.4
Actuated g/C Ratio	0.16	0.21	0.21	0.16	0.10	0.10	0.57	0.45	0.45	0.41	0.32	0.32
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	563	371	326	228	180	154	454	1601	633	241	1453	511
v/s Ratio Prot	c0.13	0.05		0.04	0.05		c0.13	c0.34		0.04	c0.30	
v/s Ratio Perm			0.09	c0.06		0.01	0.22		0.03	0.17		0.08
v/c Ratio	0.79	0.25	0.44	0.60	0.49	0.10	0.61	0.75	0.07	0.51	0.94	0.25
Uniform Delay, d1	44.3	36.4	38.0	41.9	46.8	44.9	24.1	25.3	17.3	21.6	36.2	27.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.31	1.07	3.04
Incremental Delay, d2	7.1	0.4	0.9	4.4	2.1	0.3	2.3	3.3	0.2	1.4	10.4	0.9
Delay (s)	51.4	36.8	38.9	46.3	48.9	45.2	26.4	28.6	17.5	29.9	49.3	84.7
Level of Service	D	D	D	D	D	D	C	C	B	C	D	F
Approach Delay (s/veh)		45.0			46.5			27.5			55.5	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	207	0	0	323	4	0	0	0	5	0	22
Future Volume (vph)	13	207	0	0	323	4	0	0	0	5	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.888	
Flt Protected		0.997									0.991	
Satd. Flow (prot)	0	3529	0	0	3532	0	0	1863	0	0	1639	0
Flt Permitted		0.997									0.991	
Satd. Flow (perm)	0	3529	0	0	3532	0	0	1863	0	0	1639	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		632.5			121.5			72.4			127.6	
Travel Time (s)		38.0			7.3			6.5			11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	225	0	0	351	4	0	0	0	5	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	239	0	0	355	0	0	0	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

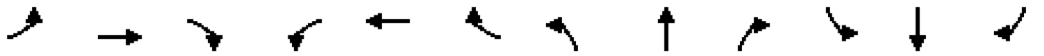
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.5%		ICU Level of Service A	
Analysis Period (min) 15			



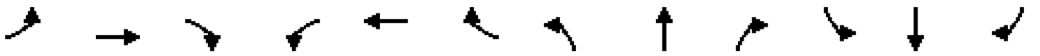
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	207	0	0	323	4	0	0	0	5	0	22
Future Volume (Veh/h)	13	207	0	0	323	4	0	0	0	5	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	225	0	0	351	4	0	0	0	5	0	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	355			225			453	608	113	494	606	178
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	355			225			453	608	113	494	606	178
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	99	100	97
cM capacity (veh/h)	1200			1341			472	404	919	455	405	835

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	127	113	176	180	0	29
Volume Left	14	0	0	0	0	5
Volume Right	0	0	0	4	0	24
cSH	1200	1700	1341	1700	1700	730
Volume to Capacity	0.01	0.07	0.00	0.11	0.00	0.04
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	1.0
Control Delay (s/veh)	1.0	0.0	0.0	0.0	0.0	10.1
Lane LOS	A				A	B
Approach Delay (s/veh)	0.5		0.0		0.0	10.1
Approach LOS					A	B

Intersection Summary				
Average Delay	0.7			
Intersection Capacity Utilization	25.5%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	737	376	463	810	218	491	748	337	422	820	250
Future Volume (vph)	229	737	376	463	810	218	491	748	337	422	820	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3486	5136	1577	3453	5136	1528	3496	5136	1562	3441	5136	1588
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			261			222			266			255
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	234	752	384	472	827	222	501	763	344	431	837	255
Shared Lane Traffic (%)												
Lane Group Flow (vph)	234	752	384	472	827	222	501	763	344	431	837	255
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0
Total Split (%)	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%
Maximum Green (s)	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.6	28.8	28.8	17.0	30.1	30.1	28.8	43.9	43.9	25.5	40.6	40.6
Actuated g/C Ratio	0.11	0.21	0.21	0.12	0.22	0.22	0.21	0.31	0.31	0.18	0.29	0.29
v/c Ratio	0.60	0.71	0.72	1.12	0.75	0.44	0.69	0.47	0.51	0.68	0.56	0.40
Control Delay (s/veh)	65.8	55.4	23.9	136.4	55.8	8.1	58.0	40.5	12.7	59.9	43.9	6.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.8	55.4	23.9	136.4	55.8	8.1	58.0	40.5	12.7	59.9	43.9	6.2
LOS	E	E	C	F	E	A	E	D	B	E	D	A
Approach Delay (s/veh)		48.4			73.8			40.0			42.1	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	33.7	75.7	33.3	~82.1	84.3	0.0	70.6	67.4	16.8	60.8	76.5	0.0
Queue Length 95th (m)	48.1	86.3	68.6	#118.5	95.4	21.3	#106.0	82.9	48.4	83.1	91.5	20.8
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	425	1489	642	420	1489	600	721	1610	672	632	1489	641
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.51	0.60	1.12	0.56	0.37	0.69	0.47	0.51	0.68	0.56	0.40

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 118 (84%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay (s/veh): 51.0	Intersection LOS: D

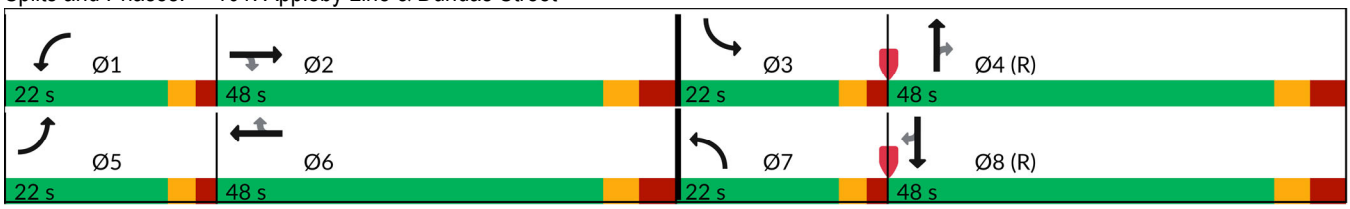
Intersection Capacity Utilization 101.9% ICU Level of Service G

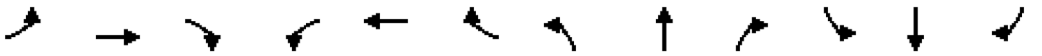
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street



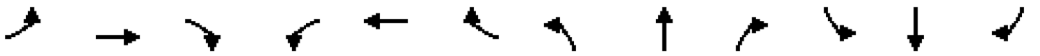


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	737	376	463	810	218	491	748	337	422	820	250
Future Volume (vph)	229	737	376	463	810	218	491	748	337	422	820	250
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	234	752	384	472	827	222	501	763	344	431	837	255
RTOR Reduction (vph)	0	0	207	0	0	174	0	0	183	0	0	181
Lane Group Flow (vph)	234	752	177	472	827	48	501	763	161	431	837	74
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.6	28.8	28.8	17.0	30.2	30.2	28.8	43.9	43.9	25.5	40.6	40.6
Effective Green, g (s)	15.6	28.8	28.8	17.0	30.2	30.2	28.8	43.9	43.9	25.5	40.6	40.6
Actuated g/C Ratio	0.11	0.21	0.21	0.12	0.22	0.22	0.21	0.31	0.31	0.18	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	390	1056	324	420	1107	329	720	1610	489	631	1489	460
v/s Ratio Prot	0.07	0.15		c0.14	c0.16		c0.14	c0.15		0.12	c0.16	
v/s Ratio Perm			0.11			0.03			0.10			0.05
v/c Ratio	0.60	0.71	0.55	1.12	0.75	0.15	0.70	0.47	0.33	0.68	0.56	0.16
Uniform Delay, d1	59.2	51.7	49.7	61.5	51.3	44.5	51.5	38.7	36.8	53.5	42.2	37.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	2.3	1.9	82.1	2.8	0.2	3.7	1.0	1.8	3.9	1.5	0.7
Delay (s)	63.0	54.0	51.6	143.6	54.1	44.7	55.3	39.7	38.6	57.4	43.7	37.8
Level of Service	E	D	D	F	D	D	E	D	D	E	D	D
Approach Delay (s/veh)		54.9			80.5			44.3			46.6	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	101.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	345	342	215	565	484	307	1358	140	318	1126	240
Future Volume (vph)	258	345	342	215	565	484	307	1358	140	318	1126	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.925				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3286	0	1787	4515	1615	3502	4438	0	1787	4378	0
Flt Permitted	0.299			0.172			0.950			0.101		
Satd. Flow (perm)	549	3286	0	323	4515	1575	3495	4438	0	190	4378	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		218				182		16			36	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	263	352	349	219	577	494	313	1386	143	324	1149	245
Shared Lane Traffic (%)												
Lane Group Flow (vph)	263	701	0	219	577	494	313	1529	0	324	1394	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



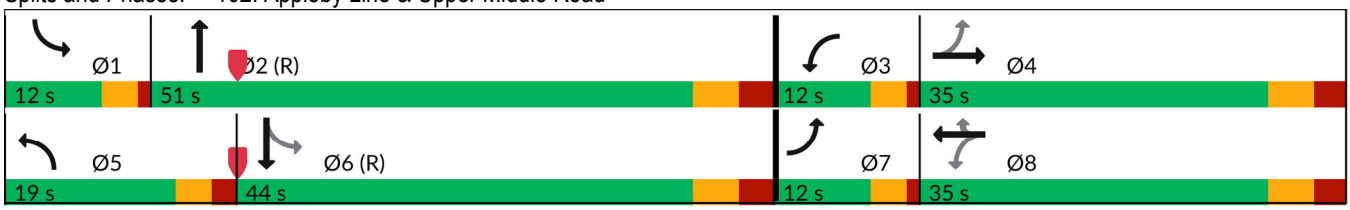
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	12.0	35.0		12.0	35.0	35.0	19.0	51.0		12.0	44.0	
Total Split (%)	10.9%	31.8%		10.9%	31.8%	31.8%	17.3%	46.4%		10.9%	40.0%	
Maximum Green (s)	8.0	28.6		8.0	28.6	28.6	14.0	44.5		8.0	37.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	37.5	27.1		37.5	27.1	27.1	13.3	44.5		51.7	39.7	
Actuated g/C Ratio	0.34	0.25		0.34	0.25	0.25	0.12	0.40		0.47	0.36	
v/c Ratio	0.96	0.72		1.01	0.52	0.94	0.74	0.85		1.43	0.87	
Control Delay (s/veh)	75.4	30.1		94.7	37.4	53.1	61.9	16.9		242.8	39.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	75.4	30.1		94.7	37.4	53.1	61.9	16.9		242.8	39.7	
LOS	E	C		F	D	D	E	B		F	D	
Approach Delay (s/veh)		42.5			53.1			24.6			78.0	
Approach LOS		D			D			C			E	
Queue Length 50th (m)	42.9	52.2		34.1	46.5	72.6	29.4	114.4		~90.7	123.2	
Queue Length 95th (m)	#92.4	73.8		#77.4	60.5	#138.0	m45.0	90.5		#148.7	#158.5	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	274	1015		216	1173	544	445	1804		227	1602	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.96	0.69		1.01	0.49	0.91	0.70	0.85		1.43	0.87	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay (s/veh): 49.7	Intersection LOS: D

Intersection Capacity Utilization 98.0%	ICU Level of Service F
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

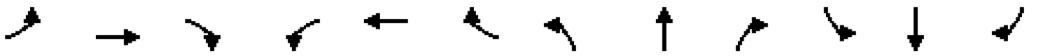
Splits and Phases: 102: Appleby Line & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	345	342	215	565	484	307	1358	140	318	1126	240
Future Volume (vph)	258	345	342	215	565	484	307	1358	140	318	1126	240
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	3287		1786	4515	1575	3502	4438		1787	4377	
Flt Permitted	0.30	1.00		0.17	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	551	3287		324	4515	1575	3502	4438		190	4377	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	263	352	349	219	577	494	313	1386	143	324	1149	245
RTOR Reduction (vph)	0	164	0	0	0	137	0	10	0	0	23	0
Lane Group Flow (vph)	263	537	0	219	577	357	313	1519	0	324	1371	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	35.1	27.1		35.1	27.1	27.1	13.3	44.5		49.2	39.7	
Effective Green, g (s)	35.1	27.1		35.1	27.1	27.1	13.3	44.5		49.2	39.7	
Actuated g/C Ratio	0.32	0.25		0.32	0.25	0.25	0.12	0.40		0.45	0.36	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	263	809		209	1112	388	423	1795		222	1579	
v/s Ratio Prot	0.07	0.16		c0.08	0.13		0.09	c0.34		c0.13	0.31	
v/s Ratio Perm	0.25			c0.26		0.23				c0.53		
v/c Ratio	1.00	0.66		1.05	0.52	0.92	0.74	0.85		1.46	0.87	
Uniform Delay, d1	34.6	37.3		33.4	35.8	40.4	46.7	29.7		27.7	32.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.16	0.45		1.00	1.00	
Incremental Delay, d2	55.5	2.1		75.4	0.4	26.3	4.6	3.6		229.9	6.7	
Delay (s)	90.1	39.4		108.7	36.2	66.7	58.7	16.8		257.6	39.5	
Level of Service	F	D		F	D	E	E	B		F	D	
Approach Delay (s/veh)		53.2			60.2			24.0			80.6	
Approach LOS		D			E			C			F	

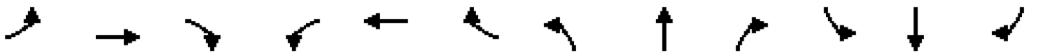
Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	98.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	628	63	1	1203	72	21	0	1	56	0	100
Future Volume (vph)	123	628	63	1	1203	72	21	0	1	56	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			0.0			7.5			0.0		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.986			0.992			0.994			0.914	
Flt Protected	0.950							0.954			0.982	
Satd. Flow (prot)	1787	4448	0	0	4481	0	0	1766	0	0	1705	0
Flt Permitted	0.950							0.954			0.982	
Satd. Flow (perm)	1787	4448	0	0	4481	0	0	1766	0	0	1705	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			128.2			285.4	
Travel Time (s)		7.1			17.4			11.5			25.7	
Confl. Peds. (#/hr)	18					18						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	129	661	66	1	1266	76	22	0	1	59	0	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	727	0	0	1343	0	0	23	0	0	164	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.1%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			

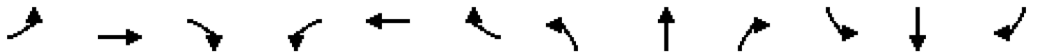


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	628	63	1	1203	72	21	0	1	56	0	100
Future Volume (Veh/h)	123	628	63	1	1203	72	21	0	1	56	0	100
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	129	661	66	1	1266	76	22	0	1	59	0	105
Pedestrians		1									18	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked	0.83						0.83	0.83		0.83	0.83	0.83
vC, conflicting volume	1360			727			1482	2314	253	1803	2309	479
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	723			727			870	1871	253	1256	1865	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	82			100			86	100	100	35	100	88
cM capacity (veh/h)	722			872			153	48	746	91	48	893

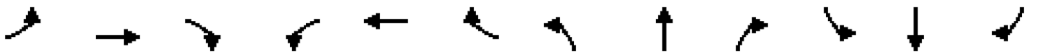
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	129	264	264	198	318	633	393	23	164
Volume Left	129	0	0	0	1	0	0	22	59
Volume Right	0	0	0	66	0	0	76	1	105
cSH	722	1700	1700	1700	872	1700	1700	159	213
Volume to Capacity	0.18	0.16	0.16	0.12	0.00*	0.37	0.23	0.14	0.77
Queue Length 95th (m)	5.2	0.0	0.0	0.0	0.0	0.0	0.0	3.9	42.7
Control Delay (s/veh)	11.1	0.0	0.0	0.0	0.0	0.0	0.0	31.4	62.2
Lane LOS	B				A			D	F
Approach Delay (s/veh)	1.7				0.0			31.4	62.2
Approach LOS								D	F

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	57.1%	ICU Level of Service		B
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	483	37	7	1071	219	38	2	8	207	2	168
Future Volume (vph)	137	483	37	7	1071	219	38	2	8	207	2	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			0.0			7.5			0.0		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.989			0.975			0.978			0.940	
Flt Protected	0.950							0.962			0.973	
Satd. Flow (prot)	1770	4462	0	0	4371	0	0	1753	0	0	1715	0
Flt Permitted	0.093				0.936			0.687			0.801	
Satd. Flow (perm)	173	4462	0	0	4091	0	0	1252	0	0	1412	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			45			8			47	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			125.2			244.6	
Travel Time (s)		17.4			14.7			11.3			22.0	
Confl. Peds. (#/hr)	12					12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	143	503	39	7	1116	228	40	2	8	216	2	175
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	542	0	0	1351	0	0	50	0	0	393	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

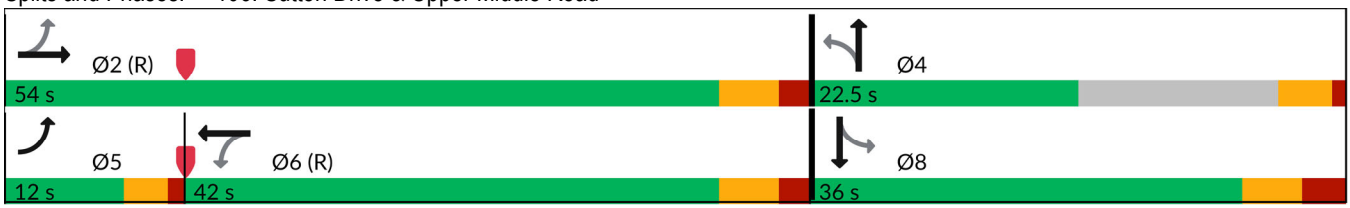


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		8.0	8.0		5.0	5.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		31.0	31.0		22.5	22.5		34.0	34.0	
Total Split (s)	12.0	54.0		42.0	42.0		22.5	22.5		36.0	36.0	
Total Split (%)	13.3%	60.0%		46.7%	46.7%		25.0%	25.0%		40.0%	40.0%	
Maximum Green (s)	8.0	48.0		36.0	36.0		18.0	18.0		29.0	29.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.5	3.5		4.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	1.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	6.0			6.0			4.5			7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		18.0		18.0	18.0		11.0	11.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	53.0	51.0			39.2			28.5			26.0	
Actuated g/C Ratio	0.59	0.57			0.44			0.32			0.29	
v/c Ratio	0.60	0.21			0.75			0.12			0.89	
Control Delay (s/veh)	38.8	24.5			24.5			18.5			50.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	38.8	24.5			24.5			18.5			50.2	
LOS	D	C			C			B			D	
Approach Delay (s/veh)		27.5			24.5			18.5			50.2	
Approach LOS		C			C			B			D	
Queue Length 50th (m)	24.8	37.0			87.0			5.2			58.9	
Queue Length 95th (m)	#45.4	50.8			109.2			13.4			#108.7	
Internal Link Dist (m)		266.7			220.7			101.2			220.6	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	245	2536			1807			443			486	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.58	0.21			0.75			0.11			0.81	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 29.3	Intersection LOS: C

Intersection Capacity Utilization 73.9%	ICU Level of Service D
Analysis Period (min) 15	
* User Entered Value	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

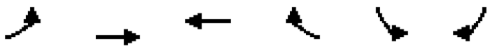
Splits and Phases: 106: Sutton Drive & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	483	37	7	1071	219	38	2	8	207	2	168
Future Volume (vph)	137	483	37	7	1071	219	38	2	8	207	2	168
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			4.5			7.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.99			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.97			0.98			0.94	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1769	4463			4369			1752			1715	
Flt Permitted	0.09	1.00			0.94			0.69			0.80	
Satd. Flow (perm)	172	4463			4092			1253			1412	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	143	503	39	7	1116	228	40	2	8	216	2	175
RTOR Reduction (vph)	0	8	0	0	25	0	0	5	0	0	33	0
Lane Group Flow (vph)	143	534	0	0	1326	0	0	45	0	0	360	0
Confl. Peds. (#/hr)	12					12						
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	51.0	51.0			39.2			28.5			26.0	
Effective Green, g (s)	51.0	51.0			39.2			28.5			26.0	
Actuated g/C Ratio	0.57	0.57			0.44			0.32			0.29	
Clearance Time (s)	4.0	6.0			6.0			4.5			7.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	235	2529			1782			396			407	
v/s Ratio Prot	c0.05	0.12										
v/s Ratio Perm	0.29				c0.32			0.04			c0.25	
v/c Ratio	0.61	0.21			0.74			0.11			0.88	
Uniform Delay, d1	13.5	9.6			21.2			21.8			30.6	
Progression Factor	2.27	2.46			1.00			1.00			1.00	
Incremental Delay, d2	4.2	0.2			2.9			0.1			19.7	
Delay (s)	34.9	23.8			24.1			21.9			50.3	
Level of Service	C	C			C			C			D	
Approach Delay (s/veh)		26.2			24.1			21.9			50.3	
Approach LOS		C			C			C			D	

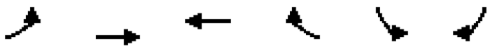
Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	36	637	1203	82	62	33
Future Volume (vph)	36	637	1203	82	62	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.953	
Flt Protected	0.950				0.969	
Satd. Flow (prot)	1805	4560	4514	0	1730	0
Flt Permitted	0.950				0.969	
Satd. Flow (perm)	1805	4560	4514	0	1730	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	38	671	1266	86	65	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	38	671	1352	0	100	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	36	637	1203	82	62	33
Future Volume (Veh/h)	36	637	1203	82	62	33
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	38	671	1266	86	65	35
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1359				1616	472
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1359				1616	472
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	93				27	93
cM capacity (veh/h)	509				89	530

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	38	224	224	224	506	506	339	100
Volume Left	38	0	0	0	0	0	0	65
Volume Right	0	0	0	0	0	0	86	35
cSH	509	1700	1700	1700	1700	1700	1700	125
Volume to Capacity	0.07	0.13	0.13	0.13	0.30	0.30	0.20	0.80
Queue Length 95th (m)	1.9	0.0	0.0	0.0	0.0	0.0	0.0	38.0
Control Delay (s/veh)	12.6	0.0	0.0	0.0	0.0	0.0	0.0	99.8
Lane LOS	B							F
Approach Delay (s/veh)	0.7				0.0			99.8
Approach LOS								F

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	42.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	51	42	1234	54	15	688
Future Volume (vph)	51	42	1234	54	15	688
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.939		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1736	0	4533	0	1805	4560
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1736	0	4533	0	1805	4560
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	55	45	1327	58	16	740
Shared Lane Traffic (%)						
Lane Group Flow (vph)	100	0	1385	0	16	740
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

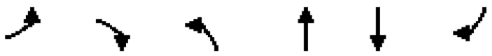
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



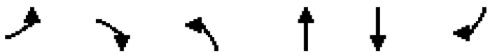
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	51	42	1234	54	15	688
Future Volume (Veh/h)	51	42	1234	54	15	688
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	55	45	1327	58	16	740
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1636	472			1386	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1636	472			1386	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	39	92			97	
cM capacity (veh/h)	90	543			500	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	100	531	531	323	16	247	247	247
Volume Left	55	0	0	0	16	0	0	0
Volume Right	45	0	0	58	0	0	0	0
cSH	145	1700	1700	1700	500	1700	1700	1700
Volume to Capacity	0.69	0.31	0.31	0.19	0.03	0.15	0.15	0.15
Queue Length 95th (m)	31.5	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Control Delay (s/veh)	72.4	0.0	0.0	0.0	12.4	0.0	0.0	0.0
Lane LOS	F				B			
Approach Delay (s/veh)	72.4	0.0			0.3			
Approach LOS	F							

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	37.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	77	239	445	1204	681	46
Future Volume (vph)	77	239	445	1204	681	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	0.0		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1787	4560	4514	0
Flt Permitted	0.950		0.260			
Satd. Flow (perm)	1805	1615	488	4560	4514	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		252			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	81	252	468	1267	717	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	81	252	468	1267	765	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

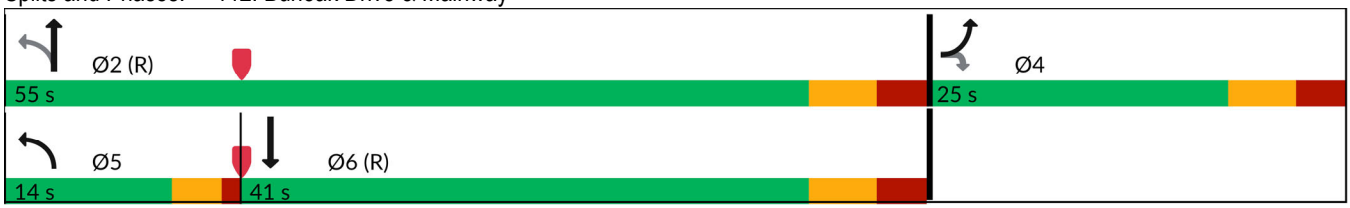


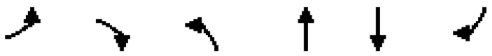
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	25.0	25.0	14.0	55.0	41.0	
Total Split (%)	31.3%	31.3%	17.5%	68.8%	51.3%	
Maximum Green (s)	18.0	18.0	10.0	48.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.7	9.7	59.3	56.3	35.0	
Actuated g/C Ratio	0.12	0.12	0.74	0.70	0.44	
v/c Ratio	0.37	0.61	0.73	0.39	0.39	
Control Delay (s/veh)	36.7	11.2	18.2	6.4	15.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.7	11.2	18.2	6.4	15.8	
LOS	D	B	B	A	B	
Approach Delay (s/veh)	17.4			9.6	15.8	
Approach LOS	B			A	B	
Queue Length 50th (m)	12.3	0.0	30.5	21.5	32.2	
Queue Length 95th (m)	24.0	19.5	#70.5	63.3	44.5	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	406	558	643	3210	1980	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.45	0.73	0.39	0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 54 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 12.2		Intersection LOS: B	

Intersection Capacity Utilization 71.3%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 112: Burloak Drive & Mainway

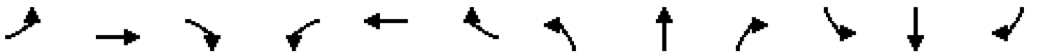




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	77	239	445	1204	681	46
Future Volume (vph)	77	239	445	1204	681	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1786	4560	4512	
Flt Permitted	0.95	1.00	0.26	1.00	1.00	
Satd. Flow (perm)	1805	1615	488	4560	4512	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	252	468	1267	717	48
RTOR Reduction (vph)	0	221	0	0	8	0
Lane Group Flow (vph)	81	31	468	1267	757	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.7	9.7	56.3	56.3	34.9	
Effective Green, g (s)	9.7	9.7	56.3	56.3	34.9	
Actuated g/C Ratio	0.12	0.12	0.70	0.70	0.44	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	218	195	625	3209	1968	
v/s Ratio Prot	c0.04		c0.16	0.28	0.17	
v/s Ratio Perm		0.02	c0.36			
v/c Ratio	0.37	0.16	0.75	0.39	0.38	
Uniform Delay, d1	32.3	31.5	6.1	4.9	15.3	
Progression Factor	1.00	1.00	1.71	1.18	1.00	
Incremental Delay, d2	1.1	0.4	4.7	0.4	0.6	
Delay (s)	33.4	31.9	15.2	6.1	15.8	
Level of Service	C	C	B	A	B	
Approach Delay (s/veh)	32.2			8.5	15.8	
Approach LOS	C			A	B	

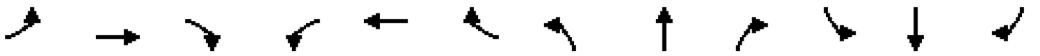
Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	142	14	5	304	66	21	40	10	92	43	17
Future Volume (vph)	17	142	14	5	304	66	21	40	10	92	43	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.974			0.981			0.985	
Flt Protected		0.995			0.999			0.986			0.971	
Satd. Flow (prot)	0	3542	0	0	3500	0	0	1817	0	0	1782	0
Flt Permitted		0.995			0.999			0.986			0.971	
Satd. Flow (perm)	0	3542	0	0	3500	0	0	1817	0	0	1782	0
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		121.5			869.1			154.8			140.4	
Travel Time (s)		7.3			52.1			13.9			10.1	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	17	145	14	5	310	67	21	41	10	94	44	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	176	0	0	382	0	0	72	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.5%		ICU Level of Service A	
Analysis Period (min) 15			

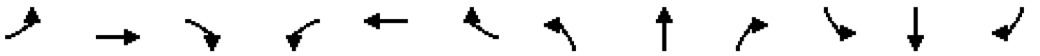


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	142	14	5	304	66	21	40	10	92	43	17
Future Volume (Veh/h)	17	142	14	5	304	66	21	40	10	92	43	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	17	145	14	5	310	67	21	41	10	94	44	17
Pedestrians								3				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	377			162			393	576	83	491	550	189
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	377			162			393	576	83	491	550	189
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			96	90	99	77	90	98
cM capacity (veh/h)	1178			1426			484	418	965	415	433	821

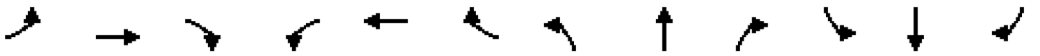
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	90	87	160	222	72	155
Volume Left	17	0	5	0	21	94
Volume Right	0	14	0	67	10	17
cSH	1178	1700	1426	1700	474	445
Volume to Capacity	0.01	0.05	0.00*	0.13	0.15	0.35
Queue Length 95th (m)	0.4	0.0	0.1	0.0	4.3	12.3
Control Delay (s/veh)	1.6	0.0	0.3	0.0	13.9	17.4
Lane LOS	A		A		B	C
Approach Delay (s/veh)	0.8		0.1		13.9	17.4
Approach LOS					B	C

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	39.5%	ICU Level of Service		A
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	87	181	97	235	97	195	1460	75	68	1457	145
Future Volume (vph)	172	87	181	97	235	97	195	1460	75	68	1457	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00			1.00	
Frt		0.899			0.956			0.993			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3196	0	1770	3390	0	1805	4478	0	1770	4430	0
Flt Permitted	0.390			0.516			0.070			0.091		
Satd. Flow (perm)	741	3196	0	960	3390	0	133	4478	0	170	4430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		183			59			7			14	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	174	88	183	98	237	98	197	1475	76	69	1472	146
Shared Lane Traffic (%)												
Lane Group Flow (vph)	174	271	0	98	335	0	197	1551	0	69	1618	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	12.0	40.0		12.0	40.0		12.0	46.0		12.0	46.0	
Total Split (%)	10.9%	36.4%		10.9%	36.4%		10.9%	41.8%		10.9%	41.8%	
Maximum Green (s)	8.0	33.7		8.0	33.7		8.0	39.7		8.0	39.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	25.0	14.7		24.6	14.5		73.2	61.6		62.7	52.9	
Actuated g/C Ratio	0.23	0.13		0.22	0.13		0.67	0.56		0.57	0.48	
v/c Ratio	0.71	0.46		0.36	0.67		0.65	0.62		0.34	0.76	
Control Delay (s/veh)	50.3	17.1		34.8	43.9		44.0	7.0		19.3	35.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.3	17.1		34.8	43.9		44.0	7.0		19.3	35.1	
LOS	D	B		C	D		D	A		B	D	
Approach Delay (s/veh)		30.1			41.9			11.1			34.5	
Approach LOS		C			D			B			C	
Queue Length 50th (m)	32.2	9.6		17.6	32.1		26.1	19.1		7.5	119.5	
Queue Length 95th (m)	49.5	21.5		30.4	45.8		46.1	51.2		m19.1	160.6	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	245	1106		275	1079		301	2511		216	2136	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.71	0.25		0.36	0.31		0.65	0.62		0.32	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 46 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay (s/veh): 25.3	Intersection LOS: C

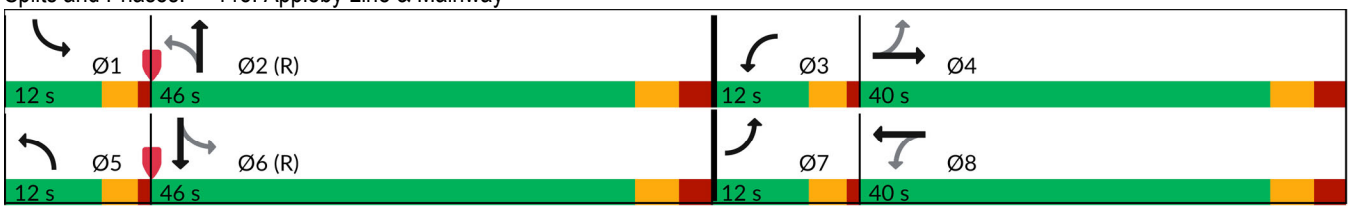
Intersection Capacity Utilization 79.1% ICU Level of Service D

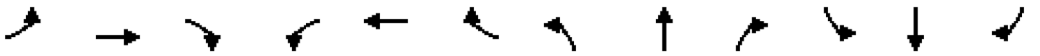
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway



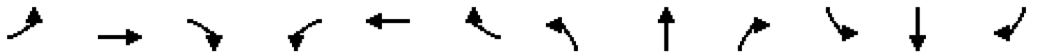


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	87	181	97	235	97	195	1460	75	68	1457	145
Future Volume (vph)	172	87	181	97	235	97	195	1460	75	68	1457	145
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3195		1769	3390		1805	4477		1770	4432	
Flt Permitted	0.39	1.00		0.52	1.00		0.07	1.00		0.09	1.00	
Satd. Flow (perm)	741	3195		961	3390		134	4477		170	4432	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	174	88	183	98	237	98	197	1475	76	69	1472	146
RTOR Reduction (vph)	0	159	0	0	51	0	0	3	0	0	7	0
Lane Group Flow (vph)	174	112	0	98	284	0	197	1548	0	69	1611	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	22.7	14.7		22.3	14.5		70.9	60.8		59.0	52.9	
Effective Green, g (s)	22.7	14.7		22.3	14.5		70.9	60.8		59.0	52.9	
Actuated g/C Ratio	0.21	0.13		0.20	0.13		0.64	0.55		0.54	0.48	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	230	426		252	446		299	2474		179	2131	
v/s Ratio Prot	c0.05	0.04		0.03	0.08		c0.08	0.35		0.02	c0.36	
v/s Ratio Perm	c0.10			0.05			0.34			0.18		
v/c Ratio	0.76	0.26		0.39	0.64		0.66	0.63		0.39	0.76	
Uniform Delay, d1	39.1	42.8		37.0	45.3		25.6	16.8		13.5	23.3	
Progression Factor	1.00	1.00		1.00	1.00		1.65	0.34		1.77	1.36	
Incremental Delay, d2	13.2	0.3		1.0	3.0		4.3	1.0		1.1	2.1	
Delay (s)	52.3	43.1		38.0	48.2		46.6	6.7		24.9	33.8	
Level of Service	D	D		D	D		D	A		C	C	
Approach Delay (s/veh)		46.7			45.9			11.2			33.5	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	79.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	17	37	176	15	94	32	1569	165	84	1548	17
Future Volume (vph)	42	17	37	176	15	94	32	1569	165	84	1548	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	0.0			0.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.948			0.955			0.986			0.998	
Flt Protected		0.978			0.970		0.950			0.950		
Satd. Flow (prot)	0	1732	0	0	1727	0	1805	4443	0	1805	4505	0
Flt Permitted		0.776			0.769		0.091			0.062		
Satd. Flow (perm)	0	1372	0	0	1368	0	173	4443	0	118	4505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			23			19			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	45	18	39	187	16	100	34	1669	176	89	1647	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	102	0	0	303	0	34	1845	0	89	1665	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		59.0	59.0		12.0	71.0	
Total Split (%)	35.5%	35.5%		35.5%	35.5%		53.6%	53.6%		10.9%	64.5%	
Maximum Green (s)	32.5	32.5		32.5	32.5		53.0	53.0		8.0	65.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		27.0			27.0		61.1	61.1		72.5	70.5	
Actuated g/C Ratio		0.25			0.25		0.56	0.56		0.66	0.64	
v/c Ratio		0.29			0.86		0.35	0.74		0.46	0.58	
Control Delay (s/veh)		26.1			59.0		18.7	12.4		13.1	9.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		26.1			59.0		18.7	12.4		13.1	9.1	
LOS		C			E		B	B		B	A	
Approach Delay (s/veh)		26.1			59.0			12.5			9.3	
Approach LOS		C			E			B			A	
Queue Length 50th (m)		14.0			60.2		1.5	114.5		3.7	117.2	
Queue Length 95th (m)		27.6			90.6		m2.7	149.0		m6.3	m132.1	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		422			420		96	2477		201	2887	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.24			0.72		0.35	0.74		0.44	0.58	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 61 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 15.0	Intersection LOS: B

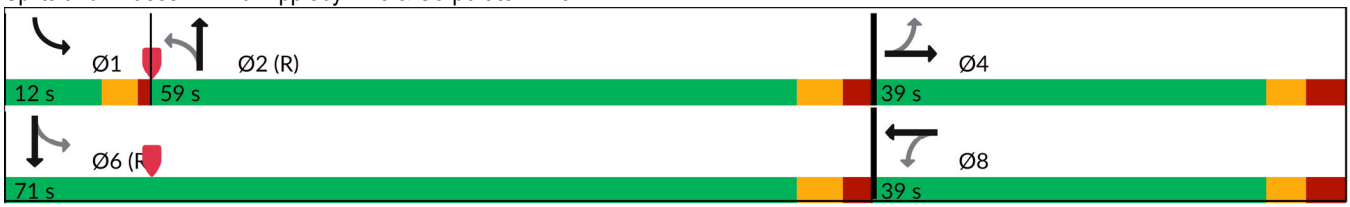
Intersection Capacity Utilization 77.7% ICU Level of Service D

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

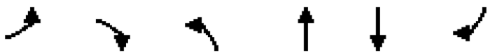
Splits and Phases: 116: Appleby Line & Corporate Drive



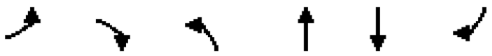
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	17	37	176	15	94	32	1569	165	84	1548	17
Future Volume (vph)	42	17	37	176	15	94	32	1569	165	84	1548	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730			1726		1803	4442		1805	4506	
Flt Permitted		0.78			0.77		0.09	1.00		0.06	1.00	
Satd. Flow (perm)		1373			1368		173	4442		118	4506	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	18	39	187	16	100	34	1669	176	89	1647	18
RTOR Reduction (vph)	0	18	0	0	17	0	0	9	0	0	1	0
Lane Group Flow (vph)	0	84	0	0	286	0	34	1836	0	89	1664	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.0			27.0		60.3	60.3		70.5	70.5	
Effective Green, g (s)		27.0			27.0		60.3	60.3		70.5	70.5	
Actuated g/C Ratio		0.25			0.25		0.55	0.55		0.64	0.64	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		337			335		94	2435		170	2887	
v/s Ratio Prot								c0.41		0.03	c0.37	
v/s Ratio Perm		0.06			c0.21		0.20			0.30		
v/c Ratio		0.25			0.85		0.36	0.75		0.52	0.58	
Uniform Delay, d1		33.4			39.6		14.0	19.1		16.0	11.2	
Progression Factor		1.00			1.00		0.48	0.52		0.77	0.71	
Incremental Delay, d2		0.4			18.5		8.7	1.9		1.5	0.4	
Delay (s)		33.7			58.1		15.4	11.7		13.8	8.5	
Level of Service		C			E		B	B		B	A	
Approach Delay (s/veh)		33.7			58.1			11.8			8.8	
Approach LOS		C			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	85	162	1323	782	12
Future Volume (vph)	13	85	162	1323	782	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	1736	4560	4541	0
Flt Permitted	0.950		0.255			
Satd. Flow (perm)	1805	1509	464	4560	4541	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		90			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	14	90	172	1407	832	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	90	172	1407	845	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	26.0	26.0	14.0	54.0	40.0	
Total Split (%)	32.5%	32.5%	17.5%	67.5%	50.0%	
Maximum Green (s)	19.0	19.0	10.0	47.0	33.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.4	8.4	63.6	62.0	47.1	
Actuated g/C Ratio	0.11	0.11	0.80	0.78	0.59	
v/c Ratio	0.07	0.38	0.33	0.40	0.32	
Control Delay (s/veh)	32.8	12.9	3.8	4.3	3.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	32.8	12.9	3.8	4.3	3.8	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	15.6			4.2	3.8	
Approach LOS	B			A	A	
Queue Length 50th (m)	2.1	0.0	9.0	33.5	7.8	
Queue Length 95th (m)	7.3	13.7	m9.3	m27.0	15.0	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	428	427	533	3535	2673	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.03	0.21	0.32	0.40	0.32	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay (s/veh): 4.5	Intersection LOS: A

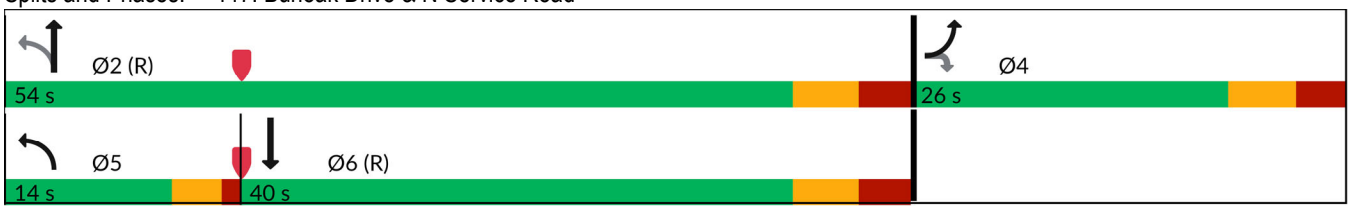
Intersection Capacity Utilization 55.6% ICU Level of Service B

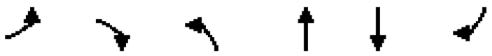
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	13	85	162	1323	782	12
Future Volume (vph)	13	85	162	1323	782	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	1734	4560	4540	
Flt Permitted	0.95	1.00	0.25	1.00	1.00	
Satd. Flow (perm)	1805	1509	465	4560	4540	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	14	90	172	1407	832	13
RTOR Reduction (vph)	0	82	0	0	1	0
Lane Group Flow (vph)	14	8	172	1407	844	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	6.8	6.8	59.2	59.2	45.7	
Effective Green, g (s)	6.8	6.8	59.2	59.2	45.7	
Actuated g/C Ratio	0.09	0.09	0.74	0.74	0.57	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	153	128	494	3374	2593	
v/s Ratio Prot	c0.01		0.04	c0.31	0.19	
v/s Ratio Perm		0.01	0.22			
v/c Ratio	0.09	0.06	0.35	0.42	0.33	
Uniform Delay, d1	33.8	33.7	3.3	3.9	9.0	
Progression Factor	1.00	1.00	1.41	1.05	0.37	
Incremental Delay, d2	0.3	0.2	0.1	0.0	0.3	
Delay (s)	34.0	33.9	4.7	4.1	3.6	
Level of Service	C	C	A	A	A	
Approach Delay (s/veh)	33.9			4.2	3.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1807	1303	835	0	0	1101
Future Volume (vph)	1807	1303	835	0	0	1101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor	1.00					
Frt	0.977	0.850				
Flt Protected	0.959					
Satd. Flow (prot)	3391	1455	4560	0	0	4515
Flt Permitted	0.959					
Satd. Flow (perm)	3388	1455	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	30	96				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	1882	1357	870	0	0	1147
Shared Lane Traffic (%)		25%				
Lane Group Flow (vph)	2221	1018	870	0	0	1147
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

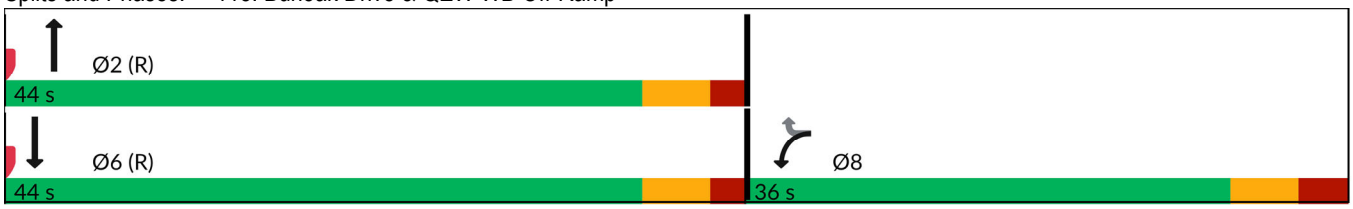


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	36.0	36.0	44.0			44.0
Total Split (%)	45.0%	45.0%	55.0%			55.0%
Maximum Green (s)	29.0	29.0	38.0			38.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
v/c Ratio	1.78	1.73	0.40			0.53
Control Delay (s/veh)	376.7	357.9	14.3			7.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	376.7	357.9	14.3			7.2
LOS	F	F	B			A
Approach Delay (s/veh)	370.8		14.3			7.2
Approach LOS	F		B			A
Queue Length 50th (m)	~284.8	~262.8	35.8			15.6
Queue Length 95th (m)	#329.4	#345.3	47.0			20.5
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1248	588	2166			2144
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.78	1.73	0.40			0.53

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.78	
Intersection Signal Delay (s/veh): 232.5	Intersection LOS: F

Intersection Capacity Utilization 97.3%	ICU Level of Service F
Analysis Period (min) 15	
* User Entered Value	
~ Volume exceeds capacity, queue is theoretically infinite.	
Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer.	
Queue shown is maximum after two cycles.	

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

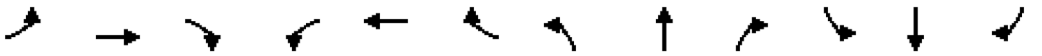




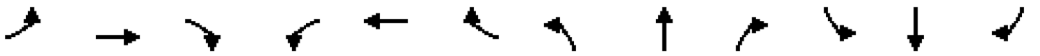
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1807	1303	835	0	0	1101
Future Volume (vph)	1807	1303	835	0	0	1101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.98	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3393	1455	4560			4515
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3393	1455	4560			4515
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1882	1357	870	0	0	1147
RTOR Reduction (vph)	19	61	0	0	0	0
Lane Group Flow (vph)	2202	957	870	0	0	1147
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	29.0	29.0	38.0			38.0
Effective Green, g (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1229	527	2166			2144
v/s Ratio Prot	0.65		0.19			c0.25
v/s Ratio Perm		c0.66				
v/c Ratio	1.79	1.82	0.40			0.53
Uniform Delay, d1	25.5	25.5	13.6			14.8
Progression Factor	1.00	1.00	1.00			0.42
Incremental Delay, d2	359.5	374.5	0.6			0.9
Delay (s)	385.0	400.0	14.2			7.2
Level of Service	F	F	B			A
Approach Delay (s/veh)	389.7		14.2			7.2
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	244.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	165	230	0	0	266	0	721	20	14	2218	0
Future Volume (vph)	138	165	230	0	0	266	0	721	20	14	2218	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.941	0.850			0.865		0.996				
Flt Protected	0.950											
Satd. Flow (prot)	1805	3209	1441	0	0	1611	0	5116	0	0	5136	0
Flt Permitted	0.950										0.931	
Satd. Flow (perm)	1805	3209	1441	0	0	1611	0	5116	0	0	4782	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		102	132			238		5				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	147	176	245	0	0	283	0	767	21	15	2360	0
Shared Lane Traffic (%)			46%									
Lane Group Flow (vph)	147	289	132	0	0	283	0	788	0	0	2375	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		0	1		2			2	
Detector Template	Left	Thru	Right			Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		0.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	

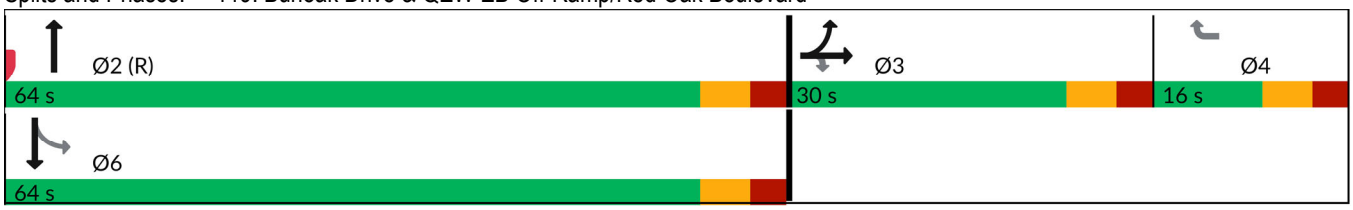


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	30.0	30.0	30.0			16.0		64.0		64.0	64.0	
Total Split (%)	27.3%	27.3%	27.3%			14.5%		58.2%		58.2%	58.2%	
Maximum Green (s)	23.0	23.0	23.0			9.0		57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		Max	Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	14.6	14.6	14.6			10.3		64.1			64.1	
Actuated g/C Ratio	0.13	0.13	0.13			0.09		0.58			0.58	
v/c Ratio	0.62	0.56	0.43			0.77		0.26			0.85	
Control Delay (s/veh)	55.5	32.2	11.5			25.2		12.3			24.3	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	55.5	32.2	11.5			25.2		12.3			24.3	
LOS	E	C	B			C		B			C	
Approach Delay (s/veh)		33.4			25.2			12.3			24.3	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	31.9	21.9	0.0			9.8		29.7			152.1	
Queue Length 95th (m)	50.2	34.6	18.4			#45.6		44.5			#228.1	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	377	751	405			372		2982			2785	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.39	0.38	0.33			0.76		0.26			0.85	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 23.3		Intersection LOS: C	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			

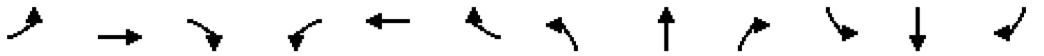
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

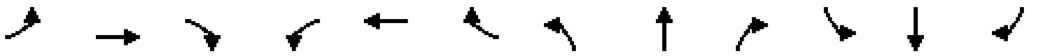


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	165	230	0	0	266	0	721	20	14	2218	0
Future Volume (vph)	138	165	230	0	0	266	0	721	20	14	2218	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1805	3211	1441			1611		5116			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1805	3211	1441			1611		5116			4783	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	147	176	245	0	0	283	0	767	21	15	2360	0
RTOR Reduction (vph)	0	88	114	0	0	216	0	2	0	0	0	0
Lane Group Flow (vph)	147	201	18	0	0	67	0	786	0	0	2375	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	14.6	14.6	14.6			10.3		64.1			64.1	
Effective Green, g (s)	14.6	14.6	14.6			10.3		64.1			64.1	
Actuated g/C Ratio	0.13	0.13	0.13			0.09		0.58			0.58	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	239	426	191			150		2981			2787	
v/s Ratio Prot	c0.08	0.06						0.15				
v/s Ratio Perm			0.01			c0.04					c0.50	
v/c Ratio	0.62	0.47	0.09			0.45		0.26			0.85	
Uniform Delay, d1	45.0	44.1	41.9			47.2		11.3			19.0	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	4.6	0.8	0.2			2.1		0.2			3.5	
Delay (s)	49.7	44.9	42.1			49.3		11.5			22.6	
Level of Service	D	D	D			D		B			C	
Approach Delay (s/veh)		45.5			49.3			11.5			22.6	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	71.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	14	52	95	37	53	38	1565	74	44	1627	45
Future Volume (vph)	53	14	52	95	37	53	38	1565	74	44	1627	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.883			0.912			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1720	0	1656	4480	0	1805	4498	0
Flt Permitted	0.696			0.491			0.068			0.067		
Satd. Flow (perm)	1321	1591	0	924	1720	0	119	4480	0	127	4498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		54			55			6			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	55	15	54	99	39	55	40	1630	77	46	1695	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	69	0	99	94	0	40	1707	0	46	1742	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	49.0		11.0	49.0	
Total Split (%)	35.5%	35.5%		10.0%	45.5%		10.0%	44.5%		10.0%	44.5%	
Maximum Green (s)	32.9	32.9		7.0	43.9		7.0	42.4		7.0	42.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.5	10.5		21.4	19.3		77.4	69.2		78.2	71.4	
Actuated g/C Ratio	0.10	0.10		0.19	0.18		0.70	0.63		0.71	0.65	
v/c Ratio	0.44	0.35		0.41	0.27		0.22	0.61		0.23	0.60	
Control Delay (s/veh)	57.2	21.5		41.3	19.1		8.8	11.5		7.7	15.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.2	21.5		41.3	19.1		8.8	11.5		7.7	15.8	
LOS	E	C		D	B		A	B		A	B	
Approach Delay (s/veh)		37.3			30.5			11.4			15.6	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	12.0	3.2		19.0	7.4		2.1	63.7		2.6	157.6	
Queue Length 95th (m)	24.6	16.4		33.0	21.0		m4.0	94.6		m2.0	180.7	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	395	513		239	719		182	2818		198	2919	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.13		0.41	0.13		0.22	0.61		0.23	0.60	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay (s/veh): 15.1	Intersection LOS: B

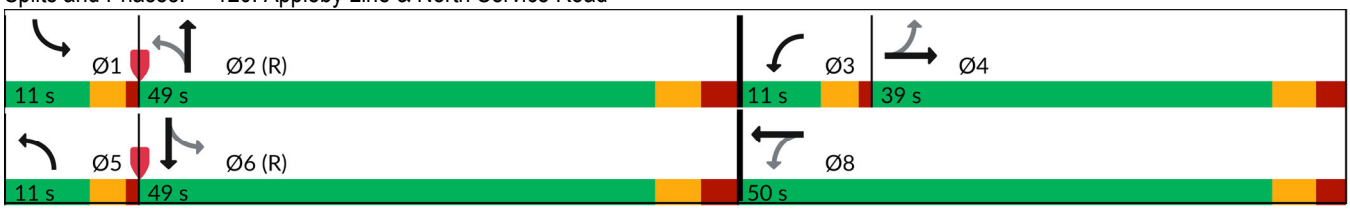
Intersection Capacity Utilization 59.5% ICU Level of Service B

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	14	52	95	37	53	38	1565	74	44	1627	45
Future Volume (vph)	53	14	52	95	37	53	38	1565	74	44	1627	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1590		1787	1720		1656	4481		1805	4498	
Flt Permitted	0.70	1.00		0.49	1.00		0.07	1.00		0.07	1.00	
Satd. Flow (perm)	1321	1590		924	1720		118	4481		128	4498	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	55	15	54	99	39	55	40	1630	77	46	1695	47
RTOR Reduction (vph)	0	50	0	0	45	0	0	2	0	0	2	0
Lane Group Flow (vph)	55	19	0	99	49	0	40	1705	0	46	1740	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		20.5	20.5		71.4	67.1		74.2	68.5	
Effective Green, g (s)	8.9	8.9		20.5	20.5		71.4	67.1		74.2	68.5	
Actuated g/C Ratio	0.08	0.08		0.19	0.19		0.65	0.61		0.67	0.62	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	106	128		231	320		136	2733		173	2801	
v/s Ratio Prot		0.01		c0.03	0.03		0.01	0.38		c0.01	c0.39	
v/s Ratio Perm	0.04			c0.05			0.18			0.17		
v/c Ratio	0.52	0.15		0.43	0.15		0.29	0.62		0.27	0.62	
Uniform Delay, d1	48.5	47.0		38.6	37.5		9.3	13.5		9.1	12.8	
Progression Factor	1.00	1.00		1.00	1.00		1.31	0.78		1.05	1.15	
Incremental Delay, d2	4.2	0.6		1.3	0.2		0.7	0.6		0.6	0.8	
Delay (s)	52.7	47.6		39.9	37.7		13.0	11.1		10.1	15.5	
Level of Service	D	D		D	D		B	B		B	B	
Approach Delay (s/veh)		49.9			38.8			11.2			15.3	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	536	399	1945	0	0	1738
Future Volume (vph)	536	399	1945	0	0	1738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1583	4560	0	0	4515
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1583	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		8				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	576	429	2091	0	0	1869
Shared Lane Traffic (%)						
Lane Group Flow (vph)	576	429	2091	0	0	1869
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

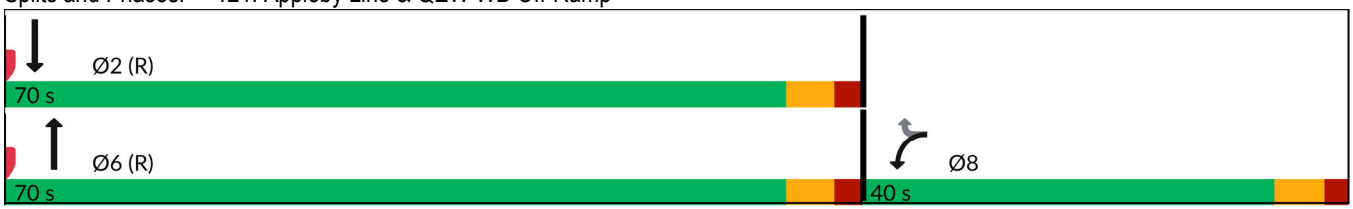


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	70.0			70.0
Total Split (%)	36.4%	36.4%	63.6%			63.6%
Maximum Green (s)	34.0	34.0	64.0			64.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	32.1	32.1	65.9			65.9
Actuated g/C Ratio	0.29	0.29	0.60			0.60
v/c Ratio	0.58	0.92	0.77			0.69
Control Delay (s/veh)	35.5	62.7	20.3			8.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	35.5	62.7	20.3			8.7
LOS	D	E	C			A
Approach Delay (s/veh)	47.1		20.3			8.7
Approach LOS	D		C			A
Queue Length 50th (m)	56.8	91.0	163.0			14.1
Queue Length 95th (m)	75.0	#149.6	193.5			16.8
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1050	494	2730			2703
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	0.87	0.77			0.69

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 21.4		Intersection LOS: C	
Intersection Capacity Utilization 72.3%		ICU Level of Service C	
Analysis Period (min) 15			

* User Entered Value
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

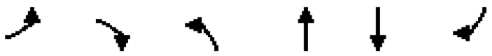
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



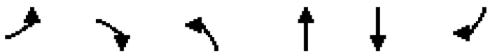


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	536	399	1945	0	0	1738
Future Volume (vph)	536	399	1945	0	0	1738
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1583	4560			4515
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1583	4560			4515
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	576	429	2091	0	0	1869
RTOR Reduction (vph)	0	6	0	0	0	0
Lane Group Flow (vph)	576	423	2091	0	0	1869
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	32.1	32.1	65.9			65.9
Effective Green, g (s)	32.1	32.1	65.9			65.9
Actuated g/C Ratio	0.29	0.29	0.60			0.60
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	992	461	2731			2704
v/s Ratio Prot	0.17		c0.46			0.41
v/s Ratio Perm		c0.27				
v/c Ratio	0.58	0.92	0.77			0.69
Uniform Delay, d1	33.2	37.7	16.3			15.1
Progression Factor	1.00	1.00	1.09			0.47
Incremental Delay, d2	0.9	23.1	1.7			1.2
Delay (s)	34.1	60.8	19.5			8.3
Level of Service	C	E	B			A
Approach Delay (s/veh)	45.5		19.5			8.3
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	665	422	0	1659	1704	0
Future Volume (vph)	665	422	0	1659	1704	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		0.0			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	4515	4515	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	4515	4515	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		31				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	686	435	0	1710	1757	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	686	435	0	1710	1757	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

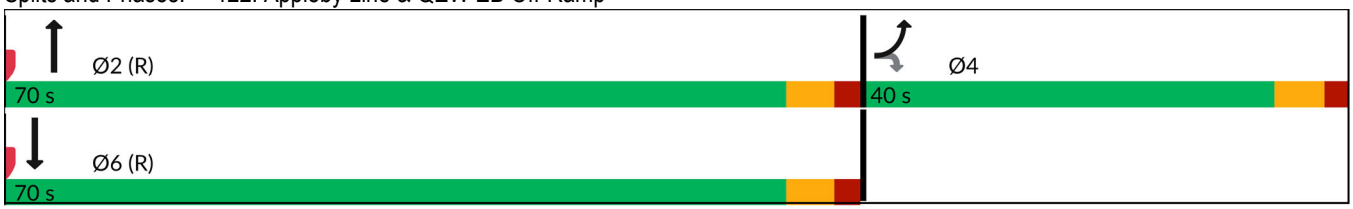


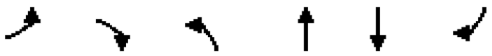
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	40.0	40.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	27.7	27.7		70.3	70.3	
Actuated g/C Ratio	0.25	0.25		0.64	0.64	
v/c Ratio	0.78	0.60		0.59	0.61	
Control Delay (s/veh)	44.6	36.4		5.1	23.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.6	36.4		5.1	23.5	
LOS	D	D		A	C	
Approach Delay (s/veh)	41.4			5.1	23.5	
Approach LOS	D			A	C	
Queue Length 50th (m)	74.6	46.1		24.3	120.2	
Queue Length 95th (m)	88.4	59.6		32.9	163.5	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1082	891		2886	2886	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.63	0.49		0.59	0.61	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 73 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay (s/veh): 21.0	Intersection LOS: C

Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



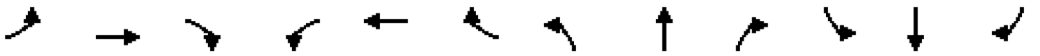


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	665	422	0	1659	1704	0
Future Volume (vph)	665	422	0	1659	1704	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		4515	4515	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		4515	4515	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	686	435	0	1710	1757	0
RTOR Reduction (vph)	0	23	0	0	0	0
Lane Group Flow (vph)	686	412	0	1710	1757	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	27.7	27.7		70.3	70.3	
Effective Green, g (s)	27.7	27.7		70.3	70.3	
Actuated g/C Ratio	0.25	0.25		0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	881	708		2885	2885	
v/s Ratio Prot	c0.20			0.38	c0.39	
v/s Ratio Perm		0.15				
v/c Ratio	0.78	0.58		0.59	0.61	
Uniform Delay, d1	38.3	36.1		11.5	11.7	
Progression Factor	1.00	1.00		0.35	1.81	
Incremental Delay, d2	4.4	1.2		0.7	0.7	
Delay (s)	42.7	37.3		4.8	22.0	
Level of Service	D	D		A	C	
Approach Delay (s/veh)	40.6			4.8	22.0	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	71	122	542	352	191	80	1269	279	142	1014	121
Future Volume (vph)	144	71	122	542	352	191	80	1269	279	142	1014	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00		0.99
Frt		0.905			0.947				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3319	0	1736	4515	1599	1805	4515	1553
Flt Permitted	0.242			0.569			0.193			0.094		
Satd. Flow (perm)	442	3218	0	1069	3319	0	353	4515	1575	179	4515	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		124			97				191			123
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	147	72	124	553	359	195	82	1295	285	145	1035	123
Shared Lane Traffic (%)												
Lane Group Flow (vph)	147	196	0	553	554	0	82	1295	285	145	1035	123
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	12.0	40.0		14.0	42.0		12.0	44.0	44.0	12.0	44.0	44.0
Total Split (%)	10.9%	36.4%		12.7%	38.2%		10.9%	40.0%	40.0%	10.9%	40.0%	40.0%
Maximum Green (s)	8.0	33.6		10.0	35.6		8.0	37.7	37.7	8.0	37.7	37.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	29.6	19.2		33.6	21.2		60.0	49.6	49.6	65.5	54.3	54.3
Actuated g/C Ratio	0.27	0.17		0.31	0.19		0.55	0.45	0.45	0.60	0.49	0.49
v/c Ratio	0.69	0.30		1.41	0.77		0.28	0.64	0.35	0.56	0.46	0.15
Control Delay (s/veh)	45.0	15.6		231.0	41.9		16.6	29.7	15.1	28.7	26.0	10.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.0	15.6		231.0	41.9		16.6	29.7	15.1	28.7	26.0	10.6
LOS	D	B		F	D		B	C	B	C	C	B
Approach Delay (s/veh)		28.2			136.4			26.6			24.8	
Approach LOS		C			F			C			C	
Queue Length 50th (m)	25.2	7.3		~170.0	53.5		9.4	78.4	18.6	19.0	61.7	5.6
Queue Length 95th (m)	38.5	16.5		#222.9	68.4		m16.7	112.3	m37.3	41.4	104.0	m19.3
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	213	1069		391	1139		301	2036	815	264	2228	818
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.18		1.41	0.49		0.27	0.64	0.35	0.55	0.46	0.15

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 65 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.41	
Intersection Signal Delay (s/veh): 53.7	Intersection LOS: D

Intersection Capacity Utilization 89.8%	ICU Level of Service E

Analysis Period (min) 15

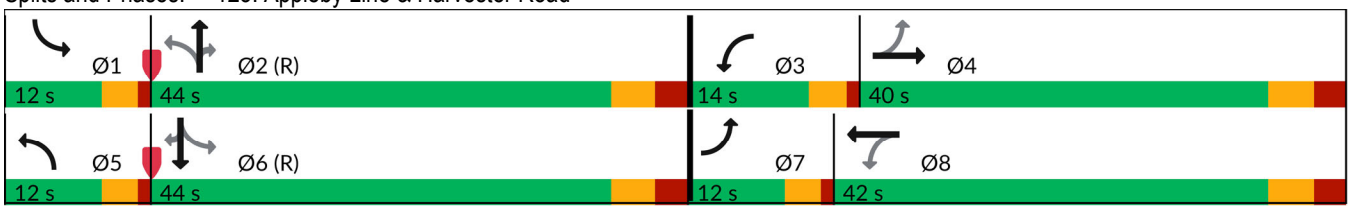
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

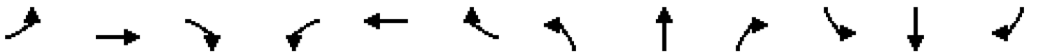
Splits and Phases: 123: Appleby Line & Harvester Road



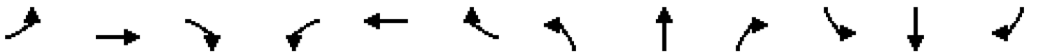
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	71	122	542	352	191	80	1269	279	142	1014	121
Future Volume (vph)	144	71	122	542	352	191	80	1269	279	142	1014	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3218		1786	3320		1736	4515	1575	1805	4515	1533
Flt Permitted	0.24	1.00		0.57	1.00		0.19	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	441	3218		1070	3320		353	4515	1575	178	4515	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	147	72	124	553	359	195	82	1295	285	145	1035	123
RTOR Reduction (vph)	0	102	0	0	78	0	0	0	105	0	0	63
Lane Group Flow (vph)	147	94	0	553	476	0	82	1295	180	145	1035	60
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	27.2	19.2		31.2	21.2		56.2	49.6	49.6	64.0	53.5	53.5
Effective Green, g (s)	27.2	19.2		31.2	21.2		56.2	49.6	49.6	64.0	53.5	53.5
Actuated g/C Ratio	0.25	0.17		0.28	0.19		0.51	0.45	0.45	0.58	0.49	0.49
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	203	561		368	639		263	2035	710	258	2195	745
v/s Ratio Prot	0.05	0.03		c0.14	0.14		0.02	c0.29		c0.05	0.23	
v/s Ratio Perm	0.13			c0.29			0.14		0.11	0.27		0.04
v/c Ratio	0.72	0.17		1.50	0.74		0.31	0.64	0.25	0.56	0.47	0.08
Uniform Delay, d1	34.5	38.6		38.1	41.8		14.1	23.3	18.7	15.1	18.8	15.1
Progression Factor	1.00	1.00		1.00	1.00		1.42	1.16	1.82	1.67	1.27	2.76
Incremental Delay, d2	12.1	0.1		240.0	4.7		0.4	0.9	0.5	2.3	0.6	0.2
Delay (s)	46.5	38.7		278.1	46.5		20.5	27.9	34.6	27.4	24.5	41.8
Level of Service	D	D		F	D		C	C	C	C	C	D
Approach Delay (s/veh)		42.1			162.2			28.7			26.4	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	62.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	472	98	366	147	94	168	296	1287	103	131	1455	425
Future Volume (vph)	472	98	366	147	94	168	296	1287	103	131	1455	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99			0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	4515	1615
Flt Permitted	0.950			0.692			0.102			0.114		
Satd. Flow (perm)	3498	1792	1577	1205	1792	1533	194	3574	1414	208	4515	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			244			167			164			438
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	487	101	377	152	97	173	305	1327	106	135	1500	438
Shared Lane Traffic (%)												
Lane Group Flow (vph)	487	101	377	152	97	173	305	1327	106	135	1500	438
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



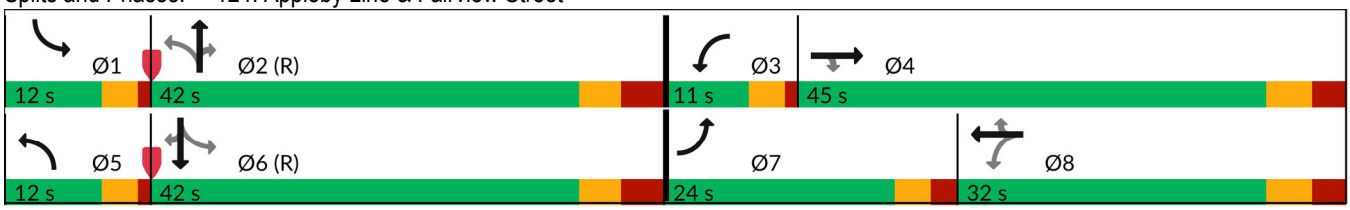
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	24.0	45.0	45.0	11.0	32.0	32.0	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	21.8%	40.9%	40.9%	10.0%	29.1%	29.1%	10.9%	38.2%	38.2%	10.9%	38.2%	38.2%
Maximum Green (s)	19.0	38.5	38.5	7.0	25.5	25.5	8.0	35.2	35.2	8.0	35.2	35.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.3	23.8	23.8	21.0	11.5	11.5	64.6	47.6	47.6	48.2	35.2	35.2
Actuated g/C Ratio	0.17	0.22	0.22	0.19	0.10	0.10	0.59	0.43	0.43	0.44	0.32	0.32
v/c Ratio	0.84	0.26	0.71	0.59	0.52	0.56	0.68	0.86	0.15	0.58	1.04	0.54
Control Delay (s/veh)	58.0	36.4	21.2	39.1	55.9	14.9	32.6	36.3	1.3	27.8	72.8	11.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	58.0	36.4	21.2	39.1	55.9	14.9	32.6	36.3	1.3	27.8	72.8	11.4
LOS	E	D	C	D	E	B	C	D	A	C	E	B
Approach Delay (s/veh)		41.4			33.1			33.5			56.9	
Approach LOS		D			C			C			E	
Queue Length 50th (m)	55.0	19.8	26.6	26.0	22.1	1.3	45.0	140.0	0.0	16.3	~141.4	13.1
Queue Length 95th (m)	#78.6	34.1	59.1	40.9	38.7	21.7	#95.4	#218.4	3.0	m28.2	m#161.6	m33.8
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	604	627	710	259	415	483	446	1547	705	236	1444	806
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.16	0.53	0.59	0.23	0.36	0.68	0.86	0.15	0.57	1.04	0.54

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay (s/veh): 44.3	Intersection LOS: D

Intersection Capacity Utilization 80.8%	ICU Level of Service D
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 124: Appleby Line & Fairview Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	472	98	366	147	94	168	296	1287	103	131	1455	425
Future Volume (vph)	472	98	366	147	94	168	296	1287	103	131	1455	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	1792	1577	1660	1792	1533	1805	3574	1414	1735	4515	1589
Flt Permitted	0.95	1.00	1.00	0.69	1.00	1.00	0.10	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3502	1792	1577	1209	1792	1533	194	3574	1414	208	4515	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	487	101	377	152	97	173	305	1327	106	135	1500	438
RTOR Reduction (vph)	0	0	191	0	0	150	0	0	60	0	0	298
Lane Group Flow (vph)	487	101	186	152	97	23	305	1327	46	135	1500	140
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	18.3	23.8	23.8	18.5	11.5	11.5	61.9	47.7	47.7	45.4	35.2	35.2
Effective Green, g (s)	18.3	23.8	23.8	18.5	11.5	11.5	61.9	47.7	47.7	45.4	35.2	35.2
Actuated g/C Ratio	0.17	0.22	0.22	0.17	0.10	0.10	0.56	0.43	0.43	0.41	0.32	0.32
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	582	387	341	232	187	160	441	1549	613	227	1444	508
v/s Ratio Prot	c0.14	0.06		0.04	0.05		c0.14	c0.37		0.06	c0.33	
v/s Ratio Perm			c0.12	0.07		0.02	0.25		0.03	0.19		0.09
v/c Ratio	0.84	0.26	0.54	0.66	0.52	0.15	0.69	0.86	0.07	0.59	1.04	0.28
Uniform Delay, d1	44.4	35.8	38.3	42.0	46.6	44.8	26.9	28.1	18.2	23.1	37.4	27.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.18	1.12	3.30
Incremental Delay, d2	10.1	0.4	1.8	6.5	2.4	0.4	4.6	6.3	0.2	3.3	31.8	1.1
Delay (s)	54.5	36.2	40.1	48.5	49.1	45.2	31.5	34.4	18.5	30.6	73.7	93.2
Level of Service	D	D	D	D	D	D	C	C	B	C	E	F
Approach Delay (s/veh)		47.0			47.3			32.9			75.0	
Approach LOS		D			D			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	80.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



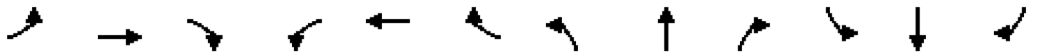
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	217	0	0	338	4	0	0	0	5	0	22
Future Volume (vph)	13	217	0	0	338	4	0	0	0	5	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.888	
Flt Protected		0.997									0.991	
Satd. Flow (prot)	0	3529	0	0	3532	0	0	1863	0	0	1639	0
Flt Permitted		0.997									0.991	
Satd. Flow (perm)	0	3529	0	0	3532	0	0	1863	0	0	1639	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		632.5			121.5			72.4			127.6	
Travel Time (s)		38.0			7.3			6.5			11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	236	0	0	367	4	0	0	0	5	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	0	0	371	0	0	0	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.7%		ICU Level of Service A	
Analysis Period (min) 15			

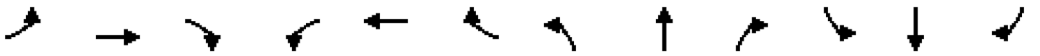
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	217	0	0	338	4	0	0	0	5	0	22
Future Volume (Veh/h)	13	217	0	0	338	4	0	0	0	5	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	236	0	0	367	4	0	0	0	5	0	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	371			236			472	635	118	515	633	186
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	371			236			472	635	118	515	633	186
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	99	100	97
cM capacity (veh/h)	1184			1328			458	390	912	439	391	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	132	118	184	188	0	29
Volume Left	14	0	0	0	0	5
Volume Right	0	0	0	4	0	24
cSH	1184	1700	1328	1700	1700	716
Volume to Capacity	0.01	0.07	0.00	0.11	0.00	0.04
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	1.0
Control Delay (s/veh)	0.9	0.0	0.0	0.0	0.0	10.2
Lane LOS	A				A	B
Approach Delay (s/veh)	0.5		0.0		0.0	10.2
Approach LOS					A	B

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	25.7%	ICU Level of Service		A
Analysis Period (min)	15			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Future Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3487	5136	1577	3453	5136	1528	3496	5136	1562	3442	5136	1588
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259			234			263			258
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	246	790	402	495	867	234	526	800	360	453	877	268
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	790	402	495	867	234	526	800	360	453	877	268
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0	22.0	48.0	48.0
Total Split (%)	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%	15.7%	34.3%	34.3%
Maximum Green (s)	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6	17.0	40.6	40.6
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.8	30.2	30.2	17.0	31.4	31.4	27.4	41.9	41.9	26.1	40.6	40.6
Actuated g/C Ratio	0.11	0.22	0.22	0.12	0.22	0.22	0.20	0.30	0.30	0.19	0.29	0.29
v/c Ratio	0.62	0.71	0.74	1.18	0.75	0.45	0.77	0.52	0.55	0.70	0.59	0.42
Control Delay (s/veh)	66.4	54.3	25.8	154.3	55.0	7.7	62.1	42.5	14.8	60.3	44.5	7.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	66.4	54.3	25.8	154.3	55.0	7.7	62.1	42.5	14.8	60.3	44.5	7.1
LOS	E	D	C	F	D	A	E	D	B	E	D	A
Approach Delay (s/veh)		48.4			78.9			42.7			42.7	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	35.5	79.1	39.6	~89.3	88.3	0.0	75.8	72.5	21.6	64.3	80.9	2.1
Queue Length 95th (m)	50.3	89.1	75.5	#126.3	98.8	21.7	#121.5	87.2	55.2	#99.0	96.5	24.4
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	425	1489	641	420	1489	609	684	1535	651	646	1489	643
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.53	0.63	1.18	0.58	0.38	0.77	0.52	0.55	0.70	0.59	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 118 (84%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 53.1	Intersection LOS: D

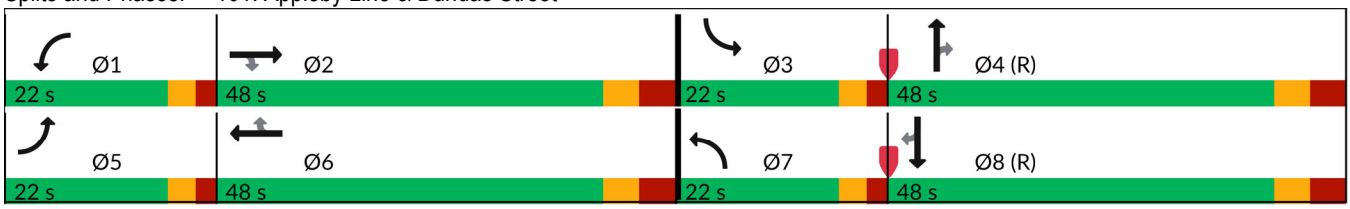
Intersection Capacity Utilization 103.7% ICU Level of Service G

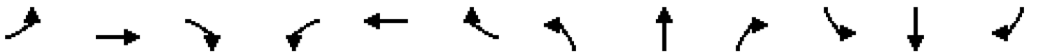
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

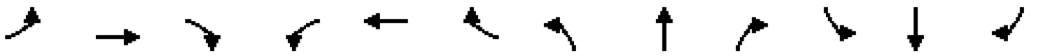




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Future Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1577	3467	5136	1528	3502	5136	1562	3467	5136	1588
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	246	790	402	495	867	234	526	800	360	453	877	268
RTOR Reduction (vph)	0	0	203	0	0	182	0	0	184	0	0	183
Lane Group Flow (vph)	246	790	199	495	867	52	526	800	176	453	877	85
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.8	30.2	30.2	17.0	31.4	31.4	27.4	41.9	41.9	26.1	40.6	40.6
Effective Green, g (s)	15.8	30.2	30.2	17.0	31.4	31.4	27.4	41.9	41.9	26.1	40.6	40.6
Actuated g/C Ratio	0.11	0.22	0.22	0.12	0.22	0.22	0.20	0.30	0.30	0.19	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	395	1107	340	420	1151	342	685	1537	467	646	1489	460
v/s Ratio Prot	0.07	0.15		c0.14	c0.17		c0.15	0.16		0.13	c0.17	
v/s Ratio Perm			0.13			0.03			0.11			0.05
v/c Ratio	0.62	0.71	0.58	1.18	0.75	0.15	0.77	0.52	0.38	0.70	0.59	0.18
Uniform Delay, d1	59.3	50.9	49.3	61.5	50.7	43.6	53.3	40.7	38.7	53.3	42.6	37.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.3	2.2	2.6	102.5	2.8	0.2	6.1	1.3	2.3	4.3	1.7	0.9
Delay (s)	63.5	53.1	51.8	164.0	53.5	43.8	59.4	42.0	41.0	57.6	44.3	38.2
Level of Service	E	D	D	F	D	D	E	D	D	E	D	D
Approach Delay (s/veh)		54.5			86.4			47.2			47.0	
Approach LOS		D			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Future Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	1		1	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	*0.80	1.00	0.97	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.925				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3286	0	1787	4515	1615	3502	4438	0	1787	4378	0
Flt Permitted	0.286			0.164			0.950			0.104		
Satd. Flow (perm)	525	3286	0	308	4515	1575	3496	4438	0	196	4378	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		214				178		16			36	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	277	365	364	230	603	517	328	1452	149	338	1206	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	729	0	230	603	517	328	1601	0	338	1463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



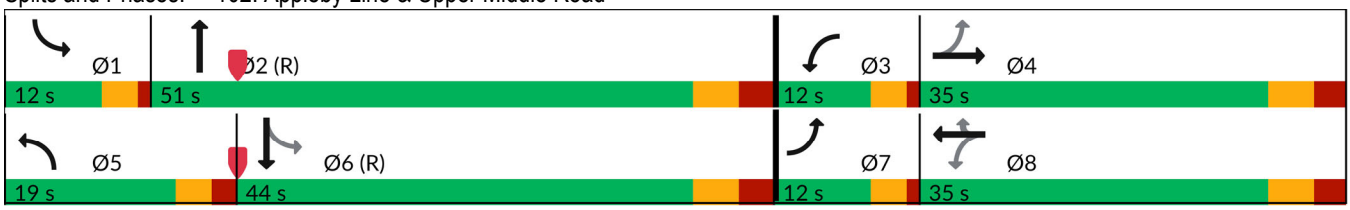
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	12.0	35.0		12.0	35.0	35.0	19.0	51.0		12.0	44.0	
Total Split (%)	10.9%	31.8%		10.9%	31.8%	31.8%	17.3%	46.4%		10.9%	40.0%	
Maximum Green (s)	8.0	28.6		8.0	28.6	28.6	14.0	44.5		8.0	37.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	38.5	28.1		38.5	28.1	28.1	13.5	44.5		49.5	38.5	
Actuated g/C Ratio	0.35	0.26		0.35	0.26	0.26	0.12	0.40		0.45	0.35	
v/c Ratio	1.02	0.73		1.07	0.52	0.97	0.76	0.89		1.60	0.94	
Control Delay (s/veh)	89.9	30.9		110.5	37.0	59.0	63.1	18.6		315.0	46.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	89.9	30.9		110.5	37.0	59.0	63.1	18.6		315.0	46.9	
LOS	F	C		F	D	E	E	B		F	D	
Approach Delay (s/veh)		47.1			57.9			26.2			97.2	
Approach LOS		D			E			C			F	
Queue Length 50th (m)	~46.1	56.4		~39.5	48.9	81.0	31.7	133.2		~96.4	132.5	
Queue Length 95th (m)	#103.6	78.9		#87.7	63.3	#151.4	m44.5	107.1		#155.4	#172.6	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	272	1012		215	1173	541	445	1804		211	1556	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.02	0.72		1.07	0.51	0.96	0.74	0.89		1.60	0.94	

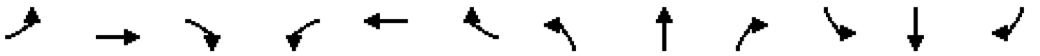
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.60	
Intersection Signal Delay (s/veh): 57.7	Intersection LOS: E

Intersection Capacity Utilization 101.3%	ICU Level of Service G
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road

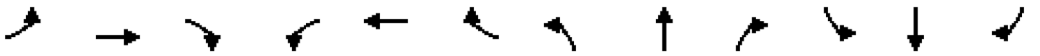




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Future Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		1.00	*0.80	1.00	0.97	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	3286		1787	4515	1575	3502	4438		1787	4377	
Flt Permitted	0.29	1.00		0.16	1.00	1.00	0.95	1.00		0.10	1.00	
Satd. Flow (perm)	528	3286		309	4515	1575	3502	4438		195	4377	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	277	365	364	230	603	517	328	1452	149	338	1206	257
RTOR Reduction (vph)	0	159	0	0	0	133	0	10	0	0	23	0
Lane Group Flow (vph)	277	570	0	230	603	384	328	1591	0	338	1440	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8				6		
Actuated Green, G (s)	36.1	28.1		36.1	28.1	28.1	13.5	44.5		47.0	38.5	
Effective Green, g (s)	36.1	28.1		36.1	28.1	28.1	13.5	44.5		47.0	38.5	
Actuated g/C Ratio	0.33	0.26		0.33	0.26	0.26	0.12	0.40		0.43	0.35	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	262	839		208	1153	402	429	1795		206	1531	
v/s Ratio Prot	0.08	0.17		c0.08	0.13		0.09	c0.36		c0.13	0.33	
v/s Ratio Perm	0.27			c0.28		0.24				c0.57		
v/c Ratio	1.06	0.68		1.11	0.52	0.96	0.76	0.89		1.64	0.94	
Uniform Delay, d1	33.9	36.9		32.6	35.2	40.3	46.7	30.4		26.3	34.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.18	0.45		1.00	1.00	
Incremental Delay, d2	71.5	2.2		93.6	0.4	33.4	5.1	4.5		309.2	12.6	
Delay (s)	105.4	39.1		126.2	35.6	73.8	60.1	18.2		335.6	47.2	
Level of Service	F	D		F	D	E	E	B		F	D	
Approach Delay (s/veh)		57.4			65.7			25.3			101.4	
Approach LOS		E			E			C			F	

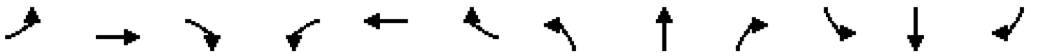
Intersection Summary			
HCM 2000 Control Delay (s/veh)	62.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	657	63	1	1261	75	21	0	1	58	0	105
Future Volume (vph)	129	657	63	1	1261	75	21	0	1	58	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			0.0			7.5			0.0		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.987			0.992			0.994			0.913	
Flt Protected	0.950							0.954			0.983	
Satd. Flow (prot)	1787	4452	0	0	4481	0	0	1766	0	0	1705	0
Flt Permitted	0.950							0.954			0.983	
Satd. Flow (perm)	1787	4452	0	0	4481	0	0	1766	0	0	1705	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			128.2			285.4	
Travel Time (s)		7.1			17.4			11.5			25.7	
Confl. Peds. (#/hr)	18					18						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	136	692	66	1	1327	79	22	0	1	61	0	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	758	0	0	1407	0	0	23	0	0	172	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.3%		ICU Level of Service B	
Analysis Period (min) 15			
* User Entered Value			

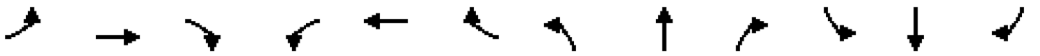


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	657	63	1	1261	75	21	0	1	58	0	105
Future Volume (Veh/h)	129	657	63	1	1261	75	21	0	1	58	0	105
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	136	692	66	1	1327	79	22	0	1	61	0	111
Pedestrians		1									18	
Lane Width (m)		3.6									3.6	
Walking Speed (m/s)		1.2									1.2	
Percent Blockage		0									2	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)		376			291							
pX, platoon unblocked	0.81						0.81	0.81		0.81	0.81	0.81
vC, conflicting volume	1424			758			1553	2423	264	1890	2417	501
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	696			758			856	1931	264	1272	1923	0
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	81			100			85	100	100	28	100	87
cM capacity (veh/h)	719			849			150	42	735	85	43	868

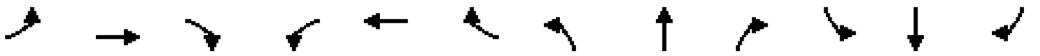
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	NB 1	SB 1
Volume Total	136	277	277	204	333	664	411	23	172
Volume Left	136	0	0	0	1	0	0	22	61
Volume Right	0	0	0	66	0	0	79	1	111
cSH	719	1700	1700	1700	849	1700	1700	155	203
Volume to Capacity	0.19	0.16	0.16	0.12	0.00*	0.39	0.24	0.15	0.85
Queue Length 95th (m)	5.5	0.0	0.0	0.0	0.0	0.0	0.0	4.1	50.4
Control Delay (s/veh)	11.2	0.0	0.0	0.0	0.0	0.0	0.0	32.2	77.0
Lane LOS	B				A			D	F
Approach Delay (s/veh)	1.7				0.0			32.2	77.0
Approach LOS								D	F

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	59.3%	ICU Level of Service		B
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Future Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			0.0			7.5			0.0		
Lane Util. Factor	1.00	*0.80	0.91	0.91	*0.80	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.990			0.975			0.978			0.940	
Flt Protected	0.950							0.962			0.973	
Satd. Flow (prot)	1770	4467	0	0	4371	0	0	1753	0	0	1715	0
Flt Permitted	0.094				0.936			0.683			0.802	
Satd. Flow (perm)	175	4467	0	0	4091	0	0	1244	0	0	1413	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			46			8			48	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			125.2			244.6	
Travel Time (s)		17.4			14.7			11.3			22.0	
Confl. Peds. (#/hr)	12					12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	150	528	39	7	1171	240	40	2	8	226	2	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	567	0	0	1418	0	0	50	0	0	412	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		8.0	8.0		5.0	5.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		31.0	31.0		22.5	22.5		34.0	34.0	
Total Split (s)	12.0	54.0		42.0	42.0		22.5	22.5		36.0	36.0	
Total Split (%)	13.3%	60.0%		46.7%	46.7%		25.0%	25.0%		40.0%	40.0%	
Maximum Green (s)	8.0	48.0		36.0	36.0		18.0	18.0		29.0	29.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.5	3.5		4.0	4.0	
All-Red Time (s)	1.0	2.0		2.0	2.0		1.0	1.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	6.0			6.0			4.5			7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	None		None	None	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		18.0		18.0	18.0		11.0	11.0		20.0	20.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	52.3	50.3			38.5			29.2			26.7	
Actuated g/C Ratio	0.58	0.56			0.43			0.32			0.30	
v/c Ratio	0.63	0.23			0.80			0.12			0.91	
Control Delay (s/veh)	40.7	25.3			26.6			18.4			52.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	40.7	25.3			26.6			18.4			52.5	
LOS	D	C			C			B			D	
Approach Delay (s/veh)		28.5			26.6			18.4			52.5	
Approach LOS		C			C			B			D	
Queue Length 50th (m)	26.2	39.5			93.7			5.2			62.8	
Queue Length 95th (m)	#48.7	53.1			117.3			13.4			#117.1	
Internal Link Dist (m)		266.7			220.7			101.2			220.6	
Turn Bay Length (m)	60.0											
Base Capacity (vph)	243	2503			1775			440			487	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.62	0.23			0.80			0.11			0.85	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 31.1	Intersection LOS: C

Intersection Capacity Utilization 76.7% ICU Level of Service D

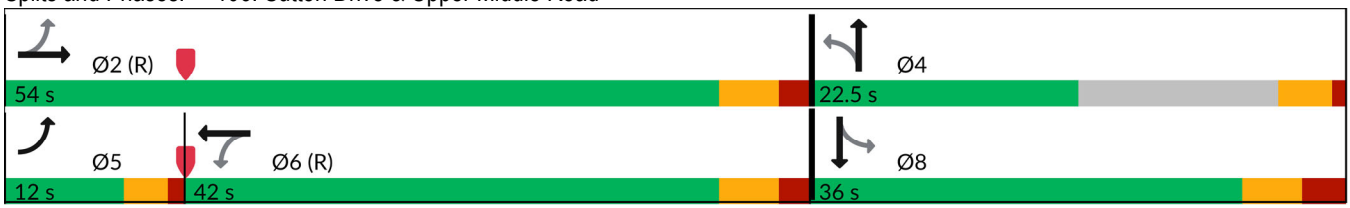
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

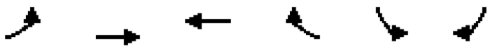
Splits and Phases: 106: Sutton Drive & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Future Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0			6.0			4.5			7.0	
Lane Util. Factor	1.00	*0.80			*0.80			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			0.99			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.97			0.98			0.94	
Flt Protected	0.95	1.00			1.00			0.96			0.97	
Satd. Flow (prot)	1769	4465			4368			1752			1715	
Flt Permitted	0.09	1.00			0.94			0.68			0.80	
Satd. Flow (perm)	175	4465			4091			1245			1412	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	150	528	39	7	1171	240	40	2	8	226	2	184
RTOR Reduction (vph)	0	7	0	0	26	0	0	5	0	0	34	0
Lane Group Flow (vph)	150	560	0	0	1392	0	0	45	0	0	378	0
Confl. Peds. (#/hr)	12					12						
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	5	2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	50.3	50.3			38.5			29.2			26.7	
Effective Green, g (s)	50.3	50.3			38.5			29.2			26.7	
Actuated g/C Ratio	0.56	0.56			0.43			0.32			0.30	
Clearance Time (s)	4.0	6.0			6.0			4.5			7.0	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	235	2495			1750			403			418	
v/s Ratio Prot	c0.06	0.13										
v/s Ratio Perm	0.30				c0.34			0.04			c0.27	
v/c Ratio	0.64	0.22			0.80			0.11			0.90	
Uniform Delay, d1	14.4	10.0			22.3			21.3			30.4	
Progression Factor	2.26	2.46			1.00			1.00			1.00	
Incremental Delay, d2	5.3	0.2			3.8			0.1			22.5	
Delay (s)	38.1	24.8			26.2			21.4			53.0	
Level of Service	D	C			C			C			D	
Approach Delay (s/veh)		27.6			26.2			21.4			53.0	
Approach LOS		C			C			C			D	

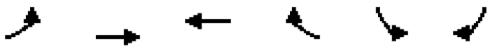
Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	668	1262	86	66	34
Future Volume (vph)	38	668	1262	86	66	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	*0.80	*0.80	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.990		0.954	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1805	4560	4514	0	1731	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1805	4560	4514	0	1731	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	40	703	1328	91	69	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	703	1419	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 44.0%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	38	668	1262	86	66	34
Future Volume (Veh/h)	38	668	1262	86	66	34
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	40	703	1328	91	69	36
Pedestrians					7	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1426				1695	495
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1426				1695	495
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				11	93
cM capacity (veh/h)	480				78	512

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	40	234	234	234	531	531	357	105
Volume Left	40	0	0	0	0	0	0	69
Volume Right	0	0	0	0	0	0	91	36
cSH	480	1700	1700	1700	1700	1700	1700	110
Volume to Capacity	0.08	0.14	0.14	0.14	0.31	0.31	0.21	0.96
Queue Length 95th (m)	2.2	0.0	0.0	0.0	0.0	0.0	0.0	47.9
Control Delay (s/veh)	13.2	0.0	0.0	0.0	0.0	0.0	0.0	147.2
Lane LOS	B							F
Approach Delay (s/veh)	0.7				0.0			147.2
Approach LOS								F

Intersection Summary			
Average Delay	7.1		
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	54	44	1294	56	16	722
Future Volume (vph)	54	44	1294	56	16	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	0.0				7.5	
Lane Util. Factor	1.00	1.00	*0.80	0.91	1.00	*0.80
Ped Bike Factor						
Frt	0.940		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1738	0	4533	0	1805	4560
Flt Permitted	0.973				0.950	
Satd. Flow (perm)	1738	0	4533	0	1805	4560
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		126.6			464.6
Travel Time (s)	14.5		7.6			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	58	47	1391	60	17	776
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	1451	0	17	776
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

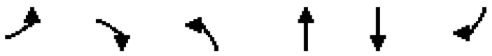
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.6%		ICU Level of Service A	
Analysis Period (min) 15			
* User Entered Value			



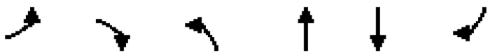
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	54	44	1294	56	16	722
Future Volume (Veh/h)	54	44	1294	56	16	722
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	58	47	1391	60	17	776
Pedestrians	1					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	1715	495			1452	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1715	495			1452	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	27	91			96	
cM capacity (veh/h)	80	525			472	

Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	105	556	556	338	17	259	259	259
Volume Left	58	0	0	0	17	0	0	0
Volume Right	47	0	0	60	0	0	0	0
cSH	129	1700	1700	1700	472	1700	1700	1700
Volume to Capacity	0.82	0.33	0.33	0.20	0.04	0.15	0.15	0.15
Queue Length 95th (m)	39.7	0.0	0.0	0.0	0.9	0.0	0.0	0.0
Control Delay (s/veh)	101.1	0.0	0.0	0.0	12.9	0.0	0.0	0.0
Lane LOS	F				B			
Approach Delay (s/veh)	101.1	0.0			0.3			
Approach LOS	F							

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	246	463	1263	714	48
Future Volume (vph)	80	246	463	1263	714	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	0.0		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	1787	4560	4509	0
Flt Permitted	0.950		0.241			
Satd. Flow (perm)	1805	1615	453	4560	4509	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		259			14	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	589.8	
Travel Time (s)	52.1			27.2	35.4	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	84	259	487	1329	752	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	259	487	1329	803	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	25.0	25.0	14.0	55.0	41.0	
Total Split (%)	31.3%	31.3%	17.5%	68.8%	51.3%	
Maximum Green (s)	18.0	18.0	10.0	48.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.8	9.8	59.2	56.2	34.0	
Actuated g/C Ratio	0.12	0.12	0.74	0.70	0.43	
v/c Ratio	0.38	0.61	0.76	0.41	0.42	
Control Delay (s/veh)	36.9	11.1	20.2	6.5	16.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.9	11.1	20.2	6.5	16.6	
LOS	D	B	C	A	B	
Approach Delay (s/veh)	17.4			10.2	16.6	
Approach LOS	B			B	B	
Queue Length 50th (m)	12.7	0.0	33.2	22.9	35.4	
Queue Length 95th (m)	24.8	19.7	#85.3	69.2	47.0	
Internal Link Dist (m)	845.1			429.2	565.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	406	564	639	3205	1924	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.21	0.46	0.76	0.41	0.42	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 54 (68%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay (s/veh): 12.8	Intersection LOS: B

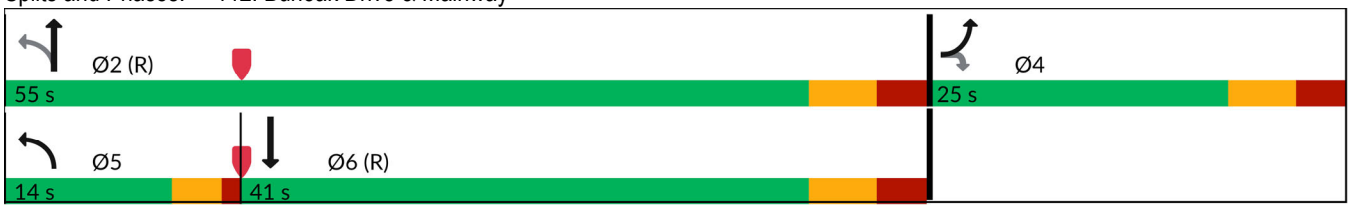
Intersection Capacity Utilization 72.3%	ICU Level of Service C
Analysis Period (min) 15	

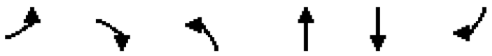
* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

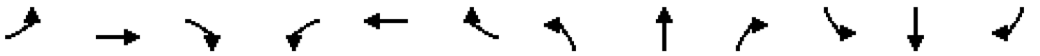




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	246	463	1263	714	48
Future Volume (vph)	80	246	463	1263	714	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1787	4560	4512	
Flt Permitted	0.95	1.00	0.24	1.00	1.00	
Satd. Flow (perm)	1805	1615	453	4560	4512	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	259	487	1329	752	51
RTOR Reduction (vph)	0	227	0	0	8	0
Lane Group Flow (vph)	84	32	487	1329	795	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	9.8	9.8	56.2	56.2	34.0	
Effective Green, g (s)	9.8	9.8	56.2	56.2	34.0	
Actuated g/C Ratio	0.12	0.12	0.70	0.70	0.43	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	221	197	621	3203	1917	
v/s Ratio Prot	c0.05		c0.18	0.29	0.18	
v/s Ratio Perm		0.02	c0.37			
v/c Ratio	0.38	0.16	0.78	0.41	0.41	
Uniform Delay, d1	32.3	31.4	8.3	5.0	16.1	
Progression Factor	1.00	1.00	1.41	1.17	1.00	
Incremental Delay, d2	1.1	0.4	6.2	0.4	0.7	
Delay (s)	33.4	31.8	17.8	6.2	16.7	
Level of Service	C	C	B	A	B	
Approach Delay (s/veh)	32.2			9.3	16.7	
Approach LOS	C			A	B	

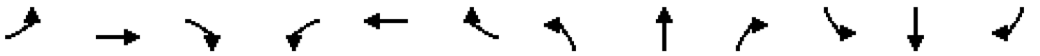
Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	149	15	6	319	66	22	40	10	92	43	17
Future Volume (vph)	17	149	15	6	319	66	22	40	10	92	43	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor												
Frt		0.988			0.975			0.982			0.985	
Flt Protected		0.995			0.999			0.985			0.971	
Satd. Flow (prot)	0	3542	0	0	3504	0	0	1817	0	0	1782	0
Flt Permitted		0.995			0.999			0.985			0.971	
Satd. Flow (perm)	0	3542	0	0	3504	0	0	1817	0	0	1782	0
Link Speed (k/h)		60			60			40			50	
Link Distance (m)		121.5			869.1			154.8			140.4	
Travel Time (s)		7.3			52.1			13.9			10.1	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	17	152	15	6	326	67	22	41	10	94	44	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	184	0	0	399	0	0	73	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.7%		ICU Level of Service A	
Analysis Period (min) 15			

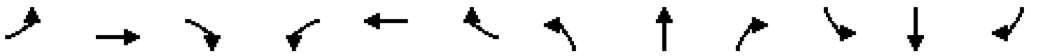


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	149	15	6	319	66	22	40	10	92	43	17
Future Volume (Veh/h)	17	149	15	6	319	66	22	40	10	92	43	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	17	152	15	6	326	67	22	41	10	94	44	17
Pedestrians								3				
Lane Width (m)								3.6				
Walking Speed (m/s)								1.2				
Percent Blockage								0				
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	393			170			411	602	87	512	576	197
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	393			170			411	602	87	512	576	197
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			95	90	99	76	89	98
cM capacity (veh/h)	1162			1416			469	404	959	400	418	812

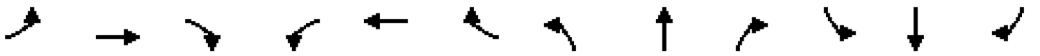
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	93	91	169	230	73	155
Volume Left	17	0	6	0	22	94
Volume Right	0	15	0	67	10	17
cSH	1162	1700	1416	1700	459	429
Volume to Capacity	0.01	0.05	0.00*	0.14	0.16	0.36
Queue Length 95th (m)	0.4	0.0	0.1	0.0	4.5	13.0
Control Delay (s/veh)	1.6	0.0	0.3	0.0	14.3	18.1
Lane LOS	A		A		B	C
Approach Delay (s/veh)	0.8		0.1		14.3	18.1
Approach LOS					B	C

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	39.7%	ICU Level of Service		A
Analysis Period (min)	15			

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Future Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00			1.00	
Frt		0.899			0.956			0.993			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3196	0	1770	3390	0	1805	4478	0	1770	4430	0
Flt Permitted	0.370			0.497			0.073			0.081		
Satd. Flow (perm)	703	3196	0	925	3390	0	139	4478	0	151	4430	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192			59			7			14	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	180	92	192	102	249	103	207	1542	78	72	1536	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	284	0	102	352	0	207	1620	0	72	1688	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	12.0	40.0		12.0	40.0		12.0	46.0		12.0	46.0	
Total Split (%)	10.9%	36.4%		10.9%	36.4%		10.9%	41.8%		10.9%	41.8%	
Maximum Green (s)	8.0	33.7		8.0	33.7		8.0	39.7		8.0	39.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	25.5	15.2		25.1	15.0		72.7	61.0		60.7	50.8	
Actuated g/C Ratio	0.23	0.14		0.23	0.14		0.66	0.55		0.55	0.46	
v/c Ratio	0.74	0.47		0.38	0.68		0.63	0.65		0.37	0.82	
Control Delay (s/veh)	52.7	16.8		34.7	44.2		42.8	8.0		21.0	39.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	52.7	16.8		34.7	44.2		42.8	8.0		21.0	39.2	
LOS	D	B		C	D		D	A		C	D	
Approach Delay (s/veh)		30.7			42.1			11.9			38.4	
Approach LOS		C			D			B			D	
Queue Length 50th (m)	33.2	10.0		18.2	34.0		26.5	23.8		9.1	134.9	
Queue Length 95th (m)	#51.5	22.1		31.1	48.1		48.0	59.2		m19.3	#188.2	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	243	1112		274	1079		326	2486		205	2055	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.74	0.26		0.37	0.33		0.63	0.65		0.35	0.82	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 46 (42%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 27.3	Intersection LOS: C

Intersection Capacity Utilization 81.8% ICU Level of Service D

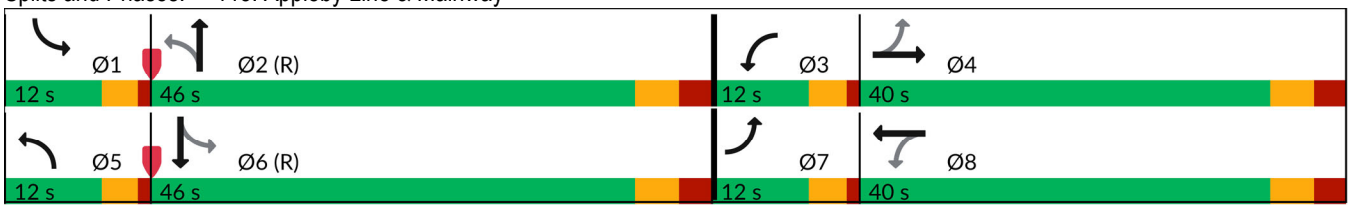
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

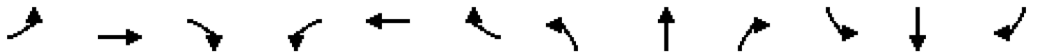


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Future Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3195		1769	3390		1805	4477		1770	4432	
Flt Permitted	0.37	1.00		0.50	1.00		0.07	1.00		0.08	1.00	
Satd. Flow (perm)	703	3195		926	3390		138	4477		151	4432	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	180	92	192	102	249	103	207	1542	78	72	1536	152
RTOR Reduction (vph)	0	165	0	0	51	0	0	3	0	0	8	0
Lane Group Flow (vph)	180	119	0	102	301	0	207	1617	0	72	1680	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	23.2	15.2		22.8	15.0		70.4	60.2		57.1	50.9	
Effective Green, g (s)	23.2	15.2		22.8	15.0		70.4	60.2		57.1	50.9	
Actuated g/C Ratio	0.21	0.14		0.21	0.14		0.64	0.55		0.52	0.46	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	228	441		251	462		323	2450		169	2050	
v/s Ratio Prot	c0.06	0.04		0.03	0.09		c0.09	0.36		0.02	c0.38	
v/s Ratio Perm	c0.11			0.06			0.32			0.20		
v/c Ratio	0.79	0.27		0.41	0.65		0.64	0.66		0.43	0.82	
Uniform Delay, d1	39.0	42.4		36.7	45.0		26.1	17.6		14.7	25.6	
Progression Factor	1.00	1.00		1.00	1.00		1.67	0.37		1.49	1.38	
Incremental Delay, d2	16.4	0.3		1.1	3.3		3.5	1.1		1.4	3.0	
Delay (s)	55.5	42.8		37.8	48.3		47.0	7.7		23.2	38.2	
Level of Service	E	D		D	D		D	A		C	D	
Approach Delay (s/veh)		47.7			45.9			12.2			37.6	
Approach LOS		D			D			B			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Future Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	0.0			0.0			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.948			0.955			0.986			0.998	
Flt Protected		0.979			0.970		0.950			0.950		
Satd. Flow (prot)	0	1734	0	0	1727	0	1805	4443	0	1805	4505	0
Flt Permitted		0.773			0.764		0.079			0.063		
Satd. Flow (perm)	0	1367	0	0	1359	0	150	4443	0	120	4505	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			23			19			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	47	19	41	194	17	104	35	1746	182	94	1721	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	315	0	35	1928	0	94	1740	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	39.0	39.0		39.0	39.0		59.0	59.0		12.0	71.0	
Total Split (%)	35.5%	35.5%		35.5%	35.5%		53.6%	53.6%		10.9%	64.5%	
Maximum Green (s)	32.5	32.5		32.5	32.5		53.0	53.0		8.0	65.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		27.9			27.9		60.3	60.3		71.6	69.6	
Actuated g/C Ratio		0.25			0.25		0.55	0.55		0.65	0.63	
v/c Ratio		0.30			0.87		0.43	0.79		0.49	0.61	
Control Delay (s/veh)		27.6			60.3		24.6	13.9		13.4	9.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		27.6			60.3		24.6	13.9		13.4	9.4	
LOS		C			E		C	B		B	A	
Approach Delay (s/veh)		27.6			60.3			14.0			9.6	
Approach LOS		C			E			B			A	
Queue Length 50th (m)		15.4			62.4		1.6	130.7		4.4	126.8	
Queue Length 95th (m)		29.8			#102.3		m2.6	126.0		m6.2	m133.2	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		417			417		82	2444		200	2852	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.26			0.76		0.43	0.79		0.47	0.61	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 61 (55%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 15.9	Intersection LOS: B

Intersection Capacity Utilization 79.7% ICU Level of Service D

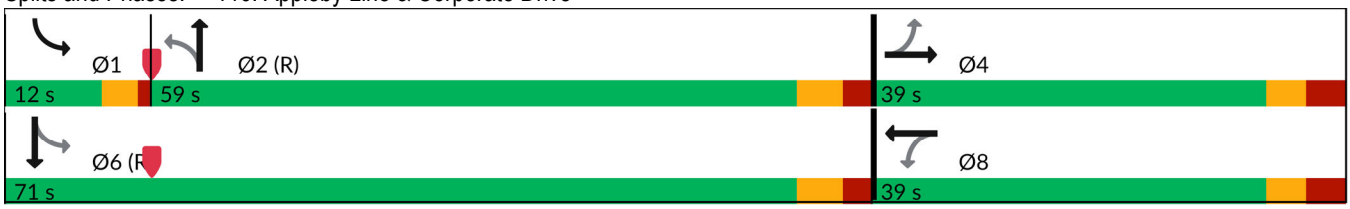
Analysis Period (min) 15

* User Entered Value

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

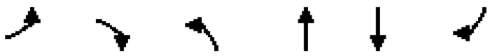
Splits and Phases: 116: Appleby Line & Corporate Drive



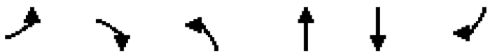
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Future Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730			1726		1803	4443		1805	4506	
Flt Permitted		0.77			0.76		0.08	1.00		0.06	1.00	
Satd. Flow (perm)		1367			1360		149	4443		120	4506	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	19	41	194	17	104	35	1746	182	94	1721	19
RTOR Reduction (vph)	0	15	0	0	17	0	0	9	0	0	1	0
Lane Group Flow (vph)	0	92	0	0	298	0	35	1919	0	94	1739	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.9			27.9		59.5	59.5		69.6	69.6	
Effective Green, g (s)		27.9			27.9		59.5	59.5		69.6	69.6	
Actuated g/C Ratio		0.25			0.25		0.54	0.54		0.63	0.63	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		346			344		80	2403		169	2851	
v/s Ratio Prot								c0.43		0.03	c0.39	
v/s Ratio Perm		0.07			c0.22		0.23			0.32		
v/c Ratio		0.27			0.87		0.44	0.80		0.56	0.61	
Uniform Delay, d1		32.9			39.3		15.2	20.4		17.6	12.1	
Progression Factor		1.00			1.00		0.47	0.52		0.78	0.69	
Incremental Delay, d2		0.4			19.7		13.4	2.3		1.7	0.4	
Delay (s)		33.3			59.0		20.6	13.0		15.4	8.8	
Level of Service		C			E		C	B		B	A	
Approach Delay (s/veh)		33.3			59.0			13.1			9.1	
Approach LOS		C			E			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	88	169	1384	815	13
Future Volume (vph)	14	88	169	1384	815	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	1736	4560	4541	0
Flt Permitted	0.950		0.242			
Satd. Flow (perm)	1805	1509	440	4560	4541	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		94			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	15	94	180	1472	867	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	94	180	1472	881	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	26.0	26.0	14.0	54.0	40.0	
Total Split (%)	32.5%	32.5%	17.5%	67.5%	50.0%	
Maximum Green (s)	19.0	19.0	10.0	47.0	33.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.4	8.4	63.6	62.0	47.0	
Actuated g/C Ratio	0.11	0.11	0.80	0.78	0.59	
v/c Ratio	0.08	0.39	0.36	0.42	0.33	
Control Delay (s/veh)	32.9	12.8	3.7	4.0	3.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	32.9	12.8	3.7	4.0	3.8	
LOS	C	B	A	A	A	
Approach Delay (s/veh)	15.6			3.9	3.8	
Approach LOS	B			A	A	
Queue Length 50th (m)	2.2	0.0	9.2	34.0	8.1	
Queue Length 95th (m)	7.6	13.8	m8.2	m25.1	15.3	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	428	430	518	3534	2667	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.04	0.22	0.35	0.42	0.33	

Intersection Summary		
Area Type:	Other	
Cycle Length: 80		
Actuated Cycle Length: 80		
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.42		
Intersection Signal Delay (s/veh): 4.4	Intersection LOS: A	

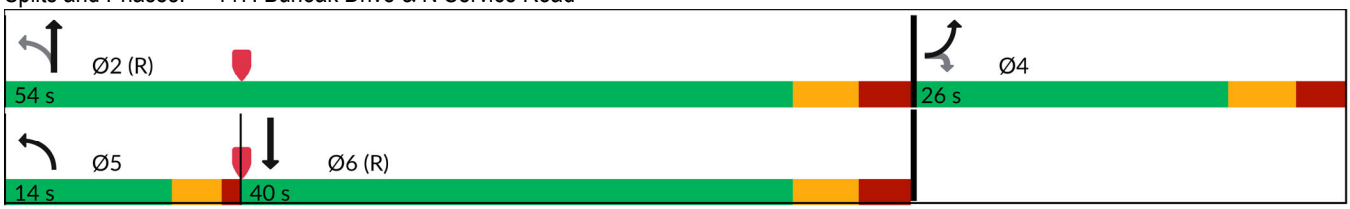
Intersection Capacity Utilization 56.0% ICU Level of Service B

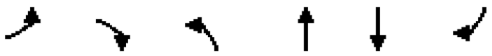
Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	88	169	1384	815	13
Future Volume (vph)	14	88	169	1384	815	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	1.00	*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	1734	4560	4539	
Flt Permitted	0.95	1.00	0.24	1.00	1.00	
Satd. Flow (perm)	1805	1509	441	4560	4539	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	94	180	1472	867	14
RTOR Reduction (vph)	0	86	0	0	1	0
Lane Group Flow (vph)	15	8	180	1472	880	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	6.8	6.8	59.2	59.2	45.6	
Effective Green, g (s)	6.8	6.8	59.2	59.2	45.6	
Actuated g/C Ratio	0.09	0.09	0.74	0.74	0.57	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	153	128	481	3374	2587	
v/s Ratio Prot	c0.01		0.04	c0.32	0.19	
v/s Ratio Perm		0.01	0.23			
v/c Ratio	0.10	0.06	0.37	0.44	0.34	
Uniform Delay, d1	33.8	33.7	3.3	4.0	9.2	
Progression Factor	1.00	1.00	1.36	0.95	0.36	
Incremental Delay, d2	0.3	0.2	0.1	0.0	0.3	
Delay (s)	34.1	33.9	4.6	3.8	3.6	
Level of Service	C	C	A	A	A	
Approach Delay (s/veh)	33.9			3.9	3.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	5.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1538	974	0	0	1290
Future Volume (vph)	2146	1538	974	0	0	1290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	1		0	0	
Taper Length (m)	0.0				0.0	
Lane Util. Factor	0.97	0.91	*0.80	1.00	1.00	*0.80
Ped Bike Factor	1.00					
Frt	0.977	0.850				
Flt Protected	0.959					
Satd. Flow (prot)	3391	1455	4560	0	0	4515
Flt Permitted	0.959					
Satd. Flow (perm)	3388	1455	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	30	63				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	2235	1602	1015	0	0	1344
Shared Lane Traffic (%)		25%				
Lane Group Flow (vph)	2636	1201	1015	0	0	1344
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



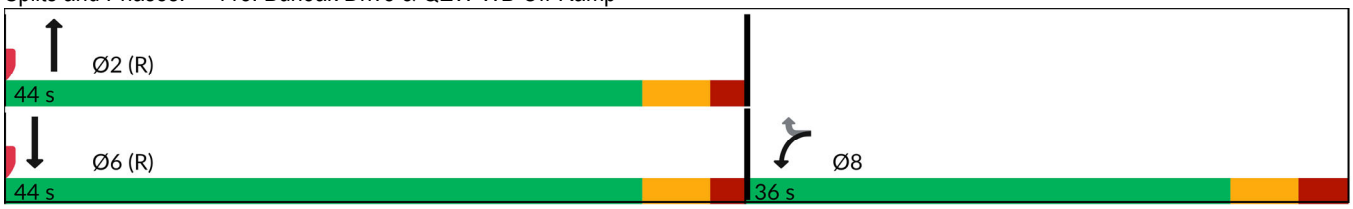
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	36.0	36.0	44.0			44.0
Total Split (%)	45.0%	45.0%	55.0%			55.0%
Maximum Green (s)	29.0	29.0	38.0			38.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
v/c Ratio	2.11	2.12	0.47			0.63
Control Delay (s/veh)	523.7	529.1	15.1			8.8
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	523.7	529.1	15.1			8.8
LOS	F	F	B			A
Approach Delay (s/veh)	525.4		15.1			8.8
Approach LOS	F		B			A
Queue Length 50th (m)	~360.1	~341.3	43.5			33.1
Queue Length 95th (m)	#404.8	#427.3	56.2			28.5
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1248	567	2166			2144
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	2.11	2.12	0.47			0.63

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 14 (18%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.12	
Intersection Signal Delay (s/veh): 329.8	Intersection LOS: F

Intersection Capacity Utilization 113.1%	ICU Level of Service H
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

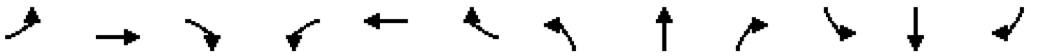




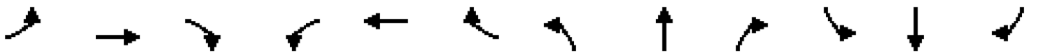
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1538	974	0	0	1290
Future Volume (vph)	2146	1538	974	0	0	1290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.91	*0.80			*0.80
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	0.98	0.85	1.00			1.00
Flt Protected	0.96	1.00	1.00			1.00
Satd. Flow (prot)	3393	1455	4560			4515
Flt Permitted	0.96	1.00	1.00			1.00
Satd. Flow (perm)	3393	1455	4560			4515
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2235	1602	1015	0	0	1344
RTOR Reduction (vph)	19	40	0	0	0	0
Lane Group Flow (vph)	2617	1161	1015	0	0	1344
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	29.0	29.0	38.0			38.0
Effective Green, g (s)	29.0	29.0	38.0			38.0
Actuated g/C Ratio	0.36	0.36	0.48			0.48
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1229	527	2166			2144
v/s Ratio Prot	0.77		0.22			c0.30
v/s Ratio Perm		c0.80				
v/c Ratio	2.13	2.20	0.47			0.63
Uniform Delay, d1	25.5	25.5	14.2			15.7
Progression Factor	1.00	1.00	1.00			0.47
Incremental Delay, d2	510.9	547.4	0.7			1.4
Delay (s)	536.4	572.9	14.9			8.7
Level of Service	F	F	B			A
Approach Delay (s/veh)	547.8		14.9			8.7
Approach LOS	F		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	343.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	113.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Future Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	0.0			0.0			0.0			0.0		
Lane Util. Factor	1.00	0.91	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.941	0.850			0.865		0.996				
Flt Protected	0.950											
Satd. Flow (prot)	1805	3209	1441	0	0	1611	0	5117	0	0	5136	0
Flt Permitted	0.950										0.929	
Satd. Flow (perm)	1805	3209	1441	0	0	1611	0	5117	0	0	4771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		103	149			190		6				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	167	209	291	0	0	336	0	900	26	17	2794	0
Shared Lane Traffic (%)			46%									
Lane Group Flow (vph)	167	343	157	0	0	336	0	926	0	0	2811	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		0	1		2			2	
Detector Template	Left	Thru	Right			Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		0.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	



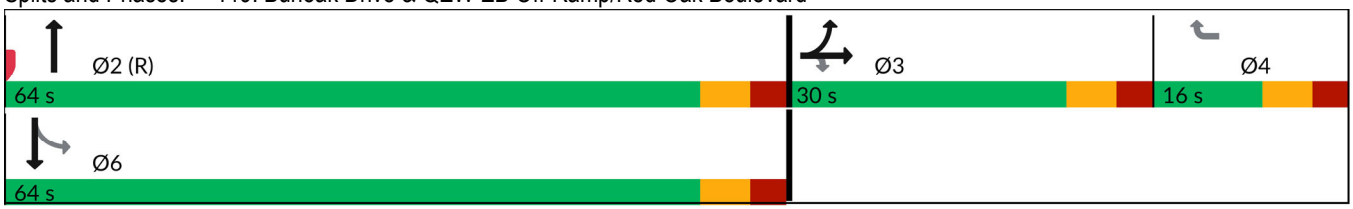
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	30.0	30.0	30.0			16.0		64.0		64.0	64.0	
Total Split (%)	27.3%	27.3%	27.3%			14.5%		58.2%		58.2%	58.2%	
Maximum Green (s)	23.0	23.0	23.0			9.0		57.0		57.0	57.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		Max	Max	
Walk Time (s)						7.0		7.0		7.0	7.0	
Flash Don't Walk (s)						25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)						0		0		0	0	
Act Effct Green (s)	15.9	15.9	15.9			16.1		57.0			57.0	
Actuated g/C Ratio	0.14	0.14	0.14			0.15		0.52			0.52	
v/c Ratio	0.64	0.62	0.47			0.84		0.35			1.14	
Control Delay (s/veh)	54.9	35.0	12.2			40.8		15.9			94.1	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	54.9	35.0	12.2			40.8		15.9			94.1	
LOS	D	D	B			D		B			F	
Approach Delay (s/veh)		34.6			40.8			15.9			94.1	
Approach LOS		C			D			B			F	
Queue Length 50th (m)	36.2	28.4	1.7			33.1		43.2			~273.8	
Queue Length 95th (m)	54.9	41.4	21.4			#103.0		53.1			#303.0	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	377	752	419			398		2654			2472	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.44	0.46	0.37			0.84		0.35			1.14	

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 43 (39%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay (s/veh): 66.7		Intersection LOS: E	
Intersection Capacity Utilization 82.1%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

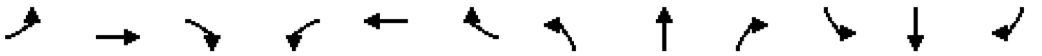
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

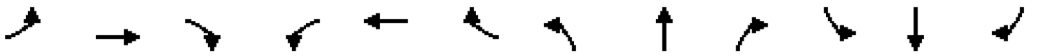


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Future Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	1.00	0.91	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1805	3211	1441			1611		5115			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1805	3211	1441			1611		5115			4769	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	167	209	291	0	0	336	0	900	26	17	2794	0
RTOR Reduction (vph)	0	88	127	0	0	162	0	3	0	0	0	0
Lane Group Flow (vph)	167	255	30	0	0	174	0	923	0	0	2811	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	15.9	15.9	15.9			16.1		57.0			57.0	
Effective Green, g (s)	15.9	15.9	15.9			16.1		57.0			57.0	
Actuated g/C Ratio	0.14	0.14	0.14			0.15		0.52			0.52	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	260	464	208			235		2650			2471	
v/s Ratio Prot	c0.09	0.08						0.18				
v/s Ratio Perm			0.02			c0.11					c0.59	
v/c Ratio	0.64	0.55	0.14			0.74		0.35			1.14	
Uniform Delay, d1	44.4	43.7	41.1			44.9		15.6			26.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	5.3	1.3	0.3			11.5		0.4			67.4	
Delay (s)	49.7	45.1	41.4			56.5		15.9			93.9	
Level of Service	D	D	D			E		B			F	
Approach Delay (s/veh)		45.4			56.5			15.9			93.9	
Approach LOS		D			E			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	69.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	82.1%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Future Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*0.80	0.91	1.00	*0.80	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.883			0.912			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1719	0	1656	4480	0	1805	4498	0
Flt Permitted	0.693			0.493			0.060			0.059		
Satd. Flow (perm)	1315	1591	0	927	1719	0	105	4480	0	112	4498	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			58			7			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	58	16	57	104	41	58	42	1702	81	48	1770	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	73	0	104	99	0	42	1783	0	48	1819	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	39.0	39.0		11.0	50.0		11.0	49.0		11.0	49.0	
Total Split (%)	35.5%	35.5%		10.0%	45.5%		10.0%	44.5%		10.0%	44.5%	
Maximum Green (s)	32.9	32.9		7.0	43.9		7.0	42.4		7.0	42.4	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.7	10.7		21.6	19.5		77.2	68.9		78.0	71.1	
Actuated g/C Ratio	0.10	0.10		0.20	0.18		0.70	0.63		0.71	0.65	
v/c Ratio	0.46	0.35		0.43	0.28		0.24	0.63		0.26	0.63	
Control Delay (s/veh)	57.6	21.3		41.5	18.9		10.5	14.8		9.4	15.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	57.6	21.3		41.5	18.9		10.5	14.8		9.4	15.7	
LOS	E	C		D	B		B	B		A	B	
Approach Delay (s/veh)		37.3			30.5			14.7			15.5	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	12.7	3.4		19.9	7.7		3.3	82.8		2.2	164.9	
Queue Length 95th (m)	25.4	16.9		34.1	21.6		m4.0	m81.8		m2.3	188.0	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	393	515		241	720		173	2808		188	2908	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.14		0.43	0.14		0.24	0.63		0.26	0.63	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 9 (8%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.63	
Intersection Signal Delay (s/veh): 16.6	Intersection LOS: B

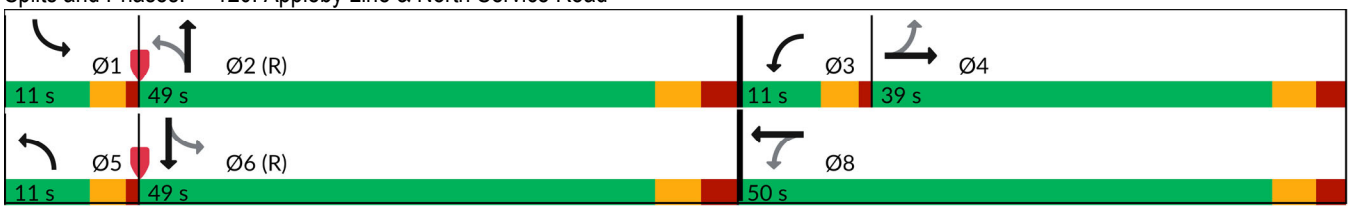
Intersection Capacity Utilization 61.4% ICU Level of Service B

Analysis Period (min) 15

* User Entered Value

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Future Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	*0.80		1.00	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1591		1787	1720		1656	4481		1805	4498	
Flt Permitted	0.69	1.00		0.49	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1315	1591		927	1720		104	4481		111	4498	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	58	16	57	104	41	58	42	1702	81	48	1770	49
RTOR Reduction (vph)	0	52	0	0	47	0	0	3	0	0	2	0
Lane Group Flow (vph)	58	21	0	104	52	0	42	1780	0	48	1817	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	9.1	9.1		20.7	20.7		71.2	66.9		74.0	68.3	
Effective Green, g (s)	9.1	9.1		20.7	20.7		71.2	66.9		74.0	68.3	
Actuated g/C Ratio	0.08	0.08		0.19	0.19		0.65	0.61		0.67	0.62	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	108	131		233	323		127	2725		162	2792	
v/s Ratio Prot		0.01		c0.03	0.03		0.01	0.40		c0.02	c0.40	
v/s Ratio Perm	0.04			c0.05			0.20			0.18		
v/c Ratio	0.54	0.16		0.45	0.16		0.33	0.65		0.30	0.65	
Uniform Delay, d1	48.4	46.9		38.6	37.4		10.1	14.0		10.0	13.3	
Progression Factor	1.00	1.00		1.00	1.00		1.64	0.98		1.27	1.09	
Incremental Delay, d2	5.1	0.6		1.4	0.2		0.5	0.4		0.7	0.8	
Delay (s)	53.5	47.5		39.9	37.6		17.2	14.2		13.4	15.3	
Level of Service	D	D		D	D		B	B		B	B	
Approach Delay (s/veh)		50.1			38.8			14.3			15.2	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2260	0	0	2019
Future Volume (vph)	630	461	2260	0	0	2019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	0.97	1.00	*0.80	1.00	1.00	*0.80
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	1583	4560	0	0	4515
Flt Permitted	0.950					
Satd. Flow (perm)	3400	1583	4560	0	0	4515
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		3				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	677	496	2430	0	0	2171
Shared Lane Traffic (%)						
Lane Group Flow (vph)	677	496	2430	0	0	2171
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

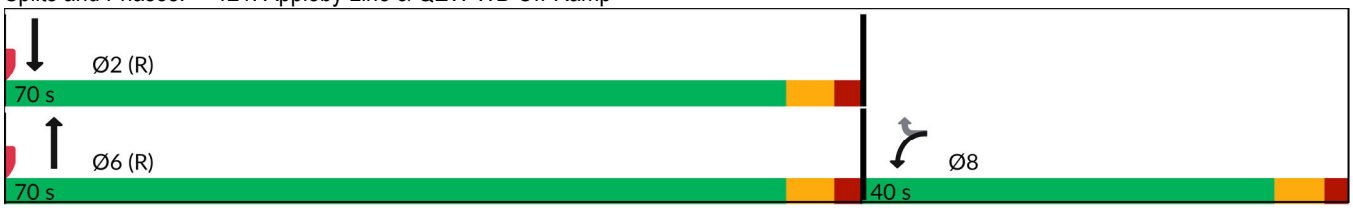


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	70.0			70.0
Total Split (%)	36.4%	36.4%	63.6%			63.6%
Maximum Green (s)	34.0	34.0	64.0			64.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	34.0	34.0	64.0			64.0
Actuated g/C Ratio	0.31	0.31	0.58			0.58
v/c Ratio	0.64	1.01	0.92			0.83
Control Delay (s/veh)	36.2	81.7	27.2			15.0
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	36.2	81.7	27.2			15.0
LOS	D	F	C			B
Approach Delay (s/veh)	55.4		27.2			15.0
Approach LOS	E		C			B
Queue Length 50th (m)	69.1	~115.0	206.0			205.8
Queue Length 95th (m)	90.0	#186.9	232.2			27.7
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1050	491	2653			2626
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.64	1.01	0.92			0.83

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 2 (2%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 28.3		Intersection LOS: C	
Intersection Capacity Utilization 82.2%		ICU Level of Service E	
Analysis Period (min) 15			

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

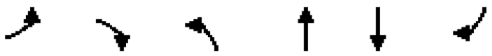
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



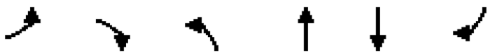


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2260	0	0	2019
Future Volume (vph)	630	461	2260	0	0	2019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	*0.80			*0.80
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	1583	4560			4515
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	1583	4560			4515
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	677	496	2430	0	0	2171
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	677	494	2430	0	0	2171
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	34.0	34.0	64.0			64.0
Effective Green, g (s)	34.0	34.0	64.0			64.0
Actuated g/C Ratio	0.31	0.31	0.58			0.58
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1050	489	2653			2626
v/s Ratio Prot	0.20		c0.53			0.48
v/s Ratio Perm		c0.31				
v/c Ratio	0.64	1.01	0.92			0.83
Uniform Delay, d1	32.8	38.0	20.6			18.5
Progression Factor	1.00	1.00	1.08			0.65
Incremental Delay, d2	1.4	43.2	4.4			2.7
Delay (s)	34.2	81.2	26.7			14.7
Level of Service	C	F	C			B
Approach Delay (s/veh)	54.1		26.7			14.7
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	773	496	0	1933	1985	0
Future Volume (vph)	773	496	0	1933	1985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		0.0			
Lane Util. Factor	0.97	0.88	1.00	*0.80	*0.80	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	4515	4515	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	4515	4515	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		15				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	797	511	0	1993	2046	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	797	511	0	1993	2046	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

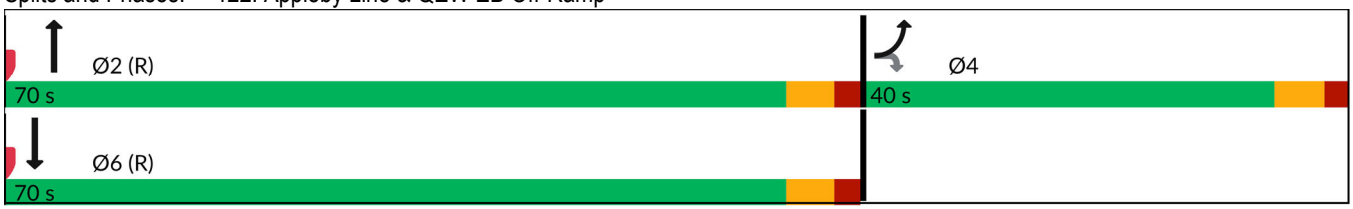


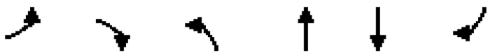
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	40.0	40.0		70.0	70.0	
Total Split (%)	36.4%	36.4%		63.6%	63.6%	
Maximum Green (s)	34.0	34.0		64.0	64.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	30.7	30.7		67.3	67.3	
Actuated g/C Ratio	0.28	0.28		0.61	0.61	
v/c Ratio	0.82	0.64		0.72	0.74	
Control Delay (s/veh)	44.3	37.4		8.8	27.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.3	37.4		8.8	27.6	
LOS	D	D		A	C	
Approach Delay (s/veh)	41.6			8.8	27.6	
Approach LOS	D			A	C	
Queue Length 50th (m)	85.6	55.6		35.2	178.9	
Queue Length 95th (m)	105.6	73.6		44.6	204.9	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1082	880		2763	2763	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.74	0.58		0.72	0.74	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 73 (66%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 24.0	Intersection LOS: C

Intersection Capacity Utilization 82.2%	ICU Level of Service E
Analysis Period (min) 15	
* User Entered Value	

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

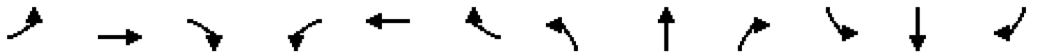




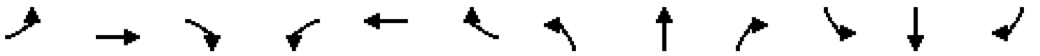
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	773	496	0	1933	1985	0
Future Volume (vph)	773	496	0	1933	1985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		*0.80	*0.80	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		4515	4515	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		4515	4515	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	797	511	0	1993	2046	0
RTOR Reduction (vph)	0	11	0	0	0	0
Lane Group Flow (vph)	797	500	0	1993	2046	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	30.7	30.7		67.3	67.3	
Effective Green, g (s)	30.7	30.7		67.3	67.3	
Actuated g/C Ratio	0.28	0.28		0.61	0.61	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	977	785		2762	2762	
v/s Ratio Prot	c0.23			0.44	c0.45	
v/s Ratio Perm		0.18				
v/c Ratio	0.82	0.64		0.72	0.74	
Uniform Delay, d1	37.0	34.8		14.8	15.2	
Progression Factor	1.00	1.00		0.48	1.66	
Incremental Delay, d2	5.3	1.7		1.4	1.1	
Delay (s)	42.3	36.5		8.4	26.2	
Level of Service	D	D		A	C	
Approach Delay (s/veh)	40.1			8.4	26.2	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Future Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	*0.80	1.00	1.00	*0.80	1.00
Ped Bike Factor		0.99		1.00			1.00		0.98	1.00		0.99
Frt		0.905			0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3323	0	1736	4515	1599	1805	4515	1553
Flt Permitted	0.226			0.565			0.175			0.078		
Satd. Flow (perm)	413	3218	0	1061	3323	0	320	4515	1575	148	4515	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			95				191			129
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	154	77	132	582	378	203	86	1358	299	150	1085	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	209	0	582	581	0	86	1358	299	150	1085	129
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	12.0	40.0		14.0	42.0		12.0	44.0	44.0	12.0	44.0	44.0
Total Split (%)	10.9%	36.4%		12.7%	38.2%		10.9%	40.0%	40.0%	10.9%	40.0%	40.0%
Maximum Green (s)	8.0	33.6		10.0	35.6		8.0	37.7	37.7	8.0	37.7	37.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	30.5	20.1		34.5	22.1		58.9	48.4	48.4	64.7	53.2	53.2
Actuated g/C Ratio	0.28	0.18		0.31	0.20		0.54	0.44	0.44	0.59	0.48	0.48
v/c Ratio	0.73	0.30		1.46	0.78		0.31	0.68	0.37	0.60	0.50	0.16
Control Delay (s/veh)	48.1	15.2		250.3	42.1		18.4	33.1	17.7	29.7	30.3	11.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	48.1	15.2		250.3	42.1		18.4	33.1	17.7	29.7	30.3	11.3
LOS	D	B		F	D		B	C	B	C	C	B
Approach Delay (s/veh)		29.2			146.3			29.7			28.5	
Approach LOS		C			F			C			C	
Queue Length 50th (m)	26.1	7.7		~181.9	56.8		11.2	90.8	25.2	22.6	81.3	6.7
Queue Length 95th (m)	#41.8	17.1		#235.8	71.9		m16.6	m115.3	m36.4	m37.6	111.7	m14.5
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	210	1074		398	1139		283	1985	799	251	2183	807
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.19		1.46	0.51		0.30	0.68	0.37	0.60	0.50	0.16

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 65 (59%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.46	
Intersection Signal Delay (s/veh): 58.6	Intersection LOS: E

Intersection Capacity Utilization 91.6%	ICU Level of Service F
Analysis Period (min) 15	

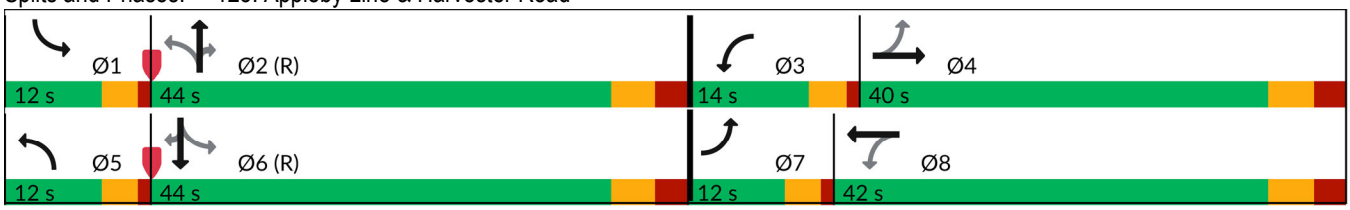
* User Entered Value

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 123: Appleby Line & Harvester Road

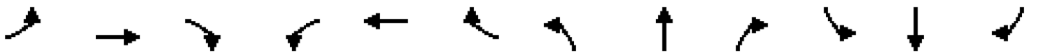


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Future Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	*0.80	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3219		1786	3321		1736	4515	1575	1805	4515	1533
Flt Permitted	0.23	1.00		0.56	1.00		0.17	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	414	3219		1061	3321		319	4515	1575	148	4515	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	154	77	132	582	378	203	86	1358	299	150	1085	129
RTOR Reduction (vph)	0	108	0	0	76	0	0	0	107	0	0	68
Lane Group Flow (vph)	154	101	0	582	505	0	86	1358	192	150	1085	61
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	28.1	20.1		32.1	22.1		55.2	48.4	48.4	63.2	52.4	52.4
Effective Green, g (s)	28.1	20.1		32.1	22.1		55.2	48.4	48.4	63.2	52.4	52.4
Actuated g/C Ratio	0.26	0.18		0.29	0.20		0.50	0.44	0.44	0.57	0.48	0.48
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	201	588		375	667		247	1986	693	247	2150	730
v/s Ratio Prot	0.06	0.03		c0.14	0.15		0.02	c0.30		c0.06	0.24	
v/s Ratio Perm	0.14			c0.31			0.15		0.12	0.29		0.04
v/c Ratio	0.77	0.17		1.55	0.76		0.35	0.68	0.28	0.61	0.50	0.08
Uniform Delay, d1	34.0	37.9		37.6	41.4		14.8	24.7	19.6	17.4	19.9	15.7
Progression Factor	1.00	1.00		1.00	1.00		1.54	1.23	1.95	1.30	1.41	2.89
Incremental Delay, d2	15.9	0.1		261.2	4.9		0.3	0.8	0.4	2.9	0.6	0.2
Delay (s)	49.9	38.1		298.8	46.3		23.2	31.1	38.8	25.6	28.6	45.6
Level of Service	D	D		F	D		C	C	D	C	C	D
Approach Delay (s/veh)		43.1			172.7			32.0			29.8	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	67.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	91.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Future Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99			0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	4515	1615
Flt Permitted	0.950			0.685			0.102			0.114		
Satd. Flow (perm)	3498	1792	1577	1193	1792	1533	194	3574	1414	208	4515	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			238			167			164			455
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	536	111	416	167	107	191	337	1463	116	146	1654	482
Shared Lane Traffic (%)												
Lane Group Flow (vph)	536	111	416	167	107	191	337	1463	116	146	1654	482
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



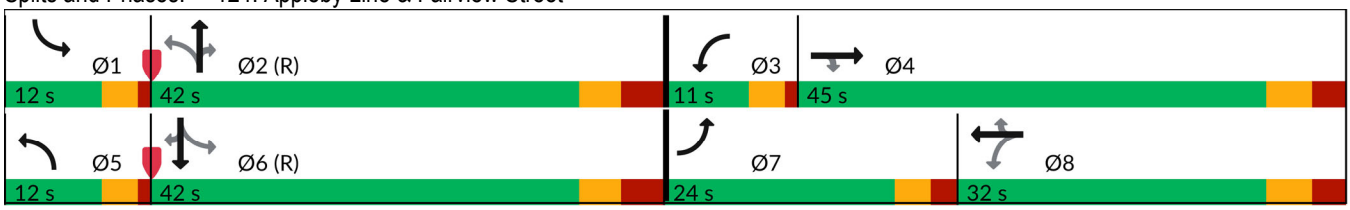
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	24.0	45.0	45.0	11.0	32.0	32.0	12.0	42.0	42.0	12.0	42.0	42.0
Total Split (%)	21.8%	40.9%	40.9%	10.0%	29.1%	29.1%	10.9%	38.2%	38.2%	10.9%	38.2%	38.2%
Maximum Green (s)	19.0	38.5	38.5	7.0	25.5	25.5	8.0	35.2	35.2	8.0	35.2	35.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	18.7	25.5	25.5	22.3	12.8	12.8	62.2	45.6	45.6	48.6	35.2	35.2
Actuated g/C Ratio	0.17	0.23	0.23	0.20	0.12	0.12	0.57	0.41	0.41	0.44	0.32	0.32
v/c Ratio	0.90	0.27	0.76	0.62	0.52	0.59	0.81	0.99	0.17	0.61	1.15	0.59
Control Delay (s/veh)	64.2	35.0	25.4	39.2	53.5	17.0	43.5	54.1	1.9	29.6	111.7	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.2	35.0	25.4	39.2	53.5	17.0	43.5	54.1	1.9	29.6	111.7	13.5
LOS	E	D	C	D	D	B	D	D	A	C	F	B
Approach Delay (s/veh)		46.0			33.4			49.1			85.7	
Approach LOS		D			C			D			F	
Queue Length 50th (m)	61.5	21.7	38.3	28.6	24.3	5.1	53.6	168.4	0.0	18.5	~177.8	23.6
Queue Length 95th (m)	#91.4	34.7	69.7	41.5	39.8	26.0	#133.9	#267.1	5.3	m32.9	m#189.7	m36.5
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	604	627	706	271	415	483	417	1480	682	241	1444	817
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.18	0.59	0.62	0.26	0.40	0.81	0.99	0.17	0.61	1.15	0.59

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 56 (51%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.15	
Intersection Signal Delay (s/veh): 61.8	Intersection LOS: E

Intersection Capacity Utilization 86.4%	ICU Level of Service E
Analysis Period (min) 15	

* User Entered Value
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

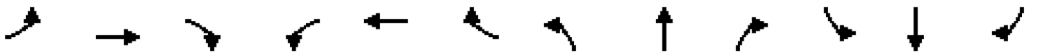
Splits and Phases: 124: Appleby Line & Fairview Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Future Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	*0.80	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	1792	1577	1660	1792	1533	1805	3574	1414	1736	4515	1589
Flt Permitted	0.95	1.00	1.00	0.69	1.00	1.00	0.10	1.00	1.00	0.11	1.00	1.00
Satd. Flow (perm)	3502	1792	1577	1198	1792	1533	194	3574	1414	208	4515	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	536	111	416	167	107	191	337	1463	116	146	1654	482
RTOR Reduction (vph)	0	0	183	0	0	148	0	0	68	0	0	309
Lane Group Flow (vph)	536	111	233	167	107	43	337	1463	48	146	1654	173
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	18.7	25.5	25.5	19.8	12.8	12.8	60.2	45.6	45.6	45.8	35.2	35.2
Effective Green, g (s)	18.7	25.5	25.5	19.8	12.8	12.8	60.2	45.6	45.6	45.8	35.2	35.2
Actuated g/C Ratio	0.17	0.23	0.23	0.18	0.12	0.12	0.55	0.41	0.41	0.42	0.32	0.32
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	595	415	365	245	208	178	413	1481	586	233	1444	508
v/s Ratio Prot	c0.15	0.06		0.04	0.06		c0.16	c0.41		0.06	c0.37	
v/s Ratio Perm			c0.15	0.08		0.03	0.29		0.03	0.20		0.11
v/c Ratio	0.90	0.27	0.64	0.68	0.51	0.24	0.82	0.99	0.08	0.63	1.15	0.34
Uniform Delay, d1	44.7	34.6	38.1	41.3	45.7	44.2	30.0	31.9	19.5	25.2	37.4	28.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.19	1.15	2.96
Incremental Delay, d2	16.8	0.3	3.7	7.6	2.1	0.7	11.8	20.7	0.3	4.1	72.4	1.4
Delay (s)	61.5	34.9	41.7	48.9	47.8	44.9	41.8	52.6	19.8	34.1	115.3	86.0
Level of Service	E	C	D	D	D	D	D	D	B	C	F	F
Approach Delay (s/veh)		51.0			47.0			48.7			103.9	
Approach LOS		D			D			D			F	

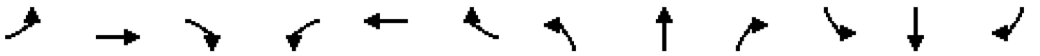
Intersection Summary			
HCM 2000 Control Delay (s/veh)	71.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	227	0	0	354	4	0	0	0	5	0	22
Future Volume (vph)	13	227	0	0	354	4	0	0	0	5	0	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.998						0.888	
Flt Protected		0.997									0.991	
Satd. Flow (prot)	0	3529	0	0	3532	0	0	1863	0	0	1639	0
Flt Permitted		0.997									0.991	
Satd. Flow (perm)	0	3529	0	0	3532	0	0	1863	0	0	1639	0
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		632.5			121.5			72.4			127.6	
Travel Time (s)		38.0			7.3			6.5			11.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	14	247	0	0	385	4	0	0	0	5	0	24
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	261	0	0	389	0	0	0	0	0	29	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.0%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	227	0	0	354	4	0	0	0	5	0	22
Future Volume (Veh/h)	13	227	0	0	354	4	0	0	0	5	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	247	0	0	385	4	0	0	0	5	0	24
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	389			247			492	664	124	539	662	195
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	389			247			492	664	124	539	662	195
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	99	100	97
cM capacity (veh/h)	1166			1316			442	375	904	422	376	814

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	138	124	193	197	0	29
Volume Left	14	0	0	0	0	5
Volume Right	0	0	0	4	0	24
cSH	1166	1700	1316	1700	1700	702
Volume to Capacity	0.01	0.07	0.00	0.12	0.00	0.04
Queue Length 95th (m)	0.3	0.0	0.0	0.0	0.0	1.0
Control Delay (s/veh)	0.9	0.0	0.0	0.0	0.0	10.4
Lane LOS	A				A	B
Approach Delay (s/veh)	0.5		0.0		0.0	10.4
Approach LOS					A	B

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	26.0%	ICU Level of Service		A
Analysis Period (min)	15			

Appendix K

Signal Warrants

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Upper Middle Road
North/South: N
Minor Street: Baker Street

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Upper Middle Road						Minor Street: Baker Street						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	41	1486			595	6				0		72	0
PM Peak Hour	61	749			2024	30				0		70	0
Average Hourly Volume	**26**	**559**	**0**	**0**	**655**	**9**	**0**	**0**	**0**	**0**	**0**	**36**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1284
1B - Minor	36
2A - Major	1248
2B - Cross	0

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1284
					% Fulfilled	**178.3%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	36
					% Fulfilled	**20.9%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1248
					% Fulfilled	**173.3%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	0
					% Fulfilled	**0.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: Blue Spruce Avenue
North/South: N

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street						Minor Street						Peds Crossing Main Road
	Upper Middle Road						Blue Spruce Avenue						
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	29	1516	0	0	525	37	0	0	0	215	0	49	
PM Peak Hour	43	708	0	0	2220	162	0	0	0	70	0	48	
Average Hourly Volume	**18**	**556**	**0**	**0**	**686**	**50**	**0**	**0**	**0**	**71**	**0**	**24**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1406
1B - Minor	96
2A - Major	1310
2B - Cross	71

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1406
					% Fulfilled	**195.2%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	96
					% Fulfilled	**56.2%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1310
					% Fulfilled	**181.9%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	71
					% Fulfilled	**95.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: Deer Place
North/South: N

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Upper Middle Road						Minor Street: Deer Place						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	5	1482			609	5				29		9	
PM Peak Hour	13	742			2216	10				6		9	
Average Hourly Volume	**5**	**556**	**0**	**0**	**706**	**4**	**0**	**0**	**0**	**9**	**0**	**5**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1284
1B - Minor	13
2A - Major	1271
2B - Cross	9

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1284
					% Fulfilled	**178.3%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	13
					% Fulfilled	**7.8%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1271
					% Fulfilled	**176.5%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	9
					% Fulfilled	**11.7%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: East School Driveway
North/South: N

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Upper Middle Road						Minor Street: East School Driveway						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	0	1249	183	284	794	0	52	0	210	0	0	0	
PM Peak Hour	0	963	10	21	1859	0	32	0	62	0	0	0	
Average Hourly Volume	**0**	**553**	**48**	**76**	**663**	**0**	**21**	**0**	**68**	**0**	**0**	**0**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1430
1B - Minor	89
2A - Major	1341
2B - Cross	21

\

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1430
					% Fulfilled	**198.6%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	89
					% Fulfilled	**52.4%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1341
					% Fulfilled	**186.2%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	21
					% Fulfilled	**28.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Mainway
Minor Street: Norjohn Court/Lampman Aven
North/South: N

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Mainway						Minor Street: Norjohn Court/Lampman Avenue						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	23	939	69	16	191	22	16	0	5	115	2	86	
PM Peak Hour	39	317	33	6	1108	122	74	7	16	47	2	57	
Average Hourly Volume	**16**	**314**	**26**	**6**	**325**	**36**	**23**	**2**	**5**	**41**	**1**	**36**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	828
1B - Minor	107
2A - Major	721
2B - Cross	65

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	828
					% Fulfilled	**115.0%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	107
					% Fulfilled	**62.8%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	721
					% Fulfilled	**100.2%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	65
					% Fulfilled	**86.3%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Burloak Drive
Minor Street: Bronte Creek Park Access
North/South: Y

Number of Approach Lanes: 2 or more
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Burloak Drive						Minor Street: Bronte Creek Park Access						Peds Crossing Main Road
	Northbound			Southbound			Eastbound			Westbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	0	581	53	23	1655	0	0	0	0	14	0	5	
PM Peak Hour	0	2334	25	41	722	0	0	0	0	32	0	34	
Average Hourly Volume	**0**	**729**	**20**	**16**	**594**	**0**	**0**	**0**	**0**	**12**	**0**	**10**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1380
1B - Minor	21
2A - Major	1359
2B - Cross	12

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	All Approaches	480	720	600	900	1380
					% Fulfilled	**153.3%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	21
					% Fulfilled	**12.5%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	Major Street Approaches	480	720	600	900	1359
					% Fulfilled	**150.9%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	12
					% Fulfilled	**15.3%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: Quinte Street
North/South: N

Number of Approach Lanes: 2 or more
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street						Minor Street						Peds Crossing Main Road
	Upper Middle Road						Quinte Street						
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	169	1272	18	0	790	86	22	0	1	102	0	260	1
PM Peak Hour	180	767	72	1	1732	205	14	0	1	55	0	124	1
Average Hourly Volume	**87**	**510**	**23**	**0**	**631**	**73**	**9**	**0**	**1**	**39**	**0**	**96**	**1**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1468
1B - Minor	145
2A - Major	1323
2B - Cross	49

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	All Approaches	480	720	600	900	1468
					% Fulfilled	**163.1%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	145
					% Fulfilled	**85.1%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	Major Street Approaches	480	720	600	900	1323
					% Fulfilled	**147.0%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	49
					% Fulfilled	**65.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Region/City/Township: Burlington

Major Street: Mainway
Minor Street: Site Access A
North/South: N

Number of Approach Lanes: 2 or more
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Mainway						Minor Street: Site Access A						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	61	998			291	22				5		20	
PM Peak Hour	16	365			904	5				7		102	
Average Hourly Volume	**19**	**341**	**0**	**0**	**299**	**7**	**0**	**0**	**0**	**3**	**0**	**31**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	699
1B - Minor	34
2A - Major	666
2B - Cross	3

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	All Approaches	480	720	600	900	699
					% Fulfilled	**77.7%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	34
					% Fulfilled	**19.7%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	Major Street Approaches	480	720	600	900	666
					% Fulfilled	**73.9%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	3
					% Fulfilled	**4.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: Total 2045 - Phase 1
Region/City/Township: Burlington

Major Street: Mainway
Minor Street: Sutton Drive
North/South: N

Number of Approach Lanes: 2 or more
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Mainway						Minor Street: Sutton Drive						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	106	435	126	33	267	146	18	78	13	86	46	28	
PM Peak Hour	23	385	28	14	651	70	182	48	56	186	79	76	
Average Hourly Volume	**32**	**205**	**39**	**12**	**230**	**54**	**50**	**32**	**17**	**68**	**31**	**26**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	795
1B - Minor	224
2A - Major	571
2B - Cross	150

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	All Approaches	480	720	600	900	795
					% Fulfilled	**88.3%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	224
					% Fulfilled	**131.8%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
					X	
	Major Street Approaches	480	720	600	900	571
					% Fulfilled	**63.4%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	150
					% Fulfilled	**199.3%**

Signal Justification Calculation for Forecast Volumes
(OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Phase 1
Municipality: Halton
Project number: 230553

Major Street: Sutton Drive
Minor Street: Corporate Drive
North/South?: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
200% Satisfied	No	Case 1: Signal is undoubtedly warranted
100% Satisfied	No	Case 2: Signal might be warranted
		Case 3: Signal warrant is unlikely

	Major Street						Minor Street						
	Sutton Drive						Corporate Drive						
	Northbound			Southbound			Eastbound			Westbound			Peds
Time Period	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right	Crossing
AM Peak Hour	15	44	0	0	172	0	0	0	44	0	0	0	
PM Peak Hour	39	93	0	0	77	0	0	0	34	0	0	0	
verage Hourly Volum	14	34	0	0	62	0	0	0	20	0	0	0	0

Warrant	AHV
1A - All	130
1B - Minor	20
2A - Major	110
2B - Cross	0

Warrant 1 - Minimum Vehicular Volume

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	130
					% Fulfilled	18.0%

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	180	255	180	255	20
					% Fulfilled	7.6%

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	110
					% Fulfilled	15.3%

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	50	75	0
					% Fulfilled	0.0%

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: Baker Street
North/South: N

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Upper Middle Road						Minor Street: Baker Street						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	41	1643			887	6				0		72	0
PM Peak Hour	61	1185			2223	30				0		70	0
Average Hourly Volume	**26**	**707**	**0**	**0**	**778**	**9**	**0**	**0**	**0**	**0**	**0**	**36**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1555
1B - Minor	36
2A - Major	1519
2B - Cross	0

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1555
					% Fulfilled	**215.9%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	36
					% Fulfilled	**20.9%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1519
					% Fulfilled	**211.0%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	0
					% Fulfilled	**0.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: Blue Spruce Avenue
North/South: N

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**Yes**	Justification for new intersections with forecast traffic
120% Satisfied	**Yes**	Justification for existing intersections with forecast traffic

Time Period	Major Street						Minor Street						Peds Crossing Main Road
	Upper Middle Road						Blue Spruce Avenue						
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	29	1579	94	5	654	37	163	0	81	215	0	49	
PM Peak Hour	43	860	284	21	2331	162	88	0	52	70	0	48	
Average Hourly Volume	**18**	**610**	**95**	**7**	**746**	**50**	**63**	**0**	**33**	**71**	**0**	**24**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1716
1B - Minor	192
2A - Major	1525
2B - Cross	134

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1716
					% Fulfilled	**238.4%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	192
					% Fulfilled	**112.6%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1525
					% Fulfilled	**211.8%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	134
					% Fulfilled	**178.7%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: Deer Place
North/South: N

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Upper Middle Road						Minor Street: Deer Place						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	5	1639			901	5				29		9	
PM Peak Hour	13	1178			2415	10				6		9	
Average Hourly Volume	**5**	**704**	**0**	**0**	**829**	**4**	**0**	**0**	**0**	**9**	**0**	**5**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1555
1B - Minor	13
2A - Major	1542
2B - Cross	9

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1555
					% Fulfilled	**215.9%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	13
					% Fulfilled	**7.8%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1542
					% Fulfilled	**214.1%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	9
					% Fulfilled	**11.7%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: East School Driveway
North/South: N

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street						Minor Street						Peds Crossing Main Road
	Upper Middle Road						East School Driveway						
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	0	1516	183	284	1296	0	52	0	210	0	0	0	
PM Peak Hour	0	1541	10	21	2144	0	32	0	62	0	0	0	
Average Hourly Volume	**0**	**764**	**48**	**76**	**860**	**0**	**21**	**0**	**68**	**0**	**0**	**0**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1838
1B - Minor	89
2A - Major	1749
2B - Cross	21

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1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1838
					% Fulfilled	**255.2%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	89
					% Fulfilled	**52.4%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1749
					% Fulfilled	**242.9%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	21
					% Fulfilled	**28.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Mainway
Minor Street: Norjohn Court/Lampman Aven
North/South: N

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Mainway						Minor Street: Norjohn Court/Lampman Avenue						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	23	1256	69	16	685	22	16	0	5	115	2	86	
PM Peak Hour	39	762	33	6	1496	122	74	7	16	47	2	57	
Average Hourly Volume	**16**	**505**	**26**	**6**	**545**	**36**	**23**	**2**	**5**	**41**	**1**	**36**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1239
1B - Minor	107
2A - Major	1132
2B - Cross	65

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1239
					% Fulfilled	**172.1%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	107
					% Fulfilled	**62.8%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1132
					% Fulfilled	**157.3%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	65
					% Fulfilled	**86.3%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Burloak Drive
Minor Street: Bronte Creek Park Access/ Co
North/South: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**Yes**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Burloak Drive						Minor Street: Bronte Creek Park Access/ Corporate Drive						Peds Crossing Main Road
	Northbound			Southbound			Eastbound			Westbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	172	674	53	23	1762	37	41	0	359	14	0	5	
PM Peak Hour	278	2397	25	41	843	83	69	0	286	32	0	34	
Average Hourly Volume	**113**	**768**	**20**	**16**	**651**	**30**	**28**	**0**	**161**	**12**	**0**	**10**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1807
1B - Minor	210
2A - Major	1597
2B - Cross	39

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1807
					% Fulfilled	**251.0%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	210
					% Fulfilled	**123.5%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1597
					% Fulfilled	**221.8%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	39
					% Fulfilled	**52.0%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Upper Middle Road
Minor Street: Quinte Street
North/South: N

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street						Minor Street						Peds Crossing Main Road
	Upper Middle Road						Quinte Street						
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	169	1535	22	0	1287	86	27	0	1	102	0	260	1
PM Peak Hour	180	1331	82	1	2017	205	14	0	1	55	0	124	1
Average Hourly Volume	**87**	**717**	**26**	**0**	**826**	**73**	**10**	**0**	**1**	**39**	**0**	**96**	**1**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1875
1B - Minor	146
2A - Major	1729
2B - Cross	50

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1875
					% Fulfilled	**260.4%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	146
					% Fulfilled	**85.9%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1729
					% Fulfilled	**240.1%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	50
					% Fulfilled	**66.7%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Mainway
Minor Street: Site Access A
North/South: N

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Mainway						Minor Street: Site Access A						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	66	1310			783	22				6		22	
PM Peak Hour	17	809			1288	5				22		106	
Average Hourly Volume	**21**	**530**	**0**	**0**	**518**	**7**	**0**	**0**	**0**	**7**	**0**	**32**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1114
1B - Minor	39
2A - Major	1075
2B - Cross	7

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1114
					% Fulfilled	**154.7%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	39
					% Fulfilled	**22.9%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1075
					% Fulfilled	**149.3%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	7
					% Fulfilled	**9.3%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Mainway
Minor Street: Site Access B
North/South: N

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Mainway						Minor Street: Site Access B						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	26	630			802	9				2		3	
PM Peak Hour	2	789			835	0				15		45	
Average Hourly Volume	**7**	**355**	**0**	**0**	**409**	**2**	**0**	**0**	**0**	**4**	**0**	**12**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	790
1B - Minor	16
2A - Major	773
2B - Cross	4

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	790
					% Fulfilled	**109.7%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	16
					% Fulfilled	**9.6%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	773
					% Fulfilled	**107.4%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	4
					% Fulfilled	**5.7%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: 2045 Total - Full Build
Region/City/Township: Burlington

Major Street: Burloak Drive
Minor Street: Site Access C
North/South: Y

Number of Approach Lanes: 1
Tee Intersection? Y
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Burloak Drive						Minor Street: Site Access C						Peds Crossing Main Road
	Northbound			Southbound			Eastbound			Westbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	90	824			2116	20	87		372				
PM Peak Hour	195	2608			1077	81	64		241				
Average Hourly Volume	**71**	**858**	**0**	**0**	**798**	**25**	**38**	**0**	**153**	**0**	**0**	**0**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1944
1B - Minor	191
2A - Major	1753
2B - Cross	38

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1944
					% Fulfilled	**270.0%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	191
					% Fulfilled	**112.4%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	1753
					% Fulfilled	**243.4%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	38
					% Fulfilled	**50.3%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: Total 2045 - Full Build
Region/City/Township: Burlington

Major Street: Sutton Drive
Minor Street: Corporate Drive
North/South: Y

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**No**	Justification for new intersections with forecast traffic
120% Satisfied	**No**	Justification for existing intersections with forecast traffic

Time Period	Major Street Sutton Drive						Minor Street Corporate Drive						Peds Crossing Main Road
	Northbound			Southbound			Eastbound			Westbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	38	144	332	72	260	37	11	61	46	326	112	103	
PM Peak Hour	43	169	499	41	180	18	31	65	37	224	51	54	
Average Hourly Volume	**20**	**78**	**208**	**28**	**110**	**14**	**11**	**32**	**21**	**138**	**41**	**39**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	739
1B - Minor	280
2A - Major	458
2B - Cross	189

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	739
					% Fulfilled	**102.6%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	280
					% Fulfilled	**164.9%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	458
					% Fulfilled	**63.6%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	189
					% Fulfilled	**251.7%**

Signal Justification Calculation for Existing Volumes (OTM Book 12 - Justification 7)

Horizon Year: Total 2045 - Full Build
Region/City/Township: Burlington

Major Street: Mainway
Minor Street: Sutton Drive
North/South: N

Number of Approach Lanes: 1
Tee Intersection? N
Flow Conditions: Restricted

PM Forecast Only? N

Warrant Results		
150% Satisfied	**Yes**	Justification for new intersections with forecast traffic
120% Satisfied	**Yes**	Justification for existing intersections with forecast traffic

Time Period	Major Street: Mainway						Minor Street: Sutton Drive						Peds Crossing Main Road
	Eastbound			Westbound			Northbound			Southbound			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
AM Peak Hour	353	501	126	39	418	234	18	226	13	142	177	369	
PM Peak Hour	375	492	28	18	785	130	182	281	56	243	151	326	
Average Hourly Volume	**182**	**248**	**39**	**14**	**301**	**91**	**50**	**127**	**17**	**96**	**82**	**174**	**0**

Warrant 1 - Minimum Vehicular Volume

Warrant	AHV
1A - All	1421
1B - Minor	546
2A - Major	875
2B - Cross	273

1A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	All Approaches	480	720	600	900	1421
					% Fulfilled	**197.3%**

1B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Minor Street Approaches	120	170	120	170	546
					% Fulfilled	**321.2%**

Warrant 2 - Delay To Cross Traffic

2A	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Major Street Approaches	480	720	600	900	875
					% Fulfilled	**121.5%**

2B	Approach Lanes	1		2 or more		Average Hourly Volume
	Flow Conditions	Free	Restricted	Free	Restricted	
			X			
	Traffic Crossing Major Street	50	75	120	170	273
					% Fulfilled	**364.0%**

Appendix L

SimTraffic Queuing Reports

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	69.2	119.9	221.1	217.0	214.2	172.9	177.8	188.1	188.5	177.2	123.4	24.6
Average Queue (m)	33.4	69.5	151.1	135.3	108.3	68.6	105.9	118.1	84.5	72.2	34.3	11.0
95th Queue (m)	67.6	132.1	245.9	234.9	215.9	154.2	196.2	209.0	198.8	167.0	89.4	21.5
Link Distance (m)			211.8	211.8	211.8				243.8	243.8	243.8	
Upstream Blk Time (%)			15	6	4				2			
Queuing Penalty (veh)			0	0	0				0			
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)			34		8	1	3	8	3			
Queuing Penalty (veh)			61		27	2	4	14	10			

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	72.4	74.7	56.2	1621.1	453.8	70.6	96.5	138.2	145.1	128.8	110.0	25.8
Average Queue (m)	25.8	31.8	21.4	130.7	41.3	22.2	38.6	54.5	69.0	60.7	42.5	6.6
95th Queue (m)	55.4	59.2	47.3	866.2	308.5	53.8	80.9	100.2	134.0	116.9	92.7	17.6
Link Distance (m)			1973.6	1973.6	1973.6				253.1	253.1	253.1	
Upstream Blk Time (%)				0	0							
Queuing Penalty (veh)				0	0							
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)							0	0	1			
Queuing Penalty (veh)							0	0	3			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	L	T	TR	L
Maximum Queue (m)	62.4	103.6	106.3	80.6	39.1	45.2	3.8	32.0	78.9	117.7	124.0	62.4
Average Queue (m)	30.1	55.8	55.6	40.2	17.6	21.6	0.1	13.9	22.1	71.5	78.4	53.9
95th Queue (m)	58.2	88.0	96.4	69.5	31.9	36.1	1.9	28.8	49.4	113.9	119.2	76.7
Link Distance (m)		160.8	160.8		492.2	492.2				520.7	520.7	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	55.0			125.0			80.0	100.0	100.0			55.0
Storage Blk Time (%)	0	8								2		15
Queuing Penalty (veh)	1	11								3		85

Intersection: 102: Appleby Line & Upper Middle Road

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	261.2	254.9
Average Queue (m)	154.9	152.4
95th Queue (m)	262.1	253.7
Link Distance (m)	1973.6	1973.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	31	
Queuing Penalty (veh)	87	

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	LT	R	LTR
Maximum Queue (m)	6.9	61.7	65.4	14.4	36.2	45.1	54.4	22.2	14.0
Average Queue (m)	0.4	26.0	30.0	5.2	17.1	19.9	29.5	8.9	3.3
95th Queue (m)	3.3	49.2	54.4	13.1	32.8	37.9	48.2	17.8	11.3
Link Distance (m)		492.2	492.2		234.5	234.5	143.0	143.0	43.7
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	30.0			80.0					
Storage Blk Time (%)		7							
Queuing Penalty (veh)		0							

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	TR	L	T	L	R
Maximum Queue (m)	12.8	18.4	34.2	9.4	19.6	23.5
Average Queue (m)	0.4	1.9	15.1	0.3	8.1	13.0
95th Queue (m)	5.6	9.5	26.8	6.6	17.7	20.6
Link Distance (m)	234.5	234.5		102.5	118.4	118.4
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)			30.0			
Storage Blk Time (%)			0			
Queuing Penalty (veh)			1			

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (m)	28.0	4.8	1.8	3.2	7.6	48.2
Average Queue (m)	11.1	0.2	0.1	0.1	0.4	21.8
95th Queue (m)	22.0	2.5	1.3	2.2	3.6	39.1
Link Distance (m)		102.5	102.5	274.2	274.2	270.6
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	60.0					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (m)	47.8	41.0	46.1	50.1	66.5	226.6
Average Queue (m)	22.3	21.1	24.8	25.9	31.5	157.3
95th Queue (m)	39.4	36.8	41.2	46.2	55.6	252.1
Link Distance (m)		274.2	274.2	224.4	224.4	229.0
Upstream Blk Time (%)						11
Queuing Penalty (veh)						0
Storage Bay Dist (m)	60.0					
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	SB
Directions Served	L	R
Maximum Queue (m)	11.4	14.8
Average Queue (m)	2.0	6.8
95th Queue (m)	8.2	13.1
Link Distance (m)		178.3
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	5.1	18.1
Average Queue (m)	0.2	5.3
95th Queue (m)	2.4	13.6
Link Distance (m)		136.1
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (m)	10.2	2.5	41.0
Average Queue (m)	1.2	0.1	18.8
95th Queue (m)	6.4	1.7	33.3
Link Distance (m)		446.5	212.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	10.6	1.6	1.3	8.9
Average Queue (m)	3.2	0.1	0.0	2.0
95th Queue (m)	10.6	1.1	0.9	7.8
Link Distance (m)	146.4	107.5	107.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (m)	35.6	64.2	58.4	15.6	23.7	82.4	89.2
Average Queue (m)	11.6	31.7	28.7	2.0	6.6	34.0	39.3
95th Queue (m)	26.2	55.9	49.0	9.7	19.6	67.3	75.9
Link Distance (m)	848.0	848.0		431.4	431.4	568.6	568.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			110.0				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 113: Sutton Drive & Mainway

Movement	EB	WB	WB	NB
Directions Served	TR	LT	T	LR
Maximum Queue (m)	3.2	10.4	1.8	17.4
Average Queue (m)	0.1	2.0	0.1	5.8
95th Queue (m)	1.8	8.1	1.3	14.2
Link Distance (m)	733.1	848.0	848.0	141.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	13.3	10.6	11.6	3.6	18.8	32.8
Average Queue (m)	0.9	0.5	1.6	0.1	4.9	13.0
95th Queue (m)	6.0	5.0	8.4	1.9	14.4	23.2
Link Distance (m)	400.6	400.6	733.1	733.1	92.7	97.3
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	92.4	192.4	196.0	87.7	91.9	89.0	90.4	120.3	117.6	72.4	135.3	139.8
Average Queue (m)	60.6	119.6	122.1	44.5	36.8	34.0	25.7	49.9	55.7	27.2	45.6	52.1
95th Queue (m)	109.0	204.8	204.2	96.8	116.2	76.1	62.4	114.8	121.4	57.8	105.8	115.3
Link Distance (m)		185.6	185.6		400.6	400.6		602.7	602.7		473.8	473.8
Upstream Blk Time (%)		6	6									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			90.0			95.0			65.0		
Storage Blk Time (%)	5	33		17	3		0	2		0	5	
Queuing Penalty (veh)	9	45		7	2		0	2		0	10	

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (m)	48.0	83.4	51.0	112.0	108.8	31.0	93.5	97.6
Average Queue (m)	12.9	41.1	10.9	56.9	61.1	10.1	53.1	56.5
95th Queue (m)	31.7	70.7	33.0	100.2	99.7	23.2	86.4	89.8
Link Distance (m)	118.6	93.0		473.8	473.8		520.7	520.7
Upstream Blk Time (%)		0						
Queuing Penalty (veh)		0						
Storage Bay Dist (m)			50.0			120.0		
Storage Blk Time (%)			0	7			0	
Queuing Penalty (veh)			0	2			0	

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (m)	20.1	29.4	108.6	40.8	36.5	95.8	95.5
Average Queue (m)	6.6	13.4	55.2	10.3	9.7	33.0	43.8
95th Queue (m)	15.8	24.6	93.8	28.3	27.0	68.8	80.0
Link Distance (m)		152.2		375.5	375.5	431.4	431.4
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	60.0		140.0				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T
Maximum Queue (m)	306.5	308.9	167.5	55.2	44.9	40.1	39.5	47.4
Average Queue (m)	265.3	266.9	162.5	28.3	18.5	8.5	10.8	14.1
95th Queue (m)	346.9	349.8	187.7	48.1	36.4	28.6	31.4	34.0
Link Distance (m)	293.0	293.0		296.9	296.9	375.5	375.5	375.5
Upstream Blk Time (%)	35	34						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (m)			160.0					
Storage Blk Time (%)		51	1					
Queuing Penalty (veh)		166	10					

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	37.0	36.2	47.9	31.0	22.2	47.5	35.6	4.4	38.6	45.1	51.5
Average Queue (m)	18.9	14.1	24.1	4.8	7.7	18.7	4.4	0.3	15.6	16.5	20.3
95th Queue (m)	35.7	29.0	40.8	17.3	17.5	38.8	18.7	2.3	32.1	34.8	40.0
Link Distance (m)	200.6	200.6	200.6		148.0	143.2	143.2	143.2	296.9	296.9	296.9
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	B3	B4	B4	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	T	T	T	L	T
Maximum Queue (m)	47.3	65.4	44.5	25.2	72.3	116.2	123.6	1.8	11.0	12.2	50.4	96.3
Average Queue (m)	13.7	32.0	19.3	8.1	24.7	47.5	58.1	0.1	0.9	1.1	17.3	35.1
95th Queue (m)	33.9	57.2	37.9	19.0	52.1	86.5	96.1	1.2	6.3	7.5	36.0	73.3
Link Distance (m)		351.5		154.1		136.2	136.2	27.7	18.5	18.5		602.7
Upstream Blk Time (%)						0	0		0	0		
Queuing Penalty (veh)						0	1		0	0		
Storage Bay Dist (m)	40.0		65.0		65.0						65.0	
Storage Blk Time (%)	0	8			0	3						2
Queuing Penalty (veh)	0	3			0	4						1

Intersection: 120: Appleby Line & North Service Road

Movement	SB
Directions Served	TR
Maximum Queue (m)	104.4
Average Queue (m)	42.6
95th Queue (m)	80.0
Link Distance (m)	602.7
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	B18	SB	SB	B4	B4
Directions Served	L	L	R	T	T	T	T	T	T	T
Maximum Queue (m)	62.5	73.2	87.3	145.0	156.2	4.5	41.4	44.4	10.7	15.2
Average Queue (m)	23.7	35.9	46.9	59.9	67.8	0.2	17.6	20.4	0.4	0.9
95th Queue (m)	49.2	59.1	76.4	111.7	123.4	3.2	37.3	40.5	5.2	6.3
Link Distance (m)		328.0	328.0	162.8	162.8	126.0	18.5	18.5	27.7	27.7
Upstream Blk Time (%)				0	0		7	10	0	0
Queuing Penalty (veh)				1	2		35	44	0	0
Storage Bay Dist (m)	210.0									
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	R	T	T	T	T
Maximum Queue (m)	84.4	94.7	65.6	46.2	92.0	101.0	91.7	90.4
Average Queue (m)	45.8	60.0	25.0	12.5	29.5	33.1	43.6	47.2
95th Queue (m)	72.2	83.4	47.2	29.9	62.5	67.4	79.1	82.2
Link Distance (m)		258.5	258.5		317.3	317.3	126.0	126.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	180.0			70.0				
Storage Blk Time (%)			0					
Queuing Penalty (veh)			0					

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (m)	112.8	156.0	149.4	78.3	65.0	82.9	57.3	176.0	193.7	57.5	87.4	128.0
Average Queue (m)	48.2	77.1	70.8	29.1	26.9	37.3	16.5	83.3	96.2	34.5	58.8	34.0
95th Queue (m)	99.3	138.2	131.1	62.5	51.1	68.4	45.2	170.1	193.8	74.5	92.7	93.9
Link Distance (m)		188.2	188.2		211.6	211.6		565.9	565.9			317.3
Upstream Blk Time (%)		0	0									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	115.0			120.0			50.0			50.0	80.0	
Storage Blk Time (%)	2	3					0	25	26	1	9	
Queuing Penalty (veh)	3	4					0	18	83	3	26	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (m)	109.9	35.6
Average Queue (m)	30.1	10.2
95th Queue (m)	73.6	24.8
Link Distance (m)	317.3	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		85.0
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.0	137.7	77.7	52.9	50.1	47.0	38.2	82.3	108.8	107.8	62.5	82.3
Average Queue (m)	49.3	64.2	30.1	21.3	17.0	19.1	17.8	28.2	56.6	54.0	16.7	31.1
95th Queue (m)	83.5	110.0	63.1	42.4	36.2	36.9	32.1	61.8	97.2	95.4	51.5	66.0
Link Distance (m)		329.3	329.3			464.1	464.1		319.8	319.8		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	1	5	2	0				0	3	9	0	1
Queuing Penalty (veh)	2	11	4	0				0	5	9	0	3

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (m)	125.3	115.6	73.2
Average Queue (m)	58.1	60.4	10.7
95th Queue (m)	104.1	104.7	44.5
Link Distance (m)	565.9	565.9	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			100.0
Storage Blk Time (%)	4	1	0
Queuing Penalty (veh)	6	1	0

Network Summary

Network wide Queuing Penalty: 836

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	111.6	119.9	262.3	259.0	263.4	187.5	150.6	209.9	284.2	277.2	276.5	222.5
Average Queue (m)	79.1	96.4	251.5	235.2	234.1	69.0	105.7	134.4	270.3	267.3	265.6	53.2
95th Queue (m)	118.6	137.8	273.0	274.4	274.6	206.3	151.6	214.0	283.9	288.9	286.1	197.0
Link Distance (m)			252.3	252.3	252.3				271.7	271.7	271.7	
Upstream Blk Time (%)			85	24	35				71	68	64	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	6	40	86		84	2		0	89		88	0
Queuing Penalty (veh)	12	84	139		209	4		0	365		206	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.4	149.9	1964.4	1969.1	1841.7	63.7	142.5	149.9	219.1	210.8	65.7	22.5
Average Queue (m)	127.9	148.5	1220.4	1173.8	991.8	9.3	128.1	148.3	204.0	39.5	5.7	1.7
95th Queue (m)	142.3	151.7	2169.2	2151.5	1982.5	37.6	142.9	152.3	252.5	165.7	40.2	12.0
Link Distance (m)			1960.8	1960.8	1960.8				208.6	208.6	208.6	
Upstream Blk Time (%)			12	3	4				92	0		
Queuing Penalty (veh)			76	21	25				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	31	96	0		0		16	95				
Queuing Penalty (veh)	94	288	0		0		36	209				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	L	T	TR	L
Maximum Queue (m)	62.4	103.5	84.6	80.0	177.4	198.2	87.5	53.2	107.3	355.4	364.7	56.8
Average Queue (m)	39.3	45.7	26.9	23.9	81.9	87.1	42.5	29.4	40.7	85.1	90.3	16.1
95th Queue (m)	66.3	91.1	68.8	55.1	131.8	146.0	111.9	48.0	78.8	262.8	266.5	50.3
Link Distance (m)		124.1	124.1		492.3	492.3				521.1	521.1	
Upstream Blk Time (%)		2	0							1	1	
Queuing Penalty (veh)		0	0							12	11	
Storage Bay Dist (m)	55.0			125.0			80.0	100.0	100.0			55.0
Storage Blk Time (%)	12	1			1	10	5		0	9		2
Queuing Penalty (veh)	15	1			1	39	16		0	27		8

Intersection: 102: Appleby Line & Upper Middle Road

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	119.4	126.2
Average Queue (m)	30.6	33.7
95th Queue (m)	95.2	101.9
Link Distance (m)	1960.8	1960.8
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	3	
Queuing Penalty (veh)	6	

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	T	TR	T	TR	LT	R	LTR
Maximum Queue (m)	8.6	56.0	48.3	90.3	105.0	30.9	12.0	9.9
Average Queue (m)	0.3	15.2	11.3	52.3	61.6	11.6	2.3	1.6
95th Queue (m)	5.1	39.4	31.7	83.0	94.3	25.5	9.2	7.1
Link Distance (m)		492.3	492.3	234.5	234.5	143.0	143.0	43.7
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	30.0							
Storage Blk Time (%)		2		1				
Queuing Penalty (veh)		0		0				

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	WB	NB	NB
Directions Served	TR	L	L	R
Maximum Queue (m)	1.6	12.3	14.6	18.2
Average Queue (m)	0.1	1.7	4.7	7.6
95th Queue (m)	1.1	8.1	13.4	15.8
Link Distance (m)	234.5		118.4	118.4
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)		30.0		
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	EB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	37.9	1.8	12.0	19.4	33.0
Average Queue (m)	13.8	0.1	0.8	2.3	15.0
95th Queue (m)	28.6	1.3	7.7	11.1	26.8
Link Distance (m)		102.3	274.2	274.2	220.9
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	60.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (m)	47.2	27.0	32.0	135.4	149.3	101.9
Average Queue (m)	23.6	8.9	11.3	74.8	86.2	56.2
95th Queue (m)	41.2	23.2	26.3	121.2	131.3	89.8
Link Distance (m)		274.2	274.2	224.9	224.9	305.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	60.0					
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	WB	SB
Directions Served	L	T	R
Maximum Queue (m)	19.4	1.0	15.5
Average Queue (m)	5.5	0.0	7.1
95th Queue (m)	14.7	0.7	14.2
Link Distance (m)		171.6	178.3
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (m)	10.4	1.8	11.6
Average Queue (m)	1.5	0.1	2.8
95th Queue (m)	7.0	1.3	9.9
Link Distance (m)		181.9	136.1
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	20.5	25.5	18.6	31.9
Average Queue (m)	4.9	2.0	1.9	12.5
95th Queue (m)	13.8	13.4	9.6	24.4
Link Distance (m)		441.7	441.7	212.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	19.3	3.4	4.1	10.5
Average Queue (m)	7.8	0.2	0.1	3.3
95th Queue (m)	16.4	3.4	2.3	10.2
Link Distance (m)	146.2	107.5	107.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (m)	55.4	47.7	81.2	75.8	87.6	40.6	47.7
Average Queue (m)	25.2	21.5	39.7	31.1	40.4	19.1	22.4
95th Queue (m)	46.1	37.3	69.9	59.5	71.4	35.2	40.2
Link Distance (m)	848.0	848.0		431.4	431.4	568.6	568.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			110.0				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 113: Sutton Drive & Mainway

Movement	WB	WB	NB
Directions Served	LT	T	LR
Maximum Queue (m)	11.4	1.8	38.4
Average Queue (m)	0.7	0.1	18.0
95th Queue (m)	4.9	1.3	31.3
Link Distance (m)	848.0	848.0	141.9
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	20.5	12.0	22.2	19.0	23.0	21.6
Average Queue (m)	4.3	0.7	1.4	1.0	9.9	10.3
95th Queue (m)	13.9	6.5	9.7	8.4	18.1	17.5
Link Distance (m)	400.6	400.6	733.1	733.1	92.7	97.3
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	83.6	99.2	86.2	97.4	223.3	228.4	72.5	128.2	127.6	64.3	92.4	99.2
Average Queue (m)	44.3	33.5	32.5	47.3	126.5	133.3	33.0	39.5	43.7	13.1	31.8	37.7
95th Queue (m)	85.2	82.0	67.8	104.3	220.0	222.6	64.9	106.7	107.0	38.3	73.8	81.1
Link Distance (m)		129.7	129.7		400.6	400.6		603.0	603.0		473.8	473.8
Upstream Blk Time (%)		0										
Queuing Penalty (veh)		0										
Storage Bay Dist (m)	85.0			90.0			95.0			65.0		
Storage Blk Time (%)	8	0		0	28		2	0			2	
Queuing Penalty (veh)	6	0		0	35		14	1			2	

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (m)	39.4	72.9	31.4	98.4	106.4	30.0	71.2	74.4
Average Queue (m)	17.2	38.9	5.0	29.9	36.7	9.8	15.9	20.4
95th Queue (m)	34.5	62.7	18.4	64.2	71.6	22.3	51.5	55.2
Link Distance (m)	118.6	93.0		473.8	473.8		521.1	521.1
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)			50.0			120.0		
Storage Blk Time (%)			0	2				
Queuing Penalty (veh)			0	1				

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (m)	57.8	63.4	34.7	95.7	91.6	40.4	50.8
Average Queue (m)	25.8	27.1	14.1	57.2	58.3	17.1	23.6
95th Queue (m)	46.7	45.6	26.7	86.2	86.7	34.9	42.7
Link Distance (m)		152.2		375.5	375.5	431.4	431.4
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	60.0		140.0				
Storage Blk Time (%)	0	0					
Queuing Penalty (veh)	0	0					

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T
Maximum Queue (m)	307.5	305.4	167.5	73.1	63.7	47.1	57.3	67.5
Average Queue (m)	284.8	281.2	161.4	43.7	37.5	26.8	37.7	44.9
95th Queue (m)	345.5	346.2	181.0	66.0	59.4	43.2	53.1	63.6
Link Distance (m)	293.0	293.0		296.9	296.9	375.5	375.5	375.5
Upstream Blk Time (%)	26	20						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (m)			160.0					
Storage Blk Time (%)		18	1					
Queuing Penalty (veh)		114	15					

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	41.0	32.2	55.1	43.4	18.9	42.7	24.4	4.7	43.5	42.9	40.2
Average Queue (m)	17.7	10.0	24.9	7.2	9.3	19.0	3.9	0.6	13.9	13.4	15.4
95th Queue (m)	35.0	23.0	44.3	26.4	16.9	38.7	13.3	3.1	33.6	33.5	32.5
Link Distance (m)	200.6	200.6	200.6		148.0	143.2	143.2	143.2	296.9	296.9	296.9
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 120: Apleby Line/Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	L	T	TR
Maximum Queue (m)	46.0	80.4	72.4	138.3	72.4	112.8	111.2	61.9	158.6	145.0
Average Queue (m)	18.7	32.2	58.3	88.7	38.8	63.4	68.1	11.2	65.8	71.2
95th Queue (m)	39.4	64.1	85.1	149.9	72.4	100.4	101.2	38.0	126.1	130.8
Link Distance (m)		339.0		132.6		138.2	138.2		603.0	603.0
Upstream Blk Time (%)				5						
Queuing Penalty (veh)				0						
Storage Bay Dist (m)	40.0		65.0		65.0			65.0		
Storage Blk Time (%)	1	9	6	17	2	7			8	
Queuing Penalty (veh)	2	5	24	45	15	19			4	

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	SB	SB	SB	B7	B7	B18
Directions Served	L	L	R	T	T	T	T	T	T	T	T
Maximum Queue (m)	159.7	168.6	177.4	111.7	124.3	40.5	42.4	9.8	27.3	40.4	3.6
Average Queue (m)	111.2	156.6	166.9	61.0	63.1	32.8	35.5	0.9	9.7	17.8	0.2
95th Queue (m)	178.1	183.5	173.9	97.0	100.5	43.5	43.8	5.9	25.5	38.1	2.3
Link Distance (m)		159.6	159.6	167.5	167.5	15.3	15.3	15.3	24.3	24.3	138.2
Upstream Blk Time (%)	0	36	91			23	26	0	1	4	
Queuing Penalty (veh)	0	0	0			108	123	1	5	27	
Storage Bay Dist (m)	210.0										
Storage Blk Time (%)	0	36									
Queuing Penalty (veh)	1	123									

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	SB	SB	B22
Directions Served	L	L	R	R	T	T	T	T	T
Maximum Queue (m)	72.5	84.2	59.5	48.2	54.1	60.1	78.7	89.8	2.9
Average Queue (m)	40.9	52.6	28.1	19.7	26.6	28.2	22.7	30.2	0.1
95th Queue (m)	67.7	76.9	50.2	38.6	45.4	48.5	60.1	68.2	1.5
Link Distance (m)		204.2	204.2		320.2	320.2	125.6	125.6	167.5
Upstream Blk Time (%)							0		
Queuing Penalty (veh)							0		
Storage Bay Dist (m)	180.0			70.0					
Storage Blk Time (%)			0						
Queuing Penalty (veh)			0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (m)	122.5	166.9	159.6	127.4	155.6	158.7	57.3	114.5	122.1	57.5	87.2	149.4
Average Queue (m)	120.4	153.1	103.9	113.0	145.9	145.4	25.6	53.2	54.0	19.9	21.2	56.8
95th Queue (m)	132.9	166.7	177.0	156.1	159.1	163.9	58.2	110.9	115.9	57.9	49.1	122.4
Link Distance (m)		149.2	149.2		144.2	144.2		577.7	577.7			320.2
Upstream Blk Time (%)		87	6		57	54						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0			50.0	80.0	
Storage Blk Time (%)	86	8		31	31		1	13	12	0		5
Queuing Penalty (veh)	102	23		78	124		2	12	20	0		7

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (m)	164.1	92.5
Average Queue (m)	65.9	20.7
95th Queue (m)	138.1	69.1
Link Distance (m)	320.2	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		85.0
Storage Blk Time (%)	7	0
Queuing Penalty (veh)	16	1

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	82.4	102.2	79.5	57.5	75.9	68.3	38.8	71.9	80.9	71.7	20.2	57.1
Average Queue (m)	41.2	55.8	21.4	33.0	34.5	34.8	14.2	37.1	38.1	26.7	5.8	16.9
95th Queue (m)	71.5	84.0	52.6	57.1	60.2	60.1	28.6	65.2	68.1	53.3	14.9	37.6
Link Distance (m)		177.1	177.1			248.2	248.2		208.2	208.2		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	0	1	0	4	0	0		2		0		
Queuing Penalty (veh)	0	1	1	3	0	0		5		0		

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (m)	175.1	177.8	107.5
Average Queue (m)	61.6	72.2	66.3
95th Queue (m)	127.8	151.6	116.8
Link Distance (m)	577.7	577.7	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			100.0
Storage Blk Time (%)	2	1	10
Queuing Penalty (veh)	3	5	48

Network Summary

Network wide Queuing Penalty: 3044

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	104.6	119.9	216.4	213.0	207.2	168.8	200.0	209.9	252.4	239.0	156.3	42.3
Average Queue (m)	66.3	85.6	181.6	165.0	152.3	62.4	182.1	202.0	227.7	110.5	61.3	10.4
95th Queue (m)	121.1	144.5	271.5	254.4	250.9	174.2	218.1	235.9	305.5	236.6	137.9	31.6
Link Distance (m)			211.8	211.8	211.8				243.8	243.8	243.8	
Upstream Blk Time (%)			57	14	12				80	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	16	32	63		37	1	28	84	13		0	
Queuing Penalty (veh)	32	65	122		107	1	63	189	50		0	

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.5	150.0	1569.2	2001.2	1325.4	73.6	142.4	149.9	261.7	248.0	88.5	48.1
Average Queue (m)	127.1	140.1	815.7	843.4	540.0	12.4	126.6	142.3	225.6	82.1	13.3	5.6
95th Queue (m)	156.9	171.5	1857.1	2018.7	1456.4	43.0	160.3	175.6	348.8	255.7	59.8	27.8
Link Distance (m)			1973.6	1973.6	1973.6				253.1	253.1	253.1	
Upstream Blk Time (%)			4	0					77	0		
Queuing Penalty (veh)			20	1					0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	43	77					43	81	0			
Queuing Penalty (veh)	87	154					95	179	1			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	L	L	T	TR	L
Maximum Queue (m)	62.3	108.8	86.1	55.8	73.0	74.0	78.5	42.9	74.3	169.9	178.8	62.3
Average Queue (m)	44.7	41.3	21.8	27.5	35.3	36.1	8.4	22.0	30.5	53.2	60.1	21.9
95th Queue (m)	69.2	96.6	70.7	48.0	58.9	59.3	44.8	38.7	58.4	134.4	141.1	54.7
Link Distance (m)		160.8	160.8		492.2	492.2				520.7	520.7	
Upstream Blk Time (%)		1	0									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0			80.0	100.0	100.0			55.0
Storage Blk Time (%)	17	0				0	0		0	3		1
Queuing Penalty (veh)	18	0				1	1		0	7		3

Intersection: 102: Appleby Line & Upper Middle Road

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	143.8	159.0
Average Queue (m)	40.2	45.1
95th Queue (m)	109.9	117.5
Link Distance (m)	1973.6	1973.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	5	
Queuing Penalty (veh)	11	

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (m)	27.0	3.3	7.9	4.1	6.8	25.1
Average Queue (m)	8.0	0.1	0.3	0.1	0.4	10.9
95th Queue (m)	18.7	2.3	3.4	2.9	4.5	19.4
Link Distance (m)		102.5	102.5	274.2	274.2	270.6
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	60.0					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (m)	33.2	31.2	38.4	66.8	71.8	84.5
Average Queue (m)	13.4	15.1	17.9	30.6	37.4	39.7
95th Queue (m)	26.7	30.6	34.2	56.4	65.7	70.1
Link Distance (m)		274.2	274.2	224.4	224.4	229.0
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)	60.0					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	SB
Directions Served	L	T	LR
Maximum Queue (m)	12.9	3.1	19.9
Average Queue (m)	3.2	0.1	10.0
95th Queue (m)	10.4	2.2	18.2
Link Distance (m)		446.5	212.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	24.6	3.4	1.4	11.4
Average Queue (m)	10.2	0.1	0.0	1.3
95th Queue (m)	19.4	2.4	1.0	6.8
Link Distance (m)	146.4	107.5	107.5	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (m)	29.5	21.8	39.2	39.3	47.4	31.4	35.5
Average Queue (m)	8.9	10.5	17.0	10.4	14.2	11.3	13.1
95th Queue (m)	21.1	18.5	33.2	29.3	35.6	24.9	29.2
Link Distance (m)	848.0	848.0		431.4	431.4	568.6	568.6
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)			110.0				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 113: Sutton Drive & Mainway

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	3.2	8.6
Average Queue (m)	0.1	4.6
95th Queue (m)	1.6	11.5
Link Distance (m)	848.0	141.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	TR	L	T	TR
Maximum Queue (m)	42.0	28.7	47.9	27.4	51.9	56.4	38.5	74.7	73.2	44.9	98.0	108.7
Average Queue (m)	21.1	10.2	17.3	10.5	21.6	26.4	17.1	28.5	30.6	9.7	45.0	50.4
95th Queue (m)	36.8	22.0	34.1	22.9	38.5	45.1	30.7	57.5	61.1	31.7	89.4	97.7
Link Distance (m)		185.6	185.6		400.6	400.6		602.7	602.7		473.8	473.8
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			90.0			95.0			65.0		
Storage Blk Time (%)								0			5	
Queuing Penalty (veh)								0			3	

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LTR	LTR	L	T	TR	L	T	TR
Maximum Queue (m)	37.9	68.8	13.1	61.8	68.2	21.7	68.7	74.4
Average Queue (m)	15.1	34.8	3.9	27.8	29.0	9.1	21.2	26.1
95th Queue (m)	31.1	58.8	10.9	52.8	55.0	19.2	55.2	62.4
Link Distance (m)	118.6	93.0		473.8	473.8		520.7	520.7
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)			50.0			120.0		
Storage Blk Time (%)				1				
Queuing Penalty (veh)				0				

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (m)	12.5	18.8	27.1	43.4	42.4	30.5	34.9
Average Queue (m)	2.7	7.4	8.7	8.3	9.0	3.7	5.0
95th Queue (m)	8.8	15.4	19.2	29.1	31.0	16.5	19.8
Link Distance (m)		152.2		375.5	375.5	431.4	431.4
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	60.0		140.0				
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T
Maximum Queue (m)	250.5	247.4	167.5	42.2	35.7	25.4	25.0	27.6
Average Queue (m)	189.4	177.6	130.5	22.2	16.3	8.9	11.7	12.3
95th Queue (m)	280.6	277.4	184.6	35.8	29.6	20.8	23.2	23.3
Link Distance (m)	293.0	293.0		296.9	296.9	375.5	375.5	375.5
Upstream Blk Time (%)	6	6						
Queuing Penalty (veh)	0	0						
Storage Bay Dist (m)			160.0					
Storage Blk Time (%)		11	0					
Queuing Penalty (veh)		41	4					

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	28.5	39.2	40.7	16.1	23.8	37.4	22.3	4.8	49.5	54.9	51.6
Average Queue (m)	11.0	17.6	18.3	2.1	11.7	14.0	2.5	0.4	18.7	21.5	19.3
95th Queue (m)	23.4	33.1	32.3	10.2	20.3	30.2	11.4	2.6	39.9	46.4	41.7
Link Distance (m)	200.6	200.6	200.6		148.0	143.2	143.2	143.2	296.9	296.9	296.9
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	B4	B4	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	TR	T	T	L	T	TR
Maximum Queue (m)	32.4	24.6	42.3	28.9	28.4	57.0	61.0	12.9	15.0	14.9	83.0	90.6
Average Queue (m)	11.4	9.8	16.7	11.8	5.3	24.3	28.8	1.1	1.6	5.0	32.7	36.5
95th Queue (m)	24.7	20.7	33.8	24.0	18.3	47.5	50.8	6.8	8.9	12.7	73.7	77.2
Link Distance (m)		351.5		154.1		136.2	136.2	18.5	18.5		602.7	602.7
Upstream Blk Time (%)								0	0			
Queuing Penalty (veh)								0	0			
Storage Bay Dist (m)	40.0		65.0		65.0					65.0		
Storage Blk Time (%)	0					0					1	
Queuing Penalty (veh)	0					0					0	

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	SB	SB	B4	B4	B3	B3
Directions Served	L	L	R	T	T	T	T	T	T	T	T
Maximum Queue (m)	55.7	66.0	54.9	64.2	63.9	39.8	37.7	20.0	15.8	9.2	7.0
Average Queue (m)	26.2	40.6	23.4	26.6	30.9	14.0	13.5	0.9	0.8	0.3	0.2
95th Queue (m)	54.0	60.4	42.5	47.9	53.8	31.7	30.3	8.5	9.1	6.5	4.9
Link Distance (m)		328.0	328.0	162.8	162.8	18.5	18.5	27.7	27.7	136.2	136.2
Upstream Blk Time (%)						2	3	0	0		
Queuing Penalty (veh)						11	13	1	1		
Storage Bay Dist (m)	210.0										
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	R	T	T	T	T
Maximum Queue (m)	62.3	73.3	48.0	39.1	32.4	29.9	66.5	64.6
Average Queue (m)	30.5	45.8	17.9	9.4	12.5	12.9	29.0	33.6
95th Queue (m)	57.6	66.7	33.3	22.3	25.2	25.1	56.5	59.8
Link Distance (m)		258.5	258.5		317.3	317.3	126.0	126.0
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	180.0			70.0				
Storage Blk Time (%)			0					
Queuing Penalty (veh)			0					

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	R	L	T
Maximum Queue (m)	42.2	26.9	36.9	127.4	225.2	211.3	57.2	108.9	114.3	57.5	33.8	70.2
Average Queue (m)	21.3	12.8	14.4	123.3	173.5	114.2	13.3	44.9	49.0	21.0	11.5	33.4
95th Queue (m)	37.7	24.5	27.3	142.0	292.6	233.6	39.0	86.2	93.5	53.6	25.0	57.2
Link Distance (m)		188.2	188.2		211.6	211.6		565.9	565.9			317.3
Upstream Blk Time (%)					53	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (m)	115.0			120.0			50.0			50.0	80.0	
Storage Blk Time (%)				69	1			5	6	0		0
Queuing Penalty (veh)				103	3			4	14	0		0

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB
Directions Served	T	R
Maximum Queue (m)	72.3	23.0
Average Queue (m)	40.3	5.9
95th Queue (m)	64.5	15.1
Link Distance (m)	317.3	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		85.0
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	68.9	79.8	58.8	53.8	46.7	37.5	30.5	81.4	100.9	91.0	62.5	75.3
Average Queue (m)	33.4	47.2	18.2	27.1	19.1	16.6	14.2	34.3	55.2	50.1	14.1	15.9
95th Queue (m)	62.8	70.0	43.3	48.3	36.3	33.1	26.1	66.3	88.7	82.8	46.8	45.0
Link Distance (m)		329.3	329.3			464.1	464.1		319.8	319.8		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	0	0	0	2				0	2	5	0	
Queuing Penalty (veh)	0	0	0	1				1	4	4	0	

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB
Directions Served	T	T	R
Maximum Queue (m)	106.3	112.2	82.5
Average Queue (m)	66.1	68.7	19.4
95th Queue (m)	99.7	103.5	51.2
Link Distance (m)	565.9	565.9	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			100.0
Storage Blk Time (%)	5	1	0
Queuing Penalty (veh)	5	2	0

Zone Summary

Zone wide Queuing Penalty: 1423

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	74.2	120.0	219.5	215.7	216.1	187.5	183.4	196.0	210.8	184.8	116.8	30.6
Average Queue (m)	36.5	76.8	163.8	145.8	121.0	63.2	115.3	129.1	104.1	78.0	40.1	11.6
95th Queue (m)	74.5	141.1	251.3	238.8	224.4	152.9	204.9	221.3	242.1	176.4	99.1	24.2
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			22	7	5				14	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)			40		11	0	3	19	2			
Queuing Penalty (veh)			83		46	0	6	36	8			

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	76.9	84.3	112.7	112.5	470.3	80.7	93.8	99.7	139.7	132.7	79.0	32.6
Average Queue (m)	34.7	41.3	35.5	40.1	54.4	29.6	46.1	57.6	72.3	61.5	38.4	8.3
95th Queue (m)	83.0	89.7	93.7	90.0	321.0	68.9	97.2	105.3	134.6	119.2	74.8	21.9
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	0	2					0	2				
Queuing Penalty (veh)	0	3					1	6				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	160.6	166.1	119.0	119.9	32.2	36.8	2.1	51.3	90.4	112.8	116.6
Average Queue (m)	45.9	117.0	130.5	80.0	35.7	13.4	18.4	0.1	21.4	29.6	65.0	73.2
95th Queue (m)	76.1	187.6	192.2	142.1	139.1	26.6	31.4	1.5	43.6	57.7	100.4	109.1
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		18	23									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	3	33		18	0						1	
Queuing Penalty (veh)	8	54		17	0						2	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	121.4	62.4	223.0	199.2	170.5
Average Queue (m)	79.7	58.1	128.6	116.0	102.7
95th Queue (m)	116.9	75.6	222.4	198.1	169.6
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		39	11		
Queuing Penalty (veh)		183	38		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (m)	8.6	53.7	48.1	62.3	16.8	37.3	38.6	49.2	73.7	26.5	13.8
Average Queue (m)	0.8	31.3	25.9	32.6	6.2	14.3	14.3	20.9	41.4	11.4	4.4
95th Queue (m)	4.8	50.6	44.9	53.0	14.1	30.0	29.5	37.8	65.4	21.0	12.0
Link Distance (m)		492.0	492.0	492.0		234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	30.0				80.0						
Storage Blk Time (%)		10									
Queuing Penalty (veh)		1									

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	L	R
Maximum Queue (m)	1.6	13.0	17.3	37.4	54.5	37.3	33.5
Average Queue (m)	0.1	0.4	2.7	20.8	4.2	14.6	16.5
95th Queue (m)	1.1	4.8	10.3	35.3	29.7	29.4	27.8
Link Distance (m)	234.5	234.5	234.5		102.7	114.8	114.8
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)				30.0			
Storage Blk Time (%)				3			
Queuing Penalty (veh)				7			

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	35.4	7.8	12.8	105.2
Average Queue (m)	14.3	0.3	1.3	49.0
95th Queue (m)	26.4	4.1	6.7	95.4
Link Distance (m)		274.2	274.2	267.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	60.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	66.4	36.2	40.2	47.2	47.7	49.6	65.9	237.2
Average Queue (m)	32.0	17.6	21.1	25.0	22.6	19.8	32.7	230.5
95th Queue (m)	54.4	32.4	35.6	41.0	40.5	38.0	56.4	233.6
Link Distance (m)		274.2	274.2	274.2	224.1	224.1	224.1	225.3
Upstream Blk Time (%)								81
Queuing Penalty (veh)								0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	1							
Queuing Penalty (veh)	4							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	WB	SB
Directions Served	L	TR	R
Maximum Queue (m)	22.2	1.3	15.8
Average Queue (m)	4.2	0.0	8.7
95th Queue (m)	14.2	0.9	14.3
Link Distance (m)		171.6	174.7
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	3.5	19.3
Average Queue (m)	0.1	7.0
95th Queue (m)	1.8	15.9
Link Distance (m)		132.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	15.0	59.9
Average Queue (m)	2.4	30.3
95th Queue (m)	9.8	51.2
Link Distance (m)		209.2
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (m)	11.7	1.4	10.2
Average Queue (m)	3.7	0.0	2.0
95th Queue (m)	11.3	1.0	8.1
Link Distance (m)	142.7	107.4	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			145.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	50.6	95.2	77.8	15.3	28.4	26.9	72.7	88.4	100.6
Average Queue (m)	15.9	48.9	40.4	4.0	5.5	7.3	36.2	43.4	48.3
95th Queue (m)	40.4	85.1	69.2	12.3	17.8	20.8	60.3	71.0	81.8
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	NB
Directions Served	T	TR	LT	LR
Maximum Queue (m)	5.3	8.1	13.0	20.7
Average Queue (m)	0.2	0.5	2.6	6.0
95th Queue (m)	2.9	4.0	9.8	15.3
Link Distance (m)	733.1	733.1	844.4	141.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LT	LTR	LTR
Maximum Queue (m)	29.1	11.1	13.4	18.4	36.1
Average Queue (m)	1.7	0.7	1.8	5.4	14.7
95th Queue (m)	12.9	5.2	8.3	15.2	26.2
Link Distance (m)	397.0	397.0	733.1	92.7	97.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	193.5	194.0	87.2	93.9	93.2	61.4	102.0	111.9	115.8	67.1	74.8
Average Queue (m)	69.3	151.0	150.4	51.5	37.9	33.0	25.6	36.2	44.8	53.5	25.8	26.8
95th Queue (m)	114.0	229.9	226.5	102.9	117.1	72.9	51.7	84.7	100.9	114.5	52.1	61.3
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)		33	27									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	11	43		17	2		0	0			0	0
Queuing Penalty (veh)	23	74		8	2		0	0			1	1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	84.4	97.1
Average Queue (m)	33.5	41.2
95th Queue (m)	74.3	85.3
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	43.2	86.7	52.5	90.8	93.4	99.9	45.1	71.3	81.1	81.0
Average Queue (m)	14.0	46.0	11.5	49.1	51.4	55.2	10.8	28.0	33.5	36.7
95th Queue (m)	31.4	77.1	33.5	87.4	88.5	92.4	29.6	54.6	66.2	68.0
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		0								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)			0	6				0		
Queuing Penalty (veh)			0	2				0		

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	22.0	34.1	105.6	28.8	22.8	18.0	49.0	58.6	63.3
Average Queue (m)	8.4	16.9	49.9	8.5	5.0	6.0	10.5	25.2	34.1
95th Queue (m)	19.3	29.6	85.7	22.3	16.1	16.4	30.7	48.1	55.5
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	303.4	305.9	167.5	52.7	41.9	26.2	47.3	48.7	53.5
Average Queue (m)	295.1	296.2	163.5	26.2	18.7	10.8	22.1	16.3	21.9
95th Queue (m)	301.5	302.1	192.6	46.2	35.1	22.4	40.1	36.4	46.2
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	62	61							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		59	1						
Queuing Penalty (veh)		282	11						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	53.5	43.3	70.5	58.3	29.4	75.4	64.6	18.3	65.3	68.8	67.1
Average Queue (m)	23.2	18.4	36.1	15.0	11.9	32.9	12.8	1.8	27.8	32.3	39.0
95th Queue (m)	42.7	34.3	58.9	44.0	22.6	61.7	39.5	9.6	50.1	55.5	61.1
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	43.3	76.5	48.0	31.3	51.6	70.8	97.5	106.2	46.2	53.6	61.2	67.4
Average Queue (m)	15.2	37.7	19.7	9.6	22.0	31.1	45.2	58.6	19.6	19.5	25.2	32.3
95th Queue (m)	36.1	63.4	37.6	22.2	41.8	58.0	76.9	91.7	36.2	42.2	48.7	58.0
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	0	13				0				0		
Queuing Penalty (veh)	0	6				0				0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	144.0	169.8	208.0	80.6	92.6	98.5	25.6	30.9	35.2
Average Queue (m)	43.7	62.7	118.9	44.1	48.4	56.0	12.8	12.9	15.4
95th Queue (m)	98.3	123.3	192.6	68.5	73.8	86.2	24.6	26.5	30.4
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)		0							
Queuing Penalty (veh)		0							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	97.9	118.1	87.2	75.3	53.6	63.2	78.2	72.7	72.6	87.6
Average Queue (m)	60.1	75.1	41.0	21.8	24.3	32.2	37.0	42.5	40.5	49.3
95th Queue (m)	88.6	105.9	72.1	53.6	45.1	53.7	64.1	69.0	68.1	76.5
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			0	0						
Queuing Penalty (veh)			1	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	113.9	166.0	154.5	100.6	83.1	119.7	57.3	92.2	96.0	96.0	57.5	87.4
Average Queue (m)	58.7	89.4	81.3	45.1	33.7	49.8	13.8	34.9	39.2	39.8	29.0	66.3
95th Queue (m)	115.4	149.3	133.8	86.1	65.3	97.9	36.3	74.4	80.0	82.0	64.5	102.5
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)		1	0									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	1	5		0	0			5		8	3	22
Queuing Penalty (veh)	2	8		0	0			4		28	10	47

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	181.0	109.6	60.6	33.4
Average Queue (m)	58.2	32.7	22.5	12.9
95th Queue (m)	167.4	100.2	47.9	29.2
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.4	197.6	190.6	57.5	55.0	49.7	45.3	82.3	177.6	179.2	62.5	82.4
Average Queue (m)	64.7	91.7	53.4	33.8	20.3	22.0	19.8	55.9	89.6	92.2	29.3	45.8
95th Queue (m)	100.7	166.7	137.9	62.8	43.3	45.5	35.8	94.2	156.0	159.9	73.8	84.6
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	4	14	8	5	0			1	17	28	0	3
Queuing Penalty (veh)	10	39	17	7	0			7	33	34	1	10

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	117.6	114.3	115.7	94.7
Average Queue (m)	66.3	67.4	68.0	17.0
95th Queue (m)	107.9	105.1	106.6	59.9
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	6		2	0
Queuing Penalty (veh)	11		3	0

Network Summary

Network wide Queuing Penalty: 1187

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	95.9	119.9	259.6	258.4	255.1	187.5	139.4	209.9	282.8	282.0	281.5	222.5
Average Queue (m)	72.6	89.3	251.0	241.6	232.4	63.7	101.2	137.6	269.8	267.0	266.9	55.2
95th Queue (m)	110.3	133.4	262.1	265.0	282.0	197.6	143.4	222.8	283.9	285.2	292.9	202.1
Link Distance (m)			250.5	250.5	250.5				271.7	271.7	271.7	
Upstream Blk Time (%)			87	43	38				65	49	61	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	2	24	89		74	1			86		84	0
Queuing Penalty (veh)	5	58	164		222	2			412		219	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.4	149.9	1961.7	1960.3	1985.2	65.8	142.4	149.9	219.4	203.7	57.0	44.4
Average Queue (m)	130.9	148.3	1307.5	1271.7	1221.1	7.7	129.4	147.7	209.1	43.6	4.3	3.4
95th Queue (m)	143.4	151.1	2276.9	2327.1	2394.6	37.6	144.7	153.5	215.8	174.8	32.2	26.1
Link Distance (m)			1956.6	1956.6	1956.6				208.6	208.6	208.6	
Upstream Blk Time (%)			19	16	30				95	0		
Queuing Penalty (veh)			142	123	226				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	45	96			0	0	37	96				
Queuing Penalty (veh)	154	326			0	0	94	239				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	126.2	116.4	60.7	364.8	421.0	448.8	87.5	60.6	107.4	491.7	486.2
Average Queue (m)	52.1	71.5	49.5	25.8	101.2	139.7	150.7	51.1	33.1	49.9	135.2	142.1
95th Queue (m)	74.2	128.8	106.5	48.1	321.8	397.2	421.6	114.4	58.7	97.4	439.0	441.5
Link Distance (m)		120.5	120.5		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		17	0		0	5	9				7	7
Queuing Penalty (veh)		0	0		0	26	51				49	49
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	32	3					1	29		0	23	
Queuing Penalty (veh)	54	7					3	78		0	86	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	490.6	61.7	98.4	103.1	107.0
Average Queue (m)	143.2	17.0	21.1	25.7	28.4
95th Queue (m)	443.7	50.1	70.1	78.1	86.6
Link Distance (m)	519.9		1956.6	1956.6	1956.6
Upstream Blk Time (%)	8				
Queuing Penalty (veh)	52				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		2	1		
Queuing Penalty (veh)		6	2		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LT	R	LTR
Maximum Queue (m)	6.8	56.3	45.0	34.2	133.3	152.6	153.5	43.9	10.6	9.9
Average Queue (m)	0.4	18.4	10.2	8.6	49.7	60.2	72.4	15.7	3.3	1.8
95th Queue (m)	3.3	45.0	31.8	23.7	130.0	140.8	149.6	32.9	10.6	7.2
Link Distance (m)		492.0	492.0	492.0	234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)					2	3	4			
Queuing Penalty (veh)					12	15	21			
Storage Bay Dist (m)	30.0									
Storage Blk Time (%)		3			4					
Queuing Penalty (veh)		0			0					

Intersection: 104: East School Driveway & Upper Middle Road

Movement	WB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	L	R
Maximum Queue (m)	19.7	26.3	28.0	34.6	21.9	20.4
Average Queue (m)	2.8	3.6	3.9	4.4	7.3	8.4
95th Queue (m)	12.0	34.7	35.2	36.8	17.5	15.9
Link Distance (m)		102.4	102.4	102.4	114.8	114.8
Upstream Blk Time (%)		2	2	3		
Queuing Penalty (veh)		10	12	14		
Storage Bay Dist (m)	30.0					
Storage Blk Time (%)		3				
Queuing Penalty (veh)		0				

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	46.8	3.5	1.8	3.2	61.2	73.7	70.6	137.3
Average Queue (m)	21.8	0.1	0.1	0.1	6.3	7.8	10.9	43.0
95th Queue (m)	41.1	1.8	1.3	2.3	67.5	70.3	75.5	110.3
Link Distance (m)		102.4	102.4	102.4	274.4	274.4	274.4	217.3
Upstream Blk Time (%)					0	0	0	0
Queuing Penalty (veh)					0	2	2	0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	62.0	41.9	24.7	28.2	130.5	156.1	159.1	179.6
Average Queue (m)	33.7	10.2	8.7	9.9	55.0	81.0	97.0	98.2
95th Queue (m)	57.0	34.3	21.5	23.1	98.9	129.0	140.6	183.0
Link Distance (m)		274.4	274.4	274.4	224.7	224.7	224.7	302.2
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	3							
Queuing Penalty (veh)	5							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	R
Maximum Queue (m)	21.2	4.2	10.4	17.0
Average Queue (m)	7.9	0.1	0.4	9.3
95th Queue (m)	17.4	2.4	3.9	17.0
Link Distance (m)		171.6	171.6	174.7
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	8.9	6.6	6.4	8.9
Average Queue (m)	1.7	0.2	0.2	3.1
95th Queue (m)	7.2	3.3	3.2	9.8
Link Distance (m)		182.0	182.0	132.5
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	15.7	6.7	21.6	17.3	62.7
Average Queue (m)	6.0	0.2	1.9	2.3	25.6
95th Queue (m)	14.2	3.4	10.9	10.4	50.5
Link Distance (m)		441.5	441.5	441.5	209.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	32.5	4.7	3.1	17.9
Average Queue (m)	12.1	0.2	0.1	6.5
95th Queue (m)	25.1	3.3	1.5	14.4
Link Distance (m)	142.6	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	51.5	64.6	110.2	83.8	70.4	63.6	41.2	48.1	52.3
Average Queue (m)	29.8	28.9	57.1	19.7	27.3	33.0	17.1	21.8	24.4
95th Queue (m)	50.7	51.1	98.2	52.9	52.6	55.0	31.0	38.6	42.8
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			1	0					
Queuing Penalty (veh)			4	0					

Intersection: 113: Sutton Drive & Mainway

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	6.8	35.0
Average Queue (m)	0.3	16.6
95th Queue (m)	3.0	28.7
Link Distance (m)	844.4	141.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	17.1	8.0	39.7	35.1	23.2	29.8
Average Queue (m)	3.2	0.4	3.6	3.9	10.5	12.9
95th Queue (m)	11.1	4.1	21.8	23.1	18.2	24.2
Link Distance (m)	397.0	397.0	733.1	733.1	92.7	97.3
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	140.5	126.6	97.4	340.9	343.8	83.1	164.3	174.1	175.8	33.7	63.8
Average Queue (m)	83.4	89.5	57.0	62.6	213.2	220.0	32.7	29.4	36.5	42.1	9.2	18.6
95th Queue (m)	111.3	174.9	123.5	121.9	384.2	386.4	64.9	144.6	150.1	156.7	22.4	48.1
Link Distance (m)		126.1	126.1		397.0	397.0		602.4	602.4	602.4		473.0
Upstream Blk Time (%)		41	0		3	3		0	0	0		
Queuing Penalty (veh)		0	0		14	14		1	1	1		
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	63	1		0	54			2				0
Queuing Penalty (veh)	50	2		0	78			8				0

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	73.6	77.6
Average Queue (m)	27.7	34.5
95th Queue (m)	61.6	69.6
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	49.1	90.1	25.4	221.1	220.2	225.8	28.2	39.4	49.1	53.2
Average Queue (m)	19.7	51.7	4.7	50.6	55.1	60.5	9.4	7.4	11.6	17.1
95th Queue (m)	38.6	91.4	17.9	234.8	236.8	240.9	22.5	26.3	36.1	43.9
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		8		3	3	3				
Queuing Penalty (veh)		0		19	19	20				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				9						
Queuing Penalty (veh)				4						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	67.4	88.4	28.6	83.0	78.4	76.6	27.3	37.6	39.8
Average Queue (m)	33.6	42.6	13.7	48.8	46.2	41.9	7.6	18.1	20.9
95th Queue (m)	60.1	72.8	25.4	72.8	69.0	64.2	20.3	33.5	37.5
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)	1	3							
Queuing Penalty (veh)	3	5							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	300.8	303.7	167.5	78.1	63.8	52.6	87.0	88.4	97.7
Average Queue (m)	280.8	281.0	161.5	44.8	37.5	27.8	53.1	59.2	69.4
95th Queue (m)	334.3	336.3	185.2	66.0	56.7	45.1	77.8	81.6	92.8
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	26	20							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		20	1						
Queuing Penalty (veh)		183	22						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	56.9	39.7	67.1	56.8	21.4	69.0	54.4	19.2	57.1	63.1	63.8
Average Queue (m)	23.2	13.5	39.6	20.1	8.5	35.8	15.9	2.9	28.6	31.2	30.5
95th Queue (m)	45.6	29.3	61.2	51.2	17.1	59.2	41.2	12.3	50.4	56.0	51.3
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 120: Apleby Line/Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	220.3	72.4	142.0	59.3	73.1	80.5	83.4	64.4	88.9	103.5	111.6
Average Queue (m)	30.3	87.6	66.8	122.7	28.4	36.7	44.6	51.4	9.8	39.5	49.2	56.0
95th Queue (m)	55.3	232.4	85.6	163.4	51.0	63.4	70.6	77.4	30.1	76.0	92.1	100.9
Link Distance (m)		335.4		129.0		210.2	210.2	210.2		602.4	602.4	602.4
Upstream Blk Time (%)		1		37								
Queuing Penalty (veh)		0		0								
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	24	22	17	39	0	1				2		
Queuing Penalty (veh)	50	14	70	114	1	2				1		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	157.3	166.2	173.6	82.7	72.1	80.6	49.5	57.0	64.9
Average Queue (m)	115.2	158.2	163.6	46.1	38.6	43.4	29.2	35.9	42.7
95th Queue (m)	176.8	170.9	169.2	71.0	61.2	68.4	44.0	52.9	62.7
Link Distance (m)		157.2	157.2	311.3	311.3	311.3	210.2	210.2	210.2
Upstream Blk Time (%)	0	40	76						
Queuing Penalty (veh)	0	0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	0	40							
Queuing Penalty (veh)	1	197							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	117.1	123.4	99.8	75.4	65.2	60.4	65.7	51.8	65.5	76.6
Average Queue (m)	60.1	74.1	45.4	31.3	31.2	34.1	37.0	26.6	30.5	37.1
95th Queue (m)	93.7	106.8	77.8	62.0	51.7	51.9	57.2	46.7	56.0	66.3
Link Distance (m)		200.6	200.6		319.4	319.4	319.4	311.3	311.3	311.3
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)		0	1	0						
Queuing Penalty (veh)		0	1	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	158.0	154.2	127.4	148.3	156.1	57.3	96.8	88.7	95.7	57.5	47.0
Average Queue (m)	121.4	149.3	91.2	112.7	140.6	143.9	22.0	37.4	38.6	37.0	17.1	18.5
95th Queue (m)	124.5	155.4	170.1	153.3	157.5	159.2	48.2	84.3	82.3	82.3	50.4	37.8
Link Distance (m)		145.6	145.6		140.6	140.6		576.9	576.9	576.9		
Upstream Blk Time (%)		90	4		52	64						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	92	3		25	31		0	6		5	0	
Queuing Penalty (veh)	121	10		71	140		1	6		9	0	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	72.9	90.1	111.6	80.8
Average Queue (m)	27.0	37.6	46.6	14.7
95th Queue (m)	62.7	81.6	98.5	49.7
Link Distance (m)	319.4	319.4	319.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0		1	0
Queuing Penalty (veh)	0		4	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (m)	92.2	131.3	146.8	57.5	74.0	87.8	33.3	82.4	207.5	192.8	42.6	16.3
Average Queue (m)	58.4	77.1	58.8	47.6	36.4	43.5	14.4	73.4	117.8	89.6	16.7	5.4
95th Queue (m)	90.2	116.6	138.4	70.3	62.8	72.5	25.8	98.3	235.7	203.7	35.7	12.6
Link Distance (m)		173.2	173.2			244.6	244.6		208.2	208.2	208.2	
Upstream Blk Time (%)		0	0						9	0		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0				55.0
Storage Blk Time (%)	0	5	0	23	0	1		47	2			
Queuing Penalty (veh)	1	11	2	24	0	1		94	5			

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (m)	73.5	396.8	456.9	480.0	107.5
Average Queue (m)	18.3	119.9	293.4	372.0	107.5
95th Queue (m)	46.3	319.6	499.9	500.4	107.7
Link Distance (m)		576.9	576.9	576.9	
Upstream Blk Time (%)			0	0	
Queuing Penalty (veh)			0	1	
Storage Bay Dist (m)	75.0				100.0
Storage Blk Time (%)		2		4	75
Queuing Penalty (veh)		3		42	318

Network Summary

Network wide Queuing Penalty: 4715

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	112.2	119.9	214.9	218.3	215.8	187.5	199.9	209.9	250.7	238.8	148.7	57.6
Average Queue (m)	83.5	100.2	210.3	197.0	191.0	84.0	190.5	208.1	244.6	105.8	55.3	9.5
95th Queue (m)	113.5	136.0	229.9	229.3	230.0	215.9	203.6	211.1	251.3	233.2	121.8	34.6
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			81	23	19				93	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	10	27	83		59	2	52	95	10		0	
Queuing Penalty (veh)	22	64	180		205	5	135	245	43		1	

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.5	150.0	1974.0	1973.4	1995.5	86.6	142.5	149.9	261.1	244.9	68.2	41.7
Average Queue (m)	132.5	148.6	1139.8	1098.9	1006.4	13.7	132.9	148.8	254.2	81.6	7.6	4.1
95th Queue (m)	146.1	151.7	2040.6	2064.5	2087.5	54.6	146.6	150.6	263.6	261.8	38.6	23.6
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)			6	4	9				92	0		
Queuing Penalty (veh)			37	29	59				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	35	93			0	0	45	94	0			
Queuing Penalty (veh)	79	212			1	0	112	235	0			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	162.4	147.2	74.9	76.1	153.7	189.1	84.5	48.0	63.1	228.0	233.3
Average Queue (m)	54.1	82.6	49.8	37.4	24.2	43.1	46.8	16.0	26.0	33.6	54.9	61.9
95th Queue (m)	76.1	161.8	126.0	64.0	51.0	145.8	164.7	65.8	45.6	58.7	195.4	202.1
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		6	0								0	0
Queuing Penalty (veh)		0	0								1	2
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	46	1			0			6			5	
Queuing Penalty (veh)	64	2			0			10			14	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	234.1	62.4	135.4	113.4	106.9
Average Queue (m)	63.9	30.2	37.2	32.6	34.5
95th Queue (m)	205.4	70.3	111.2	89.2	92.1
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)	1				
Queuing Penalty (veh)	3				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		17	1		
Queuing Penalty (veh)		61	1		

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	32.6	4.2	10.4	11.1	40.2
Average Queue (m)	13.1	0.1	0.5	1.1	17.6
95th Queue (m)	27.3	2.9	5.1	6.3	31.9
Link Distance (m)		274.2	274.2	274.2	267.0
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	60.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	39.0	33.3	32.6	40.5	56.9	72.5	79.0	113.4
Average Queue (m)	17.7	13.2	15.5	18.6	27.1	36.6	46.5	58.4
95th Queue (m)	31.8	27.6	29.5	34.4	47.8	62.9	71.3	97.8
Link Distance (m)		274.2	274.2	274.2	224.1	224.1	224.1	225.3
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	11.6	12.6	6.4	29.4
Average Queue (m)	4.7	0.5	0.3	13.4
95th Queue (m)	12.1	5.7	2.9	22.9
Link Distance (m)		446.2	446.2	209.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	27.3	9.9	8.2	8.8
Average Queue (m)	12.2	0.4	0.3	1.8
95th Queue (m)	21.7	4.6	3.1	7.4
Link Distance (m)	142.7	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	32.5	25.0	54.9	31.6	36.0	42.2	32.8	33.6	34.7
Average Queue (m)	14.0	12.1	23.1	9.0	13.4	16.7	14.8	15.7	16.0
95th Queue (m)	27.4	21.9	42.2	22.8	30.1	35.2	27.8	30.3	32.0
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 113: Sutton Drive & Mainway

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	1.6	12.7
Average Queue (m)	0.1	5.3
95th Queue (m)	1.2	12.5
Link Distance (m)	844.4	141.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	53.6	27.8	49.7	41.4	42.6	53.4	43.5	53.3	64.5	67.8	22.5	75.6
Average Queue (m)	26.1	11.3	20.5	13.8	21.8	26.2	20.9	21.4	23.9	27.6	7.1	29.6
95th Queue (m)	45.4	22.8	40.6	29.6	37.5	42.5	37.4	43.7	51.7	54.9	17.7	64.1
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)												1
Queuing Penalty (veh)												1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	90.2	98.5
Average Queue (m)	38.4	45.7
95th Queue (m)	77.6	85.4
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	36.6	70.6	14.2	51.6	49.6	54.5	23.5	57.0	62.6	77.9
Average Queue (m)	16.4	36.3	4.2	19.3	20.6	23.6	8.3	13.8	18.1	24.7
95th Queue (m)	30.5	62.5	11.7	37.2	39.9	43.3	18.6	37.7	44.7	55.3
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				0						
Queuing Penalty (veh)				0						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	14.0	19.0	23.5	32.7	34.5	29.4	17.6	18.2	20.9
Average Queue (m)	3.4	7.5	8.9	7.8	6.9	7.7	2.1	2.5	4.6
95th Queue (m)	10.6	16.4	18.3	25.4	23.4	24.7	9.6	10.9	15.8
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	304.6	301.8	167.5	55.6	47.0	29.6	33.8	33.6	34.4
Average Queue (m)	294.8	294.9	166.3	28.6	21.7	13.5	17.8	15.4	16.6
95th Queue (m)	299.5	298.9	177.1	46.1	37.8	25.3	31.0	27.9	28.9
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	51	44							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		40	2						
Queuing Penalty (veh)		214	27						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	40.0	43.2	45.1	24.8	31.7	55.5	46.8	11.5	57.8	60.0	62.6
Average Queue (m)	17.4	23.7	23.7	4.6	17.7	28.1	9.5	1.4	27.6	29.9	29.3
95th Queue (m)	34.2	38.5	40.0	16.7	27.3	52.7	30.5	6.0	51.7	55.5	56.0
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	35.0	24.8	49.5	34.6	16.3	42.8	48.2	55.5	18.9	59.2	62.0	69.1
Average Queue (m)	12.5	10.2	19.1	13.8	5.0	19.1	21.9	25.5	5.8	21.4	25.6	28.7
95th Queue (m)	26.4	21.6	37.0	28.4	12.5	36.2	40.7	46.7	15.1	52.7	57.0	61.3
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	0	0	0							0		
Queuing Penalty (veh)	0	0	0							0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	77.0	89.7	76.4	76.2	78.8	88.4	47.5	47.8	50.0
Average Queue (m)	40.4	52.5	38.7	34.2	41.3	48.4	15.6	17.1	16.7
95th Queue (m)	68.5	77.4	64.6	63.3	70.5	78.1	35.4	36.7	38.0
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	86.1	101.7	70.6	58.5	38.6	40.7	41.7	68.0	76.7	83.7
Average Queue (m)	48.6	62.4	29.0	14.0	11.4	15.9	19.2	31.2	36.6	44.3
95th Queue (m)	75.3	86.8	53.5	36.7	27.2	31.8	37.0	60.3	69.9	76.6
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			0	0						
Queuing Penalty (veh)			0	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	54.2	28.9	38.2	127.5	220.7	209.4	57.3	85.2	93.0	97.7	57.5	37.3
Average Queue (m)	24.3	12.5	16.2	124.8	197.4	131.3	16.9	50.4	53.8	54.7	32.5	15.6
95th Queue (m)	44.3	24.4	31.7	143.4	274.7	244.3	43.6	74.5	79.0	83.2	68.2	31.0
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)					78	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)				83	1		0	9		10	0	
Queuing Penalty (veh)				139	3		0	7		27	1	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	56.0	57.6	68.8	21.4
Average Queue (m)	23.7	30.9	38.1	6.8
95th Queue (m)	47.3	54.0	63.1	15.7
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)			0	
Queuing Penalty (veh)			0	

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.3	134.3	104.6	57.5	48.4	47.7	32.3	82.4	265.4	247.3	62.5	82.4
Average Queue (m)	50.6	64.2	29.4	38.7	24.1	19.7	15.5	66.6	133.3	125.8	23.7	49.0
95th Queue (m)	88.8	105.1	81.3	64.8	42.9	37.4	27.4	99.4	277.2	266.8	66.3	105.0
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)									7	3		
Queuing Penalty (veh)									0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	1	5	0	10				26	8	22	0	0
Queuing Penalty (veh)	2	10	1	9				151	21	20	0	0

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	255.7	272.2	294.9	107.5
Average Queue (m)	145.6	158.5	170.2	82.4
95th Queue (m)	273.3	294.5	315.5	148.7
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	48		48	1
Queuing Penalty (veh)	54		180	2

Zone Summary

Zone wide Queuing Penalty: 2695

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	65.1	119.9	221.0	219.4	217.1	187.5	199.9	210.0	258.6	242.5	139.6	68.4
Average Queue (m)	36.3	82.7	189.6	178.5	161.2	96.3	168.2	182.4	187.6	128.5	45.4	13.7
95th Queue (m)	64.3	146.6	258.0	259.6	260.0	207.4	244.0	257.3	327.6	256.8	122.0	45.9
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			37	24	16				32	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)		0	53		26	0	13	48	8		2	0
Queuing Penalty (veh)		0	118		114	1	26	96	30		2	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	97.4	100.0	110.9	93.4	847.8	89.8	115.0	126.6	173.4	157.9	98.4	28.0
Average Queue (m)	35.4	41.5	31.1	35.9	64.4	35.7	56.6	69.1	79.9	66.9	44.5	8.2
95th Queue (m)	86.6	91.8	77.5	76.1	439.1	77.5	111.1	121.8	158.6	137.2	90.2	21.3
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)					0				0			
Queuing Penalty (veh)					0				0			
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	1	2					2	3	1			
Queuing Penalty (veh)	1	3					4	8	3			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	L	L	T	T	TR
Maximum Queue (m)	62.5	170.7	171.2	128.4	100.1	77.2	70.3	47.5	64.2	107.1	113.7	121.6
Average Queue (m)	47.1	157.1	158.2	86.1	26.5	17.3	20.7	21.6	28.6	60.3	71.3	76.3
95th Queue (m)	77.6	190.8	187.7	141.3	126.5	60.1	47.5	42.2	49.9	95.2	109.0	117.2
Link Distance (m)		157.2	157.2		492.0	492.0	492.0			519.9	519.9	519.9
Upstream Blk Time (%)		52	62									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0				100.0	100.0			
Storage Blk Time (%)	4	50		10	0					0		
Queuing Penalty (veh)	11	86		10	0					1		

Intersection: 102: Appleby Line & Upper Middle Road

Movement	SB	SB	SB	SB
Directions Served	L	T	T	TR
Maximum Queue (m)	62.4	240.6	223.9	216.0
Average Queue (m)	59.6	140.9	126.3	116.5
95th Queue (m)	72.7	233.8	208.4	191.7
Link Distance (m)		1969.5	1969.5	1969.5
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	55.0			
Storage Blk Time (%)	49	14		
Queuing Penalty (veh)	242	52		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (m)	24.6	56.3	49.4	57.8	17.8	29.6	33.3	40.9	75.6	23.8	15.4
Average Queue (m)	1.7	33.5	27.6	33.2	6.5	12.3	13.7	20.6	41.4	11.5	4.4
95th Queue (m)	11.5	50.3	44.2	53.2	14.3	24.8	27.1	36.3	65.5	21.3	12.6
Link Distance (m)		492.0	492.0	492.0		234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	30.0				80.0						
Storage Blk Time (%)	0	12									
Queuing Penalty (veh)	0	1									

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	L	R
Maximum Queue (m)	4.3	7.6	15.4	37.4	43.9	30.7	37.4
Average Queue (m)	0.1	0.3	2.4	22.4	3.2	12.7	16.6
95th Queue (m)	3.0	3.9	9.3	37.1	24.0	25.8	29.0
Link Distance (m)	234.5	234.5	234.5		102.7	114.8	114.8
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)				30.0			
Storage Blk Time (%)				4			
Queuing Penalty (veh)				9			

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	TR	LR
Maximum Queue (m)	36.1	7.7	1.8	6.2	9.2	12.1	165.6
Average Queue (m)	13.8	0.4	0.1	0.2	0.3	1.4	77.0
95th Queue (m)	27.8	4.3	1.3	3.4	4.2	7.2	170.0
Link Distance (m)		102.7	102.7	274.2	274.2	274.2	267.0
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	60.0						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	55.1	34.5	43.0	48.4	43.1	45.2	60.2	239.8
Average Queue (m)	29.0	18.8	22.3	25.3	21.0	19.7	32.8	230.9
95th Queue (m)	47.8	33.1	36.9	40.8	35.6	37.6	54.4	235.5
Link Distance (m)		274.2	274.2	274.2	224.1	224.1	224.1	225.3
Upstream Blk Time (%)								81
Queuing Penalty (veh)								0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	0							
Queuing Penalty (veh)	1							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	WB	SB
Directions Served	L	TR	R
Maximum Queue (m)	18.6	1.8	15.4
Average Queue (m)	3.5	0.1	8.6
95th Queue (m)	12.2	1.2	14.5
Link Distance (m)		171.6	174.7
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	5.1	24.9
Average Queue (m)	0.3	7.6
95th Queue (m)	2.8	17.9
Link Distance (m)		132.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (m)	15.3	3.9	77.2
Average Queue (m)	2.1	0.2	29.9
95th Queue (m)	9.2	2.5	59.8
Link Distance (m)		446.2	209.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (m)	14.4	2.6	10.4
Average Queue (m)	3.7	0.1	2.5
95th Queue (m)	11.8	1.3	9.0
Link Distance (m)	142.7	107.4	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			145.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	43.2	97.3	94.3	20.4	16.9	24.0	78.2	87.8	91.9
Average Queue (m)	12.3	48.1	44.2	4.3	4.7	6.5	36.5	43.0	46.7
95th Queue (m)	29.7	83.9	77.4	13.5	14.1	18.3	65.8	76.2	82.0
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			0						
Queuing Penalty (veh)			0						

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	NB
Directions Served	T	TR	LT	LR
Maximum Queue (m)	3.1	8.8	17.1	18.8
Average Queue (m)	0.1	0.5	3.0	6.0
95th Queue (m)	2.2	3.7	10.8	14.9
Link Distance (m)	733.1	733.1	844.4	141.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LT	LTR	LTR
Maximum Queue (m)	19.9	3.4	17.4	21.8	36.2
Average Queue (m)	1.8	0.2	1.8	5.4	15.3
95th Queue (m)	10.1	2.0	9.1	15.1	27.7
Link Distance (m)	397.0	397.0	733.1	92.7	97.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	197.7	198.0	94.0	134.6	122.0	72.3	90.7	100.4	108.5	62.3	77.3
Average Queue (m)	68.5	167.5	167.0	64.2	44.3	38.5	28.5	35.6	43.3	50.5	27.1	26.1
95th Queue (m)	114.7	234.0	227.7	110.3	127.3	84.8	57.7	83.0	97.9	109.4	50.7	62.7
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)		53	47									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	21	48		21	2		0	0			0	0
Queuing Penalty (veh)	43	87		11	2		0	0			1	1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	88.8	98.4
Average Queue (m)	33.6	40.0
95th Queue (m)	76.3	87.3
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	45.9	90.6	51.6	89.9	91.8	90.0	26.2	59.8	68.7	72.1
Average Queue (m)	14.2	48.5	14.8	49.3	51.6	54.0	10.3	28.1	33.0	37.1
95th Queue (m)	30.3	82.1	39.8	84.0	87.8	87.6	21.8	51.4	58.8	65.4
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		1								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)			0	5						
Queuing Penalty (veh)			0	2						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	24.5	42.7	76.5	34.1	30.0	22.9	39.4	52.5	60.0
Average Queue (m)	8.4	17.1	43.0	9.9	6.3	5.8	10.1	25.1	33.3
95th Queue (m)	19.6	32.2	71.8	26.2	18.8	17.1	27.0	44.2	54.3
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	302.7	304.8	167.5	50.8	39.6	26.8	64.5	58.1	62.4
Average Queue (m)	295.7	296.3	165.6	26.8	17.2	10.5	35.2	21.9	22.6
95th Queue (m)	301.2	302.1	181.0	45.3	33.9	21.6	57.2	45.6	49.3
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	64	61							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		58	1						
Queuing Penalty (veh)		330	14						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	55.1	41.5	80.4	65.8	27.4	93.5	70.5	24.8	81.4	90.5	84.8
Average Queue (m)	26.6	19.5	45.3	26.5	12.6	41.0	20.8	2.9	41.9	44.9	49.9
95th Queue (m)	48.4	34.7	71.2	62.0	22.5	73.9	54.5	13.8	68.1	73.8	77.0
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			1	0							
Queuing Penalty (veh)			2	0							

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	44.6	91.0	52.9	28.5	45.6	61.0	84.3	95.0	54.2	59.4	59.4	70.2
Average Queue (m)	17.1	40.2	23.3	8.9	23.1	31.6	46.7	59.4	23.1	23.0	28.4	37.0
95th Queue (m)	39.8	77.7	44.5	20.3	41.3	56.1	75.8	89.3	42.6	47.1	51.8	63.3
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	1	15	0			0				0		
Queuing Penalty (veh)	2	8	0			0				0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	217.4	343.0	341.1	97.6	88.1	108.1	34.0	37.3	42.7
Average Queue (m)	163.9	308.1	323.4	56.2	57.2	64.1	14.4	16.1	18.6
95th Queue (m)	281.6	430.7	375.7	86.7	85.3	95.2	27.4	32.0	36.8
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)		58	61						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	1	16							
Queuing Penalty (veh)	1	41							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	125.9	142.7	164.0	77.4	100.5	99.3	101.2	89.8	88.2	90.6
Average Queue (m)	74.1	90.8	58.8	33.4	39.9	46.3	50.5	51.0	50.1	54.0
95th Queue (m)	114.1	127.0	111.0	67.6	72.2	78.5	84.1	82.3	82.1	86.9
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			2	0						
Queuing Penalty (veh)			5	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	192.7	178.8	108.8	137.9	157.0	57.3	119.3	125.0	127.8	57.5	87.4
Average Queue (m)	84.3	115.8	102.5	67.9	55.0	68.8	14.9	40.3	45.5	50.1	29.5	62.7
95th Queue (m)	146.3	194.0	171.3	127.5	140.4	148.4	39.0	96.9	106.3	115.6	67.4	97.1
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)		5	1		1	0						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	7	12		11	1		0	8		11	3	10
Queuing Penalty (veh)	16	20		8	1		0	7		42	14	22

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	123.6	80.3	57.1	41.6
Average Queue (m)	31.3	22.5	22.9	13.3
95th Queue (m)	92.9	57.8	50.7	32.4
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.5	327.9	328.1	57.5	50.7	55.8	61.1	82.4	317.4	323.0	62.5	82.4
Average Queue (m)	81.7	167.8	128.8	36.0	21.5	26.1	23.8	73.1	210.5	207.2	37.1	74.3
95th Queue (m)	107.9	327.7	310.4	69.6	40.9	49.3	45.8	100.5	361.2	354.8	81.2	102.0
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)		4	4						7	9		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	13	36	13	6				16	36	49	0	13
Queuing Penalty (veh)	38	110	32	11				95	76	66	1	51

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	230.6	226.8	220.8	107.5
Average Queue (m)	132.8	129.2	124.1	67.1
95th Queue (m)	224.2	212.4	206.8	147.5
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	37		39	0
Queuing Penalty (veh)	82		54	1

Network Summary

Network wide Queuing Penalty: 2115

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	112.3	119.9	259.2	258.0	256.2	187.5	135.5	209.9	280.7	278.5	279.7	222.5
Average Queue (m)	82.9	97.6	251.9	229.7	221.8	47.0	99.5	125.9	271.2	270.2	268.7	42.9
95th Queue (m)	115.6	138.9	258.8	275.4	269.3	167.5	158.3	215.1	279.8	278.6	281.8	177.4
Link Distance (m)			250.5	250.5	250.5				271.7	271.7	271.7	
Upstream Blk Time (%)			90	23	13				74	70	77	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	17	49	84		82	0	0	0	89		89	0
Queuing Penalty (veh)	45	125	163		256	0	0	1	447		246	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.5	149.9	1961.7	1961.7	1982.4	54.8	142.5	149.9	218.9	198.0	36.8	38.7
Average Queue (m)	130.4	148.6	1373.2	1355.5	1344.2	6.0	128.8	147.8	208.3	36.1	1.9	2.3
95th Queue (m)	143.3	150.5	2367.9	2407.2	2472.1	31.3	143.6	151.1	214.9	157.7	17.3	19.5
Link Distance (m)			1956.6	1956.6	1956.6				208.6	208.6	208.6	
Upstream Blk Time (%)			25	24	36				96	0		
Queuing Penalty (veh)			199	193	288				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	49	97			0		39	97	0			
Queuing Penalty (veh)	174	345			1		102	255	0			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	130.2	121.3	63.7	490.4	495.2	497.6	87.5	70.6	98.1	524.1	527.0
Average Queue (m)	57.9	98.5	63.4	28.1	145.1	179.3	196.7	54.3	32.0	45.9	182.4	188.5
95th Queue (m)	73.5	151.2	133.4	58.5	422.1	482.4	520.9	115.2	62.2	97.2	537.6	540.6
Link Distance (m)		120.5	120.5		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		42	2		1	2	19				12	13
Queuing Penalty (veh)		0	0		6	12	114				84	91
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	59	5			0		0	37		0	30	
Queuing Penalty (veh)	104	10			0		0	104		0	121	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	523.8	54.4	94.6	106.7	118.0
Average Queue (m)	190.1	13.6	14.9	18.1	20.5
95th Queue (m)	539.9	44.7	56.1	64.5	72.7
Link Distance (m)	519.9		1956.6	1956.6	1956.6
Upstream Blk Time (%)	13				
Queuing Penalty (veh)	93				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		1	1		
Queuing Penalty (veh)		3	2		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LT	R	LTR
Maximum Queue (m)	8.2	60.6	50.2	37.5	201.1	206.9	213.7	67.6	10.4	8.6
Average Queue (m)	0.7	17.7	10.0	9.2	66.6	76.9	86.7	20.3	3.2	1.4
95th Queue (m)	4.9	45.1	33.3	26.7	175.6	187.0	192.8	50.8	10.4	6.4
Link Distance (m)		492.0	492.0	492.0	234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)					5	7	8			
Queuing Penalty (veh)					31	37	47			
Storage Bay Dist (m)	30.0									
Storage Blk Time (%)		3			10					
Queuing Penalty (veh)		0			0					

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	WB	WB	WB	WB	NB	NB
Directions Served	TR	L	T	T	T	L	R
Maximum Queue (m)	3.5	19.3	67.3	64.5	65.2	26.5	17.1
Average Queue (m)	0.1	2.1	9.2	9.3	9.4	8.1	9.3
95th Queue (m)	2.5	11.4	58.5	57.8	58.3	20.9	15.6
Link Distance (m)	234.5		102.4	102.4	102.4	114.8	114.8
Upstream Blk Time (%)			4	5	6		
Queuing Penalty (veh)			24	30	33		
Storage Bay Dist (m)		30.0					
Storage Blk Time (%)			6				
Queuing Penalty (veh)			1				

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	48.3	102.5	116.9	121.9	117.0
Average Queue (m)	20.9	12.1	14.5	17.2	38.1
95th Queue (m)	41.8	93.4	100.8	103.3	93.0
Link Distance (m)		274.4	274.4	274.4	217.3
Upstream Blk Time (%)		0	0	0	0
Queuing Penalty (veh)		1	2	2	0
Storage Bay Dist (m)	60.0				
Storage Blk Time (%)	1				
Queuing Penalty (veh)	1				

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	62.2	28.6	31.2	32.3	103.6	137.0	151.1	214.6
Average Queue (m)	29.2	8.4	8.7	8.8	50.0	77.7	92.1	131.2
95th Queue (m)	53.2	21.8	22.3	23.1	90.7	123.9	136.1	232.5
Link Distance (m)		274.4	274.4	274.4	224.7	224.7	224.7	302.2
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	1							
Queuing Penalty (veh)	1							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	R
Maximum Queue (m)	19.5	10.0	9.4	18.8
Average Queue (m)	7.7	0.4	0.6	10.0
95th Queue (m)	16.7	4.6	4.4	17.9
Link Distance (m)		171.6	171.6	174.7
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (m)	10.1	2.0	11.1
Average Queue (m)	1.4	0.1	3.7
95th Queue (m)	6.6	1.9	10.8
Link Distance (m)		182.0	132.5
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	16.0	4.1	20.1	14.3	70.0
Average Queue (m)	5.9	0.1	1.6	1.8	27.3
95th Queue (m)	14.4	2.9	9.9	8.5	56.2
Link Distance (m)		441.5	441.5	441.5	209.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	32.2	11.1	9.8	17.7
Average Queue (m)	12.8	0.4	0.3	5.5
95th Queue (m)	26.0	4.7	3.6	14.4
Link Distance (m)	142.6	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	66.0	74.5	117.4	139.8	81.1	60.9	32.6	43.0	49.9
Average Queue (m)	31.9	34.3	62.0	23.7	28.3	32.3	18.2	22.4	25.2
95th Queue (m)	55.0	61.7	106.0	81.1	57.3	53.9	29.8	36.8	42.9
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			2	0					
Queuing Penalty (veh)			13	0					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (m)	1.4	9.9	36.1
Average Queue (m)	0.0	0.9	17.5
95th Queue (m)	1.0	5.4	28.7
Link Distance (m)	733.1	844.4	141.9
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	22.9	6.6	17.5	17.3	26.6	35.4
Average Queue (m)	4.9	0.3	1.3	1.5	11.2	12.9
95th Queue (m)	15.8	3.9	8.4	8.2	20.5	25.3
Link Distance (m)	397.0	397.0	733.1	733.1	92.7	97.3
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	91.7	124.1	114.2	97.5	388.1	381.1	89.0	137.9	123.5	141.0	30.1	60.2
Average Queue (m)	71.4	69.0	53.3	68.1	250.2	256.8	36.7	30.2	32.8	40.1	8.3	19.3
95th Queue (m)	108.7	153.6	115.0	125.8	381.4	385.1	76.3	100.9	94.3	108.0	21.4	47.7
Link Distance (m)		126.1	126.1		397.0	397.0		602.4	602.4	602.4		473.0
Upstream Blk Time (%)		28	0		0	0						
Queuing Penalty (veh)		0	0		1	0						
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	39	1		0	63		2	2				0
Queuing Penalty (veh)	33	2		1	96		9	8				0

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	78.6	85.2
Average Queue (m)	29.1	35.2
95th Queue (m)	60.3	67.7
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	60.6	91.4	56.4	354.9	363.1	366.8	29.4	49.2	56.7	60.7
Average Queue (m)	24.7	59.2	6.1	74.8	81.7	89.1	8.1	6.5	10.5	14.0
95th Queue (m)	48.4	98.5	26.0	298.8	306.4	310.8	21.0	28.3	37.7	42.8
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		11		2	2	2				
Queuing Penalty (veh)		0		15	15	15				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				16						
Queuing Penalty (veh)				7						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	67.3	98.3	40.7	79.0	78.5	67.6	29.7	39.1	44.9
Average Queue (m)	35.4	48.0	13.3	50.0	48.0	41.4	9.4	20.9	23.8
95th Queue (m)	62.7	83.1	28.5	74.9	73.1	64.6	24.7	36.1	39.8
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)	0	5							
Queuing Penalty (veh)	0	8							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	302.3	303.0	167.5	85.8	74.8	57.7	134.2	123.4	135.8
Average Queue (m)	280.5	279.4	161.5	48.8	42.3	32.0	78.2	77.9	88.6
95th Queue (m)	340.8	342.1	182.0	72.4	63.8	52.1	115.6	112.0	122.5
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	25	20							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		19	1						
Queuing Penalty (veh)		208	28						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	59.0	39.3	74.3	64.2	25.0	93.7	75.3	26.8	88.7	95.8	90.6
Average Queue (m)	27.9	14.0	48.3	29.7	10.8	45.8	25.1	3.8	50.3	52.6	49.7
95th Queue (m)	49.4	28.9	70.9	61.7	21.3	73.3	57.1	14.5	82.9	87.7	81.3
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			1	0							
Queuing Penalty (veh)			1	0							

Intersection: 120: Apleby Line/Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	147.6	72.4	140.0	57.4	72.7	70.9	80.3	29.2	93.3	102.1	102.9
Average Queue (m)	31.2	62.1	67.4	118.2	27.2	35.6	42.2	48.4	9.3	41.9	50.2	56.7
95th Queue (m)	55.1	168.1	85.1	163.0	46.7	61.4	67.0	74.0	28.0	78.0	90.6	96.7
Link Distance (m)		335.4		129.0		210.2	210.2	210.2		602.4	602.4	602.4
Upstream Blk Time (%)		2		28								
Queuing Penalty (veh)		0		0								
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	18	22	16	35	0	0				2		
Queuing Penalty (veh)	40	15	68	107	1	1				1		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	159.8	167.9	172.8	89.6	78.2	81.0	62.7	66.9	77.2
Average Queue (m)	116.4	158.8	163.3	53.1	44.9	47.1	41.3	45.2	51.2
95th Queue (m)	176.8	169.9	168.9	79.9	70.3	74.5	59.3	63.6	72.1
Link Distance (m)		157.2	157.2	311.3	311.3	311.3	210.2	210.2	210.2
Upstream Blk Time (%)	0	40	74						
Queuing Penalty (veh)	0	0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	0	40							
Queuing Penalty (veh)	2	230							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	115.2	131.3	111.7	77.4	61.9	71.6	77.6	60.2	61.2	68.6
Average Queue (m)	67.6	85.2	57.5	45.1	34.1	37.9	43.5	32.9	34.7	40.6
95th Queue (m)	100.7	116.0	93.5	76.5	54.6	59.0	66.9	54.0	57.2	65.4
Link Distance (m)		200.6	200.6		319.4	319.4	319.4	311.3	311.3	311.3
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			3	0						
Queuing Penalty (veh)			8	1						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.5	160.2	150.1	127.4	152.7	156.2	57.3	86.7	93.2	113.8	57.5	39.2
Average Queue (m)	121.3	149.7	88.2	113.0	139.0	136.8	18.6	31.4	37.3	41.1	16.8	17.4
95th Queue (m)	124.3	156.1	167.3	158.6	165.7	176.7	40.7	75.4	86.0	96.8	51.4	34.6
Link Distance (m)		145.6	145.6		140.6	140.6		576.9	576.9	576.9		
Upstream Blk Time (%)		88	8		55	53						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	89	3		34	22		2	4		8	0	
Queuing Penalty (veh)	123	10		102	103		5	4		15	0	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	82.9	99.6	114.6	92.4
Average Queue (m)	32.3	45.2	55.4	16.1
95th Queue (m)	70.9	93.2	108.1	58.8
Link Distance (m)	319.4	319.4	319.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0		3	0
Queuing Penalty (veh)	0		9	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (m)	92.4	170.4	177.4	57.5	82.6	105.1	57.7	82.5	226.1	209.2	56.2	19.3
Average Queue (m)	70.5	95.8	88.9	52.5	46.2	49.0	18.1	82.3	207.6	143.6	14.8	4.4
95th Queue (m)	101.6	151.4	189.7	67.2	76.0	84.2	39.0	83.3	248.8	266.4	39.8	13.5
Link Distance (m)		173.2	173.2			244.6	244.6		208.2	208.2	208.2	
Upstream Blk Time (%)		1	9						71	0		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0				55.0
Storage Blk Time (%)	1	12	1	36	1	1		89	6		1	
Queuing Penalty (veh)	2	29	6	41	2	2		195	15		1	

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (m)	69.0	459.6	497.0	520.9	107.5
Average Queue (m)	19.4	183.7	380.0	438.1	107.5
95th Queue (m)	46.6	474.8	602.0	592.1	107.5
Link Distance (m)		576.9	576.9	576.9	
Upstream Blk Time (%)		0	0	2	
Queuing Penalty (veh)		0	1	17	
Storage Bay Dist (m)	75.0				100.0
Storage Blk Time (%)		3		4	77
Queuing Penalty (veh)		5		42	358

Network Summary

Network wide Queuing Penalty: 5816

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	79.9	107.6	194.1	175.8	147.9	44.7	168.9	182.2	200.6	182.6	154.2	29.2
Average Queue (m)	63.2	81.3	133.4	117.5	98.1	29.6	117.8	137.2	142.4	127.0	105.9	17.8
95th Queue (m)	100.9	128.3	227.2	203.8	174.4	49.9	191.5	215.4	248.1	225.9	197.1	33.2
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			9	0					8	1		
Queuing Penalty (veh)			0	0					0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)		1	37		1		0	7	7		1	
Queuing Penalty (veh)		2	85		3		0	19	33		3	

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	87.4	97.0	41.3	46.7	47.0	28.3	133.7	145.0	201.2	160.9	38.9	18.7
Average Queue (m)	44.8	50.6	17.0	21.1	22.6	13.8	102.7	115.6	103.8	77.1	18.3	8.1
95th Queue (m)	97.9	106.5	50.4	54.3	55.0	39.9	151.8	166.1	257.6	214.6	51.8	22.8
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)									11			
Queuing Penalty (veh)									0			
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)							14	25				
Queuing Penalty (veh)							36	65				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	59.0	88.8	73.6	44.2	29.6	31.9	36.3	36.2	31.8	39.3	54.9	73.9
Average Queue (m)	52.8	62.6	42.6	28.1	19.3	23.4	25.2	9.1	20.4	29.7	32.3	42.0
95th Queue (m)	70.6	126.4	105.8	54.4	35.8	38.3	42.7	43.9	37.8	43.9	61.3	75.4
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		0										
Queuing Penalty (veh)		0										
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	35	0										
Queuing Penalty (veh)	51	0										

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	82.6	44.1	39.6	47.7	49.9
Average Queue (m)	41.0	31.1	22.8	32.4	34.9
95th Queue (m)	82.1	49.9	43.3	53.6	57.2
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		1	0		

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	21.3	1.3	2.7	25.4
Average Queue (m)	12.8	0.3	1.1	17.1
95th Queue (m)	23.8	2.4	5.1	29.5
Link Distance (m)		274.2	274.2	267.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	60.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	30.8	24.9	26.9	32.2	35.7	50.2	58.7	87.4
Average Queue (m)	19.7	14.6	15.4	16.6	23.7	32.9	39.1	62.0
95th Queue (m)	33.0	29.4	29.8	36.4	39.5	53.2	62.1	99.8
Link Distance (m)		274.2	274.2	274.2	224.1	224.1	224.1	225.3
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (m)	8.6	1.1	19.6
Average Queue (m)	3.5	0.2	14.2
95th Queue (m)	10.3	1.9	21.5
Link Distance (m)		446.2	209.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	SB
Directions Served	LR	T	L
Maximum Queue (m)	24.9	3.8	8.4
Average Queue (m)	14.6	0.8	3.3
95th Queue (m)	33.6	5.3	10.1
Link Distance (m)	142.7	107.4	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			145.0
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	26.1	15.5	36.2	18.3	28.2	30.0	21.8	22.2	32.5
Average Queue (m)	14.8	10.7	25.0	10.3	14.4	16.3	13.7	14.3	15.6
95th Queue (m)	28.6	17.2	39.7	21.1	31.5	33.5	24.3	24.1	34.2
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 113: Sutton Drive & Mainway

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	1.7	9.9
Average Queue (m)	0.3	5.4
95th Queue (m)	3.1	12.9
Link Distance (m)	844.4	141.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	48.7	22.8	40.9	17.8	34.6	40.4	37.7	43.3	50.4	53.8	14.6	62.9
Average Queue (m)	30.9	12.3	21.2	9.5	21.8	25.6	20.4	25.4	28.4	32.2	8.1	37.2
95th Queue (m)	53.1	27.9	43.5	20.9	37.1	43.0	42.9	52.2	57.4	60.0	16.1	76.2
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)												3
Queuing Penalty (veh)												2

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	78.9	82.9
Average Queue (m)	48.3	54.8
95th Queue (m)	87.9	93.9
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	28.9	59.8	10.3	29.9	35.2	39.2	17.0	36.5	52.5	60.1
Average Queue (m)	16.9	38.5	5.4	20.7	22.8	23.5	9.1	23.8	28.6	35.2
95th Queue (m)	32.4	67.9	13.0	35.8	39.1	42.6	20.6	45.4	58.4	70.5
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	8.7	14.8	14.0	22.2	17.8	18.0	7.7	8.0	8.6
Average Queue (m)	4.2	8.6	7.3	7.8	6.7	6.3	2.2	1.9	2.4
95th Queue (m)	10.5	17.9	16.9	23.4	20.4	20.3	9.8	10.1	9.7
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	297.2	298.3	167.5	46.8	40.9	28.9	33.3	23.5	24.6
Average Queue (m)	294.8	295.5	166.7	33.5	25.5	19.1	23.8	16.8	17.3
95th Queue (m)	298.8	300.2	169.7	51.2	44.1	34.5	36.7	26.8	28.6
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	47	42							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		37	2						
Queuing Penalty (veh)		232	36						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	27.4	41.3	46.6	26.2	29.6	50.5	23.6	3.5	45.8	49.3	44.7
Average Queue (m)	14.8	28.1	30.6	10.4	20.9	34.0	12.8	1.1	31.5	34.8	31.6
95th Queue (m)	31.1	44.3	51.3	30.1	31.0	60.0	38.4	4.1	50.8	58.0	53.8
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	23.4	20.5	33.0	25.7	13.0	36.5	43.2	45.6	9.3	51.6	55.2	55.5
Average Queue (m)	12.9	10.6	24.0	15.3	6.5	21.4	24.1	29.3	3.5	19.1	27.2	34.2
95th Queue (m)	25.1	22.8	39.7	28.9	15.2	41.3	46.5	49.7	11.0	52.0	57.9	60.4
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)										0		
Queuing Penalty (veh)										0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	68.7	77.4	92.5	63.0	74.1	83.3	34.4	33.0	32.6
Average Queue (m)	49.1	60.8	64.6	38.5	48.1	54.9	17.3	18.5	18.0
95th Queue (m)	75.7	83.7	96.2	69.4	82.8	92.7	36.8	35.5	35.6
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	72.6	89.3	46.2	36.4	33.8	39.9	42.2	63.3	64.2	72.4
Average Queue (m)	58.0	73.4	31.3	17.3	14.6	23.2	27.7	34.9	40.3	47.4
95th Queue (m)	75.9	92.2	50.4	40.1	38.0	41.5	44.2	70.0	73.2	81.1
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)										
Queuing Penalty (veh)										

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	53.2	23.2	27.9	118.9	157.8	142.9	36.2	72.6	74.7	76.0	57.1	26.8
Average Queue (m)	31.4	12.8	16.8	103.8	99.7	70.1	18.2	53.7	56.4	51.6	33.5	15.5
95th Queue (m)	65.4	26.4	31.8	144.0	227.7	146.0	44.3	78.5	80.5	81.0	68.0	28.4
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)					12							
Queuing Penalty (veh)					0							
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)				28			0	11		9	0	
Queuing Penalty (veh)				50			0	9		26	1	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	45.0	53.8	54.6	15.7
Average Queue (m)	27.7	36.3	41.2	8.0
95th Queue (m)	48.1	57.3	62.7	20.3
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	73.0	83.2	57.3	53.1	41.0	41.5	25.5	82.3	178.0	165.1	62.1	41.8
Average Queue (m)	50.8	64.4	24.0	37.0	25.2	23.6	17.3	71.3	120.7	112.3	31.6	21.4
95th Queue (m)	80.2	90.6	73.5	61.6	44.4	45.7	28.5	98.0	208.3	194.2	75.9	49.1
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	0	2	0	8				16	21	30	0	
Queuing Penalty (veh)	0	4	1	8				102	62	31	1	

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	98.0	113.3	113.6	51.5
Average Queue (m)	68.9	73.5	72.9	34.8
95th Queue (m)	114.4	127.8	132.2	82.5
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	11		3	0
Queuing Penalty (veh)	14		14	0

Zone Summary

Zone wide Queuing Penalty: 893

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	73.0	119.9	224.8	216.0	218.7	187.5	200.0	209.9	258.0	244.4	162.4	35.4
Average Queue (m)	41.2	87.3	194.8	183.7	166.6	99.1	156.2	170.6	162.0	102.6	45.7	12.3
95th Queue (m)	71.7	149.1	258.9	258.0	260.3	207.2	232.3	247.5	313.0	229.8	113.0	27.3
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			43	18	11				35	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)		0	57		28	1	12	43	5			
Queuing Penalty (veh)		0	132		129	3	25	90	21			

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	88.4	93.7	64.4	65.0	844.3	90.3	134.4	143.6	195.0	170.6	93.3	26.2
Average Queue (m)	34.6	39.2	24.2	30.8	59.6	34.2	67.6	80.4	74.8	62.6	40.3	8.2
95th Queue (m)	74.1	76.8	54.4	65.0	435.3	75.7	131.8	142.7	160.3	136.3	86.2	20.4
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)					0				0			
Queuing Penalty (veh)					0				0			
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)							1	6	0			
Queuing Penalty (veh)							2	18	0			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	174.9	172.0	130.4	209.8	134.8	37.0	3.1	47.9	53.6	113.2	124.1
Average Queue (m)	48.4	162.5	162.6	101.1	87.5	22.1	19.7	0.2	22.6	29.3	64.0	73.6
95th Queue (m)	78.1	168.9	168.1	158.7	263.9	83.5	31.8	2.9	42.2	47.3	101.1	114.3
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		60	66									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	5	51		39	2						1	
Queuing Penalty (veh)	15	93		40	6						1	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	132.5	62.4	566.6	555.3	536.9
Average Queue (m)	80.5	54.9	214.8	199.6	183.2
95th Queue (m)	124.3	83.1	559.6	546.9	531.2
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		47	13		
Queuing Penalty (veh)		243	49		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (m)	20.2	151.2	55.0	64.6	15.5	33.2	32.4	45.0	80.5	28.6	18.8
Average Queue (m)	1.1	34.6	27.4	33.4	6.5	14.6	14.0	21.9	43.2	12.8	5.6
95th Queue (m)	8.8	104.0	47.2	55.8	13.8	29.1	28.1	39.7	68.0	23.6	14.9
Link Distance (m)		492.0	492.0	492.0		234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	30.0				80.0						
Storage Blk Time (%)	0	9									
Queuing Penalty (veh)	0	1									

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	T	L	R
Maximum Queue (m)	1.5	7.2	15.2	37.4	54.7	9.6	42.0	40.7
Average Queue (m)	0.1	0.3	2.9	23.3	3.5	0.3	16.6	18.1
95th Queue (m)	1.1	3.6	9.7	37.5	26.9	6.7	35.2	32.0
Link Distance (m)	234.5	234.5	234.5		102.7	102.7	114.8	114.8
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)				30.0				
Storage Blk Time (%)				4				
Queuing Penalty (veh)				10				

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	TR	LR
Maximum Queue (m)	36.9	1.9	1.8	1.8	4.7	12.3	156.6
Average Queue (m)	14.8	0.1	0.1	0.1	0.2	1.2	73.2
95th Queue (m)	28.6	1.3	1.3	1.7	2.6	6.5	147.2
Link Distance (m)		102.7	102.7	274.2	274.2	274.2	267.0
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	60.0						
Storage Blk Time (%)	0						
Queuing Penalty (veh)	0						

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	65.8	66.5	50.2	46.0	45.2	49.9	60.0	239.8
Average Queue (m)	34.0	20.9	23.6	26.4	25.1	21.3	33.5	231.3
95th Queue (m)	59.2	47.2	39.2	41.8	40.8	41.1	56.5	236.2
Link Distance (m)		274.2	274.2	274.2	224.1	224.1	224.1	225.3
Upstream Blk Time (%)								81
Queuing Penalty (veh)								0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	3							
Queuing Penalty (veh)	10							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	EB	EB	SB
Directions Served	L	T	T	R
Maximum Queue (m)	15.3	1.9	2.6	16.8
Average Queue (m)	3.8	0.1	0.1	8.5
95th Queue (m)	11.7	1.4	1.8	14.6
Link Distance (m)		224.1	224.1	174.7
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	5.1	23.1
Average Queue (m)	0.3	8.1
95th Queue (m)	3.0	18.4
Link Distance (m)		132.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	11.8	1.3	5.0	4.3	81.2
Average Queue (m)	2.3	0.0	0.2	0.1	33.4
95th Queue (m)	9.2	0.9	3.5	3.0	68.9
Link Distance (m)		446.2	446.2	446.2	209.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	L	T
Maximum Queue (m)	12.9	5.7	3.4	11.7	3.0
Average Queue (m)	4.2	0.2	0.1	2.2	0.1
95th Queue (m)	11.8	2.9	1.7	8.6	2.1
Link Distance (m)	142.7	107.4	107.4		446.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				145.0	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	53.7	116.4	100.5	20.7	18.4	24.1	76.9	89.7	100.2
Average Queue (m)	16.4	55.1	47.2	4.8	5.7	8.1	38.1	46.1	51.8
95th Queue (m)	40.1	96.6	83.7	15.2	15.5	20.3	63.4	75.7	84.7
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			0						
Queuing Penalty (veh)			0						

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	NB
Directions Served	T	TR	LT	LR
Maximum Queue (m)	3.4	12.8	17.5	18.1
Average Queue (m)	0.1	0.7	2.7	6.8
95th Queue (m)	2.4	6.1	10.7	16.0
Link Distance (m)	733.1	733.1	844.4	141.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	10.4	4.4	17.0	5.6	20.5	39.8
Average Queue (m)	0.7	0.2	2.1	0.2	5.3	17.7
95th Queue (m)	5.6	2.0	9.6	4.0	15.0	33.2
Link Distance (m)	397.0	397.0	733.1	733.1	92.7	97.3
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	198.5	198.1	92.2	134.0	99.2	63.0	94.1	101.4	106.0	64.8	74.9
Average Queue (m)	70.1	186.5	184.7	66.6	60.5	38.5	24.2	36.4	42.8	49.5	25.7	29.8
95th Queue (m)	117.8	201.4	207.6	118.6	160.1	87.7	49.9	83.4	93.1	106.5	48.6	64.9
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)		69	62									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	12	59		33	2			0			0	0
Queuing Penalty (veh)	26	111		18	3			0			1	1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	83.5	94.6
Average Queue (m)	36.6	42.4
95th Queue (m)	77.8	86.6
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	40.9	95.2	50.5	95.5	92.8	93.8	27.5	65.2	65.6	72.1
Average Queue (m)	13.9	52.0	12.9	55.4	56.8	59.0	10.1	30.7	35.3	38.7
95th Queue (m)	32.0	87.3	36.5	92.9	93.6	94.1	21.7	54.6	59.4	66.6
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		2								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)			0	8						
Queuing Penalty (veh)			0	3						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	23.1	47.8	105.0	37.8	31.1	18.1	50.0	52.7	58.9
Average Queue (m)	8.9	18.4	45.7	11.0	7.1	6.2	11.1	25.1	33.4
95th Queue (m)	19.8	35.7	81.0	28.2	22.1	16.3	32.6	44.9	53.5
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)		0							
Queuing Penalty (veh)		0							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	304.1	306.2	167.5	52.5	40.9	31.9	90.8	63.5	66.4
Average Queue (m)	295.6	296.7	166.5	24.8	18.7	13.3	50.0	31.8	28.0
95th Queue (m)	301.7	302.7	173.5	44.6	33.9	25.8	75.1	55.5	53.9
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	57	58							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		55	2						
Queuing Penalty (veh)		371	33						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	58.9	66.6	101.2	75.9	37.4	104.4	78.0	30.8	95.3	105.0	101.2
Average Queue (m)	28.9	23.7	56.4	38.3	14.2	50.0	29.9	4.9	59.2	61.9	63.3
95th Queue (m)	50.5	47.2	86.0	74.9	27.8	84.1	66.9	18.9	86.2	88.9	89.4
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			3	0							
Queuing Penalty (veh)			5	0							

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	43.4	118.9	59.8	23.6	51.0	73.0	91.5	103.1	47.6	62.5	74.7	79.5
Average Queue (m)	19.2	50.4	24.4	8.9	21.8	34.4	47.4	60.1	20.4	24.3	31.8	38.7
95th Queue (m)	41.8	102.0	46.5	19.4	39.5	60.4	76.6	91.0	38.3	50.2	58.4	66.7
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	0	22	0			0			0	0		
Queuing Penalty (veh)	0	12	0			0			2	0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	217.5	343.2	343.9	104.2	107.6	113.7	44.3	44.8	44.8
Average Queue (m)	176.5	332.8	333.5	63.2	65.5	73.6	21.8	19.5	21.5
95th Queue (m)	278.3	339.3	341.6	96.6	97.9	105.6	36.7	35.2	40.5
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)		73	71						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	1	22							
Queuing Penalty (veh)	3	63							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	149.5	177.9	193.0	77.5	93.4	97.6	100.2	101.6	97.4	109.2
Average Queue (m)	96.5	115.8	88.8	51.6	48.0	49.9	53.5	58.1	59.0	60.9
95th Queue (m)	140.7	165.0	155.1	88.6	76.0	77.4	83.7	90.8	91.5	95.3
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)	0	0	8	0						
Queuing Penalty (veh)	0	1	21	1						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	181.4	175.4	114.6	122.3	135.5	52.2	113.0	122.0	137.6	57.5	87.4
Average Queue (m)	69.3	101.3	94.5	63.4	47.0	58.1	14.7	40.5	46.3	53.1	33.8	74.4
95th Queue (m)	128.9	178.7	166.0	123.0	117.0	120.2	34.8	86.5	95.1	114.1	67.9	106.6
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)		3	2		0							
Queuing Penalty (veh)		0	0		0							
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	3	12		8	0		0	8		12	3	35
Queuing Penalty (veh)	8	22		6	0		0	7		48	11	81

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	183.3	155.7	86.5	59.4
Average Queue (m)	84.9	50.3	29.8	16.4
95th Queue (m)	198.1	140.1	78.2	39.2
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.4	306.0	306.7	57.5	62.6	64.4	57.2	82.4	332.6	334.5	62.5	82.5
Average Queue (m)	86.2	211.9	173.9	38.5	23.9	25.5	23.8	76.7	308.2	305.1	38.8	79.7
95th Queue (m)	106.9	372.9	377.3	71.4	48.9	51.5	44.5	100.0	372.0	381.6	82.9	95.2
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)		15	14						42	47		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	15	47	10	10		0		35	40	57	0	26
Queuing Penalty (veh)	50	155	29	19		0		221	94	84	2	112

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	329.4	322.1	329.5	107.5
Average Queue (m)	249.0	243.1	235.4	87.8
95th Queue (m)	369.0	363.6	365.6	152.3
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	49		72	0
Queuing Penalty (veh)	120		111	2

Network Summary

Network wide Queuing Penalty: 2745

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	103.4	119.9	264.7	255.1	258.5	187.5	152.1	209.9	278.9	279.7	282.7	222.5
Average Queue (m)	72.7	85.7	249.5	239.8	241.5	56.2	111.3	141.7	269.5	268.4	268.6	52.8
95th Queue (m)	110.1	137.1	259.4	261.5	263.5	185.7	152.4	213.6	283.2	282.6	282.8	200.1
Link Distance (m)			250.5	250.5	250.5				271.7	271.7	271.7	
Upstream Blk Time (%)			84	44	36				75	64	66	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	10	31	92		87	0	0	0	88		88	0
Queuing Penalty (veh)	27	84	187		285	1	0	1	464		254	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.4	149.9	1960.3	1966.2	1982.6	82.3	142.4	149.9	215.5	198.0	53.6	44.9
Average Queue (m)	130.3	148.2	1321.9	1302.9	1256.3	9.0	127.9	146.9	208.1	32.2	5.0	3.6
95th Queue (m)	142.3	150.9	2232.1	2262.1	2275.0	49.9	142.7	153.3	214.3	147.0	32.9	23.9
Link Distance (m)			1956.6	1956.6	1956.6				208.6	208.6	208.6	
Upstream Blk Time (%)			20	19	24				96	0		
Queuing Penalty (veh)			171	160	203				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	37	96	1		2	0	24	96				
Queuing Penalty (veh)	137	360	7		7	1	67	266				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	132.4	122.7	66.2	365.4	397.7	418.9	87.5	64.3	99.6	460.9	455.3
Average Queue (m)	56.0	91.7	61.5	30.0	101.4	140.3	149.9	47.6	31.9	43.1	120.5	125.7
95th Queue (m)	74.7	150.5	129.7	54.4	307.5	401.4	417.1	112.1	58.3	84.5	416.3	417.4
Link Distance (m)		120.5	120.5		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		34	2		0	4	12				9	9
Queuing Penalty (veh)		0	0		0	27	75				65	65
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	50	7			0		2	26		0	20	
Queuing Penalty (veh)	93	14			0		10	77		0	83	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	456.7	56.7	127.3	124.7	142.6
Average Queue (m)	126.4	16.1	22.5	22.9	25.4
95th Queue (m)	418.0	52.0	90.4	86.9	94.0
Link Distance (m)	519.9		1956.6	1956.6	1956.6
Upstream Blk Time (%)	9				
Queuing Penalty (veh)	69				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		5	1		
Queuing Penalty (veh)		17	2		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LT	R	LTR
Maximum Queue (m)	3.4	63.7	52.4	42.6	174.4	170.1	180.0	56.0	13.1	12.0
Average Queue (m)	0.1	18.2	10.5	9.0	59.1	68.9	79.5	20.4	3.5	2.4
95th Queue (m)	1.7	46.1	33.9	25.4	160.1	165.6	172.5	47.7	11.2	9.2
Link Distance (m)		492.0	492.0	492.0	234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)					5	6	7			
Queuing Penalty (veh)					29	34	42			
Storage Bay Dist (m)	30.0									
Storage Blk Time (%)		4			7					
Queuing Penalty (veh)		0			0					

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	T	L	R
Maximum Queue (m)	2.3	1.6	25.0	43.2	45.2	43.6	20.9	20.6
Average Queue (m)	0.1	0.1	2.8	7.3	7.6	7.6	7.8	9.2
95th Queue (m)	1.2	1.1	14.2	50.3	51.3	51.6	18.1	16.5
Link Distance (m)	234.5	234.5		102.4	102.4	102.4	114.8	114.8
Upstream Blk Time (%)				3	4	5		
Queuing Penalty (veh)				17	23	31		
Storage Bay Dist (m)			30.0					
Storage Blk Time (%)				5				
Queuing Penalty (veh)				1				

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (m)	48.8	15.9	67.6	77.6	89.4	142.0
Average Queue (m)	20.8	0.5	7.9	9.7	13.1	59.0
95th Queue (m)	40.8	10.2	69.7	75.3	81.1	135.0
Link Distance (m)		102.4	274.4	274.4	274.4	217.3
Upstream Blk Time (%)			1	1	1	1
Queuing Penalty (veh)			4	5	5	0
Storage Bay Dist (m)	60.0					
Storage Blk Time (%)	0					
Queuing Penalty (veh)	1					

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	62.9	48.0	26.9	33.4	111.3	138.4	143.9	265.1
Average Queue (m)	34.4	12.1	9.5	10.5	55.2	80.6	96.3	198.0
95th Queue (m)	61.4	43.7	23.3	24.5	98.6	126.5	139.4	342.7
Link Distance (m)		274.4	274.4	274.4	224.7	224.7	224.7	302.2
Upstream Blk Time (%)								25
Queuing Penalty (veh)								0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	4							
Queuing Penalty (veh)	8							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	EB	WB	WB	SB
Directions Served	L	T	T	TR	R
Maximum Queue (m)	22.1	4.4	18.5	11.1	19.2
Average Queue (m)	8.0	0.1	0.7	0.8	9.7
95th Queue (m)	17.7	3.1	6.4	5.8	17.2
Link Distance (m)		224.7	171.6	171.6	174.7
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	SB
Directions Served	L	T	LR
Maximum Queue (m)	11.6	3.2	12.6
Average Queue (m)	2.1	0.1	4.0
95th Queue (m)	8.4	2.3	11.3
Link Distance (m)		182.0	132.5
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	15.6	21.2	20.6	71.0
Average Queue (m)	6.5	2.1	3.3	26.9
95th Queue (m)	14.5	11.3	12.6	58.6
Link Distance (m)		441.5	441.5	209.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	37.0	8.3	11.5	19.6
Average Queue (m)	12.6	0.6	0.7	6.1
95th Queue (m)	27.2	6.1	6.0	14.9
Link Distance (m)	142.6	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	67.3	76.2	109.6	101.2	88.1	63.3	39.4	46.3	47.9
Average Queue (m)	33.7	32.0	63.1	23.3	30.9	32.5	19.9	23.4	25.8
95th Queue (m)	57.1	58.3	104.1	68.6	64.0	54.7	32.7	39.3	44.3
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			2	0					
Queuing Penalty (veh)			16	0					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	WB	WB	NB
Directions Served	TR	LT	T	LR
Maximum Queue (m)	3.2	8.8	2.7	36.0
Average Queue (m)	0.1	0.6	0.1	18.9
95th Queue (m)	1.8	4.3	1.9	30.7
Link Distance (m)	733.1	844.4	844.4	141.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	21.5	11.7	207.9	208.5	97.2	93.3
Average Queue (m)	4.3	0.7	44.9	48.4	40.0	44.5
95th Queue (m)	14.5	6.7	151.9	157.3	98.8	108.9
Link Distance (m)	397.0	397.0	733.1	733.1	92.7	97.3
Upstream Blk Time (%)					19	24
Queuing Penalty (veh)					0	0
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	139.5	130.9	97.5	404.1	406.6	70.8	152.3	156.2	167.9	39.3	69.2
Average Queue (m)	91.0	121.9	78.2	70.7	337.9	340.3	27.7	28.2	34.5	39.7	10.8	18.4
95th Queue (m)	99.2	173.0	148.0	127.9	472.1	472.7	53.0	121.4	126.2	132.0	29.1	50.1
Link Distance (m)		126.1	126.1		397.0	397.0		602.4	602.4	602.4		473.0
Upstream Blk Time (%)		79	1		24	27						
Queuing Penalty (veh)		0	0		130	143						
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	88	3		0	72			2			0	0
Queuing Penalty (veh)	79	5		0	115			8			0	1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	82.0	89.0
Average Queue (m)	27.2	33.8
95th Queue (m)	61.4	70.7
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	65.4	92.7	27.6	194.0	197.0	209.1	26.5	39.6	53.9	60.9
Average Queue (m)	27.0	54.6	5.5	52.4	57.3	64.0	8.1	6.2	9.4	13.7
95th Queue (m)	67.6	93.0	18.6	241.5	246.7	253.1	20.8	26.7	35.2	41.5
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)	3	9		3	3	4				
Queuing Penalty (veh)	0	0		21	23	27				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				10						
Queuing Penalty (veh)				5						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	67.4	120.5	31.8	80.2	139.2	66.4	32.0	42.5	43.9
Average Queue (m)	36.7	54.7	13.7	49.1	48.2	41.5	9.6	20.8	23.5
95th Queue (m)	65.8	105.0	26.4	74.3	101.3	61.7	26.2	37.5	40.9
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)		0			0				
Queuing Penalty (veh)		0			0				
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)	1	8							
Queuing Penalty (veh)	3	13							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	303.1	300.8	167.5	98.0	95.3	70.6	244.4	247.3	249.6
Average Queue (m)	284.8	285.4	162.4	57.6	50.1	39.4	213.7	216.5	222.4
95th Queue (m)	334.3	334.0	180.6	84.4	75.8	60.8	242.9	260.2	265.3
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	26	21							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		20	1						
Queuing Penalty (veh)		258	35						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	62.9	48.1	87.0	75.1	27.8	100.8	85.0	38.3	99.7	108.3	97.9
Average Queue (m)	33.5	17.5	53.0	39.1	12.3	56.9	34.9	7.5	62.3	67.7	62.0
95th Queue (m)	56.9	35.7	78.5	72.5	22.6	88.5	70.6	22.7	89.6	96.6	88.1
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			2	0							
Queuing Penalty (veh)			3	0							

Intersection: 120: Apleby Line/Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	282.9	72.4	143.1	55.6	63.5	69.1	78.5	63.5	104.0	111.3	118.9
Average Queue (m)	38.9	146.0	69.4	133.0	26.9	33.8	37.7	44.3	10.7	39.9	48.1	54.3
95th Queue (m)	60.6	316.3	84.6	147.2	47.7	58.0	61.9	69.5	33.0	80.4	91.1	98.5
Link Distance (m)		335.4		129.0		210.2	210.2	210.2		602.4	602.4	602.4
Upstream Blk Time (%)		6		57								
Queuing Penalty (veh)		0		0								
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	43	39	25	45	0	0			0	2		
Queuing Penalty (veh)	98	28	116	143	0	1			0	1		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	158.5	166.3	171.5	98.1	82.7	91.2	85.7	78.9	89.2
Average Queue (m)	116.9	155.5	163.5	60.7	49.8	51.7	54.7	53.4	57.1
95th Queue (m)	175.3	176.4	168.7	86.2	75.6	78.0	79.6	74.3	78.6
Link Distance (m)		157.2	157.2	311.3	311.3	311.3	210.2	210.2	210.2
Upstream Blk Time (%)	0	39	77						
Queuing Penalty (veh)	0	0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	0	39							
Queuing Penalty (veh)	1	266							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	152.3	187.1	195.6	77.5	89.5	80.4	82.1	69.7	69.5	79.4
Average Queue (m)	87.8	105.8	89.1	58.7	46.1	44.2	47.6	38.9	41.3	44.4
95th Queue (m)	136.0	156.0	156.0	90.9	70.8	67.6	73.8	62.0	64.4	69.4
Link Distance (m)		200.6	200.6		319.4	319.4	319.4	311.3	311.3	311.3
Upstream Blk Time (%)		0	0							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)		0	10	1						
Queuing Penalty (veh)		0	31	4						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	159.2	150.4	127.4	153.0	157.2	47.9	88.3	191.4	101.2	57.4	52.0
Average Queue (m)	119.7	149.3	84.3	104.5	139.6	144.1	18.5	26.7	34.7	33.8	13.7	17.2
95th Queue (m)	137.0	158.1	165.2	154.1	167.4	158.0	40.9	68.4	123.6	83.8	44.6	37.7
Link Distance (m)		145.6	145.6		140.6	140.6		576.9	576.9	576.9		
Upstream Blk Time (%)		89	5		60	67			0			
Queuing Penalty (veh)		0	0		0	0			0			
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	89	6		19	32		1	2		4	0	
Queuing Penalty (veh)	130	21		60	160		3	2		9	0	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	81.2	107.4	110.7	92.4
Average Queue (m)	31.9	43.6	52.1	15.8
95th Queue (m)	72.1	95.1	108.1	55.7
Link Distance (m)	319.4	319.4	319.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0		4	0
Queuing Penalty (veh)	0		11	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (m)	92.4	181.2	189.6	57.5	85.4	110.3	54.2	82.4	226.5	210.5	50.6	28.2
Average Queue (m)	76.6	136.9	164.9	56.6	49.0	54.6	19.4	82.3	216.5	127.3	15.3	4.2
95th Queue (m)	108.4	209.2	232.5	63.2	80.4	91.9	38.6	82.3	225.1	271.7	40.8	16.3
Link Distance (m)		173.2	173.2			244.6	244.6		208.2	208.2	208.2	
Upstream Blk Time (%)		7	46						95	0		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0				55.0
Storage Blk Time (%)	4	26	5	64	0	1		93	7		0	
Queuing Penalty (veh)	10	70	25	81	1	3		225	18		0	

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (m)	71.6	440.1	484.8	501.2	107.5
Average Queue (m)	23.3	152.5	319.7	400.3	107.5
95th Queue (m)	53.6	384.0	524.6	496.9	107.5
Link Distance (m)		576.9	576.9	576.9	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	75.0				100.0
Storage Blk Time (%)	0	4		3	77
Queuing Penalty (veh)	0	8		38	397

Network Summary

Network wide Queuing Penalty: 6326

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	103.2	119.9	215.3	214.9	213.4	187.5	199.9	209.9	252.7	240.2	184.4	73.9
Average Queue (m)	72.1	92.3	208.9	191.5	182.2	67.8	187.8	207.3	242.3	120.1	78.2	8.8
95th Queue (m)	113.8	139.3	234.5	225.3	224.9	195.7	208.0	219.4	269.8	256.9	191.7	43.2
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			83	10	8				92	0	0	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	12	25	84		52	1	32	95	17		0	
Queuing Penalty (veh)	32	65	202		198	3	92	267	80		1	

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.5	149.9	1973.2	1975.6	2000.8	110.8	142.4	149.9	260.6	249.0	58.5	20.4
Average Queue (m)	130.0	148.1	1388.6	1355.7	1299.7	15.1	129.3	148.5	249.9	60.8	4.8	2.2
95th Queue (m)	146.3	158.4	2342.5	2379.7	2409.9	66.5	145.3	152.0	294.1	224.5	28.5	13.4
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)			18	15	29				92	0		
Queuing Penalty (veh)			131	107	207				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	24	93	0		0	1	20	93	0			
Queuing Penalty (veh)	61	234	0		1	1	55	258	0			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	169.6	160.4	93.2	422.5	448.3	454.7	87.4	54.6	107.4	478.7	482.0
Average Queue (m)	60.5	135.3	89.7	38.0	86.9	111.9	124.4	35.9	26.2	44.9	136.0	140.4
95th Queue (m)	70.5	208.6	192.9	76.1	317.2	368.3	395.0	101.3	49.5	96.2	430.9	430.9
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		56	1		0	1	3				6	6
Queuing Penalty (veh)		0	0		1	2	12				34	33
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	80	2		1			0	28		0	22	
Queuing Penalty (veh)	121	5		2			1	53		0	71	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	481.5	62.3	104.6	93.6	96.9
Average Queue (m)	141.9	19.5	20.4	23.1	25.2
95th Queue (m)	431.1	54.0	64.2	66.9	75.0
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)	6				
Queuing Penalty (veh)	37				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		5	1		
Queuing Penalty (veh)		22	2		

Intersection: 105: Upper Middle Road & Quinte Street

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	32.0	12.0	12.7	42.8
Average Queue (m)	13.6	0.7	1.2	18.0
95th Queue (m)	27.4	6.2	6.7	31.9
Link Distance (m)		274.2	274.2	267.0
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	60.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 106: Upper Middle Road & Sutton Drive

Movement	EB	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	T	TR	LR
Maximum Queue (m)	43.4	31.4	33.6	35.7	57.4	71.3	82.8	95.3
Average Queue (m)	16.3	13.8	15.7	17.9	25.8	37.0	47.4	57.5
95th Queue (m)	33.2	26.8	30.5	34.1	46.9	61.7	73.7	88.2
Link Distance (m)		274.2	274.2	274.2	224.1	224.1	224.1	225.3
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)	0							
Queuing Penalty (veh)	0							

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	14.4	5.6	7.7	7.1	34.6
Average Queue (m)	4.4	0.3	0.3	0.4	14.2
95th Queue (m)	12.3	3.7	3.5	3.8	25.5
Link Distance (m)		446.2	446.2	446.2	209.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	30.9	3.4	3.4	10.4
Average Queue (m)	13.1	0.1	0.2	1.7
95th Queue (m)	23.8	2.4	2.0	7.3
Link Distance (m)	142.7	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	37.4	23.6	54.1	28.2	35.4	42.5	27.1	34.1	42.6
Average Queue (m)	15.8	12.6	24.2	10.1	12.7	15.0	13.3	15.2	16.5
95th Queue (m)	30.7	20.2	43.8	23.5	28.6	33.7	24.5	29.7	34.4
Link Distance (m)	844.4	844.4		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 113: Sutton Drive & Mainway

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (m)	1.7	13.0
Average Queue (m)	0.2	5.5
95th Queue (m)	2.0	12.7
Link Distance (m)	844.4	141.9
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	59.5	36.4	55.9	30.4	42.8	50.2	50.5	65.8	74.2	91.4	34.4	90.3
Average Queue (m)	28.4	13.4	22.7	12.9	23.0	27.6	21.4	29.0	32.7	36.7	8.4	27.9
95th Queue (m)	50.9	28.7	43.7	25.5	39.4	44.4	40.2	53.7	61.4	68.9	23.0	65.1
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)												1
Queuing Penalty (veh)												1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	99.1	103.2
Average Queue (m)	36.2	40.9
95th Queue (m)	78.6	85.3
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	45.0	82.8	32.6	215.0	218.8	222.7	22.8	48.8	61.9	71.9
Average Queue (m)	19.5	42.3	5.2	47.3	47.6	52.5	7.9	13.6	20.2	26.0
95th Queue (m)	36.3	74.4	17.7	191.7	193.3	198.3	18.3	36.6	47.5	56.4
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		4		1	1	1				
Queuing Penalty (veh)		0		4	5	4				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				8						
Queuing Penalty (veh)				3						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	15.3	20.8	23.7	30.0	25.8	27.0	11.6	13.2	20.2
Average Queue (m)	4.2	8.6	8.2	7.6	7.0	6.5	1.0	1.6	4.0
95th Queue (m)	12.6	18.0	18.0	23.8	22.0	21.1	6.0	7.7	14.0
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	304.8	302.7	167.5	65.2	58.9	45.2	50.0	43.6	40.0
Average Queue (m)	294.4	294.4	166.4	35.1	29.0	21.2	30.5	22.2	19.6
95th Queue (m)	308.4	308.9	172.4	55.4	47.6	37.2	45.8	38.9	34.8
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	51	41							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		37	2						
Queuing Penalty (veh)		279	30						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	48.8	48.8	65.1	50.2	44.2	76.2	67.2	19.1	86.3	84.4	83.4
Average Queue (m)	22.0	30.7	35.4	15.2	22.9	40.1	20.4	3.4	42.1	43.3	42.5
95th Queue (m)	41.4	48.0	57.2	42.4	36.1	66.6	50.2	12.1	74.1	75.1	75.4
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0								
Queuing Penalty (veh)			0								

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	37.5	31.8	47.7	39.1	16.3	54.4	57.8	62.9	15.6	58.8	64.2	70.1
Average Queue (m)	13.4	12.5	21.6	15.1	5.4	28.4	30.3	34.5	5.2	18.4	22.7	28.4
95th Queue (m)	28.4	26.5	40.2	30.7	13.4	50.1	53.0	56.8	13.3	42.9	50.7	57.9
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	0	0								0		
Queuing Penalty (veh)	0	0								0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	112.8	117.8	131.2	89.3	96.8	102.0	68.6	67.4	67.7
Average Queue (m)	55.4	68.2	71.6	59.5	65.3	73.8	32.0	28.9	27.7
95th Queue (m)	87.1	98.8	121.7	88.9	93.2	101.5	57.1	54.8	54.8
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	108.7	124.1	116.0	72.9	69.9	66.0	66.5	101.4	107.3	109.9
Average Queue (m)	66.3	80.0	54.7	34.6	27.9	25.6	24.9	51.4	55.4	62.4
95th Queue (m)	94.7	109.2	90.7	66.6	52.5	49.7	47.0	86.8	93.8	101.7
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			1	0						
Queuing Penalty (veh)			4	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	68.0	29.0	45.7	127.5	225.1	212.0	57.4	83.0	85.4	94.8	57.5	40.7
Average Queue (m)	30.2	12.9	18.6	127.4	213.8	131.9	20.4	53.6	58.3	59.8	38.9	16.8
95th Queue (m)	54.6	24.5	36.8	127.6	220.4	247.7	49.7	77.1	81.2	88.3	73.3	33.0
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)					92	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)				93	1			13		14	0	
Queuing Penalty (veh)				172	6			11		41	1	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	58.8	68.7	76.3	36.5
Average Queue (m)	28.6	37.6	44.8	7.5
95th Queue (m)	50.8	60.3	69.1	21.8
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)			0	0
Queuing Penalty (veh)			0	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.4	158.0	166.3	57.5	57.9	49.0	49.2	82.4	335.7	336.2	62.5	82.4
Average Queue (m)	67.4	88.0	50.6	45.2	27.7	21.4	20.6	81.7	323.0	321.3	35.5	67.6
95th Queue (m)	100.0	146.6	131.1	66.0	49.7	39.8	36.4	88.4	352.4	358.9	81.1	115.5
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)									65	50		
Queuing Penalty (veh)									0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	3	15	2	12				62	19	46	0	0
Queuing Penalty (veh)	7	39	6	13				435	63	52	1	0

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	519.9	532.9	537.6	107.5
Average Queue (m)	386.1	408.1	422.4	104.2
95th Queue (m)	531.3	553.8	563.3	133.1
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)		0	1	
Queuing Penalty (veh)		0	4	
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	76		85	1
Queuing Penalty (veh)	103		389	5

Zone Summary

Zone wide Queuing Penalty: 4065

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	75.7	120.0	218.4	216.0	218.3	187.5	195.4	207.3	235.1	213.7	127.0	37.4
Average Queue (m)	34.4	79.9	168.7	149.7	125.5	74.7	130.3	143.1	104.2	76.8	35.5	13.4
95th Queue (m)	66.1	144.0	250.6	238.0	225.3	165.7	213.9	228.6	234.6	173.0	87.1	26.7
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			20	7	4				9	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)		0	42		8	1	3	14	2			
Queuing Penalty (veh)		0	87		34	3	5	26	8			

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	77.8	82.0	65.5	72.5	848.7	78.6	105.7	114.3	120.5	108.6	88.2	26.7
Average Queue (m)	32.5	37.8	27.0	34.2	63.9	31.3	47.9	61.0	73.1	63.8	43.9	7.3
95th Queue (m)	64.2	67.5	57.1	66.2	438.4	66.6	90.0	98.1	125.0	110.8	83.6	19.2
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)					0							
Queuing Penalty (veh)					0							
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)									0			
Queuing Penalty (veh)									0			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	168.5	170.5	115.2	81.4	34.5	39.0	14.0	52.9	74.2	98.4	98.8
Average Queue (m)	46.0	160.3	161.3	74.4	19.6	15.6	19.6	0.5	23.4	32.0	60.8	69.5
95th Queue (m)	78.7	177.7	173.8	136.4	82.1	28.5	32.4	9.2	45.9	59.3	91.6	97.7
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		60	68									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	2	55		8						0	0	
Queuing Penalty (veh)	7	89		9						0	1	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	112.4	62.4	263.4	254.8	244.2
Average Queue (m)	76.6	60.8	158.8	138.7	119.4
95th Queue (m)	108.2	70.6	287.7	268.4	218.9
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		55	10		
Queuing Penalty (veh)		255	39		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (m)	14.1	54.2	58.8	68.5	16.9	38.8	36.8	51.6	73.6	29.6	13.1
Average Queue (m)	0.8	31.5	29.2	36.8	6.6	15.5	15.8	23.9	39.3	11.6	4.0
95th Queue (m)	6.9	49.3	46.9	58.4	14.6	31.0	29.5	41.5	62.0	21.9	11.8
Link Distance (m)		492.0	492.0	492.0		234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	30.0				80.0						
Storage Blk Time (%)		11									
Queuing Penalty (veh)		1									

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	TR	L	T	L	R
Maximum Queue (m)	11.7	19.7	37.4	47.2	33.3	40.1
Average Queue (m)	0.5	2.6	22.7	3.3	13.9	17.3
95th Queue (m)	5.0	10.6	36.8	25.5	29.3	30.6
Link Distance (m)	234.5	234.5		99.3	114.8	114.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)			30.0			
Storage Blk Time (%)			3			
Queuing Penalty (veh)			8			

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	34.8	4.6	1.3	3.5	9.0	13.8	16.5	165.8
Average Queue (m)	13.0	0.3	0.0	0.2	0.4	1.5	6.5	69.0
95th Queue (m)	26.0	4.0	0.9	2.3	4.7	7.6	15.2	160.5
Link Distance (m)		99.3	99.3	270.1	270.1	270.1	122.9	267.2
Upstream Blk Time (%)								0
Queuing Penalty (veh)								0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	60.6	49.8	41.8	50.8	53.4	47.2	55.0	29.4	238.8
Average Queue (m)	27.5	17.5	22.3	28.7	22.5	19.9	31.6	9.7	231.1
95th Queue (m)	49.3	34.8	37.2	45.9	43.6	39.6	51.8	21.9	235.1
Link Distance (m)		270.1	270.1	270.1	225.8	225.8	225.8	114.4	225.6
Upstream Blk Time (%)									79
Queuing Penalty (veh)									0
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	1								
Queuing Penalty (veh)	2								

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	SB
Directions Served	L	R
Maximum Queue (m)	13.2	18.7
Average Queue (m)	2.6	8.9
95th Queue (m)	9.9	15.1
Link Distance (m)		174.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	5.2	19.2
Average Queue (m)	0.2	7.3
95th Queue (m)	2.2	16.1
Link Distance (m)		132.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	14.5	57.7
Average Queue (m)	1.8	25.1
95th Queue (m)	8.7	46.2
Link Distance (m)		209.2
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 110: Burloak Drive & Park Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (m)	10.5	9.0
Average Queue (m)	3.7	1.7
95th Queue (m)	11.1	7.2
Link Distance (m)	142.7	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		145.0
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	91.2	144.6	117.5	278.1	195.4	76.0	75.7	83.7	92.4
Average Queue (m)	19.5	73.0	101.7	139.6	22.3	11.0	42.5	48.8	53.2
95th Queue (m)	57.0	125.2	145.2	321.8	117.7	41.1	68.0	77.1	86.9
Link Distance (m)	840.9	840.9		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			56	2					
Queuing Penalty (veh)			98	10					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	20.7	7.9	12.2	11.7	34.8	35.3
Average Queue (m)	7.4	0.5	2.1	0.9	14.9	17.0
95th Queue (m)	18.6	4.9	8.3	5.7	27.5	29.4
Link Distance (m)	91.5	91.5	840.9	840.9	142.0	174.4
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LT	LTR	LTR
Maximum Queue (m)	15.3	7.5	11.7	20.6	37.1
Average Queue (m)	1.9	0.3	1.6	4.6	15.8
95th Queue (m)	9.1	3.2	7.6	14.0	27.8
Link Distance (m)	397.0	397.0	623.6	92.7	97.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	200.2	196.6	97.5	192.6	158.1	75.9	109.5	117.8	131.4	65.3	79.2
Average Queue (m)	73.7	183.5	181.7	85.0	95.1	46.9	28.8	43.4	51.8	60.8	29.1	29.4
95th Queue (m)	117.1	215.9	216.1	122.3	221.4	113.7	59.5	99.3	114.6	127.8	54.1	65.5
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)		65	59									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	14	58		58	5		0	0			0	0
Queuing Penalty (veh)	33	108		31	6		0	1			2	1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	94.0	100.3
Average Queue (m)	38.2	44.1
95th Queue (m)	84.2	92.4
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	44.0	94.0	57.3	86.3	92.0	98.5	32.9	59.9	64.0	63.8
Average Queue (m)	12.8	60.8	15.2	54.5	56.6	59.9	10.5	28.1	33.6	37.1
95th Queue (m)	30.8	96.3	42.9	87.9	90.2	94.4	22.6	52.2	57.1	62.0
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		3								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)			0	8						
Queuing Penalty (veh)			1	3						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	25.4	44.8	100.1	48.7	36.0	20.9	36.9	48.5	58.8
Average Queue (m)	8.3	19.5	54.8	15.1	8.5	6.7	10.9	28.5	37.8
95th Queue (m)	20.0	35.4	90.3	36.6	23.7	18.3	27.5	45.1	55.7
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)			0						
Queuing Penalty (veh)			0						

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	304.9	304.3	167.5	59.9	50.6	30.2	39.7	43.0	48.6
Average Queue (m)	296.0	296.2	163.5	33.3	22.4	14.3	17.8	12.7	19.3
95th Queue (m)	302.2	301.8	192.9	51.9	39.7	26.1	34.2	32.5	41.3
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	62	60							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		58	1						
Queuing Penalty (veh)		306	11						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	69.2	39.3	68.8	58.6	23.6	83.0	67.8	16.0	66.0	74.4	72.1
Average Queue (m)	40.5	17.2	37.0	17.3	10.5	39.1	16.0	1.6	32.2	38.1	44.4
95th Queue (m)	63.9	31.6	60.2	46.7	19.8	70.1	46.0	8.6	55.9	62.2	67.9
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	88.0	43.0	30.8	62.8	73.7	94.9	106.1	44.8	54.4	70.1	80.6
Average Queue (m)	17.3	41.2	19.2	9.4	24.5	34.9	50.0	63.3	19.5	22.1	27.9	36.3
95th Queue (m)	43.0	72.2	37.2	21.4	46.5	63.9	83.3	95.7	37.6	46.3	55.5	66.2
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	0	15			0	0				0		
Queuing Penalty (veh)	0	8			1	1				0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	185.0	237.1	262.0	84.9	85.6	99.1	34.1	33.3	38.9
Average Queue (m)	57.9	96.1	148.8	51.6	54.7	62.1	12.1	12.6	14.9
95th Queue (m)	141.6	228.4	283.2	77.9	82.7	93.2	26.8	28.6	32.7
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)		1	1						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	0	2							
Queuing Penalty (veh)	0	3							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	128.4	141.7	128.8	76.3	66.1	81.8	85.7	82.8	85.8	87.8
Average Queue (m)	66.6	80.9	47.6	25.3	28.3	35.9	42.0	45.0	43.4	51.4
95th Queue (m)	104.1	117.7	90.2	59.7	51.6	63.3	70.0	74.4	73.2	80.4
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			2	0						
Queuing Penalty (veh)			3	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	121.9	181.2	158.2	113.2	139.3	153.0	57.3	105.9	107.6	129.3	57.5	87.4
Average Queue (m)	70.9	97.5	88.8	64.2	48.2	62.8	16.7	40.6	43.2	47.5	31.6	65.8
95th Queue (m)	128.9	178.2	156.1	128.3	124.5	128.7	43.1	86.3	91.0	101.9	69.5	100.6
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)		5	1		0	0						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	9	4		11	0		0	9		12	2	21
Queuing Penalty (veh)	21	7		7	0		0	7		41	10	47

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	161.5	123.7	94.9	38.6
Average Queue (m)	53.8	31.2	24.4	12.1
95th Queue (m)	161.8	95.0	64.2	29.1
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.4	271.1	252.4	57.5	52.6	46.0	44.0	82.4	252.2	240.7	62.5	82.4
Average Queue (m)	71.9	136.4	87.3	32.3	20.8	20.5	22.3	62.1	119.7	117.9	30.4	55.9
95th Queue (m)	107.6	279.6	244.7	61.2	41.5	38.5	40.3	100.0	222.8	217.6	74.5	93.7
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)		2	2									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	10	26	7	5				6	24	34	0	3
Queuing Penalty (veh)	28	74	16	8				32	47	41	1	12

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	142.0	130.5	133.1	100.0
Average Queue (m)	76.0	76.3	77.8	25.2
95th Queue (m)	134.4	127.6	127.2	85.6
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	10		7	0
Queuing Penalty (veh)	22		9	0

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	EB	WB	SB
Directions Served	LT	TR	TR	LTR
Maximum Queue (m)	18.1	16.4	1.3	9.8
Average Queue (m)	3.4	1.0	0.0	4.3
95th Queue (m)	12.7	8.1	0.9	11.4
Link Distance (m)	623.6	623.6	91.5	98.9
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Network Summary

Network wide Queuing Penalty: 1630

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	107.6	119.9	258.2	257.5	255.1	187.5	130.9	210.0	279.2	277.7	277.4	222.5
Average Queue (m)	69.1	84.3	251.3	240.1	238.6	62.2	101.7	138.6	268.6	267.5	267.2	46.7
95th Queue (m)	110.8	138.8	265.6	265.7	267.0	194.9	137.7	218.2	283.6	285.4	285.6	184.8
Link Distance (m)			250.5	250.5	250.5				271.7	271.7	271.7	
Upstream Blk Time (%)			89	34	39				63	65	66	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	6	26	86		86	1			88		87	0
Queuing Penalty (veh)	13	64	158		270	1			428		228	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.4	149.9	1962.0	1961.8	1986.1	48.1	142.5	149.9	219.0	202.5	22.2	26.9
Average Queue (m)	129.5	148.0	1332.1	1319.1	1281.7	6.1	129.0	148.0	206.6	39.9	1.7	1.6
95th Queue (m)	143.3	152.0	2314.5	2338.2	2396.6	30.3	143.7	152.0	238.6	165.0	17.2	13.6
Link Distance (m)			1956.6	1956.6	1956.6				208.6	208.6	208.6	
Upstream Blk Time (%)			18	16	26				93	0		
Queuing Penalty (veh)			139	122	208				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	23	95			0		20	95				
Queuing Penalty (veh)	81	340			0		52	249				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	129.3	124.9	60.2	323.7	394.5	397.2	87.5	60.1	107.4	442.9	449.1
Average Queue (m)	56.0	92.6	76.3	28.0	87.1	131.1	145.3	49.1	32.5	46.8	117.1	125.5
95th Queue (m)	75.0	147.6	139.1	52.0	269.0	374.3	413.3	112.0	57.8	90.0	402.1	406.1
Link Distance (m)		120.5	120.5		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		30	5		0	1	11				6	7
Queuing Penalty (veh)		0	0		0	6	67				44	48
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	47	6					1	27		0	20	
Queuing Penalty (veh)	94	13					6	76		0	78	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	444.8	55.3	109.6	95.6	86.0
Average Queue (m)	126.4	20.0	26.7	23.0	22.2
95th Queue (m)	409.4	58.0	96.0	74.8	67.9
Link Distance (m)	519.9		1956.6	1956.6	1956.6
Upstream Blk Time (%)	7				
Queuing Penalty (veh)	49				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		10	0		
Queuing Penalty (veh)		31	1		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LT	R	LTR
Maximum Queue (m)	6.7	60.0	43.4	34.4	153.3	160.5	170.4	52.4	10.5	12.4
Average Queue (m)	0.4	19.0	11.4	11.8	57.4	66.8	79.0	17.0	2.5	1.8
95th Queue (m)	3.3	46.5	33.7	28.6	146.4	156.2	163.5	40.4	9.2	7.8
Link Distance (m)		492.0	492.0	492.0	234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)					4	4	6			
Queuing Penalty (veh)					20	25	32			
Storage Bay Dist (m)	30.0									
Storage Blk Time (%)		4			6					
Queuing Penalty (veh)		0			0					

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	L	T	T	T	L	R
Maximum Queue (m)	3.4	16.9	40.8	40.7	41.6	20.6	14.2
Average Queue (m)	0.1	2.0	5.4	5.5	6.0	7.7	8.2
95th Queue (m)	2.4	9.5	42.2	41.5	44.2	17.6	14.7
Link Distance (m)	234.5		99.4	99.4	99.4	114.8	114.8
Upstream Blk Time (%)			3	1	4		
Queuing Penalty (veh)			15	8	24		
Storage Bay Dist (m)		30.0					
Storage Blk Time (%)		0	4				
Queuing Penalty (veh)		1	1				

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	45.7	1.6	2.8	98.3	100.6	103.3	16.6	135.0
Average Queue (m)	19.7	0.1	0.1	8.1	10.0	12.6	4.5	52.3
95th Queue (m)	37.5	1.2	2.0	72.7	79.0	80.4	13.0	134.2
Link Distance (m)		99.4	99.4	272.4	272.4	272.4	145.8	217.4
Upstream Blk Time (%)				1	1	1		0
Queuing Penalty (veh)				3	3	4		0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	64.4	62.3	39.3	31.7	111.9	133.5	149.0	39.7	187.6
Average Queue (m)	33.1	11.0	9.9	11.2	55.2	80.4	96.3	15.6	110.9
95th Queue (m)	60.7	38.0	27.4	25.8	97.3	126.8	138.7	31.2	193.7
Link Distance (m)		272.4	272.4	272.4	226.4	226.4	226.4	142.4	302.4
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	3	0							
Queuing Penalty (veh)	6	0							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	R
Maximum Queue (m)	18.3	6.7	14.2	19.7
Average Queue (m)	6.7	0.2	0.9	8.8
95th Queue (m)	16.3	3.4	7.2	16.4
Link Distance (m)		171.6	171.6	174.7
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	11.6	3.4	1.6	12.5
Average Queue (m)	1.5	0.1	0.1	3.0
95th Queue (m)	7.1	2.4	1.1	10.2
Link Distance (m)		182.0	182.0	132.5
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	18.2	4.7	21.4	18.2	73.2
Average Queue (m)	5.7	0.3	2.1	2.9	29.5
95th Queue (m)	15.0	3.3	11.7	12.1	67.6
Link Distance (m)		441.5	441.5	441.5	209.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	35.0	5.0	8.1	17.0
Average Queue (m)	11.6	0.3	0.6	5.9
95th Queue (m)	24.5	4.5	5.3	14.7
Link Distance (m)	142.6	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	85.2	119.4	117.4	164.3	107.7	69.6	38.5	41.3	54.2
Average Queue (m)	31.3	52.3	77.8	36.9	34.5	40.8	20.7	24.1	26.0
95th Queue (m)	61.8	98.9	126.8	111.2	72.9	66.0	33.0	39.0	45.2
Link Distance (m)	841.0	841.0		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			6	0					
Queuing Penalty (veh)			38	0					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	15.4	2.6	11.4	8.4	48.2	88.8
Average Queue (m)	1.6	0.1	0.8	0.4	24.0	36.2
95th Queue (m)	7.8	1.3	5.3	3.4	41.3	68.7
Link Distance (m)	96.0	96.0	841.0	841.0	142.0	177.5
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	17.5	1.8	309.6	316.7	96.0	96.0
Average Queue (m)	3.7	0.1	114.9	117.5	47.0	52.3
95th Queue (m)	12.0	1.3	334.9	338.2	110.4	117.9
Link Distance (m)	397.0	397.0	621.4	621.4	92.7	97.3
Upstream Blk Time (%)					37	34
Queuing Penalty (veh)					0	0
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	140.7	130.9	97.4	405.6	406.4	79.7	111.1	116.6	131.8	36.1	64.8
Average Queue (m)	91.9	131.3	72.0	76.1	350.4	352.2	33.0	23.6	31.0	37.7	10.0	18.3
95th Queue (m)	94.8	146.8	146.9	126.7	477.2	478.9	65.5	81.8	89.5	100.3	24.7	47.0
Link Distance (m)		126.1	126.1		397.0	397.0		602.4	602.4	602.4		473.0
Upstream Blk Time (%)		92	1		32	33						
Queuing Penalty (veh)		0	0		182	188						
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	97	3		4	68		0	1				0
Queuing Penalty (veh)	86	6		15	150		1	4				0

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	80.2	85.3
Average Queue (m)	29.2	38.0
95th Queue (m)	63.2	75.0
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	67.3	94.0	26.7	250.5	259.7	263.2	29.1	30.2	38.6	43.3
Average Queue (m)	21.6	65.4	4.7	43.4	51.4	58.8	10.5	5.3	8.6	11.4
95th Queue (m)	51.4	100.4	17.9	199.7	210.2	215.9	24.0	19.3	27.5	32.3
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)	0	10		1	2	2				
Queuing Penalty (veh)	0	0		9	11	13				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				9						
Queuing Penalty (veh)				4						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	67.4	139.0	40.7	88.7	87.6	80.2	34.8	46.2	48.9
Average Queue (m)	40.9	68.9	17.2	59.7	55.3	47.5	13.7	28.2	32.2
95th Queue (m)	76.0	127.5	32.7	82.3	79.9	70.0	30.0	43.9	47.7
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)		1							
Queuing Penalty (veh)		0							
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)	0	19							
Queuing Penalty (veh)	1	28							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	301.6	304.2	167.5	76.1	66.5	56.4	80.4	100.8	111.7
Average Queue (m)	282.3	282.3	161.5	47.6	39.8	30.9	51.9	69.0	82.9
95th Queue (m)	339.9	339.8	185.9	68.4	60.0	48.6	73.3	92.1	109.1
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	27	21							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		20	1						
Queuing Penalty (veh)		188	22						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	70.9	30.0	73.1	64.3	24.6	74.6	59.2	16.1	72.1	72.3	70.6
Average Queue (m)	33.3	12.1	40.4	21.4	9.9	35.3	17.9	2.4	32.3	37.5	38.2
95th Queue (m)	62.4	25.7	62.9	54.4	20.3	59.8	46.1	9.5	60.5	62.5	59.2
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 120: Apleby Line/Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.1	150.7	72.4	141.7	64.7	88.6	87.9	88.9	52.1	93.8	103.3	113.0
Average Queue (m)	28.3	103.2	65.9	112.5	30.0	40.8	47.6	54.1	9.4	43.0	48.5	56.1
95th Queue (m)	54.8	302.6	86.7	163.9	55.9	74.3	78.6	82.8	32.3	77.8	86.8	96.0
Link Distance (m)		335.4		129.0		210.2	210.2	210.2		602.4	602.4	602.4
Upstream Blk Time (%)		17		22								
Queuing Penalty (veh)		0		0								
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	19	24	13	29	1	1				3		
Queuing Penalty (veh)	40	16	54	85	7	2				2		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	159.7	168.8	172.4	73.8	65.0	72.1	50.0	59.5	60.9
Average Queue (m)	115.5	158.1	163.3	46.3	40.9	44.4	28.2	34.4	40.7
95th Queue (m)	180.1	174.0	168.4	69.2	59.5	65.5	45.5	52.8	59.4
Link Distance (m)		157.2	157.2	311.3	311.3	311.3	210.2	210.2	210.2
Upstream Blk Time (%)	0	39	76						
Queuing Penalty (veh)	0	0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	0	39							
Queuing Penalty (veh)	1	191							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	99.6	115.8	102.8	75.1	58.3	59.4	64.2	58.0	68.3	79.7
Average Queue (m)	60.4	76.6	47.1	33.5	33.0	33.5	38.1	28.1	29.9	36.7
95th Queue (m)	91.7	107.9	83.9	63.7	51.6	51.6	58.7	52.3	57.6	68.5
Link Distance (m)		200.6	200.6		319.4	319.4	319.4	311.3	311.3	311.3
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			1	0						
Queuing Penalty (veh)			3	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.5	161.3	154.0	127.4	152.3	155.8	57.4	100.3	94.0	105.1	57.5	44.1
Average Queue (m)	120.7	149.5	100.7	102.9	141.5	143.9	23.5	39.3	41.7	41.1	18.2	18.2
95th Queue (m)	132.7	156.9	178.6	155.7	157.2	156.8	51.7	83.7	86.6	89.6	52.5	35.9
Link Distance (m)		145.6	145.6		140.6	140.6		576.9	576.9	576.9		
Upstream Blk Time (%)		88	10		56	65						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	87	8		22	25		1	7		6	0	
Queuing Penalty (veh)	114	26		62	112		2	7		11	0	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	100.8	130.6	149.6	92.4
Average Queue (m)	30.4	44.3	52.9	15.6
95th Queue (m)	73.2	98.3	113.5	49.7
Link Distance (m)	319.4	319.4	319.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0		3	0
Queuing Penalty (veh)	1		8	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (m)	92.2	129.2	161.0	57.5	83.1	105.7	53.0	82.4	210.6	191.5	43.8	17.8
Average Queue (m)	60.2	79.1	58.0	48.8	39.1	45.1	16.4	74.6	136.5	109.5	17.1	5.8
95th Queue (m)	92.2	118.4	141.1	69.2	69.1	78.5	35.2	98.8	254.1	225.1	37.4	13.8
Link Distance (m)		173.2	173.2			244.6	244.6		208.2	208.2	208.2	
Upstream Blk Time (%)			1						15	0		
Queuing Penalty (veh)			0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0				55.0
Storage Blk Time (%)	0	6	2	21	1	1		58	2		0	
Queuing Penalty (veh)	1	15	9	22	1	2		117	4		0	

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (m)	72.0	422.8	482.3	506.0	107.5
Average Queue (m)	19.9	147.6	342.6	391.1	107.3
95th Queue (m)	51.7	388.3	526.7	547.0	110.9
Link Distance (m)		576.9	576.9	576.9	
Upstream Blk Time (%)		0	0	1	
Queuing Penalty (veh)		0	0	8	
Storage Bay Dist (m)	75.0				100.0
Storage Blk Time (%)	0	4		4	75
Queuing Penalty (veh)	1	7		43	320

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	SB
Directions Served	LT	LTR
Maximum Queue (m)	10.2	24.7
Average Queue (m)	1.5	11.6
95th Queue (m)	7.0	20.5
Link Distance (m)	621.4	110.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 5251

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	99.7	119.9	216.8	214.9	215.4	187.5	200.0	209.9	252.1	242.0	161.7	40.5
Average Queue (m)	74.0	92.7	201.6	188.8	176.9	74.2	189.5	208.3	244.7	110.1	59.2	8.9
95th Queue (m)	113.5	140.9	255.0	244.4	245.7	198.0	206.2	211.4	252.6	248.7	141.3	28.3
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			73	13	12				91	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	3	24	78		49	2	32	89	20		0	
Queuing Penalty (veh)	8	57	170		175	5	83	230	88		1	

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.5	150.0	1974.5	1973.2	1998.2	67.9	142.5	150.0	263.3	248.1	52.8	24.5
Average Queue (m)	130.5	146.4	1206.7	1135.0	1063.5	12.2	131.8	148.5	254.1	76.5	7.0	2.5
95th Queue (m)	150.5	165.4	2244.5	2270.8	2228.8	47.2	146.7	151.9	263.5	250.1	36.1	14.2
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)			10	7	13				92	0		
Queuing Penalty (veh)			65	48	85				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	26	88					39	94				
Queuing Penalty (veh)	62	211					102	243				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	164.3	161.3	72.9	166.0	217.6	250.1	87.5	58.0	95.4	307.3	308.0
Average Queue (m)	57.1	107.3	89.1	40.5	39.7	54.9	62.5	27.6	27.2	40.3	70.5	77.0
95th Queue (m)	74.5	197.2	176.3	68.6	136.7	191.7	211.9	87.3	48.3	80.2	245.7	248.5
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		19	1									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	61	2			0			11	0	0	10	
Queuing Penalty (veh)	101	5			0			20	0	0	28	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	308.2	62.4	132.0	114.1	102.8
Average Queue (m)	79.8	31.0	37.7	31.7	29.7
95th Queue (m)	251.7	71.6	111.9	87.0	82.1
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		18	1		
Queuing Penalty (veh)		65	2		

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	LT	T	TR	LTR	LTR
Maximum Queue (m)	33.4	1.6	2.7	3.0	17.5	17.9	13.8	49.2
Average Queue (m)	12.2	0.1	0.1	0.1	0.8	1.7	5.4	19.6
95th Queue (m)	27.0	1.1	1.9	1.5	7.3	8.7	12.9	36.3
Link Distance (m)		98.6	98.6	270.6	270.6	270.6	110.0	267.2
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	37.9	33.3	33.9	39.9	50.3	68.2	77.9	26.6	107.8
Average Queue (m)	16.2	12.9	15.8	18.9	23.7	33.2	43.7	7.8	50.2
95th Queue (m)	32.0	26.9	28.8	34.3	44.3	58.9	72.1	19.8	87.2
Link Distance (m)		270.6	270.6	270.6	225.8	225.8	225.8	107.0	225.6
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	15.5	8.2	10.4	32.2
Average Queue (m)	4.6	0.3	0.6	14.2
95th Queue (m)	12.5	3.7	4.6	27.2
Link Distance (m)		446.2	446.2	209.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	30.7	3.0	5.5	11.5
Average Queue (m)	12.2	0.1	0.2	2.2
95th Queue (m)	23.6	2.1	2.1	8.7
Link Distance (m)	142.7	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	30.9	31.7	58.4	33.1	40.0	44.8	30.0	33.8	39.9
Average Queue (m)	14.3	16.2	26.3	11.3	14.9	19.5	15.4	16.7	17.6
95th Queue (m)	26.8	26.0	44.8	25.3	32.0	38.6	27.6	30.4	34.7
Link Distance (m)	841.1	841.1		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 113: Sutton Drive & Mainway

Movement	EB	WB	WB	NB	SB
Directions Served	LT	LT	TR	LTR	LTR
Maximum Queue (m)	8.3	3.2	4.0	17.3	32.3
Average Queue (m)	1.0	0.2	0.1	8.7	12.9
95th Queue (m)	5.4	2.0	2.2	15.5	23.0
Link Distance (m)	103.3	841.1	841.1	142.0	127.8
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	65.6	53.7	54.0	40.9	35.7	50.4	44.7	51.4	60.6	70.0	34.3	87.2
Average Queue (m)	32.8	15.4	21.8	16.6	20.6	27.2	20.7	24.0	28.0	33.4	8.0	31.6
95th Queue (m)	62.1	46.1	42.3	32.7	33.5	43.2	38.5	46.8	54.2	62.2	21.3	68.2
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	1											1
Queuing Penalty (veh)	0											1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	96.8	101.7
Average Queue (m)	39.6	45.8
95th Queue (m)	80.2	86.3
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	38.6	90.3	14.9	54.5	60.7	61.2	34.5	56.8	61.5	70.6
Average Queue (m)	17.6	49.5	4.2	21.7	23.8	27.8	9.7	16.4	22.5	28.1
95th Queue (m)	33.8	83.2	12.5	40.8	46.2	50.0	23.0	41.0	47.2	55.4
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		1								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				0						
Queuing Penalty (veh)				0						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	10.4	20.3	27.9	33.5	31.7	33.8	17.3	18.7	25.8
Average Queue (m)	2.9	10.0	11.2	9.4	8.5	8.6	2.5	3.8	7.2
95th Queue (m)	9.5	18.2	21.9	27.9	26.1	26.8	10.6	13.5	20.3
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	302.9	304.4	167.5	52.6	44.5	33.2	34.2	31.7	39.6
Average Queue (m)	294.6	293.9	166.2	29.4	23.2	16.5	15.2	17.3	20.3
95th Queue (m)	304.0	310.8	173.1	45.1	39.1	29.0	28.3	28.6	33.0
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	52	46							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		41	2						
Queuing Penalty (veh)		228	21						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	46.6	44.6	50.8	34.3	36.5	57.5	54.2	15.6	63.9	63.7	67.1
Average Queue (m)	25.1	23.5	25.4	5.8	17.5	26.7	11.5	1.9	28.6	31.3	30.6
95th Queue (m)	43.6	40.0	42.0	22.3	28.3	49.0	34.9	8.2	54.5	59.1	57.9
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)											
Queuing Penalty (veh)											

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	28.6	28.3	40.8	33.9	15.8	42.2	51.6	60.7	15.7	62.0	73.4	76.2
Average Queue (m)	12.9	11.2	18.1	13.1	5.2	20.5	23.2	28.0	5.7	18.9	22.9	28.3
95th Queue (m)	26.1	23.4	34.0	26.9	13.3	37.9	41.4	47.5	13.7	47.8	54.8	62.8
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)		0								0		
Queuing Penalty (veh)		0								0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	72.5	81.2	77.1	67.2	79.9	86.5	47.8	54.7	59.0
Average Queue (m)	36.5	51.1	39.5	31.8	41.6	47.5	14.9	17.8	17.1
95th Queue (m)	65.5	74.2	69.0	59.7	69.3	76.7	35.4	41.4	43.5
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	80.2	96.3	72.2	58.6	47.5	51.3	58.4	80.5	92.4	98.8
Average Queue (m)	50.8	64.0	30.7	15.1	13.1	19.7	23.1	33.5	39.4	47.3
95th Queue (m)	74.2	86.3	56.1	37.8	32.8	38.2	45.0	64.0	75.2	82.6
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			0	0						
Queuing Penalty (veh)			0	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	58.8	32.4	41.6	127.4	222.2	211.5	53.4	86.1	86.4	87.8	57.5	40.1
Average Queue (m)	26.9	12.0	15.6	127.3	209.5	138.6	14.4	49.2	54.3	55.3	31.5	16.4
95th Queue (m)	48.3	25.3	32.0	128.7	239.9	244.0	32.8	73.7	79.8	85.4	65.8	32.1
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)					78	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)				87	1			9		12	0	
Queuing Penalty (veh)				146	5			7		31	1	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	71.5	77.7	78.0	29.9
Average Queue (m)	26.5	34.8	41.3	7.9
95th Queue (m)	51.2	59.0	65.5	19.3
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0		0	
Queuing Penalty (veh)	0		0	

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	80.2	106.1	113.4	57.5	62.6	48.2	40.1	82.4	287.1	276.7	62.5	82.4
Average Queue (m)	44.8	59.3	24.8	38.7	27.4	20.2	16.4	66.5	129.2	120.4	22.6	59.9
95th Queue (m)	78.3	96.9	74.7	61.5	52.3	40.0	30.8	99.6	264.5	249.0	65.1	110.7
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)									3	2		
Queuing Penalty (veh)									0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	1	3		9	0			21	11	22	0	0
Queuing Penalty (veh)	2	7		8	0			125	29	21	0	0

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	268.6	293.3	308.1	107.5
Average Queue (m)	179.6	196.2	207.8	90.3
95th Queue (m)	327.9	355.5	374.0	147.0
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	54		56	1
Queuing Penalty (veh)	65		216	3

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	SB
Directions Served	LT	LTR
Maximum Queue (m)	5.1	12.1
Average Queue (m)	0.3	5.7
95th Queue (m)	3.1	13.3
Link Distance (m)	614.1	115.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 2772

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	95.3	119.9	223.9	216.9	220.9	187.5	199.9	210.0	259.8	242.3	121.5	36.5
Average Queue (m)	43.9	89.3	184.7	169.9	149.0	88.6	173.9	188.4	192.0	116.3	37.9	12.2
95th Queue (m)	82.1	150.8	257.1	252.0	248.2	186.7	236.5	248.7	332.0	245.9	94.2	28.3
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			29	12	10				42	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	0	1	49		16	1	13	52	8			
Queuing Penalty (veh)	0	2	107		74	4	25	105	31			

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	84.6	86.2	68.1	74.9	457.7	92.6	126.0	137.5	177.2	152.2	98.6	27.5
Average Queue (m)	33.0	38.1	28.7	35.3	51.8	38.8	57.0	70.2	81.8	68.2	44.7	8.7
95th Queue (m)	68.0	72.5	60.2	69.3	318.5	84.5	118.0	126.4	153.3	129.9	89.6	21.4
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)						0	0	3	1			
Queuing Penalty (veh)						0	1	9	1			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	169.0	170.1	125.6	122.6	87.5	37.3	17.7	46.6	74.4	106.5	115.8
Average Queue (m)	48.1	161.6	162.4	86.7	41.6	19.0	21.8	0.8	23.2	31.1	65.1	75.4
95th Queue (m)	79.0	167.2	166.5	143.7	149.2	50.9	34.3	8.4	42.2	55.9	96.4	107.9
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		61	68									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	3	55		20	0						1	
Queuing Penalty (veh)	12	95		23	0						1	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	124.0	62.4	503.5	492.6	452.6
Average Queue (m)	82.2	61.5	305.0	284.5	219.8
95th Queue (m)	114.9	69.1	540.9	523.0	431.3
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		72	11		
Queuing Penalty (veh)		353	45		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (m)	8.5	53.7	52.5	63.2	15.5	34.4	43.1	50.9	69.2	20.3	14.6
Average Queue (m)	0.8	32.5	29.9	36.4	6.8	14.9	16.8	24.2	42.6	10.8	3.6
95th Queue (m)	4.8	50.0	47.2	56.3	14.4	29.0	33.5	42.5	65.9	18.2	11.2
Link Distance (m)		492.0	492.0	492.0		234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	30.0				80.0						
Storage Blk Time (%)		10									
Queuing Penalty (veh)		1									

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	TR	L	T	L	R
Maximum Queue (m)	7.2	14.3	37.4	69.6	34.6	48.9
Average Queue (m)	0.4	3.6	24.5	7.0	14.4	19.0
95th Queue (m)	4.8	12.0	39.7	38.4	29.9	36.7
Link Distance (m)	234.5	234.5		99.3	114.8	114.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)			30.0			
Storage Blk Time (%)			6	0		
Queuing Penalty (veh)			15	0		

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	TR	T	TR	LTR	LTR
Maximum Queue (m)	28.7	12.3	1.8	1.8	4.1	10.0	16.2	186.6
Average Queue (m)	11.9	0.4	0.1	0.1	0.2	1.1	5.8	107.0
95th Queue (m)	23.7	5.1	1.3	1.3	2.4	5.9	14.8	228.4
Link Distance (m)		99.3	99.3	99.3	270.1	270.1	122.9	267.2
Upstream Blk Time (%)								6
Queuing Penalty (veh)								0
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	62.4	48.8	49.3	58.8	44.1	45.2	66.3	28.2	239.9
Average Queue (m)	31.1	17.6	22.4	29.1	23.1	21.3	34.9	9.2	231.3
95th Queue (m)	52.9	37.5	40.0	48.8	39.9	40.5	58.2	21.1	235.6
Link Distance (m)		270.1	270.1	270.1	225.8	225.8	225.8	114.4	225.6
Upstream Blk Time (%)									80
Queuing Penalty (veh)									0
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	1	0							
Queuing Penalty (veh)	4	0							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	SB
Directions Served	L	R
Maximum Queue (m)	14.6	18.2
Average Queue (m)	3.3	9.1
95th Queue (m)	11.3	15.7
Link Distance (m)		174.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	6.9	1.4	1.3	22.6
Average Queue (m)	0.6	0.0	0.0	7.9
95th Queue (m)	4.1	1.0	0.9	18.8
Link Distance (m)		182.0	182.0	132.5
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	14.6	70.0
Average Queue (m)	2.0	29.2
95th Queue (m)	8.9	54.7
Link Distance (m)		209.2
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	11.8	10.1	6.3	8.9
Average Queue (m)	4.4	0.3	0.2	1.9
95th Queue (m)	12.0	4.6	2.9	7.7
Link Distance (m)	142.7	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	113.5	155.1	117.5	277.4	199.3	114.4	74.1	87.9	92.2
Average Queue (m)	23.0	86.0	102.2	137.2	44.3	15.2	41.5	48.7	53.3
95th Queue (m)	71.4	142.3	145.0	315.7	165.1	63.5	65.4	77.3	85.3
Link Distance (m)	840.9	840.9		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			58	1					
Queuing Penalty (veh)			107	6					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	24.6	9.9	11.1	9.7	27.2	43.4
Average Queue (m)	6.9	0.8	2.7	0.9	13.0	18.9
95th Queue (m)	17.5	5.2	9.3	5.0	23.0	34.4
Link Distance (m)	91.5	91.5	840.9	840.9	142.0	174.4
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LT	LTR	LTR
Maximum Queue (m)	18.5	5.8	13.6	22.6	37.0
Average Queue (m)	1.7	0.5	1.2	5.2	15.1
95th Queue (m)	9.8	4.5	6.9	14.5	26.7
Link Distance (m)	397.0	397.0	623.6	92.7	97.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	197.0	198.3	97.5	238.9	218.6	79.5	112.6	116.0	125.0	69.5	87.9
Average Queue (m)	75.9	186.2	186.2	90.0	157.0	55.4	27.8	42.1	51.7	61.1	32.4	32.7
95th Queue (m)	119.3	198.1	199.0	118.1	301.5	153.1	60.7	95.9	111.4	126.5	62.0	72.3
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)		68	67									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	22	60		77	9		0	1			2	1
Queuing Penalty (veh)	53	117		44	11		0	1			8	2

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	89.1	97.3
Average Queue (m)	39.2	43.5
95th Queue (m)	83.3	90.3
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	34.0	95.5	50.4	91.9	90.2	92.5	36.0	66.2	77.6	79.5
Average Queue (m)	12.7	62.7	12.9	56.0	58.4	61.4	12.2	31.4	37.9	41.4
95th Queue (m)	27.8	96.9	35.0	90.7	90.5	92.8	27.4	54.6	65.5	69.9
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		3								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)			0	8						
Queuing Penalty (veh)			0	3						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	20.4	55.4	111.7	67.3	29.4	23.6	33.5	49.2	58.3
Average Queue (m)	7.9	22.2	60.9	17.6	9.7	8.3	12.2	29.9	39.4
95th Queue (m)	18.4	42.9	102.6	45.5	23.5	20.3	28.0	47.3	56.8
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)		0	0						
Queuing Penalty (veh)		0	1						

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	305.9	306.6	167.5	56.9	48.4	37.8	53.8	46.5	56.5
Average Queue (m)	295.8	296.6	165.9	33.4	24.0	16.8	31.6	19.8	23.9
95th Queue (m)	301.8	303.2	181.7	53.5	41.3	31.0	49.7	39.4	48.8
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	62	59							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		58	2						
Queuing Penalty (veh)		356	22						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	83.1	48.0	83.0	71.4	26.6	77.5	63.4	20.5	79.4	88.3	89.4
Average Queue (m)	46.8	20.0	45.0	25.2	12.2	46.1	24.0	2.8	44.4	49.9	56.0
95th Queue (m)	74.1	39.3	72.6	61.3	22.5	73.1	55.5	11.9	69.0	76.6	82.2
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			1	0							

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	83.6	57.4	28.2	51.9	69.0	82.6	100.2	40.0	55.9	68.7	74.4
Average Queue (m)	18.1	36.5	23.4	9.1	23.5	34.4	48.4	60.9	19.4	21.3	26.3	34.9
95th Queue (m)	39.8	67.3	47.9	20.6	41.1	61.7	75.8	89.1	35.4	46.1	54.4	63.7
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	1	11	0			0			0	0		
Queuing Penalty (veh)	1	5	0			0			1	0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	217.5	340.2	343.2	96.8	100.9	110.4	41.4	43.0	39.3
Average Queue (m)	175.5	324.7	328.6	59.6	62.8	72.5	14.2	15.6	18.9
95th Queue (m)	282.5	392.5	363.2	89.2	92.8	103.0	30.3	32.6	36.6
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)		66	69						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	1	20							
Queuing Penalty (veh)	1	49							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	126.2	142.9	143.5	77.3	88.9	106.6	110.5	86.1	90.8	96.5
Average Queue (m)	78.5	94.0	60.6	36.7	37.8	47.0	53.3	50.2	52.1	54.3
95th Queue (m)	110.0	125.9	109.7	73.7	65.7	78.3	86.5	78.7	80.5	84.1
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			4	0						
Queuing Penalty (veh)			9	1						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	192.8	173.5	97.9	130.7	150.2	53.5	113.0	132.2	147.5	57.5	87.4
Average Queue (m)	75.3	104.5	94.8	49.6	43.1	66.5	16.1	41.9	47.7	53.7	30.5	71.7
95th Queue (m)	134.1	188.5	171.2	100.5	94.3	133.6	41.5	93.8	103.4	119.0	67.8	104.6
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)		6	1			0						
Queuing Penalty (veh)		0	0			0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	9	10		1			0	9		13	2	30
Queuing Penalty (veh)	20	18		1			0	8		49	9	70

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	188.2	148.8	89.2	39.2
Average Queue (m)	71.7	39.1	24.2	13.0
95th Queue (m)	184.3	114.3	58.0	30.5
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0			
Queuing Penalty (veh)	0			

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.4	255.1	228.2	57.5	54.8	60.1	53.2	82.4	329.6	333.2	62.5	82.4
Average Queue (m)	72.0	127.2	92.6	34.7	22.6	22.0	22.4	70.8	256.8	254.8	38.8	67.0
95th Queue (m)	105.5	269.3	244.2	64.9	44.5	46.4	40.8	101.0	391.8	393.4	82.1	100.8
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)		2	2						22	24		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	8	23	8	5				13	44	56	0	7
Queuing Penalty (veh)	24	73	20	8				77	95	74	1	26

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	194.1	179.5	185.6	107.5
Average Queue (m)	106.0	103.0	101.9	41.2
95th Queue (m)	182.6	172.9	174.0	118.0
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	25		21	0
Queuing Penalty (veh)	58		32	1

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	EB	SB
Directions Served	LT	TR	LTR
Maximum Queue (m)	18.6	5.2	11.3
Average Queue (m)	3.3	0.2	4.6
95th Queue (m)	12.3	3.1	11.7
Link Distance (m)	623.6	623.6	98.9
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 2368

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	100.4	119.9	256.6	256.6	258.5	187.5	172.3	209.9	281.1	279.7	278.3	222.5
Average Queue (m)	75.0	88.4	248.3	234.0	227.5	61.0	123.4	154.3	270.7	264.5	263.1	58.7
95th Queue (m)	118.4	143.4	279.5	275.4	275.9	193.5	183.3	231.4	284.0	289.2	291.0	209.6
Link Distance (m)			250.5	250.5	250.5				271.7	271.7	271.7	
Upstream Blk Time (%)			87	34	24				75	44	56	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	5	31	80		80	1	3	6	85		85	0
Queuing Penalty (veh)	13	79	156		263	2	17	33	436		234	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.4	149.9	1916.4	1919.8	1933.4	87.0	142.4	149.9	219.2	203.9	46.3	35.9
Average Queue (m)	133.4	147.9	1367.9	1348.6	1313.0	15.5	132.1	148.0	208.3	40.1	5.9	4.0
95th Queue (m)	143.3	150.2	2305.8	2331.2	2350.2	69.7	147.5	151.8	215.9	163.3	36.3	24.2
Link Distance (m)			1956.6	1956.6	1956.6				208.6	208.6	208.6	
Upstream Blk Time (%)			17	16	27				95	0		
Queuing Penalty (veh)			142	128	225				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	61	94	1		2	0	52	96	0			
Queuing Penalty (veh)	229	352	6		9	0	141	262	0			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	130.2	123.6	66.5	331.5	349.9	359.4	87.5	77.0	98.8	359.7	351.6
Average Queue (m)	57.0	94.4	74.1	31.8	98.2	148.6	156.6	58.5	36.8	49.5	125.6	130.6
95th Queue (m)	73.5	149.5	141.3	62.3	308.1	412.7	426.1	116.2	70.2	94.6	416.8	417.9
Link Distance (m)		120.5	120.5		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		35	4		0	7	13				8	6
Queuing Penalty (veh)		0	0		2	43	80				61	43
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	50	8					1	31	0	0	20	
Queuing Penalty (veh)	104	17					7	94	0	0	82	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	349.0	57.8	164.8	156.0	143.5
Average Queue (m)	132.4	29.5	47.6	33.5	33.3
95th Queue (m)	421.4	74.9	158.7	117.8	108.7
Link Distance (m)	519.9		1956.6	1956.6	1956.6
Upstream Blk Time (%)	9				
Queuing Penalty (veh)	64				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		21	3		
Queuing Penalty (veh)		69	8		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LT	R	LTR
Maximum Queue (m)	6.7	60.5	57.1	41.1	140.6	150.0	153.1	56.9	10.6	10.1
Average Queue (m)	0.3	19.1	12.6	13.0	60.7	70.7	82.0	19.8	3.5	2.0
95th Queue (m)	3.0	47.5	38.3	32.4	169.5	174.4	180.4	48.7	10.7	7.8
Link Distance (m)		492.0	492.0	492.0	234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)					6	7	9			
Queuing Penalty (veh)					37	43	56			
Storage Bay Dist (m)	30.0									
Storage Blk Time (%)		4			9					
Queuing Penalty (veh)		0			0					

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	T	TR	L	T	T	T	L	R
Maximum Queue (m)	1.0	7.0	2.7	17.2	41.8	44.6	44.7	30.7	16.8
Average Queue (m)	0.0	0.3	0.1	1.8	10.6	10.9	11.2	8.5	8.3
95th Queue (m)	0.7	4.3	1.4	10.7	61.5	63.1	64.9	21.6	15.3
Link Distance (m)	234.5	234.5	234.5		99.4	99.4	99.4	114.8	114.8
Upstream Blk Time (%)					5	7	8		
Queuing Penalty (veh)					28	40	49		
Storage Bay Dist (m)				30.0					
Storage Blk Time (%)				0	8				
Queuing Penalty (veh)				0	2				

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	46.2	12.4	9.9	5.9	115.2	123.8	122.8	17.9	139.5
Average Queue (m)	19.5	0.5	0.4	0.2	21.5	23.1	26.4	4.5	54.6
95th Queue (m)	38.2	7.8	4.4	2.7	132.8	137.8	141.1	13.0	126.4
Link Distance (m)		99.4	99.4	99.4	272.4	272.4	272.4	145.8	217.4
Upstream Blk Time (%)					1	2	2		1
Queuing Penalty (veh)					8	14	12		0
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	0								
Queuing Penalty (veh)	0								

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	66.6	55.6	53.5	34.4	157.6	173.8	177.3	32.4	194.3
Average Queue (m)	36.0	16.9	11.4	12.5	58.1	84.2	98.8	15.0	98.8
95th Queue (m)	66.3	62.6	35.3	26.6	110.3	140.9	151.2	29.0	173.9
Link Distance (m)		272.4	272.4	272.4	226.4	226.4	226.4	142.4	302.4
Upstream Blk Time (%)					0	0	0		0
Queuing Penalty (veh)					0	2	3		0
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	9	0							
Queuing Penalty (veh)	15	0							

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	EB	EB	WB	WB	WB	SB
Directions Served	L	T	T	T	T	TR	R
Maximum Queue (m)	20.9	2.2	2.8	4.5	26.2	27.6	24.7
Average Queue (m)	7.6	0.1	0.1	0.2	1.0	1.2	10.7
95th Queue (m)	17.7	1.5	2.0	3.2	11.8	13.5	20.0
Link Distance (m)		226.4	226.4	171.6	171.6	171.6	174.7
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (m)	100.0						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	12.0	6.7	4.1	12.6
Average Queue (m)	1.9	0.2	0.1	3.6
95th Queue (m)	8.0	3.6	2.1	11.0
Link Distance (m)		182.0	182.0	132.5
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	15.7	9.2	23.7	17.6	61.1
Average Queue (m)	6.4	0.5	1.6	2.0	25.8
95th Queue (m)	15.1	5.9	10.5	9.6	56.6
Link Distance (m)		441.5	441.5	441.5	209.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	26.0	8.5	5.0	14.2
Average Queue (m)	11.2	0.3	0.3	5.3
95th Queue (m)	22.1	4.4	2.6	13.5
Link Distance (m)	142.6	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	91.1	109.2	117.4	164.9	142.0	87.9	42.4	41.9	47.0
Average Queue (m)	37.2	55.4	77.1	40.7	36.1	38.6	20.8	24.8	25.5
95th Queue (m)	74.8	101.5	122.2	125.3	87.0	66.5	35.5	39.7	44.1
Link Distance (m)	841.0	841.0		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			7	0					
Queuing Penalty (veh)			46	2					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	14.9	1.3	7.9	4.9	56.1	92.8
Average Queue (m)	2.0	0.1	0.6	0.2	27.5	37.3
95th Queue (m)	8.7	1.2	4.2	2.6	48.9	69.8
Link Distance (m)	96.0	96.0	841.0	841.0	142.0	177.5
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	22.5	13.0	290.1	293.1	84.6	90.9
Average Queue (m)	4.4	0.6	96.4	100.0	48.1	54.0
95th Queue (m)	13.4	6.7	283.8	289.5	108.4	120.3
Link Distance (m)	397.0	397.0	621.4	621.4	92.7	97.3
Upstream Blk Time (%)					31	42
Queuing Penalty (veh)					0	0
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	141.5	130.7	97.4	404.4	404.6	84.4	180.5	183.9	183.2	40.0	75.7
Average Queue (m)	90.3	129.0	76.7	78.7	354.7	355.9	34.9	34.4	37.5	43.1	11.7	20.4
95th Queue (m)	105.2	158.6	154.6	129.5	466.0	468.9	72.8	119.7	119.6	123.7	29.3	56.5
Link Distance (m)		126.1	126.1		397.0	397.0		602.4	602.4	602.4		473.0
Upstream Blk Time (%)		87	1		32	33						
Queuing Penalty (veh)		0	0		188	198						
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	95	5		1	68		2	2				0
Queuing Penalty (veh)	88	10		4	154		12	9				0

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	88.5	93.0
Average Queue (m)	30.1	37.4
95th Queue (m)	70.8	78.0
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	68.8	94.0	25.2	219.4	224.9	224.6	32.8	41.1	50.3	52.8
Average Queue (m)	27.3	71.7	5.2	66.3	71.5	77.3	10.7	8.3	12.5	16.4
95th Queue (m)	59.1	107.9	20.2	284.8	287.8	292.2	25.1	29.7	39.5	46.6
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)	1	19		3	4	4				
Queuing Penalty (veh)	0	0		25	27	29				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				11						
Queuing Penalty (veh)				5						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	67.4	160.4	41.0	89.6	84.0	69.4	35.7	47.5	54.0
Average Queue (m)	47.2	86.4	16.8	59.0	54.1	46.0	14.5	29.5	32.8
95th Queue (m)	81.3	157.1	31.4	82.5	76.8	64.7	31.2	44.0	49.3
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)		8							
Queuing Penalty (veh)		0							
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)	0	27							
Queuing Penalty (veh)	2	43							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	303.2	304.1	167.5	85.4	68.3	58.1	152.3	151.1	175.1
Average Queue (m)	282.6	282.3	161.7	50.5	42.9	34.4	91.7	104.0	120.5
95th Queue (m)	339.4	337.5	182.1	73.2	61.8	54.0	141.1	153.3	172.5
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	26	22							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		21	1						
Queuing Penalty (veh)		230	30						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	73.9	39.8	82.1	73.1	27.2	94.7	79.0	23.1	87.2	93.6	92.0
Average Queue (m)	35.8	15.0	46.0	29.4	11.2	46.4	23.6	4.2	50.3	55.0	52.1
95th Queue (m)	61.6	32.0	72.9	65.4	21.8	76.4	55.1	13.5	76.6	83.5	79.6
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			1	0							
Queuing Penalty (veh)			1	0							

Intersection: 120: Apleby Line/Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	163.9	72.4	140.4	59.4	79.8	85.8	92.0	41.6	99.1	121.3	124.3
Average Queue (m)	34.2	81.9	68.9	127.5	28.0	39.9	45.8	52.5	10.1	44.7	52.7	58.3
95th Queue (m)	58.6	191.1	84.8	160.0	51.1	69.0	75.9	83.3	33.4	87.0	100.7	107.1
Link Distance (m)		335.4		129.0		210.2	210.2	210.2		602.4	602.4	602.4
Upstream Blk Time (%)				41								
Queuing Penalty (veh)				0								
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	24	30	18	40	0	2				4		
Queuing Penalty (veh)	53	20	77	122	0	6				2		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	158.6	167.9	172.8	81.5	76.4	84.0	60.4	62.7	75.3
Average Queue (m)	117.1	154.1	163.4	52.2	43.6	46.7	38.4	43.3	50.0
95th Queue (m)	174.1	178.7	169.0	75.5	66.9	72.5	56.6	60.5	68.4
Link Distance (m)		157.2	157.2	311.3	311.3	311.3	210.2	210.2	210.2
Upstream Blk Time (%)	0	32	75						
Queuing Penalty (veh)	0	0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	0	32							
Queuing Penalty (veh)	1	183							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	116.2	139.4	132.4	77.4	63.6	65.6	72.4	66.9	77.4	83.5
Average Queue (m)	74.6	91.3	64.1	45.6	35.8	38.9	43.6	34.6	38.2	44.3
95th Queue (m)	109.2	126.8	110.4	79.7	55.9	59.3	66.6	57.3	64.5	74.0
Link Distance (m)		200.6	200.6		319.4	319.4	319.4	311.3	311.3	311.3
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			3	0						
Queuing Penalty (veh)			9	1						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	158.4	153.1	127.4	152.8	155.3	53.6	97.6	98.7	114.0	57.5	47.8
Average Queue (m)	121.6	149.7	87.0	106.4	142.2	138.7	20.1	35.8	38.8	41.7	17.6	19.1
95th Queue (m)	124.0	155.5	171.8	158.7	154.5	179.6	43.7	84.5	88.1	96.2	52.3	36.8
Link Distance (m)		145.6	145.6		140.6	140.6		576.9	576.9	576.9		
Upstream Blk Time (%)		88	6		56	66						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	91	1		22	29		1	4		8	0	
Queuing Penalty (veh)	126	2		66	137		4	5		15	1	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	77.6	109.3	121.9	80.0
Average Queue (m)	34.1	49.4	58.6	18.8
95th Queue (m)	72.9	106.5	122.6	62.2
Link Distance (m)	319.4	319.4	319.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0		5	0
Queuing Penalty (veh)	0		15	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (m)	91.4	148.0	175.5	57.5	86.5	102.0	53.1	82.4	226.7	211.8	77.0	28.5
Average Queue (m)	69.4	91.7	94.8	54.3	43.6	50.6	18.1	82.3	212.3	125.4	18.8	4.9
95th Queue (m)	101.0	140.5	184.5	67.4	72.0	87.4	37.5	82.4	244.4	264.2	51.9	16.8
Link Distance (m)		173.2	173.2			244.6	244.6		208.2	208.2	208.2	
Upstream Blk Time (%)		0	4						82	0		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0				55.0
Storage Blk Time (%)	1	11	3	37	0	1		91	4		1	
Queuing Penalty (veh)	2	27	13	43	0	4		202	10		1	

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (m)	81.7	487.8	518.7	533.3	107.5
Average Queue (m)	22.5	199.2	382.5	430.4	107.5
95th Queue (m)	57.7	485.8	560.2	567.8	107.8
Link Distance (m)		576.9	576.9	576.9	
Upstream Blk Time (%)			0	2	
Queuing Penalty (veh)			1	17	
Storage Bay Dist (m)	75.0				100.0
Storage Blk Time (%)	0	7		6	76
Queuing Penalty (veh)	0	13		68	356

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	SB
Directions Served	LT	LTR
Maximum Queue (m)	11.3	25.8
Average Queue (m)	1.5	11.7
95th Queue (m)	7.0	19.1
Link Distance (m)	621.4	110.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 6420

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	95.2	119.9	216.4	214.9	214.9	187.5	199.9	210.0	251.9	245.9	211.2	112.1
Average Queue (m)	67.0	92.8	203.2	188.0	179.0	73.7	189.7	208.4	244.3	124.4	79.0	13.6
95th Queue (m)	103.7	140.1	244.3	236.3	237.7	196.5	205.6	212.6	256.1	256.0	177.8	58.9
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			66	12	8				89	0	0	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	3	13	80		40	4	25	92	16		0	0
Queuing Penalty (veh)	7	33	182		150	10	68	248	75		1	0

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.4	149.9	1967.8	1964.9	1897.4	83.3	142.5	149.9	262.1	247.0	63.6	35.2
Average Queue (m)	134.0	148.3	1303.5	1261.3	1159.4	14.0	134.0	148.7	254.7	85.5	8.6	3.7
95th Queue (m)	147.5	154.6	2258.5	2273.2	2212.0	50.7	146.7	150.9	265.8	265.5	40.4	18.4
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)			14	11	17				91	0		
Queuing Penalty (veh)			99	74	121				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	44	92			0	0	50	93				
Queuing Penalty (veh)	110	229			0	0	138	253				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	166.8	157.8	80.9	272.3	289.1	304.2	87.4	52.0	97.8	385.8	387.7
Average Queue (m)	57.1	116.3	83.9	40.7	53.9	69.5	73.4	28.9	25.2	39.2	89.5	95.6
95th Queue (m)	75.2	204.3	180.4	75.3	211.5	253.5	268.7	89.1	46.1	81.4	315.0	317.1
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		39	1		0	0	4				3	3
Queuing Penalty (veh)		0	0		2	0	16				19	20
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	68	1			0			14		0	13	
Queuing Penalty (veh)	116	2			0			27		0	39	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	389.0	62.4	186.0	156.8	122.2
Average Queue (m)	94.0	31.2	49.8	36.6	35.6
95th Queue (m)	318.9	71.5	168.2	116.4	97.7
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)	4				
Queuing Penalty (veh)	21				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		20	1		
Queuing Penalty (veh)		76	3		

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	30.4	1.7	3.4	4.8	14.9	20.6	15.2	15.1	50.2
Average Queue (m)	11.8	0.1	0.1	0.2	0.6	1.0	1.7	5.3	19.4
95th Queue (m)	24.7	1.2	1.7	2.5	6.2	8.2	8.3	13.3	38.3
Link Distance (m)		98.6	98.6	98.6	270.6	270.6	270.6	110.0	267.2
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	44.0	34.3	39.1	42.9	49.0	64.9	73.0	22.6	102.5
Average Queue (m)	14.6	13.1	15.9	18.7	24.1	33.2	42.5	8.1	53.8
95th Queue (m)	30.9	28.1	31.2	36.1	43.7	56.7	69.2	18.7	87.5
Link Distance (m)		270.6	270.6	270.6	225.8	225.8	225.8	107.0	225.6
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	0								
Queuing Penalty (veh)	0								

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	14.3	11.5	8.0	40.8
Average Queue (m)	4.3	0.5	0.5	14.8
95th Queue (m)	12.2	5.4	4.1	29.6
Link Distance (m)		446.2	446.2	209.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	23.4	11.3	8.1	11.2
Average Queue (m)	12.3	0.4	0.3	2.7
95th Queue (m)	21.0	4.3	3.2	9.6
Link Distance (m)	142.7	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	36.5	32.6	62.5	33.8	43.0	44.3	31.0	30.7	39.8
Average Queue (m)	15.5	18.0	27.5	11.0	15.4	18.4	14.8	16.5	16.6
95th Queue (m)	30.0	28.8	48.1	26.3	34.0	38.7	28.3	30.2	33.9
Link Distance (m)	841.1	841.1		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	9.7	1.3	3.1	2.5	20.1	26.2
Average Queue (m)	1.0	0.0	0.2	0.1	9.3	12.7
95th Queue (m)	5.5	0.9	1.9	1.7	16.8	21.2
Link Distance (m)	103.3	103.3	841.1	841.1	142.0	127.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	74.6	54.2	48.3	33.3	44.4	53.3	53.1	68.3	66.0	75.1	33.6	91.2
Average Queue (m)	35.0	14.4	22.2	14.8	22.7	29.2	24.3	26.4	29.7	35.5	8.4	36.2
95th Queue (m)	63.2	36.9	41.0	28.7	38.2	46.0	44.5	50.6	55.3	64.3	23.2	80.2
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	0											3
Queuing Penalty (veh)	0											2

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	107.2	109.0
Average Queue (m)	46.8	53.0
95th Queue (m)	94.5	101.3
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	43.2	93.7	24.4	160.3	165.0	169.0	25.2	56.6	70.2	77.9
Average Queue (m)	16.4	57.1	4.7	33.4	35.7	40.5	8.8	18.2	27.7	32.9
95th Queue (m)	32.2	89.7	15.8	119.1	122.7	128.5	20.1	43.2	58.1	65.4
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		3		0	0	0				
Queuing Penalty (veh)		0		0	0	0				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				4						
Queuing Penalty (veh)				1						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	16.5	30.4	27.0	32.8	30.2	30.6	17.2	22.2	28.0
Average Queue (m)	4.2	11.8	10.3	9.9	8.5	8.8	2.0	3.9	7.4
95th Queue (m)	12.1	22.0	20.9	29.0	24.8	25.6	9.6	14.2	21.9
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	304.6	304.3	167.5	57.6	49.8	35.9	42.1	35.9	39.9
Average Queue (m)	294.8	295.4	166.9	31.4	25.3	17.6	21.1	20.3	22.5
95th Queue (m)	300.7	300.3	170.9	49.3	43.2	30.6	35.5	33.3	36.8
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	52	44							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		40	2						
Queuing Penalty (veh)		259	25						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	51.8	52.9	52.6	46.3	37.1	69.0	59.5	11.4	70.5	75.0	70.7
Average Queue (m)	27.9	26.6	30.3	9.1	19.5	34.5	16.4	2.0	35.5	39.1	38.7
95th Queue (m)	47.5	44.7	50.0	31.2	31.0	59.1	43.6	6.9	59.9	66.2	65.4
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0								
Queuing Penalty (veh)			0								

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	27.3	29.2	42.7	32.4	15.4	51.8	54.9	63.2	19.7	58.6	64.1	66.3
Average Queue (m)	11.0	11.4	17.6	14.9	4.9	22.4	25.1	30.0	5.6	16.6	18.9	24.0
95th Queue (m)	24.1	23.3	33.3	29.1	12.4	44.9	47.5	54.7	13.9	43.1	49.0	56.6
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)						0				0		
Queuing Penalty (veh)						0				0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	82.7	91.6	91.4	83.8	91.2	101.1	56.7	52.8	67.0
Average Queue (m)	42.6	57.6	46.1	40.2	48.0	56.2	20.5	21.8	23.4
95th Queue (m)	72.0	82.9	80.7	70.5	80.4	91.7	44.1	44.9	50.9
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	93.0	111.3	90.8	74.1	51.1	55.2	52.8	82.5	93.8	99.7
Average Queue (m)	58.7	72.6	43.9	24.4	17.9	21.8	23.7	43.4	49.8	56.1
95th Queue (m)	88.6	101.0	78.9	57.5	36.5	41.1	42.0	73.8	83.5	91.6
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			1	0						
Queuing Penalty (veh)			3	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	47.8	35.9	48.8	127.4	222.6	211.6	57.4	83.6	92.2	107.0	57.5	62.5
Average Queue (m)	25.5	13.0	17.8	127.4	213.2	144.2	17.5	54.8	59.4	63.0	37.3	22.7
95th Queue (m)	43.0	26.2	34.6	127.4	221.6	255.2	45.1	76.8	84.2	96.3	71.6	52.6
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)					88	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)				93	1			14		16	0	0
Queuing Penalty (veh)				164	3			12		45	2	0

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	104.6	114.5	120.0	35.7
Average Queue (m)	37.6	48.6	55.5	13.3
95th Queue (m)	109.8	125.3	133.0	48.0
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)		0	0	
Queuing Penalty (veh)		0	1	
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	3		5	0
Queuing Penalty (veh)	5		6	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	89.6	122.8	160.8	57.5	69.2	61.4	38.6	82.4	334.5	333.7	62.5	82.4
Average Queue (m)	54.1	67.0	41.3	40.6	28.0	19.9	18.4	80.4	262.7	255.0	31.3	67.3
95th Queue (m)	88.3	106.3	120.3	65.6	53.8	44.2	33.7	93.3	409.7	407.6	77.0	112.5
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)									34	22		
Queuing Penalty (veh)									0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	1	5	0	12	1			56	15	40	0	0
Queuing Penalty (veh)	1	12	0	12	1			362	45	41	0	0

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	452.4	467.4	471.8	107.5
Average Queue (m)	313.3	330.1	344.6	106.1
95th Queue (m)	508.6	523.2	531.6	122.4
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)	2	2	3	
Queuing Penalty (veh)	9	12	16	
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	73		79	1
Queuing Penalty (veh)	96		336	4

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	SB
Directions Served	LT	LTR
Maximum Queue (m)	6.7	11.5
Average Queue (m)	0.8	5.3
95th Queue (m)	4.6	12.7
Link Distance (m)	614.1	115.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 3614

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	76.9	119.9	219.5	216.5	214.2	171.2	199.2	209.4	246.0	218.5	140.2	37.4
Average Queue (m)	38.5	82.5	182.3	166.6	143.8	89.7	152.7	166.4	145.9	102.9	42.1	13.1
95th Queue (m)	69.1	146.4	251.7	247.7	244.8	190.9	233.4	246.9	302.0	230.9	108.7	28.4
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			29	15	8				27	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)		0	47		18	1	11	33	7			
Queuing Penalty (veh)		0	109		85	5	24	71	28			

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	94.0	103.0	107.3	114.1	461.9	97.4	111.1	132.0	176.0	146.4	116.4	28.8
Average Queue (m)	34.5	41.0	33.1	39.4	53.3	38.3	60.2	73.7	91.7	74.0	48.3	8.6
95th Queue (m)	83.0	91.3	84.7	88.0	314.4	79.9	121.8	133.8	182.8	149.8	98.0	21.0
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)					0				4			
Queuing Penalty (veh)					0				0			
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	1	2					4	7	0			
Queuing Penalty (veh)	2	5					13	20	1			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	169.6	170.5	119.4	148.6	131.6	36.6	15.9	62.4	97.2	114.3	124.3
Average Queue (m)	46.2	160.6	161.5	89.2	51.5	28.0	22.5	0.9	23.3	32.3	64.1	73.7
95th Queue (m)	75.8	173.8	171.4	150.2	187.1	103.4	35.1	10.1	47.0	63.3	99.9	110.3
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		58	68									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	2	52		23	0					0	0	
Queuing Penalty (veh)	7	94		27	0					0	1	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	130.6	62.4	485.2	466.5	450.2
Average Queue (m)	79.8	60.7	273.0	255.6	197.9
95th Queue (m)	117.1	72.1	499.2	474.7	415.4
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		67	12		
Queuing Penalty (veh)		344	51		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	LTR
Maximum Queue (m)	19.6	58.1	53.8	66.1	19.2	35.7	45.2	47.5	79.2	27.2	17.2
Average Queue (m)	1.2	32.6	28.9	36.9	7.3	15.3	17.6	25.0	41.4	11.3	4.2
95th Queue (m)	8.6	50.5	47.6	57.5	15.9	30.4	35.4	43.7	67.2	20.9	13.1
Link Distance (m)		492.0	492.0	492.0		234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)	30.0				80.0						
Storage Blk Time (%)		11									
Queuing Penalty (veh)		1									

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	WB	WB	NB	NB
Directions Served	T	TR	L	T	L	R
Maximum Queue (m)	11.8	18.5	37.4	56.1	33.6	37.5
Average Queue (m)	0.4	3.3	23.5	4.0	15.4	17.2
95th Queue (m)	4.9	11.9	37.8	27.7	29.6	29.0
Link Distance (m)	234.5	234.5		99.3	114.8	114.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)			30.0			
Storage Blk Time (%)			4			
Queuing Penalty (veh)			12			

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	WB	WB	NB	SB
Directions Served	L	T	T	LT	TR	LTR	LTR
Maximum Queue (m)	32.8	2.9	3.2	1.6	9.8	18.6	232.6
Average Queue (m)	13.0	0.1	0.1	0.1	1.0	6.3	123.4
95th Queue (m)	24.9	2.0	2.3	1.1	5.2	15.3	232.5
Link Distance (m)		99.3	99.3	270.1	270.1	122.9	267.2
Upstream Blk Time (%)							3
Queuing Penalty (veh)							0
Storage Bay Dist (m)	60.0						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	59.7	59.5	61.9	58.5	41.9	41.2	61.0	25.0	242.8
Average Queue (m)	28.5	17.0	22.4	28.6	22.3	21.2	33.3	9.9	231.8
95th Queue (m)	52.7	39.4	42.0	48.0	38.6	39.1	55.7	21.2	237.5
Link Distance (m)		270.1	270.1	270.1	225.8	225.8	225.8	114.4	225.6
Upstream Blk Time (%)									80
Queuing Penalty (veh)									0
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	2								
Queuing Penalty (veh)	6								

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	SB
Directions Served	L	R
Maximum Queue (m)	16.6	17.8
Average Queue (m)	3.6	8.2
95th Queue (m)	11.9	14.7
Link Distance (m)		174.7
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (m)	8.4	19.1
Average Queue (m)	0.4	8.0
95th Queue (m)	3.5	15.9
Link Distance (m)		132.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)	100.0	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	14.7	3.3	1.3	72.6
Average Queue (m)	2.3	0.1	0.0	30.1
95th Queue (m)	9.4	2.4	0.9	55.4
Link Distance (m)		446.2	446.2	209.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	SB	SB	SB
Directions Served	LR	TR	L	T	T
Maximum Queue (m)	13.3	1.3	10.3	1.0	2.7
Average Queue (m)	5.5	0.0	1.9	0.0	0.1
95th Queue (m)	14.0	0.9	7.9	0.7	1.9
Link Distance (m)	142.7	107.4		446.2	446.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)			145.0		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	105.2	162.8	117.5	244.0	184.9	60.6	71.4	83.6	90.7
Average Queue (m)	21.9	83.6	108.5	138.3	31.3	9.5	43.2	48.9	54.3
95th Queue (m)	68.9	151.3	140.2	304.9	130.2	38.5	65.5	76.0	86.0
Link Distance (m)	840.9	840.9		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			59	1					
Queuing Penalty (veh)			113	8					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	21.8	5.9	14.7	6.1	34.6	42.9
Average Queue (m)	6.3	0.4	2.7	0.3	13.2	18.2
95th Queue (m)	16.2	2.9	10.1	2.7	24.5	33.6
Link Distance (m)	91.5	91.5	840.9	840.9	142.0	174.4
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	12.9	11.5	19.4	1.3	23.7	40.3
Average Queue (m)	1.1	0.5	2.2	0.0	5.7	17.2
95th Queue (m)	6.7	4.9	9.7	0.9	16.9	31.2
Link Distance (m)	397.0	397.0	623.6	623.6	92.7	97.3
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	198.1	198.4	97.5	246.5	198.7	76.3	111.1	119.5	119.6	62.5	115.8
Average Queue (m)	71.4	182.3	183.5	87.4	150.2	56.9	32.1	40.8	47.8	55.1	29.0	34.0
95th Queue (m)	113.4	214.6	210.9	123.6	295.6	144.4	69.6	96.6	109.2	121.2	54.3	81.6
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)		67	64									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	14	61		73	7		2	0			0	0
Queuing Penalty (veh)	35	124		43	10		6	0			2	1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	134.8	103.3
Average Queue (m)	40.8	45.1
95th Queue (m)	94.5	94.4
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	37.4	97.9	57.3	89.3	90.6	96.0	26.8	60.9	63.8	71.8
Average Queue (m)	14.6	66.0	14.1	53.0	56.7	59.9	10.3	30.7	36.5	40.4
95th Queue (m)	32.6	100.7	38.9	83.7	85.3	86.3	21.2	53.0	59.6	65.0
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		7								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)			1	6						
Queuing Penalty (veh)			3	3						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	25.2	61.5	110.4	75.8	55.4	28.6	36.7	54.9	63.5
Average Queue (m)	10.0	23.8	61.5	17.1	10.1	8.5	12.1	29.7	38.3
95th Queue (m)	21.5	45.7	102.4	47.6	34.3	21.3	29.6	47.1	57.2
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)		0	0						
Queuing Penalty (veh)		0	1						

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	305.1	305.8	167.5	66.6	55.8	45.2	92.5	61.5	70.1
Average Queue (m)	296.1	296.4	166.8	33.1	25.7	20.7	47.8	29.0	27.9
95th Queue (m)	302.2	302.7	170.7	54.6	43.5	35.7	75.4	52.3	54.0
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	60	58							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		55	2						
Queuing Penalty (veh)		399	24						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	96.0	61.0	93.1	73.6	28.6	116.2	92.4	45.6	104.3	101.9	106.9
Average Queue (m)	53.8	23.3	53.1	35.9	14.4	58.2	37.9	6.3	61.6	65.6	68.6
95th Queue (m)	86.9	47.0	81.1	72.7	24.9	94.3	79.5	25.6	91.4	96.3	97.4
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			2	0							
Queuing Penalty (veh)			4	0							

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	97.4	54.1	35.1	51.5	75.8	88.1	100.9	54.6	59.1	63.6	76.4
Average Queue (m)	18.6	45.6	24.4	9.8	22.7	36.2	49.1	62.1	20.0	24.2	30.1	36.8
95th Queue (m)	41.5	82.8	45.6	23.3	41.4	65.1	78.2	92.2	38.4	49.5	55.7	65.4
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	1	19				0			0	0		
Queuing Penalty (veh)	1	10				1			1	0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	217.5	344.5	343.9	101.8	107.6	122.8	47.8	46.8	48.5
Average Queue (m)	180.6	333.4	333.6	65.9	70.4	79.5	21.0	18.9	21.5
95th Queue (m)	271.4	340.6	341.2	94.0	98.4	111.4	39.3	36.4	40.9
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)		73	72						
Queuing Penalty (veh)		0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	1	16							
Queuing Penalty (veh)	2	48							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	176.4	212.2	217.3	77.5	107.5	108.0	117.0	137.9	133.6	134.6
Average Queue (m)	98.4	118.6	92.7	53.2	52.1	56.5	60.8	70.0	70.4	68.1
95th Queue (m)	148.0	175.5	171.5	87.0	85.0	87.2	94.6	158.1	147.6	132.4
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)		0	0					0		
Queuing Penalty (veh)		0	0					0		
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)	0	1	8	1						
Queuing Penalty (veh)	0	3	21	3						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	189.6	174.6	106.5	121.0	142.4	57.2	115.5	119.9	127.0	57.5	87.4
Average Queue (m)	78.6	105.3	97.4	53.3	42.6	65.0	14.0	39.0	44.6	48.1	31.1	76.7
95th Queue (m)	139.9	187.0	172.0	107.1	97.0	118.2	35.8	86.0	95.2	102.0	66.9	104.9
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)		3	0									
Queuing Penalty (veh)		0	0									
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	7	10		2	1		0	9		13	2	42
Queuing Penalty (veh)	16	19		1	1		0	7		51	8	104

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	249.2	233.5	129.3	47.0
Average Queue (m)	116.9	73.8	28.8	14.7
95th Queue (m)	292.7	219.8	79.0	34.7
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)	3	0	0	
Queuing Penalty (veh)	26	3	0	
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	0			
Queuing Penalty (veh)	1			

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.5	294.1	286.8	57.5	63.4	67.8	66.7	82.4	334.4	337.1	62.5	82.4
Average Queue (m)	83.7	187.4	154.7	40.5	23.6	23.2	28.4	75.2	322.5	323.5	41.0	79.6
95th Queue (m)	107.4	348.5	350.0	70.5	48.2	50.2	54.4	101.3	346.0	350.7	83.1	96.9
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)		9	9						49	56		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	14	40	13	8	0	0		24	48	59	0	25
Queuing Penalty (veh)	48	137	38	14	0	0		154	113	87	1	107

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	308.6	300.0	302.6	107.5
Average Queue (m)	229.3	220.7	217.9	90.7
95th Queue (m)	345.1	338.6	339.4	151.8
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	50		72	0
Queuing Penalty (veh)	128		119	2

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	EB	SB
Directions Served	LT	TR	LTR
Maximum Queue (m)	17.6	10.1	9.8
Average Queue (m)	2.9	0.4	4.2
95th Queue (m)	10.8	4.6	11.1
Link Distance (m)	623.6	623.6	98.9
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 2957

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	106.6	119.9	260.1	257.4	262.8	187.5	139.2	209.9	282.2	279.5	277.4	222.5
Average Queue (m)	74.4	89.5	250.9	243.2	237.6	59.2	107.2	131.9	271.3	268.5	263.3	58.7
95th Queue (m)	114.1	139.9	257.5	260.1	261.7	192.8	154.5	211.0	280.7	282.2	282.5	212.5
Link Distance (m)			250.5	250.5	250.5				271.7	271.7	271.7	
Upstream Blk Time (%)			90	46	29				80	55	42	
Queuing Penalty (veh)			0	0	0				0	0	0	
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	9	33	91		86	1		0	88		86	0
Queuing Penalty (veh)	25	88	186		295	2		1	469		250	1

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.4	149.9	1963.0	1963.6	1984.8	94.6	142.4	149.9	216.8	198.4	65.4	33.6
Average Queue (m)	131.4	148.0	1372.9	1347.0	1313.9	15.2	129.8	148.3	209.5	38.3	5.2	2.9
95th Queue (m)	144.1	150.8	2373.7	2420.7	2469.0	73.3	144.9	151.3	215.2	162.3	38.1	18.3
Link Distance (m)			1956.6	1956.6	1956.6				208.6	208.6	208.6	
Upstream Blk Time (%)			21	21	33				95	0		
Queuing Penalty (veh)			180	179	287				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	41	95	0		8	0	40	96	0			
Queuing Penalty (veh)	159	373	3		37	2	116	277	0			

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.5	136.1	125.1	69.6	469.5	488.6	495.5	87.5	71.8	101.7	527.0	522.6
Average Queue (m)	60.5	110.9	86.3	30.7	114.0	154.6	183.7	61.9	32.0	43.6	156.8	161.2
95th Queue (m)	70.3	153.5	155.2	55.9	327.9	422.5	473.4	120.8	61.5	90.2	483.6	479.7
Link Distance (m)		120.5	120.5		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		52	10		0	4	13				9	9
Queuing Penalty (veh)		0	0		0	28	88				70	70
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	66	9			0		2	38		0	26	
Queuing Penalty (veh)	143	20			0		11	119		0	108	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	523.2	61.6	155.8	150.4	152.8
Average Queue (m)	162.6	24.0	32.4	26.5	26.1
95th Queue (m)	482.9	67.9	113.5	94.4	92.9
Link Distance (m)	519.9		1956.6	1956.6	1956.6
Upstream Blk Time (%)	9				
Queuing Penalty (veh)	71				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		13	1		
Queuing Penalty (veh)		42	4		

Intersection: 103: West School Driveway/Private Driveway & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	L	T	T	TR	T	T	TR	LT	R	LTR
Maximum Queue (m)	8.4	54.8	47.2	34.8	162.5	170.0	178.2	57.4	10.6	11.1
Average Queue (m)	0.4	18.1	12.1	12.1	57.9	68.8	80.4	18.2	2.8	2.4
95th Queue (m)	3.3	44.2	35.3	29.3	145.6	159.9	168.8	40.8	9.9	8.7
Link Distance (m)		492.0	492.0	492.0	234.5	234.5	234.5	139.4	139.4	40.0
Upstream Blk Time (%)					2	3	5			
Queuing Penalty (veh)					12	18	32			
Storage Bay Dist (m)	30.0									
Storage Blk Time (%)		4			6					
Queuing Penalty (veh)		0			0					

Intersection: 104: East School Driveway & Upper Middle Road

Movement	EB	EB	WB	WB	WB	WB	NB	NB
Directions Served	T	TR	L	T	T	T	L	R
Maximum Queue (m)	3.3	1.2	16.2	39.8	42.1	40.6	19.6	19.8
Average Queue (m)	0.1	0.0	1.8	4.2	4.8	5.2	7.5	8.8
95th Queue (m)	2.3	0.8	9.3	36.3	39.1	40.2	16.7	16.9
Link Distance (m)	234.5	234.5		99.4	99.4	99.4	114.8	114.8
Upstream Blk Time (%)				1	2	3		
Queuing Penalty (veh)				7	11	17		
Storage Bay Dist (m)			30.0					
Storage Blk Time (%)				2				
Queuing Penalty (veh)				0				

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	51.5	21.4	7.2	9.8	68.7	79.0	76.6	14.9	141.3
Average Queue (m)	20.8	1.2	0.2	0.4	2.5	4.6	8.0	4.7	64.9
95th Queue (m)	41.1	17.1	3.1	3.9	34.4	40.4	43.2	13.1	134.9
Link Distance (m)		99.4	99.4	99.4	272.4	272.4	272.4	145.8	217.4
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	1								
Queuing Penalty (veh)	1								

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	64.0	61.6	57.1	36.3	122.8	148.9	161.9	45.2	255.6
Average Queue (m)	35.6	12.9	11.1	11.9	56.4	79.8	95.9	18.2	157.4
95th Queue (m)	62.7	45.9	34.4	28.1	99.3	125.9	140.8	34.8	286.1
Link Distance (m)		272.4	272.4	272.4	226.4	226.4	226.4	142.4	302.4
Upstream Blk Time (%)									5
Queuing Penalty (veh)									0
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)	5								
Queuing Penalty (veh)	10								

Intersection: 107: Upper Middle Road & Baker Drive

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	R
Maximum Queue (m)	25.0	2.7	10.3	13.5	22.8
Average Queue (m)	7.8	0.1	0.3	0.8	11.0
95th Queue (m)	18.7	1.9	4.6	5.8	19.3
Link Distance (m)		171.6	171.6	171.6	174.7
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 108: Upper Middle Road & Deer Place

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (m)	12.9	2.5	13.7
Average Queue (m)	2.4	0.1	4.0
95th Queue (m)	9.2	1.8	11.5
Link Distance (m)		182.0	132.5
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	100.0		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	WB	SB
Directions Served	L	T	T	TR	LR
Maximum Queue (m)	18.7	4.0	22.7	20.6	99.2
Average Queue (m)	6.2	0.1	2.1	2.3	44.2
95th Queue (m)	15.1	2.8	11.9	11.0	89.3
Link Distance (m)		441.5	441.5	441.5	209.2
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)	100.0				
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	31.4	3.2	6.7	19.1
Average Queue (m)	12.3	0.1	0.2	6.1
95th Queue (m)	23.7	2.3	2.9	14.6
Link Distance (m)	142.6	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	110.8	139.7	117.4	158.5	101.4	66.5	38.3	50.8	51.9
Average Queue (m)	38.3	59.9	77.2	39.5	35.3	37.9	21.5	25.3	26.8
95th Queue (m)	79.7	111.5	125.2	115.9	74.3	59.2	35.1	39.7	45.0
Link Distance (m)	841.0	841.0		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)			7	0					
Queuing Penalty (veh)			52	0					

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	9.8	2.6	9.0	5.2	62.6	79.3
Average Queue (m)	1.9	0.1	0.6	0.2	25.9	36.6
95th Queue (m)	7.8	1.3	4.7	1.9	46.1	66.5
Link Distance (m)	96.0	96.0	841.0	841.0	142.0	177.5
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 114: Norjohn Court/Lampman Avenue & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	20.1	7.7	294.4	299.4	83.3	88.0
Average Queue (m)	3.6	0.3	96.9	99.8	43.3	44.9
95th Queue (m)	12.7	4.4	298.8	304.8	104.4	107.8
Link Distance (m)	397.0	397.0	621.4	621.4	92.7	97.3
Upstream Blk Time (%)					29	28
Queuing Penalty (veh)					0	0
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	92.5	140.9	130.4	97.4	403.9	405.8	85.4	108.5	116.8	116.2	29.7	63.0
Average Queue (m)	92.0	129.9	69.0	72.6	354.2	356.2	35.9	25.1	30.4	35.8	10.7	20.6
95th Queue (m)	94.8	152.4	145.2	126.6	462.8	461.1	73.2	73.3	76.6	82.8	23.9	49.9
Link Distance (m)		126.1	126.1		397.0	397.0		602.4	602.4	602.4		473.0
Upstream Blk Time (%)		93	1		28	30						
Queuing Penalty (veh)		0	0		175	184						
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	97	3		1	61		1	1				0
Queuing Penalty (veh)	94	6		4	144		7	3				0

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	82.0	86.8
Average Queue (m)	32.1	38.5
95th Queue (m)	69.3	77.9
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	69.2	94.0	15.4	271.8	281.4	285.3	27.8	44.0	54.7	59.0
Average Queue (m)	25.2	70.9	3.3	41.3	46.3	52.9	10.1	6.8	10.4	14.0
95th Queue (m)	55.8	101.9	10.7	183.1	187.5	193.2	23.2	28.7	36.7	43.4
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)	0	12		2	2	2				
Queuing Penalty (veh)	0	0		12	12	13				
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				8						
Queuing Penalty (veh)				4						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	67.4	161.0	37.6	80.7	79.3	74.5	39.8	48.2	55.6
Average Queue (m)	50.0	89.9	16.6	52.2	49.9	45.7	15.7	29.3	34.2
95th Queue (m)	82.7	165.4	32.1	74.6	72.9	68.3	34.5	45.2	51.1
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)		11							
Queuing Penalty (veh)		0							
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)	1	30							
Queuing Penalty (veh)	4	49							

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	300.9	305.9	167.5	92.5	82.0	68.6	259.4	265.9	276.5
Average Queue (m)	287.2	289.0	163.0	58.2	50.3	43.2	227.9	234.9	243.2
95th Queue (m)	327.3	324.5	178.5	82.0	72.3	64.1	254.7	267.3	276.8
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	24	22							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		21	1						
Queuing Penalty (veh)		276	38						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	70.7	41.9	91.0	74.0	33.6	98.0	84.4	44.6	104.4	105.4	100.0
Average Queue (m)	37.4	17.6	54.6	39.3	14.0	58.2	38.4	10.6	62.9	67.8	60.6
95th Queue (m)	64.1	34.6	78.6	71.4	26.0	88.0	72.9	31.2	93.5	95.3	86.1
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			1	0							
Queuing Penalty (veh)			3	0							

Intersection: 120: Apleby Line/Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	47.4	257.7	72.5	142.8	66.7	73.5	80.9	85.7	44.2	97.6	100.6	109.5
Average Queue (m)	37.3	109.2	69.1	133.6	30.3	40.9	45.9	52.6	9.2	45.4	52.4	58.2
95th Queue (m)	58.3	274.3	85.1	148.0	54.2	64.5	71.7	78.6	25.9	83.3	92.3	101.7
Link Distance (m)		335.4		129.0		210.2	210.2	210.2		602.4	602.4	602.4
Upstream Blk Time (%)		7		56								
Queuing Penalty (veh)		0		0								
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	40	28	21	48	0	1				3		
Queuing Penalty (veh)	91	20	99	153	2	4				2		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	158.9	168.2	171.0	106.8	92.2	95.9	78.6	74.7	82.5
Average Queue (m)	126.9	155.8	163.2	65.8	53.1	55.8	52.2	53.7	56.7
95th Queue (m)	170.7	179.9	167.8	93.7	80.8	83.7	70.9	73.2	77.6
Link Distance (m)		157.2	157.2	311.3	311.3	311.3	210.2	210.2	210.2
Upstream Blk Time (%)	0	39	77						
Queuing Penalty (veh)	0	0	0						
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)	0	39							
Queuing Penalty (veh)	1	265							

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	181.6	202.4	196.2	77.5	93.6	91.3	85.5	74.4	76.4	87.0
Average Queue (m)	97.5	116.3	95.5	60.9	48.4	46.7	50.5	40.7	43.7	47.5
95th Queue (m)	153.2	176.2	165.8	88.8	75.9	69.0	74.2	64.1	67.8	76.8
Link Distance (m)		200.6	200.6		319.4	319.4	319.4	311.3	311.3	311.3
Upstream Blk Time (%)		1	1							
Queuing Penalty (veh)		0	0							
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)	0	1	12	3						
Queuing Penalty (veh)	0	4	37	8						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	122.4	157.0	151.3	127.4	152.8	154.0	57.2	92.2	98.3	112.3	57.5	55.5
Average Queue (m)	121.4	149.4	93.4	112.1	141.9	137.0	20.6	33.0	37.7	39.4	19.2	20.3
95th Queue (m)	124.2	155.5	168.9	155.4	156.9	177.7	43.3	77.4	84.0	91.3	56.4	42.5
Link Distance (m)		145.6	145.6		140.6	140.6		576.9	576.9	576.9		
Upstream Blk Time (%)		92	5		60	55						
Queuing Penalty (veh)		0	0		0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)	93	2		39	25		0	4		7	0	
Queuing Penalty (veh)	135	7		124	125		1	5		15	0	

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	129.2	192.8	156.5	92.5
Average Queue (m)	38.0	50.2	59.8	18.3
95th Queue (m)	105.1	132.1	133.3	61.6
Link Distance (m)	319.4	319.4	319.4	
Upstream Blk Time (%)		0	0	
Queuing Penalty (veh)		1	2	
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	1		4	0
Queuing Penalty (veh)	1		12	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	T	R	L	T	T	T	R
Maximum Queue (m)	92.4	182.6	189.1	57.5	85.3	94.1	64.0	82.4	226.0	212.5	62.0	33.7
Average Queue (m)	82.9	149.0	159.8	55.6	46.7	52.0	21.1	82.3	214.7	134.6	19.8	4.8
95th Queue (m)	109.8	208.3	231.3	66.8	79.4	86.0	45.3	82.6	238.6	273.2	51.0	20.2
Link Distance (m)		173.2	173.2			244.6	244.6		208.2	208.2	208.2	
Upstream Blk Time (%)		9	43						89	0		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0				55.0
Storage Blk Time (%)	7	38	4	58	1	1		91	7		2	0
Queuing Penalty (veh)	19	102	22	74	3	3		223	19		2	0

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB	SB
Directions Served	L	T	T	T	R
Maximum Queue (m)	63.7	499.1	527.3	551.1	107.5
Average Queue (m)	22.0	199.6	383.3	441.2	107.5
95th Queue (m)	51.2	480.7	582.8	575.2	107.5
Link Distance (m)		576.9	576.9	576.9	
Upstream Blk Time (%)		0	0	1	
Queuing Penalty (veh)		0	1	10	
Storage Bay Dist (m)	75.0				100.0
Storage Blk Time (%)	0	3		4	77
Queuing Penalty (veh)	0	5		45	398

Intersection: 125: John Lucas Drive/Site Access A & Mainway

Movement	EB	SB
Directions Served	LT	LTR
Maximum Queue (m)	15.7	22.7
Average Queue (m)	1.6	11.5
95th Queue (m)	8.1	18.4
Link Distance (m)	621.4	110.6
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 6937

Intersection: 101: Appleby Line & Dundas Street

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	112.3	119.9	215.5	215.4	214.9	187.5	199.9	209.9	250.6	236.0	159.0	41.4
Average Queue (m)	87.4	104.4	211.0	191.0	175.8	80.9	189.7	208.7	244.2	99.1	52.0	9.0
95th Queue (m)	124.7	141.4	222.2	229.6	229.4	204.8	203.3	211.0	251.1	221.9	118.1	29.2
Link Distance (m)			210.3	210.3	210.3				243.8	243.8	243.8	
Upstream Blk Time (%)			80	8	5				93	0		
Queuing Penalty (veh)			0	0	0				0	0		
Storage Bay Dist (m)	105.0	105.0				180.0	190.0	190.0				215.0
Storage Blk Time (%)	12	44	75		38	1	32	95	6		0	
Queuing Penalty (veh)	30	114	179		151	3	92	269	30		1	

Intersection: 101: Appleby Line & Dundas Street

Movement	NB	NB	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R	L	L	T	T	T	R
Maximum Queue (m)	142.5	149.9	1974.2	1974.6	2000.7	86.4	142.5	149.9	263.6	248.1	53.9	34.2
Average Queue (m)	134.1	148.5	1290.2	1244.1	1193.3	13.4	131.5	148.4	254.0	82.5	5.2	2.9
95th Queue (m)	145.8	151.8	2269.0	2301.3	2353.6	53.9	147.5	151.4	261.2	261.6	29.4	16.8
Link Distance (m)			1969.5	1969.5	1969.5				253.1	253.1	253.1	
Upstream Blk Time (%)			16	14	21				92	0		
Queuing Penalty (veh)			120	100	156				0	0		
Storage Bay Dist (m)	135.0	135.0				120.0	135.0	135.0				180.0
Storage Blk Time (%)	49	92	0		0	0	30	93				
Queuing Penalty (veh)	128	241	1		2	0	85	267				

Intersection: 102: Appleby Line & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	TR	L	T	T	T	R	L	L	T	T
Maximum Queue (m)	62.4	169.4	160.9	94.7	377.4	401.9	422.6	87.5	61.8	107.4	494.9	497.5
Average Queue (m)	58.9	137.0	98.3	43.5	58.8	77.4	97.4	38.2	28.4	44.3	105.2	112.0
95th Queue (m)	73.5	213.7	197.9	85.2	223.0	266.6	319.7	102.4	54.7	87.9	355.1	356.6
Link Distance (m)		157.2	157.2		492.0	492.0	492.0				519.9	519.9
Upstream Blk Time (%)		55	2		0	1	3				4	4
Queuing Penalty (veh)		0	0		0	5	13				24	25
Storage Bay Dist (m)	55.0			125.0				80.0	100.0	100.0		
Storage Blk Time (%)	80	1		0	0			21		0	17	
Queuing Penalty (veh)	144	3		0	0			42		0	53	

Intersection: 102: Appleby Line & Upper Middle Road

Movement	NB	SB	SB	SB	SB
Directions Served	TR	L	T	T	TR
Maximum Queue (m)	497.4	62.3	115.5	103.3	109.5
Average Queue (m)	111.7	27.8	28.3	29.4	32.1
95th Queue (m)	358.7	63.4	84.4	76.7	82.0
Link Distance (m)	519.9		1969.5	1969.5	1969.5
Upstream Blk Time (%)	4				
Queuing Penalty (veh)	25				
Storage Bay Dist (m)		55.0			
Storage Blk Time (%)		9	1		
Queuing Penalty (veh)		37	2		

Intersection: 105: Quinte Street & Upper Middle Road

Movement	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	33.9	5.1	5.1	4.8	22.6	21.0	15.1	41.7
Average Queue (m)	13.0	0.2	0.2	0.2	1.6	2.4	5.8	17.6
95th Queue (m)	27.1	2.7	2.5	3.4	10.8	11.7	13.7	31.4
Link Distance (m)		98.6	98.6	270.6	270.6	270.6	110.0	267.2
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (m)	60.0							
Storage Blk Time (%)								
Queuing Penalty (veh)								

Intersection: 106: Sutton Drive & Upper Middle Road

Movement	EB	EB	EB	EB	WB	WB	WB	NB	SB
Directions Served	L	T	T	TR	LT	T	TR	LTR	LTR
Maximum Queue (m)	40.1	36.6	34.5	38.3	59.6	68.9	78.5	21.2	113.6
Average Queue (m)	14.9	12.8	16.2	18.9	25.8	37.9	46.6	8.1	58.2
95th Queue (m)	30.4	27.7	32.2	34.5	47.7	62.7	72.1	17.6	99.3
Link Distance (m)		270.6	270.6	270.6	225.8	225.8	225.8	107.0	225.6
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 109: Upper Middle Road & Blue Spruce Avenue

Movement	EB	WB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (m)	14.4	5.5	10.9	31.8
Average Queue (m)	4.2	0.4	0.7	13.7
95th Queue (m)	12.2	4.5	4.8	23.9
Link Distance (m)		446.2	446.2	209.2
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	100.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 110: Burloak Drive & Park Access

Movement	WB	NB	NB	SB
Directions Served	LR	T	TR	L
Maximum Queue (m)	26.0	3.4	7.0	9.0
Average Queue (m)	13.0	0.1	0.2	2.1
95th Queue (m)	22.6	2.4	3.1	8.2
Link Distance (m)	142.7	107.4	107.4	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)				145.0
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 112: Burloak Drive & Mainway

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	28.9	30.3	72.2	30.0	37.7	44.8	34.3	35.0	41.5
Average Queue (m)	12.5	17.8	31.4	10.9	16.1	18.3	16.8	18.4	19.0
95th Queue (m)	24.2	27.0	56.4	24.5	34.4	40.1	30.1	32.7	37.9
Link Distance (m)	841.1	841.1		431.0	431.0	431.0	569.1	569.1	569.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)			110.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 113: Sutton Drive & Mainway

Movement	EB	EB	WB	WB	NB	SB
Directions Served	LT	TR	LT	TR	LTR	LTR
Maximum Queue (m)	9.7	1.3	3.3	2.5	20.3	26.1
Average Queue (m)	1.1	0.0	0.3	0.2	9.1	12.3
95th Queue (m)	5.9	0.9	2.6	1.8	16.5	20.4
Link Distance (m)	103.3	103.3	841.1	841.1	142.0	127.8
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 115: Appleby Line & Mainway

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	TR	L	T
Maximum Queue (m)	75.5	34.9	52.4	35.6	43.3	51.1	46.7	59.8	65.8	71.2	41.3	83.7
Average Queue (m)	38.0	14.9	21.3	15.4	21.6	28.3	21.5	27.9	31.0	35.3	8.4	33.9
95th Queue (m)	68.8	29.2	39.2	29.2	36.8	44.8	38.5	53.1	57.4	63.9	23.0	71.7
Link Distance (m)		182.0	182.0		397.0	397.0		602.0	602.0	602.0		473.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	85.0			90.0			95.0				65.0	
Storage Blk Time (%)	0											2
Queuing Penalty (veh)	0											1

Intersection: 115: Appleby Line & Mainway

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	94.8	103.8
Average Queue (m)	43.3	48.9
95th Queue (m)	84.9	93.0
Link Distance (m)	473.0	473.0
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 116: Appleby Line & Corporate Drive

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	52.3	94.0	24.1	188.8	201.3	199.2	22.4	62.3	68.6	75.9
Average Queue (m)	19.7	57.1	4.9	36.1	38.7	42.7	8.1	19.7	28.2	33.8
95th Queue (m)	40.4	90.5	17.6	115.6	119.7	122.8	17.8	48.8	58.2	64.4
Link Distance (m)	115.0	89.4		473.0	473.0	473.0		519.9	519.9	519.9
Upstream Blk Time (%)		3								
Queuing Penalty (veh)		0								
Storage Bay Dist (m)			50.0				120.0			
Storage Blk Time (%)				5						
Queuing Penalty (veh)				2						

Intersection: 117: Burloak Drive & N Service Road

Movement	EB	EB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	R	L	T	T	T	T	T	TR
Maximum Queue (m)	14.2	26.2	21.3	35.9	34.3	32.1	20.6	26.4	30.1
Average Queue (m)	4.0	10.8	10.5	11.0	10.2	8.9	2.1	4.0	7.8
95th Queue (m)	11.6	20.6	20.0	30.1	28.4	25.6	10.3	15.2	23.0
Link Distance (m)		152.5		374.9	374.9	374.9	431.0	431.0	431.0
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	60.0		140.0						
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 118: Burloak Drive & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	LR	R	T	T	T	T	T	T
Maximum Queue (m)	302.5	304.9	167.5	67.0	62.5	42.6	50.6	49.0	51.8
Average Queue (m)	294.7	295.2	166.8	35.1	30.4	21.5	28.3	22.5	24.3
95th Queue (m)	298.7	300.0	170.6	57.1	49.7	36.5	45.1	38.6	39.8
Link Distance (m)	289.4	289.4		297.6	297.6	297.6	374.9	374.9	374.9
Upstream Blk Time (%)	51	43							
Queuing Penalty (veh)	0	0							
Storage Bay Dist (m)			160.0						
Storage Blk Time (%)		39	2						
Queuing Penalty (veh)		302	35						

Intersection: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

Movement	EB	EB	EB	EB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	TR	R	R	T	T	TR	LT	T	T
Maximum Queue (m)	58.4	58.0	61.4	52.0	44.4	81.7	62.7	22.0	84.7	84.1	82.0
Average Queue (m)	29.4	31.0	36.5	13.8	23.2	44.3	22.5	3.7	45.2	46.3	46.7
95th Queue (m)	50.0	50.7	56.2	40.6	36.3	70.9	52.5	12.3	73.0	74.9	76.3
Link Distance (m)	200.6	200.6	200.6		147.6	143.2	143.2	143.2	297.6	297.6	297.6
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (m)				70.0							
Storage Blk Time (%)			0	0							
Queuing Penalty (veh)			0	0							

Intersection: 120: Appleby Line & North Service Road

Movement	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	TR	L	TR	L	T	T	TR	L	T	T	TR
Maximum Queue (m)	36.8	30.3	40.2	40.3	23.1	65.6	71.5	71.6	29.6	62.1	73.5	86.2
Average Queue (m)	14.1	11.5	19.5	15.1	5.7	28.4	31.7	36.4	6.2	21.1	25.1	29.3
95th Queue (m)	28.8	23.7	35.7	30.9	16.0	51.2	57.4	61.7	18.8	49.3	58.1	66.7
Link Distance (m)		347.9		150.3		214.1	214.1	214.1		602.0	602.0	602.0
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (m)	40.0		65.0		65.0				65.0			
Storage Blk Time (%)	0	0				0				0		
Queuing Penalty (veh)	0	0				0				0		

Intersection: 121: Appleby Line & QEW WB Off-Ramp

Movement	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	T	T	T	T	T	T
Maximum Queue (m)	97.8	127.3	147.8	91.2	107.3	115.8	81.1	78.0	82.0
Average Queue (m)	55.1	69.6	73.4	56.2	64.5	70.9	33.7	30.7	28.8
95th Queue (m)	87.1	103.2	126.9	83.8	93.7	101.2	61.0	57.4	57.8
Link Distance (m)		325.3	325.3	306.2	306.2	306.2	214.1	214.1	214.1
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (m)	210.0								
Storage Blk Time (%)									
Queuing Penalty (veh)									

Intersection: 122: Appleby Line & QEW EB Off-Ramp

Movement	EB	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	L	R	R	T	T	T	T	T	T
Maximum Queue (m)	109.9	118.2	136.5	77.2	59.3	54.1	53.8	113.4	114.1	117.8
Average Queue (m)	65.5	80.0	56.0	36.3	26.7	27.3	27.9	60.2	63.3	69.3
95th Queue (m)	96.2	109.2	101.0	72.3	45.9	46.2	48.8	98.1	101.0	107.5
Link Distance (m)		254.9	254.9		316.7	316.7	316.7	306.2	306.2	306.2
Upstream Blk Time (%)			0							
Queuing Penalty (veh)			0							
Storage Bay Dist (m)	180.0			70.0						
Storage Blk Time (%)			3	0						
Queuing Penalty (veh)			6	0						

Intersection: 123: Appleby Line & Harvester Road

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	TR	L	T	T	T	R	L
Maximum Queue (m)	62.5	29.3	49.8	127.5	222.9	213.7	57.1	86.9	90.1	97.8	57.5	64.4
Average Queue (m)	31.0	11.8	19.6	127.3	211.0	128.1	18.9	52.1	57.5	58.5	37.5	21.2
95th Queue (m)	56.1	25.2	38.1	128.7	240.6	239.3	47.5	80.0	85.0	89.3	71.9	49.6
Link Distance (m)		184.6	184.6		208.0	208.0		565.0	565.0	565.0		
Upstream Blk Time (%)					81	0						
Queuing Penalty (veh)					0	0						
Storage Bay Dist (m)	115.0			120.0			50.0				50.0	80.0
Storage Blk Time (%)				88	1			11		14	0	0
Queuing Penalty (veh)				162	5			10		42	1	0

Intersection: 123: Appleby Line & Harvester Road

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	122.9	122.9	128.6	51.5
Average Queue (m)	40.6	49.3	57.3	12.1
95th Queue (m)	100.5	113.9	124.5	43.5
Link Distance (m)	316.7	316.7	316.7	
Upstream Blk Time (%)	0	0	0	
Queuing Penalty (veh)	0	1	0	
Storage Bay Dist (m)				85.0
Storage Blk Time (%)	2		4	0
Queuing Penalty (veh)	4		5	0

Intersection: 124: Appleby Line & Fairview Street

Movement	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB
Directions Served	L	L	T	R	L	T	R	L	T	T	R	L
Maximum Queue (m)	92.4	258.2	270.3	57.5	72.1	63.0	43.2	82.4	332.9	336.9	62.5	82.4
Average Queue (m)	69.7	113.6	83.1	46.7	31.7	24.5	19.4	81.6	325.0	323.1	29.8	69.6
95th Queue (m)	103.6	229.8	224.3	69.0	61.2	47.8	34.5	90.4	329.0	367.8	75.7	112.5
Link Distance (m)		325.6	325.6			460.8	460.8		319.8	319.8		
Upstream Blk Time (%)		0	0						75	50		
Queuing Penalty (veh)		0	0						0	0		
Storage Bay Dist (m)	85.0			50.0	80.0			75.0			55.0	75.0
Storage Blk Time (%)	7	24	3	20	0			71	16	41	0	0
Queuing Penalty (veh)	19	62	11	22	0			503	52	47	1	0

Intersection: 124: Appleby Line & Fairview Street

Movement	SB	SB	SB	SB
Directions Served	T	T	T	R
Maximum Queue (m)	527.9	540.4	543.7	107.5
Average Queue (m)	406.3	421.7	433.0	105.1
95th Queue (m)	599.4	610.7	615.2	128.8
Link Distance (m)	565.0	565.0	565.0	
Upstream Blk Time (%)	3	4	6	
Queuing Penalty (veh)	19	24	35	
Storage Bay Dist (m)				100.0
Storage Blk Time (%)	75		81	1
Queuing Penalty (veh)	107		378	6

Intersection: 125: John Lucas Drive/Site Access A & Mainway

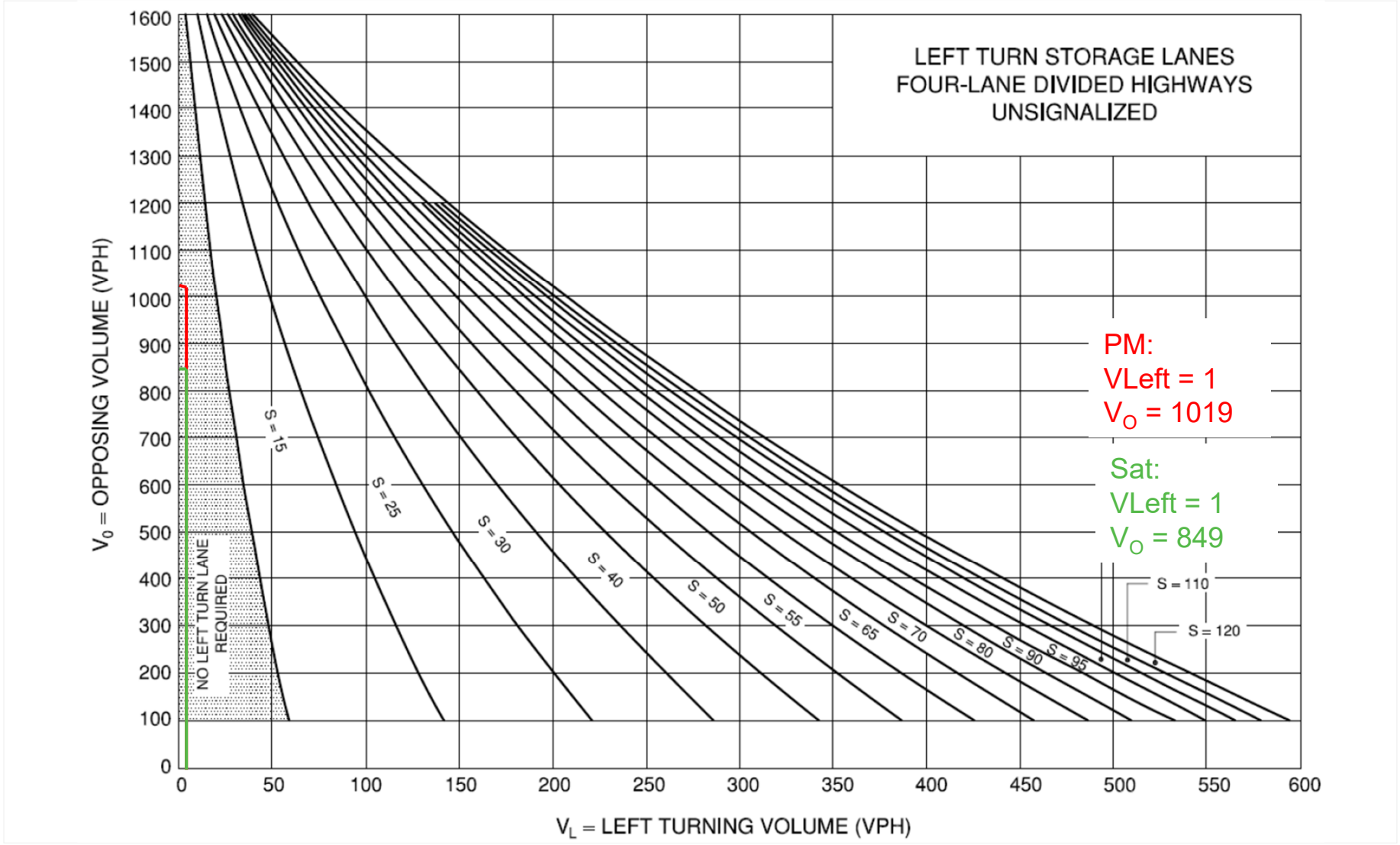
Movement	EB	SB
Directions Served	LT	LTR
Maximum Queue (m)	9.9	9.2
Average Queue (m)	0.7	5.6
95th Queue (m)	4.6	12.8
Link Distance (m)	614.1	115.4
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

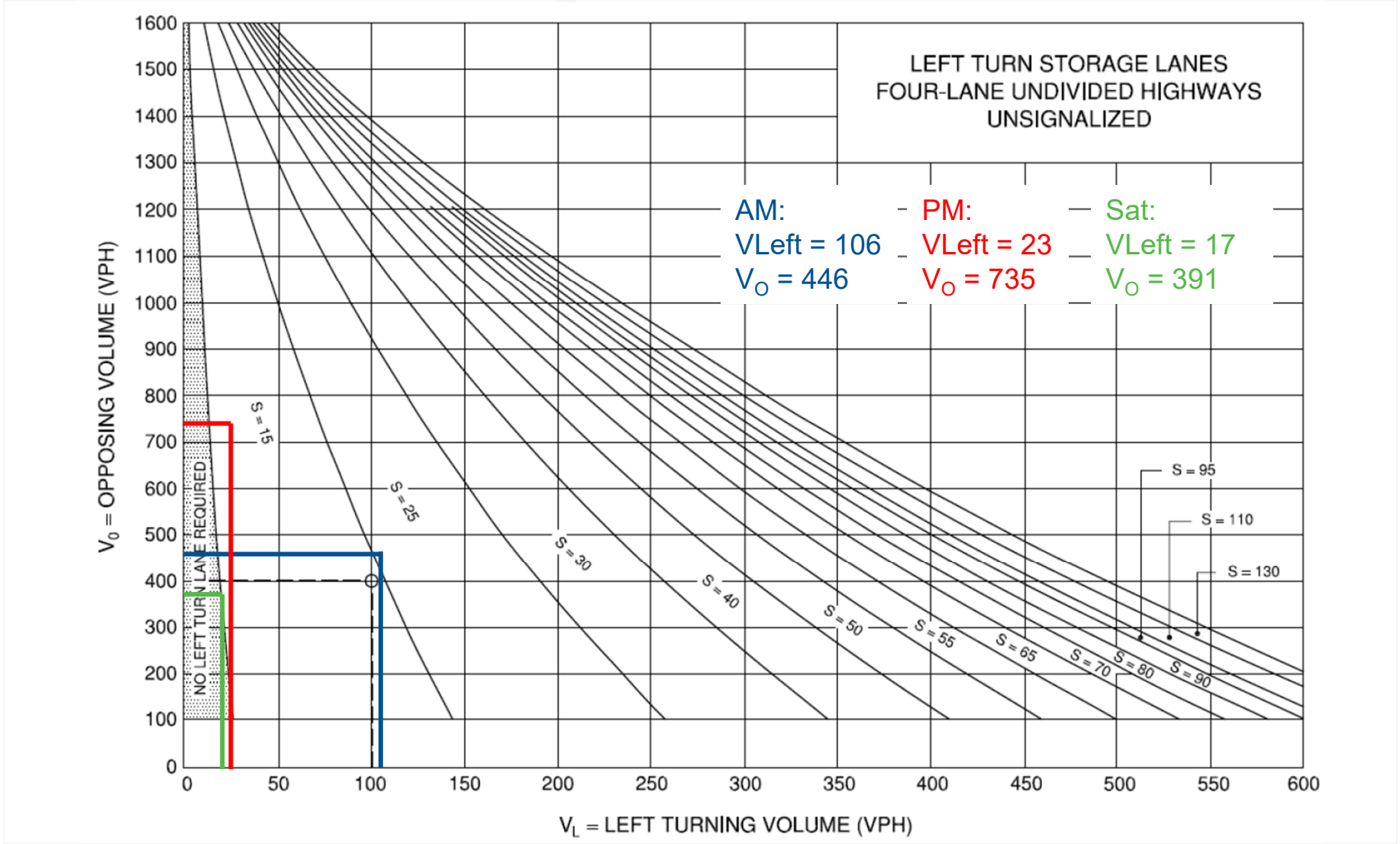
Zone wide Queuing Penalty: 4204

Appendix M

Left-Turn Warrants

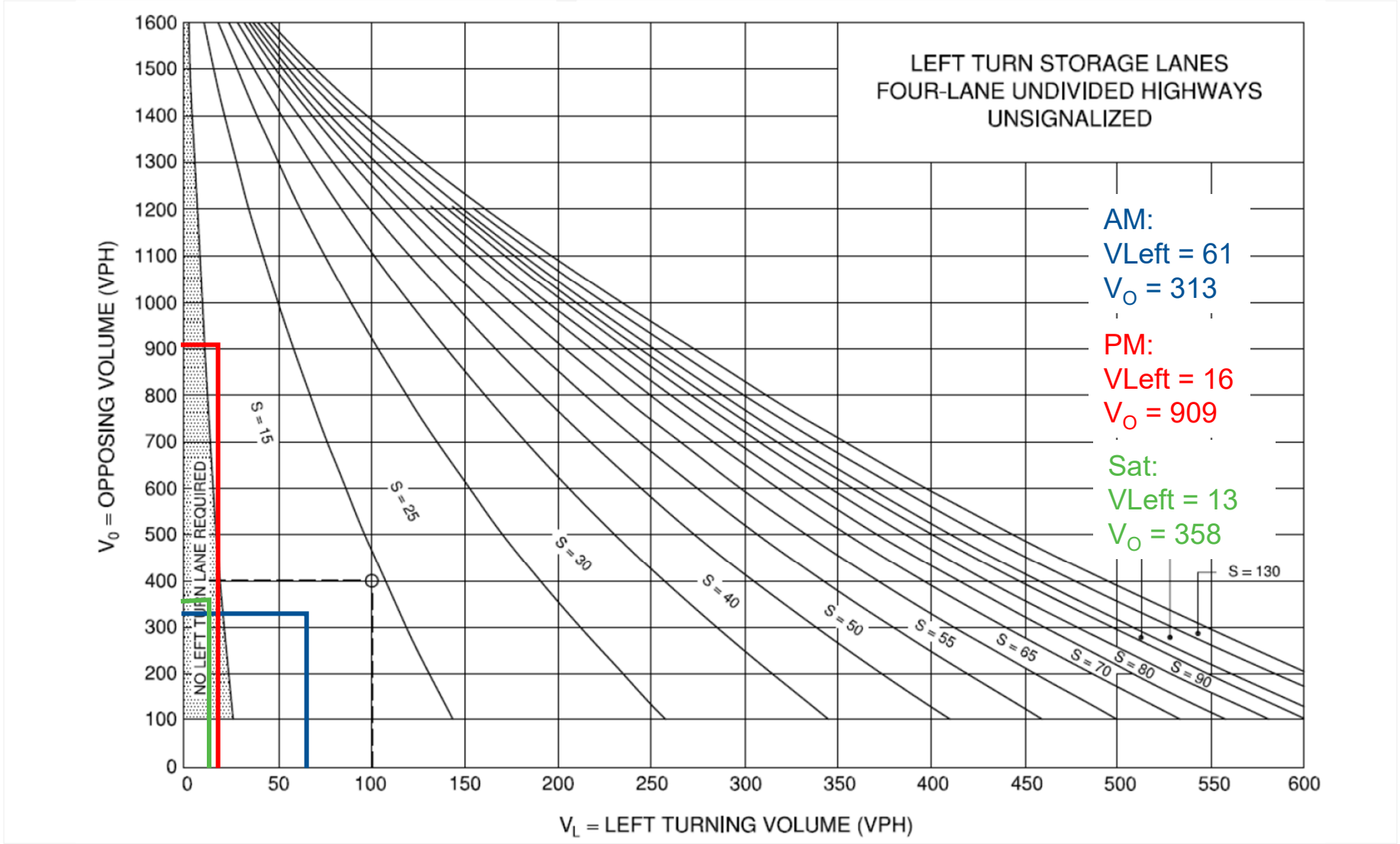


Phase 1 - Quinte Street at Upper Middle Road
Westbound Left-Turn Lane Warrant



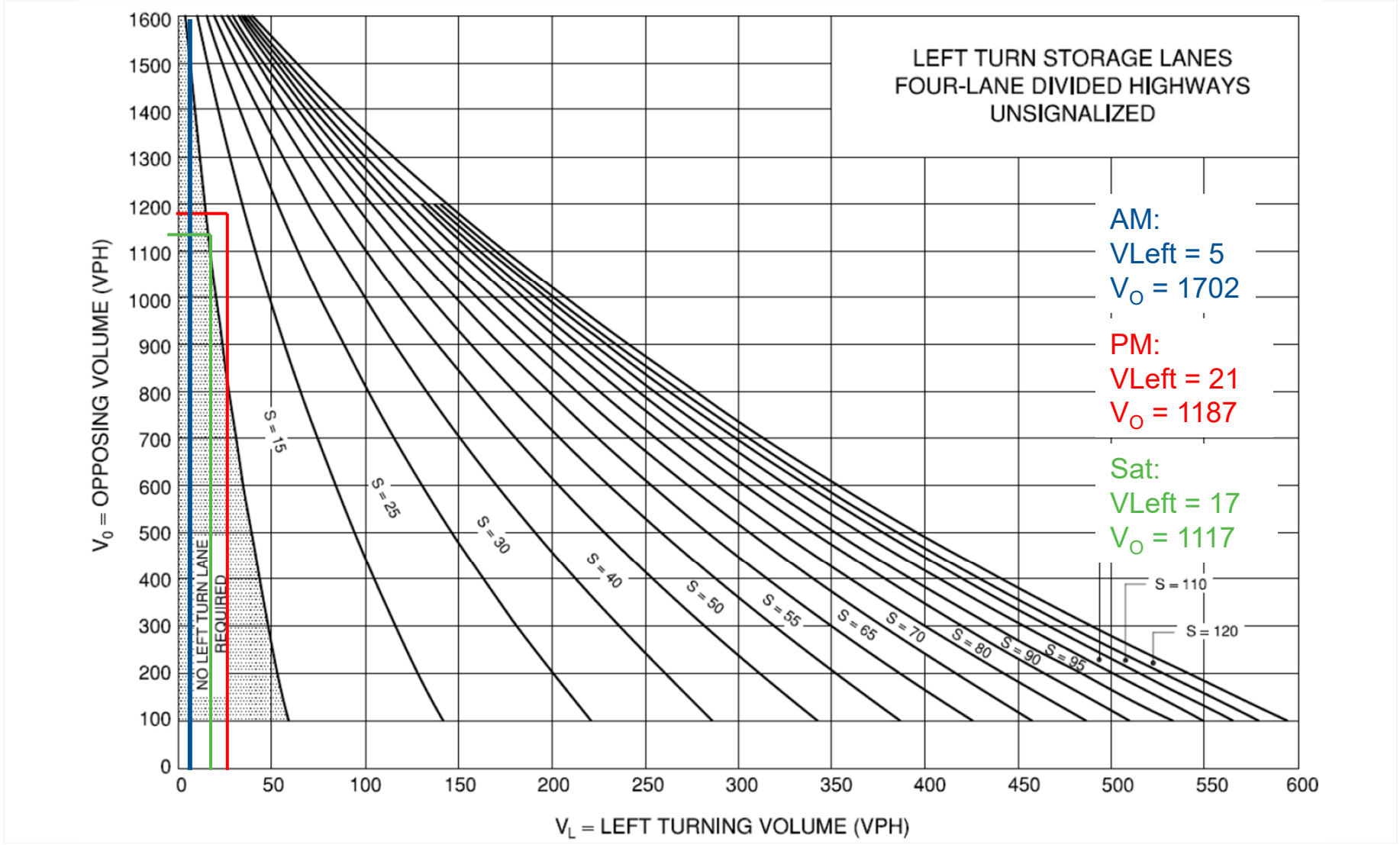
paradigm TRANSPORTATION SOLUTIONS LIMITED

Phase 1 - Sutton Drive at Mainway
Eastbound Left-Turn Lane Warrant

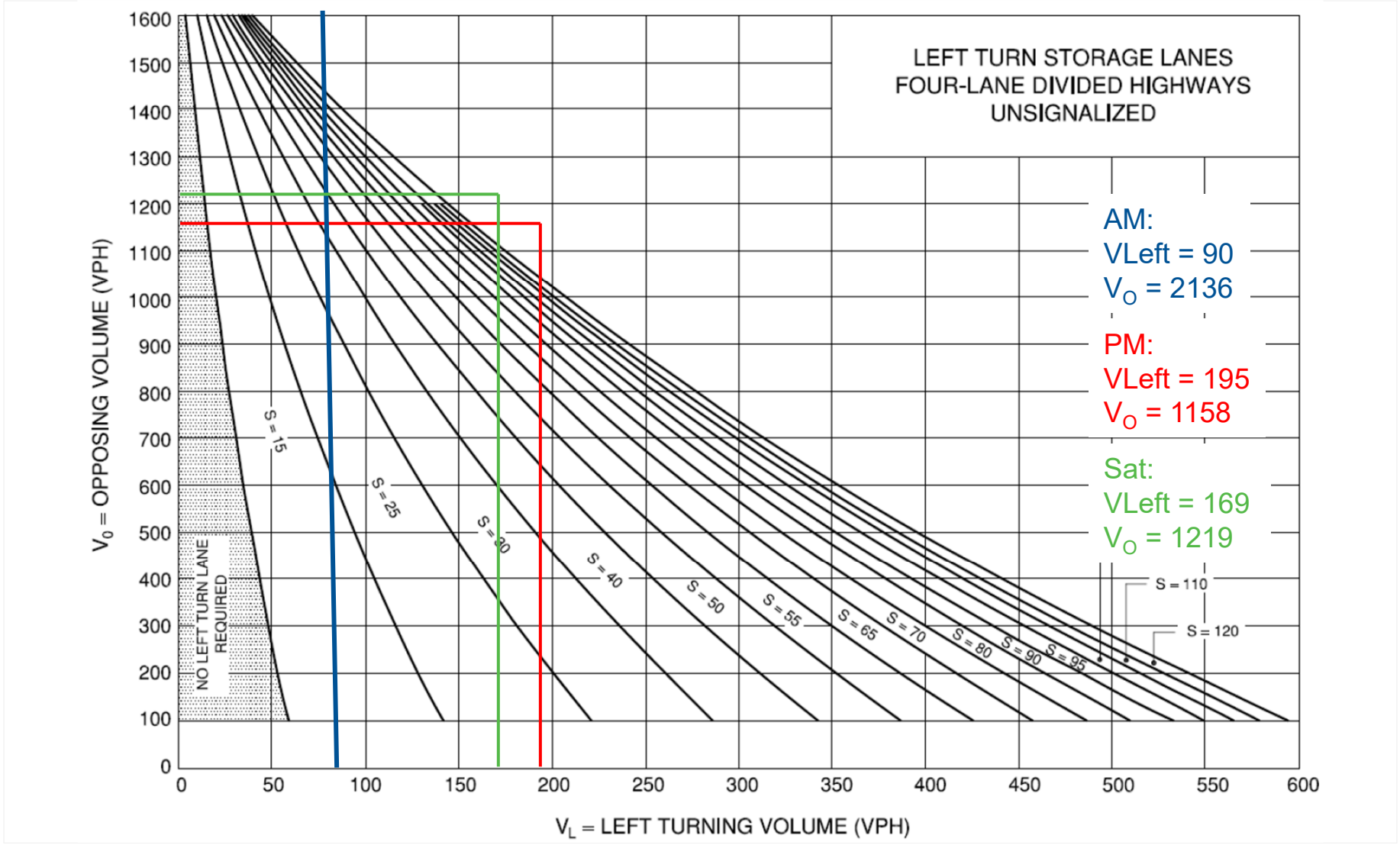


paradigm TRANSPORTATION SOLUTIONS LIMITED

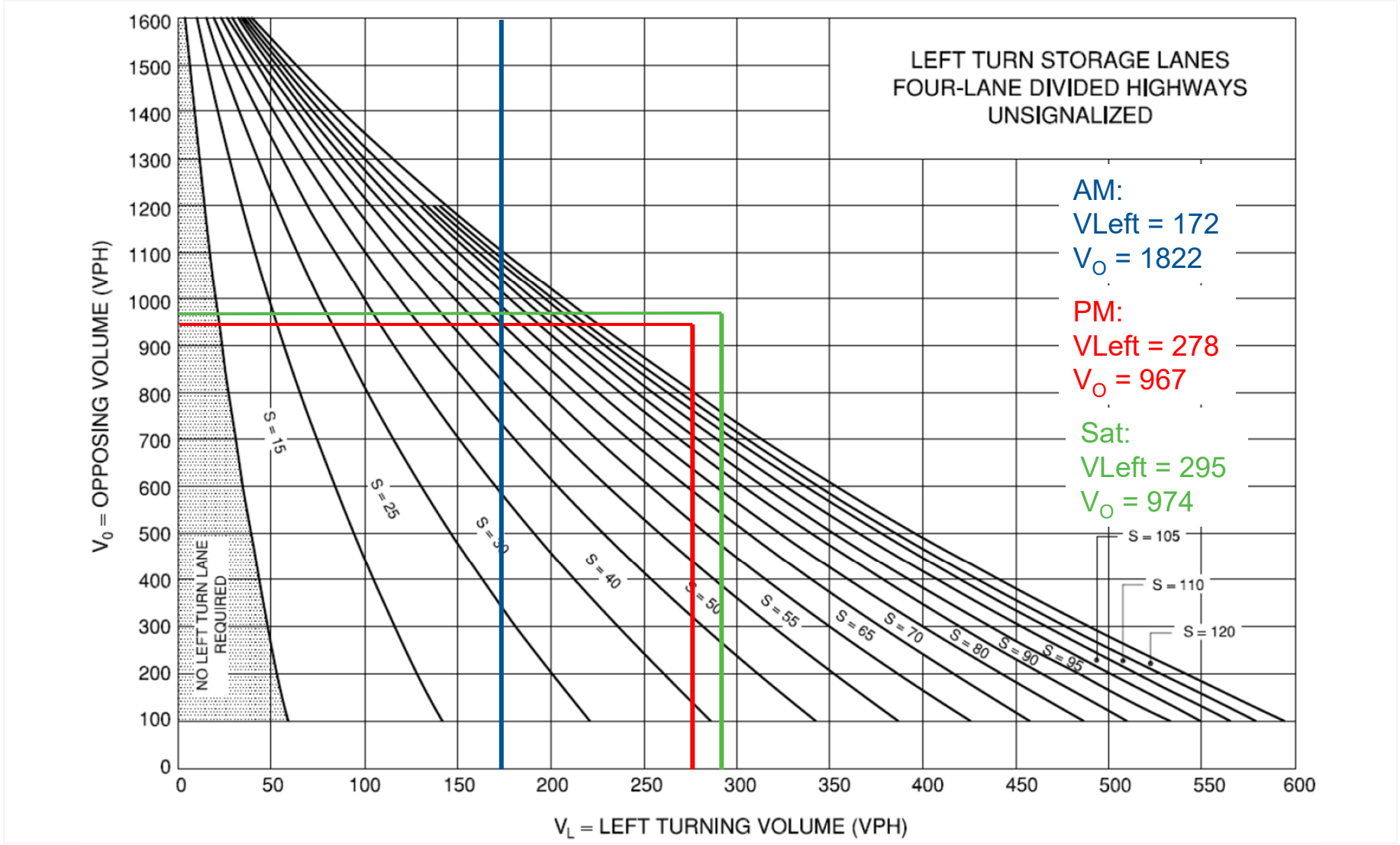
Phase 1 - Site Access B at Mainway
Eastbound Left-Turn Lane Warrant



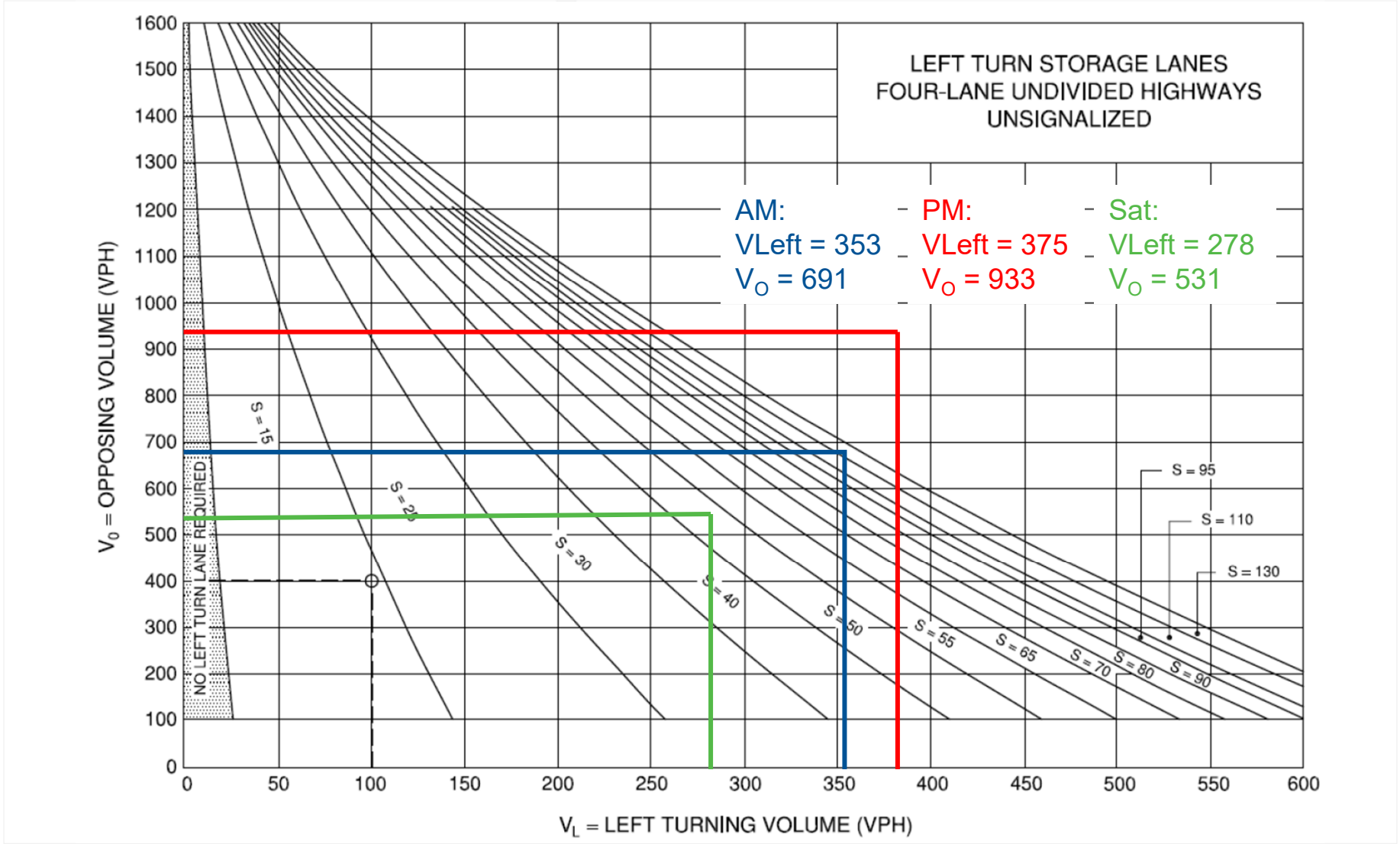
Full Build - Blue Spruce Avenue at Upper Middle Road
Westbound Left-Turn Lane Warrant



Full Build - Site Access C at Burloak Drive
Northbound Left-Turn Lane Warrant

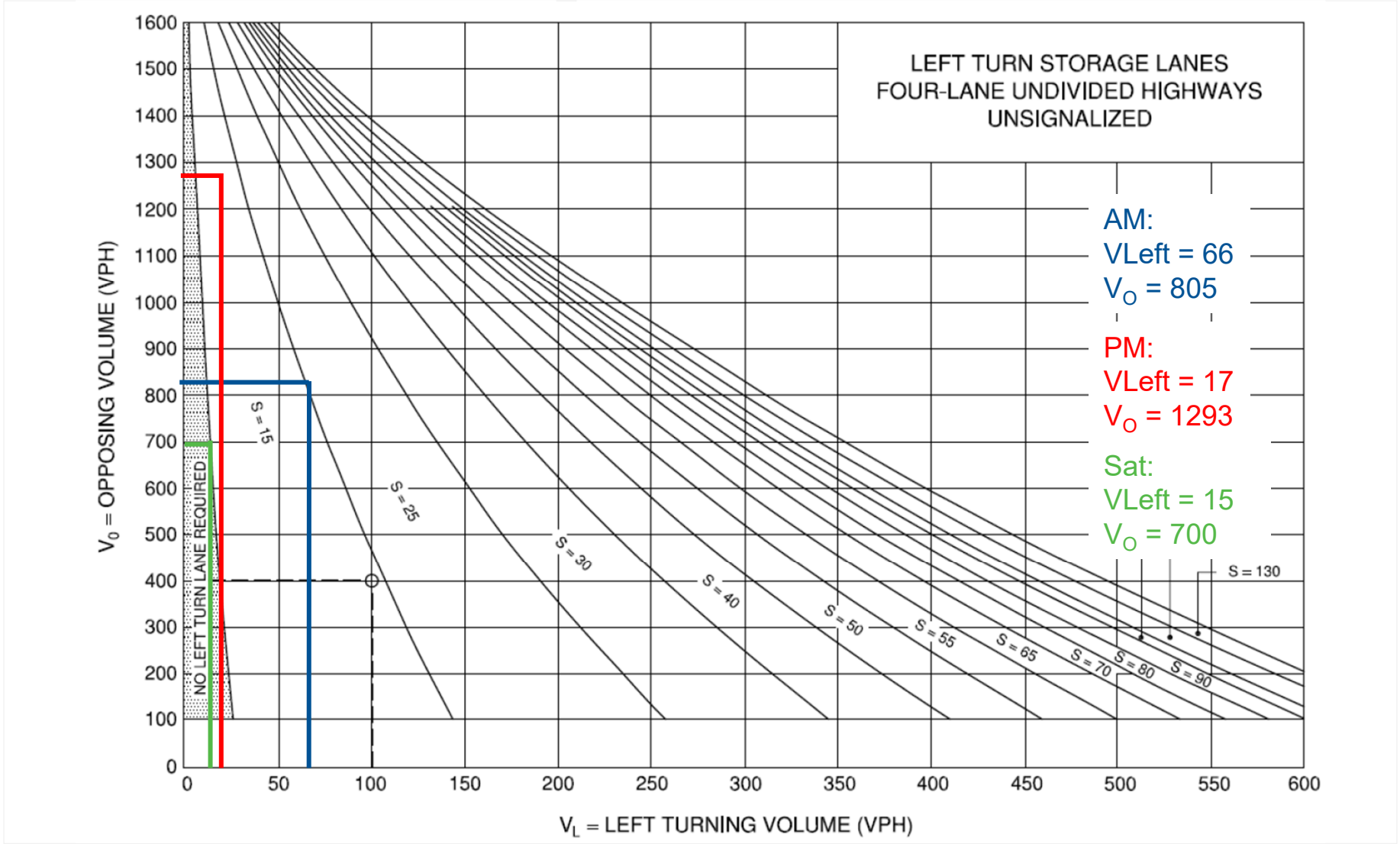


Full Build - Corporate Drive/Park Access at Burloak Drive Northbound Left-Turn Lane Warrant



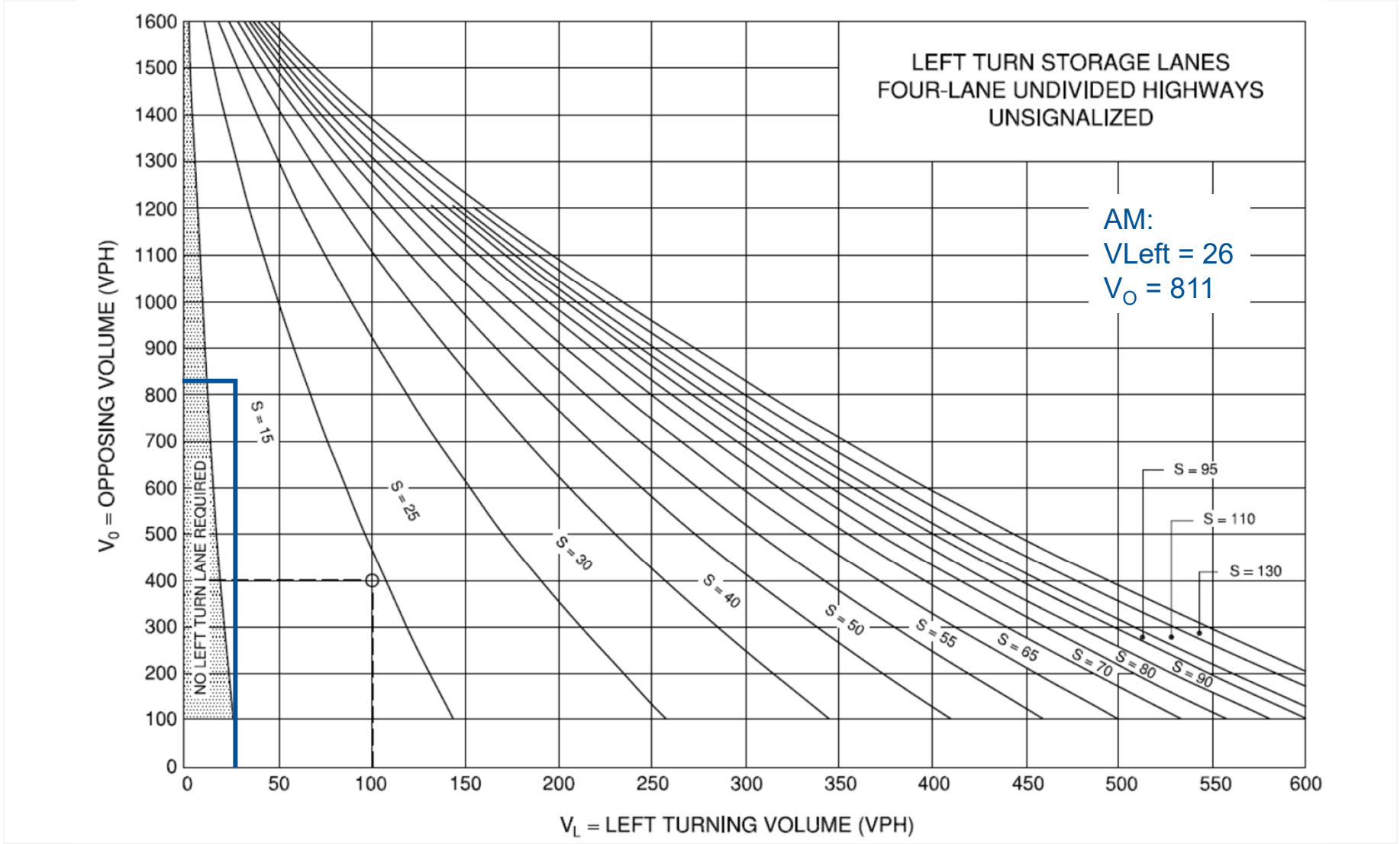
paradigm TRANSPORTATION SOLUTIONS LIMITED

Full Build - Sutton Drive at Mainway
Eastbound Left-Turn Lane Warrant



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Full Build - Site Access A at Mainway
Eastbound Left-Turn Lane Warrant

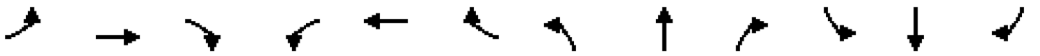


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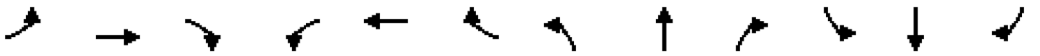
Full Build - Site Access B at Mainway
Eastbound Left-Turn Lane Warrant

Appendix N

Intersection Modification Traffic Operation Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Future Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3362	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			152			266			186
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	246	1459	499	450	677	152	251	628	374	295	928	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	1459	499	450	677	152	251	628	374	295	928	186
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	23.0	48.4	48.4	16.0	49.6	49.6	16.0	49.6	49.6
Total Split (%)	15.6%	34.4%	34.4%	17.0%	35.9%	35.9%	11.9%	36.7%	36.7%	11.9%	36.7%	36.7%
Maximum Green (s)	16.0	39.0	39.0	18.0	41.0	41.0	11.0	42.2	42.2	11.0	42.2	42.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.2	39.0	39.0	18.0	41.8	41.8	11.0	42.2	42.2	11.0	42.2	42.2
Actuated g/C Ratio	0.11	0.29	0.29	0.13	0.31	0.31	0.08	0.31	0.31	0.08	0.31	0.31
v/c Ratio	0.65	0.99	0.87	1.05	0.46	0.27	0.92	0.41	0.58	1.08	0.60	0.31
Control Delay (s/veh)	65.7	69.6	44.7	113.0	38.9	6.4	97.7	37.7	14.9	133.2	41.1	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.7	69.6	44.7	113.0	38.9	6.4	97.7	37.7	14.9	133.2	41.1	5.9
LOS	E	E	D	F	D	A	F	D	B	F	D	A
Approach Delay (s/veh)		63.6			61.1			42.9			55.7	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	35.3	152.0	91.3	~75.3	59.6	0.0	37.6	53.5	24.3	~48.7	82.8	0.0
Queue Length 95th (m)	50.5	#188.3	#158.3	#112.7	73.5	17.4	#64.7	66.5	60.0	#80.2	98.7	18.1
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	399	1469	575	428	1485	555	274	1515	647	274	1559	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.99	0.87	1.05	0.46	0.27	0.92	0.41	0.58	1.08	0.60	0.31

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 57.0	Intersection LOS: E

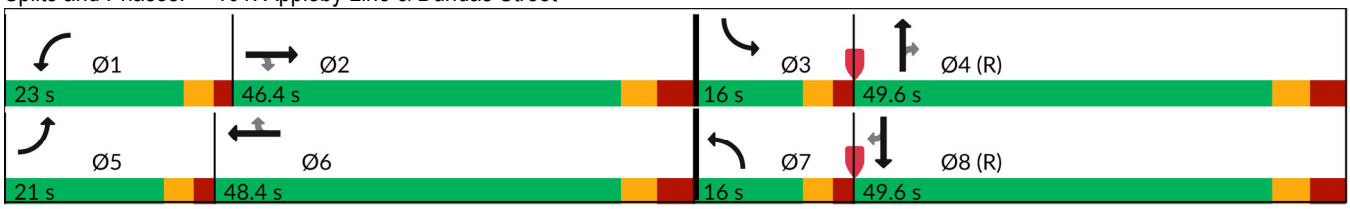
Intersection Capacity Utilization 101.5% ICU Level of Service G

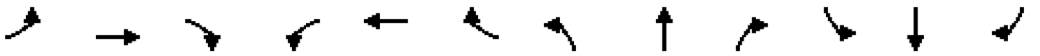
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

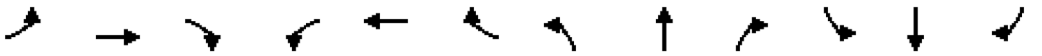




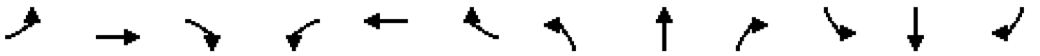
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Future Volume (vph)	231	1371	469	423	636	143	236	590	352	277	872	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	246	1459	499	450	677	152	251	628	374	295	928	186
RTOR Reduction (vph)	0	0	133	0	0	105	0	0	183	0	0	128
Lane Group Flow (vph)	246	1459	366	450	677	47	251	628	191	295	928	58
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.2	39.0	39.0	18.0	41.8	41.8	11.0	42.2	42.2	11.0	42.2	42.2
Effective Green, g (s)	15.2	39.0	39.0	18.0	41.8	41.8	11.0	42.2	42.2	11.0	42.2	42.2
Actuated g/C Ratio	0.11	0.29	0.29	0.13	0.31	0.31	0.08	0.31	0.31	0.08	0.31	0.31
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	379	1469	442	428	1487	451	274	1515	464	274	1559	478
v/s Ratio Prot	0.07	c0.29		c0.14	c0.14		0.07	0.13		c0.09	c0.19	
v/s Ratio Perm			0.24			0.03			0.13			0.04
v/c Ratio	0.65	0.99	0.83	1.05	0.46	0.10	0.92	0.41	0.41	1.08	0.60	0.12
Uniform Delay, d1	57.3	47.9	44.9	58.5	37.5	33.2	61.5	36.6	36.6	62.0	39.2	33.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	21.7	12.1	57.6	0.2	0.1	34.2	0.8	2.7	76.2	1.7	0.5
Delay (s)	62.5	69.6	56.9	116.1	37.7	33.3	95.8	37.5	39.3	138.2	40.9	33.7
Level of Service	E	E	E	F	D	C	F	D	D	F	D	C
Approach Delay (s/veh)		65.9			64.8			49.7			60.3	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	61.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	101.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Future Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	0.99	0.98		0.99		0.98	1.00	1.00		1.00	1.00	
Frt		0.951				0.850		0.978			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3336	0	3367	5085	1553	3400	4658	0	3400	4955	0
Flt Permitted	0.478			0.950			0.950			0.950		
Satd. Flow (perm)	861	3336	0	3344	5085	1520	3395	4658	0	3387	4955	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68				299		28			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	201	820	392	281	393	334	226	1046	184	474	1719	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	1212	0	281	393	334	226	1230	0	474	1781	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	47.0		14.0	45.0	45.0	13.0	43.0		21.0	51.0	
Total Split (%)	12.8%	37.6%		11.2%	36.0%	36.0%	10.4%	34.4%		16.8%	40.8%	
Maximum Green (s)	12.0	40.6		10.0	38.6	38.6	8.0	36.5		17.0	44.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	54.6	40.6		10.0	39.0	39.0	8.0	36.5		17.0	44.5	
Actuated g/C Ratio	0.44	0.32		0.08	0.31	0.31	0.06	0.29		0.14	0.36	
v/c Ratio	0.44	1.07		1.04	0.25	0.49	1.04	0.89		1.03	1.01	
Control Delay (s/veh)	24.5	87.1		122.0	32.7	8.1	128.5	50.7		101.4	63.4	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	24.5	87.1		122.0	32.7	8.1	128.5	50.7		101.4	63.4	
LOS	C	F		F	C	A	F	D		F	E	
Approach Delay (s/veh)		78.2			49.5			62.8			71.4	
Approach LOS		E			D			E			E	
Queue Length 50th (m)	32.5	~178.2		~41.7	28.2	6.6	~33.1	116.5		~68.7	~175.2	
Queue Length 95th (m)	50.4	#223.1		#71.7	37.6	32.5	#60.6	#139.0		#104.1	#214.1	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	461	1129		269	1588	680	217	1379		462	1767	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.44	1.07		1.04	0.25	0.49	1.04	0.89		1.03	1.01	

Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.07			
Intersection Signal Delay (s/veh): 67.3		Intersection LOS: E	

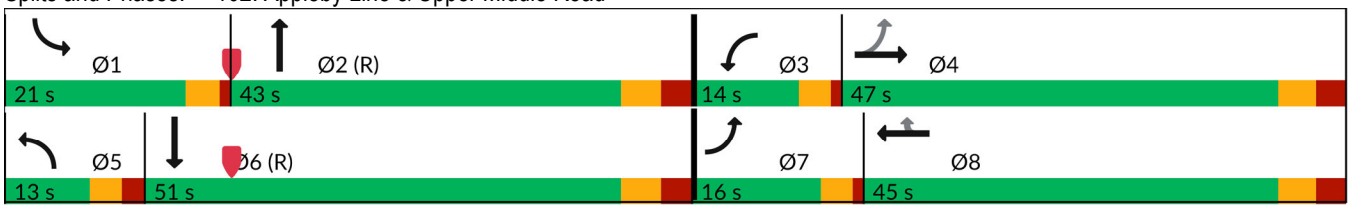
Intersection Capacity Utilization 95.0% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road

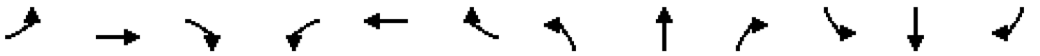


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Future Volume (vph)	181	738	353	253	354	301	203	941	166	427	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1715	3338		3367	5085	1520	3400	4655		3400	4954	
Flt Permitted	0.48	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	862	3338		3367	5085	1520	3400	4655		3400	4954	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	201	820	392	281	393	334	226	1046	184	474	1719	62
RTOR Reduction (vph)	0	46	0	0	0	206	0	20	0	0	3	0
Lane Group Flow (vph)	201	1166	0	281	393	128	226	1210	0	474	1778	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	52.2	40.6		10.0	39.0	39.0	8.0	36.5		17.0	44.5	
Effective Green, g (s)	52.2	40.6		10.0	39.0	39.0	8.0	36.5		17.0	44.5	
Actuated g/C Ratio	0.42	0.32		0.08	0.31	0.31	0.06	0.29		0.14	0.36	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	439	1084		269	1586	474	217	1359		462	1763	
v/s Ratio Prot	c0.04	c0.35		c0.08	0.08		0.07	0.26		c0.14	c0.36	
v/s Ratio Perm	0.15					0.08						
v/c Ratio	0.46	1.08		1.04	0.25	0.27	1.04	0.89		1.03	1.01	
Uniform Delay, d1	24.1	42.2		57.5	32.1	32.3	58.5	42.3		54.0	40.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	50.1		67.0	0.1	0.3	72.4	9.1		48.7	23.5	
Delay (s)	24.8	92.3		124.5	32.1	32.6	130.9	51.4		102.7	63.7	
Level of Service	C	F		F	C	C	F	D		F	E	
Approach Delay (s/veh)		82.7			58.1			63.8			71.9	
Approach LOS		F			E			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	70.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Future Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.973							0.850		0.905	
Flt Protected	0.950			0.950				0.950			0.985	
Satd. Flow (prot)	1805	4887	0	1805	4988	0	0	1752	1615	0	1565	0
Flt Permitted	0.271			0.094				0.740			0.898	
Satd. Flow (perm)	511	4887	0	179	4988	0	0	1360	1588	0	1425	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		63							136		85	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		521.3			256.9			157.0			83.5	
Travel Time (s)		31.3			15.4			11.3			6.0	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	8	1725	371	64	1013	0	278	0	136	8	0	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	2096	0	64	1013	0	0	278	136	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	43.0	43.0		11.0	54.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	47.8%	47.8%		12.2%	60.0%		40.0%	40.0%	40.0%	40.0%	40.0%	
Maximum Green (s)	37.0	37.0		7.0	48.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	39.2	39.2		50.0	48.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.44	0.44		0.56	0.53			0.32	0.32		0.32	
v/c Ratio	0.04	0.97		0.28	0.38			0.63	0.23		0.05	
Control Delay (s/veh)	16.7	39.1		12.5	12.8			33.8	5.2		0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	16.7	39.1		12.5	12.8			33.8	5.2		0.2	
LOS	B	D		B	B			C	A		A	
Approach Delay (s/veh)		39.0			12.8			24.4			0.2	
Approach LOS		D			B			C			A	
Queue Length 50th (m)	0.9	~149.8		5.0	38.3			42.7	0.0		0.0	
Queue Length 95th (m)	3.1	124.6		9.1	39.3			57.0	7.9		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			59.5	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	222	2164		225	2660			438	603		516	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.04	0.97		0.28	0.38			0.63	0.23		0.05	

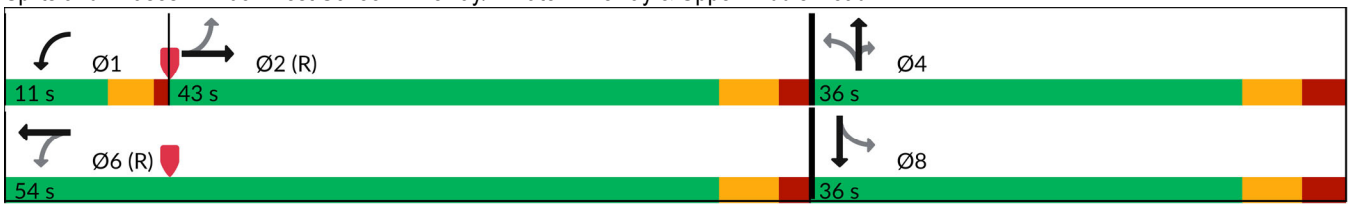
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay (s/veh): 29.3		Intersection LOS: C	

Intersection Capacity Utilization 95.7% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

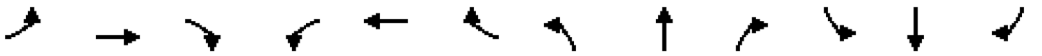
Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



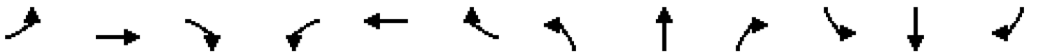
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Future Volume (vph)	6	1328	286	49	780	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1792	4889		1805	4988			1746	1588		1564	
Flt Permitted	0.27	1.00		0.09	1.00			0.74	1.00		0.90	
Satd. Flow (perm)	511	4889		179	4988			1359	1588		1426	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	8	1725	371	64	1013	0	278	0	136	8	0	19
RTOR Reduction (vph)	0	36	0	0	0	0	0	0	92	0	18	0
Lane Group Flow (vph)	8	2060	0	64	1013	0	0	278	44	0	9	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	38.4	38.4		48.0	48.0			29.0	29.0		29.0	
Effective Green, g (s)	38.4	38.4		48.0	48.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.43	0.43		0.53	0.53			0.32	0.32		0.32	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	218	2085		196	2660			437	511		459	
v/s Ratio Prot		c0.42		0.02	c0.20							
v/s Ratio Perm	0.02			0.15				c0.20	0.03		0.01	
v/c Ratio	0.04	0.99		0.33	0.38			0.64	0.09		0.02	
Uniform Delay, d1	15.0	25.6		17.9	12.3			26.0	21.3		20.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.3	17.1		1.0	0.4			6.9	0.3		0.1	
Delay (s)	15.3	42.6		18.9	12.7			32.9	21.6		20.9	
Level of Service	B	D		B	B			C	C		C	
Approach Delay (s/veh)		42.5			13.1			29.2			20.9	
Approach LOS		D			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1272	18	0	790	86	22	0	1	102	0	260
Future Volume (vph)	169	1272	18	0	790	86	22	0	1	102	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	120.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				0.99						0.99	
Frt		0.998			0.985			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1752	5075	0	0	4919	0	1770	1583	0	1805	1563	0
Flt Permitted	0.201						0.375			0.757		
Satd. Flow (perm)	368	5075	0	0	4919	0	699	1583	0	1438	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			25			94			482	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			84.7			285.4	
Travel Time (s)		7.1			17.4			7.6			25.7	
Confl. Peds. (#/hr)	29					29						1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	222	1674	24	0	1039	113	29	0	1	134	0	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	1698	0	0	1152	0	29	1	0	134	342	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

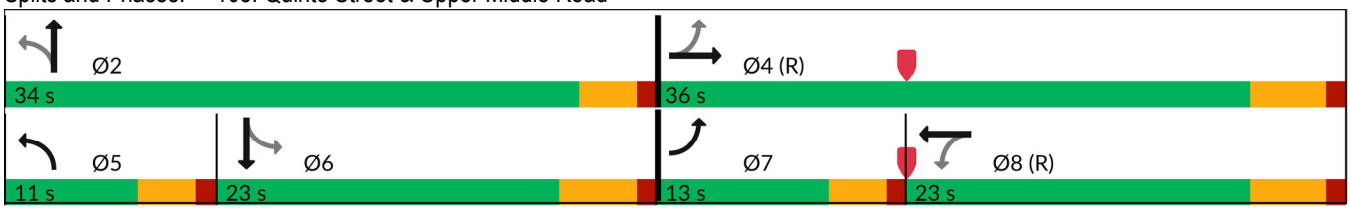


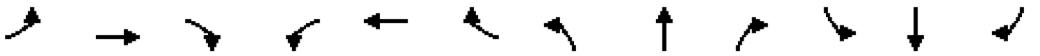
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	23.0		23.0	23.0		11.0	22.5		23.0	23.0	
Total Split (s)	13.0	36.0		23.0	23.0		11.0	34.0		23.0	23.0	
Total Split (%)	18.6%	51.4%		32.9%	32.9%		15.7%	48.6%		32.9%	32.9%	
Maximum Green (s)	9.0	31.0		18.0	18.0		7.0	30.0		18.0	18.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	3.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	32.0	31.0			18.3		30.0	30.0		24.7	24.7	
Actuated g/C Ratio	0.46	0.44			0.26		0.43	0.43		0.35	0.35	
v/c Ratio	0.65	0.76			0.89		0.07	0.00		0.26	0.40	
Control Delay (s/veh)	22.1	19.0			34.5		12.1	0.0		20.2	1.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.1	19.0			34.5		12.1	0.0		20.2	1.7	
LOS	C	B			C		B	A		C	A	
Approach Delay (s/veh)		19.3			34.5			11.7			6.9	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	18.5	69.3			56.1		2.3	0.0		11.5	0.0	
Queue Length 95th (m)	26.6	67.1			57.9		5.7	0.0		24.6	0.0	
Internal Link Dist (m)		94.7			266.7			60.7			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	346	2249			1301		406	732		506	862	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.64	0.76			0.89		0.07	0.00		0.26	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 45 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 22.5	Intersection LOS: C

Intersection Capacity Utilization 72.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 105: Quinte Street & Upper Middle Road

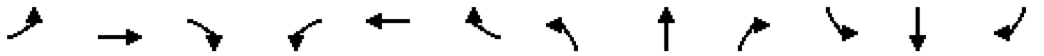




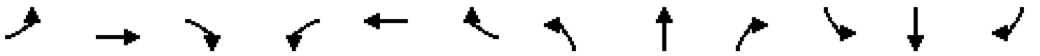
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1272	18	0	790	86	22	0	1	102	0	260
Future Volume (vph)	169	1272	18	0	790	86	22	0	1	102	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	5075			4921		1770	1583		1805	1563	
Flt Permitted	0.20	1.00			1.00		0.38	1.00		0.76	1.00	
Satd. Flow (perm)	370	5075			4921		699	1583		1439	1563	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	222	1674	24	0	1039	113	29	0	1	134	0	342
RTOR Reduction (vph)	0	2	0	0	19	0	0	1	0	0	221	0
Lane Group Flow (vph)	222	1696	0	0	1133	0	29	0	0	134	121	0
Confl. Peds. (#/hr)	29					29						1
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.6	28.6			15.9		32.4	32.4		24.7	24.7	
Effective Green, g (s)	28.6	28.6			15.9		32.4	32.4		24.7	24.7	
Actuated g/C Ratio	0.41	0.41			0.23		0.46	0.46		0.35	0.35	
Clearance Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	322	2073			1117		364	732		507	551	
v/s Ratio Prot	0.09	c0.33			c0.23		c0.00	0.00			0.08	
v/s Ratio Perm	0.20						0.03			c0.09		
v/c Ratio	0.69	0.82			1.01		0.08	0.00		0.26	0.22	
Uniform Delay, d1	16.0	18.4			27.1		10.9	10.1		16.2	15.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.0	3.7			30.5		0.1	0.0		1.3	0.9	
Delay (s)	22.1	22.1			57.5		11.0	10.1		17.4	16.8	
Level of Service	C	C			E		B	B		B	B	
Approach Delay (s/veh)		22.1			57.5			11.0			17.0	
Approach LOS		C			E			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	32.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Future Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.86	0.86	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99				0.98		1.00	0.98		0.98	0.98	
Frt		0.984			0.959			0.887			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	5048	0	1522	4475	0	1770	1618	0	3502	1532	0
Flt Permitted	0.317			0.197			0.889			0.950		
Satd. Flow (perm)	560	5048	0	316	4475	0	1651	1618	0	3446	1532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			124			6			266	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			175.8			244.6	
Travel Time (s)		17.4			14.7			15.8			22.0	
Confl. Peds. (#/hr)	24					24	6		16	16		6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	332	1171	144	2	593	220	62	2	6	631	7	371
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	332	1315	0	2	813	0	62	8	0	631	378	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



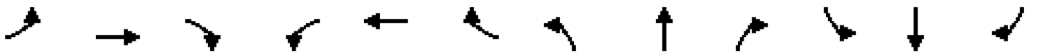
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	31.0		11.0	31.0		11.0	34.0		11.0	34.0	
Total Split (s)	11.0	31.0		11.0	31.0		11.0	34.0		14.0	37.0	
Total Split (%)	12.2%	34.4%		12.2%	34.4%		12.2%	37.8%		15.6%	41.1%	
Maximum Green (s)	7.0	25.0		7.0	25.0		7.0	27.0		10.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	54.6	50.4		38.7	30.7		12.1	10.9		21.4	15.6	
Actuated g/C Ratio	0.61	0.56		0.43	0.34		0.13	0.12		0.24	0.17	
v/c Ratio	0.57	0.46		0.01	0.51		0.27	0.04		0.76	0.78	
Control Delay (s/veh)	17.3	15.0		9.0	16.9		32.8	20.6		40.2	22.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	17.3	15.0		9.0	16.9		32.8	20.6		40.2	22.0	
LOS	B	B		A	B		C	C		D	C	
Approach Delay (s/veh)		15.5			16.9			31.4			33.4	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	29.3	46.6		0.1	34.8		11.2	0.3		48.7	18.9	
Queue Length 95th (m)	#64.1	86.9		m0.8	37.9		13.0	3.5		#109.2	37.4	
Internal Link Dist (m)		266.7			220.7			151.8			220.6	
Turn Bay Length (m)	60.0			60.0			30.0			60.0		
Base Capacity (vph)	580	2839		230	1609		231	489		834	688	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.46		0.01	0.51		0.27	0.02		0.76	0.55	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay (s/veh): 21.2	Intersection LOS: C

Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: Sutton Drive & Upper Middle Road

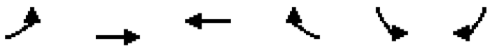




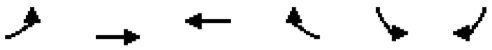
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Future Volume (vph)	279	984	121	2	498	185	52	2	5	530	6	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		0.86	0.86		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.89		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1696	5046		1522	4477		1764	1619		3502	1531	
Flt Permitted	0.32	1.00		0.20	1.00		0.89	1.00		0.95	1.00	
Satd. Flow (perm)	566	5046		316	4477		1651	1619		3502	1531	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	332	1171	144	2	593	220	62	2	6	631	7	371
RTOR Reduction (vph)	0	13	0	0	89	0	0	6	0	0	206	0
Lane Group Flow (vph)	332	1302	0	2	724	0	62	2	0	631	172	0
Confl. Peds. (#/hr)	24					24	6		16	16		6
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	47.1	41.7		25.6	25.6		10.1	4.5		21.4	20.3	
Effective Green, g (s)	47.1	41.7		25.6	25.6		10.1	4.5		21.4	20.3	
Actuated g/C Ratio	0.52	0.46		0.28	0.28		0.11	0.05		0.24	0.23	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	533	2337		108	1273		192	80		832	345	
v/s Ratio Prot	c0.13	0.26		0.00	0.01		0.02	0.00		c0.18	c0.11	
v/s Ratio Perm	c0.19			0.00	0.15		0.02					
v/c Ratio	0.62	0.56		0.02	0.57		0.32	0.03		0.76	0.50	
Uniform Delay, d1	12.7	17.5		23.1	27.5		36.8	40.7		31.9	30.4	
Progression Factor	1.00	1.00		0.75	0.79		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.3	1.0		0.1	0.6		1.0	0.1		4.0	1.1	
Delay (s)	15.0	18.4		17.4	22.2		37.7	40.8		35.9	31.5	
Level of Service	B	B		B	C		D	D		D	C	
Approach Delay (s/veh)		17.7			22.2			38.1			34.3	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	90.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	1516	525	37	215	49
Future Volume (vph)	29	1516	525	37	215	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor	0.99		1.00			
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	5136	4927	0	1737	0
Flt Permitted	0.404				0.961	
Satd. Flow (perm)	720	5136	4927	0	1737	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			29		30	
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	32	1684	583	41	239	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	1684	624	0	293	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Detector Phase	4	4	8		2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	22.5	22.5	22.5		22.5	
Total Split (s)	22.5	22.5	22.5		22.5	
Total Split (%)	50.0%	50.0%	50.0%		50.0%	
Maximum Green (s)	18.0	18.0	18.0		18.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	C-Max	C-Max	C-Max		Max	
Walk Time (s)	7.0	7.0	7.0		7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)	18.0	18.0	18.0		18.0	
Actuated g/C Ratio	0.40	0.40	0.40		0.40	
v/c Ratio	0.11	0.82	0.31		0.41	
Control Delay (s/veh)	7.9	16.5	8.3		10.8	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	7.9	16.5	8.3		10.8	
LOS	A	B	A		B	
Approach Delay (s/veh)		16.3	8.3		10.8	
Approach LOS		B	A		B	
Queue Length 50th (m)	1.4	55.8	11.9		14.6	
Queue Length 95th (m)	m6.0	114.5	18.3		29.7	
Internal Link Dist (m)		174.8	440.6		202.6	
Turn Bay Length (m)	100.0					
Base Capacity (vph)	288	2054	1988		712	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.11	0.82	0.31		0.41	

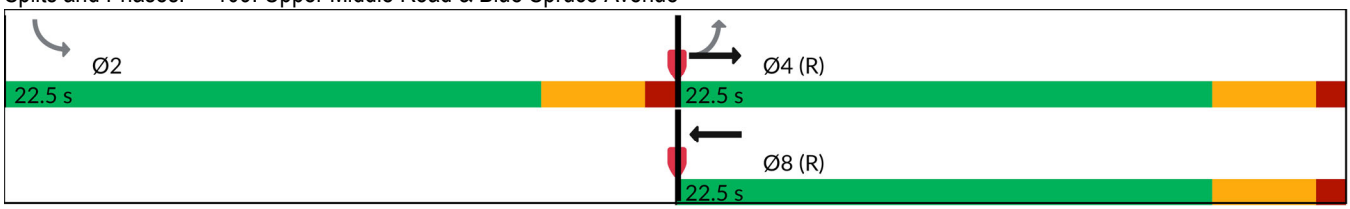
Intersection Summary	
Area Type:	Other
Cycle Length: 45	
Actuated Cycle Length: 45	
Offset: 22.5 (50%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 13.8	Intersection LOS: B

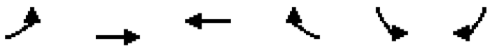
Intersection Capacity Utilization 51.7% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 109: Upper Middle Road & Blue Spruce Avenue





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	1516	525	37	215	49
Future Volume (vph)	29	1516	525	37	215	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91	0.91		1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	
Flpb, ped/bikes	0.99	1.00	1.00		1.00	
Frt	1.00	1.00	0.99		0.98	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1694	5136	4928		1737	
Flt Permitted	0.40	1.00	1.00		0.96	
Satd. Flow (perm)	721	5136	4928		1737	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	1684	583	41	239	54
RTOR Reduction (vph)	0	0	17	0	18	0
Lane Group Flow (vph)	32	1684	607	0	275	0
Confl. Peds. (#/hr)	10			10		
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Actuated Green, G (s)	18.0	18.0	18.0		18.0	
Effective Green, g (s)	18.0	18.0	18.0		18.0	
Actuated g/C Ratio	0.40	0.40	0.40		0.40	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	288	2054	1971		694	
v/s Ratio Prot		c0.33	0.12			
v/s Ratio Perm	0.04				c0.16	
v/c Ratio	0.11	0.82	0.31		0.40	
Uniform Delay, d1	8.5	12.1	9.2		9.6	
Progression Factor	0.82	1.08	0.89		1.00	
Incremental Delay, d2	0.7	3.3	0.4		1.7	
Delay (s)	7.6	16.3	8.6		11.3	
Level of Service	A	B	A		B	
Approach Delay (s/veh)		16.2	8.6		11.3	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	5	581	53	23	1655
Future Volume (vph)	14	5	581	53	23	1655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor			1.00		1.00	
Frt	0.963		0.987			
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1766	0	4974	0	1805	5136
Flt Permitted	0.965				0.372	
Satd. Flow (perm)	1766	0	4974	0	706	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		40			
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		716.4			464.6
Travel Time (s)	14.5		43.0			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	16	6	646	59	26	1839
Shared Lane Traffic (%)						
Lane Group Flow (vph)	22	0	705	0	26	1839
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (m)	2.0		10.0		2.0	10.0
Trailing Detector (m)	0.0		0.0		0.0	0.0
Detector 1 Position(m)	0.0		0.0		0.0	0.0
Detector 1 Size(m)	2.0		0.6		2.0	0.6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	4				6	
Detector Phase	4		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5
Total Split (s)	22.5		22.5		22.5	22.5
Total Split (%)	50.0%		50.0%		50.0%	50.0%
Maximum Green (s)	18.0		18.0		18.0	18.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Don't Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	6.1		41.8		41.8	41.8
Actuated g/C Ratio	0.14		0.93		0.93	0.93
v/c Ratio	0.09		0.15		0.04	0.39
Control Delay (s/veh)	15.4		1.1		2.0	1.4
Queue Delay	0.0		0.0		0.0	0.0
Total Delay (s/veh)	15.4		1.1		2.0	1.4
LOS	B		A		A	A
Approach Delay (s/veh)	15.4		1.1			1.4
Approach LOS	B		A			A
Queue Length 50th (m)	1.2		0.0		0.0	0.0
Queue Length 95th (m)	5.6		9.8		m1.0	24.5
Internal Link Dist (m)	136.8		692.4			440.6
Turn Bay Length (m)					145.0	
Base Capacity (vph)	710		4621		655	4768
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.03		0.15		0.04	0.39

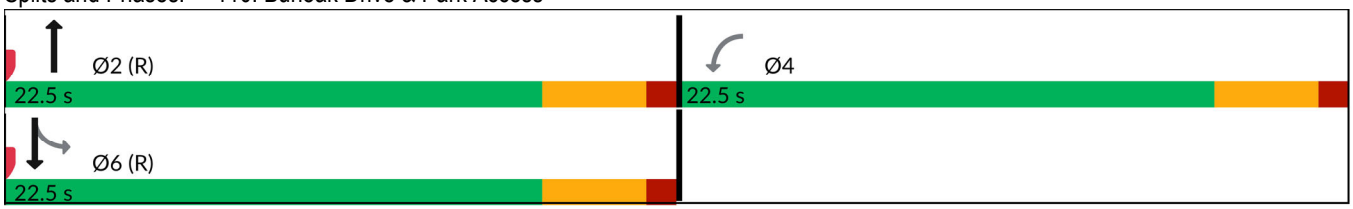
Intersection Summary	
Area Type:	Other
Cycle Length: 45	
Actuated Cycle Length: 45	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.39	
Intersection Signal Delay (s/veh): 1.4	Intersection LOS: A

Intersection Capacity Utilization 43.6% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 110: Burloak Drive & Park Access

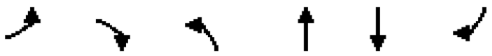




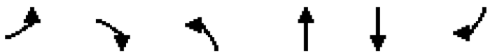
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	5	581	53	23	1655
Future Volume (vph)	14	5	581	53	23	1655
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.96		0.99		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1766		4976		1804	5136
Flt Permitted	0.96		1.00		0.37	1.00
Satd. Flow (perm)	1766		4976		707	5136
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	6	646	59	26	1839
RTOR Reduction (vph)	6	0	9	0	0	0
Lane Group Flow (vph)	16	0	696	0	26	1839
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	4				6	
Actuated Green, G (s)	1.4		34.6		34.6	34.6
Effective Green, g (s)	1.4		34.6		34.6	34.6
Actuated g/C Ratio	0.03		0.77		0.77	0.77
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	54		3825		543	3949
v/s Ratio Prot			0.14			c0.36
v/s Ratio Perm	c0.01				0.04	
v/c Ratio	0.30		0.18		0.05	0.47
Uniform Delay, d1	21.3		1.4		1.2	1.9
Progression Factor	1.00		1.00		1.29	1.02
Incremental Delay, d2	3.1		0.1		0.1	0.2
Delay (s)	24.4		1.5		1.7	2.2
Level of Service	C		A		A	A
Approach Delay (s/veh)	24.4		1.5			2.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	2.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	538	577	578	1593	85
Future Volume (vph)	68	538	577	578	1593	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	3367	5036	5092	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1524	3364	5036	5092	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		393			8	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	716.4	
Travel Time (s)	52.1			27.2	43.0	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	75	591	634	635	1751	93
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	591	634	635	1844	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	22.0	61.0	39.0	
Total Split (%)	39.0%	39.0%	22.0%	61.0%	39.0%	
Maximum Green (s)	32.0	32.0	18.0	54.0	32.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	22.0	22.0	23.6	64.0	36.4	
Actuated g/C Ratio	0.22	0.22	0.24	0.64	0.36	
v/c Ratio	0.19	0.92	0.80	0.20	0.99	
Control Delay (s/veh)	29.3	32.7	45.8	7.7	52.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	29.3	32.7	45.8	7.7	52.6	
LOS	C	C	D	A	D	
Approach Delay (s/veh)	32.3			26.8	52.6	
Approach LOS	C			C	D	
Queue Length 50th (m)	12.3	44.0	52.1	15.7	~161.5	
Queue Length 95th (m)	21.6	89.7	#103.1	23.0	#193.5	
Internal Link Dist (m)	845.1			429.2	692.4	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	577	754	795	3225	1859	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.78	0.80	0.20	0.99	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 40.3	Intersection LOS: D

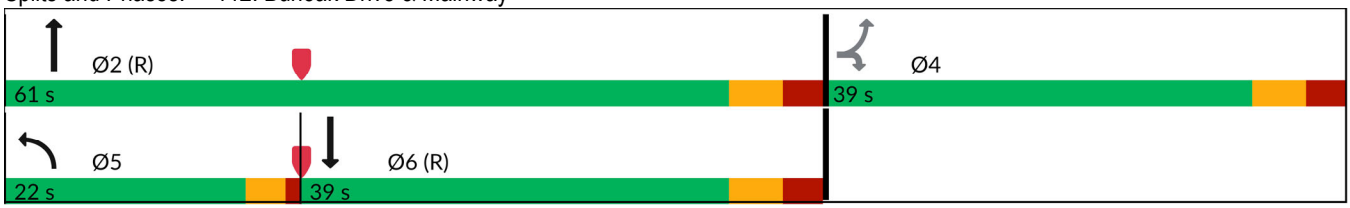
Intersection Capacity Utilization 77.7% ICU Level of Service D

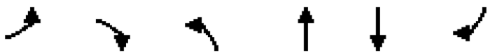
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

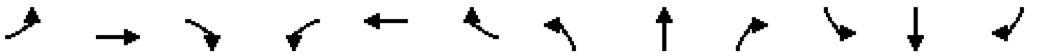




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	538	577	578	1593	85
Future Volume (vph)	68	538	577	578	1593	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	3367	5036	5094	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1524	3367	5036	5094	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	591	634	635	1751	93
RTOR Reduction (vph)	0	307	0	0	5	0
Lane Group Flow (vph)	75	284	634	635	1839	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	22.0	22.0	23.6	64.0	36.4	
Effective Green, g (s)	22.0	22.0	23.6	64.0	36.4	
Actuated g/C Ratio	0.22	0.22	0.24	0.64	0.36	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	397	335	794	3223	1854	
v/s Ratio Prot			c0.19	0.13	c0.36	
v/s Ratio Perm	0.04	c0.19				
v/c Ratio	0.19	0.85	0.80	0.20	0.99	
Uniform Delay, d1	31.7	37.4	36.0	7.4	31.7	
Progression Factor	1.00	1.00	1.00	0.87	1.00	
Incremental Delay, d2	0.2	17.8	5.6	0.1	19.1	
Delay (s)	32.0	55.2	41.5	6.6	50.7	
Level of Service	C	E	D	A	D	
Approach Delay (s/veh)	52.6			24.0	50.7	
Approach LOS	D			C	D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	435	126	33	267	146	18	78	13	86	46	28
Future Volume (vph)	106	435	126	33	267	146	18	78	13	86	46	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00							
Frt		0.966			0.951			0.984			0.977	
Flt Protected	0.950				0.996			0.992			0.974	
Satd. Flow (prot)	1770	3318	0	0	3280	0	0	1772	0	0	1773	0
Flt Permitted	0.349				0.880			0.943			0.785	
Satd. Flow (perm)	650	3318	0	0	2898	0	0	1684	0	0	1429	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		100			162			14			20	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		104.9			869.1			154.8			77.6	
Travel Time (s)		6.3			52.1			13.9			7.0	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Adj. Flow (vph)	119	489	142	37	300	164	20	88	15	97	52	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	119	631	0	0	501	0	0	123	0	0	180	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	9.5	32.5		23.0	23.0		22.5	22.5		22.5	22.5	
Total Split (%)	17.3%	59.1%		41.8%	41.8%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.0	28.0		18.5	18.5		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	28.0	28.0			20.4			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.37			0.33			0.33	
v/c Ratio	0.28	0.36			0.43			0.22			0.37	
Control Delay (s/veh)	11.6	9.5			10.6			13.3			15.3	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	11.6	9.5			10.6			13.3			15.3	
LOS	B	A			B			B			B	
Approach Delay (s/veh)		9.8			10.6			13.3			15.3	
Approach LOS		A			B			B			B	
Queue Length 50th (m)	5.6	11.4			14.3			8.2			12.6	
Queue Length 95th (m)	m17.5	37.1			25.5			18.4			26.7	
Internal Link Dist (m)		80.9			845.1			130.8			53.6	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	432	1738			1176			560			481	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.28	0.36			0.43			0.22			0.37	

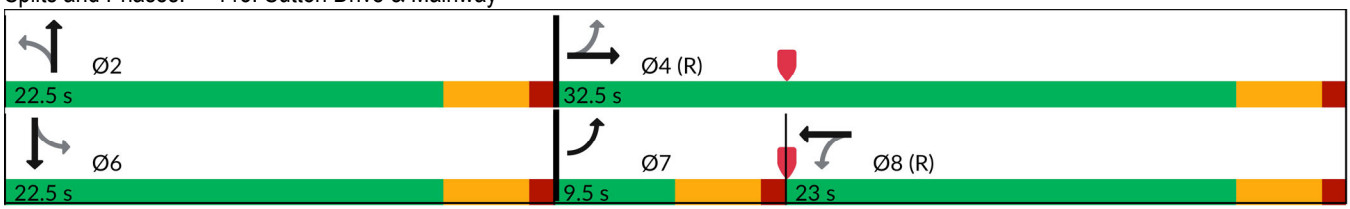
Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 32.5 (59%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay (s/veh): 11.0	Intersection LOS: B

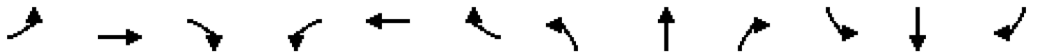
Intersection Capacity Utilization 55.9% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 113: Sutton Drive & Mainway



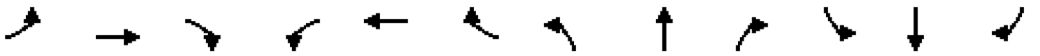


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	435	126	33	267	146	18	78	13	86	46	28
Future Volume (vph)	106	435	126	33	267	146	18	78	13	86	46	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.97			0.95			0.98			0.98	
Flt Protected	0.95	1.00			1.00			0.99			0.97	
Satd. Flow (prot)	1770	3319			3280			1771			1772	
Flt Permitted	0.35	1.00			0.88			0.94			0.79	
Satd. Flow (perm)	651	3319			2899			1683			1429	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	119	489	142	37	300	164	20	88	15	97	52	31
RTOR Reduction (vph)	0	49	0	0	105	0	0	9	0	0	13	0
Lane Group Flow (vph)	119	582	0	0	396	0	0	114	0	0	167	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.0	28.0			19.5			18.0			18.0	
Effective Green, g (s)	28.0	28.0			19.5			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.35			0.33			0.33	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	412	1689			1027			550			467	
v/s Ratio Prot	0.02	c0.18										
v/s Ratio Perm	0.13				0.14			0.07			c0.12	
v/c Ratio	0.29	0.34			0.39			0.21			0.36	
Uniform Delay, d1	7.5	8.0			13.3			13.3			14.1	
Progression Factor	1.40	1.32			1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.5			1.1			0.8			2.1	
Delay (s)	10.8	11.0			14.4			14.2			16.2	
Level of Service	B	B			B			B			B	
Approach Delay (s/veh)		11.0			14.4			14.2			16.2	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

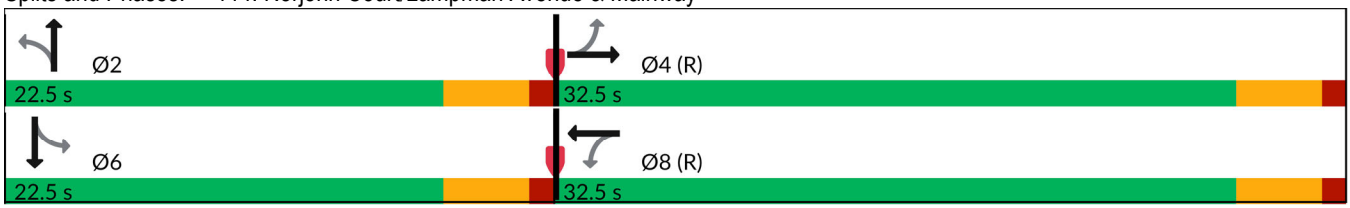
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	939	69	16	191	22	16	0	5	115	2	86
Future Volume (vph)	23	939	69	16	191	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.990			0.986			0.968			0.943	
Flt Protected		0.999			0.996			0.963			0.972	
Satd. Flow (prot)	0	3451	0	0	3208	0	0	1508	0	0	1732	0
Flt Permitted		0.945			0.872			0.799			0.810	
Satd. Flow (perm)	0	3264	0	0	2808	0	0	1251	0	0	1443	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			26			30			72	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			649.2			107.7			112.1	
Travel Time (s)		25.6			39.0			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	27	1105	81	19	225	26	19	0	6	135	2	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1213	0	0	270	0	0	25	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	32.5	32.5		32.5	32.5		22.5	22.5		22.5	22.5	
Total Split (%)	59.1%	59.1%		59.1%	59.1%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	28.0	28.0		28.0	28.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		34.2			34.2			11.8			11.8	
Actuated g/C Ratio		0.62			0.62			0.21			0.21	
v/c Ratio		0.60			0.15			0.09			0.65	
Control Delay (s/veh)		8.7			6.4			6.2			21.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		8.7			6.4			6.2			21.3	
LOS		A			A			A			C	
Approach Delay (s/veh)		8.7			6.4			6.2			21.3	
Approach LOS		A			A			A			C	
Queue Length 50th (m)		33.5			3.7			0.0			15.5	
Queue Length 95th (m)		61.7			14.7			3.5			27.4	
Internal Link Dist (m)		402.4			625.2			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		2036			1755			429			520	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.60			0.15			0.06			0.46	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay (s/veh): 10.0		Intersection LOS: B	
Intersection Capacity Utilization 64.4%		ICU Level of Service C	
Analysis Period (min) 15			

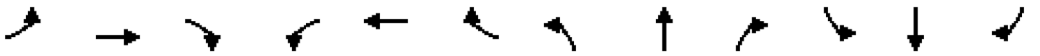
Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway



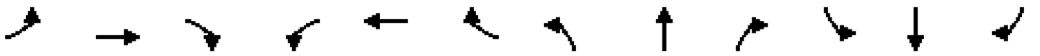
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	939	69	16	191	22	16	0	5	115	2	86
Future Volume (vph)	23	939	69	16	191	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.94	
Flt Protected		1.00			1.00			0.96			0.97	
Satd. Flow (prot)		3450			3208			1508			1732	
Flt Permitted		0.95			0.87			0.80			0.81	
Satd. Flow (perm)		3265			2805			1250			1443	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	27	1105	81	19	225	26	19	0	6	135	2	101
RTOR Reduction (vph)	0	7	0	0	10	0	0	20	0	0	57	0
Lane Group Flow (vph)	0	1206	0	0	260	0	0	5	0	0	181	0
Confl. Peds. (#/hr)	5		9	9		5						
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		34.2			34.2			11.8			11.8	
Effective Green, g (s)		34.2			34.2			11.8			11.8	
Actuated g/C Ratio		0.62			0.62			0.21			0.21	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2030			1744			268			309	
v/s Ratio Prot												
v/s Ratio Perm		c0.37			0.09			0.00			c0.13	
v/c Ratio		0.59			0.15			0.02			0.59	
Uniform Delay, d1		6.2			4.3			17.0			19.4	
Progression Factor		1.00			1.26			1.00			1.00	
Incremental Delay, d2		1.3			0.2			0.0			2.8	
Delay (s)		7.5			5.6			17.1			22.3	
Level of Service		A			A			B			C	
Approach Delay (s/veh)		7.5			5.6			17.1			22.3	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Future Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99			1.00		1.00	1.00	
Frt		0.959			0.943			0.963			0.988	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3191	0	2894	3049	0	1597	4679	0	3433	4882	0
Flt Permitted	0.627			0.177			0.095			0.103		
Satd. Flow (perm)	1056	3191	0	538	3049	0	160	4679	0	372	4882	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53			75			90			16	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	209	523	197	136	124	75	138	1044	343	280	1772	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	720	0	136	199	0	138	1387	0	280	1933	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	37.6		11.0	37.6		11.0	45.4		11.0	45.4	
Total Split (%)	10.5%	35.8%		10.5%	35.8%		10.5%	43.2%		10.5%	43.2%	
Maximum Green (s)	7.0	31.3		7.0	31.3		7.0	39.1		7.0	39.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	36.5	27.2		36.5	27.2		52.7	41.9		52.3	41.7	
Actuated g/C Ratio	0.35	0.26		0.35	0.26		0.50	0.40		0.50	0.40	
v/c Ratio	0.52	0.83		0.40	0.24		0.70	0.72		0.66	0.99	
Control Delay (s/veh)	28.4	42.8		23.4	18.6		48.1	38.8		23.0	50.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.4	42.8		23.4	18.6		48.1	38.8		23.0	50.9	
LOS	C	D		C	B		D	D		C	D	
Approach Delay (s/veh)		39.6			20.6			39.7			47.4	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	33.3	73.9		10.8	11.4		26.8	82.0		15.4	~173.0	
Queue Length 95th (m)	51.0	93.6		17.3	20.7		m#40.3	122.7		#31.3	#205.5	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	404	988		344	961		196	1922		426	1949	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.52	0.73		0.40	0.21		0.70	0.72		0.66	0.99	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 41.8	Intersection LOS: D

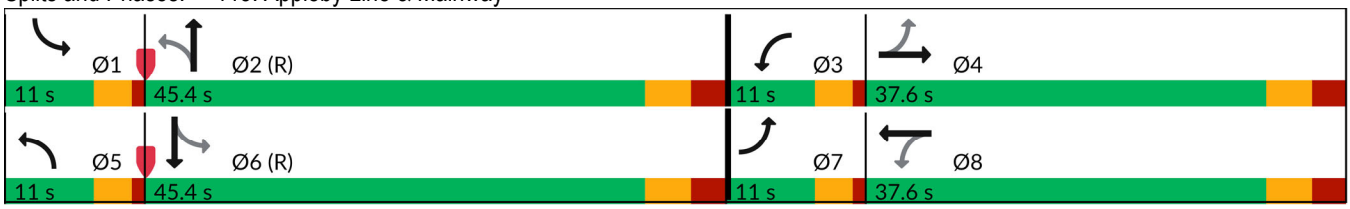
Intersection Capacity Utilization 88.1%	ICU Level of Service E
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

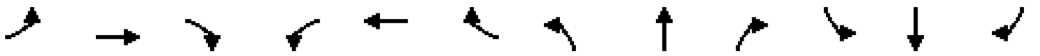


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Future Volume (vph)	201	502	189	131	119	72	132	1002	329	269	1701	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1605	3190		2893	3051		1597	4678		3433	4879	
Flt Permitted	0.63	1.00		0.18	1.00		0.10	1.00		0.10	1.00	
Satd. Flow (perm)	1059	3190		540	3051		161	4678		370	4879	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	209	523	197	136	124	75	138	1044	343	280	1772	161
RTOR Reduction (vph)	0	39	0	0	56	0	0	54	0	0	10	0
Lane Group Flow (vph)	209	681	0	136	143	0	138	1333	0	280	1923	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	34.2	27.2		34.2	27.2		50.4	41.9		50.0	41.7	
Effective Green, g (s)	34.2	27.2		34.2	27.2		50.4	41.9		50.0	41.7	
Actuated g/C Ratio	0.33	0.26		0.33	0.26		0.48	0.40		0.48	0.40	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	381	826		332	790		193	1866		418	1937	
v/s Ratio Prot	c0.04	c0.21		0.03	0.05		c0.06	0.28		0.05	c0.39	
v/s Ratio Perm	0.14			0.11			0.29			0.27		
v/c Ratio	0.55	0.82		0.41	0.18		0.72	0.71		0.67	0.99	
Uniform Delay, d1	27.7	36.6		26.2	30.2		22.3	26.5		18.5	31.5	
Progression Factor	1.00	1.00		1.00	1.00		2.05	1.46		1.00	1.00	
Incremental Delay, d2	1.6	6.7		0.8	0.1		7.4	1.4		4.0	18.9	
Delay (s)	29.3	43.3		27.0	30.4		53.2	40.2		22.5	50.4	
Level of Service	C	D		C	C		D	D		C	D	
Approach Delay (s/veh)		40.2			29.0			41.4			46.8	
Approach LOS		D			C			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	88.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Future Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.955			0.987			0.996	
Flt Protected		0.984			0.970		0.950			0.950		
Satd. Flow (prot)	0	1323	0	0	1707	0	1530	4772	0	1736	4963	0
Flt Permitted		0.850			0.774		0.108			0.135		
Satd. Flow (perm)	0	1142	0	0	1358	0	174	4772	0	246	4963	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			34			19			6	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	21	10	32	226	18	121	41	1150	106	94	2002	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	365	0	41	1256	0	94	2057	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

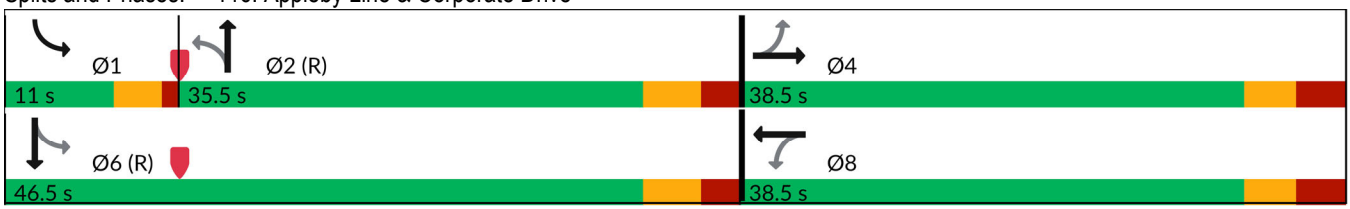


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.5	38.5		38.5	38.5		35.5	35.5		11.0	46.5	
Total Split (%)	45.3%	45.3%		45.3%	45.3%		41.8%	41.8%		12.9%	54.7%	
Maximum Green (s)	32.0	32.0		32.0	32.0		29.5	29.5		7.0	40.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		25.6			25.6		37.6	37.6		48.9	46.9	
Actuated g/C Ratio		0.30			0.30		0.44	0.44		0.58	0.55	
v/c Ratio		0.18			0.84		0.53	0.59		0.35	0.75	
Control Delay (s/veh)		20.1			42.3		54.7	21.1		13.4	18.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		20.1			42.3		54.7	21.1		13.4	18.1	
LOS		C			D		D	C		B	B	
Approach Delay (s/veh)		20.1			42.3			22.1			17.9	
Approach LOS		C			D			C			B	
Queue Length 50th (m)		8.1			52.1		6.0	64.0		7.1	97.0	
Queue Length 95th (m)		16.8			79.7		#28.0	88.8		16.5	136.5	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		431			532		77	2123		271	2739	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.15			0.69		0.53	0.59		0.35	0.75	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay (s/veh): 21.6	Intersection LOS: C

Intersection Capacity Utilization 88.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

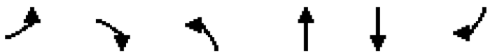
Splits and Phases: 116: Appleby Line & Corporate Drive



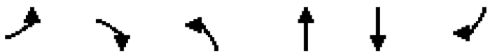
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Future Volume (vph)	21	10	31	221	18	119	40	1127	104	92	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1322			1702		1529	4773		1735	4963	
Flt Permitted		0.85			0.77		0.11	1.00		0.14	1.00	
Satd. Flow (perm)		1142			1358		174	4773		247	4963	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	10	32	226	18	121	41	1150	106	94	2002	55
RTOR Reduction (vph)	0	2	0	0	24	0	0	11	0	0	3	0
Lane Group Flow (vph)	0	61	0	0	341	0	41	1245	0	94	2054	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.6			25.6		36.9	36.9		46.9	46.9	
Effective Green, g (s)		25.6			25.6		36.9	36.9		46.9	46.9	
Actuated g/C Ratio		0.30			0.30		0.43	0.43		0.55	0.55	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		343			408		75	2072		241	2738	
v/s Ratio Prot								0.26		0.03	c0.41	
v/s Ratio Perm		0.05			c0.25		0.23			0.19		
v/c Ratio		0.18			0.84		0.55	0.60		0.39	0.75	
Uniform Delay, d1		21.9			27.7		17.8	18.4		10.7	14.6	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			13.8		25.7	1.3		1.0	1.9	
Delay (s)		22.2			41.6		43.5	19.7		11.7	16.5	
Level of Service		C			D		D	B		B	B	
Approach Delay (s/veh)		22.2			41.6			20.5			16.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	150	554	942	1668	122
Future Volume (vph)	34	150	554	942	1668	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	3335	5036	5035	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1313	3332	5036	5035	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		152			12	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	34	152	560	952	1685	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	152	560	952	1808	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	20.0	61.0	41.0	
Total Split (%)	39.0%	39.0%	20.0%	61.0%	41.0%	
Maximum Green (s)	32.0	32.0	16.0	54.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.2	9.2	27.2	76.8	45.6	
Actuated g/C Ratio	0.09	0.09	0.27	0.77	0.46	
v/c Ratio	0.20	0.59	0.62	0.25	0.79	
Control Delay (s/veh)	44.0	16.7	35.2	3.6	35.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	44.0	16.7	35.2	3.6	35.2	
LOS	D	B	D	A	D	
Approach Delay (s/veh)	21.7			15.3	35.2	
Approach LOS	C			B	D	
Queue Length 50th (m)	6.6	0.0	53.5	15.6	118.6	
Queue Length 95th (m)	15.6	21.5	70.2	26.0	m126.3	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	577	523	906	3865	2301	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.06	0.29	0.62	0.25	0.79	

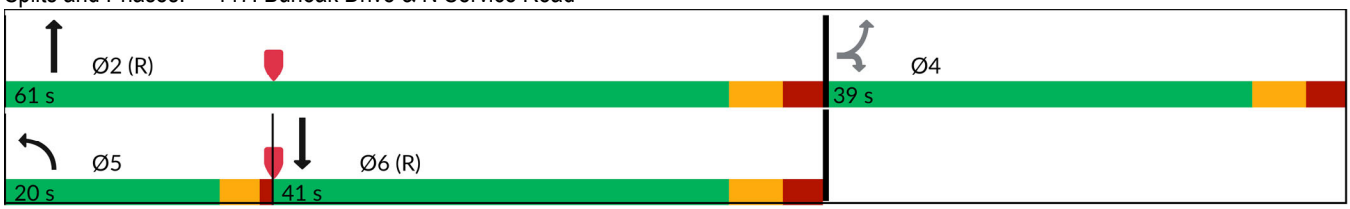
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 25.9		Intersection LOS: C	

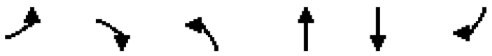
Intersection Capacity Utilization 72.5% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	150	554	942	1668	122
Future Volume (vph)	34	150	554	942	1668	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	3335	5036	5034	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1313	3335	5036	5034	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	34	152	560	952	1685	123
RTOR Reduction (vph)	0	138	0	0	7	0
Lane Group Flow (vph)	34	14	560	952	1801	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	9.2	9.2	27.2	76.8	45.6	
Effective Green, g (s)	9.2	9.2	27.2	76.8	45.6	
Actuated g/C Ratio	0.09	0.09	0.27	0.77	0.46	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	166	120	907	3867	2295	
v/s Ratio Prot			c0.17	0.19	c0.36	
v/s Ratio Perm	c0.02	0.01				
v/c Ratio	0.20	0.12	0.62	0.25	0.78	
Uniform Delay, d1	42.0	41.7	31.8	3.3	23.0	
Progression Factor	1.00	1.00	1.00	1.00	1.45	
Incremental Delay, d2	0.6	0.4	1.8	0.2	1.0	
Delay (s)	42.6	42.1	33.7	3.5	34.4	
Level of Service	D	D	C	A	C	
Approach Delay (s/veh)	42.2			14.7	34.4	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1444	997	0	0	2604
Future Volume (vph)	1445	1444	997	0	0	2604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2760	5036	0	0	5036
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2760	5036	0	0	5036
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		92				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1554	1553	1072	0	0	2800
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1554	1553	1072	0	0	2800
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	73.0	73.0	77.0			77.0
Total Split (%)	48.7%	48.7%	51.3%			51.3%
Maximum Green (s)	66.0	66.0	71.0			71.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
v/c Ratio	1.07	1.23	0.45			1.17
Control Delay (s/veh)	84.8	144.5	27.2			119.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	84.8	144.5	27.2			119.7
LOS	F	F	C			F
Approach Delay (s/veh)	114.7		27.2			119.7
Approach LOS	F		C			F
Queue Length 50th (m)	~288.6	~338.0	82.6			~390.5
Queue Length 95th (m)	#334.3	#388.0	95.7			#415.5
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1453	1265	2383			2383
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.07	1.23	0.45			1.17

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay (s/veh): 103.3		Intersection LOS: F	
Intersection Capacity Utilization 102.4%		ICU Level of Service G	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

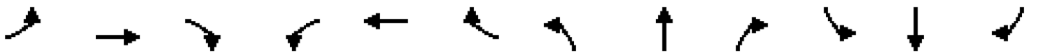
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



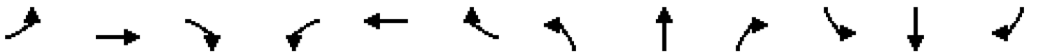


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1444	997	0	0	2604
Future Volume (vph)	1445	1444	997	0	0	2604
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3303	2760	5036			5036
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3303	2760	5036			5036
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1554	1553	1072	0	0	2800
RTOR Reduction (vph)	0	52	0	0	0	0
Lane Group Flow (vph)	1554	1501	1072	0	0	2800
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	66.0	66.0	71.0			71.0
Effective Green, g (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1453	1214	2383			2383
v/s Ratio Prot	0.47		0.21			c0.56
v/s Ratio Perm		c0.54				
v/c Ratio	1.07	1.24	0.45			1.17
Uniform Delay, d1	42.0	42.0	26.4			39.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	44.6	113.8	0.6			83.5
Delay (s)	86.6	155.8	27.0			123.0
Level of Service	F	F	C			F
Approach Delay (s/veh)	121.2		27.0			123.0
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	107.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Future Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.923	0.850			0.865		0.999				
Flt Protected	0.950	0.991										
Satd. Flow (prot)	1610	2750	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950	0.991									0.937	
Satd. Flow (perm)	1610	2750	1318	0	0	1417	0	5032	0	0	4629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		208	208			109		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	311	138	456	0	0	104	0	1108	6	6	2724	0
Shared Lane Traffic (%)	25%		50%									
Lane Group Flow (vph)	233	444	228	0	0	104	0	1114	0	0	2730	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			15.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)								7.0		7.0	7.0	
Flash Don't Walk (s)								25.0		15.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	21.2	21.2	21.2			8.6		59.1			59.1	
Actuated g/C Ratio	0.19	0.19	0.19			0.08		0.54			0.54	
v/c Ratio	0.75	0.64	0.54			0.49		0.41			1.10	
Control Delay (s/veh)	56.7	24.9	11.7			16.7		16.4			77.0	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	56.7	24.9	11.7			16.7		16.4			77.0	
LOS	E	C	B			B		B			E	
Approach Delay (s/veh)		29.7			16.7			16.4			77.0	
Approach LOS		C			B			B			E	
Queue Length 50th (m)	55.4	29.5	4.3			0.0		53.3			~265.7	
Queue Length 95th (m)	82.9	47.7	29.7			17.2		74.9			#323.6	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	380	808	470			251		2706			2488	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.61	0.55	0.49			0.41		0.41			1.10	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 3 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay (s/veh): 53.0	Intersection LOS: D

Intersection Capacity Utilization 78.3% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

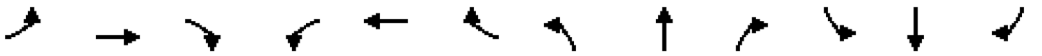
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



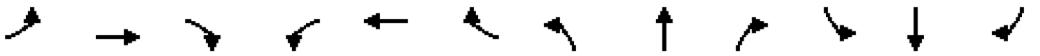
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Future Volume (vph)	289	128	424	0	0	97	0	1030	6	6	2533	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.92	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.99	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1610	2750	1318			1417		5033			4940	
Flt Permitted	0.95	0.99	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1610	2750	1318			1417		5033			4629	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	311	138	456	0	0	104	0	1108	6	6	2724	0
RTOR Reduction (vph)	0	168	168	0	0	96	0	0	0	0	0	0
Lane Group Flow (vph)	233	276	60	0	0	8	0	1114	0	0	2730	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	21.2	21.2	21.2			8.6		59.2			59.2	
Effective Green, g (s)	21.2	21.2	21.2			8.6		59.2			59.2	
Actuated g/C Ratio	0.19	0.19	0.19			0.08		0.54			0.54	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	310	530	254			110		2708			2491	
v/s Ratio Prot	c0.14	0.10						0.22				
v/s Ratio Perm			0.05			c0.01					c0.59	
v/c Ratio	0.75	0.52	0.24			0.07		0.41			1.10	
Uniform Delay, d1	41.9	39.8	37.6			47.0		15.1			25.4	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	9.8	0.9	0.5			0.3		0.5			50.3	
Delay (s)	51.8	40.8	38.0			47.3		15.5			75.7	
Level of Service	D	D	D			D		B			E	
Approach Delay (s/veh)		42.9			47.3			15.5			75.7	
Approach LOS		D			D			B			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	55.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Future Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.957			0.884			0.963			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1681	0	1504	1571	0	1719	4754	0	1752	4925	0
Flt Permitted	0.717			0.365			0.076			0.080		
Satd. Flow (perm)	1195	1681	0	578	1571	0	138	4754	0	148	4925	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			48			91			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	57	140	56	92	14	48	172	1534	505	115	1882	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	196	0	92	62	0	172	2039	0	115	1925	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

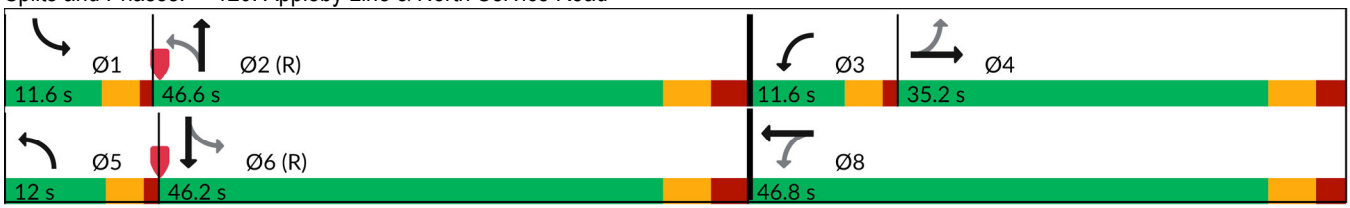


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		11.6	46.8		12.0	46.6		11.6	46.2	
Total Split (%)	33.5%	33.5%		11.0%	44.6%		11.4%	44.4%		11.0%	44.0%	
Maximum Green (s)	29.1	29.1		7.6	40.7		8.0	40.0		7.6	39.6	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.5	16.5		27.9	25.8		67.7	53.7		62.6	51.2	
Actuated g/C Ratio	0.16	0.16		0.27	0.25		0.64	0.51		0.60	0.49	
v/c Ratio	0.30	0.70		0.42	0.15		0.66	0.82		0.52	0.80	
Control Delay (s/veh)	41.6	50.6		33.4	11.2		31.3	26.4		25.0	45.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	41.6	50.6		33.4	11.2		31.3	26.4		25.0	45.8	
LOS	D	D		C	B		C	C		C	D	
Approach Delay (s/veh)		48.6			24.4			26.8			44.6	
Approach LOS		D			C			C			D	
Queue Length 50th (m)	12.1	37.2		17.1	2.4		19.2	134.0		21.6	163.3	
Queue Length 95th (m)	24.1	58.2		29.5	12.3		45.5	#211.1		m24.8	m#176.9	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	331	479		220	638		260	2475		226	2401	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.41		0.42	0.10		0.66	0.82		0.51	0.80	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 35.7	Intersection LOS: D

Intersection Capacity Utilization 78.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Future Volume (vph)	54	133	53	87	13	46	163	1457	480	109	1788	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1682		1504	1571		1719	4753		1752	4923	
Flt Permitted	0.72	1.00		0.36	1.00		0.08	1.00		0.08	1.00	
Satd. Flow (perm)	1194	1682		578	1571		137	4753		147	4923	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	140	56	92	14	48	172	1534	505	115	1882	43
RTOR Reduction (vph)	0	16	0	0	36	0	0	45	0	0	2	0
Lane Group Flow (vph)	57	180	0	92	26	0	172	1994	0	115	1923	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.5	16.5		26.6	26.6		64.3	52.9		59.1	50.3	
Effective Green, g (s)	16.5	16.5		26.6	26.6		64.3	52.9		59.1	50.3	
Actuated g/C Ratio	0.16	0.16		0.25	0.25		0.61	0.50		0.56	0.48	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	187	264		200	397		255	2394		217	2358	
v/s Ratio Prot		c0.11		c0.03	0.02		c0.07	c0.42		0.04	0.39	
v/s Ratio Perm	0.05			0.09			0.34			0.25		
v/c Ratio	0.30	0.68		0.46	0.07		0.67	0.83		0.53	0.82	
Uniform Delay, d1	39.2	41.8		31.6	29.8		22.5	22.3		16.4	23.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.49	1.85	
Incremental Delay, d2	0.9	7.1		1.7	0.1		6.9	3.6		0.9	1.2	
Delay (s)	40.1	48.8		33.2	29.8		29.3	25.8		25.3	44.4	
Level of Service	D	D		C	C		C	C		C	D	
Approach Delay (s/veh)		46.9			31.9			26.1			43.3	
Approach LOS		D			C			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	78.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2542	0	0	2056
Future Volume (vph)	586	663	2542	0	0	2056
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	2632	4988	0	0	4893
Flt Permitted	0.950					
Satd. Flow (perm)	3183	2632	4988	0	0	4893
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	644	729	2793	0	0	2259
Shared Lane Traffic (%)						
Lane Group Flow (vph)	644	729	2793	0	0	2259
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

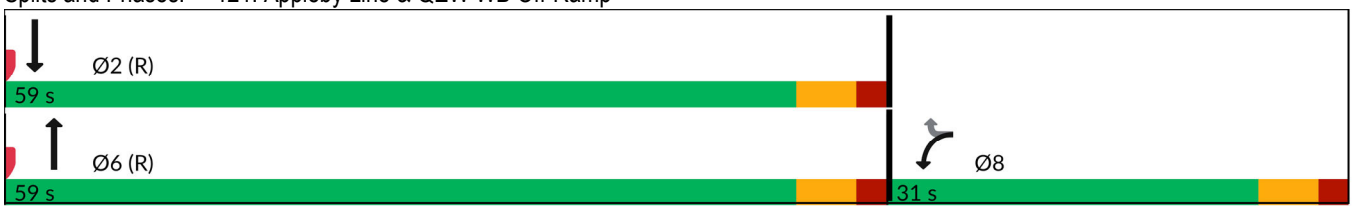


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	31.0	31.0	59.0			59.0
Total Split (%)	34.4%	34.4%	65.6%			65.6%
Maximum Green (s)	25.0	25.0	53.0			53.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	25.0	25.0	53.0			53.0
Actuated g/C Ratio	0.28	0.28	0.59			0.59
v/c Ratio	0.73	1.00	0.95			0.78
Control Delay (s/veh)	35.1	66.2	26.6			16.6
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	35.1	66.2	26.6			16.6
LOS	D	E	C			B
Approach Delay (s/veh)	51.6		26.6			16.6
Approach LOS	D		C			B
Queue Length 50th (m)	58.4	79.1	164.9			110.5
Queue Length 95th (m)	79.6	#125.3	#221.9			132.1
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	884	732	2937			2881
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.73	1.00	0.95			0.78

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 28.4	Intersection LOS: C
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

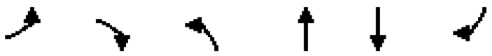
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



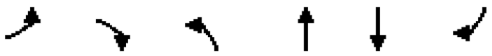


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2542	0	0	2056
Future Volume (vph)	586	663	2542	0	0	2056
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	2632	4988			4893
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	2632	4988			4893
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	644	729	2793	0	0	2259
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	644	728	2793	0	0	2259
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	25.0	25.0	53.0			53.0
Effective Green, g (s)	25.0	25.0	53.0			53.0
Actuated g/C Ratio	0.28	0.28	0.59			0.59
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	884	731	2937			2881
v/s Ratio Prot	0.20		c0.56			0.46
v/s Ratio Perm		c0.28				
v/c Ratio	0.73	1.00	0.95			0.78
Uniform Delay, d1	29.4	32.4	17.3			14.1
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	3.0	31.9	8.6			2.2
Delay (s)	32.5	64.3	25.8			16.3
Level of Service	C	E	C			B
Approach Delay (s/veh)	49.4		25.8			16.3
Approach LOS	D		C			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	970	544	0	2077	2078	0
Future Volume (vph)	970	544	0	2077	2078	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4893	4893	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4893	4893	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		3				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	1078	604	0	2308	2309	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1078	604	0	2308	2309	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

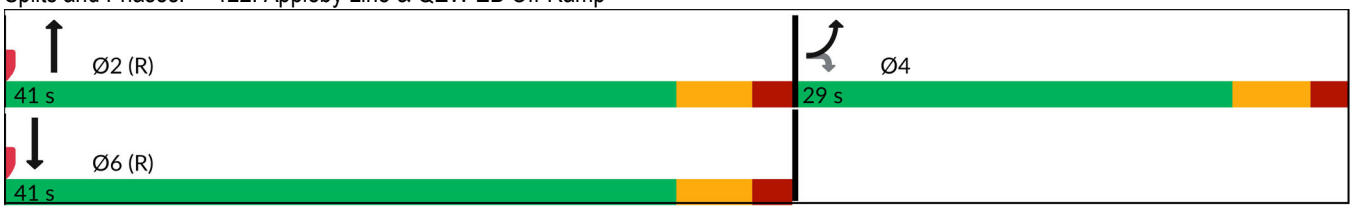


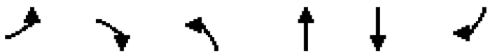
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	29.0	29.0		41.0	41.0	
Total Split (%)	41.4%	41.4%		58.6%	58.6%	
Maximum Green (s)	23.0	23.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	23.0	23.0		35.0	35.0	
Actuated g/C Ratio	0.33	0.33		0.50	0.50	
v/c Ratio	0.98	0.68		0.94	0.94	
Control Delay (s/veh)	49.1	24.8		26.7	26.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	49.1	24.8		26.7	26.8	
LOS	D	C		C	C	
Approach Delay (s/veh)	40.4			26.7	26.8	
Approach LOS	D			C	C	
Queue Length 50th (m)	77.5	41.4		107.6	107.6	
Queue Length 95th (m)	#120.8	61.2		#153.0	#153.0	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1095	891		2446	2446	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.98	0.68		0.94	0.94	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay (s/veh): 30.4		Intersection LOS: C	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

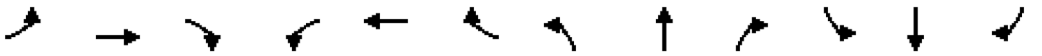




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	970	544	0	2077	2078	0
Future Volume (vph)	970	544	0	2077	2078	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4893	4893	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4893	4893	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1078	604	0	2308	2309	0
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	1078	602	0	2308	2309	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	23.0	23.0		35.0	35.0	
Effective Green, g (s)	23.0	23.0		35.0	35.0	
Actuated g/C Ratio	0.33	0.33		0.50	0.50	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1095	889		2446	2446	
v/s Ratio Prot	c0.32			0.47	c0.47	
v/s Ratio Perm		0.22				
v/c Ratio	0.98	0.68		0.94	0.94	
Uniform Delay, d1	23.3	20.3		16.6	16.6	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.3	2.1		9.1	9.1	
Delay (s)	46.6	22.4		25.6	25.7	
Level of Service	D	C		C	C	
Approach Delay (s/veh)	37.9			25.6	25.7	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Future Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99	1.00		0.99
Frt		0.982			0.905				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3263	0	1656	2893	0	1687	5036	1568	3433	4893	1417
Flt Permitted	0.412			0.246			0.340			0.950		
Satd. Flow (perm)	661	3263	0	429	2893	0	603	5036	1548	3432	4893	1396
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			216				252			294
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	202	527	74	112	156	266	90	1407	414	448	793	294
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	601	0	112	422	0	90	1407	414	448	793	294
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		11.0	38.4		11.0	38.6	38.6	12.0	39.6	39.6
Total Split (%)	11.0%	38.4%		11.0%	38.4%		11.0%	38.6%	38.6%	12.0%	39.6%	39.6%
Maximum Green (s)	7.0	32.0		7.0	32.0		7.0	32.3	32.3	8.0	33.3	33.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	32.9	23.5		32.9	23.5		42.7	32.3	32.3	16.5	42.9	42.9
Actuated g/C Ratio	0.33	0.24		0.33	0.24		0.43	0.32	0.32	0.17	0.43	0.43
v/c Ratio	0.73	0.77		0.50	0.50		0.26	0.87	0.62	0.79	0.38	0.38
Control Delay (s/veh)	40.4	41.7		28.2	17.1		14.5	38.6	15.2	53.1	21.7	4.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	40.4	41.7		28.2	17.1		14.5	38.6	15.2	53.1	21.7	4.5
LOS	D	D		C	B		B	D	B	D	C	A
Approach Delay (s/veh)		41.4			19.4			32.4			27.6	
Approach LOS		D			B			C			C	
Queue Length 50th (m)	33.4	61.6		16.3	19.1		8.6	100.1	26.3	46.3	42.7	0.0
Queue Length 95th (m)	49.3	75.8		26.5	31.8		19.4	120.2	60.6	#92.0	61.9	20.0
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	277	1055		226	1072		345	1626	670	567	2101	767
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.73	0.57		0.50	0.39		0.26	0.87	0.62	0.79	0.38	0.38

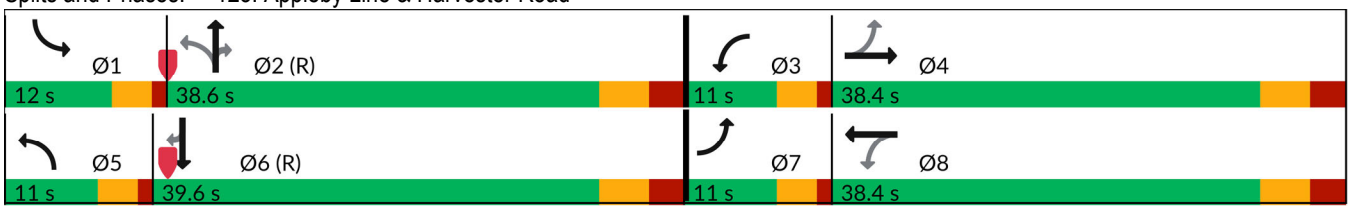
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 30.9	Intersection LOS: C

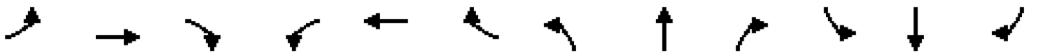
Intersection Capacity Utilization 81.5% ICU Level of Service D

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

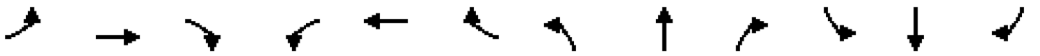




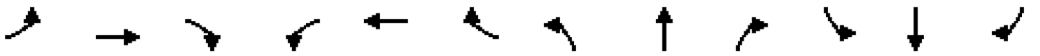
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Future Volume (vph)	190	495	70	105	147	250	85	1323	389	421	745	276
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3262		1656	2895		1686	5036	1548	3433	4893	1396
Flt Permitted	0.41	1.00		0.25	1.00		0.34	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	662	3262		428	2895		603	5036	1548	3433	4893	1396
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	202	527	74	112	156	266	90	1407	414	448	793	294
RTOR Reduction (vph)	0	12	0	0	165	0	0	0	171	0	0	170
Lane Group Flow (vph)	202	589	0	112	257	0	90	1407	243	448	793	124
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	30.5	23.5		30.5	23.5		39.0	32.3	32.3	16.5	42.1	42.1
Effective Green, g (s)	30.5	23.5		30.5	23.5		39.0	32.3	32.3	16.5	42.1	42.1
Actuated g/C Ratio	0.31	0.24		0.31	0.24		0.39	0.32	0.32	0.17	0.42	0.42
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	262	766		216	680		307	1626	500	566	2059	587
v/s Ratio Prot	c0.05	0.18		0.04	0.09		0.02	c0.28		c0.13	0.16	
v/s Ratio Perm	c0.18			0.12			0.09		0.16			0.09
v/c Ratio	0.77	0.77		0.52	0.38		0.29	0.87	0.49	0.79	0.39	0.21
Uniform Delay, d1	29.8	35.7		26.5	32.1		19.7	31.8	27.2	40.1	20.0	18.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.1	4.7		2.1	0.4		0.5	6.4	3.4	7.4	0.5	0.8
Delay (s)	42.9	40.4		28.6	32.5		20.2	38.2	30.6	47.5	20.6	19.2
Level of Service	D	D		C	C		C	D	C	D	C	B
Approach Delay (s/veh)		41.0			31.6			35.7			28.2	
Approach LOS		D			C			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	81.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Future Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	5085	1538
Flt Permitted	0.950			0.634			0.097			0.097		
Satd. Flow (perm)	3389	1776	1513	1062	1610	1395	182	3539	1403	162	5085	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			229			153			150			174
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	721	196	296	125	82	207	251	1373	154	272	1363	174
Shared Lane Traffic (%)												
Lane Group Flow (vph)	721	196	296	125	82	207	251	1373	154	272	1363	174
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	33.0	47.0	47.0	13.0	27.0	27.0	12.0	48.0	48.0	12.0	48.0	48.0
Total Split (%)	27.5%	39.2%	39.2%	10.8%	22.5%	22.5%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Maximum Green (s)	28.0	40.5	40.5	9.0	20.5	20.5	8.0	41.2	41.2	8.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	27.5	32.4	32.4	23.9	12.7	12.7	60.4	41.2	41.2	60.4	41.2	41.2
Actuated g/C Ratio	0.23	0.27	0.27	0.20	0.11	0.11	0.50	0.34	0.34	0.50	0.34	0.34
v/c Ratio	0.93	0.41	0.51	0.50	0.48	0.73	0.81	1.13	0.27	0.99	0.78	0.27
Control Delay (s/veh)	64.2	37.8	11.8	32.7	58.8	30.3	49.9	106.4	5.9	85.7	39.2	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.2	37.8	11.8	32.7	58.8	30.3	49.9	106.4	5.9	85.7	39.2	5.2
LOS	E	D	B	C	E	C	D	F	A	F	D	A
Approach Delay (s/veh)		47.2			36.6			89.7			42.9	
Approach LOS		D			D			F			D	
Queue Length 50th (m)	92.0	42.5	13.3	22.1	22.2	14.1	42.5	~210.7	0.7	56.8	111.9	0.0
Queue Length 95th (m)	#127.7	59.8	36.8	33.0	38.4	41.2	#118.1	#255.6	16.8	#151.3	130.9	16.1
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	793	599	662	253	275	365	310	1215	580	275	1745	633
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.33	0.45	0.49	0.30	0.57	0.81	1.13	0.27	0.99	0.78	0.27

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay (s/veh): 59.4	Intersection LOS: E

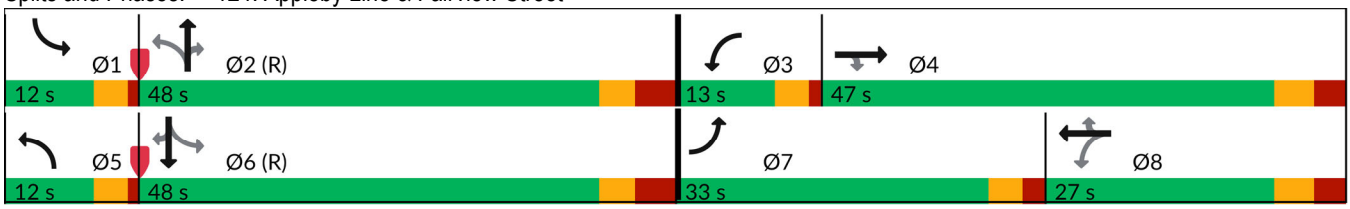
Intersection Capacity Utilization 97.0% ICU Level of Service F

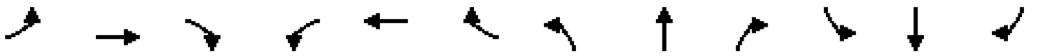
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

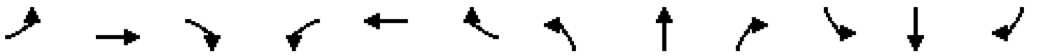




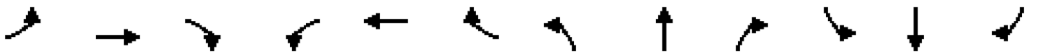
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Future Volume (vph)	685	186	281	119	78	197	238	1304	146	258	1295	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	5085	1513
Flt Permitted	0.95	1.00	1.00	0.63	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1065	1610	1395	183	3539	1403	162	5085	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	721	196	296	125	82	207	251	1373	154	272	1363	174
RTOR Reduction (vph)	0	0	167	0	0	137	0	0	99	0	0	114
Lane Group Flow (vph)	721	196	129	125	82	70	251	1373	55	272	1363	60
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	27.5	32.4	32.4	21.5	12.7	12.7	57.5	41.1	41.1	57.5	41.1	41.1
Effective Green, g (s)	27.5	32.4	32.4	21.5	12.7	12.7	57.5	41.1	41.1	57.5	41.1	41.1
Actuated g/C Ratio	0.23	0.27	0.27	0.18	0.11	0.11	0.48	0.34	0.34	0.48	0.34	0.34
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	779	479	408	229	170	147	306	1212	480	271	1741	518
v/s Ratio Prot	c0.21	0.11		0.04	0.05		0.11	c0.39		c0.14	0.27	
v/s Ratio Perm			0.09	c0.06		0.05	0.28		0.04	0.34		0.04
v/c Ratio	0.93	0.41	0.32	0.55	0.48	0.48	0.82	1.13	0.12	1.00	0.78	0.12
Uniform Delay, d1	45.2	35.9	35.0	43.9	50.6	50.5	30.6	39.4	27.0	36.9	35.4	27.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	16.7	0.6	0.4	2.6	2.2	2.4	16.0	70.5	0.5	55.6	3.6	0.5
Delay (s)	62.0	36.5	35.4	46.5	52.7	53.0	46.6	110.0	27.5	92.5	39.0	27.5
Level of Service	E	D	D	D	D	D	D	F	C	F	D	C
Approach Delay (s/veh)		51.4			51.0			93.9			46.0	
Approach LOS		D			D			F			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	64.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Future Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.97	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5036	1521	3337	5085	1514	3478	5085	1520	3421	5085	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			283			298			237			146
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	210	830	353	554	1779	298	576	1213	469	374	888	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	830	353	554	1779	298	576	1213	469	374	888	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	14.0	46.4	46.4	25.0	57.4	57.4	25.0	49.6	49.6	24.0	48.6	48.6
Total Split (%)	9.7%	32.0%	32.0%	17.2%	39.6%	39.6%	17.2%	34.2%	34.2%	16.6%	33.5%	33.5%
Maximum Green (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.2	42.2	19.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Actuated g/C Ratio	0.06	0.27	0.27	0.14	0.34	0.34	0.14	0.29	0.29	0.13	0.28	0.28
v/c Ratio	0.99	0.61	0.57	1.19	1.01	0.42	1.19	0.82	0.77	0.84	0.61	0.50
Control Delay (s/veh)	124.8	48.7	13.8	158.6	71.9	5.3	157.4	53.1	31.9	78.7	47.2	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	124.8	48.7	13.8	158.6	71.9	5.3	157.4	53.1	31.9	78.7	47.2	22.8
LOS	F	D	B	F	E	A	F	D	C	E	D	C
Approach Delay (s/veh)		51.3			82.6			75.3			50.6	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	33.7	82.6	16.6	~106.9	~210.1	0.0	~108.0	127.3	69.0	58.5	86.8	30.8
Queue Length 95th (m)	#62.1	98.4	50.3	#146.1	#241.3	21.2	#146.8	146.6	117.7	#83.6	102.9	60.2
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	213	1354	615	464	1753	717	483	1485	611	449	1444	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.61	0.57	1.19	1.01	0.42	1.19	0.82	0.77	0.83	0.61	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay (s/veh): 68.6	Intersection LOS: E

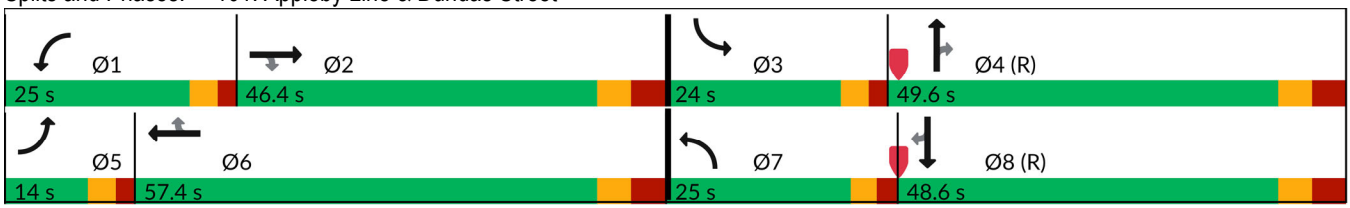
Intersection Capacity Utilization 111.2% ICU Level of Service H

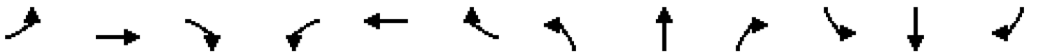
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street



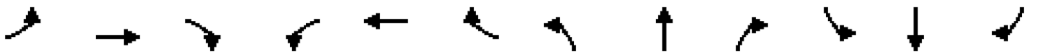


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Future Volume (vph)	204	805	342	537	1726	289	559	1177	455	363	861	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	210	830	353	554	1779	298	576	1213	469	374	888	271
RTOR Reduction (vph)	0	0	207	0	0	195	0	0	168	0	0	105
Lane Group Flow (vph)	210	830	146	554	1779	103	576	1213	301	374	888	166
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Effective Green, g (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Actuated g/C Ratio	0.06	0.27	0.27	0.14	0.34	0.34	0.14	0.29	0.29	0.13	0.28	0.28
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	213	1354	409	464	1753	522	483	1486	444	445	1444	438
v/s Ratio Prot	0.06	0.16		c0.16	c0.35		c0.16	c0.24		0.11	0.17	
v/s Ratio Perm			0.10			0.07			0.20			0.11
v/c Ratio	0.99	0.61	0.36	1.19	1.01	0.20	1.19	0.82	0.68	0.84	0.61	0.38
Uniform Delay, d1	67.9	46.4	42.9	62.5	47.5	33.4	62.5	47.7	45.3	61.6	45.0	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	57.5	0.8	0.5	106.8	25.2	0.2	105.6	5.1	8.1	14.7	2.0	2.5
Delay (s)	125.5	47.2	43.4	169.3	72.7	33.6	168.1	52.8	53.4	76.3	47.0	44.1
Level of Service	F	D	D	F	E	C	F	D	D	E	D	D
Approach Delay (s/veh)		58.1			88.6			82.3			53.6	
Approach LOS		E			F			F			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	74.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	111.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Future Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		0.99		0.97	1.00	1.00		1.00	0.99	
Frt		0.938				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3336	0	3367	5187	1599	3502	4961	0	3467	4884	0
Flt Permitted	0.141			0.950			0.950			0.950		
Satd. Flow (perm)	257	3336	0	3337	5187	1555	3492	4961	0	3462	4884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		148				198		13			63	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	218	434	302	162	947	579	425	1821	144	324	1020	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	736	0	162	947	579	425	1965	0	324	1292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	13.0	36.0		12.0	35.0	35.0	22.0	53.0		14.0	45.0	
Total Split (%)	11.3%	31.3%		10.4%	30.4%	30.4%	19.1%	46.1%		12.2%	39.1%	
Maximum Green (s)	9.0	29.6		8.0	28.6	28.6	17.0	46.5		10.0	38.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	41.0	29.6		8.0	28.6	28.6	16.6	46.5		10.0	38.9	
Actuated g/C Ratio	0.36	0.26		0.07	0.25	0.25	0.14	0.40		0.09	0.34	
v/c Ratio	1.05	0.76		0.69	0.73	1.08	0.84	0.98		1.08	0.76	
Control Delay (s/veh)	106.9	37.1		68.3	43.7	90.8	64.0	49.0		123.2	35.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	106.9	37.1		68.3	43.7	90.8	64.0	49.0		123.2	35.8	
LOS	F	D		E	D	F	E	D		F	D	
Approach Delay (s/veh)		53.0			62.2			51.7			53.3	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	~39.3	68.7		20.2	75.8	~116.8	50.9	167.9		~44.3	96.8	
Queue Length 95th (m)	#91.5	92.0		#35.0	92.1	#188.2	#75.1	#208.1		#74.3	115.7	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	207	968		234	1289	535	517	2013		301	1695	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.05	0.76		0.69	0.73	1.08	0.82	0.98		1.08	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 55.0	Intersection LOS: D

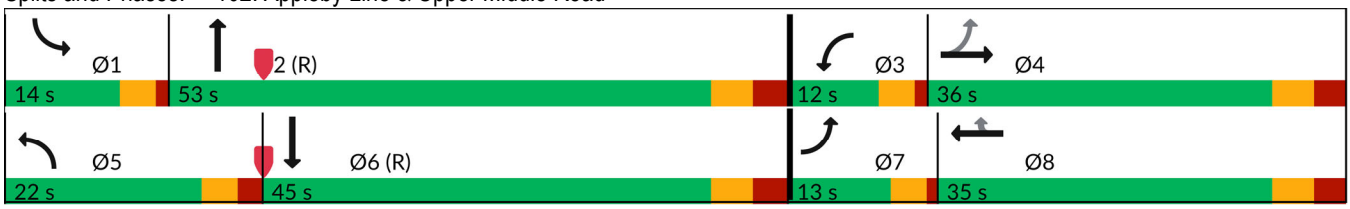
Intersection Capacity Utilization 101.0% ICU Level of Service G

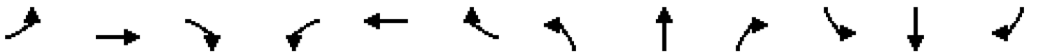
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road



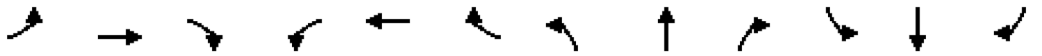


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Future Volume (vph)	216	430	299	160	938	573	421	1803	143	321	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3338		3367	5187	1555	3502	4961		3467	4886	
Flt Permitted	0.14	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	257	3338		3367	5187	1555	3502	4961		3467	4886	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	218	434	302	162	947	579	425	1821	144	324	1020	272
RTOR Reduction (vph)	0	110	0	0	0	149	0	8	0	0	42	0
Lane Group Flow (vph)	218	626	0	162	947	430	425	1957	0	324	1250	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	38.6	29.6		8.0	28.6	28.6	16.6	46.5		10.0	38.9	
Effective Green, g (s)	38.6	29.6		8.0	28.6	28.6	16.6	46.5		10.0	38.9	
Actuated g/C Ratio	0.34	0.26		0.07	0.25	0.25	0.14	0.40		0.09	0.34	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	201	859		234	1289	386	505	2005		301	1652	
v/s Ratio Prot	c0.08	0.19		0.05	0.18		0.12	c0.39		c0.09	0.26	
v/s Ratio Perm	c0.28					0.28						
v/c Ratio	1.08	0.73		0.69	0.73	1.11	0.84	0.98		1.08	0.76	
Uniform Delay, d1	32.1	39.0		52.3	39.7	43.2	47.9	33.7		52.5	33.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	87.8	3.1		8.5	2.2	80.6	12.1	15.2		73.7	3.3	
Delay (s)	119.9	42.2		60.8	41.9	123.8	60.0	48.9		126.2	37.1	
Level of Service	F	D		E	D	F	E	D		F	D	
Approach Delay (s/veh)		59.9			71.8			50.9			55.0	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	101.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Future Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.995							0.850		0.916	
Flt Protected	0.950							0.950			0.982	
Satd. Flow (prot)	1805	5095	0	1900	5136	0	0	1805	1615	0	1695	0
Flt Permitted	0.111							0.752			0.955	
Satd. Flow (perm)	211	5095	0	1900	5136	0	0	1428	1594	0	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8							78		78	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	989	31	0	1988	0	81	0	17	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1020	0	0	1988	0	0	81	17	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

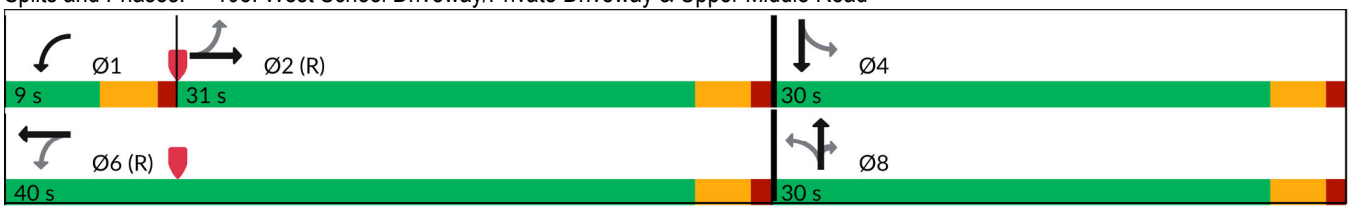


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	31.0	31.0		9.0	40.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	44.3%	44.3%		12.9%	57.1%		42.9%	42.9%	42.9%	42.9%	42.9%	
Maximum Green (s)	27.0	27.0		5.0	36.0		26.0	26.0	26.0	26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
v/c Ratio	0.03	0.39			0.75			0.15	0.03		0.01	
Control Delay (s/veh)	9.3	10.8			15.8			15.7	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.3	10.8			15.8			15.7	0.1		0.0	
LOS	A	B			B			B	A		A	
Approach Delay (s/veh)		10.8			15.8			13.0				
Approach LOS		B			B			B				
Queue Length 50th (m)	0.2	29.0			74.5			7.3	0.0		0.0	
Queue Length 95th (m)	1.5	38.0			92.8			16.1	0.0		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	108	2624			2641			530	641		661	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.03	0.39			0.75			0.15	0.03		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay (s/veh): 14.0	Intersection LOS: B

Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

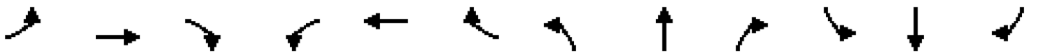
Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



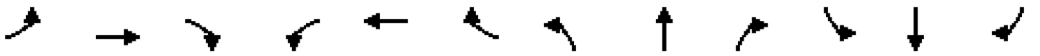
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Future Volume (vph)	3	940	29	0	1889	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91			0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1804	5097			5136			1804	1594		1694	
Flt Permitted	0.11	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	211	5097			5136			1428	1594		1647	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	989	31	0	1988	0	81	0	17	3	0	5
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	11	0	5	0
Lane Group Flow (vph)	3	1016	0	0	1988	0	0	81	6	0	3	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Effective Green, g (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	108	2621			2641			530	592		611	
v/s Ratio Prot		0.20			c0.39							
v/s Ratio Perm	0.01							c0.06	0.00		0.00	
v/c Ratio	0.03	0.39			0.75			0.15	0.01		0.00	
Uniform Delay, d1	8.4	10.3			13.5			14.7	13.9		13.9	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.4			2.0			0.6	0.0		0.0	
Delay (s)	8.9	10.7			15.5			15.3	13.9		13.9	
Level of Service	A	B			B			B	B		B	
Approach Delay (s/veh)		10.7			15.5			15.0			13.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	767	72	1	1732	205	14	0	1	55	0	124
Future Volume (vph)	180	767	72	1	1732	205	14	0	1	55	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						0.99	
Frt		0.987			0.984			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1805	5065	0	0	5026	0	1770	1583	0	1805	1593	0
Flt Permitted	0.091				0.940		0.564			0.757		
Satd. Flow (perm)	173	5065	0	0	4724	0	1051	1583	0	1438	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			31			191			240	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			140.3			235.5	
Travel Time (s)		7.1			17.4			12.6			21.2	
Confl. Peds. (#/hr)	13					13						1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	188	799	75	1	1804	214	15	0	1	57	0	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	874	0	0	2019	0	15	1	0	57	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

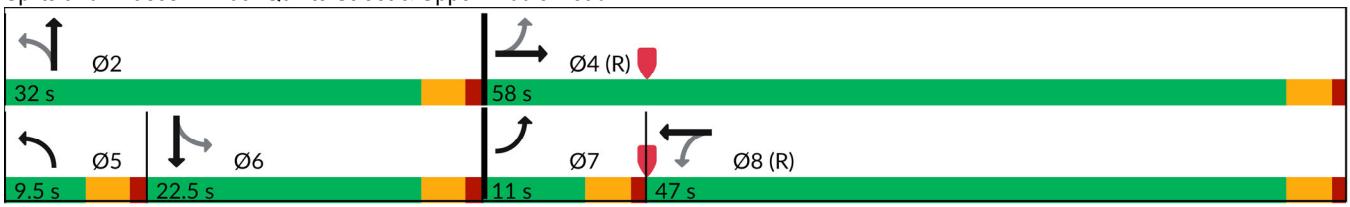


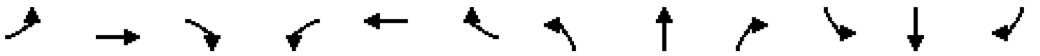
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	11.0	58.0		47.0	47.0		9.5	32.0		22.5	22.5	
Total Split (%)	12.2%	64.4%		52.2%	52.2%		10.6%	35.6%		25.0%	25.0%	
Maximum Green (s)	7.0	54.0		43.0	43.0		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	54.0	54.0			43.0		28.0	28.0		26.1	26.1	
Actuated g/C Ratio	0.60	0.60			0.48		0.31	0.31		0.29	0.29	
v/c Ratio	0.82	0.29			0.89		0.04	0.00		0.14	0.20	
Control Delay (s/veh)	43.3	8.6			27.2		22.0	0.0		26.5	0.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	43.3	8.6			27.2		22.0	0.0		26.5	0.7	
LOS	D	A			C		C	A		C	A	
Approach Delay (s/veh)		14.8			27.2			20.6			8.6	
Approach LOS		B			C			C			A	
Queue Length 50th (m)	15.7	24.9			116.5		1.9	0.0		7.4	0.0	
Queue Length 95th (m)	#52.4	31.9			140.6		6.5	0.0		19.4	0.0	
Internal Link Dist (m)		94.7			266.7			116.3			211.5	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	230	3051			2273		370	624		417	632	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.82	0.29			0.89		0.04	0.00		0.14	0.20	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 22.1	Intersection LOS: C

Intersection Capacity Utilization 79.6% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road

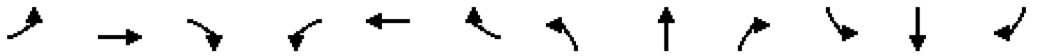




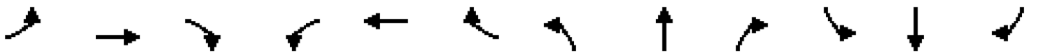
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	767	72	1	1732	205	14	0	1	55	0	124
Future Volume (vph)	180	767	72	1	1732	205	14	0	1	55	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.98		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5065			5026		1770	1583		1805	1593	
Flt Permitted	0.09	1.00			0.94		0.56	1.00		0.76	1.00	
Satd. Flow (perm)	174	5065			4724		1050	1583		1439	1593	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	799	75	1	1804	214	15	0	1	57	0	129
RTOR Reduction (vph)	0	14	0	0	17	0	0	1	0	0	92	0
Lane Group Flow (vph)	188	860	0	0	2002	0	15	0	0	57	37	0
Confl. Peds. (#/hr)	13					13						1
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.8	50.8			39.8		31.2	31.2		26.1	26.1	
Effective Green, g (s)	50.8	50.8			39.8		31.2	31.2		26.1	26.1	
Actuated g/C Ratio	0.56	0.56			0.44		0.35	0.35		0.29	0.29	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	225	2858			2089		372	548		417	461	
v/s Ratio Prot	c0.06	0.17					c0.00	0.00			0.02	
v/s Ratio Perm	0.41				c0.42		0.01			c0.04		
v/c Ratio	0.84	0.30			0.96		0.04	0.00		0.14	0.08	
Uniform Delay, d1	19.9	10.3			24.3		19.5	19.2		23.6	23.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.7	0.3			12.0		0.0	0.0		0.7	0.3	
Delay (s)	42.5	10.6			36.3		19.6	19.2		24.3	23.6	
Level of Service	D	B			D		B	B		C	C	
Approach Delay (s/veh)		16.2			36.3			19.5			23.8	
Approach LOS		B			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Future Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor					0.99					0.99	0.99	
Frt		0.989			0.960			0.925			0.851	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	5076	0	1770	4882	0	1770	1723	0	3502	1562	0
Flt Permitted	0.080			0.398			0.769			0.950		
Satd. Flow (perm)	148	5076	0	741	4882	0	1432	1723	0	3480	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			108			5			189	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			131.5			321.0	
Travel Time (s)		17.4			14.7			11.8			28.9	
Confl. Peds. (#/hr)	8					8				5		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	233	594	45	8	1733	632	73	5	5	252	2	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	639	0	8	2365	0	73	10	0	252	204	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	30.0		9.5	30.0		9.0	30.0		9.0	30.5	
Total Split (s)	15.0	58.4		9.6	53.0		9.0	30.0		12.0	33.0	
Total Split (%)	13.6%	53.1%		8.7%	48.2%		8.2%	27.3%		10.9%	30.0%	
Maximum Green (s)	11.0	54.4		5.6	49.0		5.0	26.0		8.0	29.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	Max	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Don't Walk (s)		16.0			16.0			16.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	64.0	62.1		54.6	49.0		10.2	11.4		32.0	30.8	
Actuated g/C Ratio	0.58	0.56		0.50	0.45		0.09	0.10		0.29	0.28	
v/c Ratio	0.95	0.22		0.02	1.06		0.49	0.05		0.25	0.36	
Control Delay (s/veh)	72.5	12.3		10.3	66.0		54.4	29.3		34.2	7.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	72.5	12.3		10.3	66.0		54.4	29.3		34.2	7.8	
LOS	E	B		B	E		D	C		C	A	
Approach Delay (s/veh)		28.4			65.8			51.3			22.4	
Approach LOS		C			E			D			C	
Queue Length 50th (m)	36.2	23.3		0.7	~211.9		17.0	1.1		20.5	2.6	
Queue Length 95th (m)	#86.9	37.1		2.9	#243.1		22.3	5.6		#56.7	21.0	
Internal Link Dist (m)		266.7			220.7			107.5			297.0	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	246	2871		420	2234		148	411		1018	573	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.95	0.22		0.02	1.06		0.49	0.02		0.25	0.36	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 51.6	Intersection LOS: D

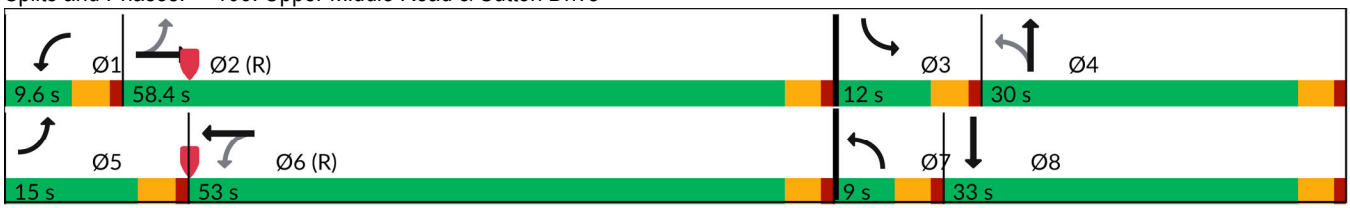
Intersection Capacity Utilization 96.8% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

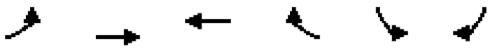
Splits and Phases: 106: Upper Middle Road & Sutton Drive



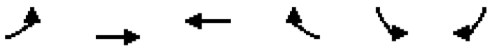
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Future Volume (vph)	221	564	43	8	1646	600	69	5	5	239	2	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	5078		1770	4882		1770	1723		3502	1563	
Flt Permitted	0.08	1.00		0.40	1.00		0.77	1.00		0.95	1.00	
Satd. Flow (perm)	148	5078		742	4882		1433	1723		3502	1563	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	233	594	45	8	1733	632	73	5	5	252	2	202
RTOR Reduction (vph)	0	7	0	0	63	0	0	5	0	0	132	0
Lane Group Flow (vph)	233	632	0	8	2302	0	73	5	0	252	72	0
Confl. Peds. (#/hr)	8					8				5		2
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	60.8	55.7		46.9	45.8		9.2	5.2		32.0	33.2	
Effective Green, g (s)	60.8	55.7		46.9	45.8		9.2	5.2		32.0	33.2	
Actuated g/C Ratio	0.55	0.51		0.43	0.42		0.08	0.05		0.29	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	242	2571		326	2032		132	81		1018	471	
v/s Ratio Prot	c0.10	0.12		0.00	c0.47		c0.02	0.00		c0.07	0.05	
v/s Ratio Perm	0.44			0.01			c0.03					
v/c Ratio	0.96	0.25		0.02	1.13		0.55	0.06		0.25	0.15	
Uniform Delay, d1	33.0	15.3		18.2	32.1		48.2	50.1		29.8	28.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	47.9	0.2		0.1	66.6		8.3	0.7		0.3	0.7	
Delay (s)	80.8	15.5		18.2	98.7		56.4	50.8		30.1	28.8	
Level of Service	F	B		B	F		E	D		C	C	
Approach Delay (s/veh)		33.0			98.4			55.8			29.5	
Approach LOS		C			F			E			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	74.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	708	2220	162	70	48
Future Volume (vph)	43	708	2220	162	70	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor			1.00			
Frt			0.990		0.945	
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1805	5136	5073	0	1722	0
Flt Permitted	0.121				0.971	
Satd. Flow (perm)	230	5136	5073	0	1722	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30		2	
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	47	770	2413	176	76	52
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	770	2589	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

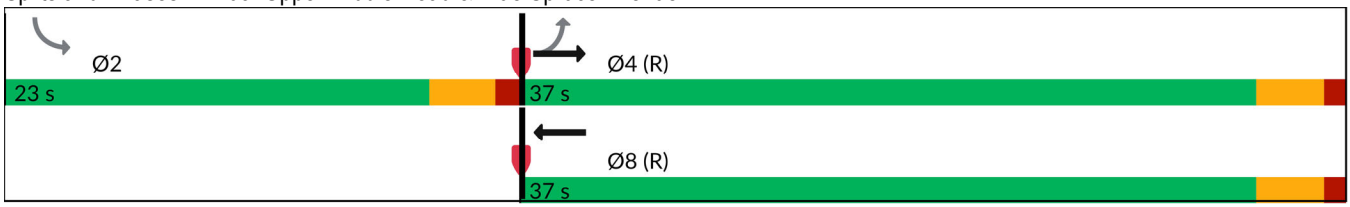


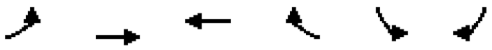
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Detector Phase	4	4	8		2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	22.5	22.5	22.5		22.5	
Total Split (s)	37.0	37.0	37.0		23.0	
Total Split (%)	61.7%	61.7%	61.7%		38.3%	
Maximum Green (s)	33.0	33.0	33.0		19.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	C-Max	C-Max	C-Max		Max	
Walk Time (s)	7.0	7.0	7.0		7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)	33.0	33.0	33.0		19.0	
Actuated g/C Ratio	0.55	0.55	0.55		0.32	
v/c Ratio	0.37	0.27	0.92		0.23	
Control Delay (s/veh)	18.2	7.5	15.5		16.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	18.2	7.5	15.5		16.3	
LOS	B	A	B		B	
Approach Delay (s/veh)		8.1	15.5		16.3	
Approach LOS		A	B		B	
Queue Length 50th (m)	2.8	15.6	90.9		10.6	
Queue Length 95th (m)	11.9	21.7	#138.6		22.0	
Internal Link Dist (m)		174.8	435.4		202.6	
Turn Bay Length (m)	100.0					
Base Capacity (vph)	126	2824	2803		546	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.37	0.27	0.92		0.23	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 23 (38%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 13.8	Intersection LOS: B

Intersection Capacity Utilization 60.1% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 109: Upper Middle Road & Blue Spruce Avenue





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	43	708	2220	162	70	48
Future Volume (vph)	43	708	2220	162	70	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91	0.91		1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.99		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1805	5136	5072		1723	
Flt Permitted	0.12	1.00	1.00		0.97	
Satd. Flow (perm)	230	5136	5072		1723	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	770	2413	176	76	52
RTOR Reduction (vph)	0	0	14	0	1	0
Lane Group Flow (vph)	47	770	2576	0	127	0
Confl. Peds. (#/hr)	14			14		
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Actuated Green, G (s)	33.0	33.0	33.0		19.0	
Effective Green, g (s)	33.0	33.0	33.0		19.0	
Actuated g/C Ratio	0.55	0.55	0.55		0.32	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	126	2824	2789		545	
v/s Ratio Prot		0.15	c0.51			
v/s Ratio Perm	0.20				c0.07	
v/c Ratio	0.37	0.27	0.92		0.23	
Uniform Delay, d1	7.6	7.1	12.3		15.1	
Progression Factor	1.00	1.00	0.72		1.00	
Incremental Delay, d2	8.3	0.2	5.6		1.0	
Delay (s)	15.9	7.4	14.5		16.1	
Level of Service	B	A	B		B	
Approach Delay (s/veh)		7.9	14.5		16.1	
Approach LOS		A	B		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	34	2334	25	41	722
Future Volume (vph)	32	34	2334	25	41	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor			1.00			
Frt	0.931		0.998			
Flt Protected	0.976				0.950	
Satd. Flow (prot)	1726	0	5125	0	1805	5136
Flt Permitted	0.976				0.088	
Satd. Flow (perm)	1726	0	5125	0	167	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	2		4			
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		716.4			459.4
Travel Time (s)	14.5		43.0			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	34	36	2457	26	43	760
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	0	2483	0	43	760
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (m)	2.0		10.0		2.0	10.0
Trailing Detector (m)	0.0		0.0		0.0	0.0
Detector 1 Position(m)	0.0		0.0		0.0	0.0
Detector 1 Size(m)	2.0		0.6		2.0	0.6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

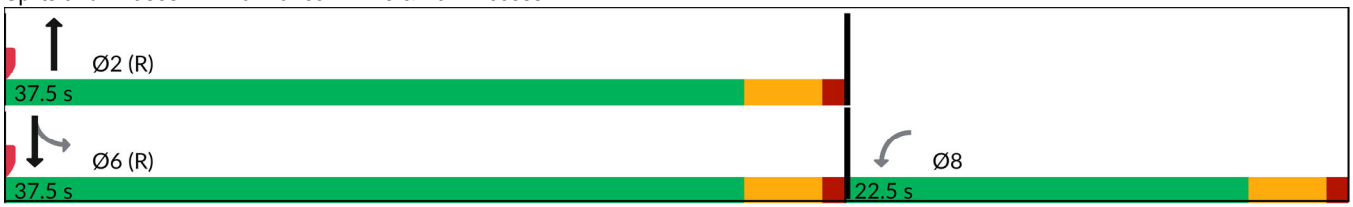


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5
Total Split (s)	22.5		37.5		37.5	37.5
Total Split (%)	37.5%		62.5%		62.5%	62.5%
Maximum Green (s)	18.0		33.0		33.0	33.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Don't Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	7.8		49.2		49.2	49.2
Actuated g/C Ratio	0.13		0.82		0.82	0.82
v/c Ratio	0.31		0.59		0.31	0.18
Control Delay (s/veh)	26.0		4.5		11.3	0.6
Queue Delay	0.0		0.0		0.0	0.0
Total Delay (s/veh)	26.0		4.5		11.3	0.6
LOS	C		A		B	A
Approach Delay (s/veh)	26.0		4.5			1.2
Approach LOS	C		A			A
Queue Length 50th (m)	7.3		42.1		0.1	0.6
Queue Length 95th (m)	16.7		68.6		#12.6	1.5
Internal Link Dist (m)	136.8		692.4			435.4
Turn Bay Length (m)					145.0	
Base Capacity (vph)	519		4201		137	4209
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.13		0.59		0.31	0.18

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 4.2	Intersection LOS: A

Intersection Capacity Utilization 57.3% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 110: Burloak Drive & Park Access

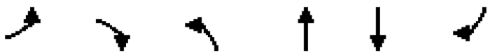




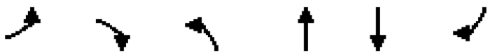
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	32	34	2334	25	41	722
Future Volume (vph)	32	34	2334	25	41	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.93		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1726		5127		1805	5136
Flt Permitted	0.98		1.00		0.09	1.00
Satd. Flow (perm)	1726		5127		167	5136
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	36	2457	26	43	760
RTOR Reduction (vph)	2	0	1	0	0	0
Lane Group Flow (vph)	68	0	2482	0	43	760
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Actuated Green, G (s)	5.4		45.6		45.6	45.6
Effective Green, g (s)	5.4		45.6		45.6	45.6
Actuated g/C Ratio	0.09		0.76		0.76	0.76
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	155		3896		126	3903
v/s Ratio Prot			c0.48			0.15
v/s Ratio Perm	c0.04				0.26	
v/c Ratio	0.44		0.64		0.34	0.19
Uniform Delay, d1	25.9		3.3		2.3	2.0
Progression Factor	1.00		1.00		0.92	0.22
Incremental Delay, d2	2.0		0.8		7.1	0.1
Delay (s)	27.9		4.2		9.2	0.6
Level of Service	C		A		A	A
Approach Delay (s/veh)	27.9		4.2			1.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	3.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	638	797	2149	698	44
Future Volume (vph)	182	638	797	2149	698	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	3367	5136	5123	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1583	3354	5136	5123	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		522			9	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	716.4	
Travel Time (s)	52.1			27.2	43.0	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	200	701	876	2362	767	48
Shared Lane Traffic (%)						
Lane Group Flow (vph)	200	701	876	2362	815	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	28.0	61.0	33.0	
Total Split (%)	39.0%	39.0%	28.0%	61.0%	33.0%	
Maximum Green (s)	32.0	32.0	23.0	54.0	26.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	22.7	22.7	31.2	63.3	27.1	
Actuated g/C Ratio	0.23	0.23	0.31	0.63	0.27	
v/c Ratio	0.51	0.92	0.83	0.73	0.58	
Control Delay (s/veh)	36.3	27.3	42.6	15.9	33.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	36.3	27.3	42.6	15.9	33.4	
LOS	D	C	D	B	C	
Approach Delay (s/veh)	29.3			23.1	33.4	
Approach LOS	C			C	C	
Queue Length 50th (m)	35.8	38.2	87.8	114.7	53.0	
Queue Length 95th (m)	52.2	#93.1	#150.2	167.2	66.9	
Internal Link Dist (m)	845.1			429.2	692.4	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	560	861	1051	3253	1394	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.36	0.81	0.83	0.73	0.58	

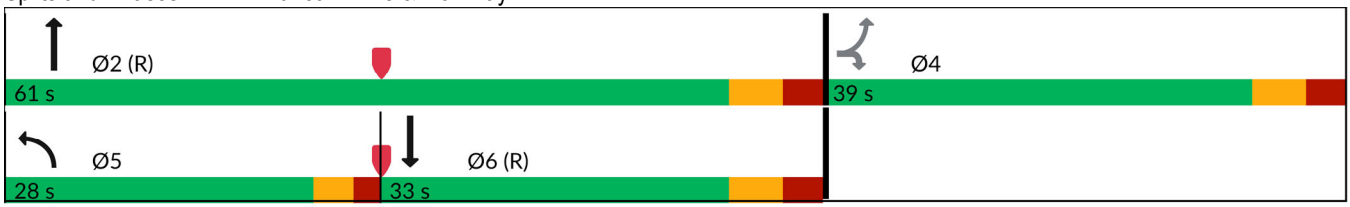
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.92			
Intersection Signal Delay (s/veh): 25.9		Intersection LOS: C	

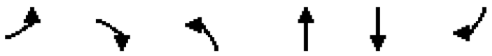
Intersection Capacity Utilization 76.2% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	182	638	797	2149	698	44
Future Volume (vph)	182	638	797	2149	698	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	3367	5136	5123	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1583	3367	5136	5123	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	200	701	876	2362	767	48
RTOR Reduction (vph)	0	404	0	0	7	0
Lane Group Flow (vph)	200	297	876	2362	808	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	22.7	22.7	31.2	63.3	27.1	
Effective Green, g (s)	22.7	22.7	31.2	63.3	27.1	
Actuated g/C Ratio	0.23	0.23	0.31	0.63	0.27	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	397	359	1050	3251	1388	
v/s Ratio Prot			c0.26	c0.46	0.16	
v/s Ratio Perm	0.11	c0.19				
v/c Ratio	0.50	0.83	0.83	0.73	0.58	
Uniform Delay, d1	33.7	36.8	32.0	12.5	31.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	14.5	5.8	1.5	1.8	
Delay (s)	34.7	51.3	37.8	13.9	33.3	
Level of Service	C	D	D	B	C	
Approach Delay (s/veh)	47.6			20.4	33.3	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	385	28	14	651	70	182	48	56	186	79	76
Future Volume (vph)	23	385	28	14	651	70	182	48	56	186	79	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.990			0.986			0.973			0.970	
Flt Protected	0.950				0.999			0.969			0.973	
Satd. Flow (prot)	1770	3408	0	0	3482	0	0	1741	0	0	1758	0
Flt Permitted	0.174				0.942			0.622			0.696	
Satd. Flow (perm)	324	3408	0	0	3283	0	0	1118	0	0	1258	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			20			23			27	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		108.6			869.1			154.8			115.8	
Travel Time (s)		6.5			52.1			13.9			10.4	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Adj. Flow (vph)	27	458	33	17	775	83	217	57	67	221	94	90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	491	0	0	875	0	0	341	0	0	405	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	9.5	34.0		24.5	24.5		26.0	26.0		26.0	26.0	
Total Split (%)	15.8%	56.7%		40.8%	40.8%		43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	5.0	29.5		20.0	20.0		21.5	21.5		21.5	21.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	29.5	29.5			25.7			21.5			21.5	
Actuated g/C Ratio	0.49	0.49			0.43			0.36			0.36	
v/c Ratio	0.10	0.29			0.62			0.82			0.87	
Control Delay (s/veh)	7.6	7.9			17.0			35.9			38.8	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	7.6	7.9			17.0			35.9			38.8	
LOS	A	A			B			D			D	
Approach Delay (s/veh)		7.9			17.0			35.9			38.8	
Approach LOS		A			B			D			D	
Queue Length 50th (m)	1.2	13.8			33.7			33.1			40.3	
Queue Length 95th (m)	m3.4	17.6			61.1			#68.4			#79.5	
Internal Link Dist (m)		84.6			845.1			130.8			91.8	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	279	1684			1417			415			468	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.10	0.29			0.62			0.82			0.87	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 21.9	Intersection LOS: C

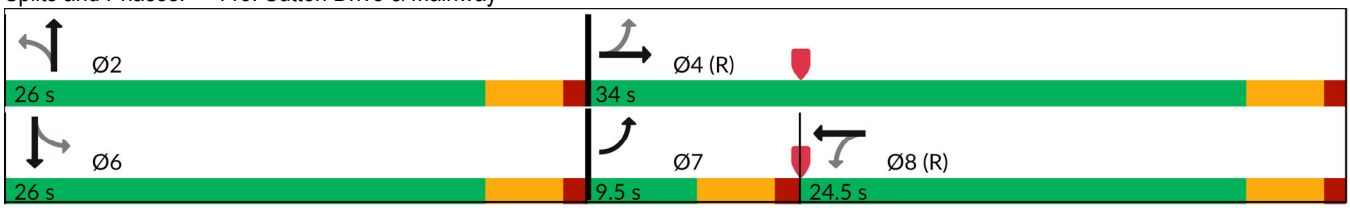
Intersection Capacity Utilization 59.3% ICU Level of Service B

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 113: Sutton Drive & Mainway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	385	28	14	651	70	182	48	56	186	79	76
Future Volume (vph)	23	385	28	14	651	70	182	48	56	186	79	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.99			0.97			0.97	
Flt Protected	0.95	1.00			1.00			0.97			0.97	
Satd. Flow (prot)	1770	3408			3481			1742			1759	
Flt Permitted	0.17	1.00			0.94			0.62			0.70	
Satd. Flow (perm)	325	3408			3282			1119			1257	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	27	458	33	17	775	83	217	57	67	221	94	90
RTOR Reduction (vph)	0	9	0	0	12	0	0	15	0	0	17	0
Lane Group Flow (vph)	27	482	0	0	863	0	0	326	0	0	388	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.5	29.5			23.0			21.5			21.5	
Effective Green, g (s)	29.5	29.5			23.0			21.5			21.5	
Actuated g/C Ratio	0.49	0.49			0.38			0.36			0.36	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	207	1675			1258			400			450	
v/s Ratio Prot	0.00	c0.14										
v/s Ratio Perm	0.06				c0.26			0.29			c0.31	
v/c Ratio	0.13	0.29			0.69			0.82			0.86	
Uniform Delay, d1	9.3	9.0			15.5			17.5			17.9	
Progression Factor	0.87	0.84			1.00			1.00			1.00	
Incremental Delay, d2	0.3	0.4			3.1			16.6			19.1	
Delay (s)	8.3	8.0			18.5			34.0			36.9	
Level of Service	A	A			B			C			D	
Approach Delay (s/veh)		8.0			18.5			34.0			36.9	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

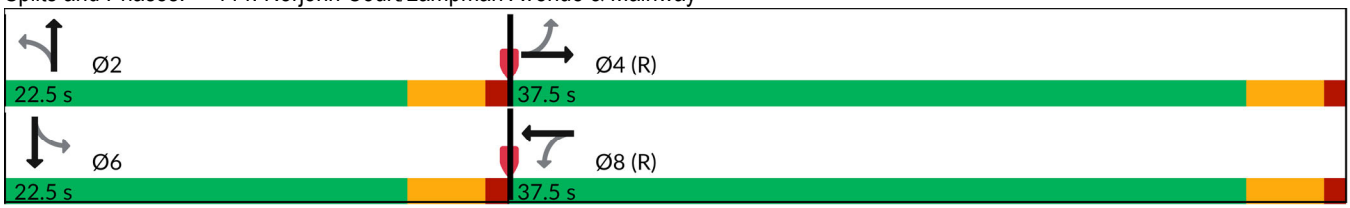
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	317	33	6	1108	122	74	7	16	47	2	57
Future Volume (vph)	39	317	33	6	1108	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			0.99	
Frt		0.987			0.985			0.977			0.927	
Flt Protected		0.995						0.963			0.978	
Satd. Flow (prot)	0	3397	0	0	3482	0	0	1783	0	0	1687	0
Flt Permitted		0.714			0.953			0.745			0.836	
Satd. Flow (perm)	0	2438	0	0	3318	0	0	1378	0	0	1440	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			31			17			38	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			645.5			107.7			112.1	
Travel Time (s)		25.6			38.7			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	48	391	41	7	1368	151	91	9	20	58	2	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	480	0	0	1526	0	0	120	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

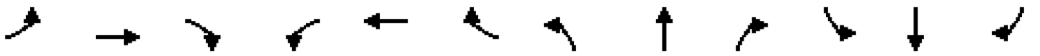


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	37.5	37.5		37.5	37.5		22.5	22.5		22.5	22.5	
Total Split (%)	62.5%	62.5%		62.5%	62.5%		37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	33.0	33.0		33.0	33.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		33.0			33.0			18.0			18.0	
Actuated g/C Ratio		0.55			0.55			0.30			0.30	
v/c Ratio		0.36			0.83			0.28			0.28	
Control Delay (s/veh)		8.0			14.4			16.1			13.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		8.0			14.4			16.1			13.7	
LOS		A			B			B			B	
Approach Delay (s/veh)		8.0			14.4			16.1			13.7	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		14.2			47.0			8.9			7.9	
Queue Length 95th (m)		19.8			72.7			18.1			17.0	
Internal Link Dist (m)		402.4			621.5			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		1352			1838			425			458	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.36			0.83			0.28			0.28	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 22.8 (38%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 13.1		Intersection LOS: B	
Intersection Capacity Utilization 63.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway

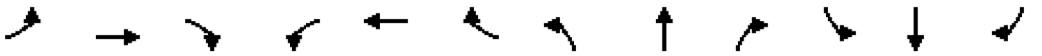




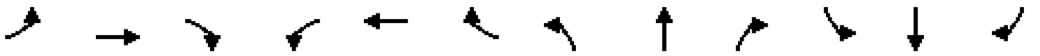
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	317	33	6	1108	122	74	7	16	47	2	57
Future Volume (vph)	39	317	33	6	1108	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.93	
Flt Protected		1.00			1.00			0.96			0.98	
Satd. Flow (prot)		3398			3481			1783			1686	
Flt Permitted		0.71			0.95			0.74			0.84	
Satd. Flow (perm)		2438			3319			1378			1440	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	48	391	41	7	1368	151	91	9	20	58	2	70
RTOR Reduction (vph)	0	12	0	0	14	0	0	12	0	0	27	0
Lane Group Flow (vph)	0	468	0	0	1512	0	0	108	0	0	103	0
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.0			33.0			18.0			18.0	
Effective Green, g (s)		33.0			33.0			18.0			18.0	
Actuated g/C Ratio		0.55			0.55			0.30			0.30	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1340			1825			413			432	
v/s Ratio Prot												
v/s Ratio Perm		0.19			c0.46			c0.08			0.07	
v/c Ratio		0.35			0.83			0.26			0.24	
Uniform Delay, d1		7.5			11.2			16.0			15.8	
Progression Factor		1.00			0.87			1.00			1.00	
Incremental Delay, d2		0.7			4.1			1.5			1.3	
Delay (s)		8.2			13.8			17.5			17.1	
Level of Service		A			B			B			B	
Approach Delay (s/veh)		8.2			13.8			17.5			17.1	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Future Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor		0.99		1.00	0.99			1.00		1.00	1.00	
Frt		0.929			0.958			0.992			0.982	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3123	0	3273	3367	0	1703	5023	0	3467	4972	0
Flt Permitted	0.114			0.950			0.089			0.950		
Satd. Flow (perm)	204	3123	0	3263	3367	0	160	5023	0	3465	4972	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		164			42			7			19	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	224	209	189	253	828	317	422	1941	103	123	1309	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	224	398	0	253	1145	0	422	2044	0	123	1493	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

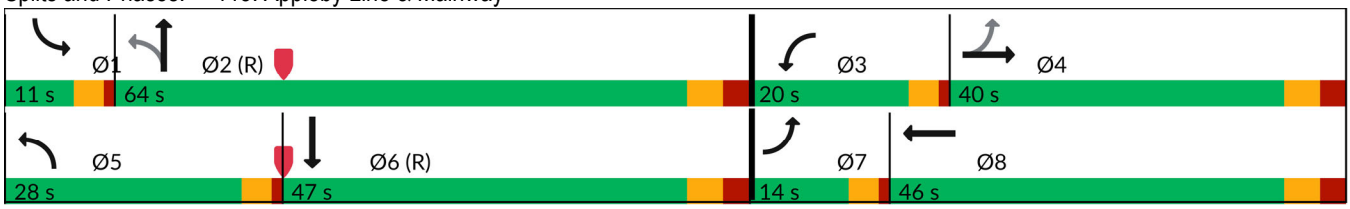


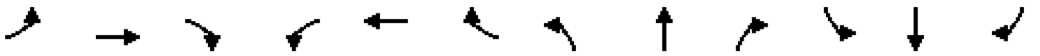
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	14.0	40.0		20.0	46.0		28.0	64.0		11.0	47.0	
Total Split (%)	10.4%	29.6%		14.8%	34.1%		20.7%	47.4%		8.1%	34.8%	
Maximum Green (s)	10.0	33.7		16.0	39.7		24.0	57.7		7.0	40.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	47.4	35.1		14.6	39.7		71.0	57.7		7.0	40.7	
Actuated g/C Ratio	0.35	0.26		0.11	0.29		0.53	0.43		0.05	0.30	
v/c Ratio	1.23	0.43		0.72	1.12		1.18	0.95		0.69	0.99	
Control Delay (s/veh)	172.3	25.7		69.9	110.6		143.5	46.0		82.5	66.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	172.3	25.7		69.9	110.6		143.5	46.0		82.5	66.5	
LOS	F	C		E	F		F	D		F	E	
Approach Delay (s/veh)		78.5			103.2			62.7			67.7	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	~64.3	29.8		37.3	~193.3		~134.6	136.9		17.9	153.5	
Queue Length 95th (m)	#121.3	46.9		53.0	#238.7		m#180.9	#177.3		#31.8	#190.0	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	182	933		387	1019		358	2150		179	1512	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.23	0.43		0.65	1.12		1.18	0.95		0.69	0.99	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.23	
Intersection Signal Delay (s/veh): 74.9	Intersection LOS: E

Intersection Capacity Utilization 108.9% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway



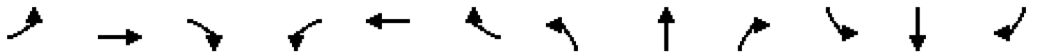


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Future Volume (vph)	208	194	176	235	770	295	392	1805	96	114	1217	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3122		3273	3369		1703	5025		3467	4969	
Flt Permitted	0.11	1.00		0.95	1.00		0.09	1.00		0.95	1.00	
Satd. Flow (perm)	204	3122		3273	3369		160	5025		3467	4969	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	224	209	189	253	828	317	422	1941	103	123	1309	184
RTOR Reduction (vph)	0	121	0	0	30	0	0	4	0	0	13	0
Lane Group Flow (vph)	224	277	0	253	1115	0	422	2040	0	123	1480	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	45.1	35.1		14.6	39.7		68.7	57.7		7.0	40.7	
Effective Green, g (s)	45.1	35.1		14.6	39.7		68.7	57.7		7.0	40.7	
Actuated g/C Ratio	0.33	0.26		0.11	0.29		0.51	0.43		0.05	0.30	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	811		353	990		355	2147		179	1498	
v/s Ratio Prot	c0.09	0.09		0.08	c0.33		c0.21	0.41		0.04	0.30	
v/s Ratio Perm	c0.32						c0.39					
v/c Ratio	1.25	0.34		0.72	1.13		1.19	0.95		0.69	0.99	
Uniform Delay, d1	38.6	40.6		58.2	47.6		43.3	37.3		62.9	46.9	
Progression Factor	1.00	1.00		1.00	1.00		1.44	1.06		1.00	1.00	
Incremental Delay, d2	150.7	0.3		6.8	70.1		99.4	6.6		10.4	20.5	
Delay (s)	189.4	40.8		65.0	117.8		161.8	46.0		73.4	67.4	
Level of Service	F	D		E	F		F	D		E	E	
Approach Delay (s/veh)		94.3			108.2			65.8			67.9	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	79.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	108.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Future Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.942			0.939			0.988			0.997	
Flt Protected		0.977			0.976		0.950			0.950		
Satd. Flow (prot)	0	1735	0	0	1724	0	1641	4970	0	1805	5062	0
Flt Permitted		0.701			0.796		0.176			0.068		
Satd. Flow (perm)	0	1242	0	0	1402	0	303	4970	0	129	5062	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			41			18			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	57	12	52	155	21	146	51	2248	196	131	1395	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	322	0	51	2444	0	131	1425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

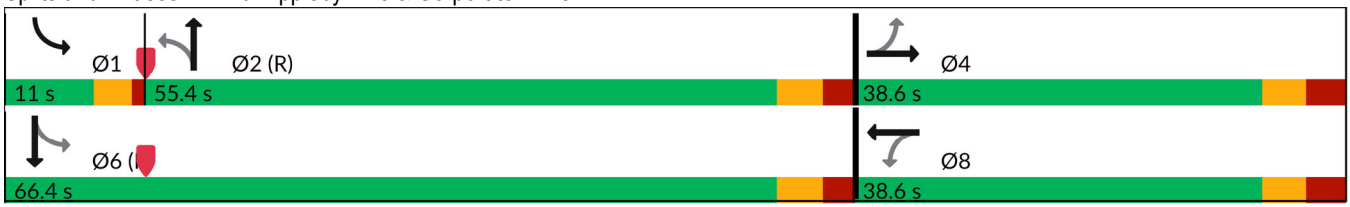


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.6	38.6		38.6	38.6		55.4	55.4		11.0	66.4	
Total Split (%)	36.8%	36.8%		36.8%	36.8%		52.8%	52.8%		10.5%	63.2%	
Maximum Green (s)	32.1	32.1		32.1	32.1		49.4	49.4		7.0	60.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		25.8			25.8		55.0	55.0		68.7	66.7	
Actuated g/C Ratio		0.25			0.25		0.52	0.52		0.65	0.64	
v/c Ratio		0.36			0.86		0.32	0.94		0.63	0.44	
Control Delay (s/veh)		24.0			54.1		24.3	32.9		29.7	10.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		24.0			54.1		24.3	32.9		29.7	10.9	
LOS		C			D		C	C		C	B	
Approach Delay (s/veh)		24.0			54.1			32.7			12.5	
Approach LOS		C			D			C			B	
Queue Length 50th (m)		14.5			57.8		6.7	182.4		10.1	54.3	
Queue Length 95th (m)		29.1			87.5		19.8	#244.4		#39.5	74.9	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		405			457		158	2609		208	3218	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.30			0.70		0.32	0.94		0.63	0.44	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay (s/veh): 27.0	Intersection LOS: C

Intersection Capacity Utilization 89.4% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

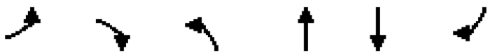
Splits and Phases: 116: Appleby Line & Corporate Drive



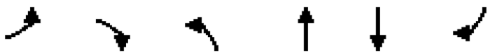
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Future Volume (vph)	54	11	49	146	20	137	48	2113	184	123	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730			1720		1635	4970		1805	5061	
Flt Permitted		0.70			0.80		0.18	1.00		0.07	1.00	
Satd. Flow (perm)		1241			1402		302	4970		129	5061	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	12	52	155	21	146	51	2248	196	131	1395	30
RTOR Reduction (vph)	0	28	0	0	31	0	0	9	0	0	2	0
Lane Group Flow (vph)	0	93	0	0	291	0	51	2435	0	131	1423	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.8			25.8		54.9	54.9		66.7	66.7	
Effective Green, g (s)		25.8			25.8		54.9	54.9		66.7	66.7	
Actuated g/C Ratio		0.25			0.25		0.52	0.52		0.64	0.64	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		304			344		157	2598		206	3214	
v/s Ratio Prot								c0.49		c0.05	0.28	
v/s Ratio Perm		0.07			c0.21		0.17			0.36		
v/c Ratio		0.31			0.85		0.32	0.94		0.64	0.44	
Uniform Delay, d1		32.3			37.7		14.4	23.4		21.3	9.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.6			17.2		5.4	8.1		6.3	0.4	
Delay (s)		32.9			54.9		19.8	31.5		27.6	10.2	
Level of Service		C			D		B	C		C	B	
Approach Delay (s/veh)		32.9			54.9			31.3			11.6	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	532	170	2218	1174	31
Future Volume (vph)	166	532	170	2218	1174	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	3242	5085	5055	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1553	3239	5085	5055	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		201			5	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	184	591	189	2464	1304	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	591	189	2464	1338	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

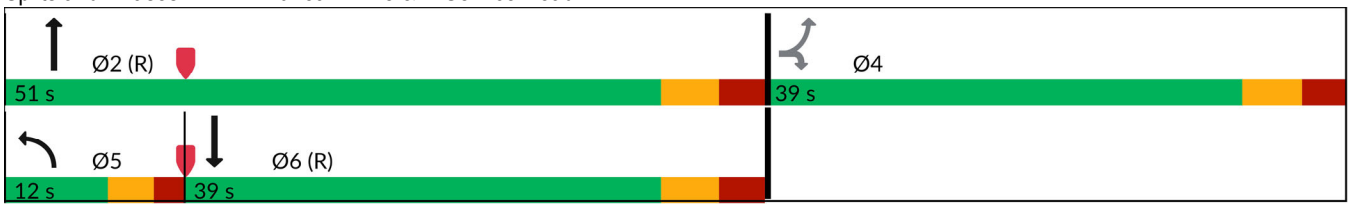


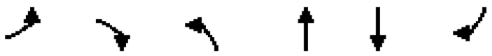
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	12.0	51.0	39.0	
Total Split (%)	43.3%	43.3%	13.3%	56.7%	43.3%	
Maximum Green (s)	32.0	32.0	7.0	44.0	32.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	28.9	28.9	7.7	47.1	34.4	
Actuated g/C Ratio	0.32	0.32	0.09	0.52	0.38	
v/c Ratio	0.32	0.93	0.68	0.93	0.69	
Control Delay (s/veh)	23.9	42.3	54.1	28.5	26.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	23.9	42.3	54.1	28.5	26.2	
LOS	C	D	D	C	C	
Approach Delay (s/veh)	38.0			30.3	26.2	
Approach LOS	D			C	C	
Queue Length 50th (m)	23.9	70.6	18.7	157.9	77.9	
Queue Length 95th (m)	40.8	#138.9	#36.0	#204.4	95.3	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	635	681	277	2663	1937	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.29	0.87	0.68	0.93	0.69	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 30.4	Intersection LOS: C

Intersection Capacity Utilization 69.6% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	532	170	2218	1174	31
Future Volume (vph)	166	532	170	2218	1174	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	3242	5085	5056	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1787	1553	3242	5085	5056	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	184	591	189	2464	1304	34
RTOR Reduction (vph)	0	136	0	0	3	0
Lane Group Flow (vph)	184	455	189	2464	1335	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	28.9	28.9	7.7	47.1	34.4	
Effective Green, g (s)	28.9	28.9	7.7	47.1	34.4	
Actuated g/C Ratio	0.32	0.32	0.09	0.52	0.38	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	573	498	277	2661	1932	
v/s Ratio Prot			0.06	c0.48	0.26	
v/s Ratio Perm	0.10	c0.29				
v/c Ratio	0.32	0.91	0.68	0.93	0.69	
Uniform Delay, d1	23.1	29.3	40.0	19.8	23.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.3	21.1	6.8	7.0	2.1	
Delay (s)	23.5	50.4	46.7	26.8	25.4	
Level of Service	C	D	D	C	C	
Approach Delay (s/veh)	44.0			28.2	25.4	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2626	1478	0	0	2495
Future Volume (vph)	2713	2626	1478	0	0	2495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2787	5036	0	0	5085
Flt Permitted	0.950					
Satd. Flow (perm)	3433	2787	5036	0	0	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		3				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2917	2824	1589	0	0	2683
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2917	2824	1589	0	0	2683
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

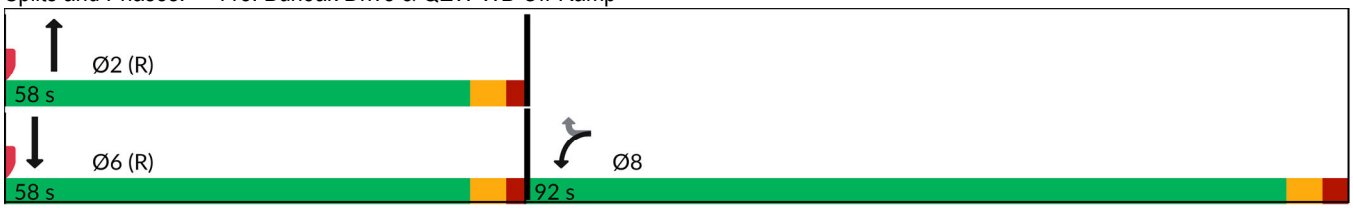


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	92.0	92.0	58.0			58.0
Total Split (%)	61.3%	61.3%	38.7%			38.7%
Maximum Green (s)	85.0	85.0	52.0			52.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	85.0	85.0	52.0			52.0
Actuated g/C Ratio	0.57	0.57	0.35			0.35
v/c Ratio	1.50	1.79	0.91			1.52
Control Delay (s/veh)	255.4	381.8	55.6			272.8
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	255.4	381.8	55.6			272.8
LOS	F	F	E			F
Approach Delay (s/veh)	317.6		55.6			272.8
Approach LOS	F		E			F
Queue Length 50th (m)	~659.8	~766.7	177.6			~434.4
Queue Length 95th (m)	#693.7	#805.8	199.5			#460.2
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1945	1580	1745			1762
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.50	1.79	0.91			1.52

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.79	
Intersection Signal Delay (s/veh): 264.0	Intersection LOS: F

Intersection Capacity Utilization 136.4% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

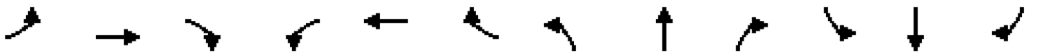




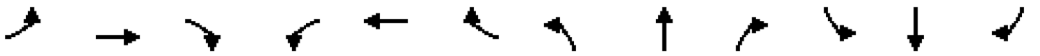
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2626	1478	0	0	2495
Future Volume (vph)	2713	2626	1478	0	0	2495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	5036			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	5036			5085
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2917	2824	1589	0	0	2683
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	2917	2823	1589	0	0	2683
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	85.0	85.0	52.0			52.0
Effective Green, g (s)	85.0	85.0	52.0			52.0
Actuated g/C Ratio	0.57	0.57	0.35			0.35
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1945	1579	1745			1762
v/s Ratio Prot	0.85		0.32			c0.53
v/s Ratio Perm		c1.01				
v/c Ratio	1.50	1.79	0.91			1.52
Uniform Delay, d1	32.5	32.5	46.8			49.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	227.6	357.0	8.6			238.2
Delay (s)	260.1	389.5	55.4			287.2
Level of Service	F	F	E			F
Approach Delay (s/veh)	323.8		55.4			287.2
Approach LOS	F		E			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	271.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.69		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	136.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Future Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.905	0.850			0.865		0.998				
Flt Protected	0.950	0.995										
Satd. Flow (prot)	1493	2792	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950	0.995									0.930	
Satd. Flow (perm)	1493	2792	1413	0	0	1596	0	5125	0	0	4776	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161	161			141		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	220	97	448	0	0	213	0	1241	17	14	4105	0
Shared Lane Traffic (%)	15%		50%									
Lane Group Flow (vph)	187	354	224	0	0	213	0	1258	0	0	4119	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

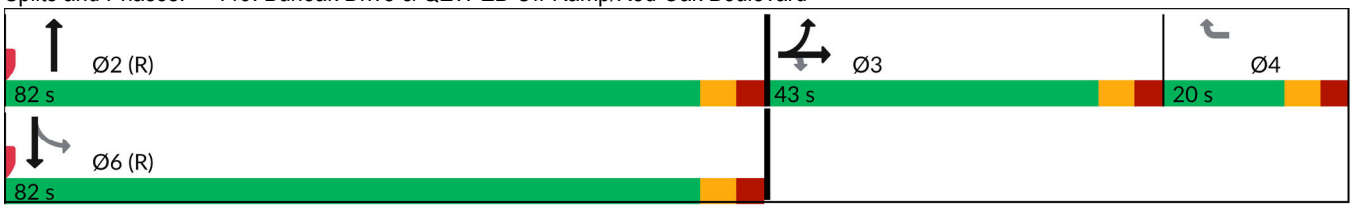


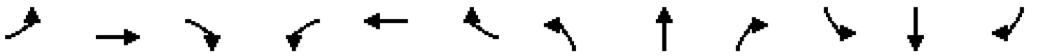
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			15.0		39.0		15.0	15.0	
Total Split (s)	43.0	43.0	43.0			20.0		82.0		82.0	82.0	
Total Split (%)	29.7%	29.7%	29.7%			13.8%		56.6%		56.6%	56.6%	
Maximum Green (s)	36.0	36.0	36.0			13.0		75.0		75.0	75.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0				
Flash Don't Walk (s)	25.0	25.0	25.0					25.0				
Pedestrian Calls (#/hr)	0	0	0					0				
Act Effct Green (s)	24.1	24.1	24.1			12.7		87.2			87.2	
Actuated g/C Ratio	0.17	0.17	0.17			0.09		0.60			0.60	
v/c Ratio	0.75	0.59	0.61			0.79		0.41			1.44	
Control Delay (s/veh)	75.6	33.0	23.1			43.7		17.0			224.3	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	75.6	33.0	23.1			43.7		17.0			224.3	
LOS	E	C	C			D		B			F	
Approach Delay (s/veh)		40.5			43.7			17.0			224.3	
Approach LOS		D			D			B			F	
Queue Length 50th (m)	64.0	32.8	19.0			21.5		71.9			~623.8	
Queue Length 95th (m)	90.7	49.1	48.3			#53.0		100.4			#681.2	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	370	814	471			285		3081			2870	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.51	0.43	0.48			0.75		0.41			1.44	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay (s/veh): 155.1	Intersection LOS: F

Intersection Capacity Utilization 104.9% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

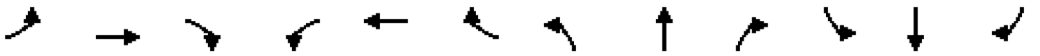




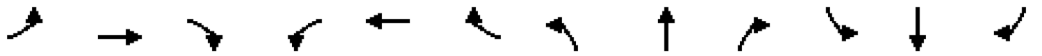
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Future Volume (vph)	209	92	426	0	0	202	0	1179	16	13	3900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.91	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1493	2794	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1493	2794	1413			1596		5125			4775	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	220	97	448	0	0	213	0	1241	17	14	4105	0
RTOR Reduction (vph)	0	134	134	0	0	129	0	1	0	0	0	0
Lane Group Flow (vph)	187	220	90	0	0	84	0	1257	0	0	4119	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	24.1	24.1	24.1			12.7		87.2			87.2	
Effective Green, g (s)	24.1	24.1	24.1			12.7		87.2			87.2	
Actuated g/C Ratio	0.17	0.17	0.17			0.09		0.60			0.60	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	248	464	234			139		3082			2871	
v/s Ratio Prot	c0.13	0.08						0.25				
v/s Ratio Perm			0.06			c0.05					c0.86	
v/c Ratio	0.75	0.47	0.38			0.61		0.41			1.43	
Uniform Delay, d1	57.6	54.7	53.8			63.7		15.3			28.9	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	12.2	0.8	1.0			7.3		0.4			197.7	
Delay (s)	69.8	55.5	54.9			71.0		15.7			226.6	
Level of Service	E	E	D			E		B			F	
Approach Delay (s/veh)		58.8			71.0			15.7			226.6	
Approach LOS		E			E			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	159.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	104.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Future Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1600	0	1770	1737	0	1736	4969	0	1805	4956	0
Flt Permitted	0.281			0.237			0.073			0.078		
Satd. Flow (perm)	523	1600	0	441	1737	0	133	4969	0	148	4956	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			33			12			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Adj. Flow (vph)	73	48	186	329	260	208	369	2157	170	65	1532	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	234	0	329	468	0	369	2327	0	65	1595	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		18.7	53.9		29.2	69.5		11.6	51.9	
Total Split (%)	26.1%	26.1%		13.9%	39.9%		21.6%	51.5%		8.6%	38.4%	
Maximum Green (s)	29.1	29.1		14.7	47.8		25.2	62.9		7.6	45.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	20.5	20.5		41.3	39.2		85.7	73.9		61.0	51.0	
Actuated g/C Ratio	0.15	0.15		0.31	0.29		0.63	0.55		0.45	0.38	
v/c Ratio	0.92	0.66		1.18	0.89		0.88	0.85		0.41	0.85	
Control Delay (s/veh)	136.7	31.0		147.6	61.2		61.0	31.7		33.2	66.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.5		0.0	0.0	
Total Delay (s/veh)	136.7	31.0		147.6	61.2		61.0	33.1		33.2	66.7	
LOS	F	C		F	E		E	C		C	E	
Approach Delay (s/veh)		56.1			96.9			37.0			65.3	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	20.6	27.1		~83.5	117.7		83.0	210.7		14.3	154.1	
Queue Length 95th (m)	#44.1	53.7		#130.7	151.4		#159.7	#283.5		m17.4	m159.7	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	112	448		279	636		420	2723		162	1876	
Starvation Cap Reductn	0	0		0	0		0	219		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.65	0.52		1.18	0.74		0.88	0.93		0.40	0.85	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 55.4	Intersection LOS: E

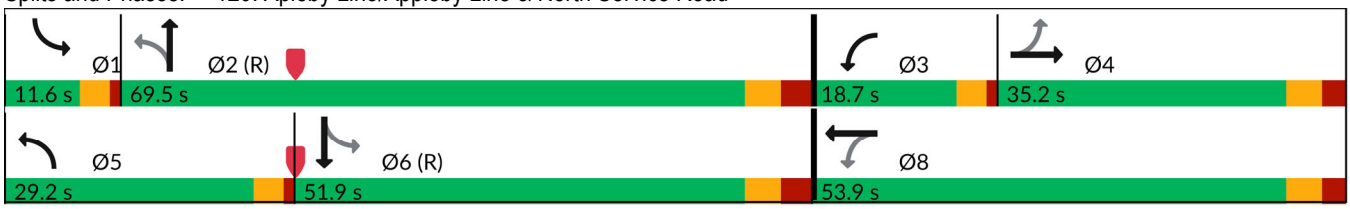
Intersection Capacity Utilization 102.0%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Future Volume (vph)	72	47	182	322	255	204	362	2114	167	64	1501	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	1600		1770	1738		1736	4969		1805	4957	
Flt Permitted	0.28	1.00		0.24	1.00		0.07	1.00		0.08	1.00	
Satd. Flow (perm)	523	1600		442	1738		133	4969		149	4957	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	73	48	186	329	260	208	369	2157	170	65	1532	63
RTOR Reduction (vph)	0	112	0	0	23	0	0	6	0	0	3	0
Lane Group Flow (vph)	73	122	0	329	445	0	369	2321	0	65	1592	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.5	20.5		39.2	39.2		83.1	73.1		57.0	51.0	
Effective Green, g (s)	20.5	20.5		39.2	39.2		83.1	73.1		57.0	51.0	
Actuated g/C Ratio	0.15	0.15		0.29	0.29		0.62	0.54		0.42	0.38	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	79	242		272	504		415	2690		136	1872	
v/s Ratio Prot		0.08		c0.13	0.26		c0.18	0.47		0.02	0.32	
v/s Ratio Perm	0.14			c0.22			c0.36			0.18		
v/c Ratio	0.92	0.50		1.21	0.88		0.89	0.86		0.48	0.85	
Uniform Delay, d1	56.5	52.6		43.5	45.7		41.0	26.6		26.8	38.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.61	1.65	
Incremental Delay, d2	75.4	1.7		123.5	16.5		20.1	4.0		1.2	2.4	
Delay (s)	131.9	54.2		167.0	62.2		61.1	30.6		44.2	65.8	
Level of Service	F	D		F	E		E	C		D	E	
Approach Delay (s/veh)		72.7			105.4			34.8			64.9	
Approach LOS		E			F			C			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	102.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	2728	0	0	2545
Future Volume (vph)	1353	1424	2728	0	0	2545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2733	5085	0	0	4988
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2733	5085	0	0	4988
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Adj. Flow (vph)	1395	1468	2812	0	0	2624
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1395	1468	2812	0	0	2624
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



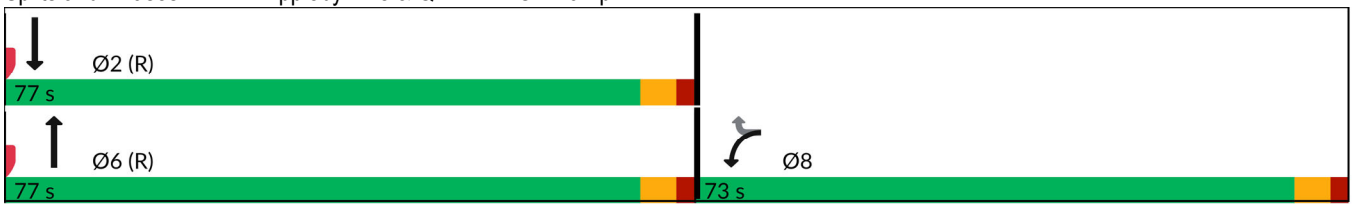
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	73.0	73.0	77.0			77.0
Total Split (%)	48.7%	48.7%	51.3%			51.3%
Maximum Green (s)	67.0	67.0	71.0			71.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	67.0	67.0	71.0			71.0
Actuated g/C Ratio	0.45	0.45	0.47			0.47
v/c Ratio	0.92	1.20	1.17			1.11
Control Delay (s/veh)	49.7	136.6	117.1			94.3
Queue Delay	0.0	0.0	0.0			0.2
Total Delay (s/veh)	49.7	136.6	117.1			94.6
LOS	D	F	F			F
Approach Delay (s/veh)	94.2		117.1			94.6
Approach LOS	F		F			F
Queue Length 50th (m)	213.2	~325.3	~387.9			~353.0
Queue Length 95th (m)	#251.8	#375.0	#412.7			#379.6
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1518	1220	2406			2360
Starvation Cap Reductn	0	0	0			224
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.92	1.20	1.17			1.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.20			
Intersection Signal Delay (s/veh): 102.1		Intersection LOS: F	
Intersection Capacity Utilization 112.5%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

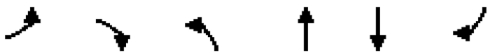
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



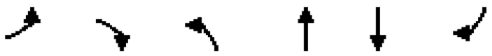


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	2728	0	0	2545
Future Volume (vph)	1353	1424	2728	0	0	2545
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2733	5085			4988
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2733	5085			4988
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1395	1468	2812	0	0	2624
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1395	1468	2812	0	0	2624
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	67.0	67.0	71.0			71.0
Effective Green, g (s)	67.0	67.0	71.0			71.0
Actuated g/C Ratio	0.45	0.45	0.47			0.47
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1518	1220	2406			2360
v/s Ratio Prot	0.41		c0.55			0.53
v/s Ratio Perm		c0.54				
v/c Ratio	0.92	1.20	1.17			1.11
Uniform Delay, d1	39.0	41.5	39.5			39.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	9.2	99.5	80.8			57.0
Delay (s)	48.1	141.0	120.3			96.5
Level of Service	D	F	F			F
Approach Delay (s/veh)	95.8		120.3			96.5
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	104.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.18		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	781	611	0	2126	3149	0
Future Volume (vph)	781	611	0	2126	3149	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	5036	4940	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	5036	4940	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Adj. Flow (vph)	789	617	0	2147	3181	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	789	617	0	2147	3181	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



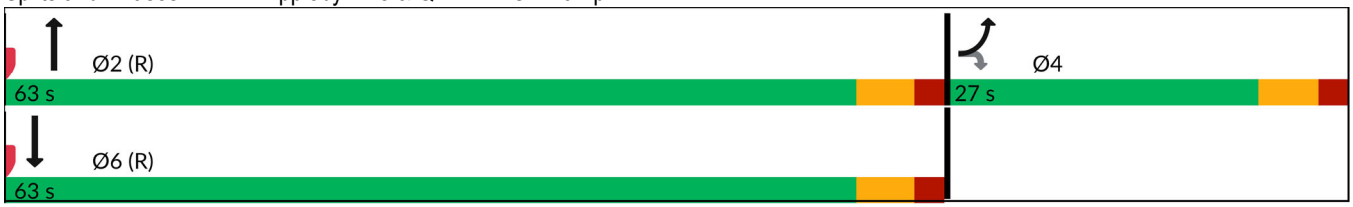
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	27.0	27.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0		57.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	21.0	21.0		57.0	57.0	
Actuated g/C Ratio	0.23	0.23		0.63	0.63	
v/c Ratio	1.01	0.98		0.67	1.02	
Control Delay (s/veh)	71.5	68.1		11.9	38.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	71.5	68.1		11.9	38.1	
LOS	E	E		B	D	
Approach Delay (s/veh)	70.0			11.9	38.1	
Approach LOS	E			B	D	
Queue Length 50th (m)	~78.7	66.2		84.1	~213.5	
Queue Length 95th (m)	#119.2	#108.1		100.4	#265.0	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	778	627		3189	3128	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	1.01	0.98		0.67	1.02	

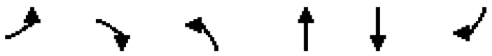
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 36.4	Intersection LOS: D
Intersection Capacity Utilization 112.5%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

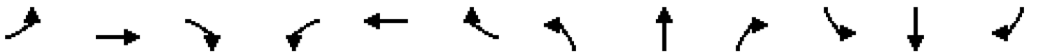
Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



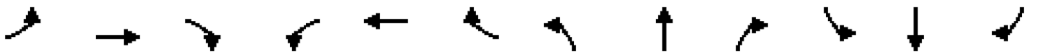


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	781	611	0	2126	3149	0
Future Volume (vph)	781	611	0	2126	3149	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		5036	4940	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		5036	4940	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	789	617	0	2147	3181	0
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	789	615	0	2147	3181	0
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	21.0	21.0		57.0	57.0	
Effective Green, g (s)	21.0	21.0		57.0	57.0	
Actuated g/C Ratio	0.23	0.23		0.63	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	778	625		3189	3128	
v/s Ratio Prot	c0.24			0.43	c0.64	
v/s Ratio Perm		0.23				
v/c Ratio	1.01	0.98		0.67	1.02	
Uniform Delay, d1	34.5	34.3		10.5	16.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	35.8	31.9		1.2	20.5	
Delay (s)	70.3	66.2		11.7	37.0	
Level of Service	E	E		B	D	
Approach Delay (s/veh)	68.5			11.7	37.0	
Approach LOS	E			B	D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	112.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Future Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.939			0.939				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3226	0	1752	3284	0	1687	5085	1538	3367	5085	1404
Flt Permitted	0.123			0.287			0.098			0.950		
Satd. Flow (perm)	224	3226	0	528	3284	0	174	5085	1514	3362	5085	1376
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		122			135				159			250
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Adj. Flow (vph)	365	297	202	509	645	446	115	1038	207	212	1713	319
Shared Lane Traffic (%)												
Lane Group Flow (vph)	365	499	0	509	1091	0	115	1038	207	212	1713	319
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	39.0		29.0	44.0		11.0	47.0	47.0	15.0	51.0	51.0
Total Split (%)	18.5%	30.0%		22.3%	33.8%		8.5%	36.2%	36.2%	11.5%	39.2%	39.2%
Maximum Green (s)	20.0	32.6		25.0	37.6		7.0	40.7	40.7	11.0	44.7	44.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	55.0	32.6		64.0	37.6		50.2	40.9	40.9	10.8	44.7	44.7
Actuated g/C Ratio	0.42	0.25		0.49	0.29		0.39	0.31	0.31	0.08	0.34	0.34
v/c Ratio	1.12	0.55		1.03	1.04		0.78	0.65	0.35	0.76	0.98	0.50
Control Delay (s/veh)	120.7	34.2		73.9	79.3		57.1	40.7	11.0	76.0	59.5	10.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	120.7	34.2		73.9	79.3		57.1	40.7	11.0	76.0	59.5	10.7
LOS	F	C		E	E		E	D	B	E	E	B
Approach Delay (s/veh)		70.7			77.6			37.6			54.1	
Approach LOS		E			E			D			D	
Queue Length 50th (m)	~98.4	47.6		~102.8	~154.2		19.0	89.7	9.5	30.1	169.2	14.2
Queue Length 95th (m)	#164.0	66.7		#175.6	#198.8		#49.3	106.3	30.7	#47.9	#206.0	44.8
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	327	900		495	1045		148	1599	585	284	1748	637
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.55		1.03	1.04		0.78	0.65	0.35	0.75	0.98	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay (s/veh): 59.0	Intersection LOS: E

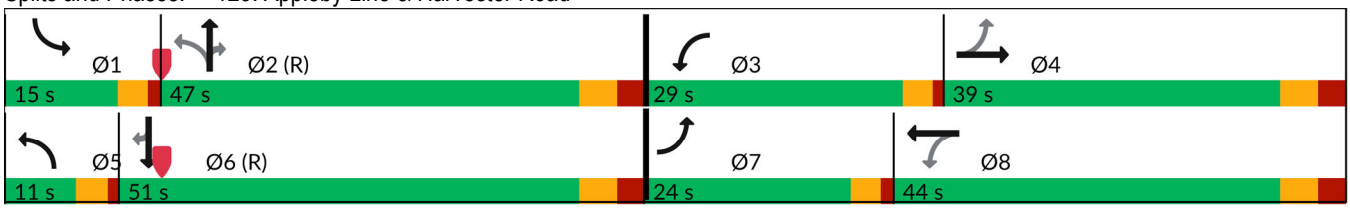
Intersection Capacity Utilization 107.7% ICU Level of Service G

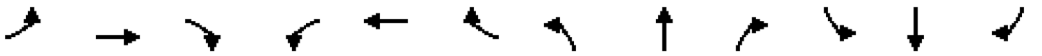
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

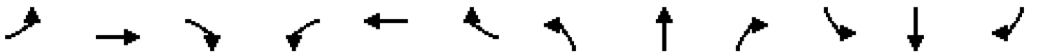




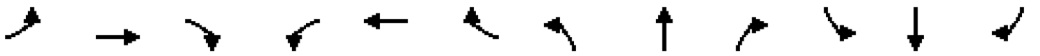
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Future Volume (vph)	358	291	198	499	632	437	113	1017	203	208	1679	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1735	3227		1751	3282		1687	5085	1514	3367	5085	1376
Flt Permitted	0.12	1.00		0.29	1.00		0.10	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	224	3227		528	3282		174	5085	1514	3367	5085	1376
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	365	297	202	509	645	446	115	1038	207	212	1713	319
RTOR Reduction (vph)	0	91	0	0	96	0	0	0	109	0	0	164
Lane Group Flow (vph)	365	408	0	509	995	0	115	1038	98	212	1713	155
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	52.6	32.6		61.6	37.6		47.9	40.9	40.9	10.8	44.7	44.7
Effective Green, g (s)	52.6	32.6		61.6	37.6		47.9	40.9	40.9	10.8	44.7	44.7
Actuated g/C Ratio	0.40	0.25		0.47	0.29		0.37	0.31	0.31	0.08	0.34	0.34
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	323	809		485	949		145	1599	476	279	1748	473
v/s Ratio Prot	c0.17	0.13		c0.20	0.30		0.04	0.20		c0.06	c0.34	
v/s Ratio Perm	c0.28			0.30			0.25		0.06			0.11
v/c Ratio	1.13	0.50		1.05	1.05		0.79	0.65	0.21	0.76	0.98	0.33
Uniform Delay, d1	39.4	41.8		27.5	46.2		33.1	38.4	32.6	58.3	42.2	31.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	90.0	0.5		54.5	42.8		25.0	2.1	1.0	11.3	17.3	1.8
Delay (s)	129.4	42.3		81.9	89.0		58.1	40.4	33.6	69.6	59.5	33.4
Level of Service	F	D		F	F		E	D	C	E	E	C
Approach Delay (s/veh)		79.1			86.7			40.9			56.7	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	64.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Future Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97	1.00		0.93	0.99		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1599	1736	1810	1468	1787	3574	1482	1626	5136	1599
Flt Permitted	0.950			0.673			0.068			0.250		
Satd. Flow (perm)	3351	1776	1502	1179	1810	1421	128	3574	1376	422	5136	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			208			149			392
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Adj. Flow (vph)	568	132	508	296	253	208	290	766	139	214	1620	1255
Shared Lane Traffic (%)												
Lane Group Flow (vph)	568	132	508	296	253	208	290	766	139	214	1620	1255
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	24.5	45.5	45.5	16.5	37.5	37.5	16.0	66.0	66.0	22.0	72.0	72.0
Total Split (%)	16.3%	30.3%	30.3%	11.0%	25.0%	25.0%	10.7%	44.0%	44.0%	14.7%	48.0%	48.0%
Maximum Green (s)	19.5	39.0	39.0	12.5	31.0	31.0	12.0	59.2	59.2	18.0	65.2	65.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	19.5	37.9	37.9	44.9	29.9	29.9	78.6	63.3	63.3	82.3	65.2	65.2
Actuated g/C Ratio	0.13	0.25	0.25	0.30	0.20	0.20	0.52	0.42	0.42	0.55	0.43	0.43
v/c Ratio	1.29	0.29	0.98	0.74	0.70	0.46	1.37	0.51	0.21	0.61	0.73	1.44
Control Delay (s/veh)	194.3	46.9	69.3	52.0	67.0	9.6	227.9	34.1	4.2	24.4	37.4	230.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	194.3	46.9	69.3	52.0	67.0	9.6	227.9	34.1	4.2	24.4	37.4	230.3
LOS	F	D	E	D	E	A	F	C	A	C	D	F
Approach Delay (s/veh)		125.7			45.4			77.6			114.9	
Approach LOS		F			D			E			F	
Queue Length 50th (m)	~118.6	34.9	110.3	70.2	76.5	0.0	~107.2	94.5	0.0	35.5	152.9	~465.3
Queue Length 95th (m)	#158.2	56.1	#187.5	99.6	110.1	24.7	#170.9	118.4	13.0	52.7	171.5	#552.1
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	442	461	528	399	374	458	211	1507	666	381	2232	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.29	0.29	0.96	0.74	0.68	0.45	1.37	0.51	0.21	0.56	0.73	1.44

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay (s/veh): 101.4	Intersection LOS: F

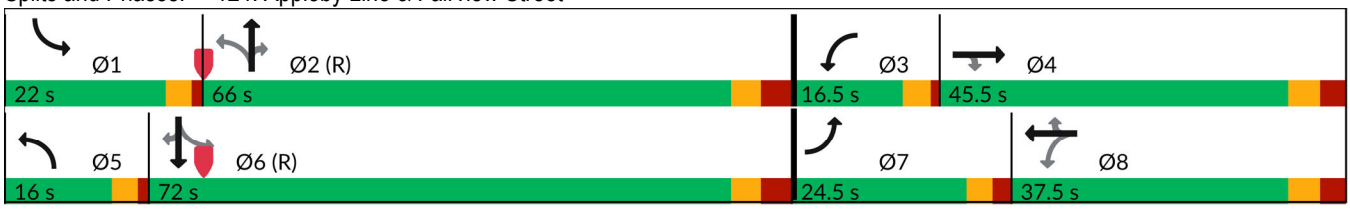
Intersection Capacity Utilization 124.1% ICU Level of Service H

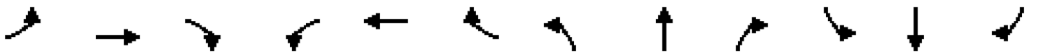
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

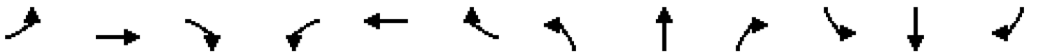




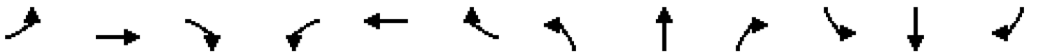
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Future Volume (vph)	545	127	488	284	243	200	278	735	133	205	1555	1205
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1502	1689	1810	1421	1787	3574	1376	1621	5136	1490
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	0.07	1.00	1.00	0.25	1.00	1.00
Satd. Flow (perm)	3400	1776	1502	1196	1810	1421	128	3574	1376	426	5136	1490
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	568	132	508	296	253	208	290	766	139	214	1620	1255
RTOR Reduction (vph)	0	0	140	0	0	167	0	0	80	0	0	222
Lane Group Flow (vph)	568	132	368	296	253	41	290	766	59	214	1620	1033
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	19.5	37.9	37.9	42.4	29.9	29.9	76.4	63.3	63.3	80.2	65.2	65.2
Effective Green, g (s)	19.5	37.9	37.9	42.4	29.9	29.9	76.4	63.3	63.3	80.2	65.2	65.2
Actuated g/C Ratio	0.13	0.25	0.25	0.28	0.20	0.20	0.51	0.42	0.42	0.53	0.43	0.43
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	442	448	379	379	360	283	210	1508	580	347	2232	647
v/s Ratio Prot	c0.17	0.07		0.07	0.14		c0.12	0.21		c0.06	0.32	
v/s Ratio Perm			c0.25	0.16		0.03	0.58		0.04	0.27		c0.69
v/c Ratio	1.29	0.29	0.97	0.78	0.70	0.15	1.38	0.51	0.10	0.62	0.73	1.60
Uniform Delay, d1	65.3	45.3	55.5	47.7	55.9	49.5	43.8	31.9	26.2	20.8	35.0	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	144.6	0.4	38.5	10.0	6.1	0.2	198.3	1.2	0.3	3.2	2.1	276.0
Delay (s)	209.8	45.6	94.1	57.7	62.0	49.8	242.1	33.1	26.5	24.0	37.1	318.4
Level of Service	F	D	F	E	E	D	F	C	C	C	D	F
Approach Delay (s/veh)		143.2			57.0			83.1			150.5	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	124.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	124.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Future Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3486	5136	1576	3453	5136	1527	3496	5136	1560	3442	5136	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			279			234			248			246
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	246	790	402	495	867	234	526	800	360	453	877	268
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	790	402	495	867	234	526	800	360	453	877	268
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	24.0	49.4	49.4	25.0	50.6	50.6	24.0	49.6	49.6
Total Split (%)	14.5%	32.0%	32.0%	16.6%	34.1%	34.1%	17.2%	34.9%	34.9%	16.6%	34.2%	34.2%
Maximum Green (s)	16.0	39.0	39.0	19.0	42.0	42.0	20.0	43.2	43.2	19.0	42.2	42.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.4	29.9	29.9	19.0	33.5	33.5	29.1	45.6	45.6	25.7	42.2	42.2
Actuated g/C Ratio	0.11	0.21	0.21	0.13	0.23	0.23	0.20	0.31	0.31	0.18	0.29	0.29
v/c Ratio	0.66	0.75	0.74	1.09	0.73	0.44	0.75	0.50	0.55	0.74	0.59	0.42
Control Delay (s/veh)	71.4	58.4	24.2	125.9	55.4	7.6	62.3	42.1	16.1	64.5	45.9	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.4	58.4	24.2	125.9	55.4	7.6	62.3	42.1	16.1	64.5	45.9	8.3
LOS	E	E	C	F	E	A	E	D	B	E	D	A
Approach Delay (s/veh)		51.1			70.2			42.8			44.8	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	37.3	83.3	35.0	~87.1	90.5	0.0	78.0	74.3	26.7	66.7	83.9	4.8
Queue Length 95th (m)	52.7	94.1	72.0	#124.2	101.1	21.6	#119.2	89.0	60.8	#99.1	99.5	28.1
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	386	1381	627	454	1487	608	703	1616	660	614	1494	636
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.57	0.64	1.09	0.58	0.38	0.75	0.50	0.55	0.74	0.59	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 52.1	Intersection LOS: D

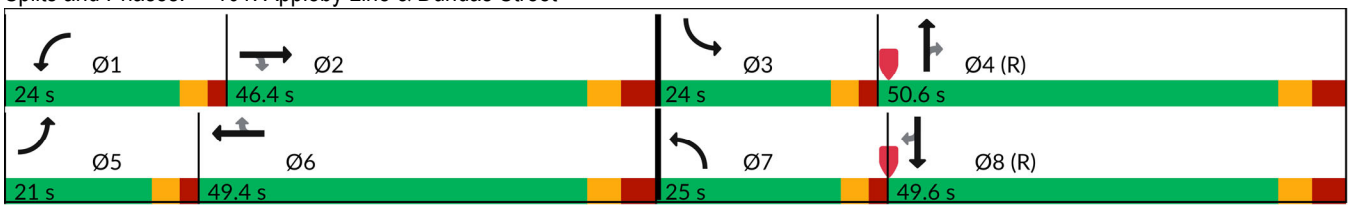
Intersection Capacity Utilization 103.7% ICU Level of Service G

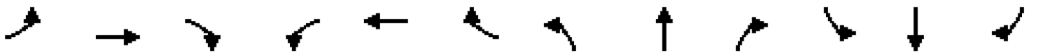
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Future Volume (vph)	241	774	394	485	850	229	515	784	353	444	859	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	246	790	402	495	867	234	526	800	360	453	877	268
RTOR Reduction (vph)	0	0	221	0	0	180	0	0	170	0	0	174
Lane Group Flow (vph)	246	790	181	495	867	54	526	800	190	453	877	94
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.4	29.9	29.9	19.0	33.5	33.5	29.1	45.6	45.6	25.7	42.2	42.2
Effective Green, g (s)	15.4	29.9	29.9	19.0	33.5	33.5	29.1	45.6	45.6	25.7	42.2	42.2
Actuated g/C Ratio	0.11	0.21	0.21	0.13	0.23	0.23	0.20	0.31	0.31	0.18	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	371	1059	324	454	1186	352	702	1615	490	614	1494	461
v/s Ratio Prot	0.07	0.15		c0.14	c0.17		c0.15	c0.16		0.13	c0.17	
v/s Ratio Perm			0.11			0.04			0.12			0.06
v/c Ratio	0.66	0.75	0.56	1.09	0.73	0.15	0.75	0.50	0.39	0.74	0.59	0.20
Uniform Delay, d1	62.3	54.0	51.6	63.0	51.6	44.4	54.5	40.4	38.8	56.5	43.9	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	2.9	2.1	68.9	2.4	0.2	5.3	1.1	2.3	5.6	1.7	1.0
Delay (s)	68.1	56.9	53.7	131.9	53.9	44.7	59.8	41.4	41.1	62.1	45.6	39.7
Level of Service	E	E	D	F	D	D	E	D	D	E	D	D
Approach Delay (s/veh)		57.9			76.7			47.1			49.3	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	57.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	103.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Future Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.925				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	3467	5136	1615	3502	5049	0	3467	4982	0
Flt Permitted	0.352			0.950			0.950			0.950		
Satd. Flow (perm)	646	3288	0	3455	5136	1578	3497	5049	0	3463	4982	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		223				244		19			50	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	277	365	364	230	603	517	328	1452	149	338	1206	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	729	0	230	603	517	328	1601	0	338	1463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	11.0	34.4		11.0	34.4	34.4	14.0	36.6		13.0	35.6	
Total Split (%)	11.6%	36.2%		11.6%	36.2%	36.2%	14.7%	38.5%		13.7%	37.5%	
Maximum Green (s)	7.0	28.0		7.0	28.0	28.0	9.0	30.1		9.0	29.1	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	33.3	23.9		7.0	23.9	23.9	11.4	31.5		11.7	30.8	
Actuated g/C Ratio	0.35	0.25		0.07	0.25	0.25	0.12	0.33		0.12	0.32	
v/c Ratio	0.90	0.73		0.90	0.47	0.89	0.78	0.95		0.79	0.89	
Control Delay (s/veh)	56.4	26.5		81.0	30.7	36.5	56.6	44.7		57.0	37.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	56.4	26.5		81.0	30.7	36.5	56.6	44.7		57.0	37.9	
LOS	E	C		F	C	D	E	D		E	D	
Approach Delay (s/veh)		34.7			41.5			46.7			41.5	
Approach LOS		C			D			D			D	
Queue Length 50th (m)	36.4	45.2		23.2	34.7	51.3	32.7	111.6		34.1	97.8	
Queue Length 95th (m)	#72.4	64.6		#45.8	45.1	#107.0	#61.3	#148.7		#64.6	#129.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	307	1126		255	1513	637	419	1686		427	1650	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.90	0.65		0.90	0.40	0.81	0.78	0.95		0.79	0.89	

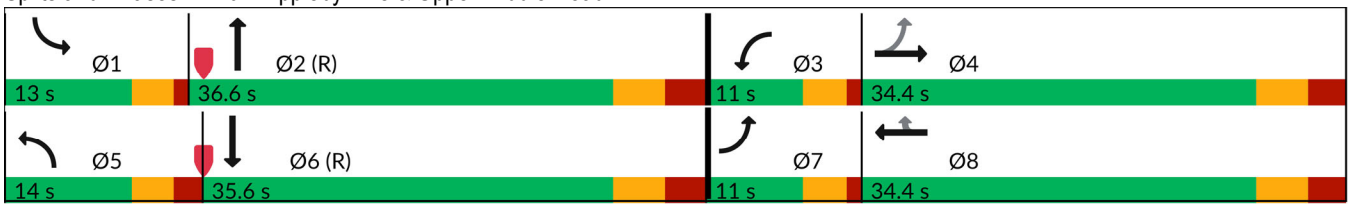
Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 42.0	Intersection LOS: D

Intersection Capacity Utilization 92.5% ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

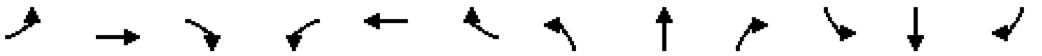
Splits and Phases: 102: Appleby Line & Upper Middle Road



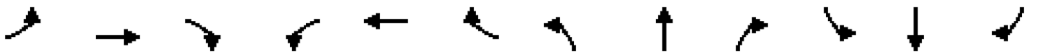
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Future Volume (vph)	271	358	357	225	591	507	321	1423	146	331	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	3288		3467	5136	1578	3502	5049		3467	4980	
Flt Permitted	0.35	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	648	3288		3467	5136	1578	3502	5049		3467	4980	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	277	365	364	230	603	517	328	1452	149	338	1206	257
RTOR Reduction (vph)	0	167	0	0	0	183	0	13	0	0	34	0
Lane Group Flow (vph)	277	562	0	230	603	334	328	1588	0	338	1429	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	30.9	23.9		7.0	23.9	23.9	11.4	31.5		11.7	30.8	
Effective Green, g (s)	30.9	23.9		7.0	23.9	23.9	11.4	31.5		11.7	30.8	
Actuated g/C Ratio	0.33	0.25		0.07	0.25	0.25	0.12	0.33		0.12	0.32	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	291	827		255	1292	396	420	1674		426	1614	
v/s Ratio Prot	c0.07	0.17		0.07	0.12		0.09	c0.31		c0.10	0.29	
v/s Ratio Perm	c0.24					0.21						
v/c Ratio	0.95	0.68		0.90	0.47	0.84	0.78	0.95		0.79	0.89	
Uniform Delay, d1	28.8	32.1		43.7	30.1	33.8	40.6	31.0		40.5	30.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	39.7	2.2		31.7	0.3	15.1	9.1	12.8		9.8	7.5	
Delay (s)	68.6	34.3		75.4	30.4	48.9	49.7	43.8		50.3	38.0	
Level of Service	E	C		E	C	D	D	D		D	D	
Approach Delay (s/veh)		43.8			45.1			44.8			40.3	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	92.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	657	63	1	1261	75	21	0	1	58	0	105
Future Volume (vph)	129	657	63	1	1261	75	21	0	1	58	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt		0.987			0.992			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1608	4558	0	0	4574	0	1593	1425	0	1624	1434	0
Flt Permitted	0.147				0.940		0.588			0.757		
Satd. Flow (perm)	249	4558	0	0	4299	0	986	1425	0	1294	1434	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			14			168			325	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			162.0			285.4	
Travel Time (s)		7.1			17.4			14.6			25.7	
Confl. Peds. (#/hr)	18					18						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	136	692	66	1	1327	79	22	0	1	61	0	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	758	0	0	1407	0	22	1	0	61	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	9.5	38.0		28.5	28.5		9.5	32.0		22.5	22.5	
Total Split (%)	13.6%	54.3%		40.7%	40.7%		13.6%	45.7%		32.1%	32.1%	
Maximum Green (s)	5.5	34.0		24.5	24.5		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	34.0	34.0			26.4		28.0	28.0		24.2	24.2	
Actuated g/C Ratio	0.49	0.49			0.38		0.40	0.40		0.35	0.35	
v/c Ratio	0.60	0.34			0.86		0.05	0.00		0.14	0.16	
Control Delay (s/veh)	22.8	11.1			28.2		13.2	0.0		19.2	0.5	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.8	11.1			28.2		13.2	0.0		19.2	0.5	
LOS	C	B			C		B	A		B	A	
Approach Delay (s/veh)		12.9			28.2			12.6			7.1	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	10.0	21.2			66.9		1.8	0.0		5.1	0.0	
Queue Length 95th (m)	#23.4	29.3			#98.3		5.9	0.0		15.6	0.0	
Internal Link Dist (m)		94.7			266.7			138.0			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	227	2229			1629		442	670		447	708	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.60	0.34			0.86		0.05	0.00		0.14	0.16	

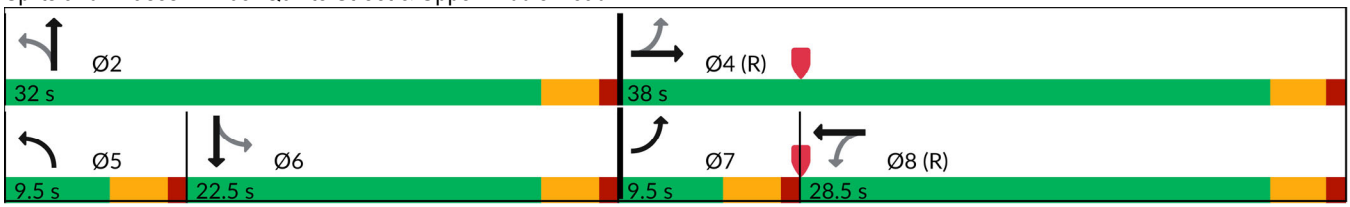
Intersection Summary	
Area Type:	CBD
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 21.1	Intersection LOS: C

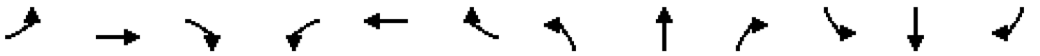
Intersection Capacity Utilization 69.7% ICU Level of Service C

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road



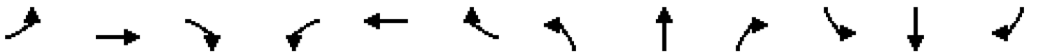


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	657	63	1	1261	75	21	0	1	58	0	105
Future Volume (vph)	129	657	63	1	1261	75	21	0	1	58	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	4558			4572		1593	1425		1625	1434	
Flt Permitted	0.15	1.00			0.94		0.59	1.00		0.76	1.00	
Satd. Flow (perm)	249	4558			4296		986	1425		1295	1434	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	692	66	1	1327	79	22	0	1	61	0	111
RTOR Reduction (vph)	0	17	0	0	9	0	0	1	0	0	73	0
Lane Group Flow (vph)	136	741	0	0	1398	0	22	0	0	61	38	0
Confl. Peds. (#/hr)	18					18						1
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.6	31.6			23.2		30.4	30.4		24.2	24.2	
Effective Green, g (s)	31.6	31.6			23.2		30.4	30.4		24.2	24.2	
Actuated g/C Ratio	0.45	0.45			0.33		0.43	0.43		0.35	0.35	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	2057			1423		447	618		447	495	
v/s Ratio Prot	c0.04	0.16					c0.00	0.00			0.03	
v/s Ratio Perm	0.27				c0.33		0.02			c0.05		
v/c Ratio	0.69	0.36			0.98		0.05	0.00		0.14	0.08	
Uniform Delay, d1	14.5	12.6			23.2		11.5	11.2		15.7	15.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.0	0.5			20.0		0.0	0.0		0.6	0.3	
Delay (s)	24.5	13.1			43.2		11.5	11.2		16.4	15.7	
Level of Service	C	B			D		B	B		B	B	
Approach Delay (s/veh)		14.8			43.2			11.5			15.9	
Approach LOS		B			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Future Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.990			0.974			0.880			0.852	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5081	0	1770	4967	0	1770	1639	0	3502	1572	0
Flt Permitted	0.113			0.428						0.615		
Satd. Flow (perm)	210	5081	0	797	4967	0	1863	1639	0	2267	1572	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			49			8			184	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			158.3			244.6	
Travel Time (s)		17.4			14.7			14.2			22.0	
Confl. Peds. (#/hr)	12					12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	150	528	39	7	1171	240	40	2	8	226	2	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	567	0	7	1411	0	40	10	0	226	186	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

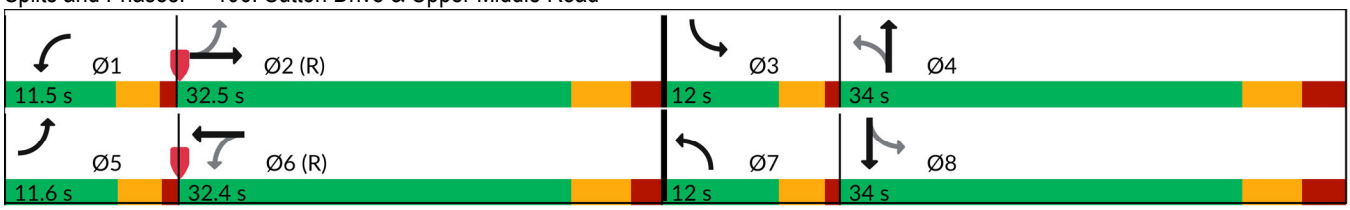


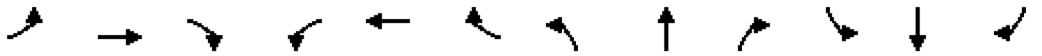
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		11.5	31.0		12.0	34.0		12.0	34.0	
Total Split (s)	11.6	32.5		11.5	32.4		12.0	34.0		12.0	34.0	
Total Split (%)	12.9%	36.1%		12.8%	36.0%		13.3%	37.8%		13.3%	37.8%	
Maximum Green (s)	7.6	26.5		7.5	26.4		8.0	27.0		8.0	27.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	62.8	58.6		57.2	48.2		11.1	8.9		18.4	9.0	
Actuated g/C Ratio	0.70	0.65		0.64	0.54		0.12	0.10		0.20	0.10	
v/c Ratio	0.51	0.17		0.01	0.53		0.18	0.06		0.34	0.58	
Control Delay (s/veh)	13.6	7.9		6.7	15.5		33.4	23.0		29.6	13.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	13.6	7.9		6.7	15.5		33.4	23.0		29.6	13.7	
LOS	B	A		A	B		C	C		C	B	
Approach Delay (s/veh)		9.1			15.4			31.4			22.4	
Approach LOS		A			B			C			C	
Queue Length 50th (m)	9.3	13.7		0.4	61.3		7.0	0.3		16.9	0.4	
Queue Length 95th (m)	23.7	29.3		2.2	89.4		12.7	5.1		24.6	19.2	
Internal Link Dist (m)		266.7			220.7			134.3			220.6	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	300	3312		591	2680		222	497		673	600	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.50	0.17		0.01	0.53		0.18	0.02		0.34	0.31	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 15.1		Intersection LOS: B	

Intersection Capacity Utilization 70.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 106: Sutton Drive & Upper Middle Road

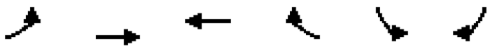




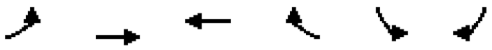
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Future Volume (vph)	144	507	37	7	1124	230	38	2	8	217	2	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.88		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	5079		1770	4970		1770	1639		3502	1571	
Flt Permitted	0.11	1.00		0.43	1.00		1.00	1.00		0.62	1.00	
Satd. Flow (perm)	210	5079		798	4970		1863	1639		2268	1571	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	150	528	39	7	1171	240	40	2	8	226	2	184
RTOR Reduction (vph)	0	6	0	0	26	0	0	8	0	0	157	0
Lane Group Flow (vph)	150	561	0	7	1385	0	40	2	0	226	29	0
Confl. Peds. (#/hr)	12					12						
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	55.2	49.8		44.0	42.6		7.3	2.5		21.8	13.0	
Effective Green, g (s)	55.2	49.8		44.0	42.6		7.3	2.5		21.8	13.0	
Actuated g/C Ratio	0.61	0.55		0.49	0.47		0.08	0.03		0.24	0.14	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	277	2810		405	2352		146	45		759	226	
v/s Ratio Prot	c0.05	0.11		0.00	c0.28		0.01	0.00		c0.05	0.02	
v/s Ratio Perm	0.28			0.01			0.01			c0.02		
v/c Ratio	0.54	0.20		0.02	0.59		0.27	0.05		0.30	0.13	
Uniform Delay, d1	10.3	10.1		11.8	17.3		38.9	42.6		27.7	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.2	0.2		0.0	1.1		1.0	0.5		0.2	0.3	
Delay (s)	12.5	10.3		11.8	18.4		39.9	43.0		27.9	33.8	
Level of Service	B	B		B	B		D	D		C	C	
Approach Delay (s/veh)		10.7			18.4			40.5			30.6	
Approach LOS		B			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	668	1262	86	66	34
Future Volume (vph)	38	668	1262	86	66	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt			0.990		0.954	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1805	5187	5125	0	1731	0
Flt Permitted	0.143				0.968	
Satd. Flow (perm)	271	5187	5125	0	1731	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28		31	
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	40	703	1328	91	69	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	703	1419	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

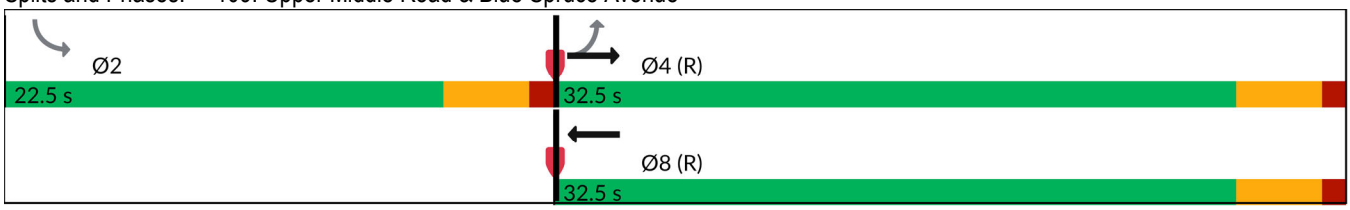


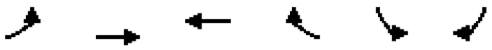
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Detector Phase	4	4	8		2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	22.5	22.5	22.5		22.5	
Total Split (s)	32.5	32.5	32.5		22.5	
Total Split (%)	59.1%	59.1%	59.1%		40.9%	
Maximum Green (s)	28.0	28.0	28.0		18.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	C-Max	C-Max	C-Max		Max	
Walk Time (s)	7.0	7.0	7.0		7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)	28.0	28.0	28.0		18.0	
Actuated g/C Ratio	0.51	0.51	0.51		0.33	
v/c Ratio	0.29	0.27	0.54		0.18	
Control Delay (s/veh)	14.8	8.0	9.9		11.0	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	14.8	8.0	9.9		11.0	
LOS	B	A	A		B	
Approach Delay (s/veh)		8.4	9.9		11.0	
Approach LOS		A	A		B	
Queue Length 50th (m)	2.2	13.9	32.7		5.3	
Queue Length 95th (m)	8.9	19.9	43.7		14.4	
Internal Link Dist (m)		174.8	440.6		202.6	
Turn Bay Length (m)	100.0					
Base Capacity (vph)	137	2640	2622		587	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.29	0.27	0.54		0.18	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay (s/veh): 9.4	Intersection LOS: A

Intersection Capacity Utilization 44.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 109: Upper Middle Road & Blue Spruce Avenue





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	38	668	1262	86	66	34
Future Volume (vph)	38	668	1262	86	66	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91	0.91		1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.99		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1803	5187	5127		1731	
Flt Permitted	0.14	1.00	1.00		0.97	
Satd. Flow (perm)	271	5187	5127		1731	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	703	1328	91	69	36
RTOR Reduction (vph)	0	0	14	0	21	0
Lane Group Flow (vph)	40	703	1405	0	84	0
Confl. Peds. (#/hr)	7			7		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Actuated Green, G (s)	28.0	28.0	28.0		18.0	
Effective Green, g (s)	28.0	28.0	28.0		18.0	
Actuated g/C Ratio	0.51	0.51	0.51		0.33	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	137	2640	2610		566	
v/s Ratio Prot		0.14	c0.27			
v/s Ratio Perm	0.15				c0.05	
v/c Ratio	0.29	0.27	0.54		0.15	
Uniform Delay, d1	7.8	7.7	9.1		13.1	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	5.3	0.2	0.8		0.6	
Delay (s)	13.1	7.9	9.9		13.6	
Level of Service	B	A	A		B	
Approach Delay (s/veh)		8.2	9.9		13.6	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	54	44	1294	56	16	722
Future Volume (vph)	54	44	1294	56	16	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor			1.00		1.00	
Frt	0.940		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1738	0	5151	0	1805	5187
Flt Permitted	0.973				0.162	
Satd. Flow (perm)	1738	0	5151	0	308	5187
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	9		17			
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		716.4			464.6
Travel Time (s)	14.5		43.0			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	58	47	1391	60	17	776
Shared Lane Traffic (%)						
Lane Group Flow (vph)	105	0	1451	0	17	776
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (m)	2.0		10.0		2.0	10.0
Trailing Detector (m)	0.0		0.0		0.0	0.0
Detector 1 Position(m)	0.0		0.0		0.0	0.0
Detector 1 Size(m)	2.0		0.6		2.0	0.6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

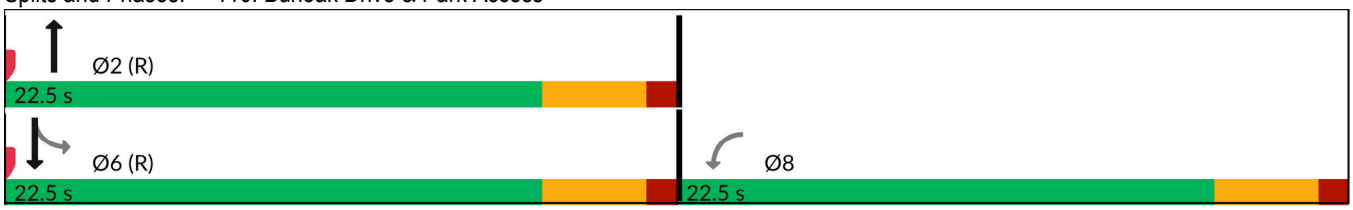


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5
Total Split (s)	22.5		22.5		22.5	22.5
Total Split (%)	50.0%		50.0%		50.0%	50.0%
Maximum Green (s)	18.0		18.0		18.0	18.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Don't Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	7.9		34.1		34.1	34.1
Actuated g/C Ratio	0.18		0.76		0.76	0.76
v/c Ratio	0.34		0.37		0.07	0.20
Control Delay (s/veh)	17.4		2.8		5.3	3.4
Queue Delay	0.0		0.0		0.0	0.0
Total Delay (s/veh)	17.4		2.8		5.3	3.4
LOS	B		A		A	A
Approach Delay (s/veh)	17.4		2.8			3.5
Approach LOS	B		A			A
Queue Length 50th (m)	7.1		11.0		0.4	8.0
Queue Length 95th (m)	15.9		13.8		2.8	15.1
Internal Link Dist (m)	136.8		692.4			440.6
Turn Bay Length (m)					145.0	
Base Capacity (vph)	700		3905		233	3928
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.15		0.37		0.07	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 45			
Actuated Cycle Length: 45			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.37			
Intersection Signal Delay (s/veh): 3.6		Intersection LOS: A	

Intersection Capacity Utilization 39.4% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 110: Burloak Drive & Park Access

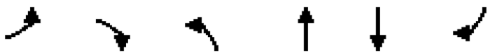




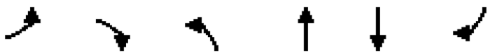
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	54	44	1294	56	16	722
Future Volume (vph)	54	44	1294	56	16	722
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.94		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1737		5150		1805	5187
Flt Permitted	0.97		1.00		0.16	1.00
Satd. Flow (perm)	1737		5150		308	5187
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	58	47	1391	60	17	776
RTOR Reduction (vph)	8	0	5	0	0	0
Lane Group Flow (vph)	97	0	1446	0	17	776
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Actuated Green, G (s)	5.5		30.5		30.5	30.5
Effective Green, g (s)	5.5		30.5		30.5	30.5
Actuated g/C Ratio	0.12		0.68		0.68	0.68
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	212		3490		208	3515
v/s Ratio Prot			c0.28			0.15
v/s Ratio Perm	c0.06				0.06	
v/c Ratio	0.46		0.41		0.08	0.22
Uniform Delay, d1	18.4		3.2		2.5	2.7
Progression Factor	1.00		0.70		1.00	1.00
Incremental Delay, d2	1.6		0.3		0.8	0.1
Delay (s)	19.9		2.6		3.2	2.9
Level of Service	B		A		A	A
Approach Delay (s/veh)	19.9		2.6			2.9
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	246	463	1263	714	48
Future Volume (vph)	80	246	463	1263	714	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	3467	5187	5129	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	3455	5187	5129	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		259			13	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	716.4	
Travel Time (s)	52.1			27.2	43.0	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	84	259	487	1329	752	51
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	259	487	1329	803	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

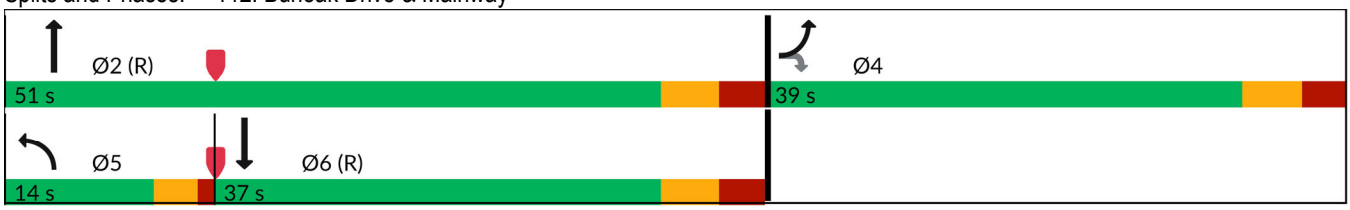


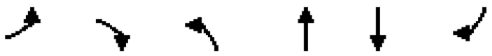
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	10.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	10.1	10.1	22.9	65.9	38.9	
Actuated g/C Ratio	0.11	0.11	0.25	0.73	0.43	
v/c Ratio	0.41	0.63	0.55	0.35	0.36	
Control Delay (s/veh)	42.8	12.2	42.9	4.6	21.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	42.8	12.2	42.9	4.6	21.0	
LOS	D	B	D	A	C	
Approach Delay (s/veh)	19.7			14.9	21.0	
Approach LOS	B			B	C	
Queue Length 50th (m)	14.6	0.0	48.9	25.6	29.0	
Queue Length 95th (m)	27.5	20.9	65.4	34.8	35.7	
Internal Link Dist (m)	845.1			429.2	692.4	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	641	741	883	3795	2225	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.13	0.35	0.55	0.35	0.36	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay (s/veh): 17.1		Intersection LOS: B	

Intersection Capacity Utilization 59.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 112: Burloak Drive & Mainway

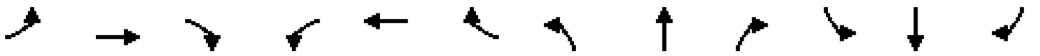




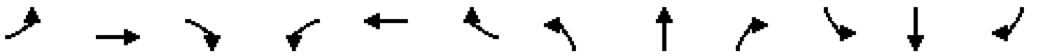
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	80	246	463	1263	714	48
Future Volume (vph)	80	246	463	1263	714	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	3467	5187	5132	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	3467	5187	5132	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	84	259	487	1329	752	51
RTOR Reduction (vph)	0	230	0	0	7	0
Lane Group Flow (vph)	84	29	487	1329	796	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	10.1	10.1	22.9	65.9	39.0	
Effective Green, g (s)	10.1	10.1	22.9	65.9	39.0	
Actuated g/C Ratio	0.11	0.11	0.25	0.73	0.43	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	202	181	882	3798	2223	
v/s Ratio Prot	c0.05		c0.14	c0.26	0.16	
v/s Ratio Perm		0.02				
v/c Ratio	0.42	0.16	0.55	0.35	0.36	
Uniform Delay, d1	37.2	36.1	29.1	4.3	17.1	
Progression Factor	1.00	1.00	1.35	0.96	1.21	
Incremental Delay, d2	1.4	0.4	0.7	0.2	0.4	
Delay (s)	38.6	36.5	40.1	4.4	21.1	
Level of Service	D	D	D	A	C	
Approach Delay (s/veh)	37.0			14.0	21.1	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	149	15	6	319	66	22	40	10	92	43	17
Future Volume (vph)	17	149	15	6	319	66	22	40	10	92	43	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.987			0.975			0.982			0.985	
Flt Protected	0.950				0.999			0.985			0.971	
Satd. Flow (prot)	1770	3555	0	0	3504	0	0	1817	0	0	1782	0
Flt Permitted	0.431				0.952			0.905			0.793	
Satd. Flow (perm)	803	3555	0	0	3339	0	0	1670	0	0	1455	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			46			10			12	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		153.9			869.1			154.8			210.9	
Travel Time (s)		9.2			52.1			13.9			19.0	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	17	152	15	6	326	67	22	41	10	94	44	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	167	0	0	399	0	0	73	0	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

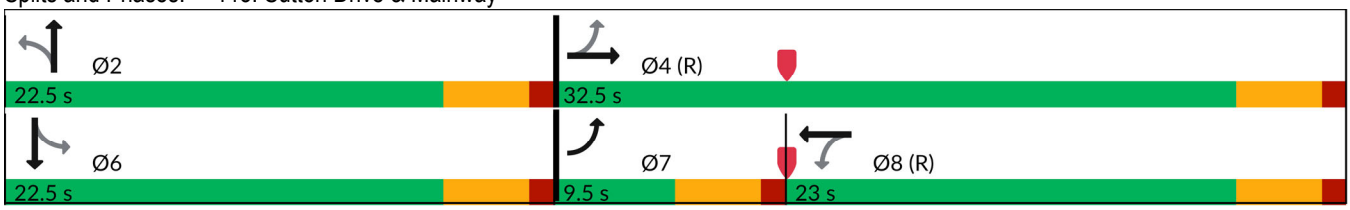


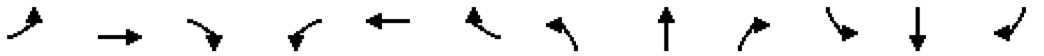
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	9.5	32.5		23.0	23.0		22.5	22.5		22.5	22.5	
Total Split (%)	17.3%	59.1%		41.8%	41.8%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.0	28.0		18.5	18.5		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	28.0	28.0			26.1			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.47			0.33			0.33	
v/c Ratio	0.03	0.09			0.25			0.13			0.32	
Control Delay (s/veh)	6.9	6.5			8.9			12.4			15.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	6.9	6.5			8.9			12.4			15.1	
LOS	A	A			A			B			B	
Approach Delay (s/veh)		6.5			8.9			12.4			15.1	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	0.8	3.8			9.7			4.6			11.1	
Queue Length 95th (m)	3.2	7.7			23.6			12.2			23.9	
Internal Link Dist (m)		129.9			845.1			130.8			186.9	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	496	1817			1608			553			484	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.03	0.09			0.25			0.13			0.32	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 32.5 (59%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.32	
Intersection Signal Delay (s/veh): 9.9	Intersection LOS: A

Intersection Capacity Utilization 37.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 113: Sutton Drive & Mainway

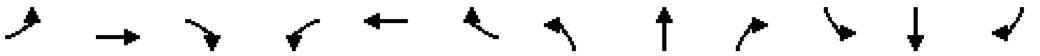




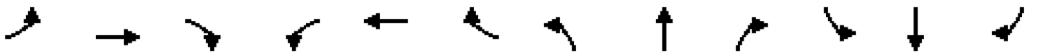
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	149	15	6	319	66	22	40	10	92	43	17
Future Volume (vph)	17	149	15	6	319	66	22	40	10	92	43	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.97			0.98			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.97	
Satd. Flow (prot)	1770	3554			3504			1817			1781	
Flt Permitted	0.43	1.00			0.95			0.91			0.79	
Satd. Flow (perm)	802	3554			3338			1669			1454	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	17	152	15	6	326	67	22	41	10	94	44	17
RTOR Reduction (vph)	0	7	0	0	27	0	0	7	0	0	8	0
Lane Group Flow (vph)	17	160	0	0	372	0	0	66	0	0	147	0
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.0	28.0			22.5			18.0			18.0	
Effective Green, g (s)	28.0	28.0			22.5			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.41			0.33			0.33	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	425	1809			1365			546			475	
v/s Ratio Prot	0.00	c0.04										
v/s Ratio Perm	0.02				c0.11			0.04			c0.10	
v/c Ratio	0.04	0.09			0.27			0.12			0.31	
Uniform Delay, d1	6.9	6.9			10.8			13.0			13.8	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.5			0.5			1.7	
Delay (s)	6.9	7.0			11.3			13.4			15.5	
Level of Service	A	A			B			B			B	
Approach Delay (s/veh)		7.0			11.3			13.4			15.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Future Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.899			0.956			0.993			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3196	0	3433	3390	0	1805	5094	0	3433	5039	0
Flt Permitted	0.389			0.950			0.090			0.950		
Satd. Flow (perm)	739	3196	0	3431	3390	0	171	5094	0	3432	5039	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192			71			8			18	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	180	92	192	102	249	103	207	1542	78	72	1536	152
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	284	0	102	352	0	207	1620	0	72	1688	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	37.3		11.0	37.3		11.0	35.7		11.0	35.7	
Total Split (%)	11.6%	39.3%		11.6%	39.3%		11.6%	37.6%		11.6%	37.6%	
Maximum Green (s)	7.0	31.0		7.0	31.0		7.0	29.4		7.0	29.4	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	23.5	15.6		7.0	13.4		60.3	48.5		7.7	41.2	
Actuated g/C Ratio	0.25	0.16		0.07	0.14		0.63	0.51		0.08	0.43	
v/c Ratio	0.69	0.41		0.40	0.65		0.63	0.62		0.26	0.77	
Control Delay (s/veh)	42.4	14.2		47.1	36.2		33.5	27.1		43.0	26.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	42.4	14.2		47.1	36.2		33.5	27.1		43.0	26.7	
LOS	D	B		D	D		C	C		D	C	
Approach Delay (s/veh)		25.1			38.6			27.8			27.3	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	27.7	8.5		10.0	27.5		35.9	83.4		6.9	97.9	
Queue Length 95th (m)	43.5	19.7		18.5	40.6		60.8	119.1		13.7	#145.8	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	261	1172		252	1154		329	2602		279	2194	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.69	0.24		0.40	0.31		0.63	0.62		0.26	0.77	

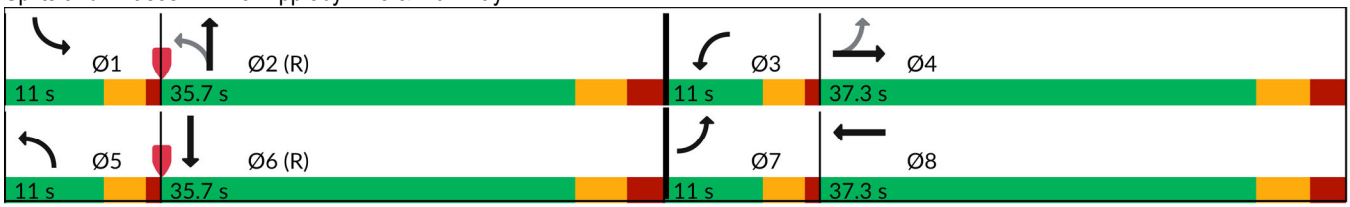
Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay (s/veh): 28.4	Intersection LOS: C

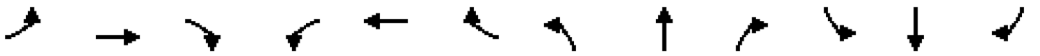
Intersection Capacity Utilization 81.8% ICU Level of Service D

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 115: Appleby Line & Mainway





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Future Volume (vph)	178	91	190	101	247	102	205	1527	77	71	1521	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3195		3433	3391		1805	5093		3433	5042	
Flt Permitted	0.39	1.00		0.95	1.00		0.09	1.00		0.95	1.00	
Satd. Flow (perm)	740	3195		3433	3391		171	5093		3433	5042	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	180	92	192	102	249	103	207	1542	78	72	1536	152
RTOR Reduction (vph)	0	160	0	0	60	0	0	4	0	0	10	0
Lane Group Flow (vph)	180	124	0	102	292	0	207	1616	0	72	1678	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	22.6	15.6		5.6	14.2		57.2	46.9		6.3	40.4	
Effective Green, g (s)	22.6	15.6		5.6	14.2		57.2	46.9		6.3	40.4	
Actuated g/C Ratio	0.24	0.16		0.06	0.15		0.60	0.49		0.07	0.43	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	254	524		202	506		323	2514		227	2144	
v/s Ratio Prot	c0.05	0.04		0.03	0.09		c0.09	0.32		0.02	c0.33	
v/s Ratio Perm	c0.12						0.30					
v/c Ratio	0.71	0.24		0.50	0.58		0.64	0.64		0.32	0.78	
Uniform Delay, d1	31.3	34.5		43.4	37.6		18.9	17.8		42.3	23.5	
Progression Factor	1.00	1.00		1.00	1.00		1.63	1.44		1.00	1.00	
Incremental Delay, d2	8.7	0.2		2.0	1.6		3.7	1.1		0.8	2.9	
Delay (s)	40.1	34.7		45.3	39.2		34.5	26.8		43.1	26.4	
Level of Service	D	C		D	D		C	C		D	C	
Approach Delay (s/veh)		36.8			40.6			27.7			27.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	81.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Future Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.948			0.955			0.986			0.998	
Flt Protected		0.979			0.970		0.950			0.950		
Satd. Flow (prot)	0	1734	0	0	1728	0	1805	5055	0	1805	5124	0
Flt Permitted		0.775			0.773		0.113			0.093		
Satd. Flow (perm)	0	1371	0	0	1376	0	215	5055	0	177	5124	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			33			23			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	47	19	41	194	17	104	35	1746	182	94	1721	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	315	0	35	1928	0	94	1740	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

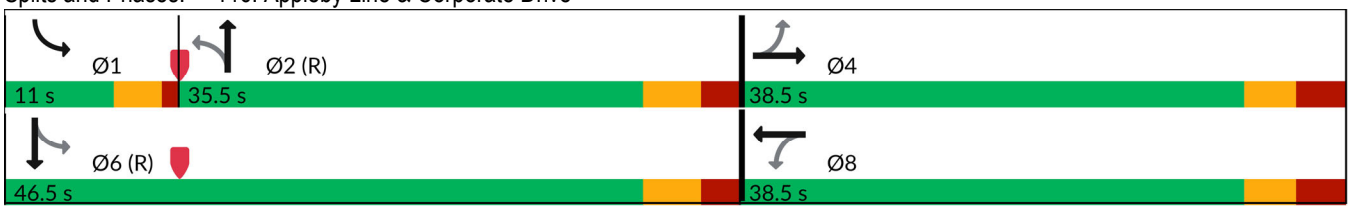


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.5	38.5		38.5	38.5		35.5	35.5		11.0	46.5	
Total Split (%)	45.3%	45.3%		45.3%	45.3%		41.8%	41.8%		12.9%	54.7%	
Maximum Green (s)	32.0	32.0		32.0	32.0		29.5	29.5		7.0	40.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		23.5			23.5		39.9	39.9		51.0	49.0	
Actuated g/C Ratio		0.28			0.28		0.47	0.47		0.60	0.58	
v/c Ratio		0.28			0.78		0.35	0.81		0.38	0.59	
Control Delay (s/veh)		22.2			38.1		33.5	25.7		13.6	13.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		22.2			38.1		33.5	25.7		13.6	13.7	
LOS		C			D		C	C		B	B	
Approach Delay (s/veh)		22.2			38.1			25.9			13.7	
Approach LOS		C			D			C			B	
Queue Length 50th (m)		13.2			44.3		3.9	105.0		6.3	65.6	
Queue Length 95th (m)		22.9			65.2		#18.3	#169.4		16.1	100.8	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		520			538		100	2382		246	2953	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.21			0.59		0.35	0.81		0.38	0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 21.4	Intersection LOS: C

Intersection Capacity Utilization 79.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

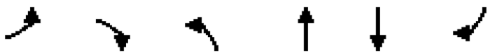
Splits and Phases: 116: Appleby Line & Corporate Drive



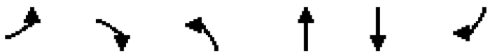
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Future Volume (vph)	44	18	39	182	16	98	33	1641	171	88	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1731			1728		1804	5055		1805	5126	
Flt Permitted		0.77			0.77		0.11	1.00		0.09	1.00	
Satd. Flow (perm)		1371			1377		215	5055		176	5126	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	19	41	194	17	104	35	1746	182	94	1721	19
RTOR Reduction (vph)	0	5	0	0	24	0	0	12	0	0	1	0
Lane Group Flow (vph)	0	102	0	0	291	0	35	1916	0	94	1739	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		23.5			23.5		39.1	39.1		49.0	49.0	
Effective Green, g (s)		23.5			23.5		39.1	39.1		49.0	49.0	
Actuated g/C Ratio		0.28			0.28		0.46	0.46		0.58	0.58	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		379			380		98	2325		214	2954	
v/s Ratio Prot								c0.38		0.03	c0.34	
v/s Ratio Perm		0.07			c0.21		0.16			0.22		
v/c Ratio		0.27			0.77		0.36	0.82		0.44	0.59	
Uniform Delay, d1		24.0			28.2		14.8	20.0		13.6	11.5	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			8.9		9.9	3.5		1.4	0.9	
Delay (s)		24.4			37.2		24.7	23.4		15.0	12.4	
Level of Service		C			D		C	C		B	B	
Approach Delay (s/veh)		24.4			37.2			23.4			12.5	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	88	169	1384	815	13
Future Volume (vph)	14	88	169	1384	815	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	3367	5187	5167	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1509	3351	5187	5167	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		94			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	15	94	180	1472	867	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	94	180	1472	881	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

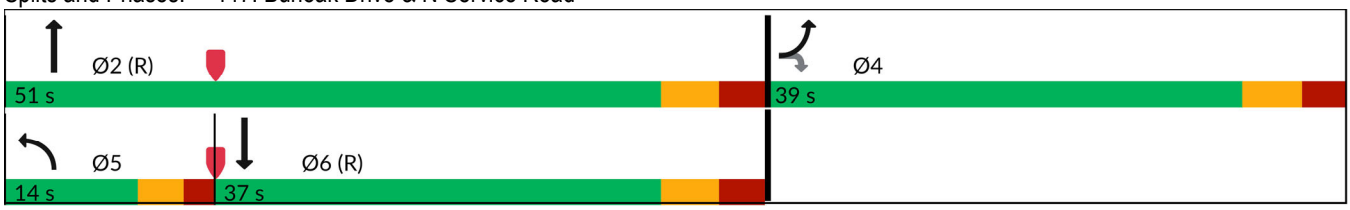


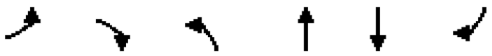
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	9.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.5	8.5	12.0	71.9	53.5	
Actuated g/C Ratio	0.09	0.09	0.13	0.80	0.59	
v/c Ratio	0.09	0.41	0.40	0.36	0.29	
Control Delay (s/veh)	37.9	14.4	38.0	3.7	9.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.9	14.4	38.0	3.7	9.7	
LOS	D	B	D	A	A	
Approach Delay (s/veh)	17.6			7.5	9.7	
Approach LOS	B			A	A	
Queue Length 50th (m)	2.6	0.0	16.1	26.8	14.9	
Queue Length 95th (m)	8.4	14.9	25.7	37.5	41.8	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	641	597	448	4145	3075	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.16	0.40	0.36	0.29	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.41			
Intersection Signal Delay (s/veh): 8.6		Intersection LOS: A	

Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	88	169	1384	815	13
Future Volume (vph)	14	88	169	1384	815	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	3367	5187	5165	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1509	3367	5187	5165	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	94	180	1472	867	14
RTOR Reduction (vph)	0	87	0	0	1	0
Lane Group Flow (vph)	15	7	180	1472	880	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	6.9	6.9	12.0	69.1	52.1	
Effective Green, g (s)	6.9	6.9	12.0	69.1	52.1	
Actuated g/C Ratio	0.08	0.08	0.13	0.77	0.58	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	138	115	448	3982	2989	
v/s Ratio Prot	c0.01		0.05	c0.28	0.17	
v/s Ratio Perm		0.00				
v/c Ratio	0.11	0.06	0.40	0.37	0.29	
Uniform Delay, d1	38.7	38.5	35.7	3.4	9.6	
Progression Factor	1.00	1.00	1.00	1.00	0.94	
Incremental Delay, d2	0.3	0.2	1.2	0.3	0.2	
Delay (s)	39.0	38.8	36.9	3.7	9.3	
Level of Service	D	D	D	A	A	
Approach Delay (s/veh)	38.8			7.3	9.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1538	974	0	0	1290
Future Volume (vph)	2146	1538	974	0	0	1290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor	1.00					
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2814	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3428	2814	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		8				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	2235	1602	1015	0	0	1344
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2235	1602	1015	0	0	1344
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	83.0	83.0	37.0			37.0
Total Split (%)	69.2%	69.2%	30.8%			30.8%
Maximum Green (s)	76.0	76.0	31.0			31.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	76.0	76.0	31.0			31.0
Actuated g/C Ratio	0.63	0.63	0.26			0.26
v/c Ratio	1.03	0.90	0.76			1.01
Control Delay (s/veh)	49.5	26.9	45.4			72.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	49.5	26.9	45.4			72.3
LOS	D	C	D			E
Approach Delay (s/veh)	40.1		45.4			72.3
Approach LOS	D		D			E
Queue Length 50th (m)	~309.5	178.9	85.3			~126.1
Queue Length 95th (m)	#352.6	228.6	102.3			#160.5
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	2174	1785	1339			1326
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.03	0.90	0.76			1.01

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 48.0	Intersection LOS: D

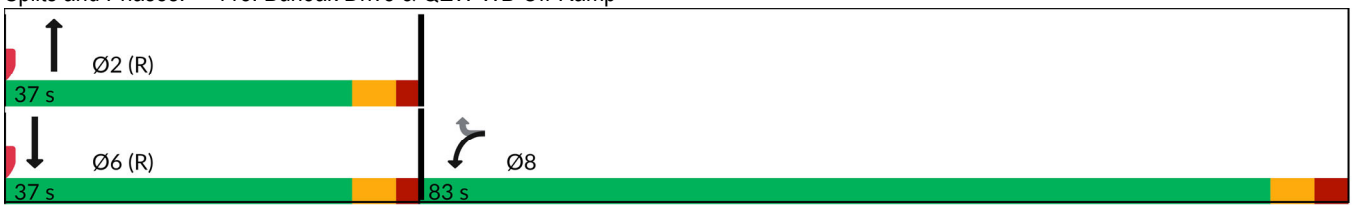
Intersection Capacity Utilization 97.0% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



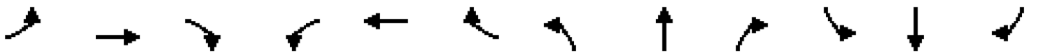


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1538	974	0	0	1290
Future Volume (vph)	2146	1538	974	0	0	1290
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2814	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2814	5187			5136
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2235	1602	1015	0	0	1344
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	2235	1599	1015	0	0	1344
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	76.0	76.0	31.0			31.0
Effective Green, g (s)	76.0	76.0	31.0			31.0
Actuated g/C Ratio	0.63	0.63	0.26			0.26
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	2174	1782	1339			1326
v/s Ratio Prot	c0.65		0.20			c0.26
v/s Ratio Perm		0.57				
v/c Ratio	1.03	0.90	0.76			1.01
Uniform Delay, d1	22.0	18.7	41.0			44.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	26.9	6.4	4.1			28.1
Delay (s)	48.9	25.1	45.1			72.6
Level of Service	D	C	D			E
Approach Delay (s/veh)	38.9		45.1			72.6
Approach LOS	D		D			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	47.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	97.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Future Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.945	0.850			0.865		0.996				
Flt Protected	0.950	0.998										
Satd. Flow (prot)	1643	3042	1441	0	0	1611	0	5117	0	0	5136	0
Flt Permitted	0.950	0.998									0.927	
Satd. Flow (perm)	1643	3042	1441	0	0	1611	0	5117	0	0	4761	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		52	160			176		4				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	167	209	291	0	0	336	0	900	26	17	2794	0
Shared Lane Traffic (%)	10%		45%									
Lane Group Flow (vph)	150	357	160	0	0	336	0	926	0	0	2811	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	



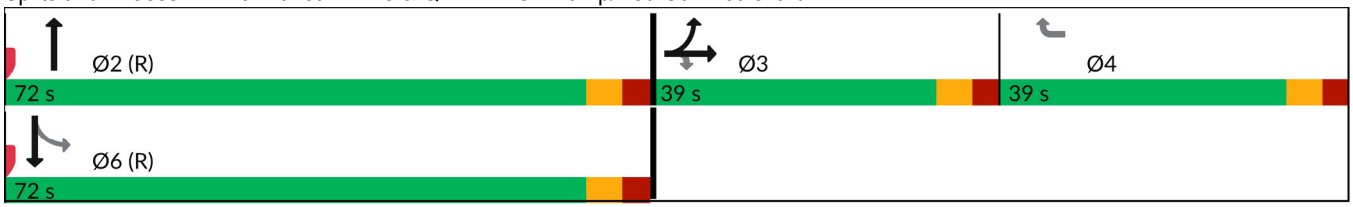
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	39.0	39.0	39.0			39.0		72.0		72.0	72.0	
Total Split (%)	26.0%	26.0%	26.0%			26.0%		48.0%		48.0%	48.0%	
Maximum Green (s)	32.0	32.0	32.0			32.0		65.0		65.0	65.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	0.0	0.0	0.0			7.0		7.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0	0.0			25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0			0		0		0	0	
Act Effct Green (s)	20.9	20.9	20.9			21.9		86.2			86.2	
Actuated g/C Ratio	0.14	0.14	0.14			0.15		0.57			0.57	
v/c Ratio	0.66	0.76	0.47			0.87		0.31			1.03	
Control Delay (s/veh)	74.1	63.4	12.2			51.3		18.6			56.4	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	74.1	63.4	12.2			51.3		18.6			56.4	
LOS	E	E	B			D		B			E	
Approach Delay (s/veh)		53.5			51.3			18.6			56.4	
Approach LOS		D			D			B			E	
Queue Length 50th (m)	49.7	55.0	0.0			52.6		53.1			~344.7	
Queue Length 95th (m)	73.9	72.1	23.4			85.5		82.1			#438.6	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	350	689	433			485		2940			2734	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.43	0.52	0.37			0.69		0.31			1.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay (s/veh): 48.2		Intersection LOS: D	
Intersection Capacity Utilization 82.0%		ICU Level of Service D	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

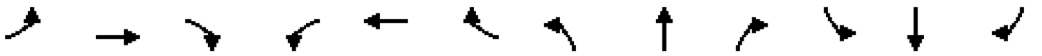
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

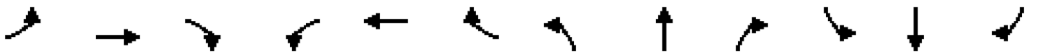


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Future Volume (vph)	157	196	274	0	0	316	0	846	24	16	2626	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1643	3041	1441			1611		5115			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1643	3041	1441			1611		5115			4762	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	167	209	291	0	0	336	0	900	26	17	2794	0
RTOR Reduction (vph)	0	45	138	0	0	150	0	2	0	0	0	0
Lane Group Flow (vph)	150	312	22	0	0	186	0	924	0	0	2811	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	20.9	20.9	20.9			21.9		86.2			86.2	
Effective Green, g (s)	20.9	20.9	20.9			21.9		86.2			86.2	
Actuated g/C Ratio	0.14	0.14	0.14			0.15		0.57			0.57	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	228	423	200			235		2939			2736	
v/s Ratio Prot	0.09	c0.10						0.18				
v/s Ratio Perm			0.02			c0.12					c0.59	
v/c Ratio	0.66	0.74	0.11			0.79		0.31			1.03	
Uniform Delay, d1	61.2	61.9	56.4			61.8		16.6			31.9	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	6.7	6.6	0.2			16.4		0.3			24.7	
Delay (s)	67.9	68.5	56.7			78.2		16.8			56.6	
Level of Service	E	E	E			E		B			E	
Approach Delay (s/veh)		65.5			78.2			16.8			56.6	
Approach LOS		E			E			B			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	51.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	82.0%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Future Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.883			0.912			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1720	0	1656	5096	0	1805	5116	0
Flt Permitted	0.693			0.482			0.081			0.085		
Satd. Flow (perm)	1316	1591	0	907	1720	0	141	5096	0	162	5116	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			58			8			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	58	16	57	104	41	58	42	1702	81	48	1770	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	73	0	104	99	0	42	1783	0	48	1819	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.1	35.1		11.5	46.6		11.5	36.9		11.5	36.9	
Total Split (%)	36.9%	36.9%		12.1%	49.1%		12.1%	38.8%		12.1%	38.8%	
Maximum Green (s)	29.0	29.0		7.5	40.5		7.5	30.3		7.5	30.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.1	10.1		20.8	19.3		66.0	60.4		66.0	60.4	
Actuated g/C Ratio	0.11	0.11		0.22	0.20		0.69	0.64		0.69	0.64	
v/c Ratio	0.41	0.33		0.39	0.25		0.20	0.55		0.20	0.56	
Control Delay (s/veh)	48.0	18.6		32.8	15.4		8.4	14.5		16.4	29.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	48.0	18.6		32.8	15.4		8.4	14.5		16.4	29.8	
LOS	D	B		C	B		A	B		B	C	
Approach Delay (s/veh)		31.6			24.3			14.4			29.5	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	10.7	2.9		16.3	6.4		2.6	86.5		6.0	121.1	
Queue Length 95th (m)	22.5	15.4		28.6	18.6		7.2	116.5		m0.0	155.8	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	401	525		269	766		218	3241		242	3253	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.14		0.39	0.13		0.19	0.55		0.20	0.56	

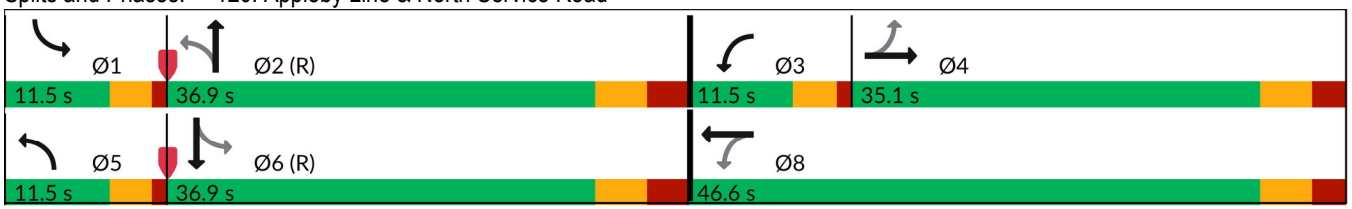
Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.56	
Intersection Signal Delay (s/veh): 22.4	Intersection LOS: C

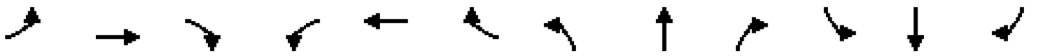
Intersection Capacity Utilization 61.4% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Future Volume (vph)	56	15	55	100	39	56	40	1634	78	46	1699	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1591		1787	1720		1656	5097		1805	5116	
Flt Permitted	0.69	1.00		0.48	1.00		0.08	1.00		0.09	1.00	
Satd. Flow (perm)	1315	1591		908	1720		141	5097		162	5116	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	58	16	57	104	41	58	42	1702	81	48	1770	49
RTOR Reduction (vph)	0	52	0	0	47	0	0	3	0	0	2	0
Lane Group Flow (vph)	58	21	0	104	52	0	42	1780	0	48	1817	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.5	8.5		18.5	18.5		59.8	55.5		59.8	55.5	
Effective Green, g (s)	8.5	8.5		18.5	18.5		59.8	55.5		59.8	55.5	
Actuated g/C Ratio	0.09	0.09		0.19	0.19		0.63	0.58		0.63	0.58	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	117	142		232	334		157	2977		176	2988	
v/s Ratio Prot		0.01		c0.03	0.03		0.01	0.35		c0.01	c0.36	
v/s Ratio Perm	0.04			c0.06			0.16			0.16		
v/c Ratio	0.50	0.15		0.45	0.16		0.27	0.60		0.27	0.61	
Uniform Delay, d1	41.2	39.9		32.8	31.8		8.5	12.6		8.4	12.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		2.39	2.09	
Incremental Delay, d2	3.3	0.5		1.4	0.2		0.9	0.9		0.6	0.7	
Delay (s)	44.5	40.4		34.2	32.0		9.4	13.5		20.6	27.3	
Level of Service	D	D		C	C		A	B		C	C	
Approach Delay (s/veh)		42.2			33.1			13.4			27.2	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2260	0	0	2019
Future Volume (vph)	630	461	2260	0	0	2019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2787	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2787	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		4				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	677	496	2430	0	0	2171
Shared Lane Traffic (%)						
Lane Group Flow (vph)	677	496	2430	0	0	2171
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

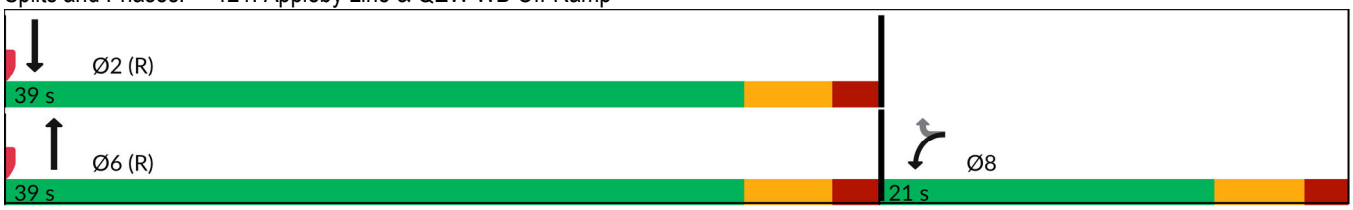


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	21.0	21.0	39.0			39.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	15.0	15.0	33.0			33.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.6	14.6	33.4			33.4
Actuated g/C Ratio	0.24	0.24	0.56			0.56
v/c Ratio	0.82	0.73	0.84			0.76
Control Delay (s/veh)	31.4	28.0	14.9			12.5
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	31.4	28.0	14.9			12.5
LOS	C	C	B			B
Approach Delay (s/veh)	29.9		14.9			12.5
Approach LOS	C		B			B
Queue Length 50th (m)	38.5	29.8	78.2			64.6
Queue Length 95th (m)	#63.3	#46.8	100.4			83.1
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	850	699	2888			2860
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.80	0.71	0.84			0.76

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 17.1		Intersection LOS: B	
Intersection Capacity Utilization 71.6%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

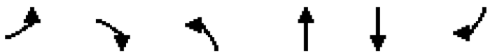
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



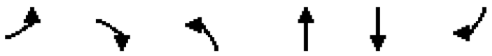


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2260	0	0	2019
Future Volume (vph)	630	461	2260	0	0	2019
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2787	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2787	5187			5136
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	677	496	2430	0	0	2171
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	677	493	2430	0	0	2171
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	14.6	14.6	33.4			33.4
Effective Green, g (s)	14.6	14.6	33.4			33.4
Actuated g/C Ratio	0.24	0.24	0.56			0.56
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	827	678	2887			2859
v/s Ratio Prot	c0.20		c0.47			0.42
v/s Ratio Perm		0.18				
v/c Ratio	0.82	0.73	0.84			0.76
Uniform Delay, d1	21.4	20.9	11.1			10.2
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	6.3	3.9	3.2			2.0
Delay (s)	27.8	24.8	14.3			12.2
Level of Service	C	C	B			B
Approach Delay (s/veh)	26.5		14.3			12.2
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	773	496	0	1933	1985	0
Future Volume (vph)	773	496	0	1933	1985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	5136	5136	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	5136	5136	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		6				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	797	511	0	1993	2046	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	797	511	0	1993	2046	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	22.0	22.0		33.0	33.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	16.0	16.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	15.5	15.5		27.5	27.5	
Actuated g/C Ratio	0.28	0.28		0.50	0.50	
v/c Ratio	0.81	0.64		0.78	0.80	
Control Delay (s/veh)	26.4	21.3		14.0	14.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	26.4	21.3		14.0	14.5	
LOS	C	C		B	B	
Approach Delay (s/veh)	24.4			14.0	14.5	
Approach LOS	C			B	B	
Queue Length 50th (m)	39.0	25.8		58.7	61.4	
Queue Length 95th (m)	#60.2	41.0		76.9	80.4	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1018	822		2571	2571	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.78	0.62		0.78	0.80	

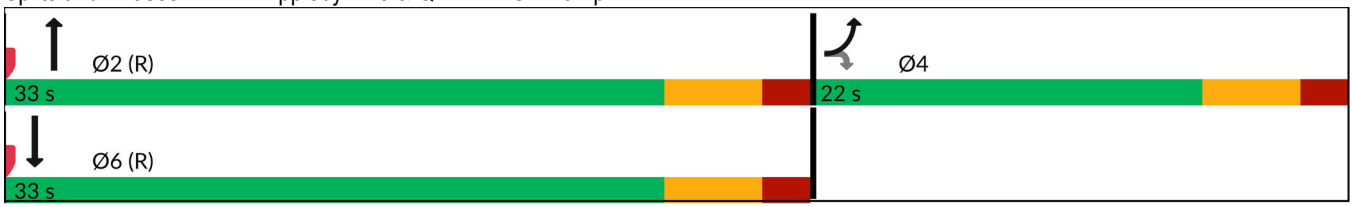
Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 16.8	Intersection LOS: B

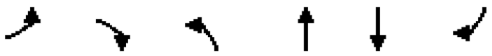
Intersection Capacity Utilization 71.6% ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

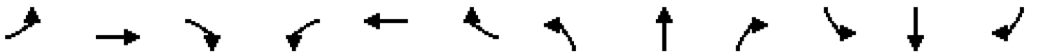




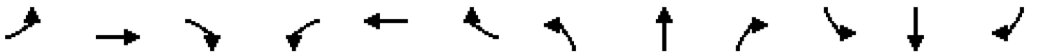
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	773	496	0	1933	1985	0
Future Volume (vph)	773	496	0	1933	1985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		5136	5136	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	797	511	0	1993	2046	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	797	507	0	1993	2046	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	15.5	15.5		27.5	27.5	
Effective Green, g (s)	15.5	15.5		27.5	27.5	
Actuated g/C Ratio	0.28	0.28		0.50	0.50	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	986	793		2568	2568	
v/s Ratio Prot	c0.23			0.39	c0.40	
v/s Ratio Perm		0.18				
v/c Ratio	0.81	0.64		0.78	0.80	
Uniform Delay, d1	18.4	17.3		11.2	11.4	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.0	1.7		2.4	2.7	
Delay (s)	23.3	19.0		13.6	14.1	
Level of Service	C	B		B	B	
Approach Delay (s/veh)	21.6			13.6	14.1	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Future Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor		0.99		1.00			1.00		0.99	1.00		0.99
Frt		0.905			0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3323	0	1736	5136	1599	3502	5136	1553
Flt Permitted	0.233			0.590			0.214			0.950		
Satd. Flow (perm)	426	3218	0	1108	3323	0	391	5136	1575	3499	5136	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			106				232			129
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	154	77	132	582	378	203	86	1358	299	150	1085	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	209	0	582	581	0	86	1358	299	150	1085	129
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		12.0	39.4		11.0	38.6	38.6	11.0	38.6	38.6
Total Split (%)	11.0%	38.4%		12.0%	39.4%		11.0%	38.6%	38.6%	11.0%	38.6%	38.6%
Maximum Green (s)	7.0	32.0		8.0	33.0		7.0	32.3	32.3	7.0	32.3	32.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	28.7	19.3		30.7	20.3		52.8	42.4	42.4	9.6	46.1	46.1
Actuated g/C Ratio	0.29	0.19		0.31	0.20		0.53	0.42	0.42	0.10	0.46	0.46
v/c Ratio	0.72	0.29		1.48	0.77		0.27	0.62	0.37	0.45	0.46	0.17
Control Delay (s/veh)	44.2	13.6		255.7	37.3		12.9	25.3	7.4	46.5	20.8	4.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.2	13.6		255.7	37.3		12.9	25.3	7.4	46.5	20.8	4.4
LOS	D	B		F	D		B	C	A	D	C	A
Approach Delay (s/veh)		26.6			146.6			21.6			22.1	
Approach LOS		C			F			C			C	
Queue Length 50th (m)	23.3	6.8		~165.7	49.8		7.4	77.9	8.1	15.1	55.8	0.0
Queue Length 95th (m)	#37.5	15.6		#217.5	64.3		16.9	110.1	31.1	24.5	80.8	12.5
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	213	1119		394	1167		315	2177	801	336	2368	776
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.19		1.48	0.50		0.27	0.62	0.37	0.45	0.46	0.17

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.48	
Intersection Signal Delay (s/veh): 53.5	Intersection LOS: D

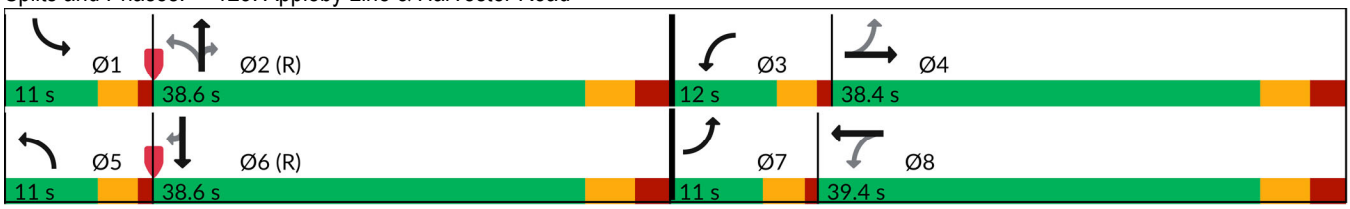
Intersection Capacity Utilization 89.3% ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

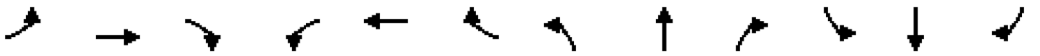
Splits and Phases: 123: Appleby Line & Harvester Road



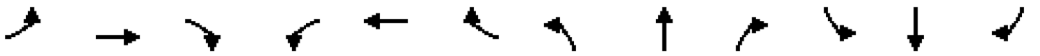
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Future Volume (vph)	151	75	129	570	370	199	84	1331	293	147	1063	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3219		1786	3321		1736	5136	1575	3502	5136	1533
Flt Permitted	0.23	1.00		0.59	1.00		0.21	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	426	3219		1109	3321		391	5136	1575	3502	5136	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	154	77	132	582	378	203	86	1358	299	150	1085	129
RTOR Reduction (vph)	0	107	0	0	84	0	0	0	134	0	0	71
Lane Group Flow (vph)	154	102	0	582	497	0	86	1358	165	150	1085	58
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	26.3	19.3		28.3	20.3		49.1	42.4	42.4	9.6	45.3	45.3
Effective Green, g (s)	26.3	19.3		28.3	20.3		49.1	42.4	42.4	9.6	45.3	45.3
Actuated g/C Ratio	0.26	0.19		0.28	0.20		0.49	0.42	0.42	0.10	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	203	621		368	674		282	2177	667	336	2326	694
v/s Ratio Prot	0.05	0.03		c0.13	0.15		0.02	c0.26		c0.04	c0.21	
v/s Ratio Perm	0.15			c0.32			0.13		0.10			0.04
v/c Ratio	0.76	0.17		1.58	0.74		0.30	0.62	0.25	0.45	0.47	0.08
Uniform Delay, d1	30.5	33.6		34.7	37.3		13.9	22.6	18.5	42.7	19.0	15.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	14.9	0.1		274.4	4.2		0.6	1.4	0.9	0.9	0.7	0.2
Delay (s)	45.4	33.8		309.0	41.5		14.5	23.9	19.4	43.6	19.6	15.8
Level of Service	D	C		F	D		B	C	B	D	B	B
Approach Delay (s/veh)		38.7			175.4			22.7			21.9	
Approach LOS		D			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	89.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Future Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99			0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	5136	1615
Flt Permitted	0.672			0.685			0.081			0.093		
Satd. Flow (perm)	2475	1792	1576	1192	1792	1533	154	3574	1414	170	5136	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			298			174			109			482
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	536	111	416	167	107	191	337	1463	116	146	1654	482
Shared Lane Traffic (%)												
Lane Group Flow (vph)	536	111	416	167	107	191	337	1463	116	146	1654	482
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	12.0	38.0	38.0	11.6	37.6	37.6	20.4	52.9	52.9	12.5	45.0	45.0
Total Split (%)	10.4%	33.0%	33.0%	10.1%	32.7%	32.7%	17.7%	46.0%	46.0%	10.9%	39.1%	39.1%
Maximum Green (s)	7.0	31.5	31.5	7.6	31.1	31.1	16.4	46.1	46.1	8.5	38.2	38.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	25.7	17.2	17.2	26.9	16.8	16.8	75.7	58.8	58.8	58.5	45.6	45.6
Actuated g/C Ratio	0.22	0.15	0.15	0.23	0.15	0.15	0.66	0.51	0.51	0.51	0.40	0.40
v/c Ratio	0.87	0.42	0.85	0.54	0.41	0.51	0.77	0.80	0.15	0.65	0.81	0.52
Control Delay (s/veh)	54.9	46.7	29.9	40.0	46.9	12.5	41.4	29.4	5.0	36.3	36.1	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	54.9	46.7	29.9	40.0	46.9	12.5	41.4	29.4	5.0	36.3	36.1	4.8
LOS	D	D	C	D	D	B	D	C	A	D	D	A
Approach Delay (s/veh)		44.3			30.3			30.0			29.5	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	57.9	25.5	27.8	34.4	24.7	3.7	55.5	145.3	0.9	14.9	128.0	0.0
Queue Length 95th (m)	63.5	38.5	60.3	46.7	37.5	22.2	#124.0	#240.1	13.7	#45.8	#176.9	23.9
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	615	490	648	310	484	541	435	1828	776	227	2038	921
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.23	0.64	0.54	0.22	0.35	0.77	0.80	0.15	0.64	0.81	0.52

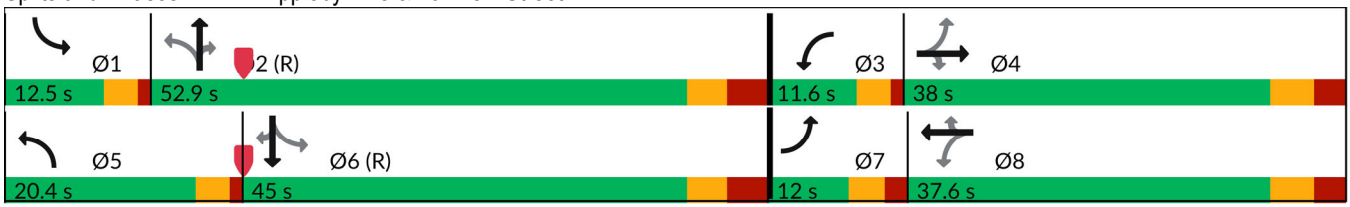
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 32.5	Intersection LOS: C

Intersection Capacity Utilization 86.4% ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Future Volume (vph)	520	108	404	162	104	185	327	1419	113	142	1604	468
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3500	1792	1576	1660	1792	1533	1805	3574	1414	1736	5136	1589
Flt Permitted	0.67	1.00	1.00	0.69	1.00	1.00	0.08	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	2475	1792	1576	1197	1792	1533	153	3574	1414	170	5136	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	536	111	416	167	107	191	337	1463	116	146	1654	482
RTOR Reduction (vph)	0	0	253	0	0	149	0	0	53	0	0	291
Lane Group Flow (vph)	536	111	163	167	107	42	337	1463	63	146	1654	191
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	24.2	17.2	17.2	24.4	16.8	16.8	72.9	58.8	58.8	55.7	45.6	45.6
Effective Green, g (s)	24.2	17.2	17.2	24.4	16.8	16.8	72.9	58.8	58.8	55.7	45.6	45.6
Actuated g/C Ratio	0.21	0.15	0.15	0.21	0.15	0.15	0.63	0.51	0.51	0.48	0.40	0.40
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	583	268	235	284	261	223	431	1827	722	219	2036	630
v/s Ratio Prot	c0.06	0.06		0.04	0.06		c0.16	c0.41		0.06	0.32	
v/s Ratio Perm	c0.14		0.10	0.09		0.03	0.34		0.04	0.26		0.12
v/c Ratio	0.92	0.41	0.69	0.59	0.41	0.19	0.78	0.80	0.09	0.67	0.81	0.30
Uniform Delay, d1	43.6	44.3	46.4	39.8	44.6	43.1	31.4	23.3	14.4	20.5	30.9	23.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	19.6	1.0	8.5	3.1	1.1	0.4	8.9	3.8	0.2	7.5	3.7	1.2
Delay (s)	63.2	45.4	54.9	42.9	45.6	43.5	40.3	27.1	14.6	27.9	34.6	25.0
Level of Service	E	D	D	D	D	D	D	C	B	C	C	C
Approach Delay (s/veh)		58.1			43.8			28.6			32.1	
Approach LOS		E			D			C			C	

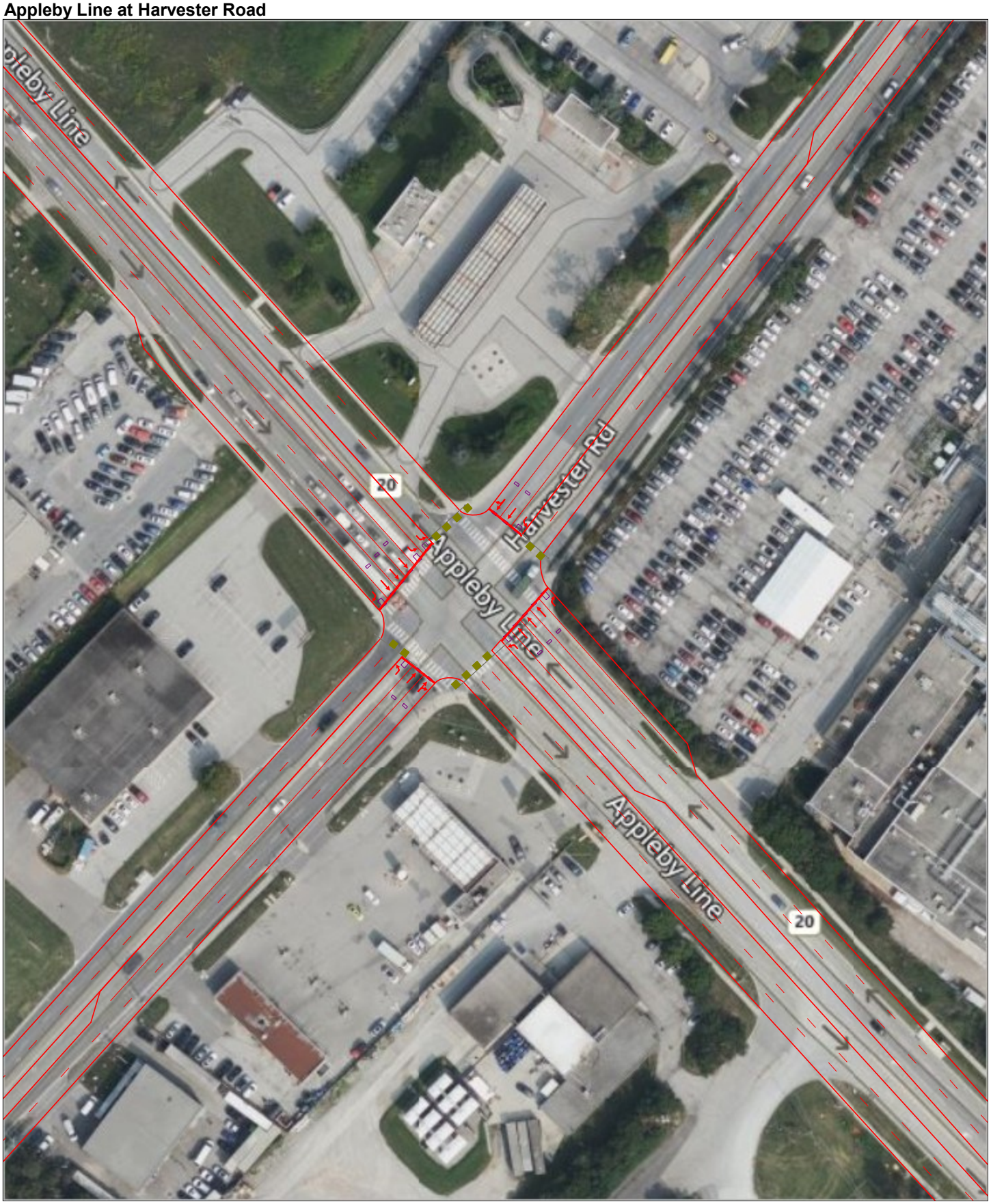
Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Appendix O

High-Level Functional Dual Left-Turn Drawings

High-Level Functional Drawing
Appleby Line at Harvester Road



Not to Scale

High-Level Functional Drawing
Appleby Line at QEW WB Ramp



Not to Scale

High-Level Functional Drawing
Burloak Drive at Mainway



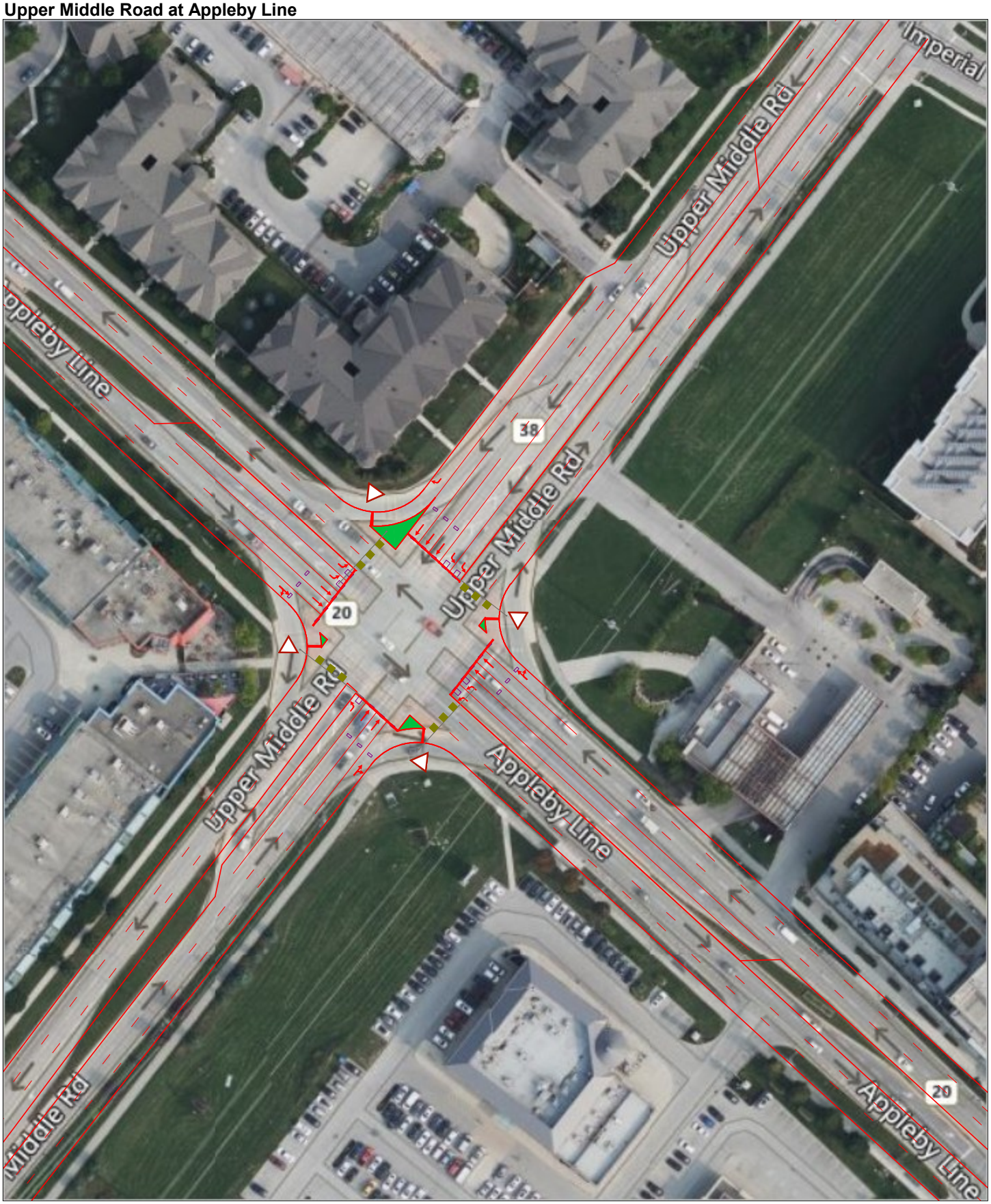
Not to Scale

High-Level Functional Drawing
Burloak Drive at North Service Road



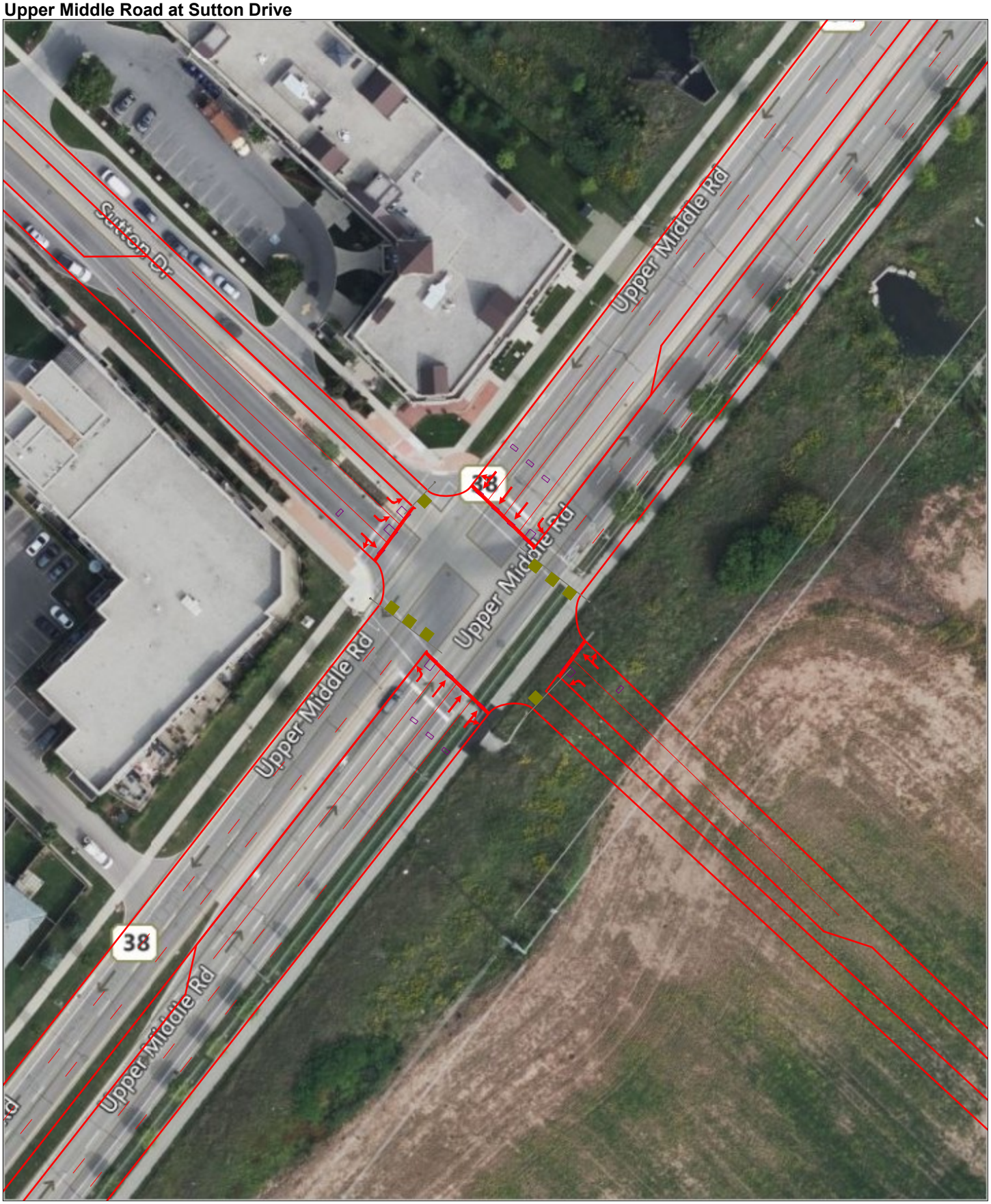
Not to Scale

High-Level Functional Drawing
Upper Middle Road at Appleby Line



Not to Scale

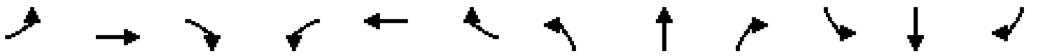
High-Level Functional Drawing
Upper Middle Road at Sutton Drive



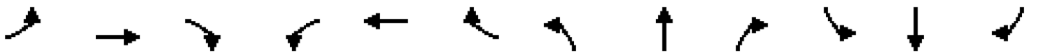
Not to Scale

Appendix P

Modal Shift Reduction Traffic Operation Report



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	1165	398	359	541	122	201	502	299	235	742	149
Future Volume (vph)	196	1165	398	359	541	122	201	502	299	235	742	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3361	5085	1533	3212	4803	1458	3365	4848	1485	3361	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			200			130			269			159
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	209	1239	423	382	576	130	214	534	318	250	789	159
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	1239	423	382	576	130	214	534	318	250	789	159
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	23.0	48.4	48.4	16.0	49.6	49.6	16.0	49.6	49.6
Total Split (%)	15.6%	34.4%	34.4%	17.0%	35.9%	35.9%	11.9%	36.7%	36.7%	11.9%	36.7%	36.7%
Maximum Green (s)	16.0	39.0	39.0	18.0	41.0	41.0	11.0	42.2	42.2	11.0	42.2	42.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.7	37.9	37.9	18.0	41.3	41.3	11.4	42.4	42.4	11.9	42.9	42.9
Actuated g/C Ratio	0.11	0.28	0.28	0.13	0.31	0.31	0.08	0.31	0.31	0.09	0.32	0.32
v/c Ratio	0.57	0.87	0.74	0.89	0.39	0.24	0.75	0.35	0.49	0.85	0.50	0.27
Control Delay (s/veh)	63.5	53.6	30.9	81.0	38.0	6.7	77.6	36.5	9.6	85.4	38.8	6.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.5	53.6	30.9	81.0	38.0	6.7	77.6	36.5	9.6	85.4	38.8	6.0
LOS	E	D	C	F	D	A	E	D	A	F	D	A
Approach Delay (s/veh)		49.6			49.3			36.8			44.2	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	29.7	121.7	59.6	58.6	49.3	0.0	31.8	44.5	10.3	37.5	68.1	0.0
Queue Length 95th (m)	43.6	141.2	103.0	#89.0	62.2	16.2	#51.5	56.4	38.1	#64.4	82.5	16.8
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	399	1469	585	428	1471	537	284	1523	651	295	1584	594
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.84	0.72	0.89	0.39	0.24	0.75	0.35	0.49	0.85	0.50	0.27

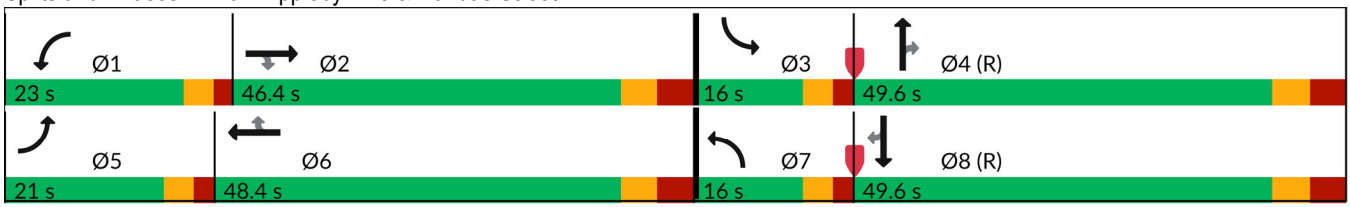
Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 45.7	Intersection LOS: D

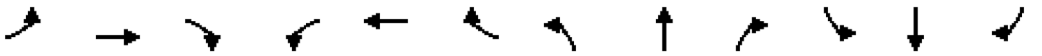
Intersection Capacity Utilization 94.6% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

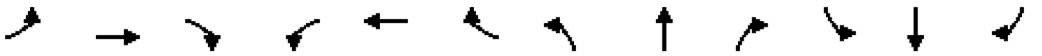




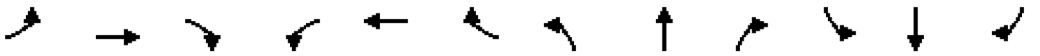
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	1165	398	359	541	122	201	502	299	235	742	149
Future Volume (vph)	196	1165	398	359	541	122	201	502	299	235	742	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	209	1239	423	382	576	130	214	534	318	250	789	159
RTOR Reduction (vph)	0	0	144	0	0	90	0	0	185	0	0	109
Lane Group Flow (vph)	209	1239	279	382	576	40	214	534	133	250	789	50
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.7	38.0	38.0	18.0	41.3	41.3	11.4	42.3	42.3	11.9	42.8	42.8
Effective Green, g (s)	14.7	38.0	38.0	18.0	41.3	41.3	11.4	42.3	42.3	11.9	42.8	42.8
Actuated g/C Ratio	0.11	0.28	0.28	0.13	0.31	0.31	0.08	0.31	0.31	0.09	0.32	0.32
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	366	1431	431	428	1469	446	284	1519	465	296	1581	485
v/s Ratio Prot	0.06	c0.24		c0.12	c0.12		0.06	0.11		c0.07	c0.16	
v/s Ratio Perm			0.18			0.03			0.09			0.03
v/c Ratio	0.57	0.87	0.65	0.89	0.39	0.09	0.75	0.35	0.29	0.84	0.50	0.10
Uniform Delay, d1	57.2	46.1	42.6	57.5	36.9	33.4	60.4	35.8	35.0	60.6	37.4	32.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.4	5.8	3.3	21.5	0.2	0.1	12.7	0.6	1.5	21.0	1.1	0.4
Delay (s)	60.6	51.8	46.0	79.0	37.1	33.5	73.1	36.4	36.5	81.7	38.5	33.0
Level of Service	E	D	D	E	D	C	E	D	D	F	D	C
Approach Delay (s/veh)		51.5			51.4			43.8			46.8	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	48.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	627	300	215	301	256	173	800	141	363	1315	48
Future Volume (vph)	154	627	300	215	301	256	173	800	141	363	1315	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	0.99	0.98		0.99		0.98	1.00	1.00		1.00	1.00	
Frt		0.952				0.850		0.977			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3340	0	3367	5085	1553	3400	4653	0	3400	4955	0
Flt Permitted	0.525			0.950			0.950			0.950		
Satd. Flow (perm)	945	3340	0	3338	5085	1520	3394	4653	0	3384	4955	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		68				284		28			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	171	697	333	239	334	284	192	889	157	403	1461	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	1030	0	239	334	284	192	1046	0	403	1514	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	16.0	47.0		14.0	45.0	45.0	13.0	43.0		21.0	51.0	
Total Split (%)	12.8%	37.6%		11.2%	36.0%	36.0%	10.4%	34.4%		16.8%	40.8%	
Maximum Green (s)	12.0	40.6		10.0	38.6	38.6	8.0	36.5		17.0	44.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	53.2	39.5		10.0	38.3	38.3	8.5	37.7		16.9	45.1	
Actuated g/C Ratio	0.43	0.32		0.08	0.31	0.31	0.07	0.30		0.14	0.36	
v/c Ratio	0.36	0.93		0.89	0.21	0.43	0.83	0.74		0.88	0.85	
Control Delay (s/veh)	23.4	54.1		89.4	32.5	5.7	86.3	42.1		74.0	42.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	23.4	54.1		89.4	32.5	5.7	86.3	42.1		74.0	42.2	
LOS	C	D		F	C	A	F	D		E	D	
Approach Delay (s/veh)		49.7			39.5			48.9			48.9	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	27.1	127.8		33.0	23.7	0.0	26.4	93.6		54.5	135.6	
Queue Length 95th (m)	43.2	#169.3		#57.9	32.4	21.1	#49.3	112.5		#82.3	156.8	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	482	1130		269	1573	666	230	1422		464	1790	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.35	0.91		0.89	0.21	0.43	0.83	0.74		0.87	0.85	

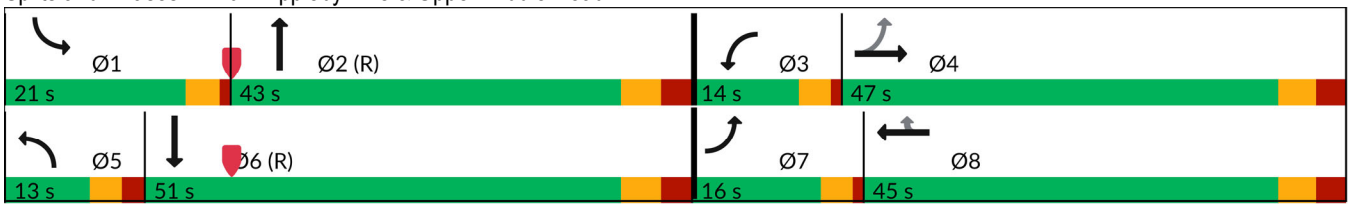
Intersection Summary			
Area Type:	Other		
Cycle Length: 125			
Actuated Cycle Length: 125			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay (s/veh): 47.6		Intersection LOS: D	

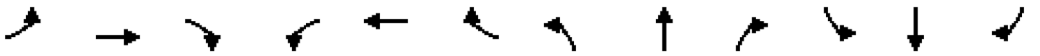
Intersection Capacity Utilization 85.0% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road



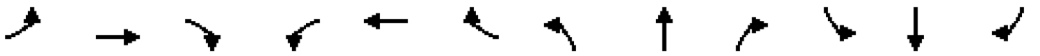


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	154	627	300	215	301	256	173	800	141	363	1315	48
Future Volume (vph)	154	627	300	215	301	256	173	800	141	363	1315	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1714	3338		3367	5085	1520	3400	4655		3400	4953	
Flt Permitted	0.52	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	947	3338		3367	5085	1520	3400	4655		3400	4953	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	171	697	333	239	334	284	192	889	157	403	1461	53
RTOR Reduction (vph)	0	46	0	0	0	197	0	20	0	0	3	0
Lane Group Flow (vph)	171	984	0	239	334	87	192	1026	0	403	1511	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	50.9	39.6		10.0	38.3	38.3	8.5	37.6		16.9	45.0	
Effective Green, g (s)	50.9	39.6		10.0	38.3	38.3	8.5	37.6		16.9	45.0	
Actuated g/C Ratio	0.41	0.32		0.08	0.31	0.31	0.07	0.30		0.14	0.36	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	454	1057		269	1558	465	231	1400		459	1783	
v/s Ratio Prot	0.03	c0.29		c0.07	0.07		0.06	0.22		c0.12	c0.31	
v/s Ratio Perm	0.12					0.06						
v/c Ratio	0.38	0.93		0.89	0.21	0.19	0.83	0.73		0.88	0.85	
Uniform Delay, d1	24.4	41.4		56.9	32.2	31.9	57.5	39.2		53.0	36.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	14.0		27.7	0.1	0.2	21.7	3.4		17.1	5.2	
Delay (s)	24.9	55.4		84.7	32.3	32.1	79.3	42.6		70.1	42.0	
Level of Service	C	E		F	C	C	E	D		E	D	
Approach Delay (s/veh)		51.0			46.8			48.3			47.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	48.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1129	243	42	663	0	182	0	89	5	0	13
Future Volume (vph)	5	1129	243	42	663	0	182	0	89	5	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99	0.99						1.00	0.98		0.99	
Frt		0.973							0.850		0.900	
Flt Protected	0.950			0.950				0.950			0.987	
Satd. Flow (prot)	1805	4887	0	1805	4988	0	0	1752	1615	0	1553	0
Flt Permitted	0.317			0.094				0.742			0.922	
Satd. Flow (perm)	597	4887	0	179	4988	0	0	1364	1588	0	1450	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		64							116		85	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		521.3			256.9			157.0			83.5	
Travel Time (s)		31.3			15.4			11.3			6.0	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	6	1466	316	55	861	0	236	0	116	6	0	17
Shared Lane Traffic (%)												
Lane Group Flow (vph)	6	1782	0	55	861	0	0	236	116	0	23	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

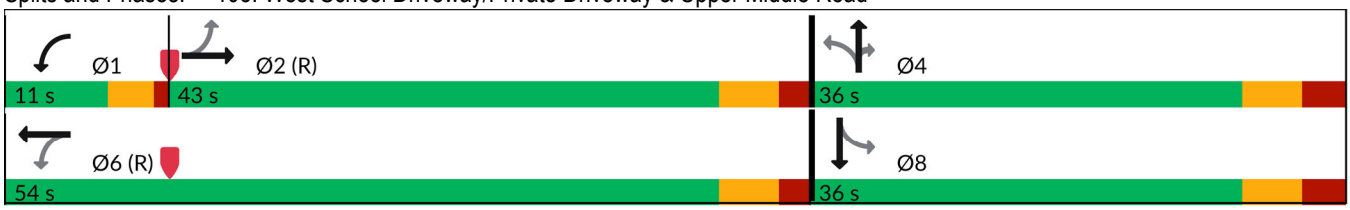


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	43.0	43.0		11.0	54.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	47.8%	47.8%		12.2%	60.0%		40.0%	40.0%	40.0%	40.0%	40.0%	
Maximum Green (s)	37.0	37.0		7.0	48.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	39.2	39.2		50.0	48.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.44	0.44		0.56	0.53			0.32	0.32		0.32	
v/c Ratio	0.02	0.82		0.24	0.32			0.54	0.20		0.04	
Control Delay (s/veh)	16.2	26.3		11.9	12.3			30.5	5.3		0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	16.2	26.3		11.9	12.3			30.5	5.3		0.2	
LOS	B	C		B	B			C	A		A	
Approach Delay (s/veh)		26.3			12.2			22.2			0.2	
Approach LOS		C			B			C			A	
Queue Length 50th (m)	0.6	104.5		4.3	31.3			34.9	0.0		0.0	
Queue Length 95th (m)	2.6	97.8		8.2	33.0			48.0	7.6		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			59.5	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	260	2164		225	2660			439	590		524	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.02	0.82		0.24	0.32			0.54	0.20		0.04	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 21.4		Intersection LOS: C	

Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15

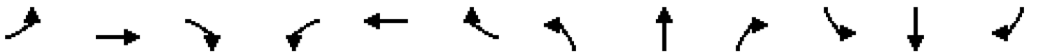
Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



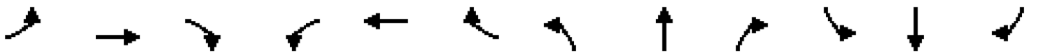
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	1129	243	42	663	0	182	0	89	5	0	13
Future Volume (vph)	5	1129	243	42	663	0	182	0	89	5	0	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	0.99	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.97		1.00	1.00			1.00	0.85		0.90	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1789	4889		1805	4988			1746	1588		1552	
Flt Permitted	0.32	1.00		0.09	1.00			0.74	1.00		0.92	
Satd. Flow (perm)	597	4889		179	4988			1364	1588		1450	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	6	1466	316	55	861	0	236	0	116	6	0	17
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	79	0	16	0
Lane Group Flow (vph)	6	1745	0	55	861	0	0	236	37	0	7	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	38.4	38.4		48.0	48.0			29.0	29.0		29.0	
Effective Green, g (s)	38.4	38.4		48.0	48.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.43	0.43		0.53	0.53			0.32	0.32		0.32	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	254	2085		196	2660			439	511		467	
v/s Ratio Prot		c0.36		0.02	c0.17							
v/s Ratio Perm	0.01			0.13				c0.17	0.02		0.01	
v/c Ratio	0.02	0.84		0.28	0.32			0.54	0.07		0.02	
Uniform Delay, d1	14.9	23.0		14.8	11.8			25.0	21.2		20.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.2	4.2		0.8	0.3			4.7	0.3		0.1	
Delay (s)	15.1	27.2		15.6	12.2			29.7	21.4		20.8	
Level of Service	B	C		B	B			C	C		C	
Approach Delay (s/veh)		27.2			12.4			27.0			20.8	
Approach LOS		C			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	1081	15	0	671	73	19	0	1	87	0	221
Future Volume (vph)	144	1081	15	0	671	73	19	0	1	87	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	120.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.99				0.99						0.99	
Frt		0.998			0.985			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1752	5075	0	0	4919	0	1770	1583	0	1805	1563	0
Flt Permitted	0.199						0.430			0.757		
Satd. Flow (perm)	364	5075	0	0	4919	0	801	1583	0	1438	1563	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			25			94			490	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			84.7			285.4	
Travel Time (s)		7.1			17.4			7.6			25.7	
Confl. Peds. (#/hr)	29					29						1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	189	1422	20	0	883	96	25	0	1	114	0	291
Shared Lane Traffic (%)												
Lane Group Flow (vph)	189	1442	0	0	979	0	25	1	0	114	291	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

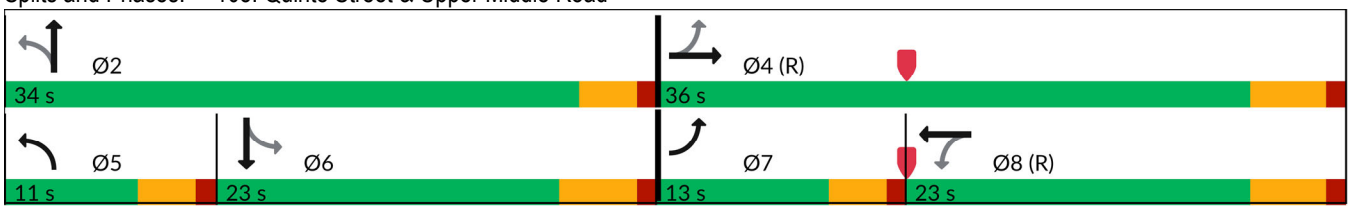


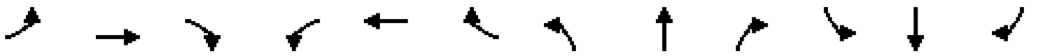
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	23.0		23.0	23.0		11.0	22.5		23.0	23.0	
Total Split (s)	13.0	36.0		23.0	23.0		11.0	34.0		23.0	23.0	
Total Split (%)	18.6%	51.4%		32.9%	32.9%		15.7%	48.6%		32.9%	32.9%	
Maximum Green (s)	9.0	31.0		18.0	18.0		7.0	30.0		18.0	18.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	3.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	32.0	31.0			18.5		30.0	30.0		24.7	24.7	
Actuated g/C Ratio	0.46	0.44			0.26		0.43	0.43		0.35	0.35	
v/c Ratio	0.56	0.64			0.74		0.06	0.00		0.22	0.34	
Control Delay (s/veh)	18.6	16.8			27.2		12.0	0.0		19.8	1.0	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	18.6	16.8			27.2		12.0	0.0		19.8	1.0	
LOS	B	B			C		B	A		B	A	
Approach Delay (s/veh)		17.0			27.2			11.5			6.3	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	15.4	54.6			45.3		1.9	0.0		9.7	0.0	
Queue Length 95th (m)	22.9	54.4			48.0		5.1	0.0		21.3	0.0	
Internal Link Dist (m)		94.7			266.7			60.7			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	344	2249			1317		440	732		507	868	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.55	0.64			0.74		0.06	0.00		0.22	0.34	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 45 (64%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay (s/veh): 18.8	Intersection LOS: B

Intersection Capacity Utilization 63.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 105: Quinte Street & Upper Middle Road



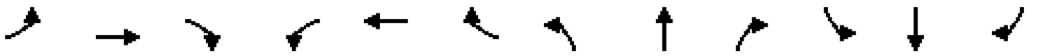


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	1081	15	0	671	73	19	0	1	87	0	221
Future Volume (vph)	144	1081	15	0	671	73	19	0	1	87	0	221
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1750	5075			4921		1770	1583		1805	1563	
Flt Permitted	0.20	1.00			1.00		0.43	1.00		0.76	1.00	
Satd. Flow (perm)	367	5075			4921		801	1583		1439	1563	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	189	1422	20	0	883	96	25	0	1	114	0	291
RTOR Reduction (vph)	0	2	0	0	19	0	0	1	0	0	188	0
Lane Group Flow (vph)	189	1440	0	0	960	0	25	0	0	114	103	0
Confl. Peds. (#/hr)	29					29						1
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.6	28.6			16.1		32.4	32.4		24.7	24.7	
Effective Green, g (s)	28.6	28.6			16.1		32.4	32.4		24.7	24.7	
Actuated g/C Ratio	0.41	0.41			0.23		0.46	0.46		0.35	0.35	
Clearance Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	317	2073			1131		408	732		507	551	
v/s Ratio Prot	0.07	c0.28			c0.20		c0.00	0.00			0.07	
v/s Ratio Perm	0.17						0.03			c0.08		
v/c Ratio	0.60	0.69			0.85		0.06	0.00		0.22	0.19	
Uniform Delay, d1	15.1	17.1			25.8		10.7	10.1		15.9	15.7	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.0	1.9			8.0		0.1	0.0		1.0	0.7	
Delay (s)	18.1	19.0			33.8		10.7	10.1		16.9	16.4	
Level of Service	B	B			C		B	B		B	B	
Approach Delay (s/veh)		18.9			33.8			10.7			16.6	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	836	103	2	423	157	44	2	4	451	5	265
Future Volume (vph)	237	836	103	2	423	157	44	2	4	451	5	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.86	0.86	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	0.98				0.98		1.00	0.98		0.98	0.98	
Frt		0.983			0.959			0.893			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	5043	0	1522	4475	0	1770	1631	0	3502	1532	0
Flt Permitted	0.362			0.243						0.950		
Satd. Flow (perm)	638	5043	0	389	4475	0	1856	1631	0	3446	1532	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			125			5			312	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			175.8			244.6	
Travel Time (s)		17.4			14.7			15.8			22.0	
Confl. Peds. (#/hr)	24					24	6		16	16		6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	282	995	123	2	504	187	52	2	5	537	6	315
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	282	1118	0	2	691	0	52	7	0	537	321	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



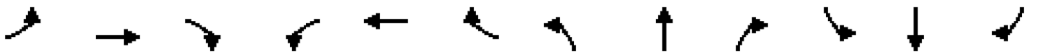
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	31.0		11.0	31.0		11.0	34.0		11.0	34.0	
Total Split (s)	11.0	31.0		11.0	31.0		11.0	34.0		14.0	37.0	
Total Split (%)	12.2%	34.4%		12.2%	34.4%		12.2%	37.8%		15.6%	41.1%	
Maximum Green (s)	7.0	25.0		7.0	25.0		7.0	27.0		10.0	30.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	61.7	57.5		51.3	43.3		10.6	9.4		15.9	10.7	
Actuated g/C Ratio	0.69	0.64		0.57	0.48		0.12	0.10		0.18	0.12	
v/c Ratio	0.47	0.35		0.01	0.31		0.25	0.04		0.87	0.70	
Control Delay (s/veh)	9.8	9.9		6.0	9.3		34.4	24.3		53.0	13.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	9.8	9.9		6.0	9.3		34.4	24.3		53.0	13.7	
LOS	A	A		A	A		C	C		D	B	
Approach Delay (s/veh)		9.8			9.3			33.2			38.3	
Approach LOS		A			A			C			D	
Queue Length 50th (m)	18.8	29.8		0.0	24.8		9.3	0.3		45.0	1.6	
Queue Length 95th (m)	38.9	61.1		m0.4	25.6		13.4	3.8		#90.5	18.4	
Internal Link Dist (m)		266.7			220.7			151.8			220.6	
Turn Bay Length (m)	60.0			60.0			30.0			60.0		
Base Capacity (vph)	597	3232		309	2215		210	492		619	718	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.47	0.35		0.01	0.31		0.25	0.01		0.87	0.45	

Intersection Summary		
Area Type:	Other	
Cycle Length: 90		
Actuated Cycle Length: 90		
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green		
Natural Cycle: 90		
Control Type: Actuated-Coordinated		
Maximum v/c Ratio: 0.87		
Intersection Signal Delay (s/veh): 18.3	Intersection LOS: B	

Intersection Capacity Utilization 84.5% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: Sutton Drive & Upper Middle Road

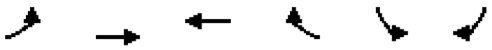




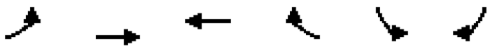
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	237	836	103	2	423	157	44	2	4	451	5	265
Future Volume (vph)	237	836	103	2	423	157	44	2	4	451	5	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		0.86	0.86		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	0.98		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.89		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1694	5045		1522	4477		1763	1630		3502	1531	
Flt Permitted	0.36	1.00		0.24	1.00		1.00	1.00		0.95	1.00	
Satd. Flow (perm)	646	5045		389	4477		1856	1630		3502	1531	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	282	995	123	2	504	187	52	2	5	537	6	315
RTOR Reduction (vph)	0	11	0	0	72	0	0	5	0	0	261	0
Lane Group Flow (vph)	282	1107	0	2	619	0	52	2	0	537	60	0
Confl. Peds. (#/hr)	24					24	6		16	16		6
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	54.1	48.7		38.0	38.0		7.2	3.0		15.9	14.7	
Effective Green, g (s)	54.1	48.7		38.0	38.0		7.2	3.0		15.9	14.7	
Actuated g/C Ratio	0.60	0.54		0.42	0.42		0.08	0.03		0.18	0.16	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	545	2729		181	1890		144	54		618	250	
v/s Ratio Prot	c0.08	0.22		0.00	0.01		0.02	0.00		c0.15	c0.04	
v/s Ratio Perm	c0.23			0.00	0.13		0.01					
v/c Ratio	0.52	0.41		0.01	0.33		0.36	0.04		0.87	0.24	
Uniform Delay, d1	8.6	12.1		15.0	17.4		39.3	42.1		36.0	32.8	
Progression Factor	1.00	1.00		0.69	0.73		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.4		0.0	0.1		1.5	0.3		12.4	0.5	
Delay (s)	9.4	12.6		10.3	12.9		40.8	42.4		48.4	33.3	
Level of Service	A	B		B	B		D	D		D	C	
Approach Delay (s/veh)		12.0			12.9			41.0			42.8	
Approach LOS		B			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	84.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	1288	447	31	183	42
Future Volume (vph)	25	1288	447	31	183	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor	0.99		1.00			
Frt			0.990		0.975	
Flt Protected	0.950				0.961	
Satd. Flow (prot)	1703	5136	4927	0	1737	0
Flt Permitted	0.444				0.961	
Satd. Flow (perm)	791	5136	4927	0	1737	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28		31	
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	10			10		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Adj. Flow (vph)	28	1431	497	34	203	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	1431	531	0	250	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

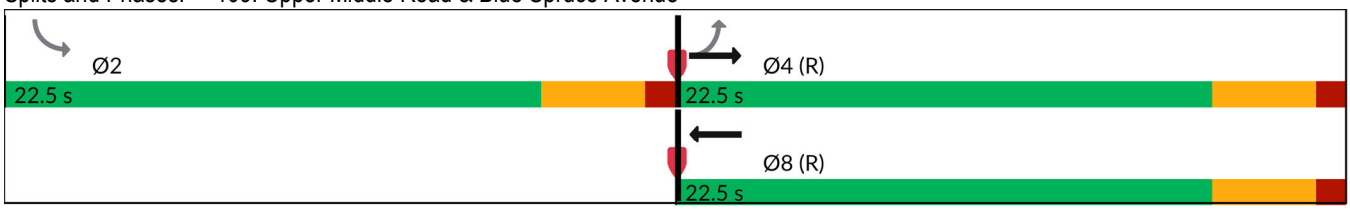


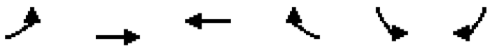
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Detector Phase	4	4	8		2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	22.5	22.5	22.5		22.5	
Total Split (s)	22.5	22.5	22.5		22.5	
Total Split (%)	50.0%	50.0%	50.0%		50.0%	
Maximum Green (s)	18.0	18.0	18.0		18.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	C-Max	C-Max	C-Max		Max	
Walk Time (s)	7.0	7.0	7.0		7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)	18.0	18.0	18.0		18.0	
Actuated g/C Ratio	0.40	0.40	0.40		0.40	
v/c Ratio	0.09	0.70	0.27		0.35	
Control Delay (s/veh)	6.9	11.1	8.0		9.9	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	6.9	11.1	8.0		9.9	
LOS	A	B	A		A	
Approach Delay (s/veh)		11.0	8.0		9.9	
Approach LOS		B	A		A	
Queue Length 50th (m)	2.0	42.3	9.8		11.8	
Queue Length 95th (m)	m3.3	59.3	15.6		24.8	
Internal Link Dist (m)		174.8	440.6		202.6	
Turn Bay Length (m)	100.0					
Base Capacity (vph)	316	2054	1987		713	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.09	0.70	0.27		0.35	

Intersection Summary	
Area Type:	Other
Cycle Length: 45	
Actuated Cycle Length: 45	
Offset: 22.5 (50%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay (s/veh): 10.2	Intersection LOS: B

Intersection Capacity Utilization 45.1% ICU Level of Service A
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 109: Upper Middle Road & Blue Spruce Avenue





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	1288	447	31	183	42
Future Volume (vph)	25	1288	447	31	183	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91	0.91		1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	
Flpb, ped/bikes	0.99	1.00	1.00		1.00	
Frt	1.00	1.00	0.99		0.97	
Flt Protected	0.95	1.00	1.00		0.96	
Satd. Flow (prot)	1693	5136	4929		1736	
Flt Permitted	0.44	1.00	1.00		0.96	
Satd. Flow (perm)	792	5136	4929		1736	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	1431	497	34	203	47
RTOR Reduction (vph)	0	0	17	0	19	0
Lane Group Flow (vph)	28	1431	514	0	231	0
Confl. Peds. (#/hr)	10			10		
Heavy Vehicles (%)	6%	1%	4%	4%	1%	9%
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Actuated Green, G (s)	18.0	18.0	18.0		18.0	
Effective Green, g (s)	18.0	18.0	18.0		18.0	
Actuated g/C Ratio	0.40	0.40	0.40		0.40	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	316	2054	1971		694	
v/s Ratio Prot		c0.28	0.10			
v/s Ratio Perm	0.04				c0.13	
v/c Ratio	0.09	0.70	0.26		0.33	
Uniform Delay, d1	8.4	11.2	9.0		9.3	
Progression Factor	0.74	0.82	0.89		1.00	
Incremental Delay, d2	0.5	1.8	0.3		1.3	
Delay (s)	6.7	11.0	8.4		10.6	
Level of Service	A	B	A		B	
Approach Delay (s/veh)		10.9	8.4		10.6	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	4	494	45	20	1407
Future Volume (vph)	12	4	494	45	20	1407
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor			1.00		1.00	
Frt	0.968		0.987			
Flt Protected	0.963				0.950	
Satd. Flow (prot)	1771	0	4974	0	1805	5136
Flt Permitted	0.963				0.415	
Satd. Flow (perm)	1771	0	4974	0	788	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	4		39			
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		716.4			464.6
Travel Time (s)	14.5		43.0			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Adj. Flow (vph)	13	4	549	50	22	1563
Shared Lane Traffic (%)						
Lane Group Flow (vph)	17	0	599	0	22	1563
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (m)	2.0		10.0		2.0	10.0
Trailing Detector (m)	0.0		0.0		0.0	0.0
Detector 1 Position(m)	0.0		0.0		0.0	0.0
Detector 1 Size(m)	2.0		0.6		2.0	0.6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	4				6	
Detector Phase	4		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5
Total Split (s)	22.5		22.5		22.5	22.5
Total Split (%)	50.0%		50.0%		50.0%	50.0%
Maximum Green (s)	18.0		18.0		18.0	18.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Don't Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	6.0		41.8		41.8	41.8
Actuated g/C Ratio	0.13		0.93		0.93	0.93
v/c Ratio	0.07		0.13		0.03	0.33
Control Delay (s/veh)	15.7		1.0		2.0	1.3
Queue Delay	0.0		0.0		0.0	0.0
Total Delay (s/veh)	15.7		1.0		2.0	1.3
LOS	B		A		A	A
Approach Delay (s/veh)	15.7		1.0			1.3
Approach LOS	B		A			A
Queue Length 50th (m)	1.0		0.0		0.0	0.0
Queue Length 95th (m)	4.9		8.1		m1.1	23.2
Internal Link Dist (m)	136.8		692.4			440.6
Turn Bay Length (m)					145.0	
Base Capacity (vph)	710		4625		732	4773
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.02		0.13		0.03	0.33

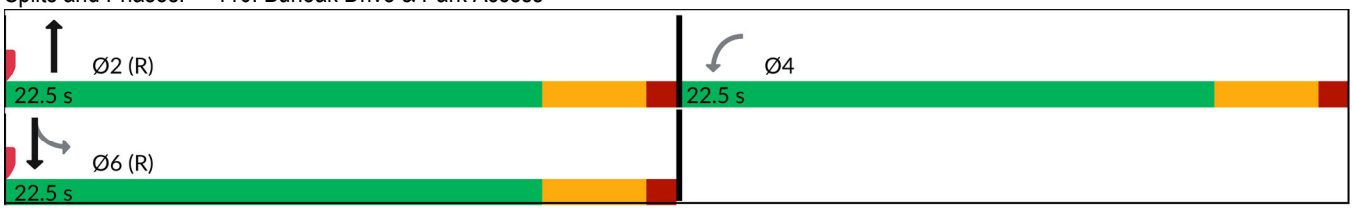
Intersection Summary	
Area Type:	Other
Cycle Length: 45	
Actuated Cycle Length: 45	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.33	
Intersection Signal Delay (s/veh): 1.4	Intersection LOS: A

Intersection Capacity Utilization 38.9% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 110: Burloak Drive & Park Access

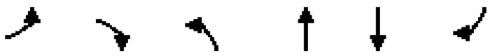




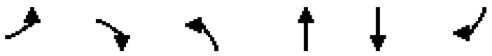
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	12	4	494	45	20	1407
Future Volume (vph)	12	4	494	45	20	1407
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.97		0.99		1.00	1.00
Flt Protected	0.96		1.00		0.95	1.00
Satd. Flow (prot)	1772		4976		1804	5136
Flt Permitted	0.96		1.00		0.41	1.00
Satd. Flow (perm)	1772		4976		788	5136
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	4	549	50	22	1563
RTOR Reduction (vph)	4	0	9	0	0	0
Lane Group Flow (vph)	13	0	590	0	22	1563
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	0%	0%	3%	0%	0%	1%
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	4				6	
Actuated Green, G (s)	1.4		34.6		34.6	34.6
Effective Green, g (s)	1.4		34.6		34.6	34.6
Actuated g/C Ratio	0.03		0.77		0.77	0.77
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	55		3825		605	3949
v/s Ratio Prot			0.12			c0.30
v/s Ratio Perm	c0.01				0.03	
v/c Ratio	0.24		0.15		0.04	0.40
Uniform Delay, d1	21.3		1.4		1.2	1.7
Progression Factor	1.00		1.00		1.32	1.11
Incremental Delay, d2	2.2		0.1		0.1	0.2
Delay (s)	23.5		1.4		1.7	2.1
Level of Service	C		A		A	A
Approach Delay (s/veh)	23.5		1.4			2.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	2.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	457	491	492	1354	72
Future Volume (vph)	58	457	491	492	1354	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.992	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	3367	5036	5092	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1524	3362	5036	5092	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		394			8	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	716.4	
Travel Time (s)	52.1			27.2	43.0	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	64	502	540	541	1488	79
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	502	540	541	1567	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	22.0	61.0	39.0	
Total Split (%)	39.0%	39.0%	22.0%	61.0%	39.0%	
Maximum Green (s)	32.0	32.0	18.0	54.0	32.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.5	16.5	20.6	69.5	44.9	
Actuated g/C Ratio	0.17	0.17	0.21	0.70	0.45	
v/c Ratio	0.22	0.87	0.78	0.15	0.68	
Control Delay (s/veh)	34.1	24.5	49.0	5.8	26.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	34.1	24.5	49.0	5.8	26.0	
LOS	C	C	D	A	C	
Approach Delay (s/veh)	25.6			27.4	26.0	
Approach LOS	C			C	C	
Queue Length 50th (m)	11.7	21.4	61.8	11.2	90.5	
Queue Length 95th (m)	19.8	57.1	#60.1	19.5	#148.7	
Internal Link Dist (m)	845.1			429.2	692.4	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	577	755	701	3500	2288	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.11	0.66	0.77	0.15	0.68	

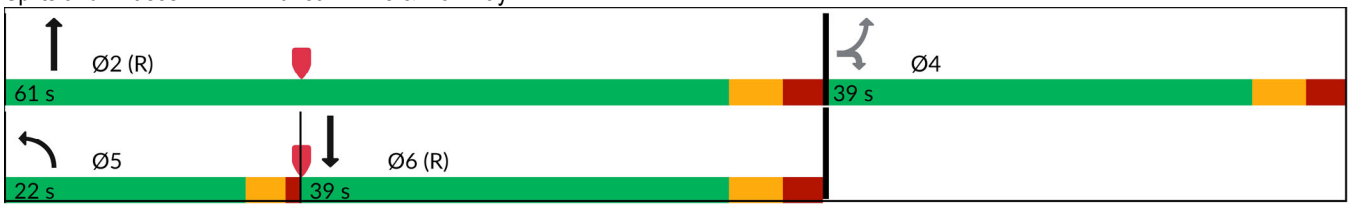
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 26.4	Intersection LOS: C

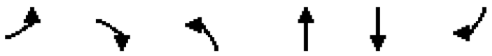
Intersection Capacity Utilization 67.8% ICU Level of Service C

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

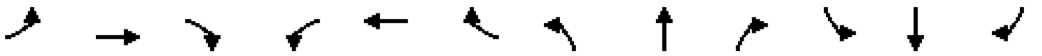




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	58	457	491	492	1354	72
Future Volume (vph)	58	457	491	492	1354	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	3367	5036	5094	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1524	3367	5036	5094	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	64	502	540	541	1488	79
RTOR Reduction (vph)	0	329	0	0	4	0
Lane Group Flow (vph)	64	173	540	541	1563	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	16.5	16.5	20.6	69.5	44.9	
Effective Green, g (s)	16.5	16.5	20.6	69.5	44.9	
Actuated g/C Ratio	0.17	0.17	0.21	0.70	0.45	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	297	251	693	3500	2287	
v/s Ratio Prot			c0.16	0.11	c0.31	
v/s Ratio Perm	0.04	c0.11				
v/c Ratio	0.22	0.69	0.78	0.15	0.68	
Uniform Delay, d1	36.1	39.3	37.5	5.2	21.9	
Progression Factor	1.00	1.00	1.08	0.91	1.00	
Incremental Delay, d2	0.4	7.7	5.5	0.1	1.7	
Delay (s)	36.5	47.0	46.1	4.8	23.6	
Level of Service	D	D	D	A	C	
Approach Delay (s/veh)	45.8			25.4	23.6	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	370	107	28	227	124	15	66	11	73	39	24
Future Volume (vph)	90	370	107	28	227	124	15	66	11	73	39	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.99			1.00							
Frt		0.966			0.951			0.984			0.976	
Flt Protected	0.950				0.996			0.992			0.974	
Satd. Flow (prot)	1770	3318	0	0	3280	0	0	1771	0	0	1771	0
Flt Permitted	0.395				0.895			0.948			0.804	
Satd. Flow (perm)	736	3318	0	0	2947	0	0	1692	0	0	1462	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		99			139			12			21	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		104.9			869.1			154.8			77.6	
Travel Time (s)		6.3			52.1			13.9			7.0	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Adj. Flow (vph)	101	416	120	31	255	139	17	74	12	82	44	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	536	0	0	425	0	0	103	0	0	153	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	10.0	32.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	18.2%	59.1%		40.9%	40.9%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.5	28.0		18.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	28.0	28.0			20.0			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.36			0.33			0.33	
v/c Ratio	0.21	0.31			0.37			0.18			0.31	
Control Delay (s/veh)	10.0	8.0			10.3			13.1			14.0	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	10.0	8.0			10.3			13.1			14.0	
LOS	A	A			B			B			B	
Approach Delay (s/veh)		8.3			10.3			13.1			14.0	
Approach LOS		A			B			B			B	
Queue Length 50th (m)	4.8	9.2			12.0			6.7			10.2	
Queue Length 95th (m)	m15.8	28.0			21.8			15.9			22.4	
Internal Link Dist (m)		80.9			845.1			130.8			53.6	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	478	1737			1159			561			492	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.21	0.31			0.37			0.18			0.31	

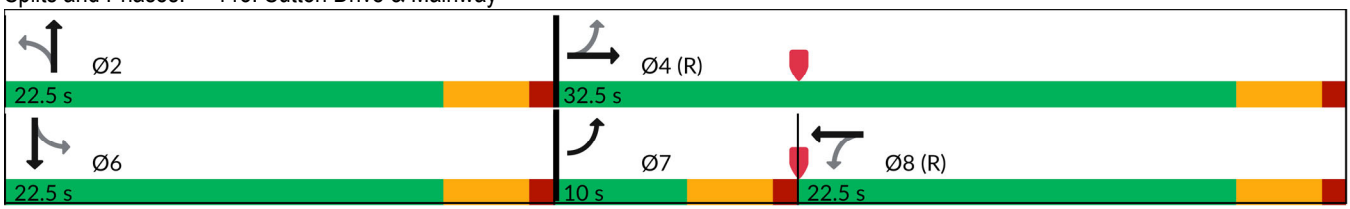
Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 32.5 (59%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.37	
Intersection Signal Delay (s/veh): 10.0	Intersection LOS: A

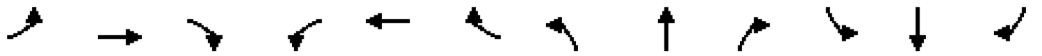
Intersection Capacity Utilization 51.5% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 113: Sutton Drive & Mainway



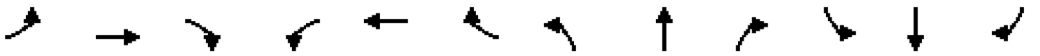


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	370	107	28	227	124	15	66	11	73	39	24
Future Volume (vph)	90	370	107	28	227	124	15	66	11	73	39	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	0.99			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.97			0.95			0.98			0.98	
Flt Protected	0.95	1.00			1.00			0.99			0.97	
Satd. Flow (prot)	1770	3320			3281			1771			1771	
Flt Permitted	0.40	1.00			0.90			0.95			0.80	
Satd. Flow (perm)	736	3320			2947			1693			1462	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	101	416	120	31	255	139	17	74	12	82	44	27
RTOR Reduction (vph)	0	49	0	0	91	0	0	8	0	0	14	0
Lane Group Flow (vph)	101	487	0	0	334	0	0	95	0	0	139	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.0	28.0			19.1			18.0			18.0	
Effective Green, g (s)	28.0	28.0			19.1			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.35			0.33			0.33	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	457	1690			1023			554			478	
v/s Ratio Prot	0.02	c0.15										
v/s Ratio Perm	0.09				c0.11			0.06			c0.09	
v/c Ratio	0.22	0.29			0.33			0.17			0.29	
Uniform Delay, d1	7.3	7.8			13.2			13.2			13.8	
Progression Factor	1.25	1.18			1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.4			0.9			0.7			1.5	
Delay (s)	9.4	9.6			14.1			13.9			15.3	
Level of Service	A	A			B			B			B	
Approach Delay (s/veh)		9.5			14.1			13.9			15.3	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

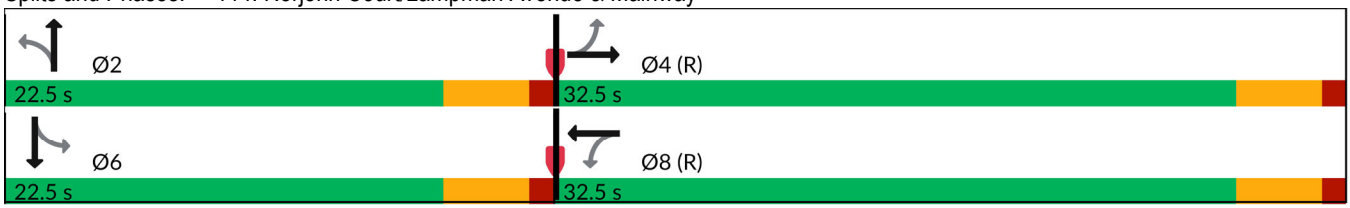
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	798	59	14	163	19	14	0	4	98	2	73
Future Volume (vph)	20	798	59	14	163	19	14	0	4	98	2	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.990			0.986			0.968			0.943	
Flt Protected		0.999			0.997			0.963			0.972	
Satd. Flow (prot)	0	3451	0	0	3211	0	0	1507	0	0	1732	0
Flt Permitted		0.946			0.891			0.815			0.813	
Satd. Flow (perm)	0	3267	0	0	2869	0	0	1275	0	0	1448	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			22			30			72	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			649.2			107.7			112.1	
Travel Time (s)		25.6			39.0			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	24	939	69	16	192	22	16	0	5	115	2	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1032	0	0	230	0	0	21	0	0	203	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

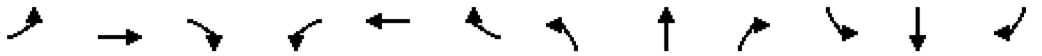


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	32.5	32.5		32.5	32.5		22.5	22.5		22.5	22.5	
Total Split (%)	59.1%	59.1%		59.1%	59.1%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	28.0	28.0		28.0	28.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		35.4			35.4			10.6			10.6	
Actuated g/C Ratio		0.64			0.64			0.19			0.19	
v/c Ratio		0.49			0.12			0.08			0.60	
Control Delay (s/veh)		6.7			5.0			6.0			20.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		6.7			5.0			6.0			20.2	
LOS		A			A			A			C	
Approach Delay (s/veh)		6.7			5.0			6.0			20.2	
Approach LOS		A			A			A			C	
Queue Length 50th (m)		23.5			3.0			0.0			12.4	
Queue Length 95th (m)		44.5			11.3			3.0			23.7	
Internal Link Dist (m)		402.4			625.2			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		2111			1856			437			522	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.49			0.12			0.05			0.39	

Intersection Summary			
Area Type:	Other		
Cycle Length: 55			
Actuated Cycle Length: 55			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay (s/veh): 8.3		Intersection LOS: A	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway

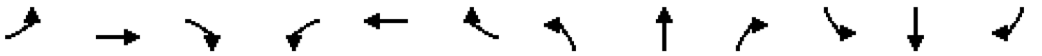




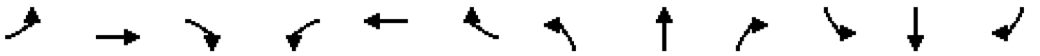
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	798	59	14	163	19	14	0	4	98	2	73
Future Volume (vph)	20	798	59	14	163	19	14	0	4	98	2	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.97			0.94	
Flt Protected		1.00			1.00			0.96			0.97	
Satd. Flow (prot)		3450			3208			1507			1732	
Flt Permitted		0.95			0.89			0.81			0.81	
Satd. Flow (perm)		3268			2867			1275			1448	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	24	939	69	16	192	22	16	0	5	115	2	86
RTOR Reduction (vph)	0	7	0	0	8	0	0	17	0	0	58	0
Lane Group Flow (vph)	0	1025	0	0	222	0	0	4	0	0	145	0
Confl. Peds. (#/hr)	5		9	9		5						
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		35.4			35.4			10.6			10.6	
Effective Green, g (s)		35.4			35.4			10.6			10.6	
Actuated g/C Ratio		0.64			0.64			0.19			0.19	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2103			1845			245			279	
v/s Ratio Prot												
v/s Ratio Perm		c0.31			0.08			0.00			c0.10	
v/c Ratio		0.49			0.12			0.02			0.52	
Uniform Delay, d1		5.1			3.8			18.0			19.9	
Progression Factor		1.00			1.14			1.00			1.00	
Incremental Delay, d2		0.8			0.1			0.0			1.6	
Delay (s)		5.9			4.4			18.0			21.5	
Level of Service		A			A			B			C	
Approach Delay (s/veh)		5.9			4.4			18.0			21.5	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	427	161	112	101	61	112	851	280	229	1446	132
Future Volume (vph)	171	427	161	112	101	61	112	851	280	229	1446	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	0.99	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Frt		0.959			0.943			0.963			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3190	0	2894	3049	0	1597	4679	0	3433	4877	0
Flt Permitted	0.645			0.222			0.089			0.165		
Satd. Flow (perm)	1086	3190	0	674	3049	0	150	4679	0	595	4877	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53			64			90			16	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	178	445	168	117	105	64	117	886	292	239	1506	138
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	613	0	117	169	0	117	1178	0	239	1644	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	37.6		11.0	37.6		11.0	45.4		11.0	45.4	
Total Split (%)	10.5%	35.8%		10.5%	35.8%		10.5%	43.2%		10.5%	43.2%	
Maximum Green (s)	7.0	31.3		7.0	31.3		7.0	39.1		7.0	39.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	33.4	24.1		33.4	24.1		56.0	45.0		55.2	44.6	
Actuated g/C Ratio	0.32	0.23		0.32	0.23		0.53	0.43		0.53	0.42	
v/c Ratio	0.47	0.79		0.32	0.23		0.59	0.57		0.45	0.79	
Control Delay (s/veh)	28.9	42.4		24.0	19.7		42.5	30.6		14.3	30.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.9	42.4		24.0	19.7		42.5	30.6		14.3	30.3	
LOS	C	D		C	B		D	C		B	C	
Approach Delay (s/veh)		39.4			21.5			31.6			28.3	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	29.8	63.0		9.9	10.2		21.3	56.8		11.7	113.9	
Queue Length 95th (m)	44.3	77.7		15.5	18.4		m#43.0	98.0		20.7	#147.6	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	380	988		362	953		199	2058		536	2081	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.47	0.62		0.32	0.18		0.59	0.57		0.45	0.79	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay (s/veh): 30.9	Intersection LOS: C

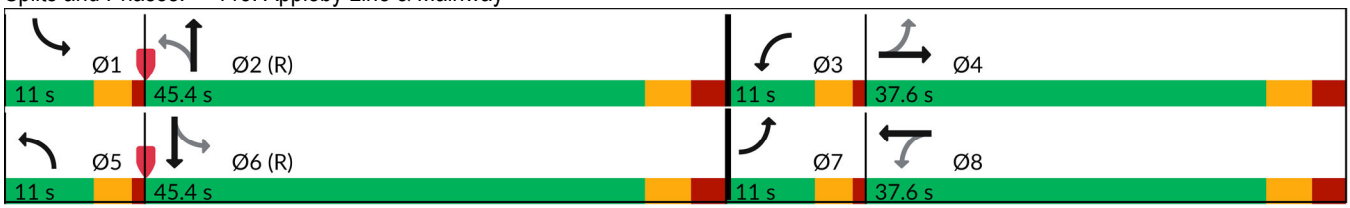
Intersection Capacity Utilization 79.3% ICU Level of Service D

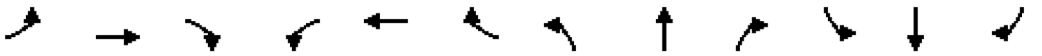
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway



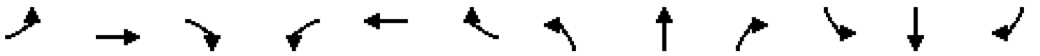


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	427	161	112	101	61	112	851	280	229	1446	132
Future Volume (vph)	171	427	161	112	101	61	112	851	280	229	1446	132
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.94		1.00	0.96		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1604	3190		2892	3050		1597	4678		3432	4879	
Flt Permitted	0.65	1.00		0.22	1.00		0.09	1.00		0.17	1.00	
Satd. Flow (perm)	1089	3190		675	3050		149	4678		598	4879	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	178	445	168	117	105	64	117	886	292	239	1506	138
RTOR Reduction (vph)	0	41	0	0	49	0	0	51	0	0	9	0
Lane Group Flow (vph)	178	572	0	117	120	0	117	1127	0	239	1635	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	31.1	24.1		31.1	24.1		53.7	45.0		52.9	44.6	
Effective Green, g (s)	31.1	24.1		31.1	24.1		53.7	45.0		52.9	44.6	
Actuated g/C Ratio	0.30	0.23		0.30	0.23		0.51	0.43		0.50	0.42	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	356	732		347	700		196	2004		525	2072	
v/s Ratio Prot	c0.03	c0.18		0.02	0.04		c0.05	0.24		0.04	c0.34	
v/s Ratio Perm	0.11			0.08			0.25			0.19		
v/c Ratio	0.50	0.78		0.34	0.17		0.60	0.56		0.46	0.79	
Uniform Delay, d1	29.4	38.0		27.8	32.4		18.0	22.6		14.9	26.1	
Progression Factor	1.00	1.00		1.00	1.00		2.08	1.36		1.00	1.00	
Incremental Delay, d2	1.1	5.4		0.6	0.1		3.8	0.9		0.6	3.1	
Delay (s)	30.5	43.4		28.4	32.6		41.3	31.7		15.5	29.3	
Level of Service	C	D		C	C		D	C		B	C	
Approach Delay (s/veh)		40.5			30.8			32.6			27.5	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	31.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	9	26	188	15	102	34	958	89	78	1668	46
Future Volume (vph)	18	9	26	188	15	102	34	958	89	78	1668	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.932			0.955			0.987			0.996	
Flt Protected		0.984			0.970		0.950			0.950		
Satd. Flow (prot)	0	1327	0	0	1707	0	1530	4772	0	1736	4963	0
Flt Permitted		0.864			0.780		0.113			0.193		
Satd. Flow (perm)	0	1164	0	0	1368	0	182	4772	0	352	4963	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			34			20			6	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	18	9	27	192	15	104	35	978	91	80	1702	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	311	0	35	1069	0	80	1749	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.5	38.5		38.5	38.5		35.5	35.5		11.0	46.5	
Total Split (%)	45.3%	45.3%		45.3%	45.3%		41.8%	41.8%		12.9%	54.7%	
Maximum Green (s)	32.0	32.0		32.0	32.0		29.5	29.5		7.0	40.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		22.9			22.9		40.5	40.5		51.6	49.6	
Actuated g/C Ratio		0.27			0.27		0.48	0.48		0.61	0.58	
v/c Ratio		0.17			0.79		0.41	0.47		0.24	0.60	
Control Delay (s/veh)		19.6			39.5		39.7	17.6		10.7	13.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.6			39.5		39.7	17.6		10.7	13.6	
LOS		B			D		D	B		B	B	
Approach Delay (s/veh)		19.6			39.5			18.3			13.5	
Approach LOS		B			D			B			B	
Queue Length 50th (m)		6.5			43.9		4.4	46.9		5.3	66.8	
Queue Length 95th (m)		14.3			64.6		#22.9	72.4		14.4	104.6	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		443			536		86	2284		332	2898	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.12			0.58		0.41	0.47		0.24	0.60	

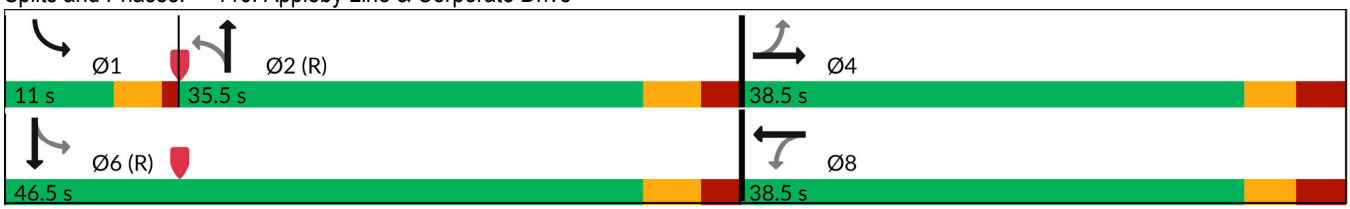
Intersection Summary			
Area Type:	Other		
Cycle Length: 85			
Actuated Cycle Length: 85			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 85			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 17.7		Intersection LOS: B	

Intersection Capacity Utilization 80.0% ICU Level of Service D

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

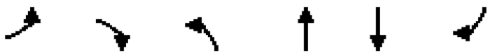
Splits and Phases: 116: Appleby Line & Corporate Drive



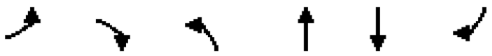
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	9	26	188	15	102	34	958	89	78	1668	46
Future Volume (vph)	18	9	26	188	15	102	34	958	89	78	1668	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.95		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1326			1701		1529	4773		1735	4962	
Flt Permitted		0.86			0.78		0.11	1.00		0.19	1.00	
Satd. Flow (perm)		1164			1368		181	4773		353	4962	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	18	9	27	192	15	104	35	978	91	80	1702	47
RTOR Reduction (vph)	0	6	0	0	25	0	0	11	0	0	2	0
Lane Group Flow (vph)	0	48	0	0	286	0	35	1058	0	80	1747	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.9			22.9		39.7	39.7		49.6	49.6	
Effective Green, g (s)		22.9			22.9		39.7	39.7		49.6	49.6	
Actuated g/C Ratio		0.27			0.27		0.47	0.47		0.58	0.58	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		313			368		84	2229		301	2895	
v/s Ratio Prot								0.22		0.02	c0.35	
v/s Ratio Perm		0.04			c0.21		0.19			0.14		
v/c Ratio		0.15			0.78		0.42	0.47		0.27	0.60	
Uniform Delay, d1		23.7			28.7		15.0	15.5		8.5	11.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			9.9		14.5	0.7		0.5	0.9	
Delay (s)		23.9			38.6		29.5	16.2		9.0	12.3	
Level of Service		C			D		C	B		A	B	
Approach Delay (s/veh)		23.9			38.6			16.7			12.2	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	128	471	801	1418	104
Future Volume (vph)	29	128	471	801	1418	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	3335	5036	5035	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1313	3331	5036	5035	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		129			13	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	29	129	476	809	1432	105
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	129	476	809	1537	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

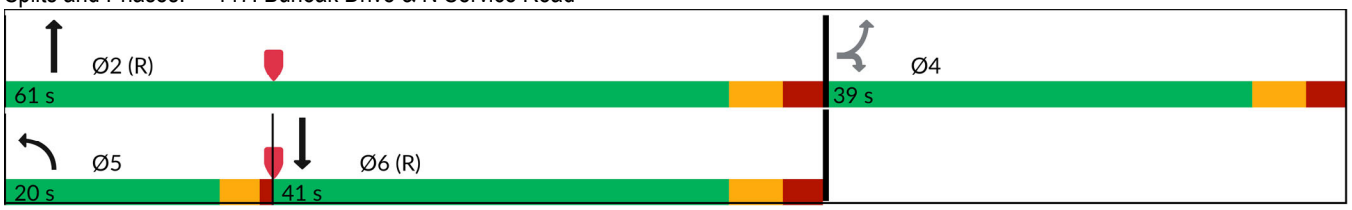


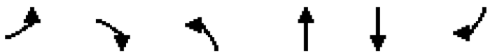
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	20.0	61.0	41.0	
Total Split (%)	39.0%	39.0%	20.0%	61.0%	41.0%	
Maximum Green (s)	32.0	32.0	16.0	54.0	34.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.0	9.0	22.0	77.0	51.0	
Actuated g/C Ratio	0.09	0.09	0.22	0.77	0.51	
v/c Ratio	0.18	0.55	0.65	0.21	0.60	
Control Delay (s/veh)	43.9	16.9	39.6	3.4	23.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	43.9	16.9	39.6	3.4	23.4	
LOS	D	B	D	A	C	
Approach Delay (s/veh)	21.8			16.8	23.4	
Approach LOS	C			B	C	
Queue Length 50th (m)	5.6	0.0	47.3	12.8	53.8	
Queue Length 95th (m)	13.9	19.8	61.6	20.9	115.2	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	577	507	733	3876	2573	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.05	0.25	0.65	0.21	0.60	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay (s/veh): 20.5	Intersection LOS: C

Intersection Capacity Utilization 64.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	29	128	471	801	1418	104
Future Volume (vph)	29	128	471	801	1418	104
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	3335	5036	5034	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1313	3335	5036	5034	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	29	129	476	809	1432	105
RTOR Reduction (vph)	0	117	0	0	6	0
Lane Group Flow (vph)	29	12	476	809	1531	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	9.0	9.0	22.0	77.0	51.0	
Effective Green, g (s)	9.0	9.0	22.0	77.0	51.0	
Actuated g/C Ratio	0.09	0.09	0.22	0.77	0.51	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	162	118	733	3877	2567	
v/s Ratio Prot			c0.14	0.16	c0.30	
v/s Ratio Perm	c0.02	0.01				
v/c Ratio	0.18	0.10	0.65	0.21	0.60	
Uniform Delay, d1	42.1	41.8	35.5	3.2	17.3	
Progression Factor	1.00	1.00	1.00	1.00	1.25	
Incremental Delay, d2	0.5	0.4	2.7	0.1	0.7	
Delay (s)	42.6	42.1	38.2	3.3	22.4	
Level of Service	D	D	D	A	C	
Approach Delay (s/veh)	42.2			16.2	22.4	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1228	1227	847	0	0	2214
Future Volume (vph)	1228	1227	847	0	0	2214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2760	5036	0	0	5036
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2760	5036	0	0	5036
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		148				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1320	1319	911	0	0	2381
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1320	1319	911	0	0	2381
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	73.0	73.0	77.0			77.0
Total Split (%)	48.7%	48.7%	51.3%			51.3%
Maximum Green (s)	66.0	66.0	71.0			71.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
v/c Ratio	0.91	1.02	0.38			1.00
Control Delay (s/veh)	49.4	65.9	26.0			57.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	49.4	65.9	26.0			57.4
LOS	D	E	C			E
Approach Delay (s/veh)	57.7		26.0			57.4
Approach LOS	E		C			E
Queue Length 50th (m)	204.8	~236.5	67.5			274.2
Queue Length 95th (m)	241.3	#286.9	79.5			#316.9
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1453	1297	2383			2383
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.91	1.02	0.38			1.00

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay (s/veh): 52.7		Intersection LOS: D	
Intersection Capacity Utilization 88.6%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

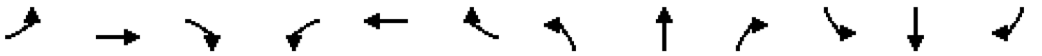
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



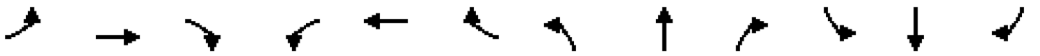


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1228	1227	847	0	0	2214
Future Volume (vph)	1228	1227	847	0	0	2214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3303	2760	5036			5036
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3303	2760	5036			5036
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1320	1319	911	0	0	2381
RTOR Reduction (vph)	0	83	0	0	0	0
Lane Group Flow (vph)	1320	1236	911	0	0	2381
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	66.0	66.0	71.0			71.0
Effective Green, g (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1453	1214	2383			2383
v/s Ratio Prot	0.40		0.18			c0.47
v/s Ratio Perm		c0.45				
v/c Ratio	0.91	1.02	0.38			1.00
Uniform Delay, d1	39.2	42.0	25.4			39.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	8.6	30.5	0.5			18.2
Delay (s)	47.7	72.5	25.9			57.7
Level of Service	D	E	C			E
Approach Delay (s/veh)	60.1		25.9			57.7
Approach LOS	E		C			E

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	109	360	0	0	82	0	876	5	5	2153	0
Future Volume (vph)	246	109	360	0	0	82	0	876	5	5	2153	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		0.99	0.99									
Frt		0.923	0.850			0.865		0.999				
Flt Protected	0.950	0.991										
Satd. Flow (prot)	1610	2749	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950	0.991									0.938	
Satd. Flow (perm)	1610	2749	1318	0	0	1417	0	5032	0	0	4634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		194	193			133		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	265	117	387	0	0	88	0	942	5	5	2315	0
Shared Lane Traffic (%)	25%		50%									
Lane Group Flow (vph)	199	377	193	0	0	88	0	947	0	0	2320	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

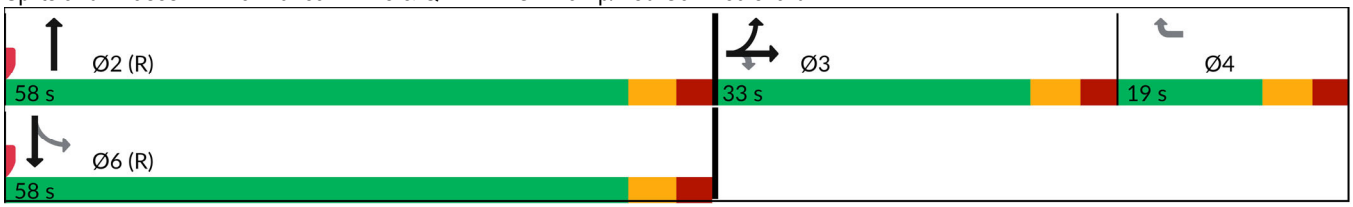


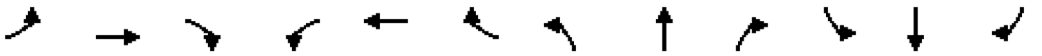
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			15.0		39.0		29.0	29.0	
Total Split (s)	33.0	33.0	33.0			19.0		58.0		58.0	58.0	
Total Split (%)	30.0%	30.0%	30.0%			17.3%		52.7%		52.7%	52.7%	
Maximum Green (s)	26.0	26.0	26.0			12.0		51.0		51.0	51.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)								7.0		7.0	7.0	
Flash Don't Walk (s)								25.0		15.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	19.2	19.2	19.2			8.0		64.8			64.8	
Actuated g/C Ratio	0.17	0.17	0.17			0.07		0.59			0.59	
v/c Ratio	0.71	0.59	0.50			0.39		0.32			0.85	
Control Delay (s/veh)	56.0	22.9	9.8			7.6		13.2			24.8	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	56.0	22.9	9.8			7.6		13.2			24.8	
LOS	E	C	A			A		B			C	
Approach Delay (s/veh)		28.1			7.6			13.2			24.8	
Approach LOS		C			A			B			C	
Queue Length 50th (m)	47.4	22.6	0.0			0.0		41.3			167.3	
Queue Length 95th (m)	70.9	38.4	22.0			6.1		58.2			#239.1	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	380	797	458			273		2964			2729	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.52	0.47	0.42			0.32		0.32			0.85	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 3 (3%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 22.4	Intersection LOS: C

Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

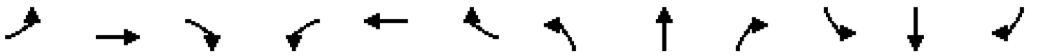




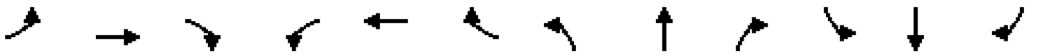
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	246	109	360	0	0	82	0	876	5	5	2153	0
Future Volume (vph)	246	109	360	0	0	82	0	876	5	5	2153	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	0.99	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.92	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.99	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1610	2749	1318			1417		5033			4940	
Flt Permitted	0.95	0.99	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1610	2749	1318			1417		5033			4633	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	265	117	387	0	0	88	0	942	5	5	2315	0
RTOR Reduction (vph)	0	160	159	0	0	83	0	0	0	0	0	0
Lane Group Flow (vph)	199	217	34	0	0	5	0	947	0	0	2320	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	19.2	19.2	19.2			6.4		63.4			63.4	
Effective Green, g (s)	19.2	19.2	19.2			6.4		63.4			63.4	
Actuated g/C Ratio	0.17	0.17	0.17			0.06		0.58			0.58	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	281	479	230			82		2900			2670	
v/s Ratio Prot	c0.12	0.08						0.19				
v/s Ratio Perm			0.03			c0.00					c0.50	
v/c Ratio	0.71	0.45	0.15			0.06		0.33			0.87	
Uniform Delay, d1	42.8	40.7	38.5			49.0		12.2			19.8	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	7.9	0.7	0.3			0.3		0.3			4.2	
Delay (s)	50.7	41.4	38.8			49.3		12.5			23.9	
Level of Service	D	D	D			D		B			C	
Approach Delay (s/veh)		43.1			49.3			12.5			23.9	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	113	45	74	11	39	139	1238	408	93	1520	35
Future Volume (vph)	46	113	45	74	11	39	139	1238	408	93	1520	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								0.99			1.00	
Frt		0.958			0.884			0.963			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1684	0	1504	1571	0	1719	4754	0	1752	4925	0
Flt Permitted	0.722			0.404			0.085			0.088		
Satd. Flow (perm)	1203	1684	0	640	1571	0	154	4754	0	162	4925	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			41			91			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	48	119	47	78	12	41	146	1303	429	98	1600	37
Shared Lane Traffic (%)												
Lane Group Flow (vph)	48	166	0	78	53	0	146	1732	0	98	1637	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		11.6	46.8		12.0	46.6		11.6	46.2	
Total Split (%)	33.5%	33.5%		11.0%	44.6%		11.4%	44.4%		11.0%	44.0%	
Maximum Green (s)	29.1	29.1		7.6	40.7		8.0	40.0		7.6	39.6	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	14.6	14.6		26.0	23.9		69.6	58.4		65.2	54.4	
Actuated g/C Ratio	0.14	0.14		0.25	0.23		0.66	0.56		0.62	0.52	
v/c Ratio	0.29	0.66		0.35	0.14		0.58	0.65		0.44	0.64	
Control Delay (s/veh)	43.1	50.0		33.0	12.3		23.1	19.2		24.0	37.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	43.1	50.0		33.0	12.3		23.1	19.2		24.0	37.7	
LOS	D	D		C	B		C	B		C	D	
Approach Delay (s/veh)		48.5			24.6			19.5			36.9	
Approach LOS		D			C			B			D	
Queue Length 50th (m)	10.3	31.0		14.8	2.1		11.1	96.2		16.2	120.5	
Queue Length 95th (m)	21.8	50.6		26.7	11.6		33.8	138.7		m24.8	154.8	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	333	480		221	634		253	2685		228	2555	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.35		0.35	0.08		0.58	0.65		0.43	0.64	

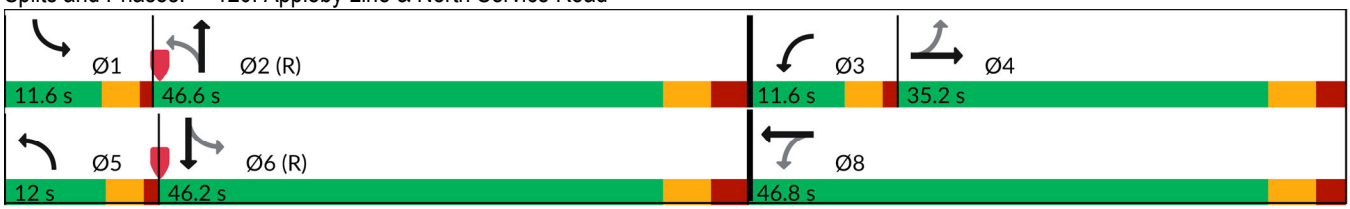
Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 28.8		Intersection LOS: C	

Intersection Capacity Utilization 71.2% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	113	45	74	11	39	139	1238	408	93	1520	35
Future Volume (vph)	46	113	45	74	11	39	139	1238	408	93	1520	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1683		1504	1571		1719	4753		1752	4923	
Flt Permitted	0.72	1.00		0.40	1.00		0.09	1.00		0.09	1.00	
Satd. Flow (perm)	1204	1683		639	1571		154	4753		162	4923	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	48	119	47	78	12	41	146	1303	429	98	1600	37
RTOR Reduction (vph)	0	16	0	0	31	0	0	42	0	0	2	0
Lane Group Flow (vph)	48	150	0	78	22	0	146	1690	0	98	1635	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.6	14.6		24.7	24.7		66.8	56.8		60.4	53.6	
Effective Green, g (s)	14.6	14.6		24.7	24.7		66.8	56.8		60.4	53.6	
Actuated g/C Ratio	0.14	0.14		0.24	0.24		0.64	0.54		0.58	0.51	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	167	234		200	369		247	2571		196	2513	
v/s Ratio Prot		c0.09		c0.02	0.01		c0.06	c0.36		0.03	0.33	
v/s Ratio Perm	0.04			0.07			0.32			0.26		
v/c Ratio	0.29	0.64		0.39	0.06		0.59	0.66		0.50	0.65	
Uniform Delay, d1	40.5	42.7		32.6	31.1		13.2	17.2		12.3	18.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.84	1.80	
Incremental Delay, d2	1.0	5.6		1.3	0.1		3.8	1.3		1.3	0.9	
Delay (s)	41.5	48.4		33.9	31.2		16.9	18.5		23.9	34.8	
Level of Service	D	D		C	C		B	B		C	C	
Approach Delay (s/veh)		46.8			32.8			18.4			34.2	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	498	564	2160	0	0	1748
Future Volume (vph)	498	564	2160	0	0	1748
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	2632	4988	0	0	4893
Flt Permitted	0.950					
Satd. Flow (perm)	3183	2632	4988	0	0	4893
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		7				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	547	620	2374	0	0	1921
Shared Lane Traffic (%)						
Lane Group Flow (vph)	547	620	2374	0	0	1921
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

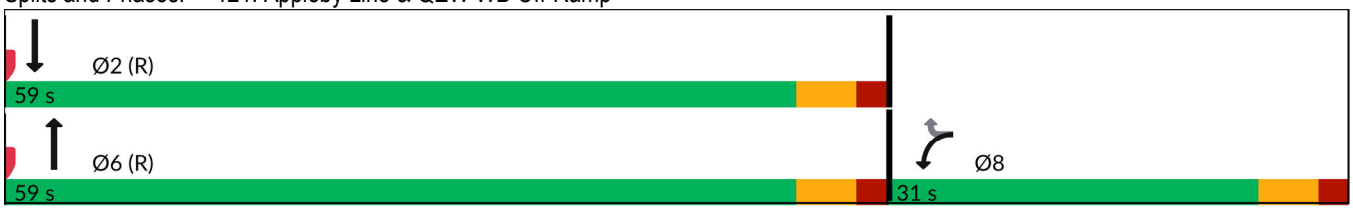


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	31.0	31.0	59.0			59.0
Total Split (%)	34.4%	34.4%	65.6%			65.6%
Maximum Green (s)	25.0	25.0	53.0			53.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	23.9	23.9	54.1			54.1
Actuated g/C Ratio	0.27	0.27	0.60			0.60
v/c Ratio	0.65	0.88	0.79			0.65
Control Delay (s/veh)	33.1	46.6	16.5			13.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	33.1	46.6	16.5			13.4
LOS	C	D	B			B
Approach Delay (s/veh)	40.3		16.5			13.4
Approach LOS	D		B			B
Queue Length 50th (m)	47.8	63.1	117.7			83.4
Queue Length 95th (m)	66.2	#96.8	140.1			100.1
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	884	736	2997			2940
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.62	0.84	0.79			0.65

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 20.5		Intersection LOS: C	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

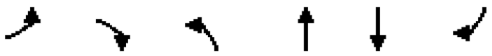
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



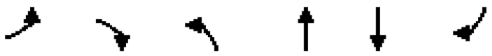


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	498	564	2160	0	0	1748
Future Volume (vph)	498	564	2160	0	0	1748
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	2632	4988			4893
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	2632	4988			4893
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	547	620	2374	0	0	1921
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	547	615	2374	0	0	1921
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	23.9	23.9	54.1			54.1
Effective Green, g (s)	23.9	23.9	54.1			54.1
Actuated g/C Ratio	0.27	0.27	0.60			0.60
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	845	698	2998			2941
v/s Ratio Prot	0.17		c0.48			0.39
v/s Ratio Perm		c0.23				
v/c Ratio	0.65	0.88	0.79			0.65
Uniform Delay, d1	29.3	31.7	13.7			11.8
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	1.7	12.5	2.2			1.1
Delay (s)	31.0	44.2	15.9			12.9
Level of Service	C	D	B			B
Approach Delay (s/veh)	38.0		15.9			12.9
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	824	462	0	1765	1766	0
Future Volume (vph)	824	462	0	1765	1766	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4893	4893	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4893	4893	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		8				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	916	513	0	1961	1962	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	916	513	0	1961	1962	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

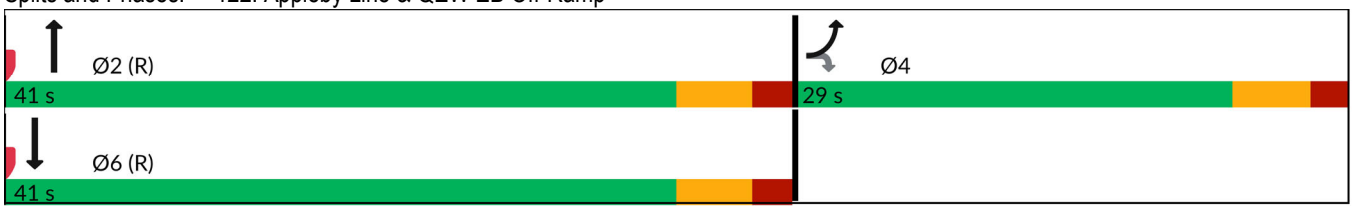


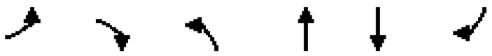
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	29.0	29.0		41.0	41.0	
Total Split (%)	41.4%	41.4%		58.6%	58.6%	
Maximum Green (s)	23.0	23.0		35.0	35.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	22.4	22.4		35.6	35.6	
Actuated g/C Ratio	0.32	0.32		0.51	0.51	
v/c Ratio	0.86	0.59		0.79	0.79	
Control Delay (s/veh)	32.2	22.7		17.2	17.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	32.2	22.7		17.2	17.2	
LOS	C	C		B	B	
Approach Delay (s/veh)	28.8			17.2	17.2	
Approach LOS	C			B	B	
Queue Length 50th (m)	61.4	33.3		80.6	80.6	
Queue Length 95th (m)	#93.7	50.1		101.3	101.5	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1095	894		2491	2491	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.84	0.57		0.79	0.79	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 20.3		Intersection LOS: C	
Intersection Capacity Utilization 71.5%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

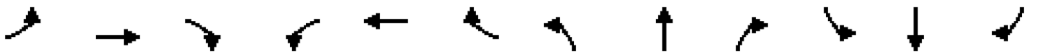
Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



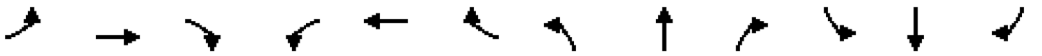


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	824	462	0	1765	1766	0
Future Volume (vph)	824	462	0	1765	1766	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4893	4893	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4893	4893	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	916	513	0	1961	1962	0
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	916	508	0	1961	1962	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	22.4	22.4		35.6	35.6	
Effective Green, g (s)	22.4	22.4		35.6	35.6	
Actuated g/C Ratio	0.32	0.32		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1067	866		2488	2488	
v/s Ratio Prot	c0.27			0.40	c0.40	
v/s Ratio Perm		0.19				
v/c Ratio	0.86	0.59		0.79	0.79	
Uniform Delay, d1	22.3	19.9		14.1	14.1	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.0	1.0		2.6	2.6	
Delay (s)	29.3	20.9		16.7	16.7	
Level of Service	C	C		B	B	
Approach Delay (s/veh)	26.3			16.7	16.7	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	421	60	89	125	213	72	1124	331	358	633	235
Future Volume (vph)	161	421	60	89	125	213	72	1124	331	358	633	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99	1.00		0.99
Frt		0.981			0.905				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3259	0	1656	2893	0	1687	5036	1568	3433	4893	1417
Flt Permitted	0.425			0.322			0.384			0.950		
Satd. Flow (perm)	682	3259	0	561	2893	0	681	5036	1548	3432	4893	1396
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		17			227				286			250
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	171	448	64	95	133	227	77	1196	352	381	673	250
Shared Lane Traffic (%)												
Lane Group Flow (vph)	171	512	0	95	360	0	77	1196	352	381	673	250
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		11.0	38.4		11.0	38.6	38.6	12.0	39.6	39.6
Total Split (%)	11.0%	38.4%		11.0%	38.4%		11.0%	38.6%	38.6%	12.0%	39.6%	39.6%
Maximum Green (s)	7.0	32.0		7.0	32.0		7.0	32.3	32.3	8.0	33.3	33.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	29.3	21.3		28.5	19.1		43.2	33.0	33.0	20.2	47.4	47.4
Actuated g/C Ratio	0.29	0.21		0.29	0.19		0.43	0.33	0.33	0.20	0.47	0.47
v/c Ratio	0.66	0.72		0.40	0.49		0.21	0.72	0.50	0.55	0.29	0.32
Control Delay (s/veh)	38.8	41.4		27.5	14.3		12.7	32.6	8.6	40.9	18.5	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	38.8	41.4		27.5	14.3		12.7	32.6	8.6	40.9	18.5	4.0
LOS	D	D		C	B		B	C	A	D	B	A
Approach Delay (s/veh)		40.8			17.1			26.5			22.2	
Approach LOS		D			B			C			C	
Queue Length 50th (m)	29.0	52.4		14.3	12.4		6.8	80.5	9.7	37.1	33.0	0.0
Queue Length 95th (m)	45.0	67.1		24.8	24.5		15.6	97.8	34.5	#61.3	49.2	17.6
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	259	1054		236	1080		374	1659	701	693	2319	793
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.49		0.40	0.33		0.21	0.72	0.50	0.55	0.29	0.32

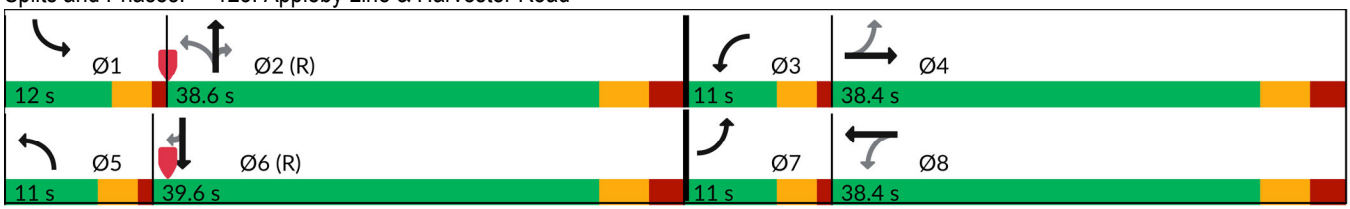
Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 26.5	Intersection LOS: C

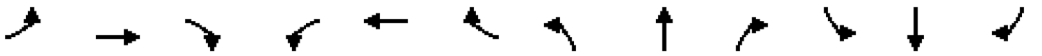
Intersection Capacity Utilization 76.7% ICU Level of Service D

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

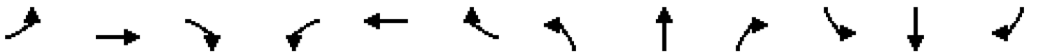




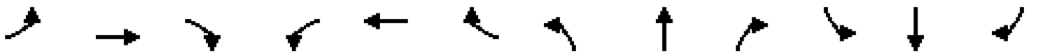
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	161	421	60	89	125	213	72	1124	331	358	633	235
Future Volume (vph)	161	421	60	89	125	213	72	1124	331	358	633	235
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3260		1656	2895		1686	5036	1548	3433	4893	1396
Flt Permitted	0.43	1.00		0.32	1.00		0.38	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	684	3260		562	2895		682	5036	1548	3433	4893	1396
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	171	448	64	95	133	227	77	1196	352	381	673	250
RTOR Reduction (vph)	0	13	0	0	182	0	0	0	194	0	0	136
Lane Group Flow (vph)	171	499	0	95	178	0	77	1196	158	381	673	115
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	28.3	21.3		25.5	19.9		38.8	32.2	32.2	20.2	45.8	45.8
Effective Green, g (s)	28.3	21.3		25.5	19.9		38.8	32.2	32.2	20.2	45.8	45.8
Actuated g/C Ratio	0.28	0.21		0.26	0.20		0.39	0.32	0.32	0.20	0.46	0.46
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	252	694		204	576		330	1621	498	693	2240	639
v/s Ratio Prot	c0.05	c0.15		0.03	0.06		0.02	c0.24		c0.11	0.14	
v/s Ratio Perm	0.14			0.09			0.07		0.10			0.08
v/c Ratio	0.68	0.72		0.47	0.31		0.23	0.74	0.32	0.55	0.30	0.18
Uniform Delay, d1	30.1	36.6		29.6	34.2		19.6	30.1	25.6	35.8	17.0	16.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.1	3.6		1.7	0.3		0.4	3.0	1.7	0.9	0.3	0.6
Delay (s)	37.2	40.1		31.3	34.5		20.0	33.2	27.3	36.7	17.4	16.6
Level of Service	D	D		C	C		B	C	C	D	B	B
Approach Delay (s/veh)		39.4			33.8			31.3			22.9	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	582	158	239	101	66	167	202	1109	124	219	1101	140
Future Volume (vph)	582	158	239	101	66	167	202	1109	124	219	1101	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	5085	1538
Flt Permitted	0.950			0.652			0.166			0.088		
Satd. Flow (perm)	3389	1776	1513	1092	1610	1395	312	3539	1403	147	5085	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			244			153			150			150
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	613	166	252	106	69	176	213	1167	131	231	1159	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	613	166	252	106	69	176	213	1167	131	231	1159	147
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	33.0	47.0	47.0	13.0	27.0	27.0	12.0	48.0	48.0	12.0	48.0	48.0
Total Split (%)	27.5%	39.2%	39.2%	10.8%	22.5%	22.5%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Maximum Green (s)	28.0	40.5	40.5	9.0	20.5	20.5	8.0	41.2	41.2	8.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	25.5	29.0	29.0	22.3	11.2	11.2	59.4	41.2	41.2	66.1	45.6	45.6
Actuated g/C Ratio	0.21	0.24	0.24	0.19	0.09	0.09	0.50	0.34	0.34	0.55	0.38	0.38
v/c Ratio	0.85	0.39	0.46	0.44	0.46	0.66	0.62	0.96	0.23	0.73	0.60	0.22
Control Delay (s/veh)	57.2	39.7	7.4	32.7	60.7	23.3	24.2	56.9	4.0	43.5	32.2	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.2	39.7	7.4	32.7	60.7	23.3	24.2	56.9	4.0	43.5	32.2	5.0
LOS	E	D	A	C	E	C	C	E	A	D	C	A
Approach Delay (s/veh)		42.2			33.5			47.7			31.3	
Approach LOS		D			C			D			C	
Queue Length 50th (m)	76.4	36.3	1.6	19.1	18.7	5.9	25.3	150.4	0.0	42.7	86.4	0.0
Queue Length 95th (m)	97.1	53.7	21.8	30.4	34.7	30.5	#53.6	#198.3	11.3	#112.5	106.9	14.2
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	793	599	672	244	275	365	344	1215	580	318	1933	668
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.28	0.38	0.43	0.25	0.48	0.62	0.96	0.23	0.73	0.60	0.22

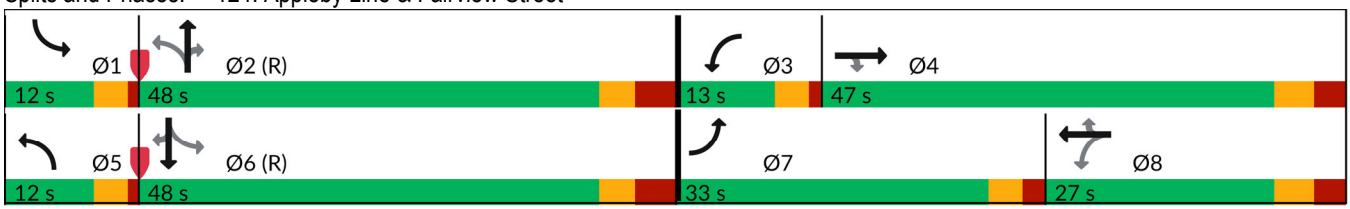
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay (s/veh): 39.6	Intersection LOS: D

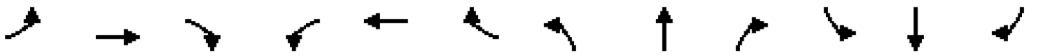
Intersection Capacity Utilization 86.5% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

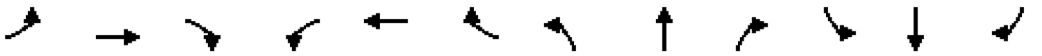




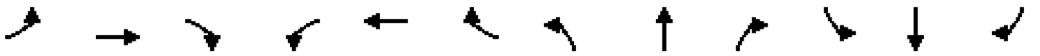
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	582	158	239	101	66	167	202	1109	124	219	1101	140
Future Volume (vph)	582	158	239	101	66	167	202	1109	124	219	1101	140
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	5085	1513
Flt Permitted	0.95	1.00	1.00	0.65	1.00	1.00	0.17	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1094	1610	1395	312	3539	1403	147	5085	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	613	166	252	106	69	176	213	1167	131	231	1159	147
RTOR Reduction (vph)	0	0	185	0	0	139	0	0	86	0	0	91
Lane Group Flow (vph)	613	166	67	106	69	37	213	1167	45	231	1159	56
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	25.5	29.0	29.0	19.9	11.2	11.2	56.6	41.2	41.2	65.0	45.6	45.6
Effective Green, g (s)	25.5	29.0	29.0	19.9	11.2	11.2	56.6	41.2	41.2	65.0	45.6	45.6
Actuated g/C Ratio	0.21	0.24	0.24	0.17	0.09	0.09	0.47	0.34	0.34	0.54	0.38	0.38
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	722	429	365	217	150	130	336	1215	481	316	1932	574
v/s Ratio Prot	c0.18	0.09		0.04	0.04		0.08	c0.33		c0.12	0.23	
v/s Ratio Perm			0.04	c0.05		0.03	0.22		0.03	0.27		0.04
v/c Ratio	0.85	0.39	0.18	0.49	0.46	0.29	0.63	0.96	0.09	0.73	0.60	0.10
Uniform Delay, d1	45.4	38.1	36.1	44.7	51.5	50.7	20.1	38.6	26.7	31.4	29.9	23.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	9.2	0.6	0.2	1.7	2.2	1.2	3.9	17.9	0.4	8.4	1.4	0.3
Delay (s)	54.6	38.6	36.3	46.5	53.8	51.9	24.0	56.5	27.1	39.8	31.3	24.3
Level of Service	D	D	D	D	D	D	C	E	C	D	C	C
Approach Delay (s/veh)		47.6			50.6			49.4			31.9	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	86.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	684	291	457	1467	246	475	1001	387	309	732	224
Future Volume (vph)	173	684	291	457	1467	246	475	1001	387	309	732	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.97	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3427	5036	1521	3332	5085	1514	3473	5085	1520	3417	5085	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			291			254			248			146
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	178	705	300	471	1512	254	490	1032	399	319	755	231
Shared Lane Traffic (%)												
Lane Group Flow (vph)	178	705	300	471	1512	254	490	1032	399	319	755	231
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	14.0	46.4	46.4	25.0	57.4	57.4	25.0	49.6	49.6	24.0	48.6	48.6
Total Split (%)	9.7%	32.0%	32.0%	17.2%	39.6%	39.6%	17.2%	34.2%	34.2%	16.6%	33.5%	33.5%
Maximum Green (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.2	42.2	19.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	9.0	37.6	37.6	20.0	48.6	48.6	21.4	44.3	44.3	18.3	41.2	41.2
Actuated g/C Ratio	0.06	0.26	0.26	0.14	0.34	0.34	0.15	0.31	0.31	0.13	0.28	0.28
v/c Ratio	0.84	0.54	0.49	1.02	0.89	0.38	0.95	0.66	0.63	0.74	0.52	0.43
Control Delay (s/veh)	97.3	47.8	8.0	106.4	52.9	5.4	89.8	46.8	21.0	71.9	45.2	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	97.3	47.8	8.0	106.4	52.9	5.4	89.8	46.8	21.0	71.9	45.2	18.0
LOS	F	D	A	F	D	A	F	D	C	E	D	B
Approach Delay (s/veh)		45.1			58.7			52.4			46.9	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	28.3	68.1	2.1	~78.0	158.2	0.0	~80.3	103.4	40.4	49.0	71.6	19.7
Queue Length 95th (m)	#49.6	82.7	27.3	#116.9	179.2	20.2	#117.1	120.8	80.3	66.5	86.1	45.6
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	213	1354	621	464	1753	688	516	1552	636	449	1444	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.84	0.52	0.48	1.02	0.86	0.37	0.95	0.66	0.63	0.71	0.52	0.43

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 52.2	Intersection LOS: D

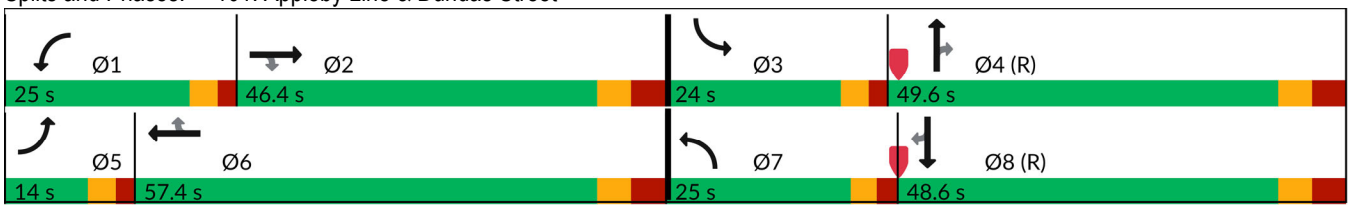
Intersection Capacity Utilization 105.5% ICU Level of Service G

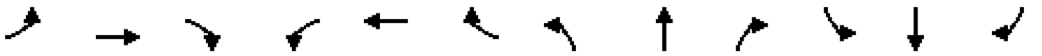
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

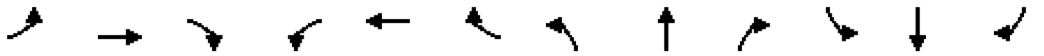




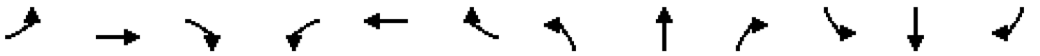
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	173	684	291	457	1467	246	475	1001	387	309	732	224
Future Volume (vph)	173	684	291	457	1467	246	475	1001	387	309	732	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	178	705	300	471	1512	254	490	1032	399	319	755	231
RTOR Reduction (vph)	0	0	216	0	0	169	0	0	172	0	0	105
Lane Group Flow (vph)	178	705	84	471	1512	85	490	1032	227	319	755	126
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	9.0	37.6	37.6	20.0	48.6	48.6	21.4	44.3	44.3	18.3	41.2	41.2
Effective Green, g (s)	9.0	37.6	37.6	20.0	48.6	48.6	21.4	44.3	44.3	18.3	41.2	41.2
Actuated g/C Ratio	0.06	0.26	0.26	0.14	0.34	0.34	0.15	0.31	0.31	0.13	0.28	0.28
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	213	1305	394	464	1704	507	516	1553	464	433	1444	438
v/s Ratio Prot	0.05	0.14		c0.14	c0.30		c0.14	c0.20		0.09	0.15	
v/s Ratio Perm			0.06			0.06			0.15			0.08
v/c Ratio	0.84	0.54	0.21	1.02	0.89	0.17	0.95	0.66	0.49	0.74	0.52	0.29
Uniform Delay, d1	67.3	46.3	42.1	62.5	45.6	34.0	61.3	43.9	41.1	61.0	43.6	40.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	26.0	0.5	0.3	45.6	6.0	0.2	27.8	2.3	3.7	7.8	1.4	1.7
Delay (s)	93.2	46.7	42.4	108.1	51.6	34.1	89.0	46.1	44.8	68.8	45.0	42.1
Level of Service	F	D	D	F	D	C	F	D	D	E	D	D
Approach Delay (s/veh)		52.6			61.5			56.8			50.3	
Approach LOS		D			E			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	56.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	105.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	366	255	136	797	487	358	1533	122	273	859	229
Future Volume (vph)	184	366	255	136	797	487	358	1533	122	273	859	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		0.99		0.97	1.00	1.00		1.00	0.99	
Frt		0.938				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3336	0	3367	5187	1599	3502	4961	0	3467	4884	0
Flt Permitted	0.191			0.950			0.950			0.950		
Satd. Flow (perm)	347	3336	0	3332	5187	1555	3490	4961	0	3459	4884	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		147				210		13			63	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	186	370	258	137	805	492	362	1548	123	276	868	231
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	628	0	137	805	492	362	1671	0	276	1099	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

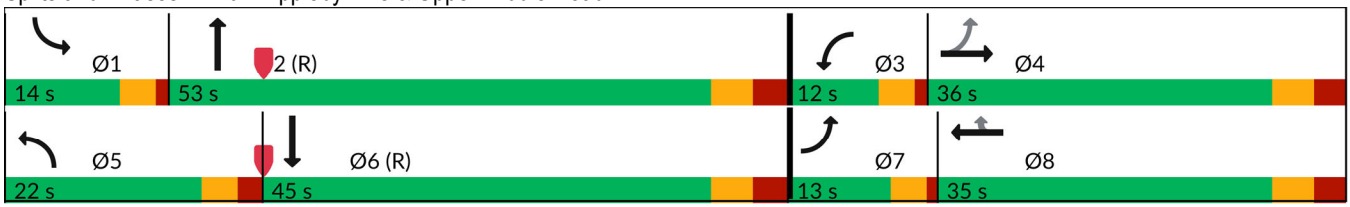


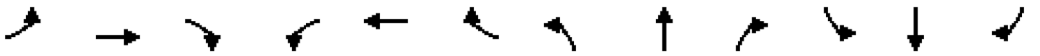
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	13.0	36.0		12.0	35.0	35.0	22.0	53.0		14.0	45.0	
Total Split (%)	11.3%	31.3%		10.4%	30.4%	30.4%	19.1%	46.1%		12.2%	39.1%	
Maximum Green (s)	9.0	29.6		8.0	28.6	28.6	17.0	46.5		10.0	38.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	39.4	28.0		7.8	26.8	26.8	15.8	47.8		10.5	41.5	
Actuated g/C Ratio	0.34	0.24		0.07	0.23	0.23	0.14	0.42		0.09	0.36	
v/c Ratio	0.82	0.68		0.60	0.67	0.94	0.75	0.81		0.88	0.61	
Control Delay (s/veh)	55.3	33.7		63.3	42.8	52.0	58.2	33.4		79.6	30.7	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	55.3	33.7		63.3	42.8	52.0	58.2	33.4		79.6	30.7	
LOS	E	C		E	D	D	E	C		E	C	
Approach Delay (s/veh)		38.6			47.9			37.8			40.5	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	31.0	53.7		17.0	62.3	70.1	42.5	129.9		34.2	77.4	
Queue Length 95th (m)	#58.2	74.3		28.1	76.9	#136.0	59.0	151.0		#60.3	93.8	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	227	967		234	1289	544	517	2070		315	1801	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.82	0.65		0.59	0.62	0.90	0.70	0.81		0.88	0.61	

Intersection Summary			
Area Type:	Other		
Cycle Length: 115			
Actuated Cycle Length: 115			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay (s/veh): 41.1		Intersection LOS: D	

Intersection Capacity Utilization 88.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road



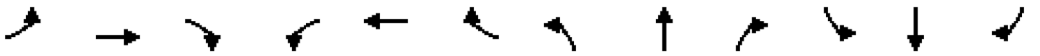


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	184	366	255	136	797	487	358	1533	122	273	859	229
Future Volume (vph)	184	366	255	136	797	487	358	1533	122	273	859	229
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3337		3367	5187	1555	3502	4960		3467	4886	
Flt Permitted	0.19	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	349	3337		3367	5187	1555	3502	4960		3467	4886	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	186	370	258	137	805	492	362	1548	123	276	868	231
RTOR Reduction (vph)	0	111	0	0	0	161	0	8	0	0	40	0
Lane Group Flow (vph)	186	517	0	137	805	331	362	1663	0	276	1059	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	37.0	28.0		7.8	26.8	26.8	15.8	47.8		10.5	41.5	
Effective Green, g (s)	37.0	28.0		7.8	26.8	26.8	15.8	47.8		10.5	41.5	
Actuated g/C Ratio	0.32	0.24		0.07	0.23	0.23	0.14	0.42		0.09	0.36	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	220	812		228	1208	362	481	2061		316	1763	
v/s Ratio Prot	c0.07	0.15		0.04	0.16		0.10	c0.34		c0.08	0.22	
v/s Ratio Perm	0.21					c0.21						
v/c Ratio	0.85	0.64		0.60	0.67	0.91	0.75	0.81		0.87	0.60	
Uniform Delay, d1	31.0	38.9		52.1	40.0	43.0	47.7	29.5		51.6	30.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	24.6	1.6		4.4	1.4	26.8	6.6	3.5		22.4	1.5	
Delay (s)	55.6	40.6		56.5	41.4	69.8	54.3	33.1		73.9	31.5	
Level of Service	E	D		E	D	E	D	C		E	C	
Approach Delay (s/veh)		44.0			52.6			36.8			40.0	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	799	25	0	1606	0	65	0	14	3	0	4
Future Volume (vph)	3	799	25	0	1606	0	65	0	14	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.996							0.850		0.923	
Flt Protected	0.950							0.950			0.979	
Satd. Flow (prot)	1805	5100	0	1900	5136	0	0	1805	1615	0	1704	0
Flt Permitted	0.111							0.753			0.951	
Satd. Flow (perm)	211	5100	0	1900	5136	0	0	1430	1594	0	1655	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7							78		78	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	841	26	0	1691	0	68	0	15	3	0	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	867	0	0	1691	0	0	68	15	0	7	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

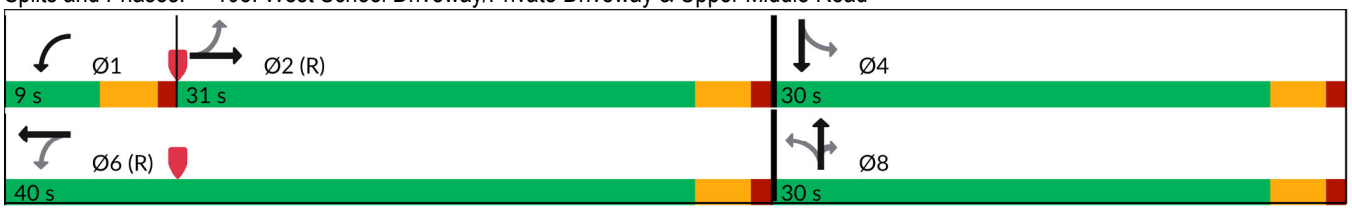


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	31.0	31.0		9.0	40.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	44.3%	44.3%		12.9%	57.1%		42.9%	42.9%	42.9%	42.9%	42.9%	
Maximum Green (s)	27.0	27.0		5.0	36.0		26.0	26.0	26.0	26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
v/c Ratio	0.03	0.33			0.64			0.13	0.02		0.01	
Control Delay (s/veh)	9.3	10.3			13.7			15.4	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.3	10.3			13.7			15.4	0.1		0.0	
LOS	A	B			B			B	A		A	
Approach Delay (s/veh)		10.3			13.7			12.6				
Approach LOS		B			B			B				
Queue Length 50th (m)	0.2	23.8			57.8			6.0	0.0		0.0	
Queue Length 95th (m)	1.5	31.7			72.6			14.1	0.0		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	108	2626			2641			531	641		663	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.03	0.33			0.64			0.13	0.02		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay (s/veh): 12.5	Intersection LOS: B

Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

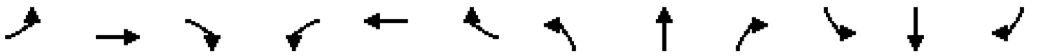
Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



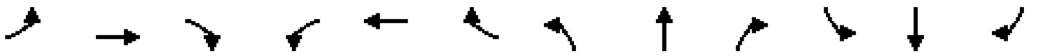
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	799	25	0	1606	0	65	0	14	3	0	4
Future Volume (vph)	3	799	25	0	1606	0	65	0	14	3	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91			0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1803	5098			5136			1804	1594		1704	
Flt Permitted	0.11	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	211	5098			5136			1430	1594		1655	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	841	26	0	1691	0	68	0	15	3	0	4
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	9	0	4	0
Lane Group Flow (vph)	3	864	0	0	1691	0	0	68	6	0	3	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Effective Green, g (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	108	2621			2641			531	592		614	
v/s Ratio Prot		0.17			c0.33							
v/s Ratio Perm	0.01							c0.05	0.00		0.00	
v/c Ratio	0.03	0.33			0.64			0.13	0.01		0.00	
Uniform Delay, d1	8.4	9.9			12.3			14.5	13.9		13.9	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.5	0.3			1.2			0.5	0.0		0.0	
Delay (s)	8.9	10.3			13.5			15.0	13.9		13.9	
Level of Service	A	B			B			B	B		B	
Approach Delay (s/veh)		10.3			13.5			14.8			13.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	652	61	1	1473	174	12	0	1	47	0	105
Future Volume (vph)	153	652	61	1	1473	174	12	0	1	47	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						0.99	
Frt		0.987			0.984			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1805	5065	0	0	5026	0	1770	1583	0	1805	1593	0
Flt Permitted	0.091				0.940		0.593			0.757		
Satd. Flow (perm)	173	5065	0	0	4724	0	1105	1583	0	1438	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		31			31			250			247	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			140.3			235.5	
Travel Time (s)		7.1			17.4			12.6			21.2	
Confl. Peds. (#/hr)	13					13						1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	159	679	64	1	1534	181	13	0	1	49	0	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	159	743	0	0	1716	0	13	1	0	49	109	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

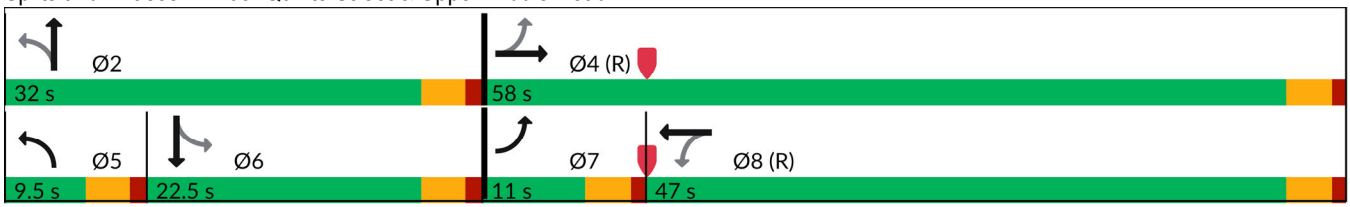


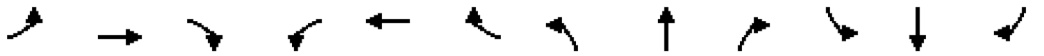
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	11.0	58.0		47.0	47.0		9.5	32.0		22.5	22.5	
Total Split (%)	12.2%	64.4%		52.2%	52.2%		10.6%	35.6%		25.0%	25.0%	
Maximum Green (s)	7.0	54.0		43.0	43.0		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	54.0	54.0			43.0		28.0	28.0		26.1	26.1	
Actuated g/C Ratio	0.60	0.60			0.48		0.31	0.31		0.29	0.29	
v/c Ratio	0.69	0.24			0.75		0.03	0.00		0.12	0.17	
Control Delay (s/veh)	29.4	8.3			21.5		21.9	0.0		26.3	0.6	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	29.4	8.3			21.5		21.9	0.0		26.3	0.6	
LOS	C	A			C		C	A		C	A	
Approach Delay (s/veh)		12.0			21.5			20.4			8.6	
Approach LOS		B			C			C			A	
Queue Length 50th (m)	11.6	20.4			88.7		1.7	0.0		6.3	0.0	
Queue Length 95th (m)	#37.9	26.7			108.0		6.0	0.0		17.4	0.0	
Internal Link Dist (m)		94.7			266.7			116.3			211.5	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	230	3051			2273		384	664		417	637	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.69	0.24			0.75		0.03	0.00		0.12	0.17	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay (s/veh): 17.7		Intersection LOS: B	

Intersection Capacity Utilization 71.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road

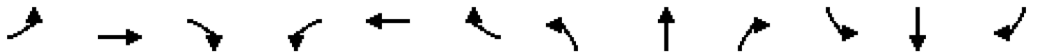




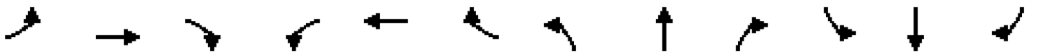
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	652	61	1	1473	174	12	0	1	47	0	105
Future Volume (vph)	153	652	61	1	1473	174	12	0	1	47	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.98		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5065			5027		1770	1583		1805	1593	
Flt Permitted	0.09	1.00			0.94		0.59	1.00		0.76	1.00	
Satd. Flow (perm)	174	5065			4724		1104	1583		1439	1593	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	159	679	64	1	1534	181	12	0	1	49	0	109
RTOR Reduction (vph)	0	14	0	0	17	0	0	1	0	0	77	0
Lane Group Flow (vph)	159	729	0	0	1699	0	13	0	0	49	32	0
Confl. Peds. (#/hr)	13					13						1
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.8	50.8			39.8		31.2	31.2		26.1	26.1	
Effective Green, g (s)	50.8	50.8			39.8		31.2	31.2		26.1	26.1	
Actuated g/C Ratio	0.56	0.56			0.44		0.35	0.35		0.29	0.29	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	225	2858			2089		390	548		417	461	
v/s Ratio Prot	c0.05	0.14					c0.00	0.00			0.02	
v/s Ratio Perm	0.34				c0.36		0.01			c0.03		
v/c Ratio	0.71	0.26			0.81		0.03	0.00		0.12	0.07	
Uniform Delay, d1	15.6	10.0			21.9		19.4	19.2		23.5	23.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.7	0.2			3.6		0.0	0.0		0.6	0.3	
Delay (s)	25.3	10.2			25.5		19.5	19.2		24.1	23.4	
Level of Service	C	B			C		B	B		C	C	
Approach Delay (s/veh)		12.9			25.5			19.5			23.6	
Approach LOS		B			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	479	37	7	1399	510	59	4	4	203	2	163
Future Volume (vph)	188	479	37	7	1399	510	59	4	4	203	2	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor					0.99					0.99	0.99	
Frt		0.989			0.960			0.925			0.852	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	5076	0	1770	4882	0	1770	1723	0	3502	1564	0
Flt Permitted	0.080			0.439			0.769			0.950		
Satd. Flow (perm)	148	5076	0	818	4882	0	1432	1723	0	3480	1564	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			108			4			172	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			131.5			321.0	
Travel Time (s)		17.4			14.7			11.8			28.9	
Confl. Peds. (#/hr)	8					8				5		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	198	504	39	7	1473	537	62	4	4	214	2	172
Shared Lane Traffic (%)												
Lane Group Flow (vph)	198	543	0	7	2010	0	62	8	0	214	174	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	30.0		9.5	30.0		9.0	30.0		9.0	30.5	
Total Split (s)	15.0	58.4		9.6	53.0		9.0	30.0		12.0	33.0	
Total Split (%)	13.6%	53.1%		8.7%	48.2%		8.2%	27.3%		10.9%	30.0%	
Maximum Green (s)	11.0	54.4		5.6	49.0		5.0	26.0		8.0	29.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	Max	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Don't Walk (s)		16.0			16.0			16.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	64.0	62.1		54.6	49.0		10.2	11.4		32.0	30.8	
Actuated g/C Ratio	0.58	0.56		0.50	0.45		0.09	0.10		0.29	0.28	
v/c Ratio	0.80	0.19		0.02	0.90		0.42	0.04		0.21	0.31	
Control Delay (s/veh)	47.1	11.9		10.1	33.4		50.5	30.1		33.8	6.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	47.1	11.9		10.1	33.4		50.5	30.1		33.8	6.6	
LOS	D	B		B	C		D	C		C	A	
Approach Delay (s/veh)		21.3			33.3			48.2			21.6	
Approach LOS		C			C			D			C	
Queue Length 50th (m)	27.1	19.3		0.6	144.7		14.3	0.9		17.2	0.4	
Queue Length 95th (m)	#66.3	31.4		2.7	169.3		19.5	5.0		#46.0	17.3	
Internal Link Dist (m)		266.7			220.7			107.5			297.0	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	246	2872		454	2234		148	410		1018	561	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.80	0.19		0.02	0.90		0.42	0.02		0.21	0.31	

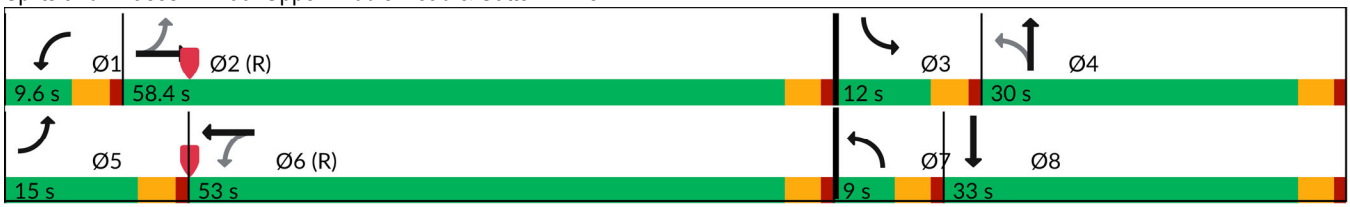
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 29.5	Intersection LOS: C

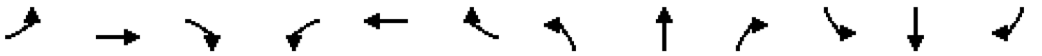
Intersection Capacity Utilization 88.2% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 106: Upper Middle Road & Sutton Drive

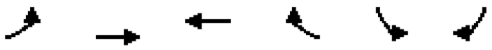




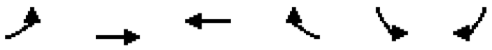
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	188	479	37	7	1399	510	59	4	4	203	2	163
Future Volume (vph)	188	479	37	7	1399	510	59	4	4	203	2	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.96		1.00	0.93		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	5077		1770	4882		1770	1723		3502	1564	
Flt Permitted	0.08	1.00		0.44	1.00		0.77	1.00		0.95	1.00	
Satd. Flow (perm)	148	5077		818	4882		1433	1723		3502	1564	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	198	504	39	7	1473	537	62	4	4	214	2	172
RTOR Reduction (vph)	0	8	0	0	63	0	0	4	0	0	120	0
Lane Group Flow (vph)	198	535	0	7	1947	0	62	4	0	214	54	0
Confl. Peds. (#/hr)	8					8				5		2
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	60.8	55.7		46.9	45.8		9.2	5.2		32.0	33.2	
Effective Green, g (s)	60.8	55.7		46.9	45.8		9.2	5.2		32.0	33.2	
Actuated g/C Ratio	0.55	0.51		0.43	0.42		0.08	0.05		0.29	0.30	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	242	2570		358	2032		132	81		1018	472	
v/s Ratio Prot	c0.08	0.11		0.00	c0.40		c0.02	0.00		c0.06	0.03	
v/s Ratio Perm	0.37			0.01			c0.02					
v/c Ratio	0.82	0.21		0.02	0.96		0.47	0.05		0.21	0.11	
Uniform Delay, d1	29.2	15.0		18.2	31.2		47.9	50.0		29.5	27.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.1	0.2		0.0	12.3		5.4	0.6		0.2	0.5	
Delay (s)	50.3	15.2		18.2	43.4		53.3	50.6		29.7	28.3	
Level of Service	D	B		B	D		D	D		C	C	
Approach Delay (s/veh)		24.5			43.4			53.0			29.0	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	37	602	1887	138	60	41
Future Volume (vph)	37	602	1887	138	60	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt			0.990		0.945	
Flt Protected	0.950				0.971	
Satd. Flow (prot)	1805	5136	5073	0	1722	0
Flt Permitted	0.121				0.971	
Satd. Flow (perm)	230	5136	5073	0	1722	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			30		6	
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	459.4		226.6	
Travel Time (s)		11.9	27.6		20.4	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Adj. Flow (vph)	40	654	2051	150	65	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	40	654	2201	0	110	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

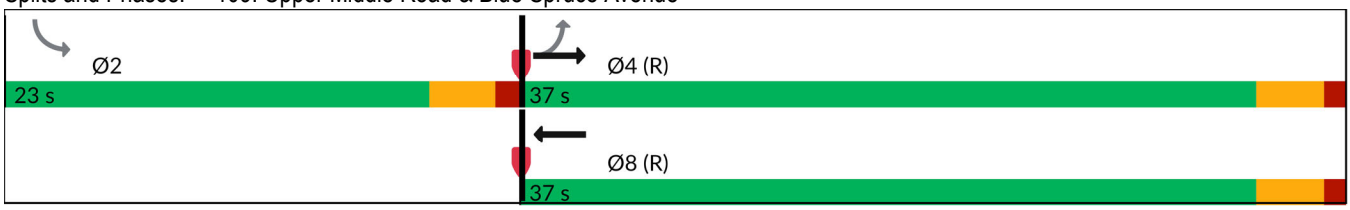


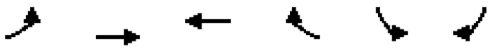
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Detector Phase	4	4	8		2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	22.5	22.5	22.5		22.5	
Total Split (s)	37.0	37.0	37.0		23.0	
Total Split (%)	61.7%	61.7%	61.7%		38.3%	
Maximum Green (s)	33.0	33.0	33.0		19.0	
Yellow Time (s)	3.0	3.0	3.0		3.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	C-Max	C-Max	C-Max		Max	
Walk Time (s)	7.0	7.0	7.0		7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)	33.0	33.0	33.0		19.0	
Actuated g/C Ratio	0.55	0.55	0.55		0.32	
v/c Ratio	0.32	0.23	0.79		0.20	
Control Delay (s/veh)	15.8	7.2	10.1		15.4	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	15.8	7.2	10.1		15.4	
LOS	B	A	B		B	
Approach Delay (s/veh)		7.7	10.1		15.4	
Approach LOS		A	B		B	
Queue Length 50th (m)	2.3	12.8	66.7		8.6	
Queue Length 95th (m)	9.7	18.3	68.0		19.0	
Internal Link Dist (m)		174.8	435.4		202.6	
Turn Bay Length (m)	100.0					
Base Capacity (vph)	126	2824	2803		549	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.32	0.23	0.79		0.20	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 23 (38%), Referenced to phase 4:EBTL and 8:WBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay (s/veh): 9.7		Intersection LOS: A	

Intersection Capacity Utilization 52.1% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 109: Upper Middle Road & Blue Spruce Avenue





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	37	602	1887	138	60	41
Future Volume (vph)	37	602	1887	138	60	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91	0.91		1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.99		0.94	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1804	5136	5072		1722	
Flt Permitted	0.12	1.00	1.00		0.97	
Satd. Flow (perm)	230	5136	5072		1722	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	654	2051	150	65	45
RTOR Reduction (vph)	0	0	14	0	4	0
Lane Group Flow (vph)	40	654	2188	0	106	0
Confl. Peds. (#/hr)	14			14		
Heavy Vehicles (%)	0%	1%	1%	0%	0%	3%
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Actuated Green, G (s)	33.0	33.0	33.0		19.0	
Effective Green, g (s)	33.0	33.0	33.0		19.0	
Actuated g/C Ratio	0.55	0.55	0.55		0.32	
Clearance Time (s)	4.0	4.0	4.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	126	2824	2789		545	
v/s Ratio Prot		0.13	c0.43			
v/s Ratio Perm	0.17				c0.06	
v/c Ratio	0.32	0.23	0.78		0.19	
Uniform Delay, d1	7.4	7.0	10.7		14.9	
Progression Factor	1.00	1.00	0.74		1.00	
Incremental Delay, d2	6.5	0.2	2.1		0.8	
Delay (s)	13.9	7.2	10.0		15.7	
Level of Service	B	A	A		B	
Approach Delay (s/veh)		7.5	10.0		15.7	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	29	1984	21	35	613
Future Volume (vph)	27	29	1984	21	35	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor			1.00		1.00	
Frt	0.929		0.998			
Flt Protected	0.977				0.950	
Satd. Flow (prot)	1725	0	5125	0	1805	5136
Flt Permitted	0.977				0.087	
Satd. Flow (perm)	1725	0	5125	0	165	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	6		4			
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		716.4			459.4
Travel Time (s)	14.5		43.0			27.6
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Adj. Flow (vph)	28	31	2088	22	37	645
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	0	2110	0	37	645
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (m)	2.0		10.0		2.0	10.0
Trailing Detector (m)	0.0		0.0		0.0	0.0
Detector 1 Position(m)	0.0		0.0		0.0	0.0
Detector 1 Size(m)	2.0		0.6		2.0	0.6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

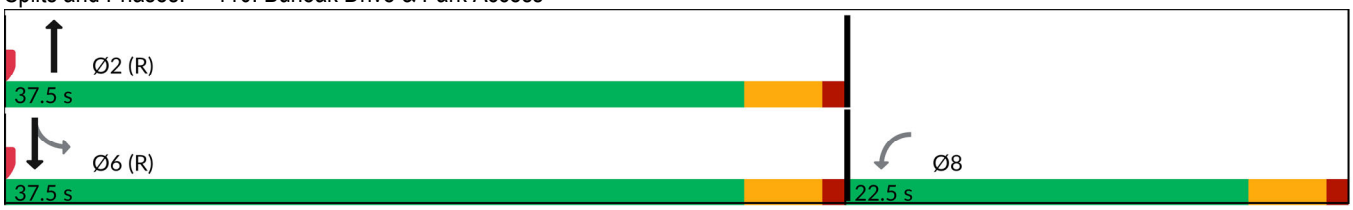


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5
Total Split (s)	22.5		37.5		37.5	37.5
Total Split (%)	37.5%		62.5%		62.5%	62.5%
Maximum Green (s)	18.0		33.0		33.0	33.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Don't Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	7.4		49.5		49.5	49.5
Actuated g/C Ratio	0.12		0.83		0.83	0.83
v/c Ratio	0.27		0.50		0.27	0.15
Control Delay (s/veh)	24.5		3.6		9.1	0.4
Queue Delay	0.0		0.0		0.0	0.0
Total Delay (s/veh)	24.5		3.6		9.1	0.4
LOS	C		A		A	A
Approach Delay (s/veh)	24.5		3.6			0.9
Approach LOS	C		A			A
Queue Length 50th (m)	5.7		29.9		0.1	0.5
Queue Length 95th (m)	14.4		48.3		9.9	0.9
Internal Link Dist (m)	136.8		692.4			435.4
Turn Bay Length (m)					145.0	
Base Capacity (vph)	521		4232		136	4240
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.11		0.50		0.27	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay (s/veh): 3.4		Intersection LOS: A	

Intersection Capacity Utilization 50.5% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 110: Burloak Drive & Park Access

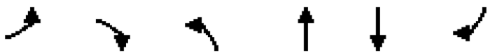




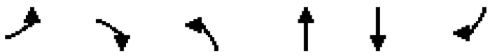
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	27	29	1984	21	35	613
Future Volume (vph)	27	29	1984	21	35	613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.93		1.00		1.00	1.00
Flt Protected	0.98		1.00		0.95	1.00
Satd. Flow (prot)	1724		5127		1805	5136
Flt Permitted	0.98		1.00		0.09	1.00
Satd. Flow (perm)	1724		5127		166	5136
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	28	31	2088	22	37	645
RTOR Reduction (vph)	5	0	1	0	0	0
Lane Group Flow (vph)	54	0	2109	0	37	645
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	0%	0%	1%	0%	0%	1%
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Actuated Green, G (s)	5.1		45.9		45.9	45.9
Effective Green, g (s)	5.1		45.9		45.9	45.9
Actuated g/C Ratio	0.09		0.77		0.77	0.77
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	146		3922		126	3929
v/s Ratio Prot			c0.41			0.13
v/s Ratio Perm	c0.03				0.22	
v/c Ratio	0.37		0.54		0.29	0.16
Uniform Delay, d1	25.9		2.8		2.1	1.9
Progression Factor	1.00		1.00		0.85	0.15
Incremental Delay, d2	1.6		0.5		5.7	0.1
Delay (s)	27.5		3.3		7.6	0.4
Level of Service	C		A		A	A
Approach Delay (s/veh)	27.5		3.3			0.8
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	3.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	542	678	1827	593	37
Future Volume (vph)	155	542	678	1827	593	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	3367	5136	5122	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1583	3352	5136	5122	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		530			9	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	716.4	
Travel Time (s)	52.1			27.2	43.0	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	170	596	745	2008	652	41
Shared Lane Traffic (%)						
Lane Group Flow (vph)	170	596	745	2008	693	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	28.0	61.0	33.0	
Total Split (%)	39.0%	39.0%	28.0%	61.0%	33.0%	
Maximum Green (s)	32.0	32.0	23.0	54.0	26.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	17.4	17.4	27.2	68.6	36.5	
Actuated g/C Ratio	0.17	0.17	0.27	0.69	0.37	
v/c Ratio	0.56	0.84	0.82	0.57	0.37	
Control Delay (s/veh)	43.3	16.6	42.5	10.0	25.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	43.3	16.6	42.5	10.0	25.3	
LOS	D	B	D	B	C	
Approach Delay (s/veh)	22.6			18.8	25.3	
Approach LOS	C			B	C	
Queue Length 50th (m)	33.8	12.3	73.5	62.4	36.6	
Queue Length 95th (m)	46.3	47.9	#110.6	119.7	56.4	
Internal Link Dist (m)	845.1			429.2	692.4	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	560	866	914	3525	1874	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.30	0.69	0.82	0.57	0.37	

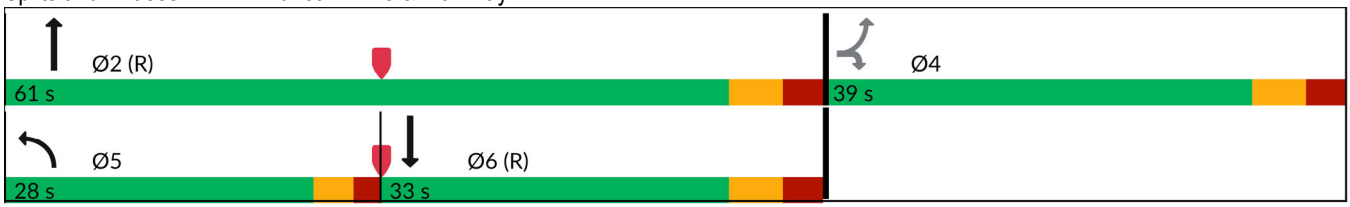
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 20.6		Intersection LOS: C	

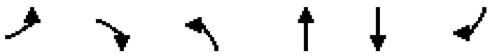
Intersection Capacity Utilization 70.2% ICU Level of Service C

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

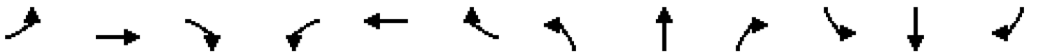




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	155	542	678	1827	593	37
Future Volume (vph)	155	542	678	1827	593	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	3367	5136	5123	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1583	3367	5136	5123	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	170	596	745	2008	652	41
RTOR Reduction (vph)	0	438	0	0	6	0
Lane Group Flow (vph)	170	158	745	2008	687	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	17.4	17.4	27.2	68.6	36.4	
Effective Green, g (s)	17.4	17.4	27.2	68.6	36.4	
Actuated g/C Ratio	0.17	0.17	0.27	0.69	0.36	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	304	275	915	3523	1864	
v/s Ratio Prot			c0.22	c0.39	0.13	
v/s Ratio Perm	0.10	c0.10				
v/c Ratio	0.56	0.58	0.81	0.57	0.37	
Uniform Delay, d1	37.8	37.9	34.0	8.1	23.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	2.9	5.6	0.7	0.6	
Delay (s)	40.0	40.8	39.7	8.8	23.9	
Level of Service	D	D	D	A	C	
Approach Delay (s/veh)	40.6			17.1	23.9	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	70.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	327	24	12	553	60	155	41	48	158	67	65
Future Volume (vph)	20	327	24	12	553	60	155	41	48	158	67	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.990			0.986			0.974			0.970	
Flt Protected	0.950				0.999			0.969			0.973	
Satd. Flow (prot)	1770	3407	0	0	3482	0	0	1743	0	0	1758	0
Flt Permitted	0.240				0.945			0.641			0.709	
Satd. Flow (perm)	447	3407	0	0	3293	0	0	1153	0	0	1281	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			20			23			27	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		108.6			869.1			154.8			115.8	
Travel Time (s)		6.5			52.1			13.9			10.4	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Adj. Flow (vph)	24	389	29	14	658	71	185	49	57	188	80	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	24	418	0	0	743	0	0	291	0	0	345	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	9.5	34.0		24.5	24.5		26.0	26.0		26.0	26.0	
Total Split (%)	15.8%	56.7%		40.8%	40.8%		43.3%	43.3%		43.3%	43.3%	
Maximum Green (s)	5.0	29.5		20.0	20.0		21.5	21.5		21.5	21.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	29.5	29.5			27.6			21.5			21.5	
Actuated g/C Ratio	0.49	0.49			0.46			0.36			0.36	
v/c Ratio	0.07	0.25			0.49			0.68			0.72	
Control Delay (s/veh)	7.6	7.7			13.2			25.2			26.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	7.6	7.7			13.2			25.2			26.5	
LOS	A	A			B			C			C	
Approach Delay (s/veh)		7.7			13.2			25.2			26.5	
Approach LOS		A			B			C			C	
Queue Length 50th (m)	1.1	11.5			27.0			25.9			31.4	
Queue Length 95th (m)	3.3	15.4			49.8			46.6			#57.1	
Internal Link Dist (m)		84.6			845.1			130.8			91.8	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	330	1684			1525			427			476	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.07	0.25			0.49			0.68			0.72	

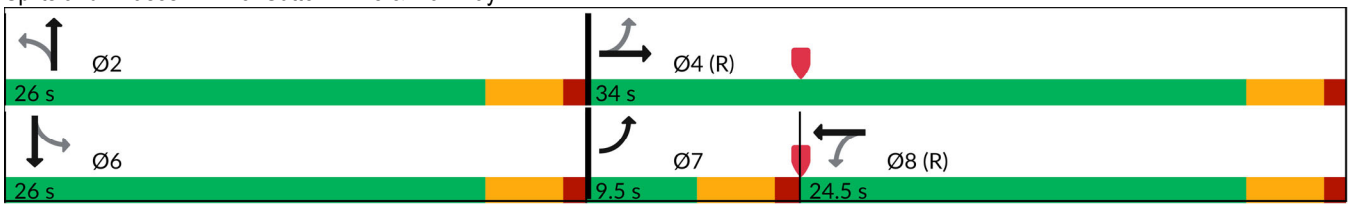
Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 16.3	Intersection LOS: B

Intersection Capacity Utilization 51.7% ICU Level of Service A

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 113: Sutton Drive & Mainway

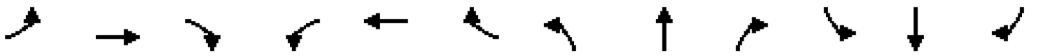


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	327	24	12	553	60	155	41	48	158	67	65
Future Volume (vph)	20	327	24	12	553	60	155	41	48	158	67	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.99			0.97			0.97	
Flt Protected	0.95	1.00			1.00			0.97			0.97	
Satd. Flow (prot)	1770	3406			3480			1743			1759	
Flt Permitted	0.24	1.00			0.95			0.64			0.71	
Satd. Flow (perm)	447	3406			3292			1152			1282	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	24	389	29	14	658	71	185	49	57	188	80	77
RTOR Reduction (vph)	0	9	0	0	12	0	0	15	0	0	17	0
Lane Group Flow (vph)	24	409	0	0	731	0	0	276	0	0	328	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	29.5	29.5			24.0			21.5			21.5	
Effective Green, g (s)	29.5	29.5			24.0			21.5			21.5	
Actuated g/C Ratio	0.49	0.49			0.40			0.36			0.36	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	241	1674			1316			412			459	
v/s Ratio Prot	0.00	c0.12										
v/s Ratio Perm	0.05				c0.22			0.24			c0.26	
v/c Ratio	0.10	0.24			0.56			0.67			0.71	
Uniform Delay, d1	8.7	8.8			13.9			16.3			16.6	
Progression Factor	0.90	0.86			1.00			1.00			1.00	
Incremental Delay, d2	0.2	0.3			1.7			8.4			9.1	
Delay (s)	8.0	7.9			15.6			24.7			25.7	
Level of Service	A	A			B			C			C	
Approach Delay (s/veh)		7.9			15.6			24.7			25.7	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

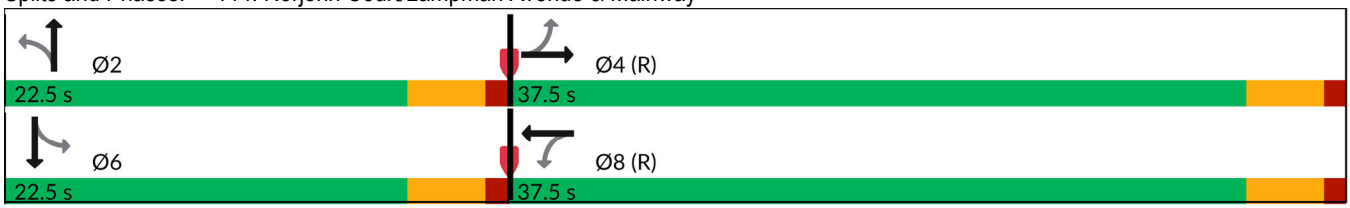
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	269	28	5	942	104	63	6	14	40	2	48
Future Volume (vph)	33	269	28	5	942	104	63	6	14	40	2	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			0.99	
Frt		0.987			0.985			0.977			0.928	
Flt Protected		0.995						0.963			0.978	
Satd. Flow (prot)	0	3397	0	0	3482	0	0	1783	0	0	1689	0
Flt Permitted		0.790			0.953			0.739			0.850	
Satd. Flow (perm)	0	2697	0	0	3318	0	0	1367	0	0	1466	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26			31			17			59	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			645.5			107.7			112.1	
Travel Time (s)		25.6			38.7			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	41	332	35	6	1163	128	78	7	17	49	2	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	408	0	0	1297	0	0	102	0	0	110	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

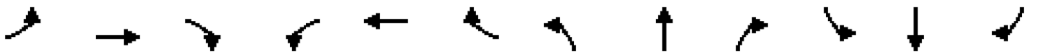


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	37.5	37.5		37.5	37.5		22.5	22.5		22.5	22.5	
Total Split (%)	62.5%	62.5%		62.5%	62.5%		37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	33.0	33.0		33.0	33.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		33.0			33.0			18.0			18.0	
Actuated g/C Ratio		0.55			0.55			0.30			0.30	
v/c Ratio		0.27			0.71			0.24			0.23	
Control Delay (s/veh)		7.2			10.3			15.5			10.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		7.2			10.3			15.5			10.1	
LOS		A			B			B			B	
Approach Delay (s/veh)		7.2			10.3			15.5			10.1	
Approach LOS		A			B			B			B	
Queue Length 50th (m)		11.3			38.0			7.3			4.2	
Queue Length 95th (m)		16.1			58.3			15.6			12.3	
Internal Link Dist (m)		402.4			621.5			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		1495			1838			422			481	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.27			0.71			0.24			0.23	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 22.8 (38%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay (s/veh): 9.9		Intersection LOS: A	
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway

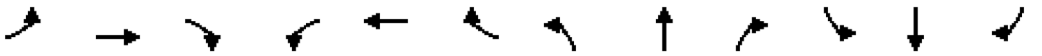




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	269	28	5	942	104	63	6	14	40	2	48
Future Volume (vph)	33	269	28	5	942	104	63	6	14	40	2	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.93	
Flt Protected		1.00			1.00			0.96			0.98	
Satd. Flow (prot)		3398			3482			1782			1687	
Flt Permitted		0.79			0.95			0.74			0.85	
Satd. Flow (perm)		2697			3320			1367			1466	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	41	332	35	6	1163	128	78	7	17	49	2	59
RTOR Reduction (vph)	0	12	0	0	14	0	0	12	0	0	41	0
Lane Group Flow (vph)	0	396	0	0	1283	0	0	90	0	0	69	0
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.0			33.0			18.0			18.0	
Effective Green, g (s)		33.0			33.0			18.0			18.0	
Actuated g/C Ratio		0.55			0.55			0.30			0.30	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1483			1826			410			439	
v/s Ratio Prot												
v/s Ratio Perm		0.15			c0.39			c0.07			0.05	
v/c Ratio		0.27			0.70			0.22			0.16	
Uniform Delay, d1		7.1			9.9			15.7			15.4	
Progression Factor		1.00			0.81			1.00			1.00	
Incremental Delay, d2		0.4			2.2			1.2			0.8	
Delay (s)		7.6			10.2			17.0			16.2	
Level of Service		A			B			B			B	
Approach Delay (s/veh)		7.6			10.2			17.0			16.2	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	165	150	200	654	251	333	1535	82	97	1035	146
Future Volume (vph)	177	165	150	200	654	251	333	1535	82	97	1035	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	0.99			1.00		1.00	1.00	
Frt		0.929			0.958			0.992			0.981	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3123	0	3273	3367	0	1703	5023	0	3467	4967	0
Flt Permitted	0.112			0.950			0.089			0.950		
Satd. Flow (perm)	200	3123	0	3262	3367	0	160	5023	0	3464	4967	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161			42			7			19	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	190	177	161	215	703	270	358	1651	88	104	1113	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	338	0	215	973	0	358	1739	0	104	1270	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	14.0	40.0		20.0	46.0		28.0	64.0		11.0	47.0	
Total Split (%)	10.4%	29.6%		14.8%	34.1%		20.7%	47.4%		8.1%	34.8%	
Maximum Green (s)	10.0	33.7		16.0	39.7		24.0	57.7		7.0	40.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	48.0	35.7		13.7	39.4		71.3	58.0		7.0	40.7	
Actuated g/C Ratio	0.36	0.26		0.10	0.29		0.53	0.43		0.05	0.30	
v/c Ratio	1.04	0.36		0.65	0.96		0.99	0.80		0.58	0.84	
Control Delay (s/veh)	112.4	22.0		67.5	65.4		95.6	32.7		76.0	49.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	112.4	22.0		67.5	65.4		95.6	32.7		76.0	49.6	
LOS	F	C		E	E		F	C		E	D	
Approach Delay (s/veh)		54.5			65.8			43.4			51.6	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	~42.3	21.5		31.8	138.3		~98.2	83.0		15.1	122.4	
Queue Length 95th (m)	#97.3	37.3		45.8	#183.5		#161.0	141.8		25.4	142.2	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	182	944		387	1019		362	2161		179	1510	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.04	0.36		0.56	0.95		0.99	0.80		0.58	0.84	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay (s/veh): 51.8	Intersection LOS: D

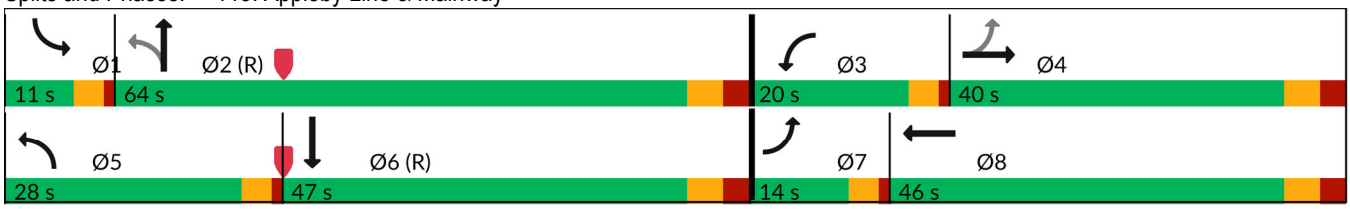
Intersection Capacity Utilization 96.0% ICU Level of Service F

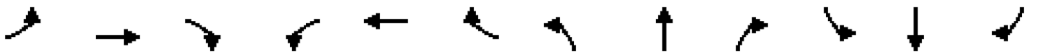
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 115: Appleby Line & Mainway



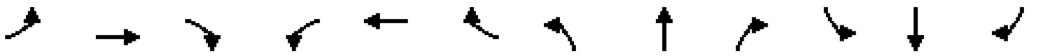


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	165	150	200	654	251	333	1535	82	97	1035	146
Future Volume (vph)	177	165	150	200	654	251	333	1535	82	97	1035	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3121		3273	3369		1703	5025		3467	4969	
Flt Permitted	0.11	1.00		0.95	1.00		0.09	1.00		0.95	1.00	
Satd. Flow (perm)	201	3121		3273	3369		160	5025		3467	4969	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	190	177	161	215	703	270	358	1651	88	104	1113	157
RTOR Reduction (vph)	0	118	0	0	30	0	0	4	0	0	13	0
Lane Group Flow (vph)	190	220	0	215	943	0	358	1735	0	104	1257	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	45.7	35.7		13.7	39.4		69.0	58.0		7.0	40.7	
Effective Green, g (s)	45.7	35.7		13.7	39.4		69.0	58.0		7.0	40.7	
Actuated g/C Ratio	0.34	0.26		0.10	0.29		0.51	0.43		0.05	0.30	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	825		332	983		359	2158		179	1498	
v/s Ratio Prot	c0.08	0.07		0.07	c0.28		c0.18	0.35		0.03	0.25	
v/s Ratio Perm	c0.28						c0.33					
v/c Ratio	1.06	0.27		0.65	0.96		1.00	0.80		0.58	0.84	
Uniform Delay, d1	37.7	39.3		58.3	47.0		42.7	33.5		62.6	44.1	
Progression Factor	1.00	1.00		1.00	1.00		1.53	0.89		1.00	1.00	
Incremental Delay, d2	84.5	0.2		4.3	19.4		39.9	2.5		4.7	5.8	
Delay (s)	122.2	39.5		62.6	66.4		105.0	32.4		67.3	49.9	
Level of Service	F	D		E	E		F	C		E	D	
Approach Delay (s/veh)		69.2			65.7			44.8			51.2	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	9	42	124	17	116	41	1796	156	105	1114	24
Future Volume (vph)	46	9	42	124	17	116	41	1796	156	105	1114	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.942			0.939			0.988			0.997	
Flt Protected		0.977			0.976		0.950			0.950		
Satd. Flow (prot)	0	1734	0	0	1724	0	1641	4970	0	1805	5062	0
Flt Permitted		0.716			0.810		0.220			0.065		
Satd. Flow (perm)	0	1268	0	0	1427	0	378	4970	0	124	5062	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		38			40			18			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	49	10	45	132	18	123	44	1911	166	112	1185	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	104	0	0	273	0	44	2077	0	112	1211	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

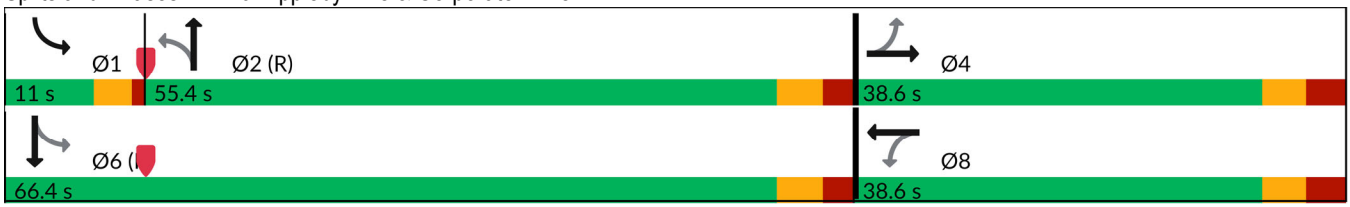


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.6	38.6		38.6	38.6		55.4	55.4		11.0	66.4	
Total Split (%)	36.8%	36.8%		36.8%	36.8%		52.8%	52.8%		10.5%	63.2%	
Maximum Green (s)	32.1	32.1		32.1	32.1		49.4	49.4		7.0	60.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		22.9			22.9		58.1	58.1		71.6	69.6	
Actuated g/C Ratio		0.22			0.22		0.55	0.55		0.68	0.66	
v/c Ratio		0.34			0.80		0.21	0.75		0.55	0.36	
Control Delay (s/veh)		23.6			49.5		18.2	21.4		23.4	8.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		23.6			49.5		18.2	21.4		23.4	8.9	
LOS		C			D		B	C		C	A	
Approach Delay (s/veh)		23.6			49.5			21.3			10.2	
Approach LOS		C			D			C			B	
Queue Length 50th (m)		11.8			48.0		4.9	120.9		7.3	38.6	
Queue Length 95th (m)		24.5			71.0		15.4	170.1		#27.5	60.5	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		414			464		209	2756		205	3358	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.25			0.59		0.21	0.75		0.55	0.36	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay (s/veh): 19.5	Intersection LOS: B

Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

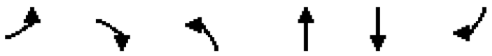
Splits and Phases: 116: Appleby Line & Corporate Drive



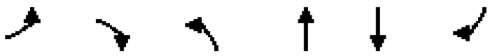
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	9	42	124	17	116	41	1796	156	105	1114	24
Future Volume (vph)	46	9	42	124	17	116	41	1796	156	105	1114	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1729			1721		1633	4970		1805	5061	
Flt Permitted		0.72			0.81		0.22	1.00		0.06	1.00	
Satd. Flow (perm)		1267			1426		378	4970		123	5061	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	49	10	45	132	18	123	44	1911	166	112	1185	26
RTOR Reduction (vph)	0	30	0	0	31	0	0	8	0	0	2	0
Lane Group Flow (vph)	0	74	0	0	242	0	44	2069	0	112	1209	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		22.9			22.9		58.0	58.0		69.6	69.6	
Effective Green, g (s)		22.9			22.9		58.0	58.0		69.6	69.6	
Actuated g/C Ratio		0.22			0.22		0.55	0.55		0.66	0.66	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		276			311		208	2745		203	3354	
v/s Ratio Prot								c0.42		c0.04	0.24	
v/s Ratio Perm		0.06			c0.17		0.12			0.33		
v/c Ratio		0.27			0.78		0.21	0.75		0.55	0.36	
Uniform Delay, d1		34.1			38.6		11.9	18.0		15.2	7.8	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.5			11.6		2.3	2.0		3.2	0.3	
Delay (s)		34.6			50.2		14.2	20.0		18.5	8.1	
Level of Service		C			D		B	B		B	A	
Approach Delay (s/veh)		34.6			50.2			19.9			9.0	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	141	452	144	1886	998	26
Future Volume (vph)	141	452	144	1886	998	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.996	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	3242	5085	5055	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1553	3237	5085	5055	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		208			5	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	157	502	160	2096	1109	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	157	502	160	2096	1138	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	12.0	51.0	39.0	
Total Split (%)	43.3%	43.3%	13.3%	56.7%	43.3%	
Maximum Green (s)	32.0	32.0	7.0	44.0	32.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	24.0	24.0	8.4	52.0	38.6	
Actuated g/C Ratio	0.27	0.27	0.09	0.58	0.43	
v/c Ratio	0.33	0.89	0.53	0.71	0.52	
Control Delay (s/veh)	26.6	35.9	46.1	16.8	21.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	26.6	35.9	46.1	16.8	21.3	
LOS	C	D	D	B	C	
Approach Delay (s/veh)	33.7			18.9	21.3	
Approach LOS	C			B	C	
Queue Length 50th (m)	22.7	54.3	15.1	97.5	57.8	
Queue Length 95th (m)	35.1	89.2	#28.5	140.4	78.0	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	635	686	302	2939	2173	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.25	0.73	0.53	0.71	0.52	

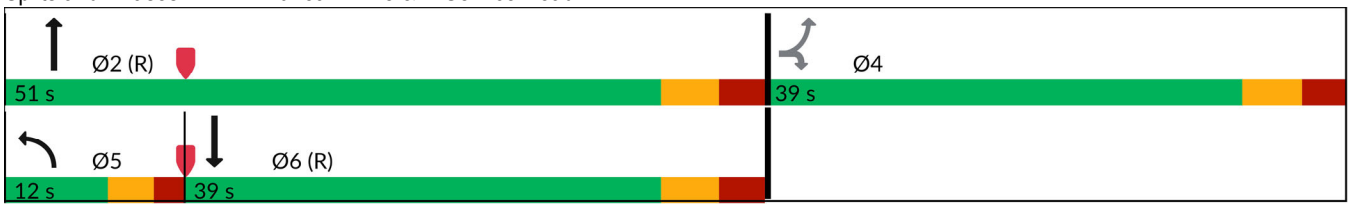
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 21.9	Intersection LOS: C

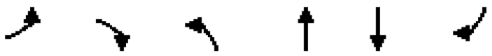
Intersection Capacity Utilization 64.7% ICU Level of Service C

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	141	452	144	1886	998	26
Future Volume (vph)	141	452	144	1886	998	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	3242	5085	5056	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1787	1553	3242	5085	5056	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	157	502	160	2096	1109	29
RTOR Reduction (vph)	0	153	0	0	3	0
Lane Group Flow (vph)	157	349	160	2096	1135	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	24.0	24.0	8.4	52.0	38.6	
Effective Green, g (s)	24.0	24.0	8.4	52.0	38.6	
Actuated g/C Ratio	0.27	0.27	0.09	0.58	0.43	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	476	414	302	2938	2168	
v/s Ratio Prot			0.05	c0.41	0.22	
v/s Ratio Perm	0.09	c0.23				
v/c Ratio	0.33	0.84	0.53	0.71	0.52	
Uniform Delay, d1	26.5	31.2	38.9	13.6	18.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	14.5	1.7	1.5	0.9	
Delay (s)	26.9	45.7	40.6	15.2	19.8	
Level of Service	C	D	D	B	B	
Approach Delay (s/veh)	41.3			17.0	19.8	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2306	2232	1256	0	0	2121
Future Volume (vph)	2306	2232	1256	0	0	2121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2787	5036	0	0	5085
Flt Permitted	0.950					
Satd. Flow (perm)	3433	2787	5036	0	0	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		8				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2480	2400	1351	0	0	2281
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2480	2400	1351	0	0	2281
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

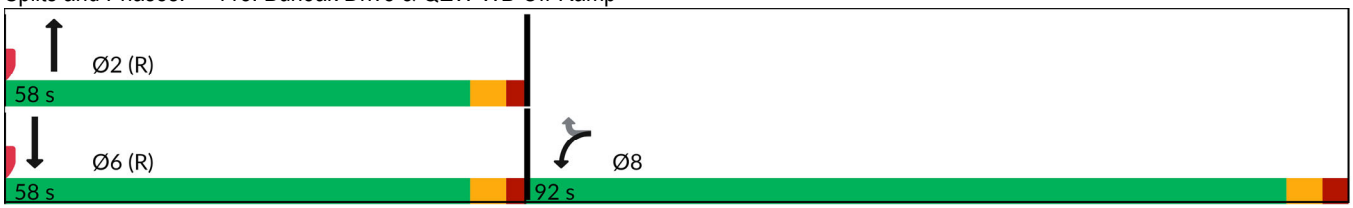


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	92.0	92.0	58.0			58.0
Total Split (%)	61.3%	61.3%	38.7%			38.7%
Maximum Green (s)	85.0	85.0	52.0			52.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	85.0	85.0	52.0			52.0
Actuated g/C Ratio	0.57	0.57	0.35			0.35
v/c Ratio	1.28	1.52	0.77			1.29
Control Delay (s/veh)	158.1	263.5	47.5			176.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	158.1	263.5	47.5			176.7
LOS	F	F	D			F
Approach Delay (s/veh)	209.9		47.5			176.7
Approach LOS	F		D			F
Queue Length 50th (m)	~511.5	~605.2	141.2			~337.5
Queue Length 95th (m)	#549.8	#649.2	160.6			#365.9
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1945	1582	1745			1762
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.28	1.52	0.77			1.29

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.52	
Intersection Signal Delay (s/veh): 175.2	Intersection LOS: F

Intersection Capacity Utilization 117.6% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

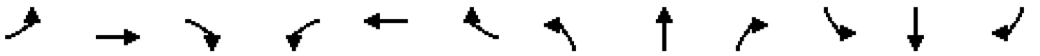




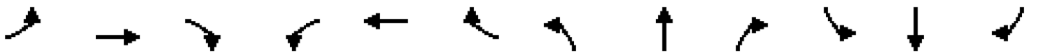
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2306	2232	1256	0	0	2121
Future Volume (vph)	2306	2232	1256	0	0	2121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	5036			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	5036			5085
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2480	2400	1351	0	0	2281
RTOR Reduction (vph)	0	3	0	0	0	0
Lane Group Flow (vph)	2480	2397	1351	0	0	2281
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	85.0	85.0	52.0			52.0
Effective Green, g (s)	85.0	85.0	52.0			52.0
Actuated g/C Ratio	0.57	0.57	0.35			0.35
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1945	1579	1745			1762
v/s Ratio Prot	0.72		0.27			c0.45
v/s Ratio Perm		c0.86				
v/c Ratio	1.28	1.52	0.77			1.29
Uniform Delay, d1	32.5	32.5	43.8			49.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	127.9	236.3	3.4			136.9
Delay (s)	160.4	268.8	47.2			185.9
Level of Service	F	F	D			F
Approach Delay (s/veh)	213.7		47.2			185.9
Approach LOS	F		D			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	179.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.43		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	117.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	78	362	0	0	172	0	1003	14	11	3315	0
Future Volume (vph)	178	78	362	0	0	172	0	1003	14	11	3315	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.905	0.850			0.865		0.998				
Flt Protected	0.950	0.995										
Satd. Flow (prot)	1493	2793	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950	0.995									0.933	
Satd. Flow (perm)	1493	2793	1413	0	0	1596	0	5125	0	0	4792	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		161	161			182		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	187	82	381	0	0	181	0	1056	15	12	3489	0
Shared Lane Traffic (%)	15%		50%									
Lane Group Flow (vph)	159	301	190	0	0	181	0	1071	0	0	3501	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

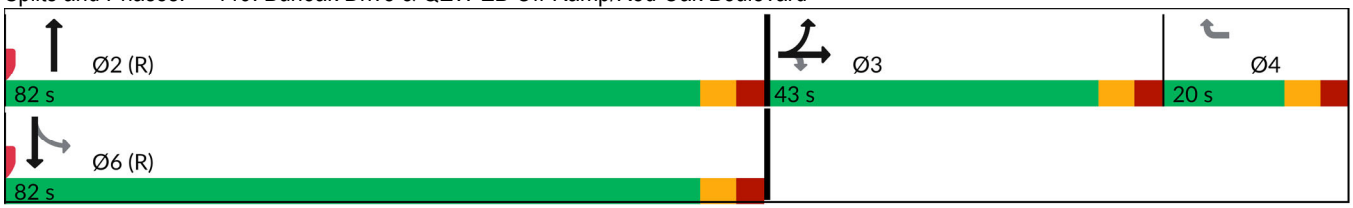


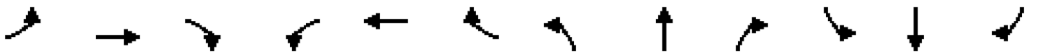
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			15.0		39.0		15.0	15.0	
Total Split (s)	43.0	43.0	43.0			20.0		82.0		82.0	82.0	
Total Split (%)	29.7%	29.7%	29.7%			13.8%		56.6%		56.6%	56.6%	
Maximum Green (s)	36.0	36.0	36.0			13.0		75.0		75.0	75.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0				
Flash Don't Walk (s)	25.0	25.0	25.0					25.0				
Pedestrian Calls (#/hr)	0	0	0					0				
Act Effct Green (s)	21.1	21.1	21.1			9.4		93.5			93.5	
Actuated g/C Ratio	0.15	0.15	0.15			0.06		0.64			0.64	
v/c Ratio	0.73	0.55	0.55			0.66		0.32			1.13	
Control Delay (s/veh)	77.8	29.2	17.9			20.4		12.7			90.4	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	77.8	29.2	17.9			20.4		12.7			90.4	
LOS	E	C	B			C		B			F	
Approach Delay (s/veh)		37.8			20.4			12.7			90.4	
Approach LOS		D			C			B			F	
Queue Length 50th (m)	55.0	23.6	8.7			0.0		48.5			~445.8	
Queue Length 95th (m)	80.4	39.7	35.2			24.2		75.3			#521.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	370	814	471			310		3306			3090	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.43	0.37	0.40			0.58		0.32			1.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.13	
Intersection Signal Delay (s/veh): 66.3	Intersection LOS: E

Intersection Capacity Utilization 90.9% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

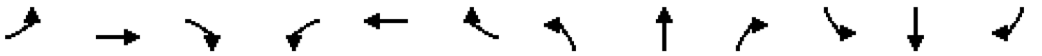




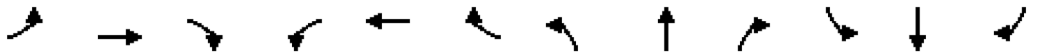
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	178	78	362	0	0	172	0	1003	14	11	3315	0
Future Volume (vph)	178	78	362	0	0	172	0	1003	14	11	3315	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.90	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1493	2793	1413			1596		5125			5135	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1493	2793	1413			1596		5125			4791	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	187	82	381	0	0	181	0	1056	15	12	3489	0
RTOR Reduction (vph)	0	138	138	0	0	169	0	1	0	0	0	0
Lane Group Flow (vph)	159	163	52	0	0	12	0	1070	0	0	3501	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	21.1	21.1	21.1			9.4		93.5			93.5	
Effective Green, g (s)	21.1	21.1	21.1			9.4		93.5			93.5	
Actuated g/C Ratio	0.15	0.15	0.15			0.06		0.64			0.64	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	217	406	205			103		3304			3089	
v/s Ratio Prot	c0.11	0.06						0.21				
v/s Ratio Perm			0.04			c0.01					c0.73	
v/c Ratio	0.73	0.40	0.26			0.11		0.32			1.13	
Uniform Delay, d1	59.3	56.2	55.0			63.9		11.6			25.8	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	12.0	0.7	0.7			0.5		0.3			64.6	
Delay (s)	71.3	56.9	55.6			64.4		11.8			90.4	
Level of Service	E	E	E			E		B			F	
Approach Delay (s/veh)		60.0			64.4			11.8			90.4	
Approach LOS		E			E			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	70.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	90.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	40	155	274	217	173	308	1797	142	54	1275	53
Future Volume (vph)	61	40	155	274	217	173	308	1797	142	54	1275	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00		1.00	1.00	
Frt		0.881			0.933			0.989			0.994	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1600	0	1770	1737	0	1736	4969	0	1805	4956	0
Flt Permitted	0.410			0.236			0.113			0.072		
Satd. Flow (perm)	763	1600	0	440	1737	0	206	4969	0	137	4956	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		131			33			12			5	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Adj. Flow (vph)	62	41	158	280	221	177	314	1834	145	55	1301	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	62	199	0	280	398	0	314	1979	0	55	1355	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		18.7	53.9		29.2	69.5		11.6	51.9	
Total Split (%)	26.1%	26.1%		13.9%	39.9%		21.6%	51.5%		8.6%	38.4%	
Maximum Green (s)	29.1	29.1		14.7	47.8		25.2	62.9		7.6	45.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.2	16.2		37.0	34.9		90.0	78.2		70.4	60.3	
Actuated g/C Ratio	0.12	0.12		0.27	0.26		0.67	0.58		0.52	0.45	
v/c Ratio	0.68	0.65		1.06	0.84		0.79	0.69		0.34	0.61	
Control Delay (s/veh)	89.2	29.4		112.7	59.2		39.2	23.1		30.3	55.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.4		0.0	0.0	
Total Delay (s/veh)	89.2	29.4		112.7	59.2		39.2	23.5		30.3	55.9	
LOS	F	C		F	E		D	C		C	E	
Approach Delay (s/veh)		43.6			81.3			25.6			54.9	
Approach LOS		D			F			C			D	
Queue Length 50th (m)	17.3	18.3		~75.1	99.8		53.6	141.3		10.6	125.7	
Queue Length 95th (m)	31.8	42.3		#105.0	126.9		94.8	196.1		m17.1	145.2	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	164	447		265	636		438	2882		168	2215	
Starvation Cap Reductn	0	0		0	0		0	354		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.38	0.45		1.06	0.63		0.72	0.78		0.33	0.61	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 43.7	Intersection LOS: D

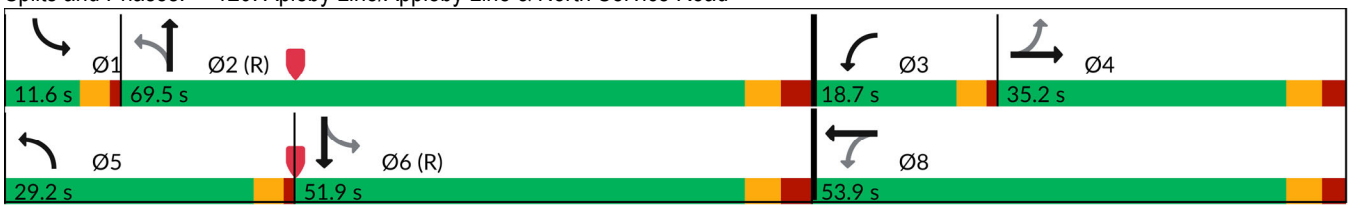
Intersection Capacity Utilization 91.5%	ICU Level of Service F
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	40	155	274	217	173	308	1797	142	54	1275	53
Future Volume (vph)	61	40	155	274	217	173	308	1797	142	54	1275	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1600		1770	1738		1736	4969		1805	4957	
Flt Permitted	0.41	1.00		0.24	1.00		0.11	1.00		0.07	1.00	
Satd. Flow (perm)	763	1600		440	1738		206	4969		138	4957	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	62	41	158	280	221	177	314	1834	145	55	1301	54
RTOR Reduction (vph)	0	115	0	0	24	0	0	5	0	0	3	0
Lane Group Flow (vph)	62	84	0	280	374	0	314	1974	0	55	1352	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.2	16.2		34.9	34.9		87.4	77.3		66.3	60.2	
Effective Green, g (s)	16.2	16.2		34.9	34.9		87.4	77.3		66.3	60.2	
Actuated g/C Ratio	0.12	0.12		0.26	0.26		0.65	0.57		0.49	0.45	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	91	192		258	449		396	2845		143	2210	
v/s Ratio Prot		0.05		c0.12	0.21		c0.14	0.40		0.02	0.27	
v/s Ratio Perm	0.08			c0.16			c0.38			0.17		
v/c Ratio	0.68	0.44		1.09	0.83		0.79	0.69		0.38	0.61	
Uniform Delay, d1	56.9	55.2		46.0	47.3		29.4	20.5		19.3	28.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.69	1.79	
Incremental Delay, d2	19.0	1.6		80.6	12.4		10.4	1.4		1.1	0.8	
Delay (s)	75.9	56.7		126.6	59.7		39.8	21.9		33.6	51.9	
Level of Service	E	E		F	E		D	C		C	D	
Approach Delay (s/veh)		61.3			87.3			24.3			51.2	
Approach LOS		E			F			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	43.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	91.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1150	1210	2319	0	0	2163
Future Volume (vph)	1150	1210	2319	0	0	2163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2733	5085	0	0	4988
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2733	5085	0	0	4988
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		1				
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Adj. Flow (vph)	1186	1247	2391	0	0	2230
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1186	1247	2391	0	0	2230
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



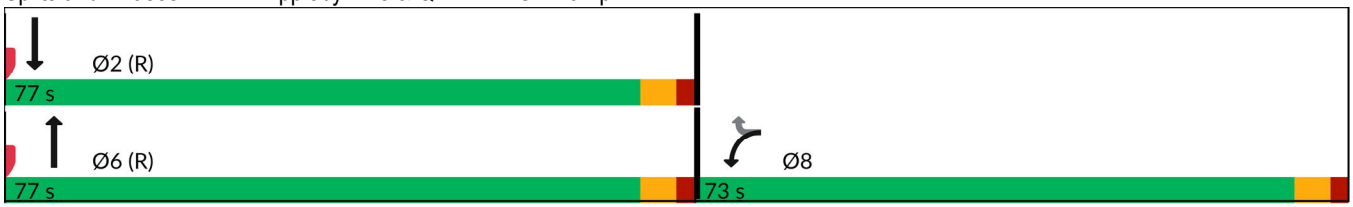
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	73.0	73.0	77.0			77.0
Total Split (%)	48.7%	48.7%	51.3%			51.3%
Maximum Green (s)	67.0	67.0	71.0			71.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	67.0	67.0	71.0			71.0
Actuated g/C Ratio	0.45	0.45	0.47			0.47
v/c Ratio	0.78	1.02	0.99			0.94
Control Delay (s/veh)	39.8	71.9	56.0			47.2
Queue Delay	0.0	0.0	0.0			29.1
Total Delay (s/veh)	39.8	71.9	56.0			76.3
LOS	D	E	E			E
Approach Delay (s/veh)	56.2		56.0			76.3
Approach LOS	E		E			E
Queue Length 50th (m)	164.0	~241.4	272.1			246.5
Queue Length 95th (m)	193.9	#292.1	#314.3			271.6
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1518	1221	2406			2360
Starvation Cap Reductn	0	0	0			264
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.78	1.02	0.99			1.06

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay (s/veh): 62.5		Intersection LOS: E	
Intersection Capacity Utilization 97.1%		ICU Level of Service F	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

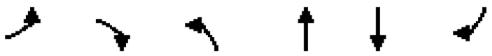
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



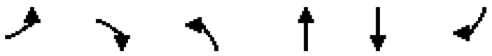


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1150	1210	2319	0	0	2163
Future Volume (vph)	1150	1210	2319	0	0	2163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2733	5085			4988
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2733	5085			4988
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1186	1247	2391	0	0	2230
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1186	1246	2391	0	0	2230
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	67.0	67.0	71.0			71.0
Effective Green, g (s)	67.0	67.0	71.0			71.0
Actuated g/C Ratio	0.45	0.45	0.47			0.47
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1518	1220	2406			2360
v/s Ratio Prot	0.35		c0.47			0.45
v/s Ratio Perm		c0.46				
v/c Ratio	0.78	1.02	0.99			0.94
Uniform Delay, d1	35.3	41.5	39.3			37.6
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	2.7	31.4	16.9			9.5
Delay (s)	38.0	72.9	56.2			47.1
Level of Service	D	E	E			D
Approach Delay (s/veh)	55.9		56.2			47.1
Approach LOS	E		E			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	664	519	0	1808	2677	0
Future Volume (vph)	664	519	0	1808	2677	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	5036	4940	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	5036	4940	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Adj. Flow (vph)	671	524	0	1826	2704	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	671	524	0	1826	2704	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

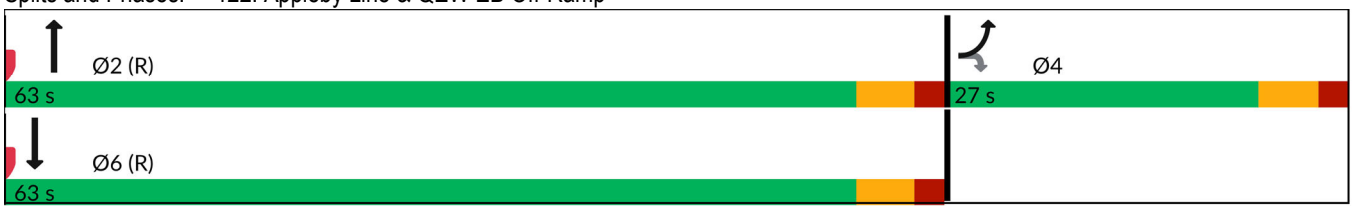


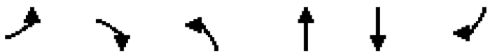
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	27.0	27.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0		57.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	20.5	20.5		57.5	57.5	
Actuated g/C Ratio	0.23	0.23		0.64	0.64	
v/c Ratio	0.89	0.85		0.57	0.86	
Control Delay (s/veh)	48.6	48.0		10.1	16.7	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	48.6	48.0		10.1	16.7	
LOS	D	D		B	B	
Approach Delay (s/veh)	48.3			10.1	16.7	
Approach LOS	D			B	B	
Queue Length 50th (m)	62.7	53.4		64.2	136.1	
Queue Length 95th (m)	#93.2	#83.9		77.3	162.8	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	778	629		3219	3158	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.86	0.83		0.57	0.86	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay (s/veh): 21.2	Intersection LOS: C
Intersection Capacity Utilization 97.1%	ICU Level of Service F
Analysis Period (min) 15	

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

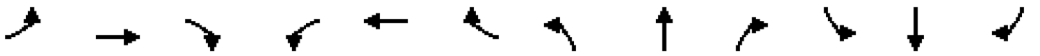
Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



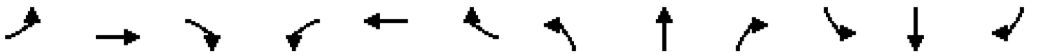


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	664	519	0	1808	2677	0
Future Volume (vph)	664	519	0	1808	2677	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		5036	4940	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		5036	4940	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	671	524	0	1826	2704	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	671	520	0	1826	2704	0
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	20.5	20.5		57.5	57.5	
Effective Green, g (s)	20.5	20.5		57.5	57.5	
Actuated g/C Ratio	0.23	0.23		0.64	0.64	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	759	610		3217	3156	
v/s Ratio Prot	c0.20			0.36	c0.55	
v/s Ratio Perm		0.19				
v/c Ratio	0.88	0.85		0.57	0.86	
Uniform Delay, d1	33.6	33.3		9.2	13.0	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	11.9	11.1		0.7	3.2	
Delay (s)	45.5	44.4		9.9	16.2	
Level of Service	D	D		A	B	
Approach Delay (s/veh)	45.0			9.9	16.2	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	97.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	247	168	424	537	371	96	865	173	177	1427	266
Future Volume (vph)	305	247	168	424	537	371	96	865	173	177	1427	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.939			0.939				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3226	0	1752	3283	0	1687	5085	1538	3367	5085	1404
Flt Permitted	0.126			0.343			0.093			0.950		
Satd. Flow (perm)	230	3226	0	630	3283	0	165	5085	1514	3361	5085	1376
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		122			135				160			249
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Adj. Flow (vph)	311	252	171	433	548	379	98	883	177	181	1456	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	311	423	0	433	927	0	98	883	177	181	1456	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

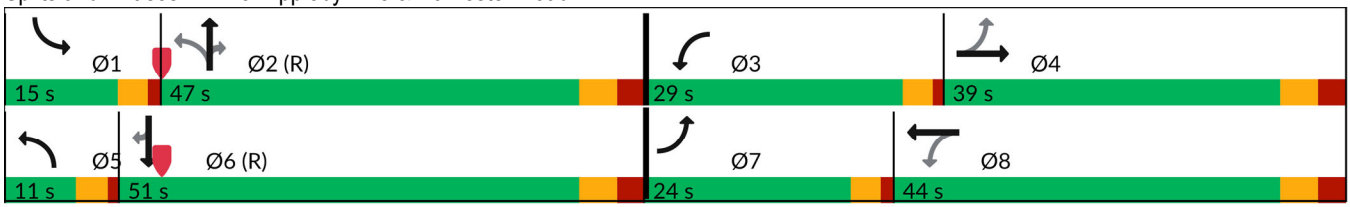


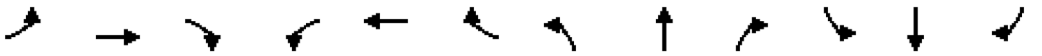
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	39.0		29.0	44.0		11.0	47.0	47.0	15.0	51.0	51.0
Total Split (%)	18.5%	30.0%		22.3%	33.8%		8.5%	36.2%	36.2%	11.5%	39.2%	39.2%
Maximum Green (s)	20.0	32.6		25.0	37.6		7.0	40.7	40.7	11.0	44.7	44.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	54.1	31.7		61.9	36.0		52.4	42.8	42.8	10.5	46.0	46.0
Actuated g/C Ratio	0.42	0.24		0.48	0.28		0.40	0.33	0.33	0.08	0.35	0.35
v/c Ratio	0.95	0.48		0.85	0.92		0.64	0.53	0.29	0.67	0.81	0.42
Control Delay (s/veh)	75.1	31.3		40.5	53.7		43.1	37.3	7.8	70.3	42.7	7.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	75.1	31.3		40.5	53.7		43.1	37.3	7.8	70.3	42.7	7.0
LOS	E	C		D	D		D	D	A	E	D	A
Approach Delay (s/veh)		49.9			49.5			33.2			40.3	
Approach LOS		D			D			C			D	
Queue Length 50th (m)	67.7	36.8		78.4	111.0		16.0	73.4	3.3	25.4	133.6	4.4
Queue Length 95th (m)	#128.5	53.8		#109.8	#148.5		#38.5	88.3	21.3	38.6	153.8	28.2
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	327	900		517	1045		152	1673	605	284	1798	647
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.47		0.84	0.89		0.64	0.53	0.29	0.64	0.81	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 42.5	Intersection LOS: D

Intersection Capacity Utilization 94.7% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

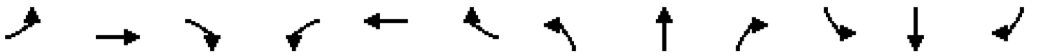




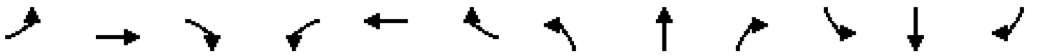
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	247	168	424	537	371	96	865	173	177	1427	266
Future Volume (vph)	305	247	168	424	537	371	96	865	173	177	1427	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1735	3227		1750	3282		1687	5085	1514	3367	5085	1376
Flt Permitted	0.13	1.00		0.34	1.00		0.09	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	230	3227		631	3282		166	5085	1514	3367	5085	1376
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	311	252	171	433	548	379	98	883	177	181	1456	271
RTOR Reduction (vph)	0	92	0	0	98	0	0	0	107	0	0	161
Lane Group Flow (vph)	311	331	0	433	829	0	98	883	70	181	1456	110
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	51.7	31.7		60.0	36.0		50.1	42.8	42.8	10.5	46.0	46.0
Effective Green, g (s)	51.7	31.7		60.0	36.0		50.1	42.8	42.8	10.5	46.0	46.0
Actuated g/C Ratio	0.40	0.24		0.46	0.28		0.39	0.33	0.33	0.08	0.35	0.35
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	323	786		500	908		149	1674	498	271	1799	486
v/s Ratio Prot	c0.15	0.10		c0.16	c0.25		0.04	0.17		c0.05	c0.29	
v/s Ratio Perm	0.23			0.24			0.22		0.05			0.08
v/c Ratio	0.96	0.42		0.87	0.91		0.66	0.53	0.14	0.67	0.81	0.23
Uniform Delay, d1	38.0	41.4		26.0	45.5		29.4	35.4	30.7	58.1	38.0	29.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	39.9	0.4		14.5	13.3		10.0	1.2	0.6	6.1	4.1	1.1
Delay (s)	77.9	41.8		40.5	58.8		39.5	36.6	31.2	64.2	42.1	30.6
Level of Service	E	D		D	E		D	D	C	E	D	C
Approach Delay (s/veh)		57.1			53.0			36.0			42.5	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	94.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	463	108	415	241	207	170	236	625	113	174	1322	1024
Future Volume (vph)	463	108	415	241	207	170	236	625	113	174	1322	1024
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	0.98		0.94	0.96		0.97	1.00		0.93	0.98		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1599	1736	1810	1468	1787	3574	1482	1626	5136	1599
Flt Permitted	0.950			0.684			0.108			0.357		
Satd. Flow (perm)	3349	1776	1502	1197	1810	1421	202	3574	1376	600	5136	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202			177			149			430
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Adj. Flow (vph)	482	113	432	251	216	177	246	651	118	181	1377	1067
Shared Lane Traffic (%)												
Lane Group Flow (vph)	482	113	432	251	216	177	246	651	118	181	1377	1067
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	24.5	45.5	45.5	16.5	37.5	37.5	16.0	66.0	66.0	22.0	72.0	72.0
Total Split (%)	16.3%	30.3%	30.3%	11.0%	25.0%	25.0%	10.7%	44.0%	44.0%	14.7%	48.0%	48.0%
Maximum Green (s)	19.5	39.0	39.0	12.5	31.0	31.0	12.0	59.2	59.2	18.0	65.2	65.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	19.5	32.2	32.2	39.2	24.2	24.2	87.4	70.8	70.8	82.3	66.7	66.7
Actuated g/C Ratio	0.13	0.21	0.21	0.26	0.16	0.16	0.58	0.47	0.47	0.55	0.44	0.44
v/c Ratio	1.09	0.30	0.90	0.70	0.74	0.47	0.82	0.39	0.16	0.43	0.60	1.18
Control Delay (s/veh)	128.3	50.0	51.8	52.1	74.4	10.8	49.1	28.0	2.3	18.0	33.2	117.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	128.3	50.0	51.8	52.1	74.4	10.8	49.1	28.0	2.3	18.0	33.2	117.6
LOS	F	D	D	D	E	B	D	C	A	B	C	F
Approach Delay (s/veh)		87.5			48.2			30.1			66.5	
Approach LOS		F			D			C			E	
Queue Length 50th (m)	~89.1	31.4	76.8	62.1	67.5	0.0	42.4	68.5	0.0	26.1	121.5	~326.3
Queue Length 95th (m)	#127.1	48.8	119.4	83.4	93.9	22.9	#117.9	98.2	7.4	44.5	137.9	#412.5
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	442	461	540	358	374	434	299	1686	728	470	2284	901
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.25	0.80	0.70	0.58	0.41	0.82	0.39	0.16	0.39	0.60	1.18

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 61.4	Intersection LOS: E

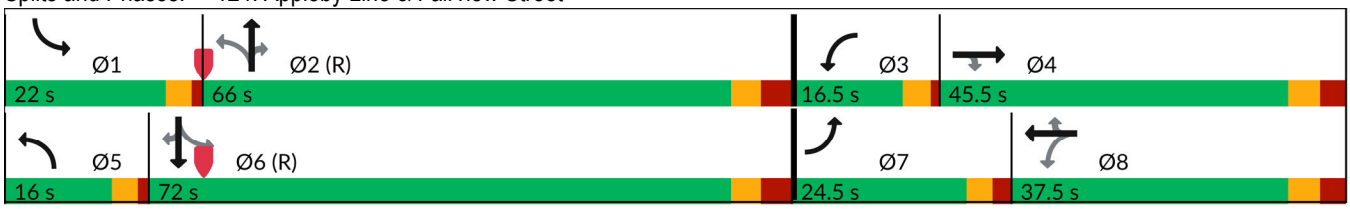
Intersection Capacity Utilization 109.4% ICU Level of Service H

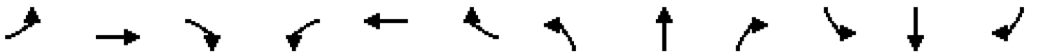
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

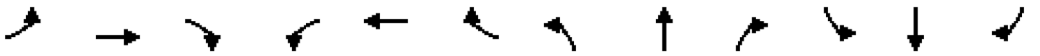




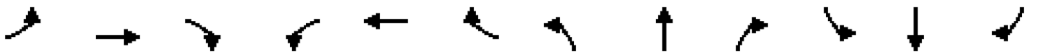
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	463	108	415	241	207	170	236	625	113	174	1322	1024
Future Volume (vph)	463	108	415	241	207	170	236	625	113	174	1322	1024
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1502	1687	1810	1421	1787	3574	1376	1615	5136	1490
Flt Permitted	0.95	1.00	1.00	0.68	1.00	1.00	0.11	1.00	1.00	0.36	1.00	1.00
Satd. Flow (perm)	3400	1776	1502	1215	1810	1421	202	3574	1376	607	5136	1490
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	482	113	432	251	216	177	246	651	118	181	1377	1067
RTOR Reduction (vph)	0	0	159	0	0	148	0	0	62	0	0	239
Lane Group Flow (vph)	482	113	273	251	216	29	246	651	56	181	1377	828
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	19.5	32.2	32.2	36.7	24.2	24.2	88.0	70.8	70.8	80.0	66.8	66.8
Effective Green, g (s)	19.5	32.2	32.2	36.7	24.2	24.2	88.0	70.8	70.8	80.0	66.8	66.8
Actuated g/C Ratio	0.13	0.21	0.21	0.24	0.16	0.16	0.59	0.47	0.47	0.53	0.45	0.45
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	442	381	322	336	292	229	300	1686	649	412	2287	663
v/s Ratio Prot	c0.14	0.06		0.06	0.12		c0.09	0.18		0.04	0.27	
v/s Ratio Perm			c0.18	0.12		0.02	0.39		0.04	0.20		c0.56
v/c Ratio	1.09	0.30	0.85	0.75	0.74	0.12	0.82	0.39	0.09	0.44	0.60	1.25
Uniform Delay, d1	65.3	49.4	56.6	50.8	59.9	53.8	29.7	25.6	21.8	18.7	31.5	41.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	69.5	0.4	18.4	8.8	9.4	0.2	16.2	0.7	0.3	0.8	1.2	124.6
Delay (s)	134.7	49.8	75.0	59.5	69.3	54.1	45.9	26.2	22.1	19.4	32.7	166.2
Level of Service	F	D	E	E	E	D	D	C	C	B	C	F
Approach Delay (s/veh)		100.3			61.3			30.5			86.0	
Approach LOS		F			E			C			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	75.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	109.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	658	335	412	723	195	438	667	300	377	730	224
Future Volume (vph)	205	658	335	412	723	195	438	667	300	377	730	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	0.99		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3483	5136	1576	3450	5136	1527	3495	5136	1560	3437	5136	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			289			199			259			229
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	209	671	342	420	738	199	447	681	306	385	745	229
Shared Lane Traffic (%)												
Lane Group Flow (vph)	209	671	342	420	738	199	447	681	306	385	745	229
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	24.0	49.4	49.4	25.0	50.6	50.6	24.0	49.6	49.6
Total Split (%)	14.5%	32.0%	32.0%	16.6%	34.1%	34.1%	17.2%	34.9%	34.9%	16.6%	34.2%	34.2%
Maximum Green (s)	16.0	39.0	39.0	19.0	42.0	42.0	20.0	43.2	43.2	19.0	42.2	42.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	14.8	25.8	25.8	19.0	30.0	30.0	26.0	52.2	52.2	23.1	49.4	49.4
Actuated g/C Ratio	0.10	0.18	0.18	0.13	0.21	0.21	0.18	0.36	0.36	0.16	0.34	0.34
v/c Ratio	0.58	0.73	0.66	0.93	0.69	0.42	0.71	0.37	0.42	0.70	0.43	0.33
Control Delay (s/veh)	68.9	61.1	16.4	89.0	56.9	8.5	62.7	36.0	9.1	64.5	38.8	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.9	61.1	16.4	89.0	56.9	8.5	62.7	36.0	9.1	64.5	38.8	5.9
LOS	E	E	B	F	E	A	E	D	A	E	D	A
Approach Delay (s/veh)		49.9			59.7			38.6			40.5	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	31.3	71.5	13.8	66.1	77.5	0.0	65.8	56.1	9.4	57.7	64.7	0.0
Queue Length 95th (m)	45.2	83.0	46.7	#98.2	89.1	21.5	84.7	75.0	37.0	74.1	83.4	20.3
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	386	1381	635	454	1487	583	627	1850	727	555	1748	691
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.49	0.54	0.93	0.50	0.34	0.71	0.37	0.42	0.69	0.43	0.33

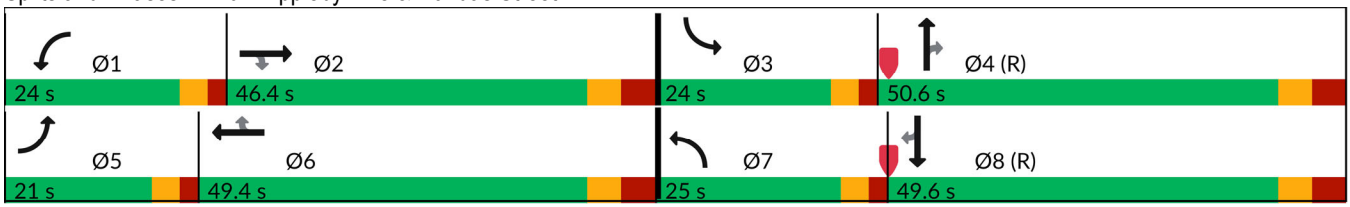
Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay (s/veh): 47.0	Intersection LOS: D

Intersection Capacity Utilization 97.9% ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

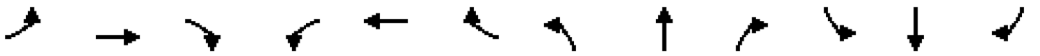


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	658	335	412	723	195	438	667	300	377	730	224
Future Volume (vph)	205	658	335	412	723	195	438	667	300	377	730	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	209	671	342	420	738	199	447	681	306	385	745	229
RTOR Reduction (vph)	0	0	238	0	0	158	0	0	166	0	0	151
Lane Group Flow (vph)	209	671	104	420	738	41	447	681	140	385	745	78
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	14.8	25.8	25.8	19.0	30.0	30.0	26.0	52.3	52.3	23.1	49.4	49.4
Effective Green, g (s)	14.8	25.8	25.8	19.0	30.0	30.0	26.0	52.3	52.3	23.1	49.4	49.4
Actuated g/C Ratio	0.10	0.18	0.18	0.13	0.21	0.21	0.18	0.36	0.36	0.16	0.34	0.34
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	357	913	280	454	1062	315	627	1852	562	552	1749	540
v/s Ratio Prot	0.06	0.13		c0.12	c0.14		c0.13	c0.13		0.11	c0.15	
v/s Ratio Perm			0.07			0.03			0.09			0.05
v/c Ratio	0.59	0.73	0.37	0.93	0.69	0.13	0.71	0.37	0.25	0.70	0.43	0.14
Uniform Delay, d1	62.2	56.4	52.5	62.3	53.3	46.9	56.0	34.2	32.6	57.6	36.9	33.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	3.1	0.8	25.6	2.0	0.2	4.7	0.6	1.1	4.8	0.8	0.6
Delay (s)	65.9	59.5	53.3	87.9	55.3	47.1	60.7	34.7	33.6	62.5	37.6	33.7
Level of Service	E	E	D	F	E	D	E	C	C	E	D	C
Approach Delay (s/veh)		58.9			64.2			42.6			44.0	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	52.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	97.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	305	304	191	503	431	273	1209	124	282	1005	214
Future Volume (vph)	230	305	304	191	503	431	273	1209	124	282	1005	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	0.99	0.99		1.00		0.98	1.00	1.00		1.00	1.00	
Frt		0.925				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3288	0	3467	5136	1615	3502	5049	0	3467	4982	0
Flt Permitted	0.398			0.950			0.950			0.950		
Satd. Flow (perm)	730	3288	0	3454	5136	1578	3495	5049	0	3462	4982	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		229				259		19			50	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	235	311	310	195	513	440	279	1234	127	288	1026	218
Shared Lane Traffic (%)												
Lane Group Flow (vph)	235	621	0	195	513	440	279	1361	0	288	1244	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	11.0	34.4		11.0	34.4	34.4	14.0	36.6		13.0	35.6	
Total Split (%)	11.6%	36.2%		11.6%	36.2%	36.2%	14.7%	38.5%		13.7%	37.5%	
Maximum Green (s)	7.0	28.0		7.0	28.0	28.0	9.0	30.1		9.0	29.1	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	29.0	19.6		7.0	19.6	19.6	11.4	35.8		11.7	35.1	
Actuated g/C Ratio	0.31	0.21		0.07	0.21	0.21	0.12	0.38		0.12	0.37	
v/c Ratio	0.79	0.72		0.76	0.48	0.83	0.66	0.71		0.67	0.67	
Control Delay (s/veh)	43.8	26.1		63.6	33.9	27.7	49.0	28.6		49.3	27.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	43.8	26.1		63.6	33.9	27.7	49.0	28.6		49.3	27.3	
LOS	D	C		E	C	C	D	C		D	C	
Approach Delay (s/veh)		31.0			36.5			32.1			31.4	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	34.9	37.5		19.5	32.7	34.2	26.2	82.5		27.2	71.9	
Queue Length 95th (m)	47.5	50.1		#36.5	38.4	65.4	#49.4	107.7		#52.4	95.7	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	297	1130		255	1513	647	421	1913		427	1870	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.79	0.55		0.76	0.34	0.68	0.66	0.71		0.67	0.67	

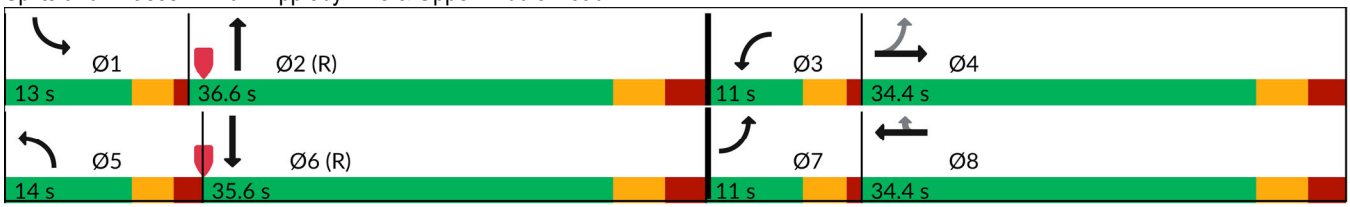
Intersection Summary			
Area Type:	Other		
Cycle Length: 95			
Actuated Cycle Length: 95			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 95			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay (s/veh): 32.7		Intersection LOS: C	

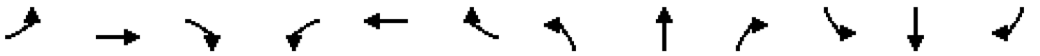
Intersection Capacity Utilization 80.9% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road

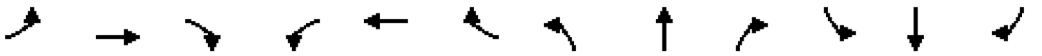




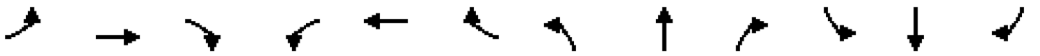
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	305	304	191	503	431	273	1209	124	282	1005	214
Future Volume (vph)	230	305	304	191	503	431	273	1209	124	282	1005	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1749	3288		3467	5136	1578	3502	5049		3467	4981	
Flt Permitted	0.40	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	732	3288		3467	5136	1578	3502	5049		3467	4981	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	235	311	310	195	513	440	279	1234	127	288	1026	218
RTOR Reduction (vph)	0	182	0	0	0	206	0	12	0	0	32	0
Lane Group Flow (vph)	235	439	0	195	513	234	279	1349	0	288	1212	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	26.6	19.6		7.0	19.6	19.6	11.4	35.8		11.7	35.1	
Effective Green, g (s)	26.6	19.6		7.0	19.6	19.6	11.4	35.8		11.7	35.1	
Actuated g/C Ratio	0.28	0.21		0.07	0.21	0.21	0.12	0.38		0.12	0.37	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	279	678		255	1059	325	420	1902		426	1840	
v/s Ratio Prot	c0.06	0.13		0.06	0.10		0.08	c0.27		c0.08	0.24	
v/s Ratio Perm	c0.17					0.15						
v/c Ratio	0.84	0.65		0.76	0.48	0.72	0.66	0.71		0.68	0.66	
Uniform Delay, d1	30.0	34.5		43.2	33.2	35.2	40.0	25.2		39.8	25.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.0	2.1		12.8	0.4	7.7	3.9	2.3		4.2	1.9	
Delay (s)	50.0	36.7		56.0	33.6	42.8	43.9	27.4		44.1	26.8	
Level of Service	D	D		E	C	D	D	C		D	C	
Approach Delay (s/veh)		40.3			40.9			30.2			30.1	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	558	54	1	1072	64	18	0	1	49	0	89
Future Volume (vph)	110	558	54	1	1072	64	18	0	1	49	0	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00						0.99	
Frt		0.987			0.992			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1608	4558	0	0	4574	0	1593	1425	0	1624	1434	0
Flt Permitted	0.152				0.940		0.604			0.757		
Satd. Flow (perm)	256	4558	0	0	4299	0	1013	1425	0	1294	1434	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		32			14			225			332	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			162.0			285.4	
Travel Time (s)		7.1			17.4			14.6			25.7	
Confl. Peds. (#/hr)	18					18						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	116	587	57	1	1128	67	19	0	1	52	0	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	644	0	0	1196	0	19	1	0	52	94	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

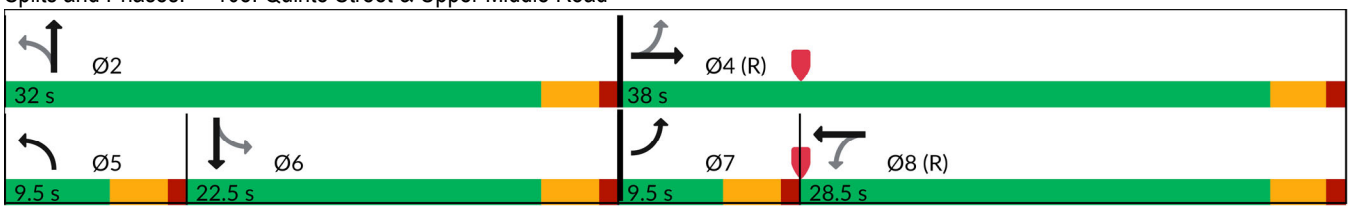


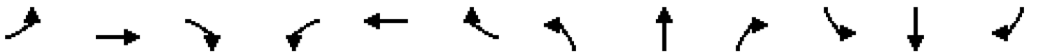
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	9.5	38.0		28.5	28.5		9.5	32.0		22.5	22.5	
Total Split (%)	13.6%	54.3%		40.7%	40.7%		13.6%	45.7%		32.1%	32.1%	
Maximum Green (s)	5.5	34.0		24.5	24.5		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	34.0	34.0			26.4		28.0	28.0		26.1	26.1	
Actuated g/C Ratio	0.49	0.49			0.38		0.40	0.40		0.37	0.37	
v/c Ratio	0.50	0.29			0.73		0.04	0.00		0.11	0.13	
Control Delay (s/veh)	17.9	10.6			22.5		13.1	0.0		16.9	0.3	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	17.9	10.6			22.5		13.1	0.0		16.9	0.3	
LOS	B	B			C		B	A		B	A	
Approach Delay (s/veh)		11.7			22.5			12.5			6.3	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	8.4	17.3			52.9		1.6	0.0		4.4	0.0	
Queue Length 95th (m)	17.1	24.5			69.6		5.3	0.0		13.8	0.0	
Internal Link Dist (m)		94.7			266.7			138.0			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	230	2230			1629		450	705		482	742	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.50	0.29			0.73		0.04	0.00		0.11	0.13	

Intersection Summary			
Area Type:	CBD		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 17.4		Intersection LOS: B	

Intersection Capacity Utilization 63.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 105: Quinte Street & Upper Middle Road



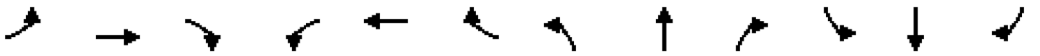


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	558	54	1	1072	64	18	0	1	49	0	89
Future Volume (vph)	110	558	54	1	1072	64	18	0	1	49	0	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	4557			4572		1593	1425		1625	1434	
Flt Permitted	0.15	1.00			0.94		0.60	1.00		0.76	1.00	
Satd. Flow (perm)	256	4557			4296		1012	1425		1295	1434	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	116	587	57	1	1128	67	19	0	1	52	0	94
RTOR Reduction (vph)	0	18	0	0	10	0	0	1	0	0	59	0
Lane Group Flow (vph)	116	626	0	0	1186	0	19	0	0	52	35	0
Confl. Peds. (#/hr)	18					18						1
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	30.8	30.8			22.4		31.2	31.2		26.1	26.1	
Effective Green, g (s)	30.8	30.8			22.4		31.2	31.2		26.1	26.1	
Actuated g/C Ratio	0.44	0.44			0.32		0.45	0.45		0.37	0.37	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	2005			1374		460	635		482	534	
v/s Ratio Prot	c0.04	0.14					c0.00	0.00			0.02	
v/s Ratio Perm	0.22				c0.28		0.02			c0.04		
v/c Ratio	0.59	0.31			0.86		0.04	0.00		0.11	0.07	
Uniform Delay, d1	13.9	12.7			22.4		11.0	10.8		14.3	14.1	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.4	0.4			7.4		0.0	0.0		0.5	0.2	
Delay (s)	18.3	13.1			29.8		11.0	10.8		14.8	14.3	
Level of Service	B	B			C		B	B		B	B	
Approach Delay (s/veh)		13.9			29.8			11.0			14.5	
Approach LOS		B			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	431	31	6	955	196	32	2	7	184	2	151
Future Volume (vph)	123	431	31	6	955	196	32	2	7	184	2	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.990			0.974			0.883			0.852	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5081	0	1770	4967	0	1770	1645	0	3502	1572	0
Flt Permitted	0.161			0.468						0.625		
Satd. Flow (perm)	299	5081	0	872	4967	0	1863	1645	0	2304	1572	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			49			7			157	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			158.3			244.6	
Travel Time (s)		17.4			14.7			14.2			22.0	
Confl. Peds. (#/hr)	12					12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	128	449	32	6	995	204	33	2	7	192	2	157
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	481	0	6	1199	0	33	9	0	192	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

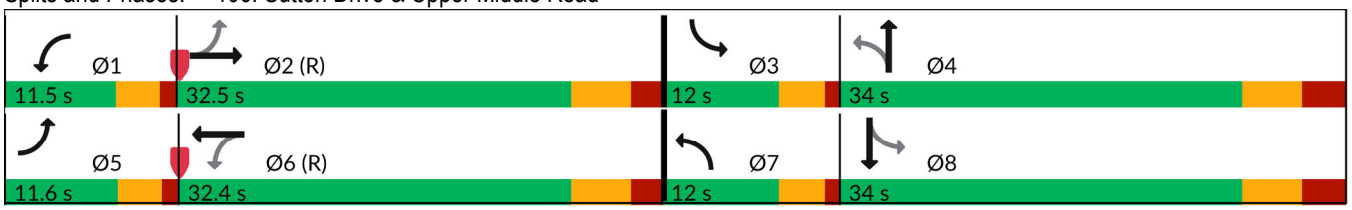


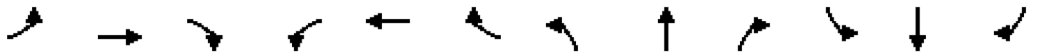
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		11.5	31.0		12.0	34.0		12.0	34.0	
Total Split (s)	11.6	32.5		11.5	32.4		12.0	34.0		12.0	34.0	
Total Split (%)	12.9%	36.1%		12.8%	36.0%		13.3%	37.8%		13.3%	37.8%	
Maximum Green (s)	7.6	26.5		7.5	26.4		8.0	27.0		8.0	27.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	62.9	58.8		57.8	48.8		11.0	8.8		18.2	8.8	
Actuated g/C Ratio	0.70	0.65		0.64	0.54		0.12	0.10		0.20	0.10	
v/c Ratio	0.37	0.14		0.01	0.44		0.15	0.05		0.29	0.54	
Control Delay (s/veh)	8.9	7.6		6.5	13.8		33.0	23.9		29.1	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	8.9	7.6		6.5	13.8		33.0	23.9		29.1	13.9	
LOS	A	A		A	B		C	C		C	B	
Approach Delay (s/veh)		7.9			13.8			31.0			22.2	
Approach LOS		A			B			C			C	
Queue Length 50th (m)	7.8	11.4		0.4	48.0		5.8	0.3		14.2	0.4	
Queue Length 95th (m)	16.5	24.4		1.9	69.7		11.3	4.8		21.5	18.1	
Internal Link Dist (m)		266.7			220.7			134.3			220.6	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	347	3322		639	2714		219	498		669	581	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.37	0.14		0.01	0.44		0.15	0.02		0.29	0.27	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 13.8		Intersection LOS: B	

Intersection Capacity Utilization 63.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 106: Sutton Drive & Upper Middle Road

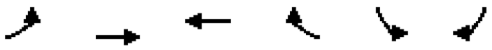




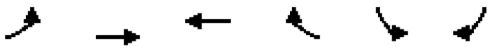
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	431	31	6	955	196	32	2	7	184	2	151
Future Volume (vph)	123	431	31	6	955	196	32	2	7	184	2	151
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	0.97		1.00	0.88		1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	5081		1770	4970		1770	1645		3502	1572	
Flt Permitted	0.16	1.00		0.47	1.00		1.00	1.00		0.63	1.00	
Satd. Flow (perm)	300	5081		871	4970		1863	1645		2304	1572	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	128	449	32	6	995	204	33	2	7	192	2	157
RTOR Reduction (vph)	0	6	0	0	25	0	0	7	0	0	135	0
Lane Group Flow (vph)	128	475	0	6	1174	0	33	2	0	192	24	0
Confl. Peds. (#/hr)	12					12						
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	55.4	50.0		44.6	43.2		7.2	2.4		21.6	12.8	
Effective Green, g (s)	55.4	50.0		44.6	43.2		7.2	2.4		21.6	12.8	
Actuated g/C Ratio	0.62	0.56		0.50	0.48		0.08	0.03		0.24	0.14	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	318	2822		445	2385		144	43		755	223	
v/s Ratio Prot	c0.04	0.09		0.00	c0.24		0.01	0.00		c0.04	0.02	
v/s Ratio Perm	0.21			0.01			0.01			c0.02		
v/c Ratio	0.40	0.17		0.01	0.49		0.23	0.05		0.25	0.11	
Uniform Delay, d1	8.5	9.8		11.5	15.9		38.8	42.7		27.5	33.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	0.1		0.0	0.7		0.8	0.5		0.2	0.2	
Delay (s)	9.4	9.9		11.5	16.7		39.6	43.2		27.7	33.8	
Level of Service	A	A		B	B		D	D		C	C	
Approach Delay (s/veh)		9.8			16.6			40.4			30.5	
Approach LOS		A			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	568	1073	73	56	29
Future Volume (vph)	32	568	1073	73	56	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor	1.00		1.00			
Frt			0.990		0.953	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1805	5187	5125	0	1729	0
Flt Permitted	0.187				0.968	
Satd. Flow (perm)	355	5187	5125	0	1729	0
Right Turn on Red				Yes		Yes
Satd. Flow (RTOR)			28		31	
Link Speed (k/h)		60	60		40	
Link Distance (m)		198.8	464.6		226.6	
Travel Time (s)		11.9	27.9		20.4	
Confl. Peds. (#/hr)	7			7		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Adj. Flow (vph)	34	598	1129	77	59	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	598	1206	0	90	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Number of Detectors	1	2	2		1	
Detector Template	Left	Thru	Thru		Left	
Leading Detector (m)	2.0	10.0	10.0		2.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6	0.6		2.0	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	
Detector 2 Position(m)		9.4	9.4			
Detector 2 Size(m)		0.6	0.6			
Detector 2 Type		Cl+Ex	Cl+Ex			
Detector 2 Channel						
Detector 2 Extend (s)		0.0	0.0			

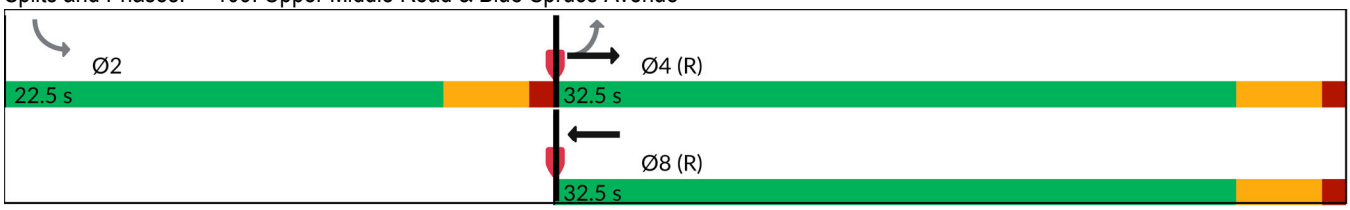


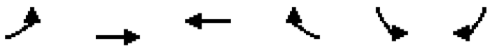
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Detector Phase	4	4	8		2	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0		5.0	
Minimum Split (s)	22.5	22.5	22.5		22.5	
Total Split (s)	32.5	32.5	32.5		22.5	
Total Split (%)	59.1%	59.1%	59.1%		40.9%	
Maximum Green (s)	28.0	28.0	28.0		18.0	
Yellow Time (s)	3.5	3.5	3.5		3.5	
All-Red Time (s)	1.0	1.0	1.0		1.0	
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	
Total Lost Time (s)	4.5	4.5	4.5		4.5	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Recall Mode	C-Max	C-Max	C-Max		Max	
Walk Time (s)	7.0	7.0	7.0		7.0	
Flash Don't Walk (s)	11.0	11.0	11.0		11.0	
Pedestrian Calls (#/hr)	0	0	0		0	
Act Effct Green (s)	28.0	28.0	28.0		18.0	
Actuated g/C Ratio	0.51	0.51	0.51		0.33	
v/c Ratio	0.19	0.23	0.46		0.15	
Control Delay (s/veh)	10.6	7.8	9.1		10.3	
Queue Delay	0.0	0.0	0.0		0.0	
Total Delay (s/veh)	10.6	7.8	9.1		10.3	
LOS	B	A	A		B	
Approach Delay (s/veh)		7.9	9.1		10.3	
Approach LOS		A	A		B	
Queue Length 50th (m)	1.8	11.5	26.2		4.2	
Queue Length 95th (m)	6.6	16.9	35.4		12.4	
Internal Link Dist (m)		174.8	440.6		202.6	
Turn Bay Length (m)	100.0					
Base Capacity (vph)	180	2640	2622		586	
Starvation Cap Reductn	0	0	0		0	
Spillback Cap Reductn	0	0	0		0	
Storage Cap Reductn	0	0	0		0	
Reduced v/c Ratio	0.19	0.23	0.46		0.15	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBT, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.46	
Intersection Signal Delay (s/veh): 8.8	Intersection LOS: A

Intersection Capacity Utilization 39.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 109: Upper Middle Road & Blue Spruce Avenue





Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	568	1073	73	56	29
Future Volume (vph)	32	568	1073	73	56	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5		4.5	
Lane Util. Factor	1.00	0.91	0.91		1.00	
Frpb, ped/bikes	1.00	1.00	1.00		1.00	
Flpb, ped/bikes	1.00	1.00	1.00		1.00	
Frt	1.00	1.00	0.99		0.95	
Flt Protected	0.95	1.00	1.00		0.97	
Satd. Flow (prot)	1802	5187	5127		1730	
Flt Permitted	0.19	1.00	1.00		0.97	
Satd. Flow (perm)	355	5187	5127		1730	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	34	598	1129	77	59	31
RTOR Reduction (vph)	0	0	14	0	21	0
Lane Group Flow (vph)	34	598	1192	0	69	0
Confl. Peds. (#/hr)	7			7		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%
Turn Type	Perm	NA	NA		Perm	
Protected Phases		4	8			
Permitted Phases	4				2	
Actuated Green, G (s)	28.0	28.0	28.0		18.0	
Effective Green, g (s)	28.0	28.0	28.0		18.0	
Actuated g/C Ratio	0.51	0.51	0.51		0.33	
Clearance Time (s)	4.5	4.5	4.5		4.5	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	180	2640	2610		566	
v/s Ratio Prot		0.12	c0.23			
v/s Ratio Perm	0.10				c0.04	
v/c Ratio	0.19	0.23	0.46		0.12	
Uniform Delay, d1	7.3	7.5	8.6		13.0	
Progression Factor	1.00	1.00	1.00		1.00	
Incremental Delay, d2	2.3	0.2	0.6		0.4	
Delay (s)	9.6	7.7	9.2		13.4	
Level of Service	A	A	A		B	
Approach Delay (s/veh)		7.8	9.2		13.4	
Approach LOS		A	A		B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	46	37	1100	48	14	614
Future Volume (vph)	46	37	1100	48	14	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	145.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	1.00	0.91	0.91	1.00	0.91
Ped Bike Factor			1.00		1.00	
Frt	0.939		0.994			
Flt Protected	0.973				0.950	
Satd. Flow (prot)	1736	0	5151	0	1805	5187
Flt Permitted	0.973				0.213	
Satd. Flow (perm)	1736	0	5151	0	405	5187
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)	19		17			
Link Speed (k/h)	40		60			60
Link Distance (m)	160.8		716.4			464.6
Travel Time (s)	14.5		43.0			27.9
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	49	40	1183	52	15	660
Shared Lane Traffic (%)						
Lane Group Flow (vph)	89	0	1235	0	15	660
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1		2		1	2
Detector Template	Left		Thru		Left	Thru
Leading Detector (m)	2.0		10.0		2.0	10.0
Trailing Detector (m)	0.0		0.0		0.0	0.0
Detector 1 Position(m)	0.0		0.0		0.0	0.0
Detector 1 Size(m)	2.0		0.6		2.0	0.6
Detector 1 Type	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0		0.0	0.0
Detector 1 Queue (s)	0.0		0.0		0.0	0.0
Detector 1 Delay (s)	0.0		0.0		0.0	0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

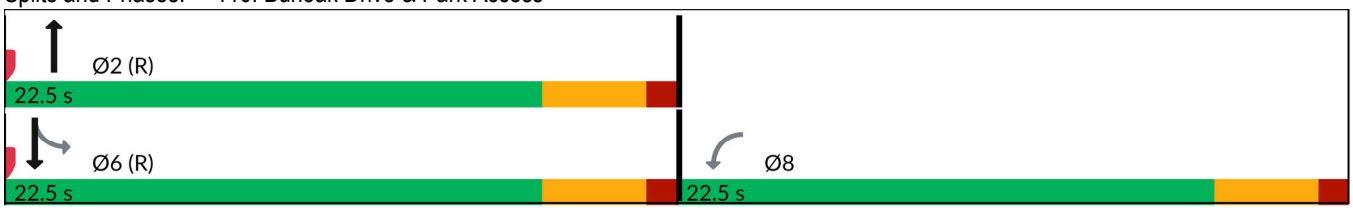


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Detector Phase	8		2		6	6
Switch Phase						
Minimum Initial (s)	5.0		5.0		5.0	5.0
Minimum Split (s)	22.5		22.5		22.5	22.5
Total Split (s)	22.5		22.5		22.5	22.5
Total Split (%)	50.0%		50.0%		50.0%	50.0%
Maximum Green (s)	18.0		18.0		18.0	18.0
Yellow Time (s)	3.5		3.5		3.5	3.5
All-Red Time (s)	1.0		1.0		1.0	1.0
Lost Time Adjust (s)	0.0		0.0		0.0	0.0
Total Lost Time (s)	4.5		4.5		4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Recall Mode	None		C-Max		C-Max	C-Max
Walk Time (s)	7.0		7.0		7.0	7.0
Flash Don't Walk (s)	11.0		11.0		11.0	11.0
Pedestrian Calls (#/hr)	0		0		0	0
Act Effct Green (s)	7.4		34.5		34.5	34.5
Actuated g/C Ratio	0.16		0.77		0.77	0.77
v/c Ratio	0.30		0.31		0.05	0.17
Control Delay (s/veh)	15.7		1.9		4.4	3.1
Queue Delay	0.0		0.0		0.0	0.0
Total Delay (s/veh)	15.7		1.9		4.4	3.1
LOS	B		A		A	A
Approach Delay (s/veh)	15.7		1.9			3.1
Approach LOS	B		A			A
Queue Length 50th (m)	5.2		9.4		0.4	6.3
Queue Length 95th (m)	13.5		11.0		2.2	11.9
Internal Link Dist (m)	136.8		692.4			440.6
Turn Bay Length (m)					145.0	
Base Capacity (vph)	705		3955		310	3979
Starvation Cap Reductn	0		0		0	0
Spillback Cap Reductn	0		0		0	0
Storage Cap Reductn	0		0		0	0
Reduced v/c Ratio	0.13		0.31		0.05	0.17

Intersection Summary	
Area Type:	Other
Cycle Length: 45	
Actuated Cycle Length: 45	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.31	
Intersection Signal Delay (s/veh): 2.9	Intersection LOS: A

Intersection Capacity Utilization 34.6% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 110: Burloak Drive & Park Access

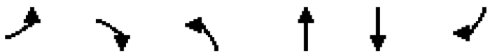




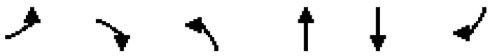
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	46	37	1100	48	14	614
Future Volume (vph)	46	37	1100	48	14	614
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	1.00		0.91		1.00	0.91
Frpb, ped/bikes	1.00		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Frt	0.94		0.99		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	1737		5150		1805	5187
Flt Permitted	0.97		1.00		0.21	1.00
Satd. Flow (perm)	1737		5150		405	5187
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	49	40	1183	52	15	660
RTOR Reduction (vph)	17	0	5	0	0	0
Lane Group Flow (vph)	72	0	1230	0	15	660
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Perm		NA		Perm	NA
Protected Phases			2			6
Permitted Phases	8				6	
Actuated Green, G (s)	5.1		30.9		30.9	30.9
Effective Green, g (s)	5.1		30.9		30.9	30.9
Actuated g/C Ratio	0.11		0.69		0.69	0.69
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	196		3536		278	3561
v/s Ratio Prot			c0.24			0.13
v/s Ratio Perm	c0.04				0.04	
v/c Ratio	0.37		0.35		0.05	0.19
Uniform Delay, d1	18.5		2.9		2.3	2.5
Progression Factor	1.00		0.55		1.00	1.00
Incremental Delay, d2	1.2		0.3		0.4	0.1
Delay (s)	19.6		1.9		2.7	2.6
Level of Service	B		A		A	A
Approach Delay (s/veh)	19.6		1.9			2.6
Approach LOS	B		A			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	2.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	45.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	34.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	209	394	1074	607	41
Future Volume (vph)	68	209	394	1074	607	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.991	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	3467	5187	5134	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	3453	5187	5134	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		220			12	
Link Speed (k/h)	60			60	60	
Link Distance (m)	869.1			453.2	716.4	
Travel Time (s)	52.1			27.2	43.0	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	72	220	415	1131	639	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	220	415	1131	682	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

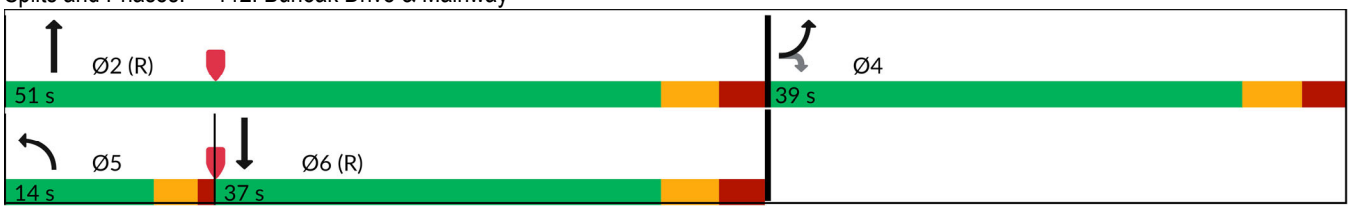


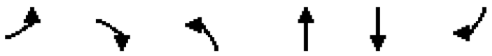
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	10.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	9.7	9.7	18.8	66.3	43.6	
Actuated g/C Ratio	0.11	0.11	0.21	0.74	0.48	
v/c Ratio	0.37	0.59	0.57	0.30	0.27	
Control Delay (s/veh)	42.3	12.4	44.1	4.3	17.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	42.3	12.4	44.1	4.3	17.7	
LOS	D	B	D	A	B	
Approach Delay (s/veh)	19.8			15.0	17.7	
Approach LOS	B			B	B	
Queue Length 50th (m)	12.5	0.0	41.8	20.1	24.6	
Queue Length 95th (m)	24.7	19.9	57.2	29.7	31.0	
Internal Link Dist (m)	845.1			429.2	692.4	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	641	716	722	3822	2490	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.11	0.31	0.57	0.30	0.27	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay (s/veh): 16.2		Intersection LOS: B	

Intersection Capacity Utilization 57.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 112: Burloak Drive & Mainway

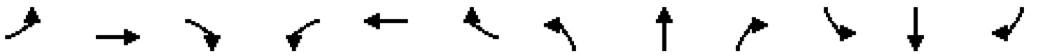




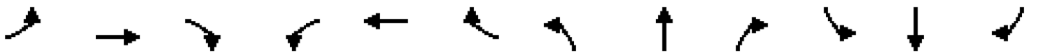
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	209	394	1074	607	41
Future Volume (vph)	68	209	394	1074	607	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	3467	5187	5132	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	3467	5187	5132	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	72	220	415	1131	639	43
RTOR Reduction (vph)	0	196	0	0	6	0
Lane Group Flow (vph)	72	24	415	1131	676	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	9.7	9.7	18.8	66.3	43.5	
Effective Green, g (s)	9.7	9.7	18.8	66.3	43.5	
Actuated g/C Ratio	0.11	0.11	0.21	0.74	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	194	174	724	3821	2480	
v/s Ratio Prot	c0.04		c0.12	c0.22	0.13	
v/s Ratio Perm		0.01				
v/c Ratio	0.37	0.14	0.57	0.30	0.27	
Uniform Delay, d1	37.3	36.4	32.0	4.0	13.8	
Progression Factor	1.00	1.00	1.26	0.98	1.24	
Incremental Delay, d2	1.2	0.4	1.1	0.2	0.3	
Delay (s)	38.5	36.7	41.5	4.1	17.5	
Level of Service	D	D	D	A	B	
Approach Delay (s/veh)	37.2			14.1	17.5	
Approach LOS	D			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	126	13	5	271	56	19	34	9	78	37	14
Future Volume (vph)	14	126	13	5	271	56	19	34	9	78	37	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.986			0.975			0.981			0.986	
Flt Protected	0.950				0.999			0.985			0.971	
Satd. Flow (prot)	1770	3551	0	0	3504	0	0	1816	0	0	1783	0
Flt Permitted	0.456				0.952			0.914			0.806	
Satd. Flow (perm)	849	3551	0	0	3339	0	0	1685	0	0	1480	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			46			9			12	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		153.9			869.1			154.8			210.9	
Travel Time (s)		9.2			52.1			13.9			19.0	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	14	129	13	5	277	57	19	35	9	80	38	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	142	0	0	339	0	0	63	0	0	132	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

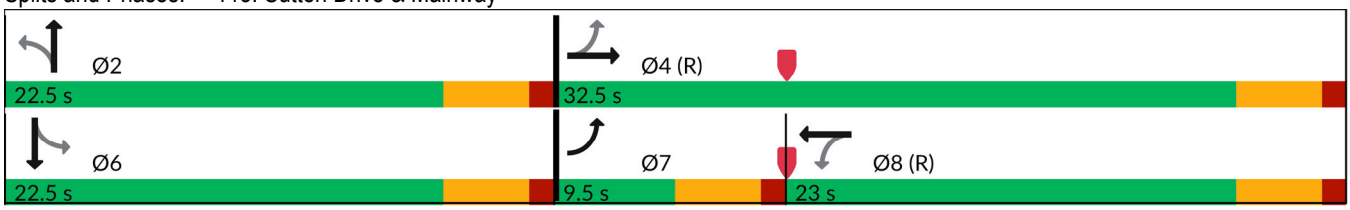


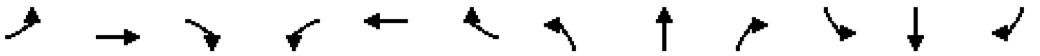
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	9.5	32.5		23.0	23.0		22.5	22.5		22.5	22.5	
Total Split (%)	17.3%	59.1%		41.8%	41.8%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.0	28.0		18.5	18.5		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	28.0	28.0			26.1			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.47			0.33			0.33	
v/c Ratio	0.03	0.08			0.21			0.11			0.27	
Control Delay (s/veh)	6.9	6.4			8.5			12.2			14.2	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	6.9	6.4			8.5			12.2			14.2	
LOS	A	A			A			B			B	
Approach Delay (s/veh)		6.5			8.5			12.2			14.2	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	0.7	3.3			7.8			3.9			9.1	
Queue Length 95th (m)	2.9	6.8			20.0			10.9			20.6	
Internal Link Dist (m)		129.9			845.1			130.8			186.9	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	515	1814			1608			557			492	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.03	0.08			0.21			0.11			0.27	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 32.5 (59%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.27	
Intersection Signal Delay (s/veh): 9.5	Intersection LOS: A

Intersection Capacity Utilization 35.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 113: Sutton Drive & Mainway

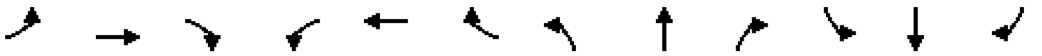




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	126	13	5	271	56	19	34	9	78	37	14
Future Volume (vph)	14	126	13	5	271	56	19	34	9	78	37	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.97			0.98			0.99	
Flt Protected	0.95	1.00			1.00			0.99			0.97	
Satd. Flow (prot)	1770	3552			3504			1816			1782	
Flt Permitted	0.46	1.00			0.95			0.91			0.81	
Satd. Flow (perm)	850	3552			3339			1684			1480	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	14	129	13	5	277	57	19	35	9	80	38	14
RTOR Reduction (vph)	0	6	0	0	27	0	0	6	0	0	8	0
Lane Group Flow (vph)	14	136	0	0	312	0	0	57	0	0	124	0
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.0	28.0			22.5			18.0			18.0	
Effective Green, g (s)	28.0	28.0			22.5			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.41			0.33			0.33	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	449	1808			1365			551			484	
v/s Ratio Prot	0.00	c0.04										
v/s Ratio Perm	0.02				c0.09			0.03			c0.08	
v/c Ratio	0.03	0.08			0.23			0.10			0.26	
Uniform Delay, d1	6.9	6.9			10.6			12.9			13.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	0.0	0.1			0.4			0.4			1.3	
Delay (s)	6.9	7.0			11.0			13.3			14.9	
Level of Service	A	A			B			B			B	
Approach Delay (s/veh)		7.0			11.0			13.3			14.9	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



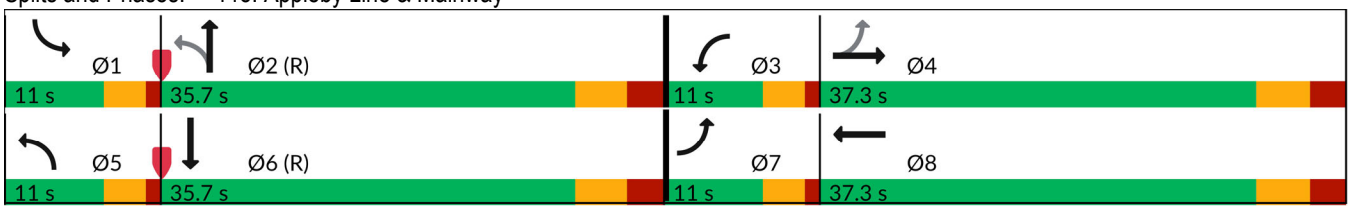
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	77	162	85	210	86	174	1298	65	60	1293	128
Future Volume (vph)	151	77	162	85	210	86	174	1298	65	60	1293	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.898			0.956			0.993			0.987	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3193	0	3433	3390	0	1805	5094	0	3433	5045	0
Flt Permitted	0.449			0.950			0.107			0.950		
Satd. Flow (perm)	853	3193	0	3431	3390	0	203	5094	0	3432	5045	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		164			70			8			18	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	153	78	164	86	212	87	176	1311	66	61	1306	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	242	0	86	299	0	176	1377	0	61	1435	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

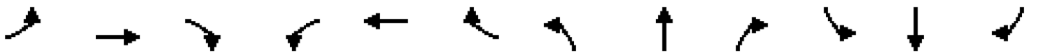
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	37.3		11.0	37.3		11.0	35.7		11.0	35.7	
Total Split (%)	11.6%	39.3%		11.6%	39.3%		11.6%	37.6%		11.6%	37.6%	
Maximum Green (s)	7.0	31.0		7.0	31.0		7.0	29.4		7.0	29.4	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	22.0	14.1		7.0	11.9		61.1	50.2		7.5	45.3	
Actuated g/C Ratio	0.23	0.15		0.07	0.13		0.64	0.53		0.08	0.48	
v/c Ratio	0.57	0.39		0.34	0.62		0.58	0.51		0.23	0.59	
Control Delay (s/veh)	37.1	14.9		45.8	35.2		30.7	22.6		42.9	20.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	37.1	14.9		45.8	35.2		30.7	22.6		42.9	20.0	
LOS	D	B		D	D		C	C		D	B	
Approach Delay (s/veh)		23.5			37.6			23.6			20.9	
Approach LOS		C			D			C			C	
Queue Length 50th (m)	23.7	7.3		8.4	22.4		27.5	58.8		5.9	70.9	
Queue Length 95th (m)	38.6	18.1		16.1	34.8		50.8	95.3		12.2	98.6	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	267	1152		252	1153		303	2694		271	2412	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.57	0.21		0.34	0.26		0.58	0.51		0.23	0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.62	
Intersection Signal Delay (s/veh): 23.9	Intersection LOS: C

Intersection Capacity Utilization 72.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 115: Appleby Line & Mainway



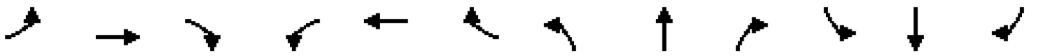


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	77	162	85	210	86	174	1298	65	60	1293	128
Future Volume (vph)	151	77	162	85	210	86	174	1298	65	60	1293	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.90		1.00	0.96		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3194		3433	3391		1805	5093		3433	5042	
Flt Permitted	0.45	1.00		0.95	1.00		0.11	1.00		0.95	1.00	
Satd. Flow (perm)	853	3194		3433	3391		204	5093		3433	5042	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	153	78	164	86	212	87	176	1311	66	61	1306	129
RTOR Reduction (vph)	0	140	0	0	61	0	0	4	0	0	10	0
Lane Group Flow (vph)	153	102	0	86	238	0	176	1373	0	61	1425	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	21.1	14.1		5.6	12.7		58.7	48.6		6.1	44.5	
Effective Green, g (s)	21.1	14.1		5.6	12.7		58.7	48.6		6.1	44.5	
Actuated g/C Ratio	0.22	0.15		0.06	0.13		0.62	0.51		0.06	0.47	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	259	474		202	453		297	2605		220	2361	
v/s Ratio Prot	c0.04	0.03		0.03	0.07		c0.06	0.27		0.02	0.28	
v/s Ratio Perm	c0.09						c0.30					
v/c Ratio	0.59	0.22		0.43	0.53		0.59	0.53		0.28	0.60	
Uniform Delay, d1	31.5	35.6		43.1	38.3		11.6	15.5		42.3	18.7	
Progression Factor	1.00	1.00		1.00	1.00		2.20	1.40		1.00	1.00	
Incremental Delay, d2	3.6	0.2		1.4	1.1		2.9	0.7		0.7	1.2	
Delay (s)	35.0	35.8		44.6	39.5		28.4	22.5		43.0	19.9	
Level of Service	D	D		D	D		C	C		D	B	
Approach Delay (s/veh)		35.5			40.6			23.2			20.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	15	33	155	14	84	28	1395	145	75	1375	15
Future Volume (vph)	37	15	33	155	14	84	28	1395	145	75	1375	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.947			0.955			0.986			0.998	
Flt Protected		0.979			0.970		0.950			0.950		
Satd. Flow (prot)	0	1732	0	0	1728	0	1805	5055	0	1805	5124	0
Flt Permitted		0.792			0.765		0.166			0.087		
Satd. Flow (perm)	0	1399	0	0	1362	0	315	5055	0	165	5124	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		16			34			22			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	39	16	35	165	15	89	30	1484	154	80	1463	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	269	0	30	1638	0	80	1479	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

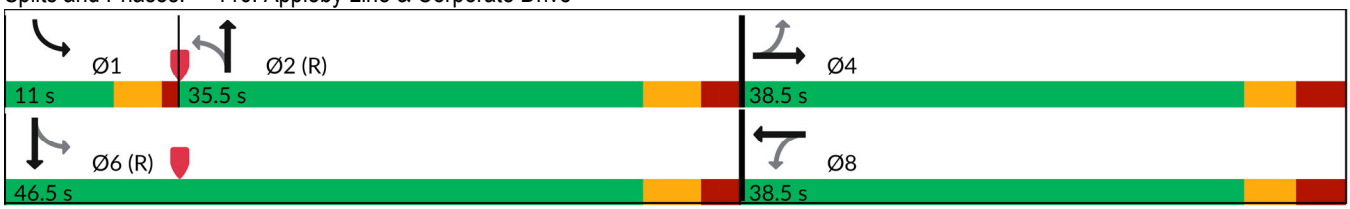


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.5	38.5		38.5	38.5		35.5	35.5		11.0	46.5	
Total Split (%)	45.3%	45.3%		45.3%	45.3%		41.8%	41.8%		12.9%	54.7%	
Maximum Green (s)	32.0	32.0		32.0	32.0		29.5	29.5		7.0	40.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		20.5			20.5		42.6	42.6		54.0	52.0	
Actuated g/C Ratio		0.24			0.24		0.50	0.50		0.64	0.61	
v/c Ratio		0.26			0.76		0.19	0.64		0.32	0.47	
Control Delay (s/veh)		21.2			39.1		21.1	19.5		11.1	10.6	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		21.2			39.1		21.1	19.5		11.1	10.6	
LOS		C			D		C	B		B	B	
Approach Delay (s/veh)		21.2			39.1			19.5			10.6	
Approach LOS		C			D			B			B	
Queue Length 50th (m)		10.2			37.4		2.8	74.6		4.7	46.2	
Queue Length 95th (m)		19.7			57.1		11.6	#126.6		12.9	74.2	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		536			533		157	2544		250	3134	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.17			0.50		0.19	0.64		0.32	0.47	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay (s/veh): 17.2	Intersection LOS: B

Intersection Capacity Utilization 72.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

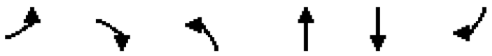
Splits and Phases: 116: Appleby Line & Corporate Drive



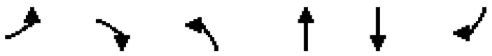
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	15	33	155	14	84	28	1395	145	75	1375	15
Future Volume (vph)	37	15	33	155	14	84	28	1395	145	75	1375	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1730			1728		1803	5055		1805	5126	
Flt Permitted		0.79			0.76		0.17	1.00		0.09	1.00	
Satd. Flow (perm)		1399			1362		315	5055		166	5126	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	39	16	35	165	15	89	30	1484	154	80	1463	16
RTOR Reduction (vph)	0	12	0	0	26	0	0	11	0	0	1	0
Lane Group Flow (vph)	0	78	0	0	243	0	30	1627	0	80	1478	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		20.5			20.5		41.8	41.8		52.0	52.0	
Effective Green, g (s)		20.5			20.5		41.8	41.8		52.0	52.0	
Actuated g/C Ratio		0.24			0.24		0.49	0.49		0.61	0.61	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		337			328		154	2485		221	3135	
v/s Ratio Prot								c0.32		0.03	c0.29	
v/s Ratio Perm		0.06			c0.18		0.10			0.20		
v/c Ratio		0.23			0.74		0.19	0.65		0.36	0.47	
Uniform Delay, d1		25.9			29.8		12.1	16.2		9.8	9.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			8.7		2.8	1.4		1.0	0.5	
Delay (s)		26.3			38.5		14.9	17.6		10.8	9.5	
Level of Service		C			D		B	B		B	A	
Approach Delay (s/veh)		26.3			38.5			17.5			9.6	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	75	143	1176	693	11
Future Volume (vph)	12	75	143	1176	693	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			0.99		1.00	
Frt		0.850			0.998	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	3367	5187	5167	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1509	3347	5187	5167	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		80			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	13	80	152	1251	737	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	13	80	152	1251	749	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

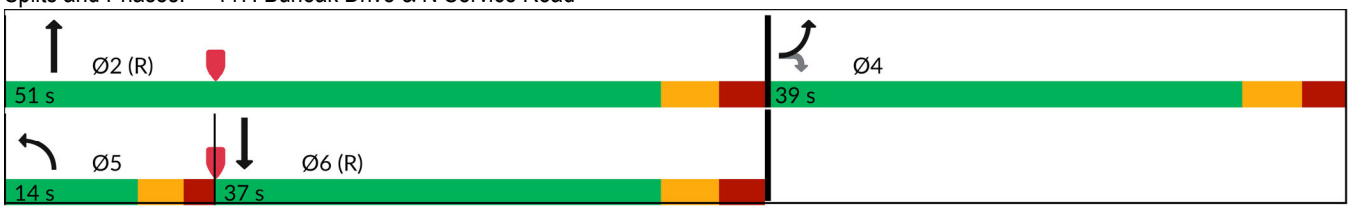


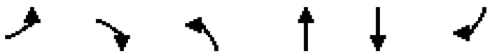
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	9.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.4	8.4	11.3	72.0	54.3	
Actuated g/C Ratio	0.09	0.09	0.13	0.80	0.60	
v/c Ratio	0.08	0.38	0.36	0.30	0.24	
Control Delay (s/veh)	37.9	14.7	38.0	3.4	6.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.9	14.7	38.0	3.4	6.9	
LOS	D	B	D	A	A	
Approach Delay (s/veh)	17.9			7.2	6.9	
Approach LOS	B			A	A	
Queue Length 50th (m)	2.2	0.0	13.6	21.4	12.4	
Queue Length 95th (m)	7.8	13.8	22.5	29.7	22.1	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	641	588	424	4149	3118	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.14	0.36	0.30	0.24	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.38			
Intersection Signal Delay (s/veh): 7.5		Intersection LOS: A	

Intersection Capacity Utilization 53.3% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	12	75	143	1176	693	11
Future Volume (vph)	12	75	143	1176	693	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	3367	5187	5164	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1509	3367	5187	5164	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	13	80	152	1251	737	12
RTOR Reduction (vph)	0	74	0	0	1	0
Lane Group Flow (vph)	13	6	152	1251	748	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	6.8	6.8	11.3	69.2	52.9	
Effective Green, g (s)	6.8	6.8	11.3	69.2	52.9	
Actuated g/C Ratio	0.08	0.08	0.13	0.77	0.59	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	136	114	422	3988	3035	
v/s Ratio Prot	c0.01		0.05	c0.24	0.14	
v/s Ratio Perm		0.00				
v/c Ratio	0.10	0.05	0.36	0.31	0.25	
Uniform Delay, d1	38.7	38.6	36.0	3.2	8.9	
Progression Factor	1.00	1.00	1.00	1.00	0.72	
Incremental Delay, d2	0.3	0.2	1.1	0.2	0.2	
Delay (s)	39.0	38.8	37.1	3.4	6.6	
Level of Service	D	D	D	A	A	
Approach Delay (s/veh)	38.8			7.0	6.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1824	1308	828	0	0	1097
Future Volume (vph)	1824	1308	828	0	0	1097
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor	1.00					
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2814	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3428	2814	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		19				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	1900	1363	863	0	0	1143
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1900	1363	863	0	0	1143
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

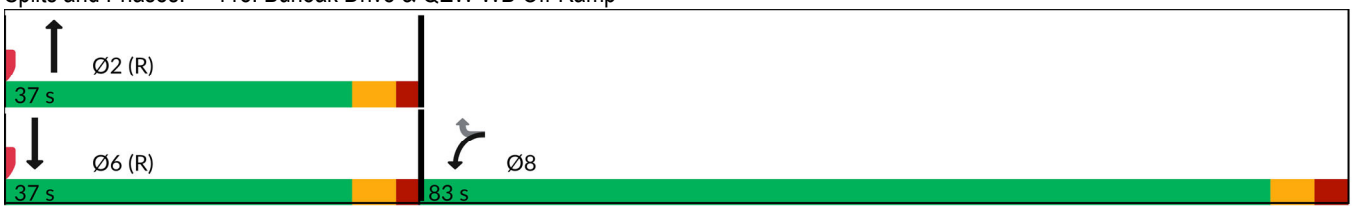


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	83.0	83.0	37.0			37.0
Total Split (%)	69.2%	69.2%	30.8%			30.8%
Maximum Green (s)	76.0	76.0	31.0			31.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	75.5	75.5	31.5			31.5
Actuated g/C Ratio	0.63	0.63	0.26			0.26
v/c Ratio	0.88	0.77	0.63			0.85
Control Delay (s/veh)	24.5	19.3	41.8			49.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	24.5	19.3	41.8			49.2
LOS	C	B	D			D
Approach Delay (s/veh)	22.3		41.8			49.2
Approach LOS	C		D			D
Queue Length 50th (m)	188.1	125.7	69.9			100.0
Queue Length 95th (m)	228.6	158.9	85.3			118.8
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	2174	1789	1360			1347
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.87	0.76	0.63			0.85

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 31.3	Intersection LOS: C

Intersection Capacity Utilization 84.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

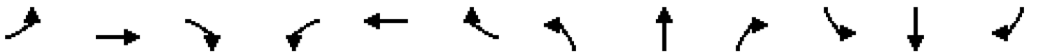




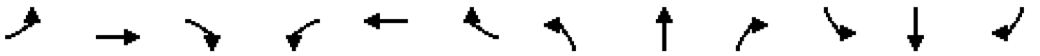
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1824	1308	828	0	0	1097
Future Volume (vph)	1824	1308	828	0	0	1097
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2814	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2814	5187			5136
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	1900	1362	863	0	0	1143
RTOR Reduction (vph)	0	7	0	0	0	0
Lane Group Flow (vph)	1900	1356	863	0	0	1143
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	75.5	75.5	31.5			31.5
Effective Green, g (s)	75.5	75.5	31.5			31.5
Actuated g/C Ratio	0.63	0.63	0.26			0.26
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	2159	1770	1361			1348
v/s Ratio Prot	c0.55		0.17			c0.22
v/s Ratio Perm		0.48				
v/c Ratio	0.88	0.77	0.63			0.85
Uniform Delay, d1	18.5	15.9	39.2			42.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	4.6	2.0	2.3			6.8
Delay (s)	23.0	18.0	41.4			48.8
Level of Service	C	B	D			D
Approach Delay (s/veh)	20.9		41.4			48.8
Approach LOS	C		D			D

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	84.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



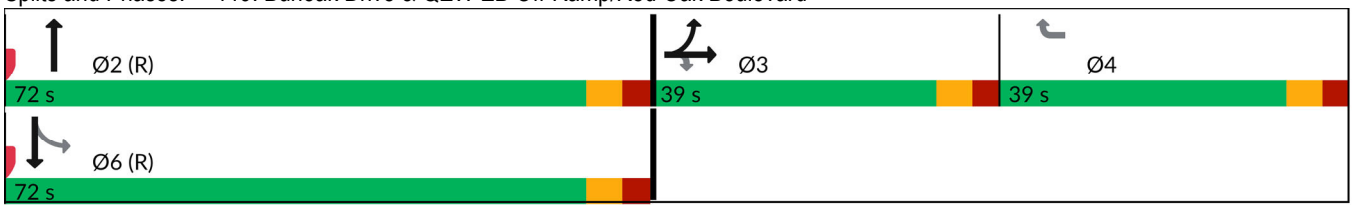
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	167	233	0	0	269	0	719	20	14	2232	0
Future Volume (vph)	133	167	233	0	0	269	0	719	20	14	2232	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.945	0.850			0.865		0.996				
Flt Protected	0.950	0.998										
Satd. Flow (prot)	1643	3042	1441	0	0	1611	0	5116	0	0	5136	0
Flt Permitted	0.950	0.998									0.930	
Satd. Flow (perm)	1643	3042	1441	0	0	1611	0	5116	0	0	4776	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		53	136			224		3				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	141	178	248	0	0	286	0	765	21	15	2374	0
Shared Lane Traffic (%)	10%		45%									
Lane Group Flow (vph)	127	304	136	0	0	286	0	786	0	0	2389	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	39.0	39.0	39.0			39.0		72.0		72.0	72.0	
Total Split (%)	26.0%	26.0%	26.0%			26.0%		48.0%		48.0%	48.0%	
Maximum Green (s)	32.0	32.0	32.0			32.0		65.0		65.0	65.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	0.0	0.0	0.0			7.0		7.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0	0.0			25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0			0		0		0	0	
Act Effct Green (s)	18.1	18.1	18.1			13.6		97.3			97.3	
Actuated g/C Ratio	0.12	0.12	0.12			0.09		0.65			0.65	
v/c Ratio	0.64	0.74	0.46			0.82		0.24			0.77	
Control Delay (s/veh)	77.2	62.9	13.8			34.5		12.2			22.5	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	77.2	62.9	13.8			34.5		12.2			22.5	
LOS	E	E	B			C		B			C	
Approach Delay (s/veh)		54.3			34.5			12.2			22.5	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	42.4	45.2	0.0			19.2		34.1			176.5	
Queue Length 95th (m)	65.1	62.0	22.3			51.6		56.7			270.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	350	690	414			519		3318			3097	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.36	0.44	0.33			0.55		0.24			0.77	

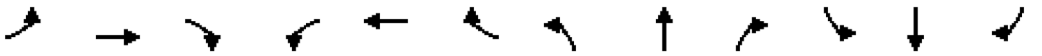
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay (s/veh): 25.8		Intersection LOS: C	
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

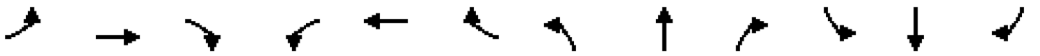


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	167	233	0	0	269	0	719	20	14	2232	0
Future Volume (vph)	133	167	233	0	0	269	0	719	20	14	2232	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	1.00	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1643	3040	1441			1611		5116			5134	
Flt Permitted	0.95	1.00	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1643	3040	1441			1611		5116			4778	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	141	178	248	0	0	286	0	765	21	15	2374	0
RTOR Reduction (vph)	0	47	120	0	0	204	0	1	0	0	0	0
Lane Group Flow (vph)	127	257	16	0	0	82	0	785	0	0	2389	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	18.1	18.1	18.1			13.6		97.3			97.3	
Effective Green, g (s)	18.1	18.1	18.1			13.6		97.3			97.3	
Actuated g/C Ratio	0.12	0.12	0.12			0.09		0.65			0.65	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	198	366	173			146		3318			3099	
v/s Ratio Prot	0.08	c0.08						0.15				
v/s Ratio Perm			0.01			c0.05					c0.50	
v/c Ratio	0.64	0.70	0.09			0.56		0.24			0.77	
Uniform Delay, d1	62.9	63.4	58.7			65.4		10.9			18.5	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	6.9	6.0	0.2			4.9		0.2			1.9	
Delay (s)	69.8	69.4	58.9			70.3		11.1			20.4	
Level of Service	E	E	E			E		B			C	
Approach Delay (s/veh)		67.0			70.3			11.1			20.4	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	13	47	85	33	48	34	1389	66	39	1444	40
Future Volume (vph)	48	13	47	85	33	48	34	1389	66	39	1444	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00		1.00		
Frt		0.883			0.911			0.993			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1718	0	1656	5096	0	1805	5116	0
Flt Permitted	0.702			0.479			0.123			0.128		
Satd. Flow (perm)	1333	1591	0	901	1718	0	214	5096	0	243	5116	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		49			50			8			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	50	14	49	89	34	50	35	1447	69	41	1504	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	50	63	0	89	84	0	35	1516	0	41	1546	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.1	35.1		11.5	46.6		11.5	36.9		11.5	36.9	
Total Split (%)	36.9%	36.9%		12.1%	49.1%		12.1%	38.8%		12.1%	38.8%	
Maximum Green (s)	29.0	29.0		7.5	40.5		7.5	30.3		7.5	30.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	9.7	9.7		20.4	18.9		66.4	60.9		66.5	60.9	
Actuated g/C Ratio	0.10	0.10		0.21	0.20		0.70	0.64		0.70	0.64	
v/c Ratio	0.37	0.31		0.34	0.22		0.14	0.46		0.14	0.47	
Control Delay (s/veh)	47.0	19.6		32.1	15.5		7.1	12.8		13.9	24.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	47.0	19.6		32.1	15.5		7.1	12.8		13.9	24.2	
LOS	D	B		C	B		A	B		B	C	
Approach Delay (s/veh)		31.7			24.1			12.7			23.9	
Approach LOS		C			C			B			C	
Queue Length 50th (m)	9.3	2.5		13.9	5.3		2.1	66.9		3.8	84.6	
Queue Length 95th (m)	20.3	14.2		25.8	16.7		6.1	89.8		m10.9	127.5	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	406	519		264	761		264	3269		293	3282	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.12		0.34	0.11		0.13	0.46		0.14	0.47	

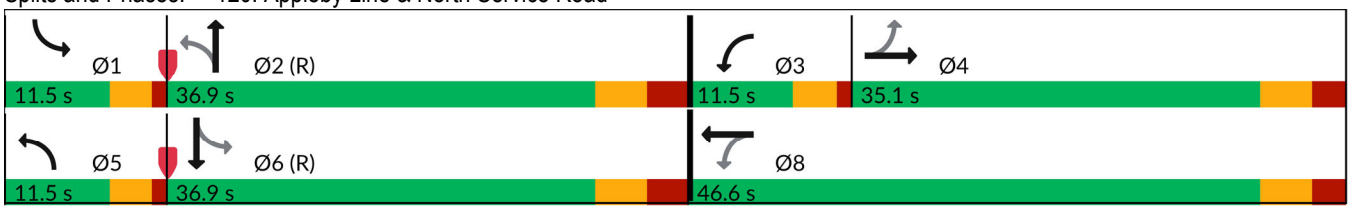
Intersection Summary	
Area Type:	Other
Cycle Length: 95	
Actuated Cycle Length: 95	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.47	
Intersection Signal Delay (s/veh): 19.1	Intersection LOS: B

Intersection Capacity Utilization 54.8% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	48	13	47	85	33	48	34	1389	66	39	1444	40
Future Volume (vph)	48	13	47	85	33	48	34	1389	66	39	1444	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1592		1787	1717		1656	5097		1805	5116	
Flt Permitted	0.70	1.00		0.48	1.00		0.12	1.00		0.13	1.00	
Satd. Flow (perm)	1333	1592		902	1717		215	5097		244	5116	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	50	14	49	89	34	50	35	1447	69	41	1504	42
RTOR Reduction (vph)	0	45	0	0	40	0	0	3	0	0	2	0
Lane Group Flow (vph)	50	18	0	89	44	0	35	1513	0	41	1544	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.1	8.1		18.1	18.1		60.1	55.9		60.3	56.0	
Effective Green, g (s)	8.1	8.1		18.1	18.1		60.1	55.9		60.3	56.0	
Actuated g/C Ratio	0.09	0.09		0.19	0.19		0.63	0.59		0.63	0.59	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	113	135		227	327		199	2999		225	3015	
v/s Ratio Prot		0.01		c0.02	0.03		0.01	0.30		c0.01	c0.30	
v/s Ratio Perm	0.04			c0.05			0.10			0.11		
v/c Ratio	0.44	0.13		0.39	0.13		0.18	0.50		0.18	0.51	
Uniform Delay, d1	41.3	40.2		32.8	31.9		7.3	11.4		7.2	11.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		2.19	1.91	
Incremental Delay, d2	2.8	0.5		1.1	0.2		0.4	0.6		0.3	0.5	
Delay (s)	44.1	40.7		34.0	32.1		7.7	12.1		16.1	22.4	
Level of Service	D	D		C	C		A	B		B	C	
Approach Delay (s/veh)		42.2			33.1			12.0			22.3	
Approach LOS		D			C			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	95.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



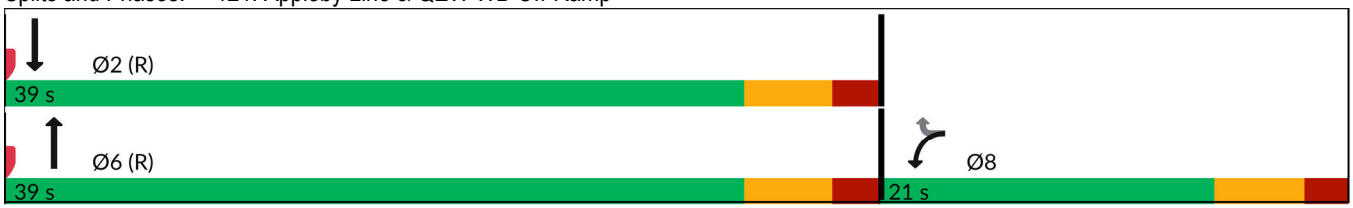
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	536	392	1921	0	0	1716
Future Volume (vph)	536	392	1921	0	0	1716
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2787	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2787	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		11				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	576	422	2066	0	0	1845
Shared Lane Traffic (%)						
Lane Group Flow (vph)	576	422	2066	0	0	1845
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	21.0	21.0	39.0			39.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	15.0	15.0	33.0			33.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	14.1	14.1	33.9			33.9
Actuated g/C Ratio	0.24	0.24	0.57			0.57
v/c Ratio	0.72	0.64	0.71			0.64
Control Delay (s/veh)	26.7	24.7	11.4			10.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	26.7	24.7	11.4			10.4
LOS	C	C	B			B
Approach Delay (s/veh)	25.9		11.4			10.4
Approach LOS	C		B			B
Queue Length 50th (m)	31.6	24.0	58.7			49.7
Queue Length 95th (m)	47.3	38.6	75.4			63.8
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	850	705	2928			2900
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.68	0.60	0.71			0.64

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay (s/veh): 13.9		Intersection LOS: B	
Intersection Capacity Utilization 62.4%		ICU Level of Service B	
Analysis Period (min) 15			

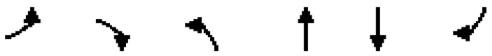
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



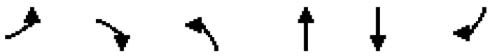


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	536	392	1921	0	0	1716
Future Volume (vph)	536	392	1921	0	0	1716
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2787	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2787	5187			5136
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	576	422	2066	0	0	1845
RTOR Reduction (vph)	0	8	0	0	0	0
Lane Group Flow (vph)	576	414	2066	0	0	1845
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	14.1	14.1	33.9			33.9
Effective Green, g (s)	14.1	14.1	33.9			33.9
Actuated g/C Ratio	0.24	0.24	0.56			0.56
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	799	654	2930			2901
v/s Ratio Prot	c0.17		c0.40			0.36
v/s Ratio Perm		0.15				
v/c Ratio	0.72	0.63	0.71			0.64
Uniform Delay, d1	21.1	20.6	9.4			8.9
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	3.2	2.0	1.5			1.1
Delay (s)	24.4	22.6	10.9			9.9
Level of Service	C	C	B			A
Approach Delay (s/veh)	23.6		10.9			9.9
Approach LOS	C		B			A

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	657	422	0	1643	1687	0
Future Volume (vph)	657	422	0	1643	1687	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	5136	5136	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	5136	5136	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		14				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	677	435	0	1694	1739	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	677	435	0	1694	1739	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

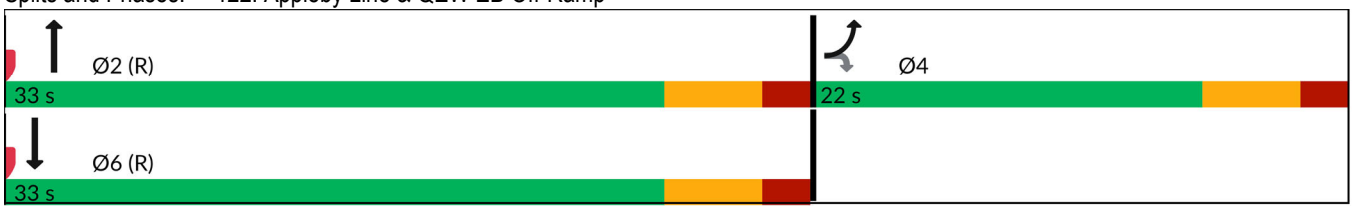


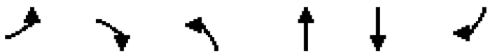
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	22.0	22.0		33.0	33.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	16.0	16.0		27.0	27.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	14.9	14.9		28.1	28.1	
Actuated g/C Ratio	0.27	0.27		0.51	0.51	
v/c Ratio	0.72	0.56		0.64	0.66	
Control Delay (s/veh)	22.8	19.6		11.5	11.8	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	22.8	19.6		11.5	11.8	
LOS	C	B		B	B	
Approach Delay (s/veh)	21.5			11.5	11.8	
Approach LOS	C			B	B	
Queue Length 50th (m)	31.7	20.7		45.6	47.5	
Queue Length 95th (m)	47.3	34.0		59.9	62.3	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1018	828		2627	2627	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.67	0.53		0.64	0.66	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay (s/veh): 14.1	Intersection LOS: B

Intersection Capacity Utilization 62.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp



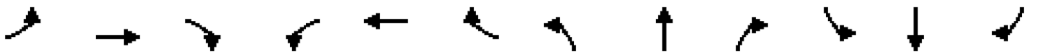


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	657	422	0	1643	1687	0
Future Volume (vph)	657	422	0	1643	1687	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		5136	5136	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	677	435	0	1694	1739	0
RTOR Reduction (vph)	0	10	0	0	0	0
Lane Group Flow (vph)	677	425	0	1694	1739	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	14.9	14.9		28.1	28.1	
Effective Green, g (s)	14.9	14.9		28.1	28.1	
Actuated g/C Ratio	0.27	0.27		0.51	0.51	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	948	762		2624	2624	
v/s Ratio Prot	c0.19			0.33	c0.34	
v/s Ratio Perm		0.15				
v/c Ratio	0.71	0.56		0.65	0.66	
Uniform Delay, d1	18.1	17.2		9.8	9.9	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.6	0.9		1.2	1.3	
Delay (s)	20.7	18.1		11.1	11.3	
Level of Service	C	B		B	B	
Approach Delay (s/veh)	19.7			11.1	11.3	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	64	110	485	315	169	71	1131	249	125	903	107
Future Volume (vph)	128	64	110	485	315	169	71	1131	249	125	903	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor		0.99		1.00			1.00		0.99	1.00		0.99
Frt		0.905			0.948				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3323	0	1736	5136	1599	3502	5136	1553
Flt Permitted	0.284			0.603			0.281			0.950		
Satd. Flow (perm)	519	3218	0	1133	3323	0	513	5136	1575	3498	5136	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		112			106				231			124
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	131	65	112	495	321	172	72	1154	254	128	921	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	131	177	0	495	493	0	72	1154	254	128	921	109
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

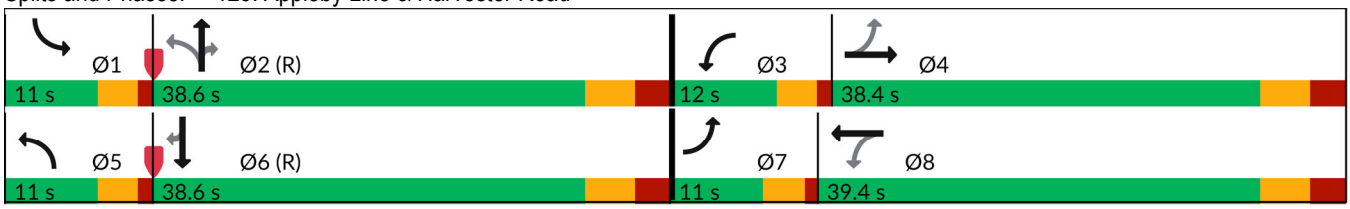


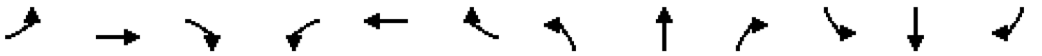
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		12.0	39.4		11.0	38.6	38.6	11.0	38.6	38.6
Total Split (%)	11.0%	38.4%		12.0%	39.4%		11.0%	38.6%	38.6%	11.0%	38.6%	38.6%
Maximum Green (s)	7.0	32.0		8.0	33.0		7.0	32.3	32.3	7.0	32.3	32.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	25.8	16.4		27.8	17.4		55.7	45.8	45.8	9.1	49.4	49.4
Actuated g/C Ratio	0.26	0.16		0.28	0.17		0.56	0.46	0.46	0.09	0.49	0.49
v/c Ratio	0.60	0.28		1.35	0.74		0.19	0.49	0.30	0.40	0.36	0.13
Control Delay (s/veh)	37.5	15.0		203.5	37.2		10.3	20.7	4.6	46.3	17.4	3.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	37.5	15.0		203.5	37.2		10.3	20.7	4.6	46.3	17.4	3.1
LOS	D	B		F	D		B	C	A	D	B	A
Approach Delay (s/veh)		24.5			120.6			17.5			19.3	
Approach LOS		C			F			B			B	
Queue Length 50th (m)	20.5	6.0		~133.9	40.6		5.6	58.7	2.5	12.9	42.5	0.0
Queue Length 95th (m)	33.3	14.6		#184.8	55.4		13.3	83.1	19.1	21.8	61.5	8.6
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	219	1105		367	1167		379	2352	846	318	2539	820
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.16		1.35	0.42		0.19	0.49	0.30	0.40	0.36	0.13

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay (s/veh): 44.4	Intersection LOS: D

Intersection Capacity Utilization 84.6% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

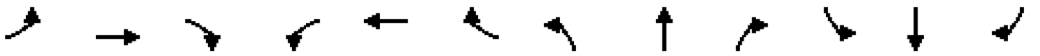




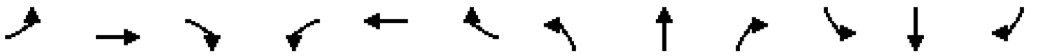
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	64	110	485	315	169	71	1131	249	125	903	107
Future Volume (vph)	128	64	110	485	315	169	71	1131	249	125	903	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3218		1786	3321		1735	5136	1575	3502	5136	1533
Flt Permitted	0.28	1.00		0.60	1.00		0.28	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	520	3218		1134	3321		513	5136	1575	3502	5136	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	131	65	112	495	321	172	72	1154	254	128	921	109
RTOR Reduction (vph)	0	94	0	0	88	0	0	0	125	0	0	56
Lane Group Flow (vph)	131	83	0	495	405	0	72	1154	129	128	921	53
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	23.4	16.4		25.4	17.4		52.0	45.8	45.8	9.1	48.7	48.7
Effective Green, g (s)	23.4	16.4		25.4	17.4		52.0	45.8	45.8	9.1	48.7	48.7
Actuated g/C Ratio	0.23	0.16		0.25	0.17		0.52	0.46	0.46	0.09	0.49	0.49
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	206	527		340	577		342	2352	721	318	2501	746
v/s Ratio Prot	0.04	0.03		c0.12	0.12		0.01	c0.22		c0.04	c0.18	
v/s Ratio Perm	0.10			c0.25			0.10		0.08			0.03
v/c Ratio	0.64	0.16		1.46	0.70		0.21	0.49	0.18	0.40	0.37	0.07
Uniform Delay, d1	32.0	35.9		36.2	38.9		12.1	18.9	16.0	42.9	16.0	13.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	0.1		220.9	3.9		0.3	0.7	0.5	0.8	0.4	0.2
Delay (s)	38.3	36.0		257.1	42.7		12.4	19.7	16.5	43.7	16.5	13.8
Level of Service	D	D		F	D		B	B	B	D	B	B
Approach Delay (s/veh)		37.0			150.1			18.8			19.2	
Approach LOS		D			F			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	53.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	84.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	92	343	138	88	157	278	1206	96	121	1363	398
Future Volume (vph)	442	92	343	138	88	157	278	1206	96	121	1363	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99	1.00		0.98	1.00		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	5136	1615
Flt Permitted	0.677			0.695			0.114			0.166		
Satd. Flow (perm)	2493	1792	1576	1210	1792	1533	217	3574	1414	303	5136	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			308			162			109			410
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	456	95	354	142	91	162	287	1243	99	125	1405	410
Shared Lane Traffic (%)												
Lane Group Flow (vph)	456	95	354	142	91	162	287	1243	99	125	1405	410
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

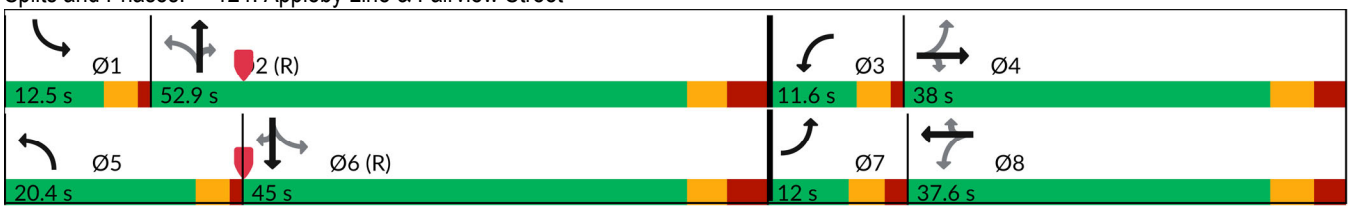


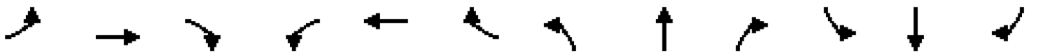
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	12.0	38.0	38.0	11.6	37.6	37.6	20.4	52.9	52.9	12.5	45.0	45.0
Total Split (%)	10.4%	33.0%	33.0%	10.1%	32.7%	32.7%	17.7%	46.0%	46.0%	10.9%	39.1%	39.1%
Maximum Green (s)	7.0	31.5	31.5	7.6	31.1	31.1	16.4	46.1	46.1	8.5	38.2	38.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	21.7	13.2	13.2	22.9	12.8	12.8	79.6	63.2	63.2	67.1	54.6	54.6
Actuated g/C Ratio	0.19	0.11	0.11	0.20	0.11	0.11	0.69	0.55	0.55	0.58	0.47	0.47
v/c Ratio	0.86	0.46	0.78	0.52	0.46	0.52	0.71	0.63	0.12	0.42	0.58	0.42
Control Delay (s/veh)	57.9	53.5	21.1	43.7	53.8	12.6	27.6	21.2	3.1	13.0	24.9	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.9	53.5	21.1	43.7	53.8	12.6	27.6	21.2	3.1	13.0	24.9	4.0
LOS	E	D	C	D	D	B	C	C	A	B	C	A
Approach Delay (s/veh)		43.0			33.3			21.2			19.7	
Approach LOS		D			C			C			B	
Queue Length 50th (m)	50.6	22.6	10.3	30.4	21.7	0.0	32.6	98.0	0.0	8.5	84.2	0.0
Queue Length 95th (m)	60.0	37.3	40.2	45.2	36.0	19.0	66.6	160.6	9.3	20.1	131.1	21.6
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	532	490	655	271	484	532	422	1963	825	306	2437	969
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.19	0.54	0.52	0.19	0.30	0.68	0.63	0.12	0.41	0.58	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 25.7	Intersection LOS: C

Intersection Capacity Utilization 77.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 124: Appleby Line & Fairview Street





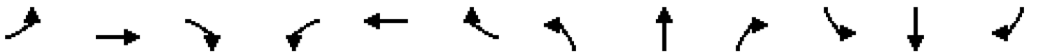
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	442	92	343	138	88	157	278	1206	96	121	1363	398
Future Volume (vph)	442	92	343	138	88	157	278	1206	96	121	1363	398
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3499	1792	1576	1659	1792	1533	1805	3574	1414	1735	5136	1589
Flt Permitted	0.68	1.00	1.00	0.70	1.00	1.00	0.11	1.00	1.00	0.17	1.00	1.00
Satd. Flow (perm)	2493	1792	1576	1215	1792	1533	216	3574	1414	304	5136	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	456	95	354	142	91	162	287	1243	99	125	1405	410
RTOR Reduction (vph)	0	0	273	0	0	144	0	0	45	0	0	215
Lane Group Flow (vph)	456	95	81	142	91	18	287	1243	54	125	1405	195
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	20.2	13.2	13.2	20.4	12.8	12.8	76.9	63.2	63.2	64.3	54.6	54.6
Effective Green, g (s)	20.2	13.2	13.2	20.4	12.8	12.8	76.9	63.2	63.2	64.3	54.6	54.6
Actuated g/C Ratio	0.18	0.11	0.11	0.18	0.11	0.11	0.67	0.55	0.55	0.56	0.47	0.47
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	499	205	180	244	199	170	397	1964	777	290	2438	754
v/s Ratio Prot	c0.06	0.05		0.04	0.05		c0.11	0.35		0.04	0.27	
v/s Ratio Perm	c0.10		0.05	0.06		0.01	c0.37		0.04	0.20		0.12
v/c Ratio	0.91	0.46	0.45	0.58	0.46	0.11	0.72	0.63	0.07	0.43	0.58	0.26
Uniform Delay, d1	45.8	47.6	47.5	42.6	47.8	46.0	21.1	17.9	12.1	13.3	21.8	18.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.2	1.7	1.8	3.5	1.7	0.3	6.4	1.6	0.2	1.0	1.0	0.8
Delay (s)	67.0	49.2	49.3	46.1	49.5	46.2	27.5	19.5	12.3	14.3	22.8	18.9
Level of Service	E	D	D	D	D	D	C	B	B	B	C	B
Approach Delay (s/veh)		58.2			46.9			20.4			21.5	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	30.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	77.8%	ICU Level of Service	D
Analysis Period (min)	15		

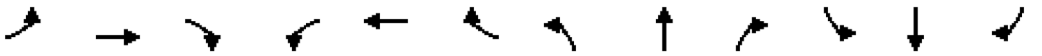
c Critical Lane Group

Appendix Q

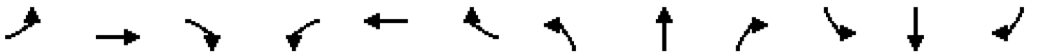
Full Build-Out Traffic Operation Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Future Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3362	5085	1533	3212	4803	1458	3365	4848	1485	3362	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			169			152			270			186
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	246	1459	523	474	677	152	361	715	418	295	978	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	1459	523	474	677	152	361	715	418	295	978	186
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Future Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.97	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5036	1521	3337	5085	1514	3483	5085	1520	3423	5085	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			279			298			237			146
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	210	830	426	593	1779	298	605	1342	498	374	1055	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	830	426	593	1779	298	605	1342	498	374	1055	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	14.0	46.4	46.4	25.0	57.4	57.4	25.0	49.6	49.6	24.0	48.6	48.6
Total Split (%)	9.7%	32.0%	32.0%	17.2%	39.6%	39.6%	17.2%	34.2%	34.2%	16.6%	33.5%	33.5%
Maximum Green (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.2	42.2	19.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Actuated g/C Ratio	0.06	0.27	0.27	0.14	0.34	0.34	0.14	0.29	0.29	0.13	0.28	0.28
v/c Ratio	0.99	0.61	0.69	1.28	1.01	0.42	1.25	0.90	0.82	0.84	0.73	0.50
Control Delay (s/veh)	124.8	48.7	22.4	189.3	71.9	5.3	169.6	35.7	12.7	78.7	50.4	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	124.8	48.7	22.4	189.3	71.9	5.3	169.6	35.7	12.7	78.7	50.4	22.8
LOS	F	D	C	F	E	A	F	D	B	E	D	C
Approach Delay (s/veh)		52.0			90.5			64.1			52.2	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	33.7	82.6	40.8	~119.8	~210.1	0.0	~115.5	152.8	72.2	58.5	107.4	30.8
Queue Length 95th (m)	#62.1	98.4	83.6	#160.1	#241.3	21.2	m#95.6	m130.5	m52.4	#83.6	125.3	60.2
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	213	1354	613	464	1753	717	483	1485	611	449	1444	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.61	0.69	1.28	1.01	0.42	1.25	0.90	0.82	0.83	0.73	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay (s/veh): 68.1	Intersection LOS: E

Intersection Capacity Utilization 113.1% ICU Level of Service H

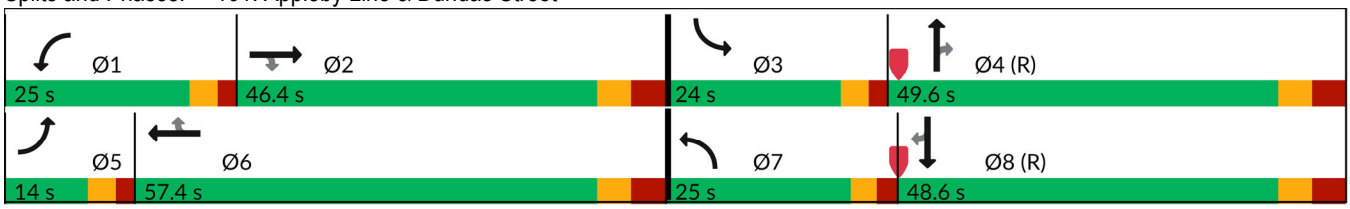
Analysis Period (min) 15

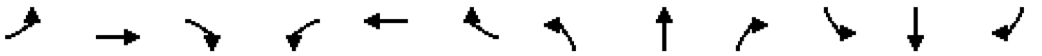
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Appleby Line & Dundas Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Future Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	210	830	426	593	1779	298	605	1342	498	374	1055	271
RTOR Reduction (vph)	0	0	204	0	0	195	0	0	168	0	0	105
Lane Group Flow (vph)	210	830	222	593	1779	103	605	1342	330	374	1055	166
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Effective Green, g (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Actuated g/C Ratio	0.06	0.27	0.27	0.14	0.34	0.34	0.14	0.29	0.29	0.13	0.28	0.28
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	213	1354	409	464	1753	522	483	1486	444	445	1444	438
v/s Ratio Prot	0.06	0.16		c0.18	c0.35		c0.17	c0.26		0.11	0.21	
v/s Ratio Perm			0.15			0.07			0.22			0.11
v/c Ratio	0.99	0.61	0.54	1.28	1.01	0.20	1.25	0.90	0.74	0.84	0.73	0.38
Uniform Delay, d1	67.9	46.4	45.4	62.5	47.5	33.4	62.5	49.3	46.4	61.6	46.9	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.69	0.45	1.00	1.00	1.00
Incremental Delay, d2	57.5	0.8	1.5	140.9	25.2	0.2	115.3	1.0	1.1	14.7	3.3	2.5
Delay (s)	125.5	47.2	46.8	203.4	72.7	33.6	185.7	35.3	21.8	76.3	50.2	44.1
Level of Service	F	D	D	F	E	C	F	D	C	E	D	D
Approach Delay (s/veh)		58.3			97.4			69.8			55.0	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	113.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Future Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		0.99		0.97	1.00	1.00		1.00	0.99	
Frt		0.955				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3403	0	3367	5187	1599	3502	4959	0	3467	4880	0
Flt Permitted	0.106			0.950			0.950			0.950		
Satd. Flow (perm)	193	3403	0	3343	5187	1548	3490	4959	0	3461	4880	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				290		10			52	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	218	740	319	162	1074	740	440	1842	144	602	1020	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	1059	0	162	1074	740	440	1986	0	602	1292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	13.0	49.0		11.0	47.0	47.0	26.0	60.0		25.0	59.0	
Total Split (%)	9.0%	33.8%		7.6%	32.4%	32.4%	17.9%	41.4%		17.2%	40.7%	
Maximum Green (s)	9.0	42.6		7.0	40.6	40.6	21.0	53.5		21.0	52.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	54.0	42.6		7.0	40.6	40.6	20.5	53.5		21.0	53.0	
Actuated g/C Ratio	0.37	0.29		0.05	0.28	0.28	0.14	0.37		0.14	0.37	
v/c Ratio	1.31	1.03		1.00	0.74	1.15	0.89	1.08		1.20	0.71	
Control Delay (s/veh)	203.6	82.4		138.1	51.1	114.0	81.4	89.9		149.5	20.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	203.6	82.4		138.1	51.1	114.0	81.4	89.9		149.5	20.9	
LOS	F	F		F	D	F	F	F		F	C	
Approach Delay (s/veh)		103.1			81.8			88.3			61.8	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	~67.1	~173.4		26.4	108.5	~197.6	68.0	~250.2		~110.4	99.3	
Queue Length 95th (m)	#124.0	#218.3		#52.4	126.3	#278.9	#96.1	#281.1		m#127.9	m102.3	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	167	1032		162	1452	642	507	1836		502	1816	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.31	1.03		1.00	0.74	1.15	0.87	1.08		1.20	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay (s/veh): 82.5	Intersection LOS: F

Intersection Capacity Utilization 111.3% ICU Level of Service H

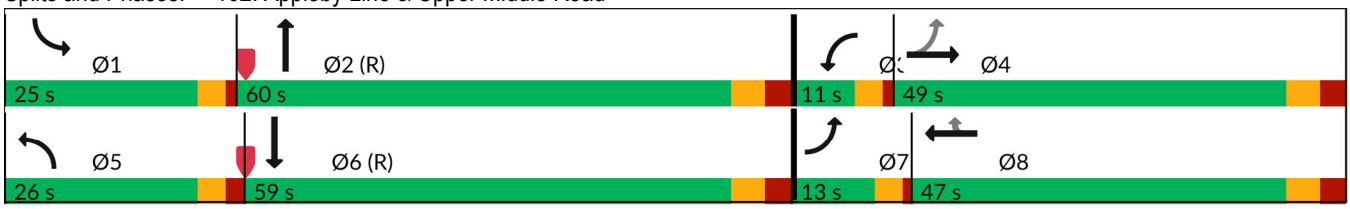
Analysis Period (min) 15

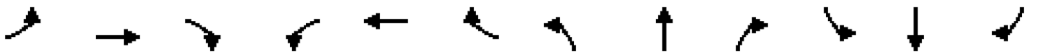
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



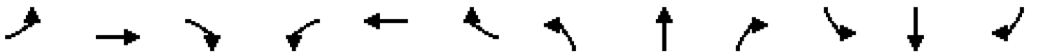


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Future Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3403		3367	5187	1548	3502	4959		3467	4882	
Flt Permitted	0.11	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	194	3403		3367	5187	1548	3502	4959		3467	4882	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	218	740	319	162	1074	740	440	1842	144	602	1020	272
RTOR Reduction (vph)	0	33	0	0	0	209	0	6	0	0	33	0
Lane Group Flow (vph)	218	1026	0	162	1074	531	440	1980	0	602	1259	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	51.6	42.6		7.0	40.6	40.6	20.5	53.5		21.0	53.0	
Effective Green, g (s)	51.6	42.6		7.0	40.6	40.6	20.5	53.5		21.0	53.0	
Actuated g/C Ratio	0.36	0.29		0.05	0.28	0.28	0.14	0.37		0.14	0.37	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	999		162	1452	433	495	1829		502	1784	
v/s Ratio Prot	c0.08	0.30		0.05	0.21		0.13	c0.40		c0.17	0.26	
v/s Ratio Perm	c0.39					0.34						
v/c Ratio	1.33	1.03		1.00	0.74	1.23	0.89	1.08		1.20	0.71	
Uniform Delay, d1	38.5	51.2		69.0	47.4	52.2	61.1	45.8		62.0	39.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	0.52	
Incremental Delay, d2	183.9	35.5		70.7	2.0	121.0	17.4	47.2		98.5	1.1	
Delay (s)	222.4	86.7		139.7	49.4	173.2	78.6	93.0		160.2	21.6	
Level of Service	F	F		F	D	F	E	F		F	C	
Approach Delay (s/veh)		109.9			103.2			90.4			65.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	90.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Future Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.997							0.850		0.916	
Flt Protected	0.950							0.950			0.982	
Satd. Flow (prot)	1805	5111	0	1900	5136	0	0	1805	1615	0	1695	0
Flt Permitted	0.111							0.752			0.955	
Satd. Flow (perm)	211	5111	0	1900	5136	0	0	1428	1594	0	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5							78		78	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	1598	31	0	2288	0	81	0	17	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1629	0	0	2288	0	0	81	17	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

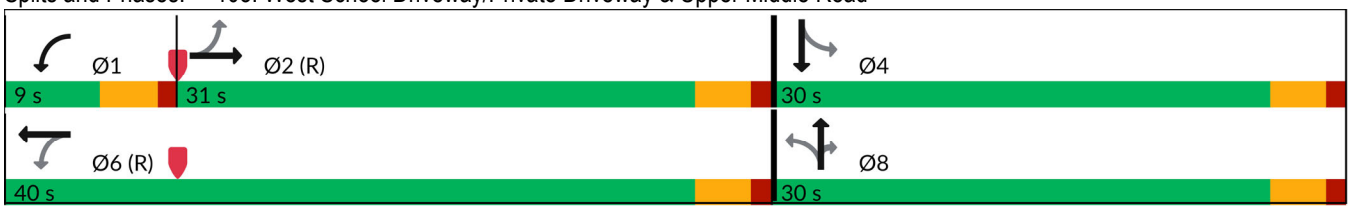


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	31.0	31.0		9.0	40.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	44.3%	44.3%		12.9%	57.1%		42.9%	42.9%	42.9%	42.9%	42.9%	
Maximum Green (s)	27.0	27.0		5.0	36.0		26.0	26.0	26.0	26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
v/c Ratio	0.03	0.62			0.87			0.15	0.03		0.01	
Control Delay (s/veh)	9.3	13.4			19.6			15.7	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.3	13.4			19.6			15.7	0.1		0.0	
LOS	A	B			B			B	A		A	
Approach Delay (s/veh)		13.4			19.6			13.0				
Approach LOS		B			B			B				
Queue Length 50th (m)	0.2	54.6			95.0			7.3	0.0		0.0	
Queue Length 95th (m)	1.5	68.9			117.7			16.1	0.0		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	108	2630			2641			530	641		661	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.03	0.62			0.87			0.15	0.03		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 16.9	Intersection LOS: B

Intersection Capacity Utilization 83.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Future Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91			0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1804	5112			5136			1804	1594		1694	
Flt Permitted	0.11	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	211	5112			5136			1428	1594		1647	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	1598	31	0	2288	0	81	0	17	3	0	5
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	11	0	5	0
Lane Group Flow (vph)	3	1627	0	0	2288	0	0	81	6	0	3	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Effective Green, g (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	108	2629			2641			530	592		611	
v/s Ratio Prot		0.32			c0.45							
v/s Ratio Perm	0.01							c0.06	0.00		0.00	
v/c Ratio	0.03	0.62			0.87			0.15	0.01		0.00	
Uniform Delay, d1	8.4	12.1			14.9			14.7	13.9		13.9	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.5	1.1			4.1			0.6	0.0		0.0	
Delay (s)	8.9	13.2			19.0			15.3	13.9		13.9	
Level of Service	A	B			B			B	B		B	
Approach Delay (s/veh)		13.2			19.0			15.0			13.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1541	10	21	2144	32	62
Future Volume (vph)	1541	10	21	2144	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt	0.999					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5131	0	1570	5136	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5131	0	1570	5136	1805	1568
Link Speed (k/h)	60			60	50	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	9.5	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	1639	11	22	2281	34	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1650	0	22	2281	34	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

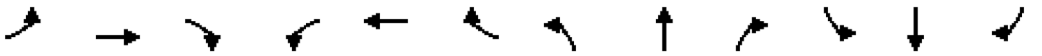
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			



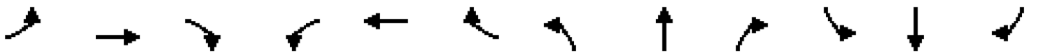
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1541	10	21	2144	32	62
Future Volume (Veh/h)	1541	10	21	2144	32	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1639	11	22	2281	34	66
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257			119		
pX, platoon unblocked			0.78		0.68	0.78
vC, conflicting volume			1667		2466	569
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			853		0	0
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			96		95	92
cM capacity (veh/h)			539		658	828

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	656	656	339	22	760	760	760	34	66
Volume Left	0	0	0	22	0	0	0	34	0
Volume Right	0	0	11	0	0	0	0	0	66
cSH	1700	1700	1700	539	1700	1700	1700	658	828
Volume to Capacity	0.39	0.39	0.20	0.04	0.45	0.45	0.45	0.05	0.08
Queue Length 95th (m)	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.3	2.1
Control Delay (s/veh)	0.0	0.0	0.0	12.0	0.0	0.0	0.0	10.8	9.7
Lane LOS				B				B	A
Approach Delay (s/veh)	0.0			0.1				10.1	
Approach LOS								B	

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Future Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt		0.991			0.986			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1805	5087	0	0	5039	0	1770	1583	0	1805	1593	0
Flt Permitted	0.090				0.940		0.564			0.757		
Satd. Flow (perm)	171	5087	0	0	4737	0	1051	1583	0	1438	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			26			61			222	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			140.3			235.5	
Travel Time (s)		7.1			17.4			12.6			21.2	
Confl. Peds. (#/hr)	13					13						1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	188	1386	85	1	2101	214	15	0	1	57	0	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	1471	0	0	2316	0	15	1	0	57	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	10.2	58.0		47.8	47.8		9.5	32.0		22.5	22.5	
Total Split (%)	11.3%	64.4%		53.1%	53.1%		10.6%	35.6%		25.0%	25.0%	
Maximum Green (s)	6.2	54.0		43.8	43.8		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	54.0	54.0			43.8		28.0	28.0		26.1	26.1	
Actuated g/C Ratio	0.60	0.60			0.49		0.31	0.31		0.29	0.29	
v/c Ratio	0.87	0.48			1.00		0.04	0.00		0.14	0.21	
Control Delay (s/veh)	53.3	10.6			42.3		22.0	0.0		26.5	0.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	53.3	10.6			42.3		22.0	0.0		26.5	0.8	
LOS	D	B			D		C	A		C	A	
Approach Delay (s/veh)		15.5			42.3			20.6			8.7	
Approach LOS		B			D			C			A	
Queue Length 50th (m)	16.0	50.1			147.5		1.9	0.0		7.4	0.0	
Queue Length 95th (m)	#55.4	61.0			#193.8		6.5	0.0		19.4	0.0	
Internal Link Dist (m)		94.7			266.7			116.3			211.5	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	215	3059			2318		370	534		417	619	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.87	0.48			1.00		0.04	0.00		0.14	0.21	

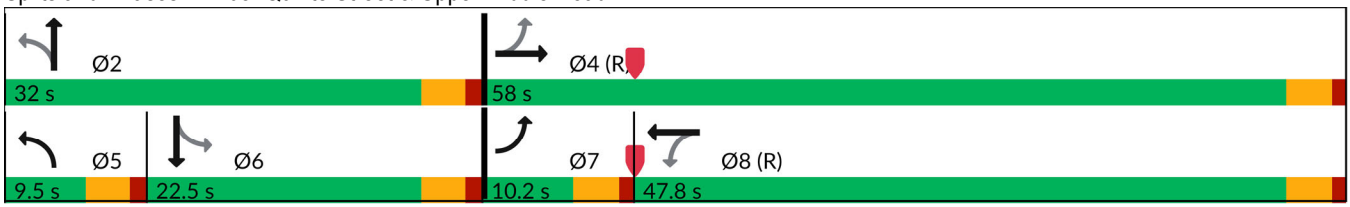
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 30.0	Intersection LOS: C

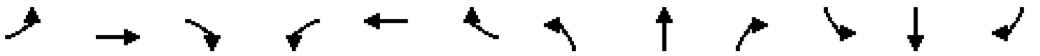
Intersection Capacity Utilization 96.2% ICU Level of Service F

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road

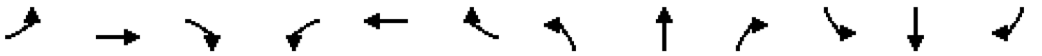




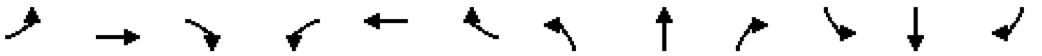
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Future Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5088			5040		1770	1583		1805	1593	
Flt Permitted	0.09	1.00			0.94		0.56	1.00		0.76	1.00	
Satd. Flow (perm)	170	5088			4736		1050	1583		1439	1593	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	1386	85	1	2101	214	15	0	1	57	0	129
RTOR Reduction (vph)	0	8	0	0	14	0	0	1	0	0	92	0
Lane Group Flow (vph)	188	1463	0	0	2302	0	15	0	0	57	37	0
Confl. Peds. (#/hr)	13					13						1
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.8	50.8			40.6		31.2	31.2		26.1	26.1	
Effective Green, g (s)	50.8	50.8			40.6		31.2	31.2		26.1	26.1	
Actuated g/C Ratio	0.56	0.56			0.45		0.35	0.35		0.29	0.29	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	208	2871			2136		372	548		417	461	
v/s Ratio Prot	c0.06	0.29					c0.00	0.00			0.02	
v/s Ratio Perm	0.45				c0.49		0.01			c0.04		
v/c Ratio	0.90	0.51			1.08		0.04	0.00		0.14	0.08	
Uniform Delay, d1	21.7	12.0			24.7		19.5	19.2		23.6	23.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	36.9	0.6			44.2		0.0	0.0		0.7	0.3	
Delay (s)	58.6	12.6			68.9		19.6	19.2		24.3	23.6	
Level of Service	E	B			E		B	B		C	C	
Approach Delay (s/veh)		17.8			68.9			19.5			23.8	
Approach LOS		B			E			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Future Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor					0.99					0.99	0.99	
Frt		0.977			0.963			0.937			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	5010	0	1770	4897	0	1770	1745	0	3502	1588	0
Flt Permitted	0.059			0.202			0.620			0.950		
Satd. Flow (perm)	109	5010	0	376	4897	0	1155	1745	0	3476	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			92			11			156	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			131.5			321.0	
Travel Time (s)		17.4			14.7			11.8			28.9	
Confl. Peds. (#/hr)	8					8				5		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	233	1047	185	16	1928	638	177	15	11	252	20	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	1232	0	16	2566	0	177	26	0	252	222	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

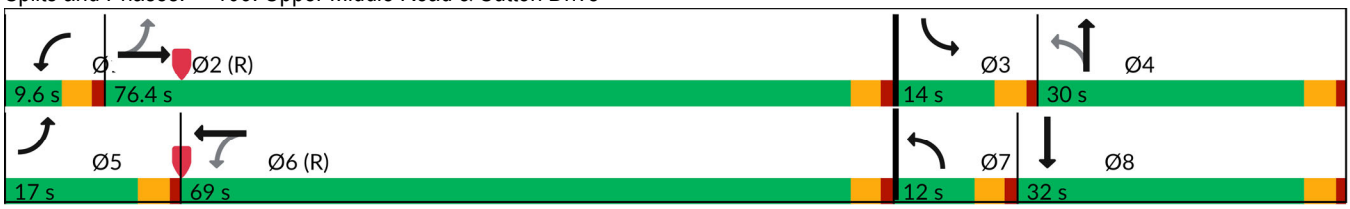


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	30.0		9.5	30.0		9.0	30.0		9.0	30.5	
Total Split (s)	17.0	76.4		9.6	69.0		12.0	30.0		14.0	32.0	
Total Split (%)	13.1%	58.8%		7.4%	53.1%		9.2%	23.1%		10.8%	24.6%	
Maximum Green (s)	13.0	72.4		5.6	65.0		8.0	26.0		10.0	28.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	Max	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Don't Walk (s)		16.0			16.0			16.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	82.0	78.2		70.6	65.0		23.6	18.6		22.0	28.0	
Actuated g/C Ratio	0.63	0.60		0.54	0.50		0.18	0.14		0.17	0.22	
v/c Ratio	1.00	0.41		0.06	1.03		0.72	0.10		0.43	0.48	
Control Delay (s/veh)	95.1	14.1		8.5	47.1		60.5	29.8		54.5	17.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	95.1	14.1		8.5	47.1		60.5	29.8		54.5	17.9	
LOS	F	B		A	D		E	C		D	B	
Approach Delay (s/veh)		27.0			46.9			56.6			37.4	
Approach LOS		C			D			E			D	
Queue Length 50th (m)	48.0	54.1		1.1	~263.2		37.3	3.3		35.4	14.9	
Queue Length 95th (m)	#105.4	77.9		m1.4	m#274.1		58.6	11.9		#62.1	40.6	
Internal Link Dist (m)		266.7			220.7			107.5			297.0	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	233	3029		264	2494		247	357		592	464	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.00	0.41		0.06	1.03		0.72	0.07		0.43	0.48	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 40.2	Intersection LOS: D

Intersection Capacity Utilization 105.7% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

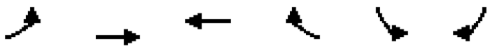
Splits and Phases: 106: Upper Middle Road & Sutton Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Future Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.94		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	5013		1770	4895		1770	1745		3502	1587	
Flt Permitted	0.06	1.00		0.20	1.00		0.62	1.00		0.95	1.00	
Satd. Flow (perm)	109	5013		376	4895		1154	1745		3502	1587	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	233	1047	185	16	1928	638	177	15	11	252	20	202
RTOR Reduction (vph)	0	18	0	0	47	0	0	10	0	0	120	0
Lane Group Flow (vph)	233	1214	0	16	2519	0	177	16	0	252	102	0
Confl. Peds. (#/hr)	8					8				5		2
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	80.4	74.2		65.6	63.4		23.6	15.6		22.0	29.6	
Effective Green, g (s)	80.4	74.2		65.6	63.4		23.6	15.6		22.0	29.6	
Actuated g/C Ratio	0.62	0.57		0.50	0.49		0.18	0.12		0.17	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	231	2861		213	2387		247	209		592	361	
v/s Ratio Prot	c0.10	0.24		0.00	c0.51		c0.04	0.01		c0.07	0.06	
v/s Ratio Perm	0.52			0.04			c0.09					
v/c Ratio	1.01	0.42		0.08	1.06		0.72	0.08		0.43	0.28	
Uniform Delay, d1	44.2	15.8		16.2	33.3		48.7	50.8		48.3	41.4	
Progression Factor	1.00	1.00		0.87	0.83		1.00	1.00		1.00	1.00	
Incremental Delay, d2	61.5	0.5		0.2	30.5		11.7	0.3		1.0	1.9	
Delay (s)	105.6	16.3		14.3	58.0		60.4	51.1		49.4	43.4	
Level of Service	F	B		B	E		E	D		D	D	
Approach Delay (s/veh)		30.5			57.8			59.2			46.6	
Approach LOS		C			E			E			D	

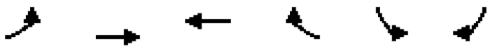
Intersection Summary			
HCM 2000 Control Delay (s/veh)	48.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	61	1185	2223	30	0	70
Future Volume (vph)	61	1185	2223	30	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	5136	5126	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	5136	5126	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	64	1247	2340	32	0	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	1247	2372	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

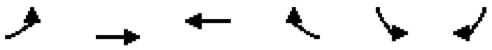
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	61	1185	2223	30	0	70
Future Volume (Veh/h)	61	1185	2223	30	0	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	64	1247	2340	32	0	74
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245	386			
pX, platoon unblocked	0.56				0.62	0.56
vC, conflicting volume	2381				2909	805
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	724				723	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				100	88
cM capacity (veh/h)	495				194	608

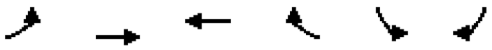
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	64	416	416	416	936	936	500	74
Volume Left	64	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	32	74
cSH	495	1700	1700	1700	1700	1700	1700	608
Volume to Capacity	0.13	0.24	0.24	0.24	0.55	0.55	0.29	0.12
Queue Length 95th (m)	3.5	0.0	0.0	0.0	0.0	0.0	0.0	3.3
Control Delay (s/veh)	13.4	0.0	0.0	0.0	0.0	0.0	0.0	11.7
Lane LOS	B							B
Approach Delay (s/veh)	0.7				0.0			11.7
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	1178	2415	10	6	9
Future Volume (vph)	13	1178	2415	10	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.916	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1805	5136	5131	0	1709	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1805	5136	5131	0	1709	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	14	1253	2569	11	6	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	1253	2580	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

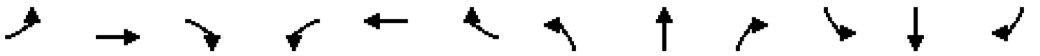
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			



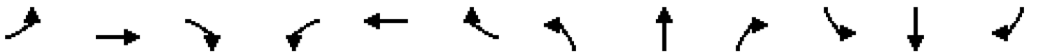
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	1178	2415	10	6	9
Future Volume (Veh/h)	13	1178	2415	10	6	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	1253	2569	11	6	10
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			199			
pX, platoon unblocked	0.51				0.51	0.51
vC, conflicting volume	2596				3036	878
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	764				1628	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				87	98
cM capacity (veh/h)	431				46	549

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	14	418	418	418	1028	1028	525	16
Volume Left	14	0	0	0	0	0	0	6
Volume Right	0	0	0	0	0	0	11	10
cSH	431	1700	1700	1700	1700	1700	1700	108
Volume to Capacity	0.03	0.25	0.25	0.25	0.60	0.60	0.31	0.15
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	0.0	4.0
Control Delay (s/veh)	13.6	0.0	0.0	0.0	0.0	0.0	0.0	44.2
Lane LOS	B							E
Approach Delay (s/veh)	0.2				0.0			44.2
Approach LOS								E

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Future Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00							
Frt		0.963			0.990			0.950			0.945	
Flt Protected	0.950							0.970			0.971	
Satd. Flow (prot)	1805	4933	0	0	5072	0	0	1717	0	0	1722	0
Flt Permitted	0.104				0.921			0.784			0.790	
Satd. Flow (perm)	198	4933	0	0	4672	0	0	1387	0	0	1401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		224			29			46			17	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		198.8			459.4			105.8			226.6	
Travel Time (s)		11.9			27.6			9.5			20.4	
Confl. Peds. (#/hr)	14					14						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	47	935	309	23	2534	176	96	0	57	76	0	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1244	0	0	2733	0	0	153	0	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	42.4	42.4		42.4	42.4		22.6	22.6		22.6	22.6	
Total Split (%)	65.2%	65.2%		65.2%	65.2%		34.8%	34.8%		34.8%	34.8%	
Maximum Green (s)	38.4	38.4		38.4	38.4		18.6	18.6		18.1	18.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.0	4.0			4.0			4.0			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	38.4	38.4			38.4			18.6			18.1	
Actuated g/C Ratio	0.59	0.59			0.59			0.29			0.28	
v/c Ratio	0.41	0.41			0.99			0.36			0.32	
Control Delay (s/veh)	24.5	8.9			28.7			15.8			18.7	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	24.5	8.9			28.7			15.8			18.7	
LOS	C	A			C			B			B	
Approach Delay (s/veh)		9.5			28.7			15.8			18.7	
Approach LOS		A			C			B			B	
Queue Length 50th (m)	2.7	23.4			109.9			10.6			11.1	
Queue Length 95th (m)	16.8	60.0			#165.3			25.1			24.6	
Internal Link Dist (m)		174.8			435.4			81.8			202.6	
Turn Bay Length (m)	100.0											
Base Capacity (vph)	116	3005			2771			429			402	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.41	0.41			0.99			0.36			0.32	

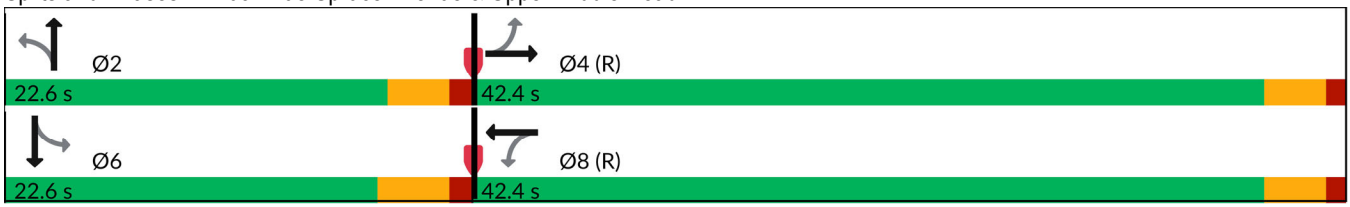
Intersection Summary	
Area Type:	Other
Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.99	
Intersection Signal Delay (s/veh): 22.2	Intersection LOS: C

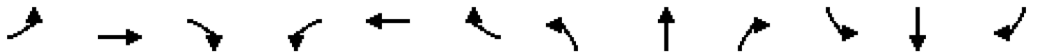
Intersection Capacity Utilization 80.0% ICU Level of Service D

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 109: Blue Spruce Avenue & Upper Middle Road

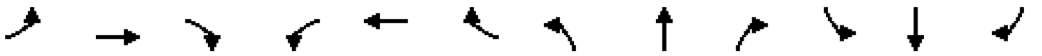




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Future Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0			4.5	
Lane Util. Factor	1.00	0.91			0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.96			0.99			0.95			0.95	
Flt Protected	0.95	1.00			1.00			0.97			0.97	
Satd. Flow (prot)	1805	4932			5072			1715			1723	
Flt Permitted	0.10	1.00			0.92			0.78			0.79	
Satd. Flow (perm)	198	4932			4673			1388			1401	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	935	309	23	2534	176	96	0	57	76	0	52
RTOR Reduction (vph)	0	92	0	0	12	0	0	33	0	0	12	0
Lane Group Flow (vph)	47	1152	0	0	2721	0	0	120	0	0	116	0
Confl. Peds. (#/hr)	14					14						
Heavy Vehicles (%)	0%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.4	38.4			38.4			18.6			18.1	
Effective Green, g (s)	38.4	38.4			38.4			18.6			18.1	
Actuated g/C Ratio	0.59	0.59			0.59			0.29			0.28	
Clearance Time (s)	4.0	4.0			4.0			4.0			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	116	2913			2760			397			390	
v/s Ratio Prot		0.23										
v/s Ratio Perm	0.24				c0.58			c0.09			0.08	
v/c Ratio	0.41	0.40			0.99			0.30			0.30	
Uniform Delay, d1	7.2	7.1			13.0			18.1			18.4	
Progression Factor	1.74	1.48			1.00			1.00			1.00	
Incremental Delay, d2	9.6	0.4			14.1			2.0			0.4	
Delay (s)	22.0	10.9			27.2			20.1			18.9	
Level of Service	C	B			C			C			B	
Approach Delay (s/veh)		11.3			27.2			20.1			18.9	
Approach LOS		B			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Future Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	120.0		0.0	145.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00				
Frt		0.891			0.931			0.999			0.987	
Flt Protected		0.990			0.976			0.995		0.950		
Satd. Flow (prot)	0	1643	0	0	1726	0	0	5099	0	1805	5064	0
Flt Permitted		0.916			0.535			0.715		0.098		
Satd. Flow (perm)	0	1520	0	0	946	0	0	3664	0	186	5064	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		301			109			3			29	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		78.6			160.8			306.9			459.4	
Travel Time (s)		7.1			14.5			18.4			27.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	73	0	301	34	0	36	293	2523	26	43	887	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	374	0	0	70	0	0	2842	0	43	974	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2		1	2	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (m)		10.0			10.0			10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6			0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5		22.5	22.5		13.0	37.5		24.5	24.5	
Total Split (%)	37.5%	37.5%		37.5%	37.5%		21.7%	62.5%		40.8%	40.8%	
Maximum Green (s)	18.0	18.0		18.0	18.0		8.5	33.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5			4.5		4.5	4.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		10.1			10.1			40.9		40.9	40.9	
Actuated g/C Ratio		0.17			0.17			0.68		0.68	0.68	
v/c Ratio		0.74			0.28			1.14		0.34	0.28	
Control Delay (s/veh)		14.7			4.7			82.4		17.0	4.6	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)		14.7			4.7			82.4		17.0	4.6	
LOS		B			A			F		B	A	
Approach Delay (s/veh)		14.7			4.7			82.4			5.1	
Approach LOS		B			A			F			A	
Queue Length 50th (m)		7.8			0.0			~143.8		1.5	11.3	
Queue Length 95th (m)		26.5			4.3			#202.2		#15.7	27.3	
Internal Link Dist (m)		54.6			136.8			282.9			435.4	
Turn Bay Length (m)										145.0		
Base Capacity (vph)		666			360			2498		127	3461	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.56			0.19			1.14		0.34	0.28	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay (s/veh): 57.0	Intersection LOS: E

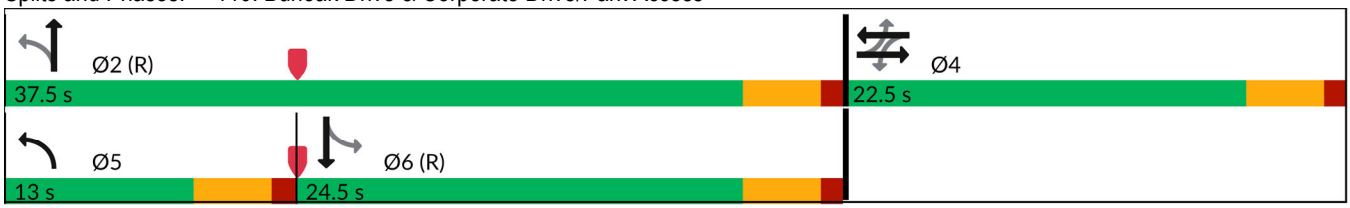
Intersection Capacity Utilization 104.3% ICU Level of Service G

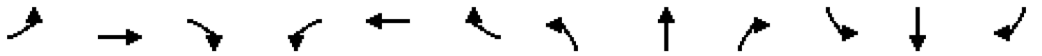
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 110: Burloak Drive & Corporate Drive/Park Access

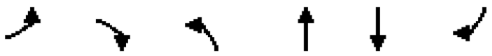




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Future Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00			0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.89			0.93			1.00		1.00	0.99	
Flt Protected		0.99			0.98			0.99		0.95	1.00	
Satd. Flow (prot)		1644			1726			5097		1805	5062	
Flt Permitted		0.92			0.54			0.72		0.10	1.00	
Satd. Flow (perm)		1521			947			3664		186	5062	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	0	301	34	0	36	293	2523	26	43	887	87
RTOR Reduction (vph)	0	250	0	0	58	0	0	1	0	0	9	0
Lane Group Flow (vph)	0	124	0	0	12	0	0	2841	0	43	965	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)		10.1			10.1			40.9		40.9	40.9	
Effective Green, g (s)		10.1			10.1			40.9		40.9	40.9	
Actuated g/C Ratio		0.17			0.17			0.68		0.68	0.68	
Clearance Time (s)		4.5			4.5			4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		256			159			2497		126	3450	
v/s Ratio Prot											0.19	
v/s Ratio Perm		c0.08			0.01			c0.78		0.23		
v/c Ratio		0.48			0.07			1.14		0.34	0.28	
Uniform Delay, d1		22.6			21.0			9.6		4.0	3.8	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		1.4			0.2			67.5		7.2	0.2	
Delay (s)		24.0			21.2			77.0		11.2	4.0	
Level of Service		C			C			E		B	A	
Approach Delay (s/veh)		24.0			21.2			77.0			4.3	
Approach LOS		C			C			E			A	

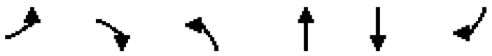
Intersection Summary			
HCM 2000 Control Delay (s/veh)	54.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.11		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	104.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	241	195	2608	1077	81
Future Volume (vph)	64	241	195	2608	1077	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	120.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.91	0.91
Frt	0.893				0.990	
Flt Protected	0.990			0.997		
Satd. Flow (prot)	1647	0	0	5070	5034	0
Flt Permitted	0.990			0.997		
Satd. Flow (perm)	1647	0	0	5070	5034	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	134.4			409.5	306.9	
Travel Time (s)	12.1			24.6	18.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	262	212	2835	1171	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	332	0	0	3047	1259	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

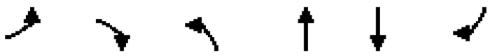
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		



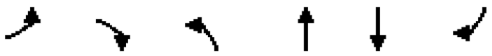
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	241	195	2608	1077	81
Future Volume (Veh/h)	64	241	195	2608	1077	81
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	262	212	2835	1171	88
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					307	
pX, platoon unblocked						
vC, conflicting volume	2584	434	1259			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2584	434	1259			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	54	61			
cM capacity (veh/h)	13	570	548			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	332	779	1134	1134	468	468	322
Volume Left	70	212	0	0	0	0	0
Volume Right	262	0	0	0	0	0	88
cSH	56	548	1700	1700	1700	1700	1700
Volume to Capacity	5.97	0.39	0.67	0.67	0.28	0.28	0.19
Queue Length 95th (m)	Err	14.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	Err	10.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s/veh)	Err	2.8			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	717.6		
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	272	725	857	2531	1172	137
Future Volume (vph)	272	725	857	2531	1172	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.984	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	3367	5136	5072	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1583	3361	5136	5072	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		537			18	
Link Speed (k/h)	60			60	60	
Link Distance (m)	769.5			453.2	409.5	
Travel Time (s)	46.2			27.2	24.6	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	299	797	942	2781	1288	151
Shared Lane Traffic (%)						
Lane Group Flow (vph)	299	797	942	2781	1439	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	34.0	71.0	37.0	
Total Split (%)	35.5%	35.5%	30.9%	64.5%	33.6%	
Maximum Green (s)	32.0	32.0	29.0	64.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	29.5	29.5	31.5	66.5	30.0	
Actuated g/C Ratio	0.27	0.27	0.29	0.60	0.27	
v/c Ratio	0.64	0.98	0.98	0.90	1.03	
Control Delay (s/veh)	41.8	39.5	63.1	28.7	71.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	41.8	39.5	63.1	28.7	71.5	
LOS	D	D	E	C	E	
Approach Delay (s/veh)	40.1			37.4	71.5	
Approach LOS	D			D	E	
Queue Length 50th (m)	59.0	70.4	~128.4	172.5	~126.8	
Queue Length 95th (m)	89.2	#163.0	m#137.5	m175.1	#157.9	
Internal Link Dist (m)	745.5			429.2	385.5	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	509	841	965	3107	1396	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.59	0.95	0.98	0.90	1.03	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 45.7	Intersection LOS: D

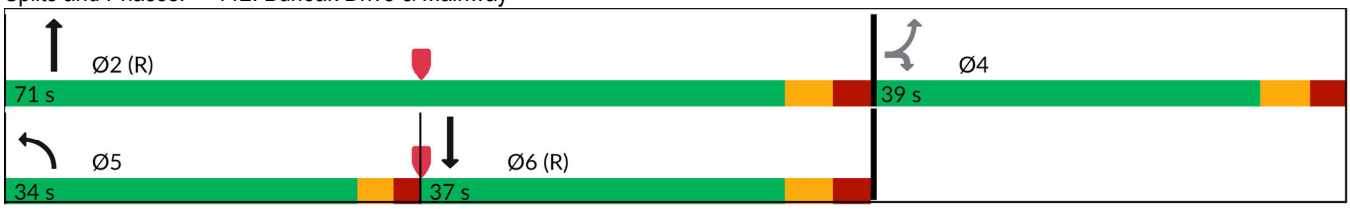
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

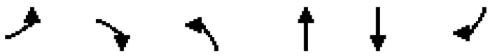
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 112: Burloak Drive & Mainway



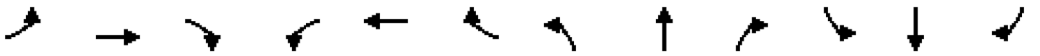


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	272	725	857	2531	1172	137
Future Volume (vph)	272	725	857	2531	1172	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	3367	5136	5074	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1583	3367	5136	5074	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	299	797	942	2781	1288	151
RTOR Reduction (vph)	0	393	0	0	13	0
Lane Group Flow (vph)	299	404	942	2781	1426	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	29.5	29.5	31.5	66.5	30.0	
Effective Green, g (s)	29.5	29.5	31.5	66.5	30.0	
Actuated g/C Ratio	0.27	0.27	0.29	0.60	0.27	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	469	424	964	3104	1383	
v/s Ratio Prot			c0.28	0.54	c0.28	
v/s Ratio Perm	0.17	c0.26				
v/c Ratio	0.64	0.95	0.98	0.90	1.03	
Uniform Delay, d1	35.5	39.6	38.9	18.8	40.0	
Progression Factor	1.00	1.00	1.18	1.32	1.00	
Incremental Delay, d2	2.8	31.7	16.4	2.6	32.5	
Delay (s)	38.4	71.2	62.2	27.4	72.5	
Level of Service	D	E	E	C	E	
Approach Delay (s/veh)	62.3			36.2	72.5	
Approach LOS	E			D	E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Future Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.992			0.979			0.985			0.939	
Flt Protected	0.950				0.999			0.983			0.983	
Satd. Flow (prot)	1770	3419	0	0	3457	0	0	1795	0	0	1719	0
Flt Permitted	0.118				0.933			0.573			0.643	
Satd. Flow (perm)	220	3419	0	0	3228	0	0	1046	0	0	1125	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			14			8			52	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		108.6			99.6			154.8			115.8	
Travel Time (s)		6.5			6.0			13.9			10.4	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Adj. Flow (vph)	446	586	33	21	935	155	217	335	67	289	180	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	446	619	0	0	1111	0	0	619	0	0	857	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	19.0	53.0		34.0	34.0		67.0	67.0		67.0	67.0	
Total Split (%)	15.8%	44.2%		28.3%	28.3%		55.8%	55.8%		55.8%	55.8%	
Maximum Green (s)	14.5	48.5		29.5	29.5		62.5	62.5		62.5	62.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	48.5	48.5			29.5			62.5			62.5	
Actuated g/C Ratio	0.40	0.40			0.25			0.52			0.52	
v/c Ratio	1.62	0.45			1.38			1.13			1.40	
Control Delay (s/veh)	319.4	27.0			214.8			107.9			217.5	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	319.4	27.0			214.8			107.9			217.5	
LOS	F	C			F			F			F	
Approach Delay (s/veh)		149.5			214.8			107.9			217.5	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	~145.7	58.9			~195.1			~179.9			~284.0	
Queue Length 95th (m)	#192.6	69.7			#215.8			#227.3			#329.2	
Internal Link Dist (m)		84.6			75.6			130.8			91.8	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	276	1385			804			548			610	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.62	0.45			1.38			1.13			1.40	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 178.3	Intersection LOS: F

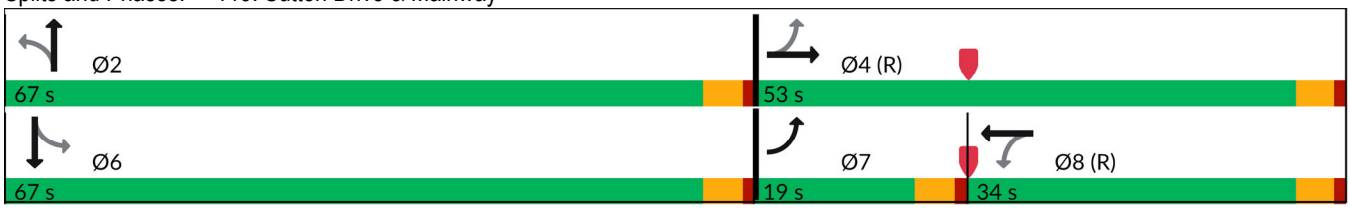
Intersection Capacity Utilization 111.8% ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 113: Sutton Drive & Mainway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Future Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.98			0.99			0.94	
Flt Protected	0.95	1.00			1.00			0.98			0.98	
Satd. Flow (prot)	1770	3419			3457			1795			1720	
Flt Permitted	0.12	1.00			0.93			0.57			0.64	
Satd. Flow (perm)	219	3419			3227			1046			1125	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	446	586	33	21	935	155	217	335	67	289	180	388
RTOR Reduction (vph)	0	4	0	0	11	0	0	4	0	0	25	0
Lane Group Flow (vph)	446	615	0	0	1100	0	0	615	0	0	832	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	48.5	48.5			29.5			62.5			62.5	
Effective Green, g (s)	48.5	48.5			29.5			62.5			62.5	
Actuated g/C Ratio	0.40	0.40			0.25			0.52			0.52	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	275	1381			793			544			585	
v/s Ratio Prot	c0.20	0.18										
v/s Ratio Perm	c0.46				0.34			0.59			c0.74	
v/c Ratio	1.62	0.45			1.39			1.13			1.42	
Uniform Delay, d1	34.5	26.0			45.3			28.7			28.7	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	296.0	1.0			182.2			79.9			199.9	
Delay (s)	330.5	27.0			227.5			108.7			228.7	
Level of Service	F	C			F			F			F	
Approach Delay (s/veh)		154.1			227.5			108.7			228.7	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	186.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	111.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

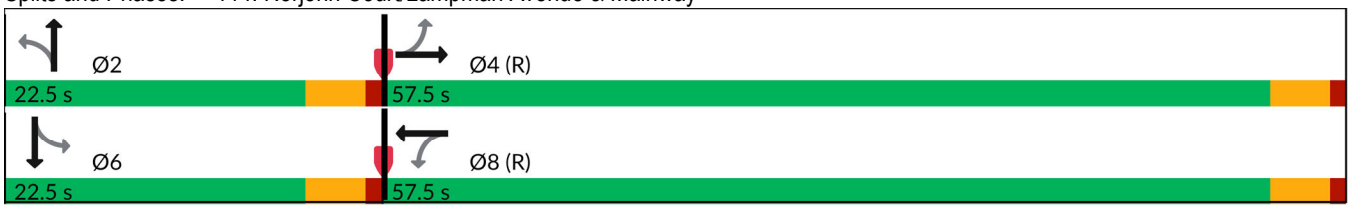
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Future Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			0.99	
Frt		0.994			0.989			0.977			0.927	
Flt Protected		0.998						0.963			0.978	
Satd. Flow (prot)	0	3420	0	0	3497	0	0	1783	0	0	1686	0
Flt Permitted		0.683			0.952			0.705			0.844	
Satd. Flow (perm)	0	2340	0	0	3329	0	0	1303	0	0	1453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			22			12			25	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			645.5			107.7			112.1	
Travel Time (s)		25.6			38.7			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	48	941	41	7	1847	151	91	9	20	58	2	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1030	0	0	2005	0	0	120	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

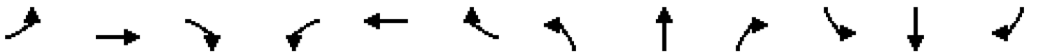


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	57.5	57.5		57.5	57.5		22.5	22.5		22.5	22.5	
Total Split (%)	71.9%	71.9%		71.9%	71.9%		28.1%	28.1%		28.1%	28.1%	
Maximum Green (s)	53.0	53.0		53.0	53.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		53.0			53.0			18.0			18.0	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
v/c Ratio		0.66			0.91			0.40			0.38	
Control Delay (s/veh)		10.7			19.1			28.3			24.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		10.7			19.1			28.3			24.8	
LOS		B			B			C			C	
Approach Delay (s/veh)		10.7			19.1			28.3			24.8	
Approach LOS		B			B			C			C	
Queue Length 50th (m)		46.2			124.2			14.7			14.1	
Queue Length 95th (m)		54.0			126.8			26.6			26.0	
Internal Link Dist (m)		402.4			621.5			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		1553			2212			302			346	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.66			0.91			0.40			0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay (s/veh): 17.0		Intersection LOS: B	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway

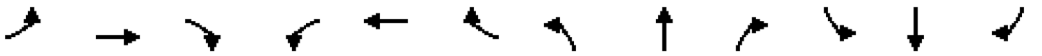




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Future Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.93	
Flt Protected		1.00			1.00			0.96			0.98	
Satd. Flow (prot)		3419			3495			1782			1685	
Flt Permitted		0.68			0.95			0.70			0.84	
Satd. Flow (perm)		2342			3327			1304			1454	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	48	941	41	7	1847	151	91	9	20	58	2	70
RTOR Reduction (vph)	0	4	0	0	7	0	0	9	0	0	19	0
Lane Group Flow (vph)	0	1026	0	0	1998	0	0	111	0	0	111	0
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		53.0			53.0			18.0			18.0	
Effective Green, g (s)		53.0			53.0			18.0			18.0	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1551			2204			293			327	
v/s Ratio Prot												
v/s Ratio Perm		0.44			c0.60			c0.08			0.08	
v/c Ratio		0.66			0.91			0.38			0.34	
Uniform Delay, d1		8.1			11.4			26.3			26.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.2			6.8			3.7			2.8	
Delay (s)		10.3			18.2			29.9			28.8	
Level of Service		B			B			C			C	
Approach Delay (s/veh)		10.3			18.2			29.9			28.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Future Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor		0.99		1.00	0.99			1.00		1.00	1.00	
Frt		0.954			0.962			0.977			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3211	0	3273	3383	0	1703	4903	0	3467	4960	0
Flt Permitted	0.110			0.950			0.086			0.950		
Satd. Flow (perm)	197	3211	0	3265	3383	0	154	4903	0	3466	4960	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			34			30			20	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	260	428	189	471	1004	340	422	1999	362	123	1344	205
Shared Lane Traffic (%)												
Lane Group Flow (vph)	260	617	0	471	1344	0	422	2361	0	123	1549	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	18.0	42.0		28.0	52.0		26.0	64.0		11.0	49.0	
Total Split (%)	12.4%	29.0%		19.3%	35.9%		17.9%	44.1%		7.6%	33.8%	
Maximum Green (s)	14.0	35.7		24.0	45.7		22.0	57.7		7.0	42.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	52.7	36.4		23.3	45.7		71.0	57.7		7.0	42.7	
Actuated g/C Ratio	0.36	0.25		0.16	0.32		0.49	0.40		0.05	0.29	
v/c Ratio	1.20	0.74		0.90	1.23		1.36	1.20		0.74	1.05	
Control Delay (s/veh)	161.1	52.2		79.8	154.2		217.0	133.0		92.8	86.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	161.1	52.2		79.8	154.2		217.0	133.0		92.8	86.3	
LOS	F	D		E	F		F	F		F	F	
Approach Delay (s/veh)		84.5			134.9			145.7			86.7	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	~82.4	89.2		76.0	~264.6		~157.9	~319.7		19.4	~187.5	
Queue Length 95th (m)	#144.1	113.7		#106.2	#310.7		#230.2	#348.4		#35.5	#219.7	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	217	839		541	1089		310	1969		167	1474	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.20	0.74		0.87	1.23		1.36	1.20		0.74	1.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay (s/veh): 121.7	Intersection LOS: F

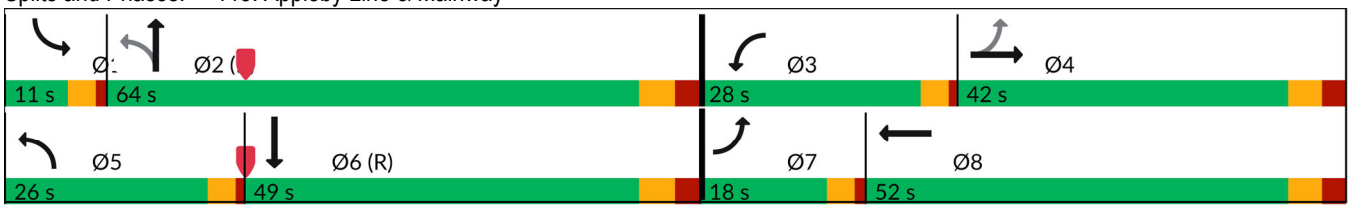
Intersection Capacity Utilization 117.0% ICU Level of Service H

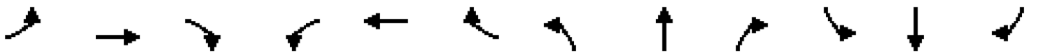
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 115: Appleby Line & Mainway



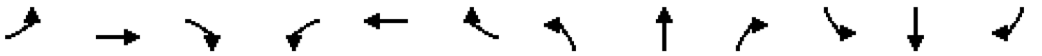


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Future Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3211		3273	3383		1703	4903		3467	4960	
Flt Permitted	0.11	1.00		0.95	1.00		0.09	1.00		0.95	1.00	
Satd. Flow (perm)	197	3211		3273	3383		154	4903		3467	4960	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	260	428	189	471	1004	340	422	1999	362	123	1344	205
RTOR Reduction (vph)	0	34	0	0	23	0	0	18	0	0	14	0
Lane Group Flow (vph)	260	583	0	471	1321	0	422	2343	0	123	1535	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	50.4	36.4		23.3	45.7		68.7	57.7		7.0	42.7	
Effective Green, g (s)	50.4	36.4		23.3	45.7		68.7	57.7		7.0	42.7	
Actuated g/C Ratio	0.35	0.25		0.16	0.32		0.47	0.40		0.05	0.29	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	213	806		525	1066		307	1951		167	1460	
v/s Ratio Prot	c0.12	0.18		0.14	c0.39		c0.21	0.48		0.04	0.31	
v/s Ratio Perm	0.31						c0.44					
v/c Ratio	1.22	0.72		0.90	1.24		1.37	1.20		0.74	1.05	
Uniform Delay, d1	41.4	49.7		59.7	49.7		47.1	43.7		68.1	51.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	134.0	3.2		17.8	115.7		187.9	95.6		15.5	38.3	
Delay (s)	175.4	52.9		77.5	165.3		235.0	139.3		83.6	89.5	
Level of Service	F	D		E	F		F	F		F	F	
Approach Delay (s/veh)		89.2			142.5			153.8			89.0	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	127.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Future Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.942			0.945			0.983			0.997	
Flt Protected		0.977			0.974		0.950			0.950		
Satd. Flow (prot)	0	1735	0	0	1733	0	1641	4943	0	1805	5062	0
Flt Permitted		0.716			0.780		0.175			0.073		
Satd. Flow (perm)	0	1269	0	0	1384	0	301	4943	0	139	5062	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			34			29			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	57	12	52	212	21	162	51	2270	289	149	1395	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	395	0	51	2559	0	149	1425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.6	38.6		38.6	38.6		55.4	55.4		11.0	66.4	
Total Split (%)	36.8%	36.8%		36.8%	36.8%		52.8%	52.8%		10.5%	63.2%	
Maximum Green (s)	32.1	32.1		32.1	32.1		49.4	49.4		7.0	60.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		30.3			30.3		50.8	50.8		64.2	62.2	
Actuated g/C Ratio		0.29			0.29		0.48	0.48		0.61	0.59	
v/c Ratio		0.31			0.93		0.35	1.06		0.74	0.48	
Control Delay (s/veh)		21.6			63.5		26.6	65.4		40.3	13.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		21.6			63.5		26.6	65.4		40.3	13.1	
LOS		C			E		C	E		D	B	
Approach Delay (s/veh)		21.6			63.5			64.6			15.6	
Approach LOS		C			E			E			B	
Queue Length 50th (m)		13.4			74.5		7.3	~232.6		14.6	63.0	
Queue Length 95th (m)		29.0			#131.6		19.9	#263.8		#47.6	74.9	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		413			446		145	2407		201	2998	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.29			0.89		0.35	1.06		0.74	0.48	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 47.0	Intersection LOS: D

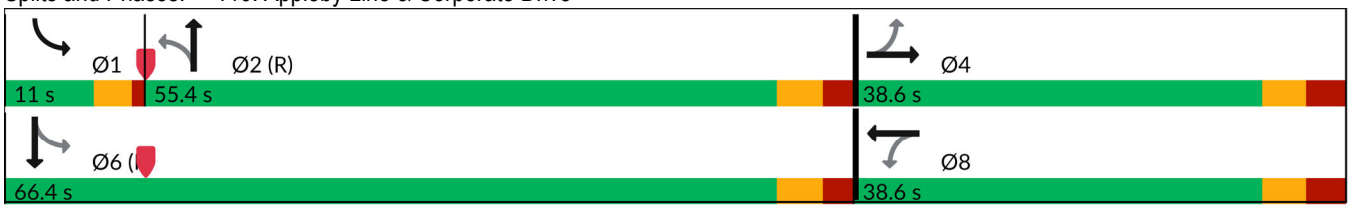
Intersection Capacity Utilization 97.4% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

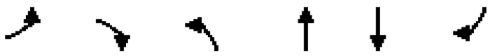
Splits and Phases: 116: Appleby Line & Corporate Drive



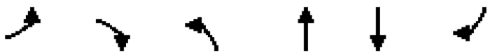
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Future Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1731			1727		1635	4943		1805	5061	
Flt Permitted		0.72			0.78		0.17	1.00		0.07	1.00	
Satd. Flow (perm)		1269			1383		301	4943		138	5061	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	12	52	212	21	162	51	2270	289	149	1395	30
RTOR Reduction (vph)	0	26	0	0	24	0	0	15	0	0	2	0
Lane Group Flow (vph)	0	95	0	0	371	0	51	2544	0	149	1423	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		30.3			30.3		50.9	50.9		62.2	62.2	
Effective Green, g (s)		30.3			30.3		50.9	50.9		62.2	62.2	
Actuated g/C Ratio		0.29			0.29		0.48	0.48		0.59	0.59	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		366			399		145	2396		197	2998	
v/s Ratio Prot								c0.51		c0.05	0.28	
v/s Ratio Perm		0.07			c0.27		0.17			0.39		
v/c Ratio		0.26			0.93		0.35	1.06		0.76	0.47	
Uniform Delay, d1		28.7			36.3		16.8	27.1		24.6	12.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			27.7		6.6	37.4		15.2	0.5	
Delay (s)		29.1			64.0		23.4	64.5		39.8	12.7	
Level of Service		C			E		C	E		D	B	
Approach Delay (s/veh)		29.1			64.0			63.7			15.2	
Approach LOS		C			E			E			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	594	351	2660	1735	31
Future Volume (vph)	166	594	351	2660	1735	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	3242	5085	5063	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1553	3240	5085	5063	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		260			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	184	660	390	2956	1928	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	660	390	2956	1962	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

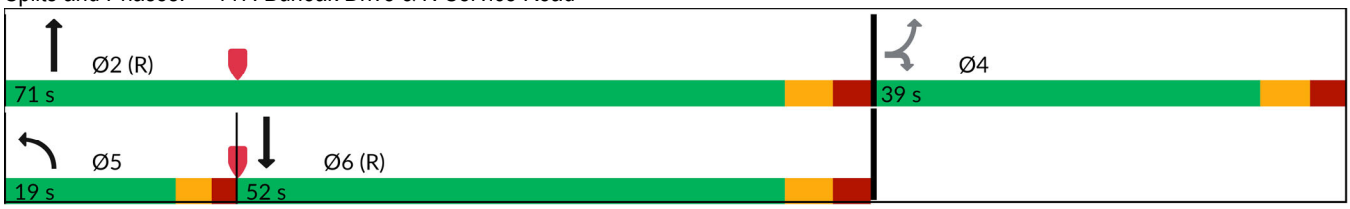


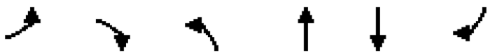
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	19.0	71.0	52.0	
Total Split (%)	35.5%	35.5%	17.3%	64.5%	47.3%	
Maximum Green (s)	32.0	32.0	14.0	64.0	45.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	32.0	32.0	14.0	64.0	45.0	
Actuated g/C Ratio	0.29	0.29	0.13	0.58	0.41	
v/c Ratio	0.35	1.04	0.95	1.00	0.95	
Control Delay (s/veh)	33.2	70.1	81.1	39.8	32.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.2	70.1	81.1	39.8	32.8	
LOS	C	E	F	D	C	
Approach Delay (s/veh)	62.0			44.6	32.8	
Approach LOS	E			D	C	
Queue Length 50th (m)	33.1	~119.6	48.3	233.1	102.0	
Queue Length 95th (m)	53.7	#194.7	#80.0	#287.4	m102.9	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	519	636	412	2958	2073	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.35	1.04	0.95	1.00	0.95	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay (s/veh): 43.3	Intersection LOS: D

Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	594	351	2660	1735	31
Future Volume (vph)	166	594	351	2660	1735	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	3242	5085	5065	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1787	1553	3242	5085	5065	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	184	660	390	2956	1928	34
RTOR Reduction (vph)	0	184	0	0	2	0
Lane Group Flow (vph)	184	476	390	2956	1960	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	32.0	32.0	14.0	64.0	45.0	
Effective Green, g (s)	32.0	32.0	14.0	64.0	45.0	
Actuated g/C Ratio	0.29	0.29	0.13	0.58	0.41	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	519	451	412	2958	2072	
v/s Ratio Prot			0.12	c0.58	0.39	
v/s Ratio Perm	0.10	c0.31				
v/c Ratio	0.35	1.05	0.95	1.00	0.95	
Uniform Delay, d1	30.8	39.0	47.6	23.0	31.3	
Progression Factor	1.00	1.00	1.00	1.00	0.93	
Incremental Delay, d2	0.4	57.5	30.7	16.4	3.1	
Delay (s)	31.3	96.5	78.4	39.4	32.3	
Level of Service	C	F	E	D	C	
Approach Delay (s/veh)	82.3			43.9	32.3	
Approach LOS	F			D	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2900	1827	0	0	2817
Future Volume (vph)	2713	2900	1827	0	0	2817
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2787	5036	0	0	5085
Flt Permitted	0.950					
Satd. Flow (perm)	3433	2787	5036	0	0	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		1				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2917	3118	1965	0	0	3029
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2917	3118	1965	0	0	3029
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

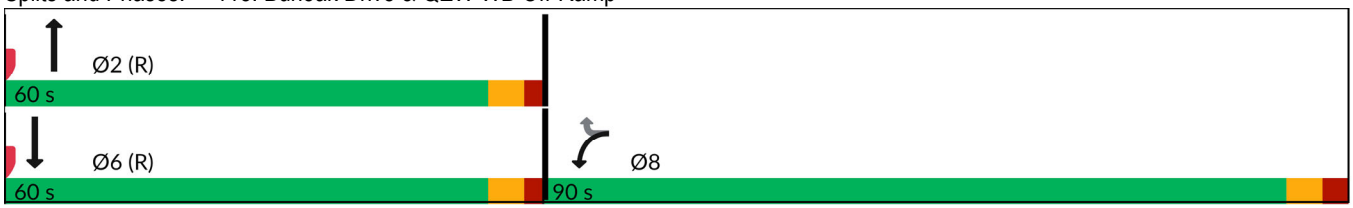


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	90.0	90.0	60.0			60.0
Total Split (%)	60.0%	60.0%	40.0%			40.0%
Maximum Green (s)	83.0	83.0	54.0			54.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	83.0	83.0	54.0			54.0
Actuated g/C Ratio	0.55	0.55	0.36			0.36
v/c Ratio	1.54	2.02	1.08			1.66
Control Delay (s/veh)	271.7	485.4	93.0			329.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	271.7	485.4	93.0			329.2
LOS	F	F	F			F
Approach Delay (s/veh)	382.1		93.0			329.2
Approach LOS	F		F			F
Queue Length 50th (m)	~667.5	~885.7	~257.0			~509.7
Queue Length 95th (m)	#701.5	#920.9	#287.4			#533.1
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1899	1542	1812			1830
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.54	2.02	1.08			1.66

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 2.02			
Intersection Signal Delay (s/veh): 316.1		Intersection LOS: F	

Intersection Capacity Utilization 147.6% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

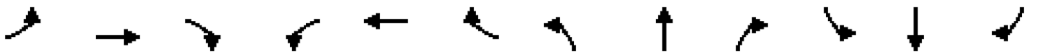




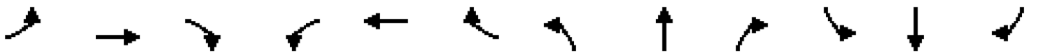
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2900	1827	0	0	2817
Future Volume (vph)	2713	2900	1827	0	0	2817
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	5036			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	5036			5085
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2917	3118	1965	0	0	3029
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2917	3118	1965	0	0	3029
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	83.0	83.0	54.0			54.0
Effective Green, g (s)	83.0	83.0	54.0			54.0
Actuated g/C Ratio	0.55	0.55	0.36			0.36
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1899	1542	1812			1830
v/s Ratio Prot	0.85		0.39			c0.60
v/s Ratio Perm		c1.12				
v/c Ratio	1.54	2.02	1.08			1.66
Uniform Delay, d1	33.5	33.5	48.0			48.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	243.9	462.1	48.1			297.3
Delay (s)	277.4	495.6	96.1			345.3
Level of Service	F	F	F			F
Approach Delay (s/veh)	390.1		96.1			345.3
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	325.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	147.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Future Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.938	0.850			0.865		0.998				
Flt Protected	0.950	0.981										
Satd. Flow (prot)	1493	2812	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950	0.981									0.928	
Satd. Flow (perm)	1493	2812	1413	0	0	1596	0	5125	0	0	4766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81	174			83		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	472	97	448	0	0	213	0	1357	17	14	4195	0
Shared Lane Traffic (%)	43%		47%									
Lane Group Flow (vph)	269	511	237	0	0	213	0	1374	0	0	4209	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

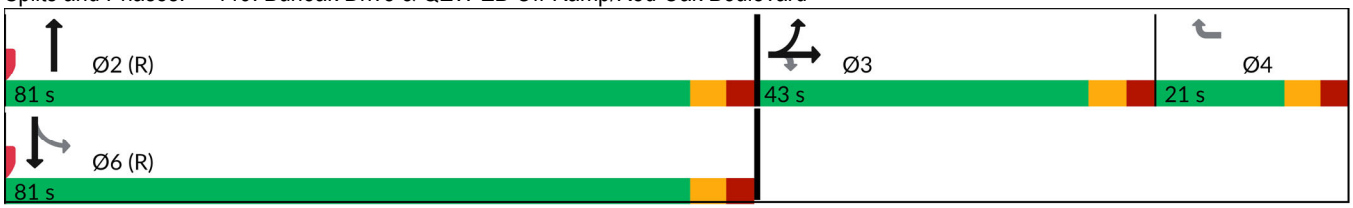


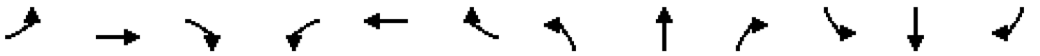
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			15.0		39.0		15.0	15.0	
Total Split (s)	43.0	43.0	43.0			21.0		81.0		81.0	81.0	
Total Split (%)	29.7%	29.7%	29.7%			14.5%		55.9%		55.9%	55.9%	
Maximum Green (s)	36.0	36.0	36.0			14.0		74.0		74.0	74.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0				
Flash Don't Walk (s)	25.0	25.0	25.0					25.0				
Pedestrian Calls (#/hr)	0	0	0					0				
Act Effct Green (s)	30.9	30.9	30.9			15.2		77.9			77.9	
Actuated g/C Ratio	0.21	0.21	0.21			0.10		0.54			0.54	
v/c Ratio	0.85	0.77	0.54			0.88		0.50			1.64	
Control Delay (s/veh)	77.8	52.8	18.4			72.5		22.6			318.0	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	77.8	52.8	18.4			72.5		22.6			318.0	
LOS	E	D	B			E		C			F	
Approach Delay (s/veh)		51.4			72.5			22.6			318.0	
Approach LOS		D			E			C			F	
Queue Length 50th (m)	91.0	74.8	17.5			40.2		99.8			~692.1	
Queue Length 95th (m)	129.3	97.0	48.1			#94.7		113.9			#705.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	370	759	481			244		2755			2561	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.73	0.67	0.49			0.87		0.50			1.64	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.64	
Intersection Signal Delay (s/veh): 211.0	Intersection LOS: F

Intersection Capacity Utilization 110.9% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

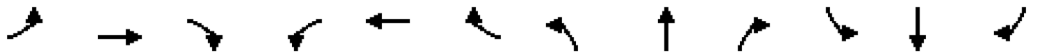




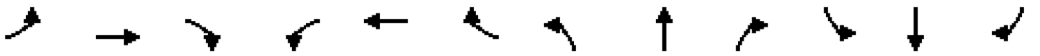
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Future Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1493	2810	1413			1596		5126			5135	
Flt Permitted	0.95	0.98	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1493	2810	1413			1596		5126			4767	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	472	97	448	0	0	213	0	1357	17	14	4195	0
RTOR Reduction (vph)	0	64	137	0	0	74	0	1	0	0	0	0
Lane Group Flow (vph)	269	447	100	0	0	139	0	1373	0	0	4209	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	30.9	30.9	30.9			15.2		77.9			77.9	
Effective Green, g (s)	30.9	30.9	30.9			15.2		77.9			77.9	
Actuated g/C Ratio	0.21	0.21	0.21			0.10		0.54			0.54	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	318	598	301			167		2753			2561	
v/s Ratio Prot	c0.18	0.16						0.27				
v/s Ratio Perm			0.07			c0.09					c0.88	
v/c Ratio	0.85	0.75	0.33			0.83		0.50			1.64	
Uniform Delay, d1	54.8	53.4	48.3			63.6		21.2			33.6	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	18.3	5.1	0.7			28.1		0.6			291.4	
Delay (s)	73.1	58.5	49.0			91.7		21.9			324.9	
Level of Service	E	E	D			F		C			F	
Approach Delay (s/veh)		60.1			91.7			21.9			324.9	
Approach LOS		E			F			C			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	217.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Future Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.990			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1600	0	1770	1737	0	1736	4975	0	1805	4962	0
Flt Permitted	0.281			0.237			0.073			0.078		
Satd. Flow (perm)	523	1600	0	441	1737	0	133	4975	0	148	4962	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			33			11			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Adj. Flow (vph)	73	48	186	329	260	208	369	2458	170	65	1772	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	234	0	329	468	0	369	2628	0	65	1835	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		18.7	53.9		29.2	69.5		11.6	51.9	
Total Split (%)	26.1%	26.1%		13.9%	39.9%		21.6%	51.5%		8.6%	38.4%	
Maximum Green (s)	29.1	29.1		14.7	47.8		25.2	62.9		7.6	45.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	20.5	20.5		41.3	39.2		85.7	73.9		61.0	51.0	
Actuated g/C Ratio	0.15	0.15		0.31	0.29		0.63	0.55		0.45	0.38	
v/c Ratio	0.92	0.66		1.18	0.89		0.88	0.96		0.41	0.98	
Control Delay (s/veh)	136.7	31.0		147.6	61.2		61.0	41.1		26.2	57.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	17.8		0.0	0.0	
Total Delay (s/veh)	136.7	31.0		147.6	61.2		61.0	58.9		26.2	57.8	
LOS	F	C		F	E		E	E		C	E	
Approach Delay (s/veh)		56.1			96.9			59.1			56.7	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	20.6	27.1		~83.5	117.7		83.0	~271.9		6.7	~219.9	
Queue Length 95th (m)	#44.1	53.7		#130.7	151.4		#159.7	#348.3		17.5	#252.0	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	112	448		279	636		420	2726		162	1877	
Starvation Cap Reductn	0	0		0	0		0	196		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.65	0.52		1.18	0.74		0.88	1.04		0.40	0.98	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 63.2	Intersection LOS: E

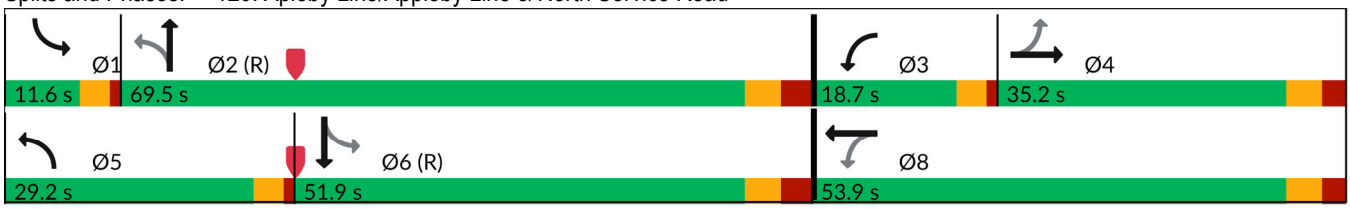
Intersection Capacity Utilization 107.7% ICU Level of Service G

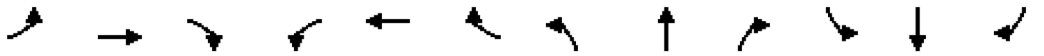
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Future Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	1600		1770	1738		1736	4977		1805	4961	
Flt Permitted	0.28	1.00		0.24	1.00		0.07	1.00		0.08	1.00	
Satd. Flow (perm)	523	1600		442	1738		133	4977		149	4961	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	73	48	186	329	260	208	369	2458	170	65	1772	63
RTOR Reduction (vph)	0	112	0	0	23	0	0	5	0	0	2	0
Lane Group Flow (vph)	73	122	0	329	445	0	369	2623	0	65	1833	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.5	20.5		39.2	39.2		83.1	73.1		57.0	51.0	
Effective Green, g (s)	20.5	20.5		39.2	39.2		83.1	73.1		57.0	51.0	
Actuated g/C Ratio	0.15	0.15		0.29	0.29		0.62	0.54		0.42	0.38	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	79	242		272	504		415	2694		136	1874	
v/s Ratio Prot		0.08		c0.13	0.26		c0.18	c0.53		0.02	0.37	
v/s Ratio Perm	0.14			c0.22			0.36			0.18		
v/c Ratio	0.92	0.50		1.21	0.88		0.89	0.97		0.48	0.98	
Uniform Delay, d1	56.5	52.6		43.5	45.7		41.7	30.0		30.6	41.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	75.4	1.7		123.5	16.5		20.1	12.2		2.6	16.2	
Delay (s)	131.9	54.2		167.0	62.2		61.8	42.2		33.2	57.6	
Level of Service	F	D		F	E		E	D		C	E	
Approach Delay (s/veh)		72.7			105.4			44.6			56.8	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	3023	0	0	2727
Future Volume (vph)	1353	1424	3023	0	0	2727
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2733	5085	0	0	4988
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2733	5085	0	0	4988
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Adj. Flow (vph)	1395	1468	3116	0	0	2811
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1395	1468	3116	0	0	2811
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



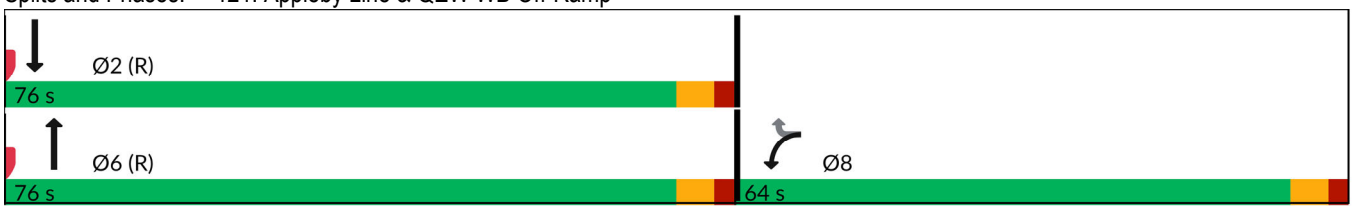
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	64.0	64.0	76.0			76.0
Total Split (%)	45.7%	45.7%	54.3%			54.3%
Maximum Green (s)	58.0	58.0	70.0			70.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	58.0	58.0	70.0			70.0
Actuated g/C Ratio	0.41	0.41	0.50			0.50
v/c Ratio	0.99	1.30	1.23			1.13
Control Delay (s/veh)	62.5	175.1	137.6			96.5
Queue Delay	0.0	0.0	0.0			0.2
Total Delay (s/veh)	62.5	175.1	137.6			96.7
LOS	E	F	F			F
Approach Delay (s/veh)	120.3		137.6			96.7
Approach LOS	F		F			F
Queue Length 50th (m)	210.4	~318.6	~414.4			~356.3
Queue Length 95th (m)	#264.7	#368.5	#438.6			#382.9
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1408	1132	2542			2494
Starvation Cap Reductn	0	0	0			204
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.99	1.30	1.23			1.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay (s/veh): 118.9		Intersection LOS: F	
Intersection Capacity Utilization 118.2%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

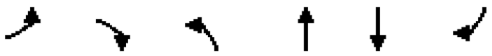
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



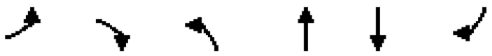


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	3023	0	0	2727
Future Volume (vph)	1353	1424	3023	0	0	2727
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2733	5085			4988
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2733	5085			4988
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1395	1468	3116	0	0	2811
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1395	1468	3116	0	0	2811
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	58.0	58.0	70.0			70.0
Effective Green, g (s)	58.0	58.0	70.0			70.0
Actuated g/C Ratio	0.41	0.41	0.50			0.50
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1408	1132	2542			2494
v/s Ratio Prot	0.41		c0.61			0.56
v/s Ratio Perm		c0.54				
v/c Ratio	0.99	1.30	1.23			1.13
Uniform Delay, d1	40.7	41.0	35.0			35.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	21.7	140.2	105.3			63.0
Delay (s)	62.4	181.2	140.3			98.0
Level of Service	E	F	F			F
Approach Delay (s/veh)	123.3		140.3			98.0
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	121.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	819	611	0	2383	3331	0
Future Volume (vph)	819	611	0	2383	3331	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	5036	4940	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	5036	4940	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		1				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Adj. Flow (vph)	827	617	0	2407	3365	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	827	617	0	2407	3365	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



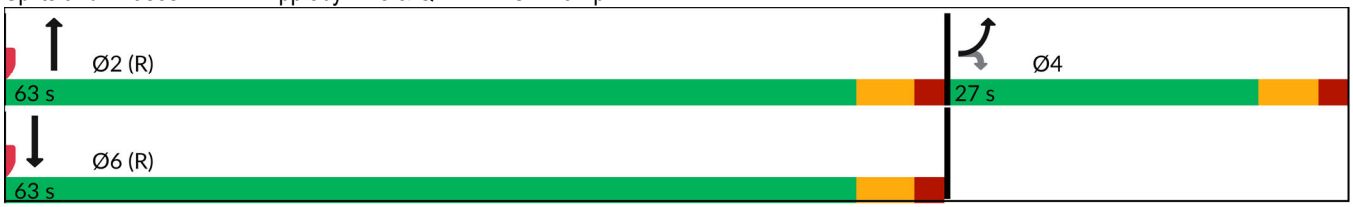
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	27.0	27.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0		57.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	21.0	21.0		57.0	57.0	
Actuated g/C Ratio	0.23	0.23		0.63	0.63	
v/c Ratio	1.06	0.99		0.75	1.08	
Control Delay (s/veh)	85.1	68.5		13.6	59.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	85.1	68.5		13.6	59.3	
LOS	F	E		B	E	
Approach Delay (s/veh)	78.0			13.6	59.3	
Approach LOS	E			B	E	
Queue Length 50th (m)	~89.4	66.3		103.7	~261.2	
Queue Length 95th (m)	#127.3	#108.2		123.1	#291.2	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	778	626		3189	3128	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	1.06	0.99		0.75	1.08	

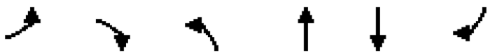
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 47.8	Intersection LOS: D
Intersection Capacity Utilization 118.2%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

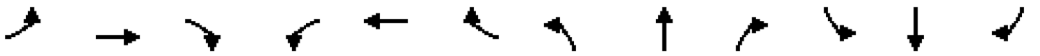




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	819	611	0	2383	3331	0
Future Volume (vph)	819	611	0	2383	3331	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		5036	4940	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		5036	4940	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	827	617	0	2407	3365	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	827	616	0	2407	3365	0
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	21.0	21.0		57.0	57.0	
Effective Green, g (s)	21.0	21.0		57.0	57.0	
Actuated g/C Ratio	0.23	0.23		0.63	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	778	625		3189	3128	
v/s Ratio Prot	c0.25			0.48	c0.68	
v/s Ratio Perm		0.23				
v/c Ratio	1.06	0.99		0.75	1.08	
Uniform Delay, d1	34.5	34.4		11.6	16.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	50.3	32.2		1.7	40.9	
Delay (s)	84.8	66.5		13.3	57.4	
Level of Service	F	E		B	E	
Approach Delay (s/veh)	77.0			13.3	57.4	
Approach LOS	E			B	E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Future Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor		0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.939			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3225	0	1752	3250	0	1687	5085	1538	3367	5085	1404
Flt Permitted	0.116			0.279			0.095			0.950		
Satd. Flow (perm)	212	3225	0	513	3250	0	169	5085	1514	3363	5085	1375
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		113			151				151			240
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Adj. Flow (vph)	404	297	202	509	645	539	115	1168	207	267	1815	348
Shared Lane Traffic (%)												
Lane Group Flow (vph)	404	499	0	509	1184	0	115	1168	207	267	1815	348
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	27.0	41.0		33.0	47.0		11.0	48.0	48.0	18.0	55.0	55.0
Total Split (%)	19.3%	29.3%		23.6%	33.6%		7.9%	34.3%	34.3%	12.9%	39.3%	39.3%
Maximum Green (s)	23.0	34.6		29.0	40.6		7.0	41.7	41.7	14.0	48.7	48.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	60.0	34.6		70.0	40.6		51.3	42.0	42.0	13.7	48.7	48.7
Actuated g/C Ratio	0.43	0.25		0.50	0.29		0.37	0.30	0.30	0.10	0.35	0.35
v/c Ratio	1.18	0.57		0.99	1.13		0.84	0.77	0.37	0.81	1.03	0.55
Control Delay (s/veh)	146.6	38.0		64.7	109.6		71.1	48.6	13.4	81.2	73.1	14.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	146.6	38.0		64.7	109.6		71.1	48.6	13.4	81.2	73.1	14.5
LOS	F	D		E	F		E	D	B	F	E	B
Approach Delay (s/veh)		86.6			96.1			45.4			65.6	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	~127.8	53.3		104.2	~194.2		20.8	115.5	12.4	40.9	~209.0	25.7
Queue Length 95th (m)	#197.8	73.0		#182.1	#239.7		#56.3	134.2	35.2	#62.4	#240.0	61.9
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	341	882		513	1049		137	1526	559	336	1768	634
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.57		0.99	1.13		0.84	0.77	0.37	0.79	1.03	0.55

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 71.8	Intersection LOS: E

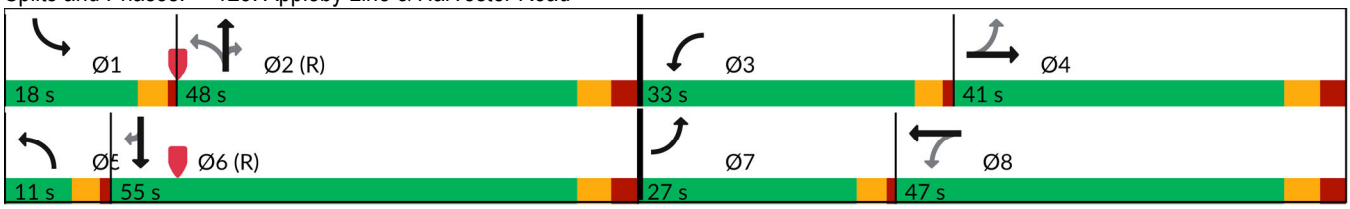
Intersection Capacity Utilization 114.7% ICU Level of Service H

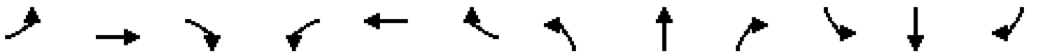
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

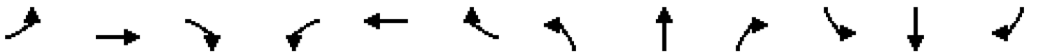




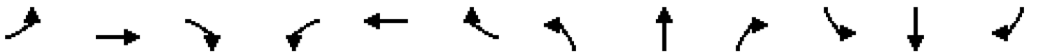
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Future Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3226		1751	3249		1687	5085	1514	3367	5085	1375
Flt Permitted	0.12	1.00		0.28	1.00		0.10	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	211	3226		515	3249		169	5085	1514	3367	5085	1375
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	404	297	202	509	645	539	115	1168	207	267	1815	348
RTOR Reduction (vph)	0	85	0	0	107	0	0	0	106	0	0	157
Lane Group Flow (vph)	404	414	0	509	1077	0	115	1168	101	267	1815	191
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	57.6	34.6		67.6	40.6		49.0	42.0	42.0	13.7	48.7	48.7
Effective Green, g (s)	57.6	34.6		67.6	40.6		49.0	42.0	42.0	13.7	48.7	48.7
Actuated g/C Ratio	0.41	0.25		0.48	0.29		0.35	0.30	0.30	0.10	0.35	0.35
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	337	797		504	942		135	1525	454	329	1768	478
v/s Ratio Prot	c0.20	0.13		c0.21	c0.33		0.04	0.23		c0.08	c0.36	
v/s Ratio Perm	0.30			0.28			0.26		0.07			0.14
v/c Ratio	1.20	0.52		1.01	1.14		0.85	0.77	0.22	0.81	1.03	0.40
Uniform Delay, d1	43.6	45.5		28.5	49.7		37.3	44.5	36.8	61.9	45.7	34.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	114.6	0.6		42.6	77.1		37.3	3.7	1.1	14.1	28.5	2.5
Delay (s)	158.2	46.1		71.1	126.8		74.6	48.3	37.9	76.0	74.1	37.1
Level of Service	F	D		E	F		E	D	D	E	E	D
Approach Delay (s/veh)		96.3			110.1			48.9			69.0	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	78.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Future Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97	1.00		0.93	0.99		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1599	1736	1810	1468	1787	3574	1482	1626	5136	1599
Flt Permitted	0.950			0.673			0.065			0.225		
Satd. Flow (perm)	3351	1776	1502	1179	1810	1421	122	3574	1376	381	5136	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			208			149			392
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Adj. Flow (vph)	622	132	508	296	253	248	290	805	139	243	1649	1301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	622	132	508	296	253	248	290	805	139	243	1649	1301
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	24.5	45.5	45.5	16.5	37.5	37.5	16.0	66.0	66.0	22.0	72.0	72.0
Total Split (%)	16.3%	30.3%	30.3%	11.0%	25.0%	25.0%	10.7%	44.0%	44.0%	14.7%	48.0%	48.0%
Maximum Green (s)	19.5	39.0	39.0	12.5	31.0	31.0	12.0	59.2	59.2	18.0	65.2	65.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	19.5	37.9	37.9	44.9	29.9	29.9	77.9	62.4	62.4	82.9	65.2	65.2
Actuated g/C Ratio	0.13	0.25	0.25	0.30	0.20	0.20	0.52	0.42	0.42	0.55	0.43	0.43
v/c Ratio	1.41	0.29	0.98	0.74	0.70	0.55	1.39	0.54	0.21	0.71	0.74	1.50
Control Delay (s/veh)	241.7	46.9	69.3	52.0	67.0	15.7	237.3	35.3	4.2	29.0	37.8	253.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	241.7	46.9	69.3	52.0	67.0	15.7	237.3	35.3	4.2	29.0	37.8	253.5
LOS	F	D	E	D	E	B	F	D	A	C	D	F
Approach Delay (s/veh)		151.9			45.5			79.3			125.0	
Approach LOS		F			D			E			F	
Queue Length 50th (m)	~137.0	34.9	110.3	70.2	76.5	11.1	~109.8	102.6	0.0	41.1	157.0	~495.8
Queue Length 95th (m)	#177.7	56.1	#187.5	99.6	110.1	41.9	#172.6	125.7	13.0	60.0	175.7	#583.3
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	442	461	528	399	374	458	208	1487	659	363	2232	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.41	0.29	0.96	0.74	0.68	0.54	1.39	0.54	0.21	0.67	0.74	1.50

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay (s/veh): 111.8	Intersection LOS: F

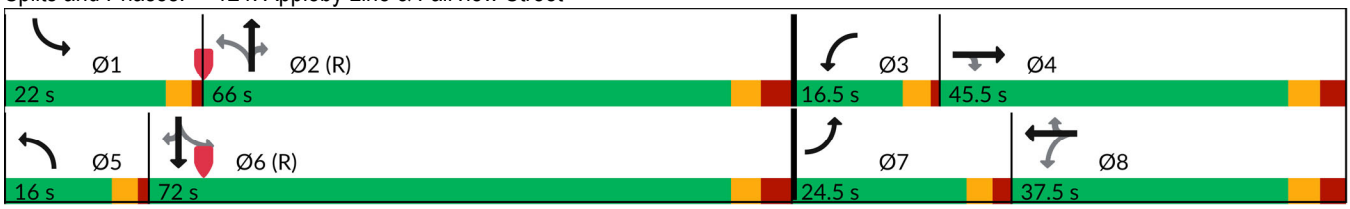
Intersection Capacity Utilization 126.8% ICU Level of Service H

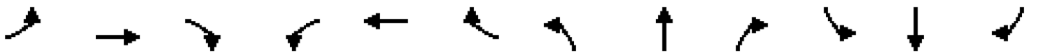
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

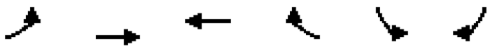




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Future Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1502	1689	1810	1421	1787	3574	1376	1622	5136	1490
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	0.06	1.00	1.00	0.23	1.00	1.00
Satd. Flow (perm)	3400	1776	1502	1196	1810	1421	122	3574	1376	385	5136	1490
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	622	132	508	296	253	248	290	805	139	243	1649	1301
RTOR Reduction (vph)	0	0	140	0	0	167	0	0	81	0	0	222
Lane Group Flow (vph)	622	132	368	296	253	81	290	805	58	243	1649	1079
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	19.5	37.9	37.9	42.4	29.9	29.9	75.5	62.4	62.4	81.1	65.2	65.2
Effective Green, g (s)	19.5	37.9	37.9	42.4	29.9	29.9	75.5	62.4	62.4	81.1	65.2	65.2
Actuated g/C Ratio	0.13	0.25	0.25	0.28	0.20	0.20	0.50	0.42	0.42	0.54	0.43	0.43
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	442	448	379	379	360	283	206	1486	572	339	2232	647
v/s Ratio Prot	c0.18	0.07		0.07	0.14		c0.12	0.23		c0.08	0.32	
v/s Ratio Perm			c0.25	0.16		0.06	0.59		0.04	0.31		c0.72
v/c Ratio	1.41	0.29	0.97	0.78	0.70	0.29	1.41	0.54	0.10	0.72	0.74	1.67
Uniform Delay, d1	65.3	45.3	55.5	47.7	55.9	51.0	44.9	33.0	26.7	21.6	35.3	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	196.4	0.4	38.5	10.0	6.1	0.6	209.9	1.4	0.4	7.1	2.2	307.5
Delay (s)	261.6	45.6	94.1	57.7	62.0	51.6	254.8	34.4	27.1	28.6	37.5	349.9
Level of Service	F	D	F	E	E	D	F	C	C	C	D	F
Approach Delay (s/veh)		171.6			57.2			85.4			164.1	
Approach LOS		F			E			F			F	

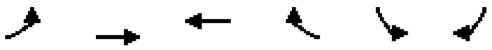
Intersection Summary			
HCM 2000 Control Delay (s/veh)	137.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	126.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	809	1288	5	22	106
Future Volume (vph)	17	809	1288	5	22	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.999		0.888	
Flt Protected	0.950				0.991	
Satd. Flow (prot)	1770	3539	3536	0	1639	0
Flt Permitted	0.950				0.991	
Satd. Flow (perm)	1770	3539	3536	0	1639	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		645.5	108.6		140.4	
Travel Time (s)		38.7	6.5		12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	879	1400	5	24	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	879	1405	0	139	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	

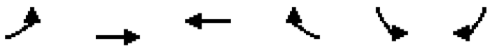
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	809	1288	5	22	106
Future Volume (Veh/h)	17	809	1288	5	22	106
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	879	1400	5	24	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			109			
pX, platoon unblocked	0.76				0.76	0.76
vC, conflicting volume	1405				1878	703
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	901				1523	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				70	86
cM capacity (veh/h)	570				80	824

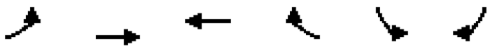
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	18	440	440	933	472	139
Volume Left	18	0	0	0	0	24
Volume Right	0	0	0	0	5	115
cSH	570	1700	1700	1700	1700	316
Volume to Capacity	0.03	0.26	0.26	0.55	0.28	0.44
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	17.1
Control Delay (s/veh)	11.5	0.0	0.0	0.0	0.0	25.0
Lane LOS	B					C
Approach Delay (s/veh)	0.2			0.0		25.0
Approach LOS						C

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	789	835	0	15	45
Future Volume (vph)	2	789	835	0	15	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt					0.898	
Flt Protected					0.988	
Satd. Flow (prot)	0	3539	3539	0	1653	0
Flt Permitted					0.988	
Satd. Flow (perm)	0	3539	3539	0	1653	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		99.6	769.5		145.5	
Travel Time (s)		6.0	46.2		13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	858	908	0	16	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	860	908	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.5%		ICU Level of Service A	
Analysis Period (min) 15			

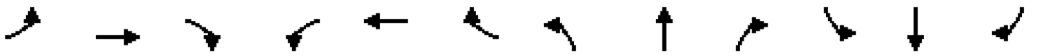


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	789	835	0	15	45
Future Volume (Veh/h)	2	789	835	0	15	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	858	908	0	16	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		100				
pX, platoon unblocked					0.88	
vC, conflicting volume	908				1341	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	908				1112	454
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	91
cM capacity (veh/h)	745				178	553

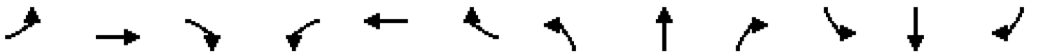
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	288	572	605	303	65
Volume Left	2	0	0	0	16
Volume Right	0	0	0	0	49
cSH	745	1700	1700	1700	364
Volume to Capacity	0.00*	0.34	0.36	0.18	0.18
Queue Length 95th (m)	0.1	0.0	0.0	0.0	5.1
Control Delay (s/veh)	0.1	0.0	0.0	0.0	17.0
Lane LOS	A				C
Approach Delay (s/veh)	0.0		0.0		17.0
Approach LOS					C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Future Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3486	5136	1576	3453	5136	1527	3497	5136	1560	3446	5136	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			274			234			248			245
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	246	790	466	527	867	234	554	928	388	453	1022	268
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	790	466	527	867	234	554	928	388	453	1022	268
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	24.0	49.4	49.4	25.0	50.6	50.6	24.0	49.6	49.6
Total Split (%)	14.5%	32.0%	32.0%	16.6%	34.1%	34.1%	17.2%	34.9%	34.9%	16.6%	34.2%	34.2%
Maximum Green (s)	16.0	39.0	39.0	19.0	42.0	42.0	20.0	43.2	43.2	19.0	42.2	42.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.4	31.2	31.2	19.0	34.8	34.8	27.8	45.6	45.6	24.4	42.2	42.2
Actuated g/C Ratio	0.11	0.22	0.22	0.13	0.24	0.24	0.19	0.31	0.31	0.17	0.29	0.29
v/c Ratio	0.66	0.72	0.84	1.16	0.70	0.43	0.82	0.57	0.59	0.78	0.68	0.42
Control Delay (s/veh)	71.4	56.2	35.9	147.9	53.4	7.2	67.3	43.7	18.8	67.6	48.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.4	56.2	35.9	147.9	53.4	7.2	67.3	43.7	18.8	67.6	48.3	8.4
LOS	E	E	D	F	D	A	E	D	B	E	D	A
Approach Delay (s/veh)		52.4			77.4			45.5			47.2	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	37.3	83.3	60.8	~97.5	90.5	0.0	83.0	88.9	35.3	66.7	101.2	5.0
Queue Length 95th (m)	52.7	91.6	101.4	#135.6	98.4	20.9	#139.1	104.8	71.8	#109.6	118.4	28.4
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	386	1381	624	454	1487	608	672	1616	660	583	1494	635
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.57	0.75	1.16	0.58	0.38	0.82	0.57	0.59	0.78	0.68	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay (s/veh): 55.2	Intersection LOS: E

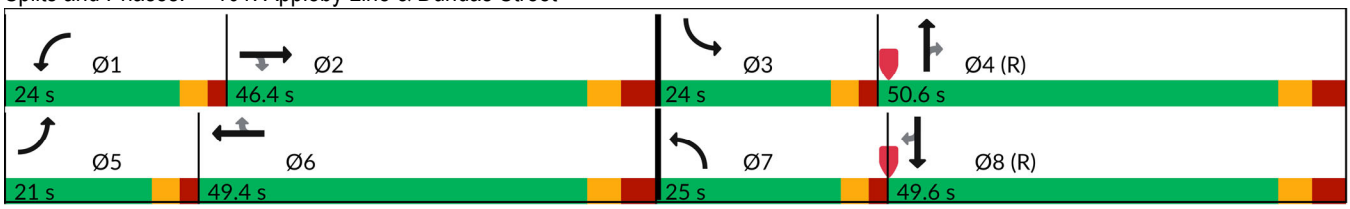
Intersection Capacity Utilization 105.4% ICU Level of Service G

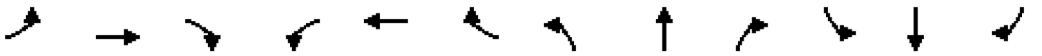
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street



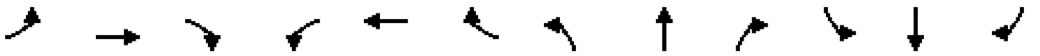


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Future Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	246	790	466	527	867	234	554	928	388	453	1022	268
RTOR Reduction (vph)	0	0	215	0	0	178	0	0	170	0	0	174
Lane Group Flow (vph)	246	790	251	527	867	56	554	928	218	453	1022	94
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.4	31.2	31.2	19.0	34.8	34.8	27.8	45.6	45.6	24.4	42.2	42.2
Effective Green, g (s)	15.4	31.2	31.2	19.0	34.8	34.8	27.8	45.6	45.6	24.4	42.2	42.2
Actuated g/C Ratio	0.11	0.22	0.22	0.13	0.24	0.24	0.19	0.31	0.31	0.17	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	371	1105	339	454	1232	366	671	1615	490	583	1494	461
v/s Ratio Prot	0.07	0.15		c0.15	c0.17		c0.16	c0.18		0.13	c0.20	
v/s Ratio Perm			0.16			0.04			0.14			0.06
v/c Ratio	0.66	0.71	0.74	1.16	0.70	0.15	0.83	0.57	0.44	0.78	0.68	0.20
Uniform Delay, d1	62.3	52.8	53.1	63.0	50.4	43.5	56.3	41.6	39.6	57.7	45.5	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	2.2	8.4	94.3	1.8	0.2	9.1	1.5	2.9	7.5	2.6	1.0
Delay (s)	68.1	55.0	61.5	157.3	52.2	43.7	65.4	43.1	42.5	65.2	48.1	39.7
Level of Service	E	D	E	F	D	D	E	D	D	E	D	D
Approach Delay (s/veh)		59.2			85.0			49.6			51.2	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	60.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Future Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00		0.97	1.00	1.00		1.00	1.00	
Frt		0.944				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3365	0	3467	5136	1615	3502	5047	0	3467	4979	0
Flt Permitted	0.268			0.950			0.950			0.950		
Satd. Flow (perm)	492	3365	0	3457	5136	1572	3495	5047	0	3462	4979	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98				274		14			41	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	277	639	381	230	731	701	342	1452	149	583	1206	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	1020	0	230	731	701	342	1601	0	583	1463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	13.0	42.0		13.0	42.0	42.0	20.0	46.0		24.0	50.0	
Total Split (%)	10.4%	33.6%		10.4%	33.6%	33.6%	16.0%	36.8%		19.2%	40.0%	
Maximum Green (s)	9.0	35.6		9.0	35.6	35.6	15.0	39.5		20.0	43.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	47.0	35.6		9.0	35.6	35.6	14.7	39.5		20.0	43.8	
Actuated g/C Ratio	0.38	0.28		0.07	0.28	0.28	0.12	0.32		0.16	0.35	
v/c Ratio	1.01	0.99		0.92	0.50	1.09	0.83	1.00		1.05	0.83	
Control Delay (s/veh)	88.8	66.7		97.9	38.7	88.8	71.7	64.4		102.9	40.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	88.8	66.7		97.9	38.7	88.8	71.7	64.4		102.9	40.9	
LOS	F	E		F	D	F	E	E		F	D	
Approach Delay (s/veh)		71.4			68.0			65.7			58.6	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	~51.2	128.1		31.2	58.2	~150.1	45.2	151.3		~85.3	124.3	
Queue Length 95th (m)	#110.8	#176.6		#56.7	71.9	#227.2	#67.9	#189.4		#122.5	144.8	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	275	1028		249	1462	643	420	1604		554	1772	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	0.99		0.92	0.50	1.09	0.81	1.00		1.05	0.83	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 65.2	Intersection LOS: E

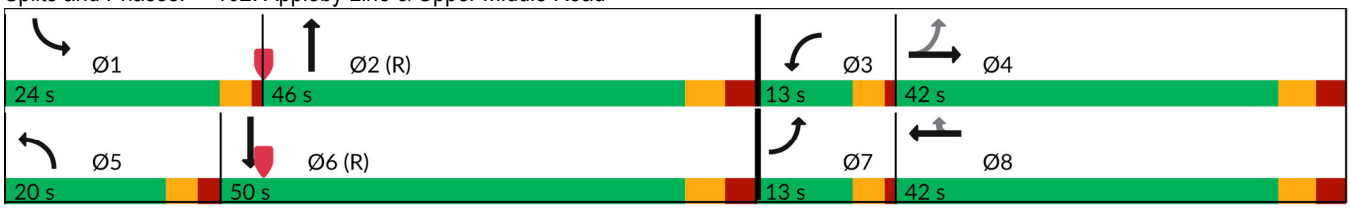
Intersection Capacity Utilization 103.6% ICU Level of Service G

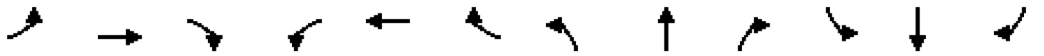
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road

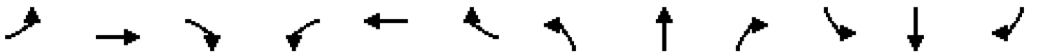




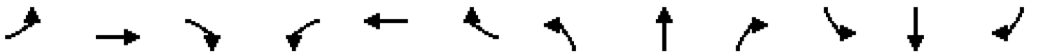
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Future Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	3365		3467	5136	1572	3502	5047		3467	4977	
Flt Permitted	0.27	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	495	3365		3467	5136	1572	3502	5047		3467	4977	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	277	639	381	230	731	701	342	1452	149	583	1206	257
RTOR Reduction (vph)	0	70	0	0	0	196	0	10	0	0	27	0
Lane Group Flow (vph)	277	950	0	230	731	505	342	1591	0	583	1436	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	44.6	35.6		9.0	35.6	35.6	14.7	39.5		20.0	43.8	
Effective Green, g (s)	44.6	35.6		9.0	35.6	35.6	14.7	39.5		20.0	43.8	
Actuated g/C Ratio	0.36	0.28		0.07	0.28	0.28	0.12	0.32		0.16	0.35	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	267	958		249	1462	447	411	1594		554	1743	
v/s Ratio Prot	c0.07	0.28		0.07	0.14		0.10	c0.32		c0.17	0.29	
v/s Ratio Perm	0.30					c0.32						
v/c Ratio	1.04	0.99		0.92	0.50	1.13	0.83	1.00		1.05	0.82	
Uniform Delay, d1	36.6	44.6		57.7	37.3	44.7	53.9	42.7		52.5	37.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	65.2	26.9		36.8	0.3	83.1	13.4	22.2		52.7	4.6	
Delay (s)	101.8	71.4		94.5	37.5	127.8	67.4	64.9		105.2	41.7	
Level of Service	F	E		F	D	F	E	E		F	D	
Approach Delay (s/veh)		77.9			83.5			65.3			59.8	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Future Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt		0.992			0.993			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1608	4583	0	0	4579	0	1593	1425	0	1624	1434	0
Flt Permitted	0.111				0.940		0.588			0.757		
Satd. Flow (perm)	188	4583	0	0	4304	0	986	1425	0	1294	1434	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			11			68			253	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			162.0			285.4	
Travel Time (s)		7.1			17.4			14.6			25.7	
Confl. Peds. (#/hr)	18					18						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	136	1217	73	1	1623	79	23	0	1	61	0	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	1290	0	0	1703	0	23	1	0	61	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	9.5	48.0		38.5	38.5		9.5	32.0		22.5	22.5	
Total Split (%)	11.9%	60.0%		48.1%	48.1%		11.9%	40.0%		28.1%	28.1%	
Maximum Green (s)	5.5	44.0		34.5	34.5		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	44.0	44.0			34.5		28.0	28.0		24.2	24.2	
Actuated g/C Ratio	0.55	0.55			0.43		0.35	0.35		0.30	0.30	
v/c Ratio	0.68	0.51			0.91		0.06	0.00		0.16	0.18	
Control Delay (s/veh)	28.9	12.0			30.5		17.7	0.0		24.2	0.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.9	12.0			30.5		17.7	0.0		24.2	0.7	
LOS	C	B			C		B	A		C	A	
Approach Delay (s/veh)		13.6			30.5			16.9			9.0	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	10.0	43.5			90.5		2.4	0.0		6.5	0.0	
Queue Length 95th (m)	#31.3	55.1			#125.8		7.4	0.0		18.1	0.0	
Internal Link Dist (m)		94.7			266.7			138.0			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	201	2528			1862		386	542		391	610	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.68	0.51			0.91		0.06	0.00		0.16	0.18	

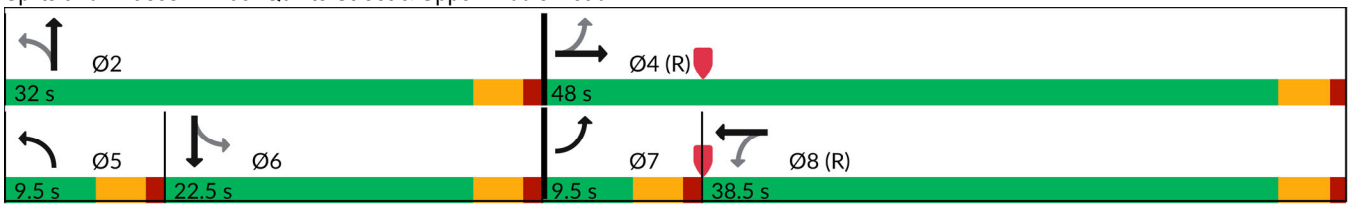
Intersection Summary	
Area Type:	CBD
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 22.1	Intersection LOS: C

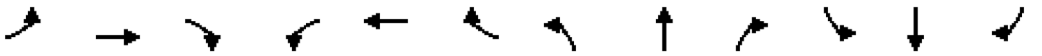
Intersection Capacity Utilization 86.6% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road

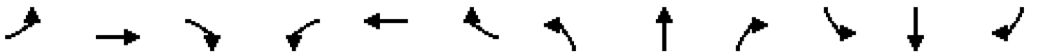




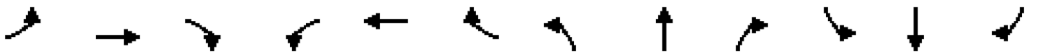
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Future Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	4580			4579		1593	1425		1625	1434	
Flt Permitted	0.11	1.00			0.94		0.59	1.00		0.76	1.00	
Satd. Flow (perm)	188	4580			4302		986	1425		1295	1434	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	1217	73	1	1623	79	23	0	1	61	0	111
RTOR Reduction (vph)	0	9	0	0	7	0	0	1	0	0	77	0
Lane Group Flow (vph)	136	1281	0	0	1696	0	23	0	0	61	34	0
Confl. Peds. (#/hr)	18					18						1
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.6	41.6			32.1		30.4	30.4		24.2	24.2	
Effective Green, g (s)	41.6	41.6			32.1		30.4	30.4		24.2	24.2	
Actuated g/C Ratio	0.52	0.52			0.40		0.38	0.38		0.30	0.30	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	195	2381			1726		391	541		391	433	
v/s Ratio Prot	c0.05	0.28					c0.00	0.00			0.02	
v/s Ratio Perm	0.31				c0.39		0.02			c0.05		
v/c Ratio	0.70	0.54			0.98		0.06	0.00		0.16	0.08	
Uniform Delay, d1	15.2	12.8			23.7		15.7	15.4		20.4	19.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.4	0.9			18.0		0.1	0.0		0.8	0.3	
Delay (s)	25.6	13.7			41.6		15.8	15.4		21.3	20.3	
Level of Service	C	B			D		B	B		C	C	
Approach Delay (s/veh)		14.8			41.6			15.8			20.6	
Approach LOS		B			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Future Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.981			0.977			0.910			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5032	0	1770	4986	0	1770	1695	0	3502	1595	0
Flt Permitted	0.094			0.251			0.851			0.460		
Satd. Flow (perm)	175	5032	0	468	4986	0	1585	1695	0	1696	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			41			15			184	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			158.3			244.6	
Travel Time (s)		17.4			14.7			14.2			22.0	
Confl. Peds. (#/hr)	12					12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	150	950	136	13	1359	246	144	10	15	226	19	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	1086	0	13	1605	0	144	25	0	226	203	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

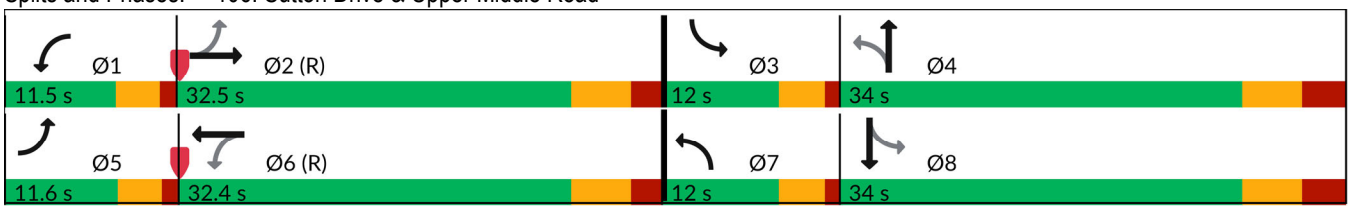


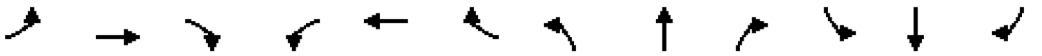
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		11.5	31.0		12.0	34.0		12.0	34.0	
Total Split (s)	11.6	32.5		11.5	32.4		12.0	34.0		12.0	34.0	
Total Split (%)	12.9%	36.1%		12.8%	36.0%		13.3%	37.8%		13.3%	37.8%	
Maximum Green (s)	7.6	26.5		7.5	26.4		8.0	27.0		8.0	27.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	57.5	53.3		51.7	42.7		13.9	9.5		22.9	9.5	
Actuated g/C Ratio	0.64	0.59		0.57	0.47		0.15	0.11		0.25	0.11	
v/c Ratio	0.56	0.36		0.04	0.67		0.55	0.13		0.29	0.61	
Control Delay (s/veh)	18.8	10.6		7.3	20.2		39.6	23.0		26.2	16.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	18.8	10.6		7.3	20.2		39.6	23.0		26.2	16.0	
LOS	B	B		A	C		D	C		C	B	
Approach Delay (s/veh)		11.6			20.1			37.1			21.4	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	9.3	29.7		0.8	74.4		26.9	1.7		16.9	3.3	
Queue Length 95th (m)	28.2	60.6		3.3	110.9		34.8	8.8		24.1	22.9	
Internal Link Dist (m)		266.7			220.7			134.3			220.6	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	270	2991		379	2385		261	519		772	607	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.36		0.03	0.67		0.55	0.05		0.29	0.33	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay (s/veh): 18.1	Intersection LOS: B

Intersection Capacity Utilization 75.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 106: Sutton Drive & Upper Middle Road

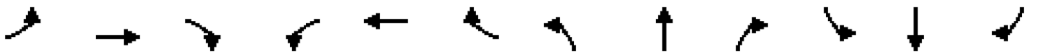




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Future Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5033		1770	4986		1770	1695		3502	1595	
Flt Permitted	0.09	1.00		0.25	1.00		0.85	1.00		0.46	1.00	
Satd. Flow (perm)	175	5033		467	4986		1585	1695		1695	1595	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	150	950	136	12	1359	246	144	10	15	226	19	184
RTOR Reduction (vph)	0	14	0	0	23	0	0	14	0	0	156	0
Lane Group Flow (vph)	150	1072	0	13	1582	0	144	11	0	226	47	0
Confl. Peds. (#/hr)	12					12						
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	51.3	45.9		39.9	38.5		12.7	4.7		25.7	13.7	
Effective Green, g (s)	51.3	45.9		39.9	38.5		12.7	4.7		25.7	13.7	
Actuated g/C Ratio	0.57	0.51		0.44	0.43		0.14	0.05		0.29	0.15	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	255	2566		227	2132		240	88		825	242	
v/s Ratio Prot	c0.06	0.21		0.00	c0.32		c0.05	0.01		c0.05	0.03	
v/s Ratio Perm	0.28			0.02			c0.03			0.03		
v/c Ratio	0.59	0.42		0.06	0.74		0.60	0.12		0.27	0.19	
Uniform Delay, d1	13.9	13.7		14.0	21.6		36.1	40.7		24.6	33.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	0.5		0.1	2.4		4.2	0.6		0.2	0.4	
Delay (s)	17.4	14.2		14.2	24.0		40.3	41.3		24.8	33.7	
Level of Service	B	B		B	C		D	D		C	C	
Approach Delay (s/veh)		14.6			23.9			40.5			29.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Future Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.966			0.991			0.949			0.954	
Flt Protected	0.950				0.999			0.970			0.968	
Satd. Flow (prot)	1805	4988	0	0	5124	0	0	1715	0	0	1731	0
Flt Permitted	0.122				0.920			0.775			0.771	
Satd. Flow (perm)	232	4988	0	0	4719	0	0	1370	0	0	1379	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		193			26			52			32	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		198.8			464.6			106.0			226.6	
Travel Time (s)		11.9			27.9			9.5			20.4	
Confl. Peds. (#/hr)	7					7						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	40	880	256	18	1413	91	118	0	72	69	0	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1136	0	0	1522	0	0	190	0	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

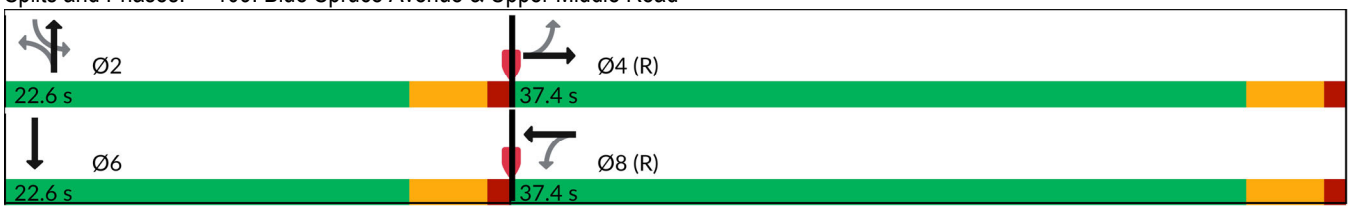


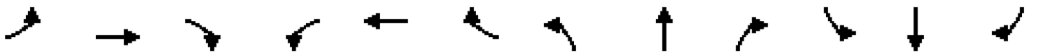
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		2	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	37.4	37.4		37.4	37.4		22.6	22.6		22.6	22.6	
Total Split (%)	62.3%	62.3%		62.3%	62.3%		37.7%	37.7%		37.7%	37.7%	
Maximum Green (s)	32.9	32.9		32.9	32.9		18.1	18.1		18.1	18.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	32.9	32.9			32.9			18.1			18.1	
Actuated g/C Ratio	0.55	0.55			0.55			0.30			0.30	
v/c Ratio	0.31	0.40			0.59			0.42			0.24	
Control Delay (s/veh)	15.7	6.9			7.2			15.5			13.4	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	15.7	6.9			7.2			15.5			13.4	
LOS	B	A			A			B			B	
Approach Delay (s/veh)		7.2			7.2			15.5			13.4	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	2.3	20.0			17.0			12.4			6.2	
Queue Length 95th (m)	9.7	27.9			36.2			28.6			16.7	
Internal Link Dist (m)		174.8			440.6			82.0			202.6	
Turn Bay Length (m)	100.0											
Base Capacity (vph)	127	2822			2599			449			438	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.31	0.40			0.59			0.42			0.24	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 7.9	Intersection LOS: A

Intersection Capacity Utilization 59.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 109: Blue Spruce Avenue & Upper Middle Road

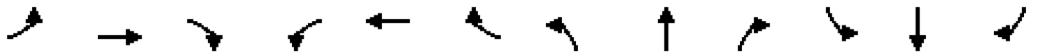




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Future Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.91			0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.97			0.99			0.95			0.95	
Flt Protected	0.95	1.00			1.00			0.97			0.97	
Satd. Flow (prot)	1803	4989			5127			1714			1731	
Flt Permitted	0.12	1.00			0.92			0.77			0.77	
Satd. Flow (perm)	231	4989			4718			1369			1378	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	880	256	18	1413	91	118	0	72	69	0	36
RTOR Reduction (vph)	0	87	0	0	12	0	0	36	0	0	22	0
Lane Group Flow (vph)	40	1049	0	0	1510	0	0	154	0	0	83	0
Confl. Peds. (#/hr)	7					7						
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	2%	2%	2%	0%	2%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Actuated Green, G (s)	32.9	32.9			32.9			18.1			18.1	
Effective Green, g (s)	32.9	32.9			32.9			18.1			18.1	
Actuated g/C Ratio	0.55	0.55			0.55			0.30			0.30	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	126	2735			2587			412			415	
v/s Ratio Prot		0.21										
v/s Ratio Perm	0.17				c0.32			c0.11			0.06	
v/c Ratio	0.32	0.38			0.58			0.37			0.20	
Uniform Delay, d1	7.4	7.7			9.0			16.5			15.6	
Progression Factor	1.00	1.00			0.73			1.00			1.00	
Incremental Delay, d2	6.5	0.4			0.6			2.6			0.2	
Delay (s)	13.9	8.2			7.2			19.1			15.8	
Level of Service	B	A			A			B			B	
Approach Delay (s/veh)		8.4			7.2			19.1			15.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Future Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	120.0		0.0	145.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00		1.00		
Frt		0.886			0.940			0.995			0.985	
Flt Protected		0.992			0.973			0.991		0.950		
Satd. Flow (prot)	0	1637	0	0	1738	0	0	5093	0	1805	5099	0
Flt Permitted		0.939			0.407			0.674		0.098		
Satd. Flow (perm)	0	1550	0	0	727	0	0	3464	0	186	5099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		325			109			13			31	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		120.8			160.8			285.5			464.6	
Travel Time (s)		10.9			14.5			17.1			27.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Adj. Flow (vph)	60	0	325	58	0	47	317	1435	60	17	929	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	105	0	0	1812	0	17	1030	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2		1	2	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (m)		10.0			10.0			10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6			0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

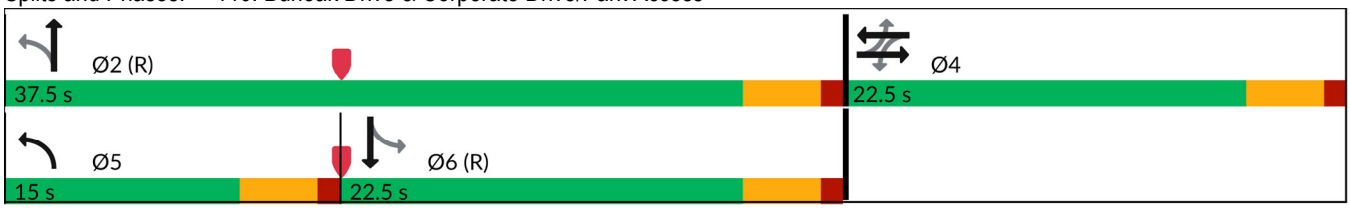


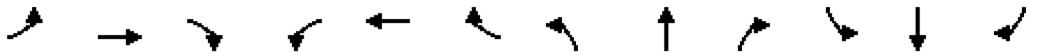
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5		22.5	22.5		15.0	37.5		22.5	22.5	
Total Split (%)	37.5%	37.5%		37.5%	37.5%		25.0%	62.5%		37.5%	37.5%	
Maximum Green (s)	18.0	18.0		18.0	18.0		10.5	33.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5			4.5		4.5	4.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		9.9			9.9			41.1		41.1	41.1	
Actuated g/C Ratio		0.17			0.17			0.69		0.69	0.69	
v/c Ratio		0.73			0.50			0.94dl		0.13	0.29	
Control Delay (s/veh)		13.4			13.0			11.3		10.8	5.8	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)		13.4			13.0			11.3		10.8	5.8	
LOS		B			B			B		B	A	
Approach Delay (s/veh)		13.4			13.0			11.3			5.9	
Approach LOS		B			B			B			A	
Queue Length 50th (m)		6.4			0.0			34.6		0.4	22.8	
Queue Length 95th (m)		24.9			9.8			#106.5		m3.9	42.3	
Internal Link Dist (m)		96.8			136.8			261.5			440.6	
Turn Bay Length (m)										145.0		
Base Capacity (vph)		692			294			2378		127	3504	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.56			0.36			0.76		0.13	0.29	

Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay (s/veh): 9.9	Intersection LOS: A

Intersection Capacity Utilization 85.0% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 110: Burloak Drive & Corporate Drive/Park Access



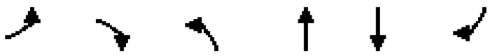


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Future Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00			0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.89			0.94			1.00		1.00	0.99	
Flt Protected		0.99			0.97			0.99		0.95	1.00	
Satd. Flow (prot)		1638			1737			5095		1805	5101	
Flt Permitted		0.94			0.41			0.67		0.10	1.00	
Satd. Flow (perm)		1549			726			3462		185	5101	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	60	0	325	58	0	47	317	1435	60	17	929	101
RTOR Reduction (vph)	0	271	0	0	88	0	0	4	0	0	10	0
Lane Group Flow (vph)	0	114	0	0	17	0	0	1808	0	17	1020	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)		9.9			9.9			41.1		41.1	41.1	
Effective Green, g (s)		9.9			9.9			41.1		41.1	41.1	
Actuated g/C Ratio		0.17			0.17			0.69		0.69	0.69	
Clearance Time (s)		4.5			4.5			4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		255			119			2371		126	3494	
v/s Ratio Prot											0.20	
v/s Ratio Perm		c0.07			0.02			c0.52		0.09		
v/c Ratio		0.45			0.15			0.94dl		0.13	0.29	
Uniform Delay, d1		22.6			21.4			6.2		3.3	3.7	
Progression Factor		1.00			1.00			1.00		1.34	1.29	
Incremental Delay, d2		1.2			0.6			1.5		2.1	0.2	
Delay (s)		23.8			22.0			7.7		6.5	5.0	
Level of Service		C			C			A		A	A	
Approach Delay (s/veh)		23.8			22.0			7.7			5.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		

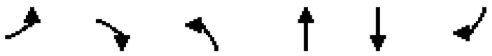
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	268	169	1635	1135	84
Future Volume (vph)	68	268	169	1635	1135	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	120.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.91	0.91
Frt	0.892				0.990	
Flt Protected	0.990			0.995		
Satd. Flow (prot)	1645	0	0	5060	5034	0
Flt Permitted	0.990			0.995		
Satd. Flow (perm)	1645	0	0	5060	5034	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	129.8			430.9	285.5	
Travel Time (s)	11.7			25.9	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	291	184	1777	1234	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	365	0	0	1961	1325	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

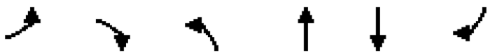
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 89.1%		ICU Level of Service E	
Analysis Period (min) 15			



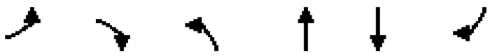
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	68	268	169	1635	1135	84
Future Volume (Veh/h)	68	268	169	1635	1135	84
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	74	291	184	1777	1234	91
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					286	
pX, platoon unblocked						
vC, conflicting volume	2240	457	1325			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2240	457	1325			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	47	64			
cM capacity (veh/h)	23	551	517			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	365	539	711	711	494	494	338
Volume Left	74	184	0	0	0	0	0
Volume Right	291	0	0	0	0	0	91
cSH	98	517	1700	1700	1700	1700	1700
Volume to Capacity	3.74	0.36	0.42	0.42	0.29	0.29	0.20
Queue Length 95th (m)	Err	12.8	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	Err	10.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s/veh)	Err	2.8			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	1001.1		
Intersection Capacity Utilization	89.1%	ICU Level of Service	E
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	279	499	1600	1238	152
Future Volume (vph)	203	279	499	1600	1238	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.984	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	3467	5187	5094	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	3462	5187	5094	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		276			26	
Link Speed (k/h)	60			60	60	
Link Distance (m)	744.3			453.2	430.9	
Travel Time (s)	44.7			27.2	25.9	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	214	294	525	1684	1303	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	214	294	525	1684	1463	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

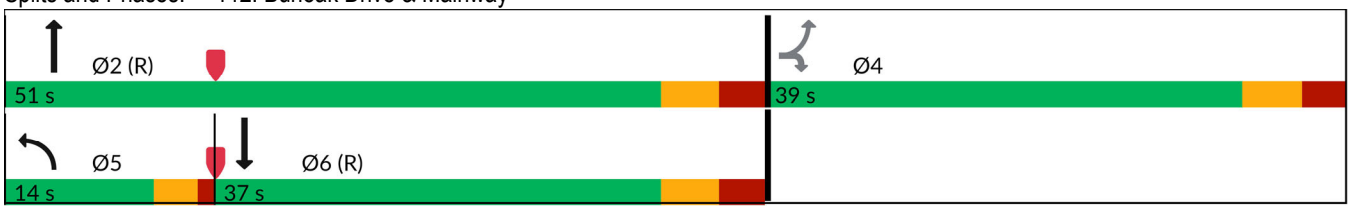


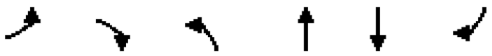
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	10.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.1	16.1	24.4	59.9	31.5	
Actuated g/C Ratio	0.18	0.18	0.27	0.67	0.35	
v/c Ratio	0.66	0.57	0.56	0.49	0.81	
Control Delay (s/veh)	44.0	9.6	41.4	7.1	30.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	44.0	9.6	41.4	7.1	30.6	
LOS	D	A	D	A	C	
Approach Delay (s/veh)	24.1			15.3	30.6	
Approach LOS	C			B	C	
Queue Length 50th (m)	36.6	2.8	47.5	38.6	83.5	
Queue Length 95th (m)	55.4	22.9	66.1	45.2	107.8	
Internal Link Dist (m)	720.3			429.2	406.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	641	752	939	3453	1801	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.39	0.56	0.49	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 21.7		Intersection LOS: C	

Intersection Capacity Utilization 67.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	279	499	1600	1238	152
Future Volume (vph)	203	279	499	1600	1238	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	3467	5187	5092	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	3467	5187	5092	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	214	294	525	1684	1303	160
RTOR Reduction (vph)	0	227	0	0	17	0
Lane Group Flow (vph)	214	67	525	1684	1446	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	16.1	16.1	24.4	59.9	31.5	
Effective Green, g (s)	16.1	16.1	24.4	59.9	31.5	
Actuated g/C Ratio	0.18	0.18	0.27	0.67	0.35	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	322	288	939	3452	1782	
v/s Ratio Prot			c0.15	0.32	c0.28	
v/s Ratio Perm	c0.12	0.04				
v/c Ratio	0.66	0.23	0.56	0.49	0.81	
Uniform Delay, d1	34.4	31.7	28.2	7.5	26.6	
Progression Factor	1.00	1.00	1.32	0.83	1.00	
Incremental Delay, d2	5.1	0.4	0.7	0.5	4.1	
Delay (s)	39.5	32.1	38.0	6.6	30.7	
Level of Service	D	C	D	A	C	
Approach Delay (s/veh)	35.2			14.1	30.7	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Future Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.992			0.971			0.995			0.929	
Flt Protected	0.950				0.999			0.996			0.988	
Satd. Flow (prot)	1770	3577	0	0	3488	0	0	1850	0	0	1710	0
Flt Permitted	0.311				0.947			0.953			0.805	
Satd. Flow (perm)	579	3577	0	0	3307	0	0	1770	0	0	1393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			56			4			107	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		153.9			124.8			154.8			210.9	
Travel Time (s)		9.2			7.5			13.9			19.0	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	284	278	15	11	427	104	22	249	10	128	113	265
Shared Lane Traffic (%)												
Lane Group Flow (vph)	284	293	0	0	542	0	0	281	0	0	506	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	10.0	32.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (%)	18.2%	59.1%		40.9%	40.9%		40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.5	28.0		18.0	18.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	28.0	28.0			18.0			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.33			0.33			0.33	
v/c Ratio	0.69	0.16			0.48			0.48			0.96	
Control Delay (s/veh)	19.3	7.1			14.9			18.0			49.1	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	19.3	7.1			14.9			18.0			49.1	
LOS	B	A			B			B			D	
Approach Delay (s/veh)		13.1			14.9			18.0			49.1	
Approach LOS		B			B			B			D	
Queue Length 50th (m)	16.0	7.4			20.7			23.0			41.5	
Queue Length 95th (m)	#34.8	12.7			33.0			42.2			#98.9	
Internal Link Dist (m)		129.9			100.8			130.8			186.9	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	413	1827			1119			581			527	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.69	0.16			0.48			0.48			0.96	

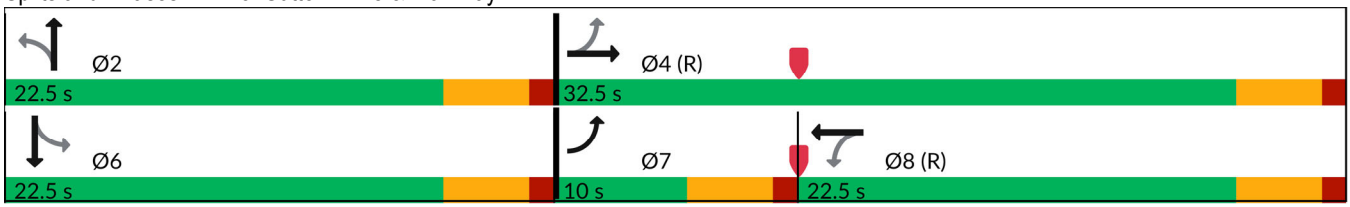
Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay (s/veh): 23.9	Intersection LOS: C

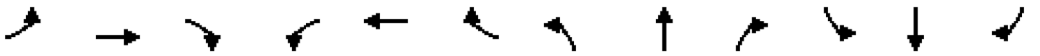
Intersection Capacity Utilization 88.9% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 113: Sutton Drive & Mainway



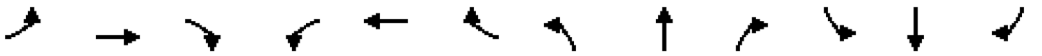


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Future Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.97			1.00			0.93	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	3578			3489			1851			1709	
Flt Permitted	0.31	1.00			0.95			0.95			0.81	
Satd. Flow (perm)	578	3578			3307			1771			1394	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	284	278	15	11	427	104	22	249	10	128	113	265
RTOR Reduction (vph)	0	7	0	0	38	0	0	3	0	0	72	0
Lane Group Flow (vph)	284	286	0	0	504	0	0	278	0	0	434	0
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	28.0	28.0			18.0			18.0			18.0	
Effective Green, g (s)	28.0	28.0			18.0			18.0			18.0	
Actuated g/C Ratio	0.51	0.51			0.33			0.33			0.33	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	413	1821			1082			579			456	
v/s Ratio Prot	c0.07	0.08										
v/s Ratio Perm	c0.28				0.15			0.16			c0.31	
v/c Ratio	0.69	0.16			0.47			0.48			0.95	
Uniform Delay, d1	8.6	7.2			14.7			14.8			18.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	4.7	0.2			1.4			2.8			31.7	
Delay (s)	13.3	7.4			16.1			17.6			49.8	
Level of Service	B	A			B			B			D	
Approach Delay (s/veh)		10.3			16.1			17.6			49.8	
Approach LOS		B			B			B			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	88.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Future Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00		1.00	1.00	
Frt		0.938			0.970			0.977			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3329	0	3433	3438	0	1805	5000	0	3433	5031	0
Flt Permitted	0.298			0.950			0.085			0.950		
Satd. Flow (perm)	566	3329	0	3431	3438	0	162	5000	0	3433	5031	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		154			31			38			20	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	205	274	192	294	404	103	207	1583	286	72	1579	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	466	0	294	507	0	207	1869	0	72	1758	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	37.3		13.0	39.3		12.0	43.7		11.0	42.7	
Total Split (%)	10.5%	35.5%		12.4%	37.4%		11.4%	41.6%		10.5%	40.7%	
Maximum Green (s)	7.0	31.0		9.0	33.0		8.0	37.4		7.0	36.4	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	27.3	18.0		9.0	20.0		63.7	51.7		7.9	43.1	
Actuated g/C Ratio	0.26	0.17		0.09	0.19		0.61	0.49		0.08	0.41	
v/c Ratio	0.90	0.67		1.00	0.74		0.64	0.75		0.28	0.85	
Control Delay (s/veh)	68.8	31.3		101.6	44.3		39.8	29.6		48.4	33.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	68.8	31.3		101.6	44.3		39.8	29.6		48.4	33.5	
LOS	E	C		F	D		D	C		D	C	
Approach Delay (s/veh)		42.8			65.4			30.7			34.1	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	33.7	33.5		33.6	52.0		38.5	92.0		7.8	121.8	
Queue Length 95th (m)	#63.3	48.5		#62.4	66.7		64.5	#128.6		15.1	#176.3	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	229	1091		294	1101		321	2479		258	2075	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.90	0.43		1.00	0.46		0.64	0.75		0.28	0.85	

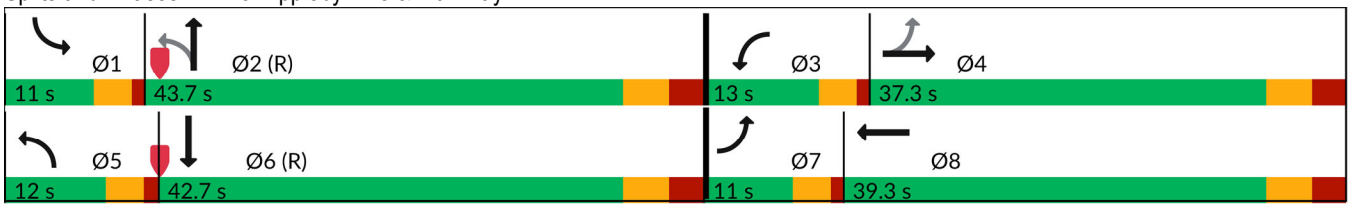
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 38.5	Intersection LOS: D

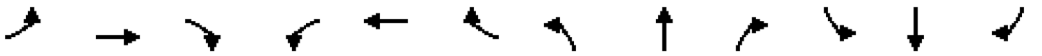
Intersection Capacity Utilization 88.6% ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 115: Appleby Line & Mainway

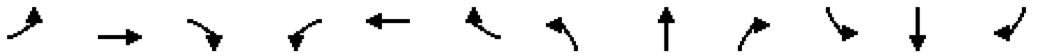




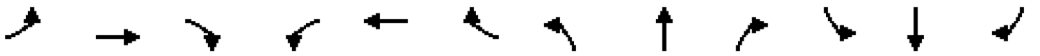
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Future Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.97		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3330		3433	3436		1805	5000		3433	5030	
Flt Permitted	0.30	1.00		0.95	1.00		0.08	1.00		0.95	1.00	
Satd. Flow (perm)	565	3330		3433	3436		161	5000		3433	5030	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	205	274	192	294	404	103	207	1583	286	72	1579	179
RTOR Reduction (vph)	0	128	0	0	25	0	0	20	0	0	12	0
Lane Group Flow (vph)	205	338	0	294	482	0	207	1849	0	72	1746	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	25.0	18.0		9.0	20.0		61.4	50.9		6.5	43.1	
Effective Green, g (s)	25.0	18.0		9.0	20.0		61.4	50.9		6.5	43.1	
Actuated g/C Ratio	0.24	0.17		0.09	0.19		0.58	0.48		0.06	0.41	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	217	570		294	654		318	2423		212	2064	
v/s Ratio Prot	0.06	0.10		c0.09	0.14		c0.09	0.37		0.02	c0.35	
v/s Ratio Perm	c0.16						0.29					
v/c Ratio	0.94	0.59		1.00	0.74		0.65	0.76		0.34	0.85	
Uniform Delay, d1	37.2	40.1		48.0	40.0		23.1	22.1		47.2	28.0	
Progression Factor	1.00	1.00		1.00	1.00		1.68	1.22		1.00	1.00	
Incremental Delay, d2	45.4	1.7		52.5	4.3		3.7	1.8		1.0	4.5	
Delay (s)	82.6	41.8		100.5	44.3		42.5	28.9		48.2	32.5	
Level of Service	F	D		F	D		D	C		D	C	
Approach Delay (s/veh)		54.3			65.0			30.3			33.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Future Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.948			0.960			0.981			0.998	
Flt Protected		0.979			0.968		0.950			0.950		
Satd. Flow (prot)	0	1734	0	0	1733	0	1805	5027	0	1805	5124	0
Flt Permitted		0.767			0.738		0.116			0.104		
Satd. Flow (perm)	0	1357	0	0	1320	0	220	5027	0	198	5124	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			28			34			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	47	19	41	267	17	119	35	1746	251	111	1721	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	403	0	35	1997	0	111	1740	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

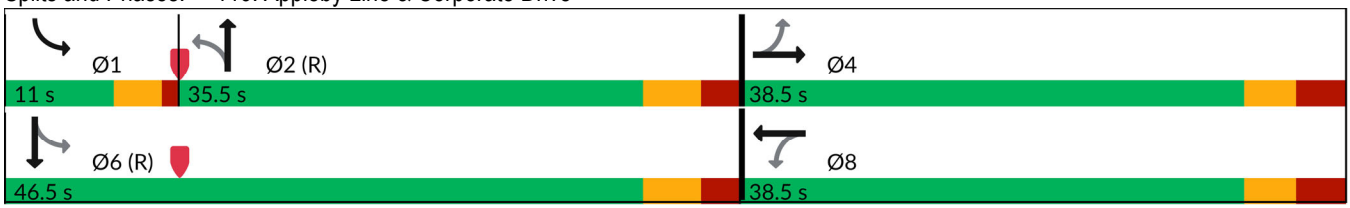


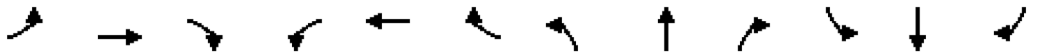
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.5	38.5		38.5	38.5		35.5	35.5		11.0	46.5	
Total Split (%)	45.3%	45.3%		45.3%	45.3%		41.8%	41.8%		12.9%	54.7%	
Maximum Green (s)	32.0	32.0		32.0	32.0		29.5	29.5		7.0	40.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		28.2			28.2		35.3	35.3		46.3	44.3	
Actuated g/C Ratio		0.33			0.33		0.42	0.42		0.54	0.52	
v/c Ratio		0.24			0.88		0.38	0.95		0.45	0.65	
Control Delay (s/veh)		19.2			46.4		37.8	38.1		16.9	17.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.2			46.4		37.8	38.1		16.9	17.0	
LOS		B			D		D	D		B	B	
Approach Delay (s/veh)		19.2			46.4			38.1			17.0	
Approach LOS		B			D			D			B	
Queue Length 50th (m)		11.6			57.6		4.6	~145.9		9.2	80.1	
Queue Length 95th (m)		23.0			#104.7		#18.0	#178.6		18.8	100.8	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		515			514		91	2105		244	2670	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.21			0.78		0.38	0.95		0.45	0.65	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 29.5	Intersection LOS: C

Intersection Capacity Utilization 85.1% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 116: Appleby Line & Corporate Drive

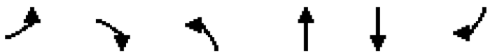




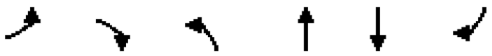
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Future Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1732			1732		1804	5028		1805	5126	
Flt Permitted		0.77			0.74		0.12	1.00		0.10	1.00	
Satd. Flow (perm)		1358			1321		220	5028		197	5126	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	19	41	267	17	119	35	1746	251	111	1721	19
RTOR Reduction (vph)	0	5	0	0	19	0	0	20	0	0	1	0
Lane Group Flow (vph)	0	102	0	0	384	0	35	1977	0	111	1739	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.2			28.2		34.5	34.5		44.3	44.3	
Effective Green, g (s)		28.2			28.2		34.5	34.5		44.3	44.3	
Actuated g/C Ratio		0.33			0.33		0.41	0.41		0.52	0.52	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		450			438		89	2040		212	2671	
v/s Ratio Prot								c0.39		0.04	c0.34	
v/s Ratio Perm		0.08			c0.29		0.16			0.24		
v/c Ratio		0.23			0.88		0.39	0.97		0.52	0.65	
Uniform Delay, d1		20.5			26.8		17.9	24.7		17.2	14.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			17.6		12.5	13.8		2.3	1.2	
Delay (s)		20.8			44.4		30.4	38.6		19.5	16.0	
Level of Service		C			D		C	D		B	B	
Approach Delay (s/veh)		20.8			44.4			38.4			16.2	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	150	327	1757	1372	13
Future Volume (vph)	14	150	327	1757	1372	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	3367	5187	5176	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1509	3360	5187	5176	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		160			2	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	15	160	348	1869	1460	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	160	348	1869	1474	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

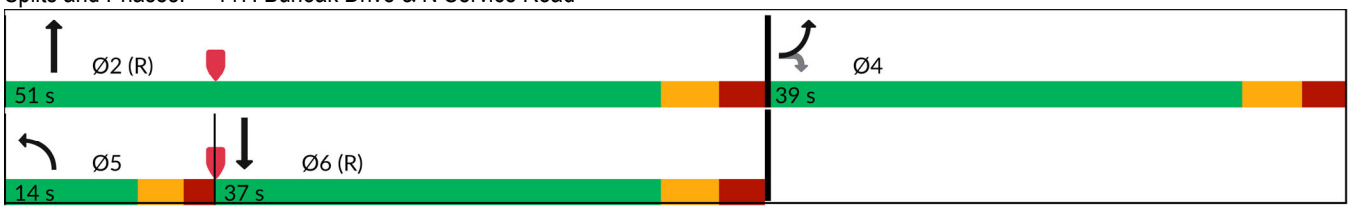


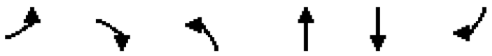
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	9.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.9	8.9	18.6	67.1	43.5	
Actuated g/C Ratio	0.10	0.10	0.21	0.75	0.48	
v/c Ratio	0.08	0.55	0.50	0.48	0.59	
Control Delay (s/veh)	37.0	13.9	34.2	5.2	35.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.0	13.9	34.2	5.2	35.2	
LOS	D	B	C	A	D	
Approach Delay (s/veh)	15.9			9.7	35.2	
Approach LOS	B			A	D	
Queue Length 50th (m)	2.6	0.0	30.0	38.1	81.2	
Queue Length 95th (m)	8.2	18.5	42.6	57.5	110.9	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	641	639	695	3868	2503	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.25	0.50	0.48	0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 19.7	Intersection LOS: B

Intersection Capacity Utilization 58.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	150	327	1757	1372	13
Future Volume (vph)	14	150	327	1757	1372	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	3367	5187	5174	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1509	3367	5187	5174	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	160	348	1869	1460	14
RTOR Reduction (vph)	0	144	0	0	1	0
Lane Group Flow (vph)	15	16	348	1869	1473	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.9	8.9	18.6	67.1	43.5	
Effective Green, g (s)	8.9	8.9	18.6	67.1	43.5	
Actuated g/C Ratio	0.10	0.10	0.21	0.75	0.48	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	178	149	695	3867	2500	
v/s Ratio Prot	0.01		0.10	c0.36	c0.28	
v/s Ratio Perm		c0.01				
v/c Ratio	0.08	0.11	0.50	0.48	0.59	
Uniform Delay, d1	36.8	36.9	31.6	4.6	16.8	
Progression Factor	1.00	1.00	1.00	1.00	2.00	
Incremental Delay, d2	0.2	0.3	1.2	0.4	0.7	
Delay (s)	37.1	37.2	32.8	5.0	34.2	
Level of Service	D	D	C	A	C	
Approach Delay (s/veh)	37.2			9.4	34.2	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1773	1270	0	0	1613
Future Volume (vph)	2146	1773	1270	0	0	1613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor	1.00					
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2814	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3427	2814	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	2235	1847	1323	0	0	1680
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2235	1847	1323	0	0	1680
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

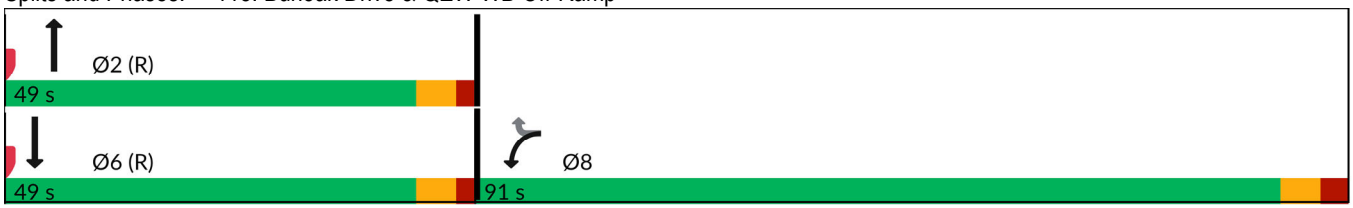


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	91.0	91.0	49.0			49.0
Total Split (%)	65.0%	65.0%	35.0%			35.0%
Maximum Green (s)	84.0	84.0	43.0			43.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	84.0	84.0	43.0			43.0
Actuated g/C Ratio	0.60	0.60	0.31			0.31
v/c Ratio	1.09	1.09	0.83			1.07
Control Delay (s/veh)	75.5	79.9	50.6			88.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	75.5	79.9	50.6			88.4
LOS	E	E	D			F
Approach Delay (s/veh)	77.5		50.6			88.4
Approach LOS	E		D			F
Queue Length 50th (m)	~380.9	~347.0	131.6			~198.8
Queue Length 95th (m)	#422.3	#395.5	150.9			#230.0
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	2059	1690	1593			1577
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.09	1.09	0.83			1.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay (s/veh): 75.0		Intersection LOS: E	

Intersection Capacity Utilization 103.2% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

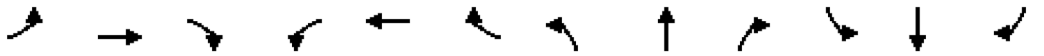




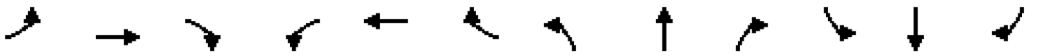
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1773	1270	0	0	1613
Future Volume (vph)	2146	1773	1270	0	0	1613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2814	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2814	5187			5136
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2235	1847	1323	0	0	1680
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	2235	1845	1323	0	0	1680
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	84.0	84.0	43.0			43.0
Effective Green, g (s)	84.0	84.0	43.0			43.0
Actuated g/C Ratio	0.60	0.60	0.31			0.31
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	2059	1688	1593			1577
v/s Ratio Prot	0.65		0.26			c0.33
v/s Ratio Perm		c0.66				
v/c Ratio	1.09	1.09	0.83			1.07
Uniform Delay, d1	28.0	28.0	45.1			48.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	47.5	52.0	5.2			42.3
Delay (s)	75.5	80.0	50.3			90.8
Level of Service	E	E	D			F
Approach Delay (s/veh)	77.5		50.3			90.8
Approach LOS	E		D			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	75.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Future Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.971	0.850			0.865		0.996				
Flt Protected	0.950	0.983										
Satd. Flow (prot)	1643	3093	1441	0	0	1611	0	5116	0	0	5136	0
Flt Permitted	0.950	0.983									0.925	
Satd. Flow (perm)	1643	3093	1441	0	0	1611	0	5116	0	0	4751	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15	204			80		3				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	382	209	291	0	0	336	0	1000	26	17	2882	0
Shared Lane Traffic (%)	41%		30%									
Lane Group Flow (vph)	225	453	204	0	0	336	0	1026	0	0	2899	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	



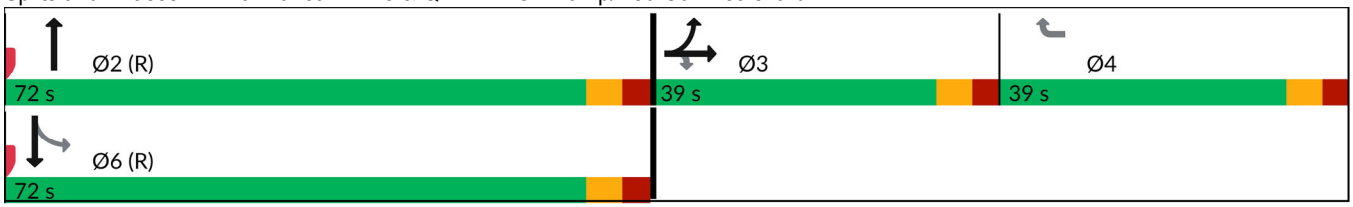
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	39.0	39.0	39.0			39.0		72.0		72.0	72.0	
Total Split (%)	26.0%	26.0%	26.0%			26.0%		48.0%		48.0%	48.0%	
Maximum Green (s)	32.0	32.0	32.0			32.0		65.0		65.0	65.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	0.0	0.0	0.0			7.0		7.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0	0.0			25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0			0		0		0	0	
Act Effct Green (s)	27.0	27.0	27.0			28.7		73.3			73.3	
Actuated g/C Ratio	0.18	0.18	0.18			0.19		0.49			0.49	
v/c Ratio	0.76	0.80	0.48			0.90		0.41			1.25	
Control Delay (s/veh)	74.8	67.4	10.0			71.9		26.3			149.5	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	74.8	67.4	10.0			71.9		26.3			149.5	
LOS	E	E	B			E		C			F	
Approach Delay (s/veh)		56.0			71.9			26.3			149.5	
Approach LOS		E			E			C			F	
Queue Length 50th (m)	74.2	77.7	0.0			80.9		77.2			~427.2	
Queue Length 95th (m)	104.9	97.5	24.9			#132.2		96.5			#471.9	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	350	671	467			408		2501			2321	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.64	0.68	0.44			0.82		0.41			1.25	

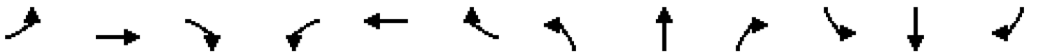
Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.25			
Intersection Signal Delay (s/veh): 103.8		Intersection LOS: F	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

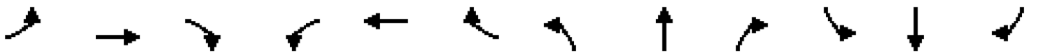
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



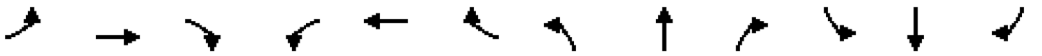


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Future Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frt	1.00	0.97	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1643	3094	1441			1611		5117			5134	
Flt Permitted	0.95	0.98	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1643	3094	1441			1611		5117			4752	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	382	209	291	0	0	336	0	1000	26	17	2882	0
RTOR Reduction (vph)	0	12	167	0	0	65	0	2	0	0	0	0
Lane Group Flow (vph)	225	441	37	0	0	271	0	1024	0	0	2899	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	27.0	27.0	27.0			28.7		73.3			73.3	
Effective Green, g (s)	27.0	27.0	27.0			28.7		73.3			73.3	
Actuated g/C Ratio	0.18	0.18	0.18			0.19		0.49			0.49	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	295	556	259			308		2500			2322	
v/s Ratio Prot	0.14	c0.14						0.20				
v/s Ratio Perm			0.03			c0.17					c0.61	
v/c Ratio	0.76	0.79	0.14			0.88		0.41			1.25	
Uniform Delay, d1	58.5	58.8	51.8			59.0		24.5			38.4	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	11.1	7.6	0.3			24.1		0.5			115.6	
Delay (s)	69.5	66.4	52.0			83.1		25.0			153.9	
Level of Service	E	E	D			F		C			F	
Approach Delay (s/veh)		63.9			83.1			25.0			153.9	
Approach LOS		E			F			C			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	108.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Future Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.883			0.912			0.994			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1720	0	1656	5102	0	1805	5116	0
Flt Permitted	0.693			0.489			0.065			0.063		
Satd. Flow (perm)	1315	1591	0	920	1720	0	113	5102	0	120	5116	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			58			7			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	58	16	57	104	41	58	42	1958	81	48	2011	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	73	0	104	99	0	42	2039	0	48	2060	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		11.6	46.8		11.6	46.6		11.6	46.6	
Total Split (%)	33.5%	33.5%		11.0%	44.6%		11.0%	44.4%		11.0%	44.4%	
Maximum Green (s)	29.1	29.1		7.6	40.7		7.6	40.0		7.6	40.0	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.5	10.5		21.9	19.8		71.9	63.6		72.7	65.8	
Actuated g/C Ratio	0.10	0.10		0.21	0.19		0.68	0.61		0.69	0.63	
v/c Ratio	0.44	0.35		0.40	0.27		0.23	0.66		0.24	0.64	
Control Delay (s/veh)	54.4	20.3		37.7	17.6		9.0	16.7		15.3	29.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	54.4	20.3		37.7	17.6		9.0	16.7		15.3	29.1	
LOS	D	C		D	B		A	B		B	C	
Approach Delay (s/veh)		35.4			27.9			16.5			28.7	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	12.0	3.2		18.6	7.2		2.6	108.9		5.4	141.1	
Queue Length 95th (m)	24.4	16.5		32.1	20.5		7.1	143.4		m9.3	m180.8	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	364	482		258	702		189	3093		205	3207	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.15		0.40	0.14		0.22	0.66		0.23	0.64	

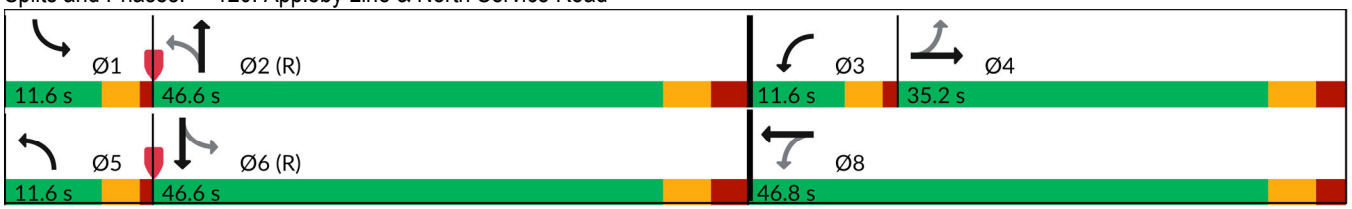
Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 105			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 105			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay (s/veh): 23.3		Intersection LOS: C	

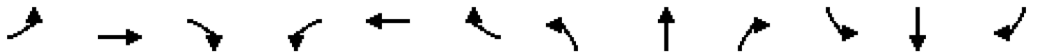
Intersection Capacity Utilization 61.5% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Future Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1591		1787	1720		1656	5102		1805	5119	
Flt Permitted	0.69	1.00		0.49	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1315	1591		921	1720		113	5102		121	5119	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	58	16	57	104	41	58	42	1958	81	48	2011	49
RTOR Reduction (vph)	0	52	0	0	46	0	0	3	0	0	2	0
Lane Group Flow (vph)	58	21	0	104	53	0	42	2036	0	48	2058	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		21.0	21.0		65.9	61.6		68.7	63.0	
Effective Green, g (s)	8.9	8.9		21.0	21.0		65.9	61.6		68.7	63.0	
Actuated g/C Ratio	0.08	0.08		0.20	0.20		0.63	0.59		0.65	0.60	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	111	134		251	344		134	2993		170	3071	
v/s Ratio Prot		0.01		c0.03	0.03		0.01	0.40		c0.02	c0.40	
v/s Ratio Perm	0.04			c0.05			0.18			0.17		
v/c Ratio	0.52	0.16		0.41	0.15		0.31	0.68		0.28	0.67	
Uniform Delay, d1	46.0	44.6		35.8	34.7		10.6	14.9		10.5	14.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		2.29	1.97	
Incremental Delay, d2	4.4	0.5		1.1	0.2		1.3	1.3		0.5	0.7	
Delay (s)	50.4	45.1		36.9	34.9		11.9	16.2		24.6	28.3	
Level of Service	D	D		D	C		B	B		C	C	
Approach Delay (s/veh)		47.4			35.9			16.1			28.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2506	0	0	2196
Future Volume (vph)	630	461	2506	0	0	2196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2787	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2787	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	677	496	2695	0	0	2361
Shared Lane Traffic (%)						
Lane Group Flow (vph)	677	496	2695	0	0	2361
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

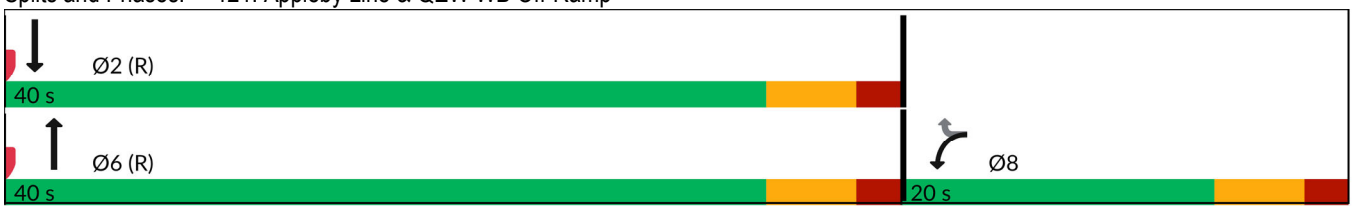


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	20.0	20.0	40.0			40.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	14.0	14.0	34.0			34.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	13.9	13.9	34.1			34.1
Actuated g/C Ratio	0.23	0.23	0.57			0.57
v/c Ratio	0.86	0.77	0.91			0.81
Control Delay (s/veh)	35.8	31.3	14.5			13.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	35.8	31.3	14.5			13.2
LOS	D	C	B			B
Approach Delay (s/veh)	33.9		14.5			13.2
Approach LOS	C		B			B
Queue Length 50th (m)	39.5	30.7	76.0			71.7
Queue Length 95th (m)	#67.0	#54.1	#100.2			92.2
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	793	651	2951			2922
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.85	0.76	0.91			0.81

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay (s/veh): 17.6		Intersection LOS: B	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

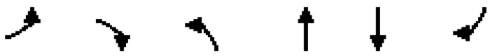
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



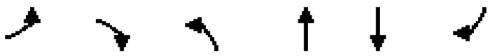


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2506	0	0	2196
Future Volume (vph)	630	461	2506	0	0	2196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2787	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2787	5187			5136
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	677	496	2695	0	0	2361
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	677	494	2695	0	0	2361
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	13.9	13.9	34.1			34.1
Effective Green, g (s)	13.9	13.9	34.1			34.1
Actuated g/C Ratio	0.23	0.23	0.57			0.57
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	787	645	2947			2918
v/s Ratio Prot	c0.20		c0.52			0.46
v/s Ratio Perm		0.18				
v/c Ratio	0.86	0.77	0.91			0.81
Uniform Delay, d1	22.1	21.5	11.6			10.3
Progression Factor	1.00	1.00	0.89			1.00
Incremental Delay, d2	9.5	5.4	3.2			2.5
Delay (s)	31.6	27.0	13.5			12.9
Level of Service	C	C	B			B
Approach Delay (s/veh)	29.6		13.5			12.9
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	803	496	0	2149	2162	0
Future Volume (vph)	803	496	0	2149	2162	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	5136	5136	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	5136	5136	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	828	511	0	2215	2229	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	828	511	0	2215	2229	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	23.0	23.0		37.0	37.0	
Total Split (%)	38.3%	38.3%		61.7%	61.7%	
Maximum Green (s)	17.0	17.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.7	16.7		31.3	31.3	
Actuated g/C Ratio	0.28	0.28		0.52	0.52	
v/c Ratio	0.85	0.65		0.83	0.83	
Control Delay (s/veh)	30.7	23.3		15.7	15.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	30.7	23.3		15.7	15.3	
LOS	C	C		B	B	
Approach Delay (s/veh)	27.8			15.7	15.3	
Approach LOS	C			B	B	
Queue Length 50th (m)	46.0	29.0		73.4	72.3	
Queue Length 95th (m)	#74.4	45.1		94.4	90.7	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	992	800		2675	2675	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.83	0.64		0.83	0.83	

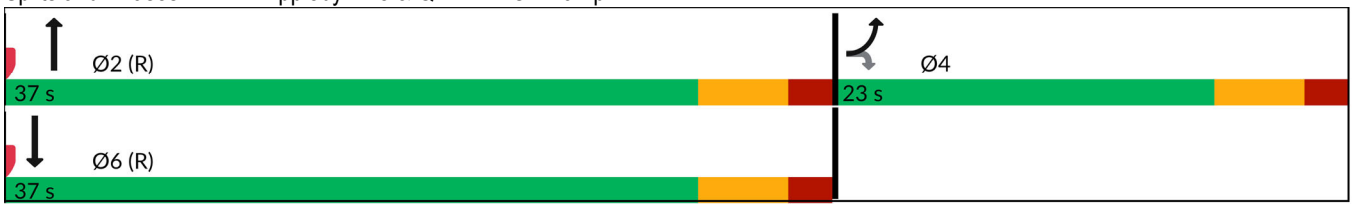
Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 18.4	Intersection LOS: B

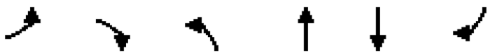
Intersection Capacity Utilization 76.4% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

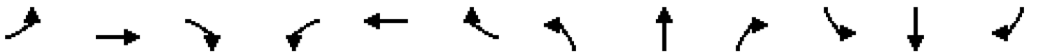




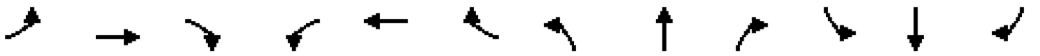
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	803	496	0	2149	2162	0
Future Volume (vph)	803	496	0	2149	2162	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		5136	5136	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	828	511	0	2215	2229	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	828	507	0	2215	2229	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.7	16.7		31.3	31.3	
Effective Green, g (s)	16.7	16.7		31.3	31.3	
Actuated g/C Ratio	0.28	0.28		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	974	783		2679	2679	
v/s Ratio Prot	c0.24			0.43	c0.43	
v/s Ratio Perm		0.18				
v/c Ratio	0.85	0.65		0.83	0.83	
Uniform Delay, d1	20.5	19.1		12.1	12.1	
Progression Factor	1.00	1.00		1.00	1.07	
Incremental Delay, d2	7.2	1.9		3.1	1.8	
Delay (s)	27.7	20.9		15.2	14.7	
Level of Service	C	C		B	B	
Approach Delay (s/veh)	25.1			15.2	14.7	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Future Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor		0.99		1.00			1.00		0.99	1.00		0.99
Frt		0.905			0.936				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3281	0	1736	5136	1599	3502	5136	1553
Flt Permitted	0.204			0.591			0.191			0.950		
Satd. Flow (perm)	373	3218	0	1110	3281	0	349	5136	1575	3500	5136	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			196				215			156
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	186	77	132	582	378	283	86	1467	299	206	1182	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	209	0	582	661	0	86	1467	299	206	1182	156
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		12.0	39.4		11.0	38.6	38.6	11.0	38.6	38.6
Total Split (%)	11.0%	38.4%		12.0%	39.4%		11.0%	38.6%	38.6%	11.0%	38.6%	38.6%
Maximum Green (s)	7.0	32.0		8.0	33.0		7.0	32.3	32.3	7.0	32.3	32.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	29.0	19.6		31.0	20.6		50.8	40.4	40.4	11.4	45.8	45.8
Actuated g/C Ratio	0.29	0.20		0.31	0.21		0.51	0.40	0.40	0.11	0.46	0.46
v/c Ratio	0.92	0.28		1.47	0.80		0.30	0.71	0.39	0.52	0.50	0.20
Control Delay (s/veh)	72.7	13.3		250.8	33.4		13.8	28.6	9.0	46.4	21.8	4.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.7	13.3		250.8	33.4		13.8	28.6	9.0	46.4	21.8	4.3
LOS	E	B		F	C		B	C	A	D	C	A
Approach Delay (s/veh)		41.3			135.2			24.7			23.3	
Approach LOS		D			F			C			C	
Queue Length 50th (m)	28.7	6.8		~165.3	49.5		7.4	90.7	10.7	20.6	62.4	0.0
Queue Length 95th (m)	#51.9	15.5		#215.5	64.8		17.3	#124.5	35.4	32.0	90.9	13.8
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	203	1119		397	1214		289	2073	764	397	2354	787
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.19		1.47	0.54		0.30	0.71	0.39	0.52	0.50	0.20

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.47	
Intersection Signal Delay (s/veh): 52.9	Intersection LOS: D

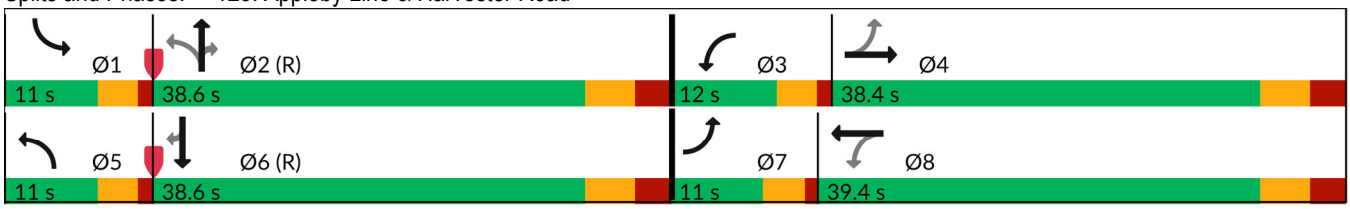
Intersection Capacity Utilization 90.4% ICU Level of Service E

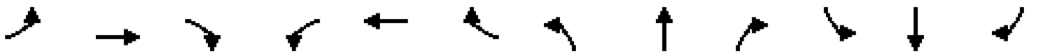
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road



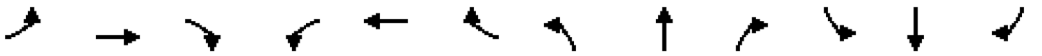


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Future Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3219		1786	3280		1736	5136	1575	3502	5136	1533
Flt Permitted	0.20	1.00		0.59	1.00		0.19	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	373	3219		1110	3280		348	5136	1575	3502	5136	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	186	77	132	582	378	283	86	1467	299	206	1182	156
RTOR Reduction (vph)	0	106	0	0	156	0	0	0	128	0	0	86
Lane Group Flow (vph)	186	103	0	582	505	0	86	1467	171	206	1182	70
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	26.6	19.6		28.6	20.6		47.0	40.3	40.3	11.4	45.0	45.0
Effective Green, g (s)	26.6	19.6		28.6	20.6		47.0	40.3	40.3	11.4	45.0	45.0
Actuated g/C Ratio	0.27	0.20		0.29	0.21		0.47	0.40	0.40	0.11	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	630		371	675		256	2069	634	399	2311	689
v/s Ratio Prot	0.07	0.03		c0.13	0.15		0.02	c0.29		c0.06	0.23	
v/s Ratio Perm	0.19			c0.32			0.13		0.11			0.05
v/c Ratio	0.96	0.16		1.57	0.75		0.34	0.71	0.27	0.52	0.51	0.10
Uniform Delay, d1	33.4	33.4		34.5	37.3		15.0	24.9	20.0	41.7	19.6	15.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.1	0.1		268.7	4.6		0.8	2.1	1.0	1.1	0.8	0.3
Delay (s)	85.5	33.5		303.2	41.8		15.8	27.0	21.0	42.8	20.5	16.1
Level of Service	F	C		F	D		B	C	C	D	C	B
Approach Delay (s/veh)		58.0			164.2			25.5			23.0	
Approach LOS		E			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	61.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Future Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99			0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	5136	1615
Flt Permitted	0.673			0.685			0.083			0.090		
Satd. Flow (perm)	2478	1792	1576	1192	1792	1533	158	3574	1414	164	5136	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			283			171			109			525
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	584	111	416	167	107	223	337	1494	116	174	1681	525
Shared Lane Traffic (%)												
Lane Group Flow (vph)	584	111	416	167	107	223	337	1494	116	174	1681	525
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	12.0	38.0	38.0	11.6	37.6	37.6	19.6	52.9	52.9	12.5	45.8	45.8
Total Split (%)	10.4%	33.0%	33.0%	10.1%	32.7%	32.7%	17.0%	46.0%	46.0%	10.9%	39.8%	39.8%
Maximum Green (s)	7.0	31.5	31.5	7.6	31.1	31.1	15.6	46.1	46.1	8.5	39.0	39.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	26.6	18.1	18.1	27.8	17.7	17.7	74.8	55.9	55.9	59.3	44.4	44.4
Actuated g/C Ratio	0.23	0.16	0.16	0.24	0.15	0.15	0.65	0.49	0.49	0.52	0.39	0.39
v/c Ratio	0.92	0.40	0.86	0.52	0.39	0.59	0.76	0.86	0.16	0.70	0.85	0.56
Control Delay (s/veh)	60.3	45.1	31.5	38.5	45.3	17.4	40.7	34.1	5.2	40.5	38.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	60.3	45.1	31.5	38.5	45.3	17.4	40.7	34.1	5.2	40.5	38.3	5.0
LOS	E	D	C	D	D	B	D	C	A	D	D	A
Approach Delay (s/veh)		48.0			30.5			33.6			31.1	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	63.1	25.2	31.8	33.9	24.3	11.4	55.1	163.9	0.9	22.8	134.9	0.0
Queue Length 95th (m)	68.5	38.0	63.8	46.0	37.0	32.0	#129.8	#248.2	13.7	#68.4	#178.6	24.7
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	635	490	637	319	484	539	441	1737	743	249	1981	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.23	0.65	0.52	0.22	0.41	0.76	0.86	0.16	0.70	0.85	0.56

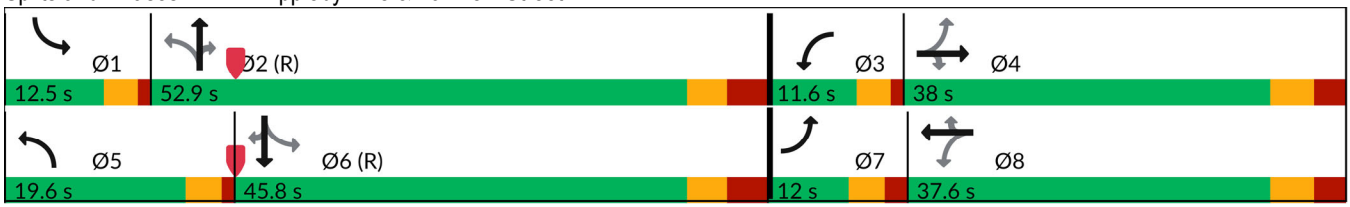
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 35.0	Intersection LOS: D

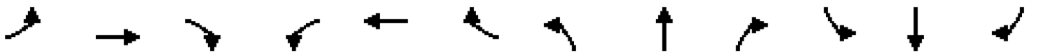
Intersection Capacity Utilization 87.8% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

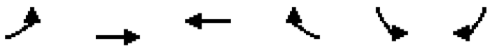




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Future Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3500	1792	1576	1660	1792	1533	1805	3574	1414	1736	5136	1589
Flt Permitted	0.67	1.00	1.00	0.69	1.00	1.00	0.08	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	2478	1792	1576	1197	1792	1533	157	3574	1414	165	5136	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	584	111	416	167	107	223	337	1494	116	174	1681	525
RTOR Reduction (vph)	0	0	238	0	0	145	0	0	56	0	0	323
Lane Group Flow (vph)	584	111	178	167	107	78	337	1494	60	174	1681	202
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	25.1	18.1	18.1	25.3	17.7	17.7	72.0	55.9	55.9	56.4	44.3	44.3
Effective Green, g (s)	25.1	18.1	18.1	25.3	17.7	17.7	72.0	55.9	55.9	56.4	44.3	44.3
Actuated g/C Ratio	0.22	0.16	0.16	0.22	0.15	0.15	0.63	0.49	0.49	0.49	0.39	0.39
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	603	282	248	293	275	235	437	1737	687	246	1978	612
v/s Ratio Prot	c0.06	0.06		0.04	0.06		c0.16	c0.42		0.07	0.33	
v/s Ratio Perm	c0.15		0.11	0.09		0.05	0.32		0.04	0.27		0.13
v/c Ratio	0.97	0.39	0.72	0.57	0.39	0.33	0.77	0.86	0.09	0.71	0.85	0.33
Uniform Delay, d1	43.7	43.5	46.0	39.0	43.8	43.4	31.1	26.1	15.9	23.4	32.3	24.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	0.9	9.4	2.5	0.9	0.8	8.2	5.8	0.3	8.9	4.8	1.4
Delay (s)	72.2	44.4	55.4	41.5	44.7	44.2	39.3	31.9	16.1	32.3	37.1	26.3
Level of Service	E	D	E	D	D	D	D	C	B	C	D	C
Approach Delay (s/veh)		63.2			43.4			32.3			34.4	
Approach LOS		E			D			C			C	

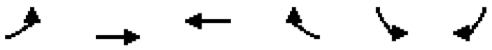
Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	611	696	4	5	23
Future Volume (vph)	15	611	696	4	5	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.999			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3536	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3536	0	1770	1583
Link Speed (k/h)		60	60		40	
Link Distance (m)		600.1	153.9		177.5	
Travel Time (s)		36.0	9.2		16.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	664	757	4	5	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	664	761	0	5	25
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	

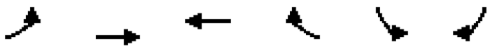
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	611	696	4	5	23
Future Volume (Veh/h)	15	611	696	4	5	23
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	664	757	4	5	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			154			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	761				1123	381
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	591				981	182
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	97
cM capacity (veh/h)	911				225	771

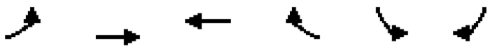
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	16	332	332	505	256	5	25
Volume Left	16	0	0	0	0	5	0
Volume Right	0	0	0	0	4	0	25
cSH	911	1700	1700	1700	1700	225	771
Volume to Capacity	0.02	0.20	0.20	0.30	0.15	0.02	0.03
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	0.5	0.8
Control Delay (s/veh)	9.0	0.0	0.0	0.0	0.0	21.3	9.8
Lane LOS	A					C	A
Approach Delay (s/veh)	0.2			0.0		11.7	
Approach LOS						B	

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	408	571	0	0	0
Future Volume (vph)	0	408	571	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	3539	3539	0	1863	0
Flt Permitted						
Satd. Flow (perm)	0	3539	3539	0	1863	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		124.8	744.3		141.5	
Travel Time (s)		7.5	44.7		12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	621	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	443	621	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

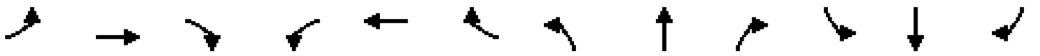
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 19.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	408	571	0	0	0
Future Volume (Veh/h)	0	408	571	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	443	621	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		125				
pX, platoon unblocked					0.99	
vC, conflicting volume	621				843	311
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	621				824	311
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	956				308	685

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	148	295	414	207	0
Volume Left	0	0	0	0	0
Volume Right	0	0	0	0	0
cSH	956	1700	1700	1700	1700
Volume to Capacity	0.00	0.17	0.24	0.12	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0
Lane LOS					A
Approach Delay (s/veh)	0.0		0.0		0.0
Approach LOS					A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	21.0	46.4	46.4	17.0	52.6	52.6	15.0	50.6	50.6
Total Split (%)	15.6%	34.4%	34.4%	15.6%	34.4%	34.4%	12.6%	39.0%	39.0%	11.1%	37.5%	37.5%
Maximum Green (s)	16.0	39.0	39.0	16.0	39.0	39.0	12.0	45.2	45.2	10.0	43.2	43.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.2	39.0	39.0	16.0	39.8	39.8	12.0	45.2	45.2	10.0	43.2	43.2
Actuated g/C Ratio	0.11	0.29	0.29	0.12	0.29	0.29	0.09	0.33	0.33	0.07	0.32	0.32
v/c Ratio	0.65	0.99	0.93	1.25	0.48	0.28	1.21	0.44	0.62	1.18	0.61	0.30
Control Delay (s/veh)	65.7	69.6	55.6	179.2	40.7	6.8	171.0	36.1	17.0	168.4	40.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.7	69.6	55.6	179.2	40.7	6.8	171.0	36.1	17.0	168.4	40.8	5.8
LOS	E	E	E	F	D	A	F	D	B	F	D	A
Approach Delay (s/veh)		65.9			87.1			63.3			62.2	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	35.3	152.0	107.0	~90.6	61.0	0.0	~65.2	60.1	35.1	~52.5	87.3	0.0
Queue Length 95th (m)	50.5	#188.3	#181.4	#128.6	75.2	17.8	#98.9	73.5	74.4	#84.0	103.7	17.9
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	399	1469	563	380	1414	536	299	1623	676	249	1596	616
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.99	0.93	1.25	0.48	0.28	1.21	0.44	0.62	1.18	0.61	0.30

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay (s/veh): 68.7	Intersection LOS: E

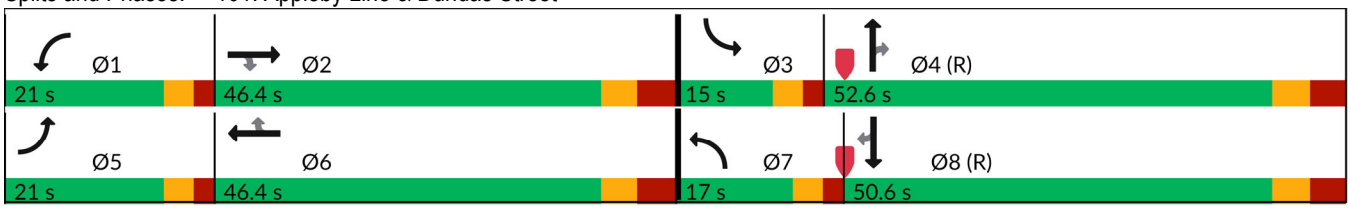
Intersection Capacity Utilization 103.9% ICU Level of Service G

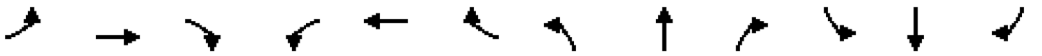
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

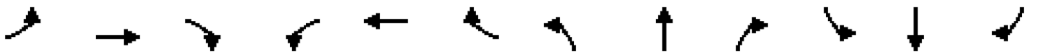




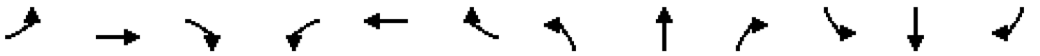
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Future Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	246	1459	523	474	677	152	361	715	418	295	978	186
RTOR Reduction (vph)	0	0	120	0	0	107	0	0	180	0	0	126
Lane Group Flow (vph)	246	1459	403	474	677	45	361	715	238	295	978	60
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.2	39.0	39.0	16.0	39.8	39.8	12.0	45.2	45.2	10.0	43.2	43.2
Effective Green, g (s)	15.2	39.0	39.0	16.0	39.8	39.8	12.0	45.2	45.2	10.0	43.2	43.2
Actuated g/C Ratio	0.11	0.29	0.29	0.12	0.29	0.29	0.09	0.33	0.33	0.07	0.32	0.32
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	379	1469	442	380	1415	429	299	1623	497	249	1596	489
v/s Ratio Prot	0.07	c0.29		c0.15	0.14		c0.11	0.15		0.09	c0.20	
v/s Ratio Perm			0.26			0.03			0.16			0.04
v/c Ratio	0.65	0.99	0.91	1.25	0.48	0.10	1.21	0.44	0.48	1.18	0.61	0.12
Uniform Delay, d1	57.3	47.9	46.3	59.5	39.1	34.6	61.5	35.0	35.6	62.5	38.8	32.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	21.7	22.8	131.5	0.3	0.1	120.5	0.9	3.3	116.3	1.8	0.5
Delay (s)	62.5	69.6	69.1	191.0	39.3	34.7	182.0	35.9	38.9	178.8	40.6	33.0
Level of Service	E	E	E	F	D	C	F	D	D	F	D	C
Approach Delay (s/veh)		68.7			94.0			72.0			67.6	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	74.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Future Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.98		0.99		0.98	1.00	0.99		1.00	1.00	
Frt		0.957				0.850		0.978			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3359	0	3367	5085	1553	3400	4655	0	3400	4954	0
Flt Permitted	0.311			0.950			0.950			0.950		
Satd. Flow (perm)	561	3359	0	3347	5085	1518	3395	4655	0	3385	4954	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				330		23			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	201	1013	403	281	701	584	249	1047	184	578	1719	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	1416	0	281	701	584	249	1231	0	578	1781	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	59.0		15.0	59.0	59.0	14.0	45.0		26.0	57.0	
Total Split (%)	10.3%	40.7%		10.3%	40.7%	40.7%	9.7%	31.0%		17.9%	39.3%	
Maximum Green (s)	11.0	52.6		11.0	52.6	52.6	9.0	38.5		22.0	50.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	65.9	52.6		11.0	52.7	52.7	9.0	38.5		22.0	50.5	
Actuated g/C Ratio	0.45	0.36		0.08	0.36	0.36	0.06	0.27		0.15	0.35	
v/c Ratio	0.59	1.14		1.10	0.38	0.77	1.18	0.98		1.12	1.03	
Control Delay (s/veh)	30.4	112.0		145.9	34.9	24.6	175.1	73.3		132.1	75.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	30.4	112.0		145.9	34.9	24.6	175.1	73.3		132.1	75.9	
LOS	C	F		F	C	C	F	E		F	E	
Approach Delay (s/veh)		101.9			50.9			90.4			89.7	
Approach LOS		F			D			F			F	
Queue Length 50th (m)	36.2	~259.0		~50.9	58.0	74.3	~47.3	142.8		~105.6	~216.4	
Queue Length 95th (m)	54.3	#304.7		#82.5	70.4	129.4	#77.3	#179.2		#145.2	#248.2	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	343	1247		255	1847	761	211	1252		515	1727	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.59	1.14		1.10	0.38	0.77	1.18	0.98		1.12	1.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay (s/veh): 84.0		Intersection LOS: F	

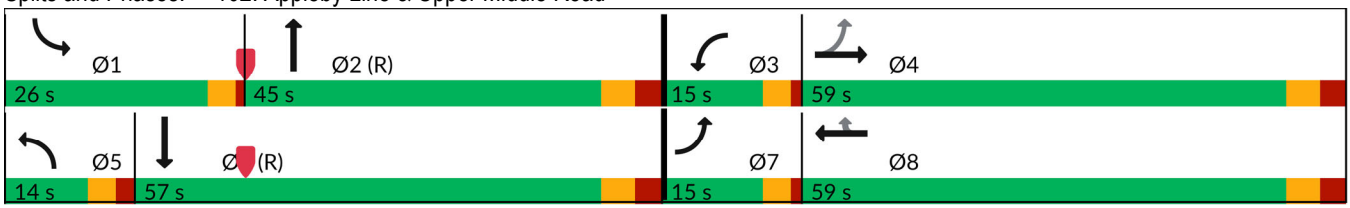
Intersection Capacity Utilization 100.6% ICU Level of Service G

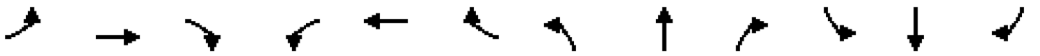
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road



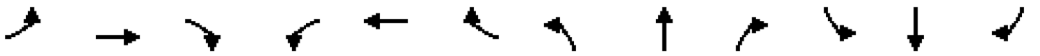


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Future Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1717	3360		3367	5085	1518	3400	4653		3400	4953	
Flt Permitted	0.31	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	562	3360		3367	5085	1518	3400	4653		3400	4953	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	201	1013	403	281	701	584	249	1047	184	578	1719	62
RTOR Reduction (vph)	0	29	0	0	0	210	0	17	0	0	3	0
Lane Group Flow (vph)	201	1387	0	281	701	374	249	1214	0	578	1778	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	63.5	52.6		11.0	52.7	52.7	9.0	38.5		22.0	50.5	
Effective Green, g (s)	63.5	52.6		11.0	52.7	52.7	9.0	38.5		22.0	50.5	
Actuated g/C Ratio	0.44	0.36		0.08	0.36	0.36	0.06	0.27		0.15	0.35	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	332	1218		255	1848	551	211	1235		515	1725	
v/s Ratio Prot	0.05	c0.41		c0.08	0.14		0.07	0.26		c0.17	c0.36	
v/s Ratio Perm	0.22					0.25						
v/c Ratio	0.61	1.14		1.10	0.38	0.68	1.18	0.98		1.12	1.03	
Uniform Delay, d1	26.3	46.2		67.0	34.1	39.0	68.0	52.9		61.5	47.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	72.7		86.4	0.1	3.3	119.1	21.9		77.8	30.0	
Delay (s)	29.4	118.9		153.4	34.2	42.3	187.1	74.8		139.3	77.3	
Level of Service	C	F		F	C	D	F	E		F	E	
Approach Delay (s/veh)		107.8			58.6			93.7			92.5	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Future Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99						1.00	0.98		0.99	
Frt		0.977							0.850		0.905	
Flt Protected	0.950			0.950				0.950			0.985	
Satd. Flow (prot)	1805	4913	0	1805	4988	0	0	1752	1615	0	1564	0
Flt Permitted	0.119			0.076				0.740			0.895	
Satd. Flow (perm)	225	4913	0	144	4988	0	0	1359	1587	0	1420	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48							136		76	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		521.3			256.9			157.0			83.5	
Travel Time (s)		31.3			15.4			11.3			6.0	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	8	2071	371	64	1665	0	278	0	136	8	0	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	2442	0	64	1665	0	0	278	136	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

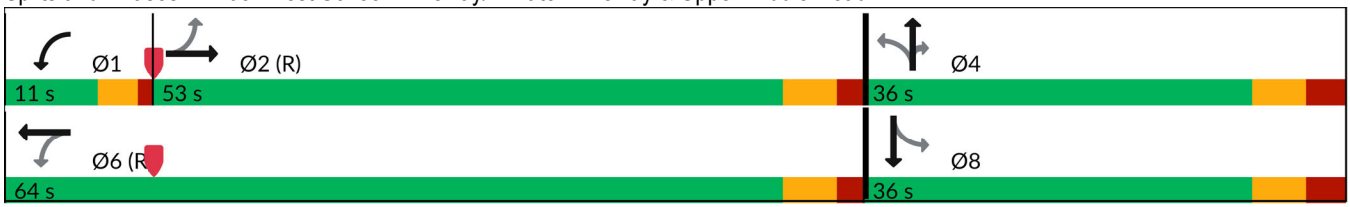


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	53.0	53.0		11.0	64.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	53.0%	53.0%		11.0%	64.0%		36.0%	36.0%	36.0%	36.0%	36.0%	
Maximum Green (s)	47.0	47.0		7.0	58.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	49.2	49.2		60.0	58.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.49	0.49		0.60	0.58			0.29	0.29		0.29	
v/c Ratio	0.07	1.00		0.32	0.58			0.71	0.24		0.06	
Control Delay (s/veh)	16.8	44.6		12.5	14.2			42.9	6.0		0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	16.8	44.6		12.5	14.2			42.9	6.0		0.2	
LOS	B	D		B	B			D	A		A	
Approach Delay (s/veh)		44.6			14.2			30.8			0.2	
Approach LOS		D			B			C			A	
Queue Length 50th (m)	0.9	~200.4		5.0	75.3			50.5	0.0		0.0	
Queue Length 95th (m)	3.4	158.1		8.9	70.4			65.7	8.5		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			59.5	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	110	2441		202	2893			394	556		465	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.07	1.00		0.32	0.58			0.71	0.24		0.06	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 31.7	Intersection LOS: C

Intersection Capacity Utilization 100.8% ICU Level of Service G
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Future Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1800	4914		1805	4988			1745	1587		1563	
Flt Permitted	0.12	1.00		0.08	1.00			0.74	1.00		0.90	
Satd. Flow (perm)	226	4914		145	4988			1359	1587		1421	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	8	2071	371	64	1665	0	278	0	136	8	0	19
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	97	0	19	0
Lane Group Flow (vph)	8	2417	0	64	1665	0	0	278	39	0	8	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	48.4	48.4		58.0	58.0			29.0	29.0		29.0	
Effective Green, g (s)	48.4	48.4		58.0	58.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.48	0.48		0.58	0.58			0.29	0.29		0.29	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	109	2378		177	2893			394	460		412	
v/s Ratio Prot		c0.49		0.02	c0.33							
v/s Ratio Perm	0.04			0.19				c0.20	0.02		0.01	
v/c Ratio	0.07	1.02		0.36	0.58			0.71	0.09		0.02	
Uniform Delay, d1	13.8	25.8		21.3	13.2			31.7	25.8		25.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.3	22.7		1.3	0.8			10.2	0.4		0.1	
Delay (s)	15.1	48.5		22.5	14.1			41.9	26.2		25.4	
Level of Service	B	D		C	B			D	C		C	
Approach Delay (s/veh)		48.4			14.4			36.7			25.4	
Approach LOS		D			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1516	183	284	1296	52	210
Future Volume (vph)	1516	183	284	1296	52	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt	0.984					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4966	0	1787	4988	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4966	0	1787	4988	1805	1615
Link Speed (k/h)	60			60	50	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	9.5	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	2135	258	400	1825	73	296
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2393	0	400	1825	73	296
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

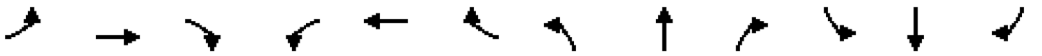
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			



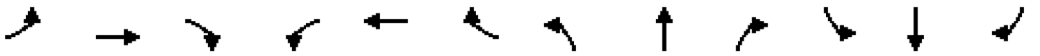
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1516	183	284	1296	52	210
Future Volume (Veh/h)	1516	183	284	1296	52	210
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	2135	258	400	1825	73	296
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257			119		
pX, platoon unblocked			0.55		0.71	0.55
vC, conflicting volume			2405		3684	853
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			719		329	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			18		9	51
cM capacity (veh/h)			485		80	598

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	854	854	685	400	608	608	608	73	296
Volume Left	0	0	0	400	0	0	0	73	0
Volume Right	0	0	258	0	0	0	0	0	296
cSH	1700	1700	1700	485	1700	1700	1700	80	598
Volume to Capacity	0.50	0.50	0.40	0.82	0.36	0.36	0.36	0.91	0.49
Queue Length 95th (m)	0.0	0.0	0.0	64.2	0.0	0.0	0.0	38.4	21.9
Control Delay (s/veh)	0.0	0.0	0.0	38.6	0.0	0.0	0.0	166.6	16.8
Lane LOS				E				F	C
Approach Delay (s/veh)	0.0			6.9				46.4	
Approach LOS								E	

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Future Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	120.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						0.99	
Frt		0.998			0.991			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1752	5075	0	0	4962	0	1770	1583	0	1805	1562	0
Flt Permitted	0.123						0.303			0.757		
Satd. Flow (perm)	227	5075	0	0	4962	0	564	1583	0	1438	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			15			82			309	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			84.7			285.4	
Travel Time (s)		7.1			17.4			7.6			25.7	
Confl. Peds. (#/hr)	29					29						1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	222	2020	29	0	1693	113	36	0	1	134	0	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	2049	0	0	1806	0	36	1	0	134	342	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	23.0		23.0	23.0		11.0	22.5		23.0	23.0	
Total Split (s)	11.0	46.0		35.0	35.0		11.0	34.0		23.0	23.0	
Total Split (%)	13.8%	57.5%		43.8%	43.8%		13.8%	42.5%		28.8%	28.8%	
Maximum Green (s)	7.0	41.0		30.0	30.0		7.0	30.0		18.0	18.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	3.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	42.0	41.0			30.0		30.0	30.0		22.5	22.5	
Actuated g/C Ratio	0.53	0.51			0.38		0.38	0.38		0.28	0.28	
v/c Ratio	0.88	0.79			0.97		0.12	0.00		0.33	0.52	
Control Delay (s/veh)	49.7	18.7			39.5		17.0	0.0		27.8	8.0	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	49.7	18.7			39.5		17.0	0.0		27.8	8.0	
LOS	D	B			D		B	A		C	A	
Approach Delay (s/veh)		21.7			39.5			16.5			13.6	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	18.5	93.5			102.8		3.7	0.0		18.3	4.2	
Queue Length 95th (m)	#39.9	85.2			96.1		8.1	0.0		28.8	14.4	
Internal Link Dist (m)		94.7			266.7			60.7			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	252	2602			1870		317	644		404	661	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.88	0.79			0.97		0.11	0.00		0.33	0.52	

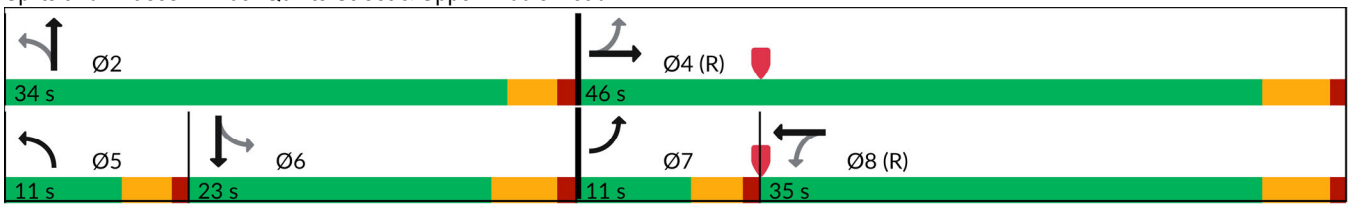
Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 27.9	Intersection LOS: C

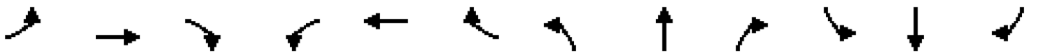
Intersection Capacity Utilization 91.2% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road



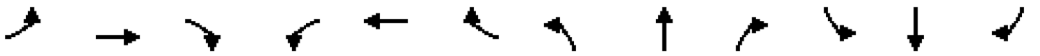


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Future Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	5074			4960		1770	1583		1805	1562	
Flt Permitted	0.12	1.00			1.00		0.30	1.00		0.76	1.00	
Satd. Flow (perm)	228	5074			4960		565	1583		1439	1562	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	222	2020	29	0	1693	113	36	0	1	134	0	342
RTOR Reduction (vph)	0	2	0	0	10	0	0	1	0	0	222	0
Lane Group Flow (vph)	222	2047	0	0	1796	0	36	0	0	134	120	0
Confl. Peds. (#/hr)	29					29						1
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	39.4	39.4			28.4		31.6	31.6		22.5	22.5	
Effective Green, g (s)	39.4	39.4			28.4		31.6	31.6		22.5	22.5	
Actuated g/C Ratio	0.49	0.49			0.36		0.40	0.40		0.28	0.28	
Clearance Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	245	2498			1760		284	625		404	439	
v/s Ratio Prot	0.08	c0.40			c0.36		c0.01	0.00			0.08	
v/s Ratio Perm	0.37						0.04			c0.09		
v/c Ratio	0.91	0.82			1.02		0.13	0.00		0.33	0.27	
Uniform Delay, d1	17.5	17.3			25.8		16.0	14.6		22.8	22.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.3	3.1			26.8		0.2	0.0		2.2	1.5	
Delay (s)	50.8	20.4			52.6		16.2	14.6		25.0	23.9	
Level of Service	D	C			D		B	B		C	C	
Approach Delay (s/veh)		23.4			52.6			16.1			24.2	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Future Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.86	0.86	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99				0.99		1.00	0.99		0.98	0.98	
Frt		0.974			0.970			0.939			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	4994	0	1522	4547	0	1770	1728	0	3502	1540	0
Flt Permitted	0.177			0.180			0.508			0.950		
Satd. Flow (perm)	315	4994	0	288	4547	0	943	1728	0	3442	1540	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			53			13			93	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			175.8			244.6	
Travel Time (s)		17.4			14.7			15.8			22.0	
Confl. Peds. (#/hr)	24					24	6		16	16		6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	332	1351	277	4	931	229	315	19	13	631	19	371
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	332	1628	0	4	1160	0	315	32	0	631	390	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	31.0		11.0	31.0		11.0	34.0		11.0	34.0	
Total Split (s)	15.0	35.0		11.0	31.0		18.0	34.0		20.0	36.0	
Total Split (%)	15.0%	35.0%		11.0%	31.0%		18.0%	34.0%		20.0%	36.0%	
Maximum Green (s)	11.0	29.0		7.0	25.0		14.0	27.0		16.0	29.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	45.7	41.5		34.0	26.0		31.7	19.1		26.2	25.3	
Actuated g/C Ratio	0.46	0.42		0.34	0.26		0.32	0.19		0.26	0.25	
v/c Ratio	0.96	0.78		0.02	0.95		0.76	0.09		0.69	0.85	
Control Delay (s/veh)	65.0	29.5		20.0	52.1		36.6	19.9		41.9	44.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.0	29.5		20.0	52.1		36.6	19.9		41.9	44.3	
LOS	E	C		B	D		D	B		D	D	
Approach Delay (s/veh)		35.5			51.9			35.1			42.8	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	~56.2	100.8		0.5	90.9		39.3	3.0		~77.2	58.0	
Queue Length 95th (m)	#106.7	#149.7		m1.5	90.8		53.4	9.6		#100.7	83.8	
Internal Link Dist (m)		266.7			220.7			151.8			220.6	
Turn Bay Length (m)	60.0			60.0			30.0			60.0		
Base Capacity (vph)	347	2096		184	1221		414	476		918	512	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.96	0.78		0.02	0.95		0.76	0.07		0.69	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay (s/veh): 41.4	Intersection LOS: D

Intersection Capacity Utilization 102.9% ICU Level of Service G

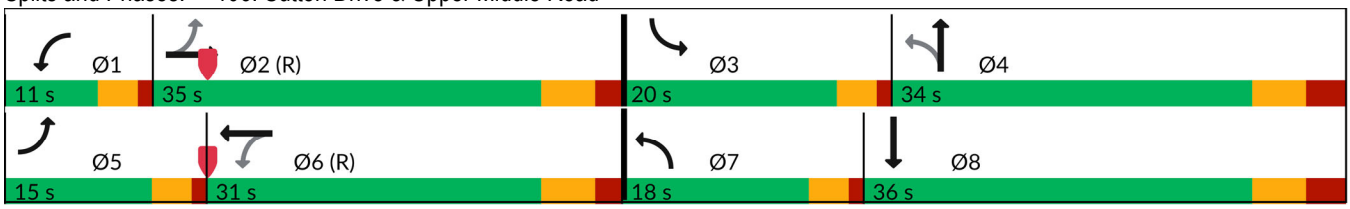
Analysis Period (min) 15

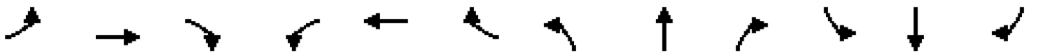
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: Sutton Drive & Upper Middle Road

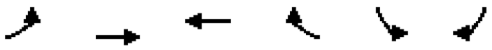




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Future Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		0.86	0.86		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.94		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1701	4996		1522	4548		1766	1728		3502	1540	
Flt Permitted	0.18	1.00		0.18	1.00		0.51	1.00		0.95	1.00	
Satd. Flow (perm)	317	4996		289	4548		945	1728		3502	1540	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	332	1351	277	4	931	229	315	19	13	631	19	371
RTOR Reduction (vph)	0	28	0	0	40	0	0	11	0	0	67	0
Lane Group Flow (vph)	332	1600	0	4	1120	0	315	21	0	631	323	0
Confl. Peds. (#/hr)	24					24	6		16	16		6
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	40.9	35.5		23.6	23.6		29.9	15.9		26.2	28.1	
Effective Green, g (s)	40.9	35.5		23.6	23.6		29.9	15.9		26.2	28.1	
Actuated g/C Ratio	0.41	0.36		0.24	0.24		0.30	0.16		0.26	0.28	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	333	1773		85	1073		397	274		917	432	
v/s Ratio Prot	c0.15	0.32		0.00	0.01		c0.11	0.01		c0.18	c0.21	
v/s Ratio Perm	c0.26			0.01	0.23		0.13					
v/c Ratio	1.00	0.90		0.05	1.04		0.79	0.08		0.69	0.75	
Uniform Delay, d1	23.3	30.6		30.1	38.2		30.0	35.8		33.2	32.7	
Progression Factor	1.00	1.00		1.14	1.05		1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.2	7.9		0.2	38.8		10.4	0.1		2.2	6.9	
Delay (s)	71.5	38.5		34.5	79.1		40.4	35.9		35.4	39.7	
Level of Service	E	D		C	E		D	D		D	D	
Approach Delay (s/veh)		44.1			78.9			40.0			37.0	
Approach LOS		D			E			D			D	

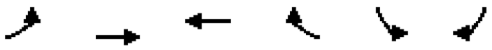
Intersection Summary			
HCM 2000 Control Delay (s/veh)	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	1643	887	6	0	72
Future Volume (vph)	41	1643	887	6	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	5136	4984	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	5136	4984	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	46	1846	997	7	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	1846	1004	0	0	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

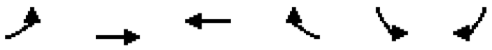
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	1643	887	6	0	72
Future Volume (Veh/h)	41	1643	887	6	0	72
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	46	1846	997	7	0	81
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245	386			
pX, platoon unblocked					0.74	
vC, conflicting volume	1022				1726	354
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1022				735	354
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	93				100	87
cM capacity (veh/h)	630				242	633

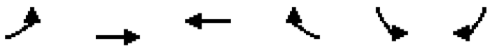
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	46	615	615	615	399	399	206	81
Volume Left	46	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	7	81
cSH	630	1700	1700	1700	1700	1700	1700	633
Volume to Capacity	0.07	0.36	0.36	0.36	0.23	0.23	0.12	0.13
Queue Length 95th (m)	1.9	0.0	0.0	0.0	0.0	0.0	0.0	3.5
Control Delay (s/veh)	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS	B							B
Approach Delay (s/veh)	0.3				0.0			11.5
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	1639	901	5	29	9
Future Volume (vph)	5	1639	901	5	29	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.968	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1805	5136	5023	0	1631	0
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1805	5136	5023	0	1631	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	5	1782	979	5	32	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	1782	984	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			

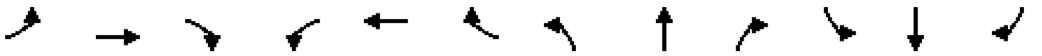


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1639	901	5	29	9
Future Volume (Veh/h)	5	1639	901	5	29	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1782	979	5	32	10
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			199			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	998				1600	343
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	840				1469	155
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	99				70	99
cM capacity (veh/h)	760				107	773

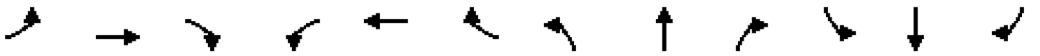
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	5	594	594	594	392	392	201	42
Volume Left	5	0	0	0	0	0	0	32
Volume Right	0	0	0	0	0	0	5	10
cSH	760	1700	1700	1700	1700	1700	1700	135
Volume to Capacity	0.00*	0.35	0.35	0.35	0.23	0.23	0.12	0.31
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	9.8
Control Delay (s/veh)	9.8	0.0	0.0	0.0	0.0	0.0	0.0	43.4
Lane LOS	A							E
Approach Delay (s/veh)	0.0				0.0			43.4
Approach LOS								E

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Future Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.992			0.992			0.955			0.975	
Flt Protected	0.950							0.968			0.961	
Satd. Flow (prot)	1703	5092	0	0	4940	0	0	1722	0	0	1737	0
Flt Permitted	0.337				0.919			0.692			0.638	
Satd. Flow (perm)	601	5092	0	0	4539	0	0	1231	0	0	1153	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			22			33			33	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		198.8			464.6			146.8			226.6	
Travel Time (s)		11.9			27.9			13.2			20.4	
Confl. Peds. (#/hr)	10					10						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	2%	2%	4%	4%	2%	2%	2%	1%	2%	9%
Adj. Flow (vph)	32	1754	104	6	727	41	181	0	90	239	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1858	0	0	774	0	0	271	0	0	293	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

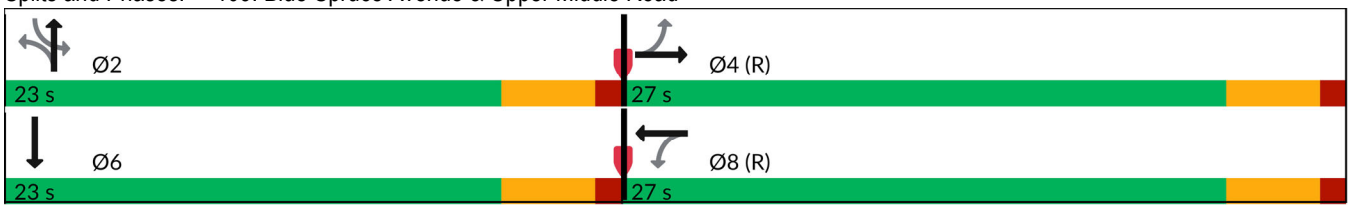


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		2	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	22.5	22.5		22.5	22.5		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	22.5	22.5			22.5			18.5			18.5	
Actuated g/C Ratio	0.45	0.45			0.45			0.37			0.37	
v/c Ratio	0.12	0.81			0.38			0.57			0.66	
Control Delay (s/veh)	12.6	23.8			9.5			16.7			20.6	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	12.6	23.8			9.5			16.7			20.6	
LOS	B	C			A			B			C	
Approach Delay (s/veh)		23.7			9.5			16.7			20.6	
Approach LOS		C			A			B			C	
Queue Length 50th (m)	3.6	95.9			16.2			17.0			19.5	
Queue Length 95th (m)	m3.0	136.8			23.8			37.3			#50.9	
Internal Link Dist (m)		174.8			440.6			122.8			202.6	
Turn Bay Length (m)	100.0											
Base Capacity (vph)	270	2304			2054			476			447	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	0.12	0.81			0.38			0.57			0.66	

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 19.4	Intersection LOS: B

Intersection Capacity Utilization 58.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

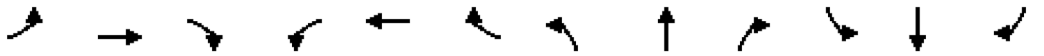
Splits and Phases: 109: Blue Spruce Avenue & Upper Middle Road



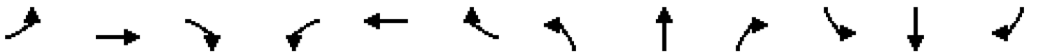
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Future Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.91			0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.99			0.99			0.96			0.98	
Flt Protected	0.95	1.00			1.00			0.97			0.96	
Satd. Flow (prot)	1695	5090			4938			1722			1737	
Flt Permitted	0.34	1.00			0.92			0.69			0.64	
Satd. Flow (perm)	601	5090			4540			1231			1154	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	1754	104	6	727	41	181	0	90	239	0	54
RTOR Reduction (vph)	0	13	0	0	12	0	0	21	0	0	21	0
Lane Group Flow (vph)	32	1845	0	0	762	0	0	250	0	0	272	0
Confl. Peds. (#/hr)	10					10						
Heavy Vehicles (%)	6%	1%	2%	2%	4%	4%	2%	2%	2%	1%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Actuated Green, G (s)	22.5	22.5			22.5			18.5			18.5	
Effective Green, g (s)	22.5	22.5			22.5			18.5			18.5	
Actuated g/C Ratio	0.45	0.45			0.45			0.37			0.37	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	270	2290			2043			455			426	
v/s Ratio Prot		c0.36										
v/s Ratio Perm	0.05				0.17			0.20			c0.24	
v/c Ratio	0.12	0.81			0.37			0.55			0.64	
Uniform Delay, d1	8.0	11.9			9.1			12.5			13.0	
Progression Factor	1.44	1.83			1.00			1.00			1.00	
Incremental Delay, d2	0.6	2.2			0.5			4.7			3.1	
Delay (s)	12.1	23.9			9.6			17.2			16.1	
Level of Service	B	C			A			B			B	
Approach Delay (s/veh)		23.7			9.6			17.2			16.1	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Future Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	120.0		0.0	145.0		0.0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00		1.00		
Frt		0.879			0.963			0.991			0.997	
Flt Protected		0.995			0.965			0.991		0.950		
Satd. Flow (prot)	0	1629	0	0	1766	0	0	4957	0	1805	5119	0
Flt Permitted		0.966			0.590			0.659		0.264		
Satd. Flow (perm)	0	1582	0	0	1080	0	0	3296	0	501	5119	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192			94			26			6	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		167.3			160.8			275.6			464.6	
Travel Time (s)		15.1			14.5			16.5			27.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	3%	0%	0%	1%	2%
Adj. Flow (vph)	46	0	399	16	0	6	191	749	59	26	1958	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	445	0	0	22	0	0	999	0	26	1999	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2		1	2	
Detector Template		Thru			Thru			Thru		Left	Thru	
Leading Detector (m)		10.0			10.0			10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6			0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0			0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0			0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

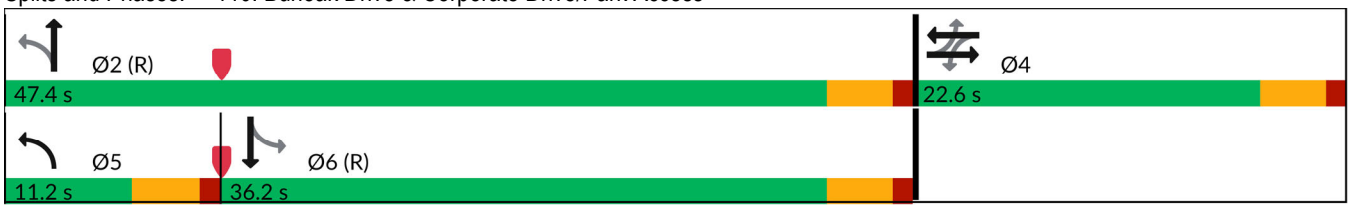


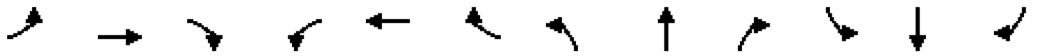
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	22.6	22.6		22.6	22.6		11.2	47.4		36.2	36.2	
Total Split (%)	32.3%	32.3%		32.3%	32.3%		16.0%	67.7%		51.7%	51.7%	
Maximum Green (s)	18.1	18.1		18.1	18.1		6.7	42.9		31.7	31.7	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5			4.5		4.5	4.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		15.7			15.7			45.3		45.3	45.3	
Actuated g/C Ratio		0.22			0.22			0.65		0.65	0.65	
v/c Ratio		0.88			0.07			1.66dl		0.08	0.60	
Control Delay (s/veh)		35.3			0.5			7.4		6.3	8.6	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)		35.3			0.5			7.4		6.3	8.6	
LOS		D			A			A		A	A	
Approach Delay (s/veh)		35.3			0.5			7.4			8.6	
Approach LOS		D			A			A			A	
Queue Length 50th (m)		32.9			0.0			24.2		1.3	56.6	
Queue Length 95th (m)		#82.2			0.0			33.7		4.3	70.4	
Internal Link Dist (m)		143.3			136.8			251.6			440.6	
Turn Bay Length (m)										145.0		
Base Capacity (vph)		551			348			2140		324	3311	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.81			0.06			0.47		0.08	0.60	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay (s/veh): 11.6	Intersection LOS: B

Intersection Capacity Utilization 87.6% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 110: Burloak Drive & Corporate Drive/Park Access



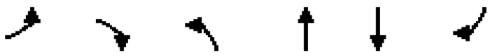


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Future Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00			0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00		1.00	1.00	
Frt		0.88			0.96			0.99		1.00	1.00	
Flt Protected		0.99			0.96			0.99		0.95	1.00	
Satd. Flow (prot)		1629			1766			4955		1804	5119	
Flt Permitted		0.97			0.59			0.66		0.26	1.00	
Satd. Flow (perm)		1582			1079			3297		501	5119	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	46	0	399	16	0	6	191	749	59	26	1958	41
RTOR Reduction (vph)	0	149	0	0	17	0	0	9	0	0	2	0
Lane Group Flow (vph)	0	296	0	0	5	0	0	990	0	26	1997	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	3%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)		15.7			15.7			45.3		45.3	45.3	
Effective Green, g (s)		15.7			15.7			45.3		45.3	45.3	
Actuated g/C Ratio		0.22			0.22			0.65		0.65	0.65	
Clearance Time (s)		4.5			4.5			4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)		354			242			2133		324	3312	
v/s Ratio Prot											c0.39	
v/s Ratio Perm		c0.19			0.00			0.30		0.05		
v/c Ratio		0.84			0.02			1.66dl		0.08	0.60	
Uniform Delay, d1		25.9			21.2			6.2		4.6	7.1	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		15.6			0.0			0.2		0.5	0.8	
Delay (s)		41.5			21.2			6.4		5.1	8.0	
Level of Service		D			C			A		A	A	
Approach Delay (s/veh)		41.5			21.2			6.4			7.9	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

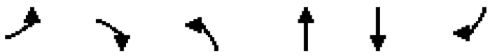
dl Defacto Left Lane. Recode with 1 though lane as a left lane.

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	87	372	90	824	2116	20
Future Volume (vph)	87	372	90	824	2116	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	120.0			0.0
Storage Lanes	1	0	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.91	0.91	0.91	0.91
Frt	0.891				0.999	
Flt Protected	0.991			0.995		
Satd. Flow (prot)	1645	0	0	5060	5080	0
Flt Permitted	0.991			0.995		
Satd. Flow (perm)	1645	0	0	5060	5080	0
Link Speed (k/h)	40			60	60	
Link Distance (m)	164.5			440.8	275.6	
Travel Time (s)	14.8			26.4	16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	404	98	896	2300	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	499	0	0	994	2322	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

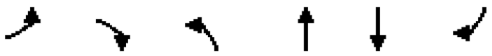
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 96.8%		ICU Level of Service F	
Analysis Period (min) 15			



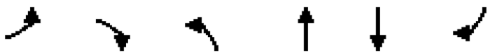
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	87	372	90	824	2116	20
Future Volume (Veh/h)	87	372	90	824	2116	20
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	95	404	98	896	2300	22
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)					276	
pX, platoon unblocked	0.77	0.77	0.77			
vC, conflicting volume	2806	778	2322			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2309	0	1684			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	52	66			
cM capacity (veh/h)	16	839	291			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	499	277	358	358	920	920	482
Volume Left	95	98	0	0	0	0	0
Volume Right	404	0	0	0	0	0	22
cSH	80	291	1700	1700	1700	1700	1700
Volume to Capacity	6.26	0.34	0.21	0.21	0.54	0.54	0.28
Queue Length 95th (m)	Err	11.5	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	Err	14.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s/veh)	Err	3.9			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	1308.9		
Intersection Capacity Utilization	96.8%	ICU Level of Service	F
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	597	674	807	2257	239
Future Volume (vph)	107	597	674	807	2257	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.986	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	3367	5036	5057	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1524	3366	5036	5057	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		306			16	
Link Speed (k/h)	60			60	60	
Link Distance (m)	747.2			453.2	440.8	
Travel Time (s)	44.8			27.2	26.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	118	656	741	887	2480	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	656	741	887	2743	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	32.0	111.0	79.0	
Total Split (%)	26.0%	26.0%	21.3%	74.0%	52.7%	
Maximum Green (s)	32.0	32.0	28.0	104.0	72.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	32.0	32.0	28.0	104.0	72.0	
Actuated g/C Ratio	0.21	0.21	0.19	0.69	0.48	
v/c Ratio	0.31	1.16	1.18	0.25	1.13	
Control Delay (s/veh)	52.3	117.8	151.5	6.6	99.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	52.3	117.8	151.5	6.6	99.4	
LOS	D	F	F	A	F	
Approach Delay (s/veh)	107.8			72.6	99.4	
Approach LOS	F			E	F	
Queue Length 50th (m)	31.4	~169.7	~146.7	21.6	~365.2	
Queue Length 95th (m)	51.3	#252.0	#189.7	28.0	#390.9	
Internal Link Dist (m)	723.2			429.2	416.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	385	565	628	3491	2435	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.31	1.16	1.18	0.25	1.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 92.2	Intersection LOS: F

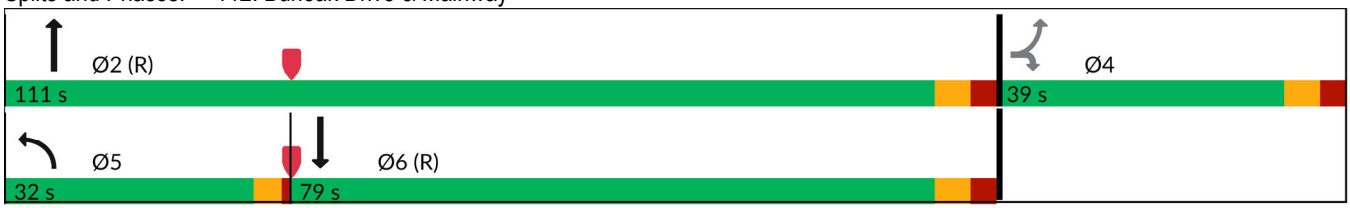
Intersection Capacity Utilization 97.6% ICU Level of Service F

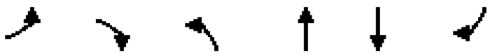
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway

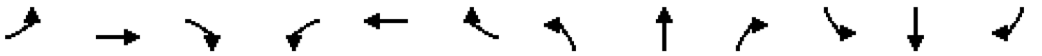




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	597	674	807	2257	239
Future Volume (vph)	107	597	674	807	2257	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	3367	5036	5055	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1524	3367	5036	5055	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	118	656	741	887	2480	263
RTOR Reduction (vph)	0	241	0	0	8	0
Lane Group Flow (vph)	118	415	741	887	2735	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	32.0	32.0	28.0	104.0	72.0	
Effective Green, g (s)	32.0	32.0	28.0	104.0	72.0	
Actuated g/C Ratio	0.21	0.21	0.19	0.69	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	385	325	628	3491	2426	
v/s Ratio Prot			c0.22	0.18	c0.54	
v/s Ratio Perm	0.07	c0.27				
v/c Ratio	0.31	1.28	1.18	0.25	1.13	
Uniform Delay, d1	49.7	59.0	61.0	8.6	39.0	
Progression Factor	1.00	1.00	1.09	0.75	1.00	
Incremental Delay, d2	0.5	146.7	96.5	0.2	63.2	
Delay (s)	50.1	205.7	162.7	6.6	102.2	
Level of Service	D	F	F	A	F	
Approach Delay (s/veh)	182.0			77.7	102.2	
Approach LOS	F			E	F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	106.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Future Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.970			0.949			0.993			0.928	
Flt Protected	0.950				0.997			0.997			0.990	
Satd. Flow (prot)	1770	3331	0	0	3275	0	0	1824	0	0	1711	0
Flt Permitted	0.154				0.872			0.943			0.830	
Satd. Flow (perm)	287	3331	0	0	2864	0	0	1725	0	0	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		51			111			4			91	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		231.3			121.9			154.8			109.5	
Travel Time (s)		13.9			7.3			13.9			9.9	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Adj. Flow (vph)	397	563	142	44	470	263	20	254	15	160	199	415
Shared Lane Traffic (%)												
Lane Group Flow (vph)	397	705	0	0	777	0	0	289	0	0	774	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2			2			2	
Detector Template	Left	Thru			Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0			10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6			0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0			0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	15.0	41.0		26.0	26.0		39.0	39.0		39.0	39.0	
Total Split (%)	18.8%	51.3%		32.5%	32.5%		48.8%	48.8%		48.8%	48.8%	
Maximum Green (s)	10.5	36.5		21.5	21.5		34.5	34.5		34.5	34.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5			4.5			4.5			4.5	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0		0	0	
Act Effct Green (s)	36.5	36.5			21.5			34.5			34.5	
Actuated g/C Ratio	0.46	0.46			0.27			0.43			0.43	
v/c Ratio	1.22	0.46			0.91			0.39			1.16	
Control Delay (s/veh)	145.9	14.9			41.6			17.3			108.6	
Queue Delay	0.0	0.0			0.0			0.0			0.0	
Total Delay (s/veh)	145.9	14.9			41.6			17.3			108.6	
LOS	F	B			D			B			F	
Approach Delay (s/veh)		62.1			41.6			17.3			108.6	
Approach LOS		E			D			B			F	
Queue Length 50th (m)	~64.1	37.2			57.4			30.4			~142.0	
Queue Length 95th (m)	#117.6	51.3			#92.8			49.7			#208.1	
Internal Link Dist (m)		207.3			97.9			130.8			85.5	
Turn Bay Length (m)	25.0											
Base Capacity (vph)	325	1547			850			746			670	
Starvation Cap Reductn	0	0			0			0			0	
Spillback Cap Reductn	0	0			0			0			0	
Storage Cap Reductn	0	0			0			0			0	
Reduced v/c Ratio	1.22	0.46			0.91			0.39			1.16	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.22			
Intersection Signal Delay (s/veh): 64.5		Intersection LOS: E	

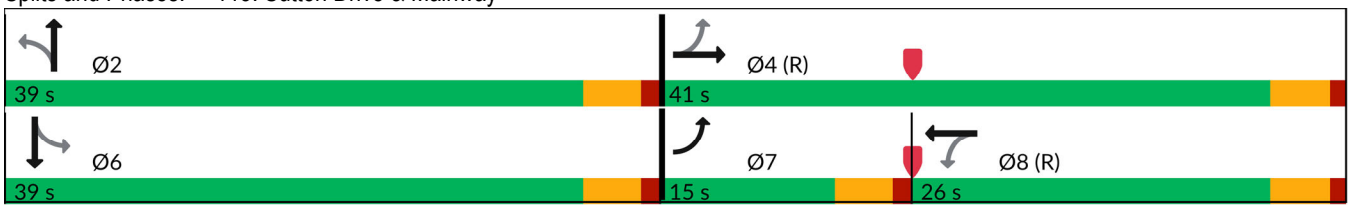
Intersection Capacity Utilization 108.2% ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

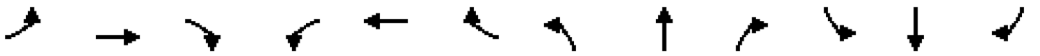
Splits and Phases: 113: Sutton Drive & Mainway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Future Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5			4.5			4.5	
Lane Util. Factor	1.00	0.95			0.95			1.00			1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	0.97			0.95			0.99			0.93	
Flt Protected	0.95	1.00			1.00			1.00			0.99	
Satd. Flow (prot)	1770	3331			3276			1823			1710	
Flt Permitted	0.15	1.00			0.87			0.94			0.83	
Satd. Flow (perm)	287	3331			2863			1725			1434	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	397	563	142	44	470	263	20	254	15	160	199	415
RTOR Reduction (vph)	0	28	0	0	81	0	0	2	0	0	52	0
Lane Group Flow (vph)	397	677	0	0	696	0	0	287	0	0	722	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	36.5	36.5			21.5			34.5			34.5	
Effective Green, g (s)	36.5	36.5			21.5			34.5			34.5	
Actuated g/C Ratio	0.46	0.46			0.27			0.43			0.43	
Clearance Time (s)	4.5	4.5			4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)	325	1519			769			743			618	
v/s Ratio Prot	c0.16	0.20										
v/s Ratio Perm	c0.40				0.24			0.17			c0.50	
v/c Ratio	1.22	0.45			0.90			0.39			1.17	
Uniform Delay, d1	19.5	14.8			28.3			15.5			22.8	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	124.2	0.9			16.2			1.5			92.5	
Delay (s)	143.7	15.8			44.4			17.0			115.2	
Level of Service	F	B			D			B			F	
Approach Delay (s/veh)		61.9			44.4			17.0			115.2	
Approach LOS		E			D			B			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	66.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	108.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



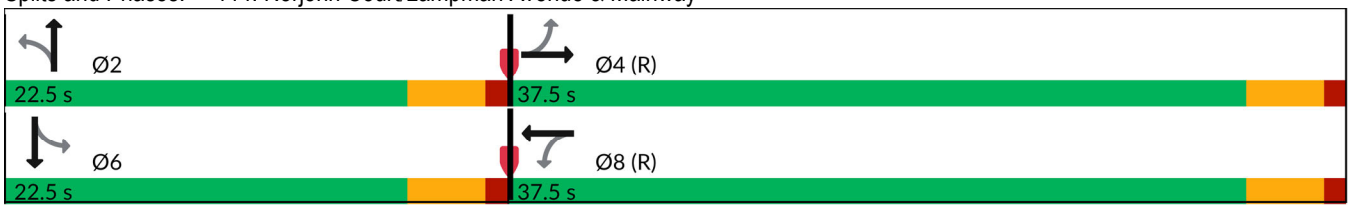
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Future Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.992			0.995			0.968			0.943	
Flt Protected		0.999			0.999			0.963			0.972	
Satd. Flow (prot)	0	3461	0	0	3237	0	0	1508	0	0	1732	0
Flt Permitted		0.933			0.902			0.793			0.810	
Satd. Flow (perm)	0	3233	0	0	2923	0	0	1241	0	0	1443	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			8			27			63	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			522.8			107.7			112.1	
Travel Time (s)		25.6			31.4			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	27	1478	81	19	806	26	19	0	6	135	2	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1586	0	0	851	0	0	25	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

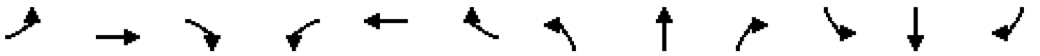


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	37.5	37.5		37.5	37.5		22.5	22.5		22.5	22.5	
Total Split (%)	62.5%	62.5%		62.5%	62.5%		37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	33.0	33.0		33.0	33.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		38.5			38.5			12.5			12.5	
Actuated g/C Ratio		0.64			0.64			0.21			0.21	
v/c Ratio		0.76			0.45			0.09			0.68	
Control Delay (s/veh)		12.5			7.2			7.5			25.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		12.5			7.2			7.5			25.1	
LOS		B			A			A			C	
Approach Delay (s/veh)		12.5			7.2			7.5			25.1	
Approach LOS		B			A			A			C	
Queue Length 50th (m)		58.1			23.6			0.0			18.3	
Queue Length 95th (m)		98.4			42.3			4.1			32.0	
Internal Link Dist (m)		402.4			498.8			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		2077			1876			391			477	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.76			0.45			0.06			0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 11.9		Intersection LOS: B	
Intersection Capacity Utilization 73.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway

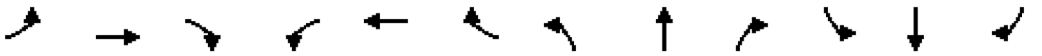




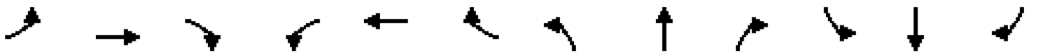
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Future Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.97			0.94	
Flt Protected		1.00			1.00			0.96			0.97	
Satd. Flow (prot)		3463			3238			1508			1732	
Flt Permitted		0.93			0.90			0.79			0.81	
Satd. Flow (perm)		3234			2925			1241			1443	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	27	1478	81	19	806	26	19	0	6	135	2	101
RTOR Reduction (vph)	0	5	0	0	3	0	0	20	0	0	50	0
Lane Group Flow (vph)	0	1581	0	0	848	0	0	5	0	0	188	0
Confl. Peds. (#/hr)	5		9	9		5						
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		38.5			38.5			12.5			12.5	
Effective Green, g (s)		38.5			38.5			12.5			12.5	
Actuated g/C Ratio		0.64			0.64			0.21			0.21	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2075			1876			258			300	
v/s Ratio Prot												
v/s Ratio Perm		c0.49			0.29			0.00			c0.13	
v/c Ratio		0.76			0.45			0.02			0.63	
Uniform Delay, d1		7.5			5.4			18.9			21.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.7			0.8			0.0			4.1	
Delay (s)		10.2			6.2			18.9			25.7	
Level of Service		B			A			B			C	
Approach Delay (s/veh)		10.2			6.2			18.9			25.7	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Future Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	0.99	1.00		1.00	1.00			0.99			1.00	
Frt		0.966			0.970			0.951			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3225	0	2894	3157	0	1597	4608	0	3433	4872	0
Flt Permitted	0.483			0.119			0.080			0.078		
Satd. Flow (perm)	814	3225	0	362	3157	0	135	4608	0	282	4872	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			24			117			17	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	222	664	197	472	302	76	138	1096	532	280	1902	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	861	0	472	378	0	138	1628	0	280	2099	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	17.0	37.6		19.0	39.6		11.0	56.4		12.0	57.4	
Total Split (%)	13.6%	30.1%		15.2%	31.7%		8.8%	45.1%		9.6%	45.9%	
Maximum Green (s)	13.0	31.3		15.0	33.3		7.0	50.1		8.0	51.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	46.2	31.3		51.0	33.7		59.4	50.1		61.4	51.1	
Actuated g/C Ratio	0.37	0.25		0.41	0.27		0.48	0.40		0.49	0.41	
v/c Ratio	0.58	1.04		1.05	0.44		0.95	0.85		0.82	1.05	
Control Delay (s/veh)	32.2	85.4		87.6	37.3		85.2	40.9		42.5	70.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	32.2	85.4		87.6	37.3		85.2	40.9		42.5	70.4	
LOS	C	F		F	D		F	D		D	E	
Approach Delay (s/veh)		74.5			65.2			44.4			67.1	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	41.3	~128.4		~61.8	42.9		32.1	102.3		20.1	~223.3	
Queue Length 95th (m)	63.8	#172.5		#102.6	59.7		m#48.3	139.9		#43.1	#255.3	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	386	830		451	867		146	1916		340	2001	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.58	1.04		1.05	0.44		0.95	0.85		0.82	1.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay (s/veh): 61.5	Intersection LOS: E

Intersection Capacity Utilization 101.2% ICU Level of Service G

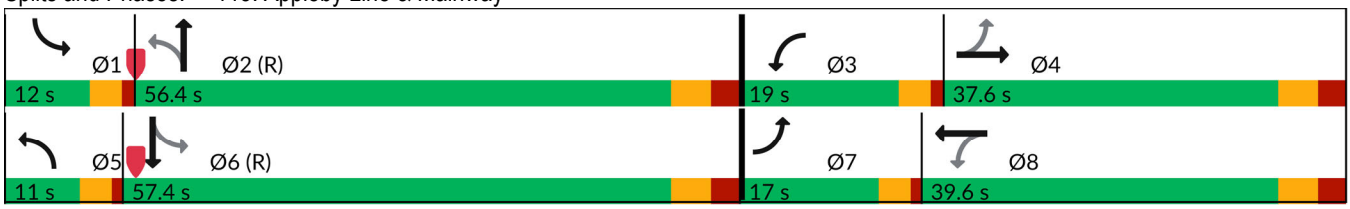
Analysis Period (min) 15

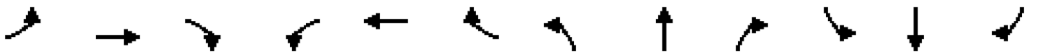
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 115: Appleby Line & Mainway

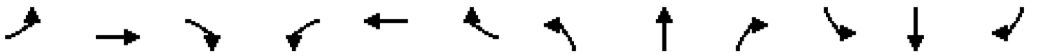




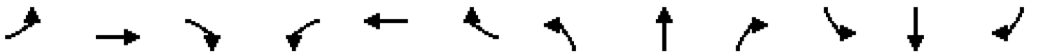
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Future Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1607	3224		2894	3157		1597	4608		3433	4871	
Flt Permitted	0.48	1.00		0.12	1.00		0.08	1.00		0.08	1.00	
Satd. Flow (perm)	817	3224		362	3157		134	4608		283	4871	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	222	664	197	472	302	76	138	1096	532	280	1902	197
RTOR Reduction (vph)	0	22	0	0	18	0	0	70	0	0	10	0
Lane Group Flow (vph)	222	839	0	472	360	0	138	1558	0	280	2089	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.9	31.3		48.7	33.7		57.1	50.1		59.1	51.1	
Effective Green, g (s)	43.9	31.3		48.7	33.7		57.1	50.1		59.1	51.1	
Actuated g/C Ratio	0.35	0.25		0.39	0.27		0.46	0.40		0.47	0.41	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	366	807		444	851		143	1846		335	1991	
v/s Ratio Prot	0.06	0.26		c0.13	0.11		c0.05	0.34		0.05	c0.43	
v/s Ratio Perm	0.15			c0.29			0.39			0.34		
v/c Ratio	0.61	1.04		1.06	0.42		0.97	0.84		0.84	1.05	
Uniform Delay, d1	30.6	46.9		35.9	37.6		30.3	33.9		25.4	36.9	
Progression Factor	1.00	1.00		1.00	1.00		1.89	1.20		1.00	1.00	
Incremental Delay, d2	2.8	42.3		60.5	0.3		45.3	2.7		16.3	34.5	
Delay (s)	33.5	89.1		96.4	38.0		102.4	43.5		41.7	71.5	
Level of Service	C	F		F	D		F	D		D	E	
Approach Delay (s/veh)		77.7			70.4			48.1			68.0	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	64.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Future Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.965			0.981			0.996	
Flt Protected		0.984			0.966		0.950			0.950		
Satd. Flow (prot)	0	1323	0	0	1722	0	1530	4736	0	1736	4963	0
Flt Permitted		0.817			0.750		0.136			0.120		
Satd. Flow (perm)	0	1098	0	0	1332	0	219	4736	0	219	4963	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			25			34			6	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	21	10	32	388	18	143	41	1151	169	104	2002	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	549	0	41	1320	0	104	2057	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	40.0	40.0		40.0	40.0		34.0	34.0		11.0	45.0	
Total Split (%)	47.1%	47.1%		47.1%	47.1%		40.0%	40.0%		12.9%	52.9%	
Maximum Green (s)	33.5	33.5		33.5	33.5		28.0	28.0		7.0	39.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		33.5			33.5		30.2	30.2		41.0	39.0	
Actuated g/C Ratio		0.39			0.39		0.36	0.36		0.48	0.46	
v/c Ratio		0.15			1.02		0.53	0.77		0.45	0.90	
Control Delay (s/veh)		17.3			69.9		53.0	28.3		18.7	28.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		17.3			69.9		53.0	28.3		18.7	28.1	
LOS		B			E		D	C		B	C	
Approach Delay (s/veh)		17.3			69.9			29.1			27.7	
Approach LOS		B			E			C			C	
Queue Length 50th (m)		7.1			~92.6		6.5	77.4		9.6	117.3	
Queue Length 95th (m)		16.4			#160.8		#25.6	96.8		18.8	#143.2	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		433			540		78	1704		230	2280	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.15			1.02		0.53	0.77		0.45	0.90	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 33.6	Intersection LOS: C

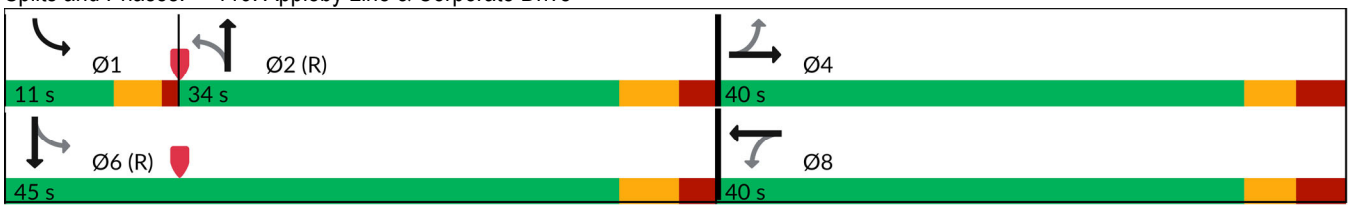
Intersection Capacity Utilization 98.6% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

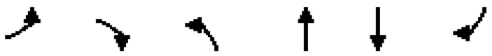
Splits and Phases: 116: Appleby Line & Corporate Drive



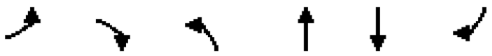
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Future Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.96		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1323			1715		1529	4735		1735	4963	
Flt Permitted		0.82			0.75		0.14	1.00		0.12	1.00	
Satd. Flow (perm)		1098			1332		219	4735		219	4963	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	10	32	388	18	143	41	1151	169	104	2002	55
RTOR Reduction (vph)	0	1	0	0	15	0	0	22	0	0	3	0
Lane Group Flow (vph)	0	62	0	0	534	0	41	1298	0	104	2054	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.5			33.5		29.4	29.4		39.0	39.0	
Effective Green, g (s)		33.5			33.5		29.4	29.4		39.0	39.0	
Actuated g/C Ratio		0.39			0.39		0.35	0.35		0.46	0.46	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		432			524		75	1637		200	2277	
v/s Ratio Prot								0.27		0.03	c0.41	
v/s Ratio Perm		0.06			c0.40		0.19			0.20		
v/c Ratio		0.14			1.02		0.55	0.79		0.52	0.90	
Uniform Delay, d1		16.5			25.8		22.4	25.1		15.8	21.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			44.1		25.7	4.0		2.4	6.4	
Delay (s)		16.7			69.9		48.1	29.1		18.2	27.6	
Level of Service		B			E		D	C		B	C	
Approach Delay (s/veh)		16.7			69.9			29.7			27.1	
Approach LOS		B			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	201	668	1268	2391	122
Future Volume (vph)	34	201	668	1268	2391	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.993	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	3335	5036	5049	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1313	3333	5036	5049	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		203			7	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	34	203	675	1281	2415	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	203	675	1281	2538	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	33.0	111.0	78.0	
Total Split (%)	26.0%	26.0%	22.0%	74.0%	52.0%	
Maximum Green (s)	32.0	32.0	29.0	104.0	71.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	10.4	10.4	42.4	125.6	79.2	
Actuated g/C Ratio	0.07	0.07	0.28	0.84	0.53	
v/c Ratio	0.27	0.73	0.72	0.30	0.95	
Control Delay (s/veh)	70.2	23.3	52.8	1.1	32.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	70.2	23.3	52.8	1.1	32.1	
LOS	E	C	D	A	C	
Approach Delay (s/veh)	30.0			18.9	32.1	
Approach LOS	C			B	C	
Queue Length 50th (m)	10.5	0.0	96.7	8.9	150.9	
Queue Length 95th (m)	21.4	30.8	m84.3	m10.4	m134.7	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	385	439	943	4217	2668	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.09	0.46	0.72	0.30	0.95	

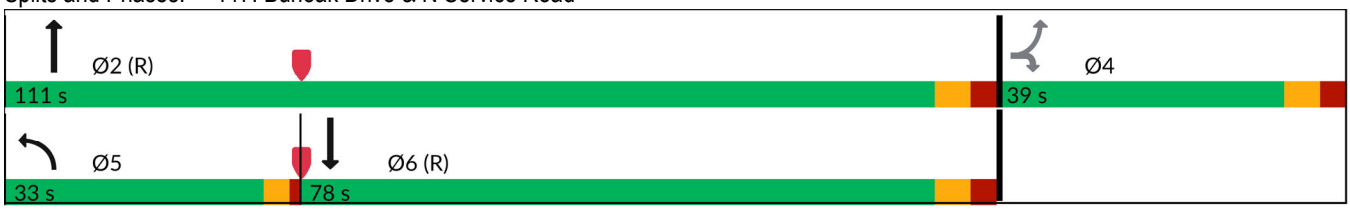
Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 26.6	Intersection LOS: C

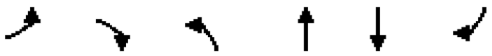
Intersection Capacity Utilization 89.7% ICU Level of Service E

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	201	668	1268	2391	122
Future Volume (vph)	34	201	668	1268	2391	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	3335	5036	5048	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1313	3335	5036	5048	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	34	203	675	1281	2415	123
RTOR Reduction (vph)	0	189	0	0	3	0
Lane Group Flow (vph)	34	14	675	1281	2535	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	10.4	10.4	42.4	125.6	79.2	
Effective Green, g (s)	10.4	10.4	42.4	125.6	79.2	
Actuated g/C Ratio	0.07	0.07	0.28	0.84	0.53	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	125	91	942	4216	2665	
v/s Ratio Prot			c0.20	0.25	c0.50	
v/s Ratio Perm	c0.02	0.01				
v/c Ratio	0.27	0.15	0.72	0.30	0.95	
Uniform Delay, d1	66.2	65.7	48.4	2.7	33.6	
Progression Factor	1.00	1.00	1.07	0.38	0.92	
Incremental Delay, d2	1.2	0.8	0.3	0.0	1.1	
Delay (s)	67.4	66.5	52.3	1.0	31.9	
Level of Service	E	E	D	A	C	
Approach Delay (s/veh)	66.6			18.7	31.9	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1612	1269	0	0	3053
Future Volume (vph)	1445	1612	1269	0	0	3053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2760	5036	0	0	5036
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2760	5036	0	0	5036
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		38				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1554	1733	1365	0	0	3283
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1554	1733	1365	0	0	3283
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	73.0	73.0	77.0			77.0
Total Split (%)	48.7%	48.7%	51.3%			51.3%
Maximum Green (s)	66.0	66.0	71.0			71.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
v/c Ratio	1.07	1.40	0.57			1.38
Control Delay (s/veh)	84.8	219.3	29.7			199.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	84.8	219.3	29.7			199.3
LOS	F	F	C			F
Approach Delay (s/veh)	155.7		29.7			199.3
Approach LOS	F		C			F
Queue Length 50th (m)	~288.6	~418.5	113.6			~504.8
Queue Length 95th (m)	#334.3	#467.3	129.3			#523.8
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1453	1235	2383			2383
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.07	1.40	0.57			1.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.40			
Intersection Signal Delay (s/veh): 152.1		Intersection LOS: F	
Intersection Capacity Utilization 111.0%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

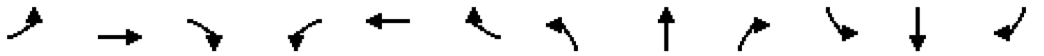
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



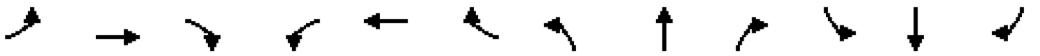


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1612	1269	0	0	3053
Future Volume (vph)	1445	1612	1269	0	0	3053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3303	2760	5036			5036
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3303	2760	5036			5036
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1554	1733	1365	0	0	3283
RTOR Reduction (vph)	0	21	0	0	0	0
Lane Group Flow (vph)	1554	1712	1365	0	0	3283
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	66.0	66.0	71.0			71.0
Effective Green, g (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1453	1214	2383			2383
v/s Ratio Prot	0.47		0.27			c0.65
v/s Ratio Perm		c0.62				
v/c Ratio	1.07	1.41	0.57			1.38
Uniform Delay, d1	42.0	42.0	28.5			39.5
Progression Factor	1.00	1.00	1.00			0.75
Incremental Delay, d2	44.6	189.5	1.0			171.8
Delay (s)	86.6	231.5	29.5			201.4
Level of Service	F	F	C			F
Approach Delay (s/veh)	163.0		29.5			201.4
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	155.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Future Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		1.00	0.99									
Frt		0.951	0.850			0.865		0.999				
Flt Protected	0.950	0.979										
Satd. Flow (prot)	1610	2856	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950	0.979									0.937	
Satd. Flow (perm)	1610	2856	1318	0	0	1417	0	5032	0	0	4629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41	94			86		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	553	138	456	0	0	104	0	1158	6	6	2812	0
Shared Lane Traffic (%)	46%		42%									
Lane Group Flow (vph)	299	584	264	0	0	104	0	1164	0	0	2818	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

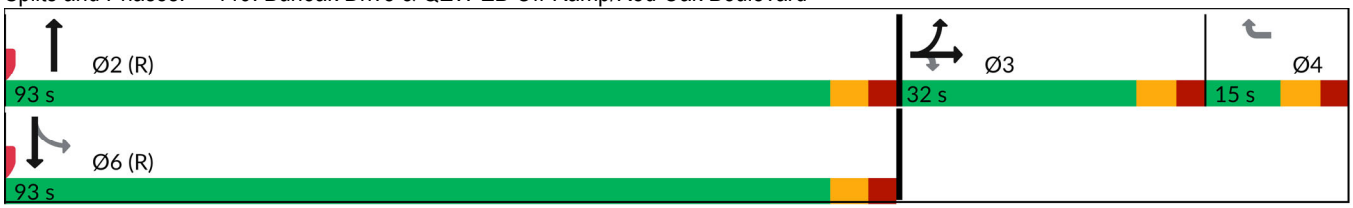


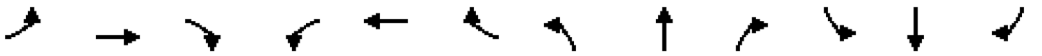
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			15.0		39.0		29.0	29.0	
Total Split (s)	32.0	32.0	32.0			15.0		93.0		93.0	93.0	
Total Split (%)	22.9%	22.9%	22.9%			10.7%		66.4%		66.4%	66.4%	
Maximum Green (s)	25.0	25.0	25.0			8.0		86.0		86.0	86.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)								7.0		7.0	7.0	
Flash Don't Walk (s)								25.0		15.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	25.0	25.0	25.0			8.0		86.0			86.0	
Actuated g/C Ratio	0.18	0.18	0.18			0.06		0.61			0.61	
v/c Ratio	1.04	1.08	0.85			0.64		0.38			0.99	
Control Delay (s/veh)	119.2	110.0	59.5			36.2		14.0			41.6	
Queue Delay	0.0	0.0	0.0			0.0		0.0			4.4	
Total Delay (s/veh)	119.2	110.0	59.5			36.2		14.0			46.0	
LOS	F	F	E			D		B			D	
Approach Delay (s/veh)		100.8			36.2			14.0			46.0	
Approach LOS		F			D			B			D	
Queue Length 50th (m)	~104.6	~109.7	58.7			5.7		60.4			291.8	
Queue Length 95th (m)	#172.0	#156.1	#117.2			#31.9		70.1			#347.1	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	287	543	312			162		3091			2843	
Starvation Cap Reductn	0	0	0			0		0			52	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	1.04	1.08	0.85			0.64		0.38			1.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 50.7	Intersection LOS: D

Intersection Capacity Utilization 81.6% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

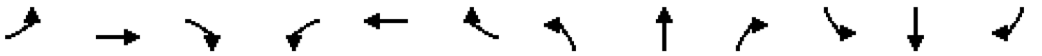




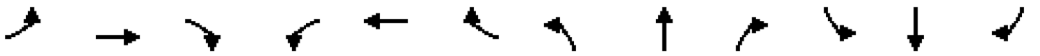
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Future Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.95	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1610	2854	1318			1417		5033			4940	
Flt Permitted	0.95	0.98	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1610	2854	1318			1417		5033			4628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	553	138	456	0	0	104	0	1158	6	6	2812	0
RTOR Reduction (vph)	0	34	77	0	0	81	0	0	0	0	0	0
Lane Group Flow (vph)	299	550	187	0	0	23	0	1164	0	0	2818	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	25.0	25.0	25.0			8.0		86.0			86.0	
Effective Green, g (s)	25.0	25.0	25.0			8.0		86.0			86.0	
Actuated g/C Ratio	0.18	0.18	0.18			0.06		0.61			0.61	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	287	509	235			80		3091			2842	
v/s Ratio Prot	0.19	c0.19						0.23				
v/s Ratio Perm			0.14			c0.02					c0.61	
v/c Ratio	1.04	1.08	0.79			0.29		0.38			0.99	
Uniform Delay, d1	57.5	57.5	55.0			63.3		13.5			26.6	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	64.4	63.6	16.7			2.0		0.4			15.0	
Delay (s)	121.9	121.1	71.8			65.2		13.9			41.7	
Level of Service	F	F	E			E		B			D	
Approach Delay (s/veh)		110.0			65.2			13.9			41.7	
Approach LOS		F			E			B			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Future Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00			1.00	
Frt		0.957			0.884			0.967			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1681	0	1504	1571	0	1719	4773	0	1752	4925	0
Flt Permitted	0.717			0.332			0.058			0.062		
Satd. Flow (perm)	1195	1681	0	526	1571	0	105	4773	0	114	4925	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			48			78			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	57	140	56	92	14	48	172	1778	505	115	2353	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	196	0	92	62	0	172	2283	0	115	2396	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		11.8	47.0		13.6	66.2		11.8	64.4	
Total Split (%)	28.2%	28.2%		9.4%	37.6%		10.9%	53.0%		9.4%	51.5%	
Maximum Green (s)	29.1	29.1		7.8	40.9		9.6	59.6		7.8	57.8	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	18.8	18.8		32.6	30.5		83.7	68.5		76.5	64.6	
Actuated g/C Ratio	0.15	0.15		0.26	0.24		0.67	0.55		0.61	0.52	
v/c Ratio	0.32	0.74		0.47	0.15		0.71	0.86		0.60	0.94	
Control Delay (s/veh)	50.2	62.6		42.9	13.3		44.1	28.8		25.5	37.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.6		0.0	0.0	
Total Delay (s/veh)	50.2	62.6		42.9	13.3		44.1	29.3		25.5	37.3	
LOS	D	E		D	B		D	C		C	D	
Approach Delay (s/veh)		59.8			31.0			30.4			36.7	
Approach LOS		E			C			C			D	
Queue Length 50th (m)	14.7	46.3		21.5	3.0		27.2	180.3		0.0	175.8	
Queue Length 95th (m)	28.1	69.4		35.8	14.4		#66.0	#256.6		m20.5	m#168.9	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	278	402		198	546		241	2649		194	2544	
Starvation Cap Reductn	0	0		0	0		0	108		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.49		0.46	0.11		0.71	0.90		0.59	0.94	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay (s/veh): 34.7	Intersection LOS: C

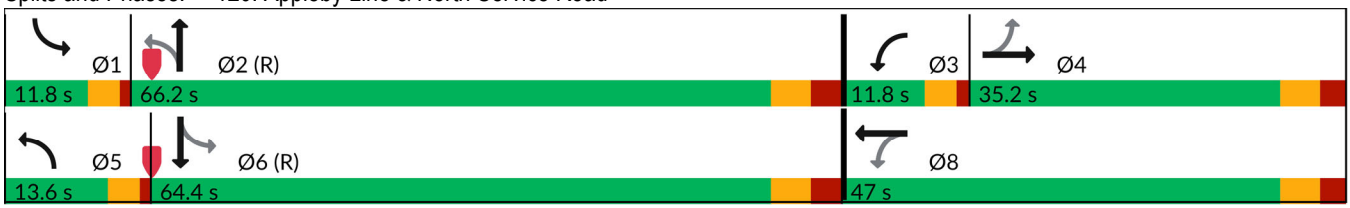
Intersection Capacity Utilization 86.4% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Future Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1682		1504	1571		1719	4773		1752	4926	
Flt Permitted	0.72	1.00		0.33	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1194	1682		525	1571		106	4773		114	4926	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	140	56	92	14	48	172	1778	505	115	2353	43
RTOR Reduction (vph)	0	13	0	0	36	0	0	35	0	0	1	0
Lane Group Flow (vph)	57	183	0	92	26	0	172	2248	0	115	2395	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.8	18.8		30.5	30.5		81.7	68.5		73.9	64.6	
Effective Green, g (s)	18.8	18.8		30.5	30.5		81.7	68.5		73.9	64.6	
Actuated g/C Ratio	0.15	0.15		0.24	0.24		0.65	0.55		0.59	0.52	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	252		188	383		239	2615		189	2545	
v/s Ratio Prot		c0.11		c0.03	0.02		c0.08	0.47		0.05	c0.49	
v/s Ratio Perm	0.05			0.09			0.39			0.31		
v/c Ratio	0.32	0.73		0.49	0.07		0.72	0.86		0.61	0.94	
Uniform Delay, d1	47.4	50.7		38.6	36.3		35.3	24.1		21.4	28.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.13	1.26	
Incremental Delay, d2	1.0	10.0		2.0	0.1		9.9	4.0		0.5	1.0	
Delay (s)	48.4	60.7		40.6	36.4		45.2	28.1		24.7	36.7	
Level of Service	D	E		D	D		D	C		C	D	
Approach Delay (s/veh)		57.9			38.9			29.3			36.1	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2774	0	0	2421
Future Volume (vph)	586	663	2774	0	0	2421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	2632	4988	0	0	4893
Flt Permitted	0.950					
Satd. Flow (perm)	3183	2632	4988	0	0	4893
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	644	729	3048	0	0	2660
Shared Lane Traffic (%)						
Lane Group Flow (vph)	644	729	3048	0	0	2660
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

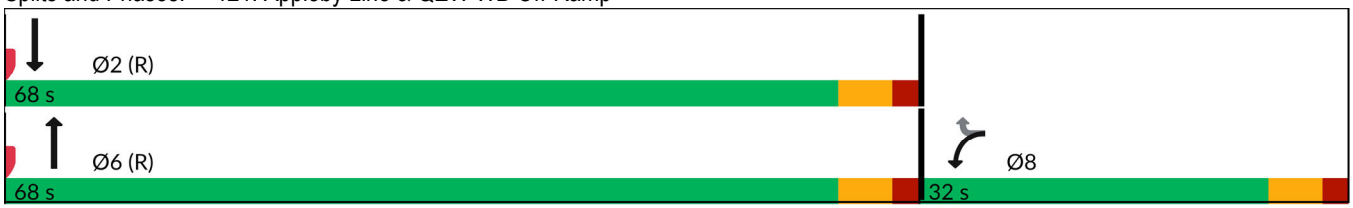


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	32.0	32.0	68.0			68.0
Total Split (%)	32.0%	32.0%	68.0%			68.0%
Maximum Green (s)	26.0	26.0	62.0			62.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	26.0	26.0	62.0			62.0
Actuated g/C Ratio	0.26	0.26	0.62			0.62
v/c Ratio	0.78	1.06	0.99			0.88
Control Delay (s/veh)	42.0	89.4	19.9			20.2
Queue Delay	0.0	0.0	0.0			0.4
Total Delay (s/veh)	42.0	89.4	19.9			20.6
LOS	D	F	B			C
Approach Delay (s/veh)	67.1		19.9			20.6
Approach LOS	E		B			C
Queue Length 50th (m)	67.3	~99.0	125.1			158.3
Queue Length 95th (m)	89.9	#142.7	m#207.8			185.7
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	827	685	3092			3033
Starvation Cap Reductn	0	0	0			79
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.78	1.06	0.99			0.90

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay (s/veh): 29.3		Intersection LOS: C	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

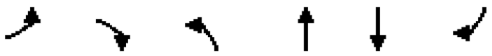
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



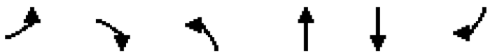


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2774	0	0	2421
Future Volume (vph)	586	663	2774	0	0	2421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	2632	4988			4893
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	2632	4988			4893
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	644	729	3048	0	0	2660
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	644	728	3048	0	0	2660
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	26.0	26.0	62.0			62.0
Effective Green, g (s)	26.0	26.0	62.0			62.0
Actuated g/C Ratio	0.26	0.26	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	827	684	3092			3033
v/s Ratio Prot	0.20		c0.61			0.54
v/s Ratio Perm		c0.28				
v/c Ratio	0.78	1.06	0.99			0.88
Uniform Delay, d1	34.3	37.0	18.6			15.8
Progression Factor	1.00	1.00	0.68			1.00
Incremental Delay, d2	4.7	52.6	6.1			4.0
Delay (s)	39.0	89.6	18.8			19.8
Level of Service	D	F	B			B
Approach Delay (s/veh)	65.9		18.8			19.8
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1026	544	0	2253	2443	0
Future Volume (vph)	1026	544	0	2253	2443	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4893	4893	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4893	4893	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	1140	604	0	2503	2714	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1140	604	0	2503	2714	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



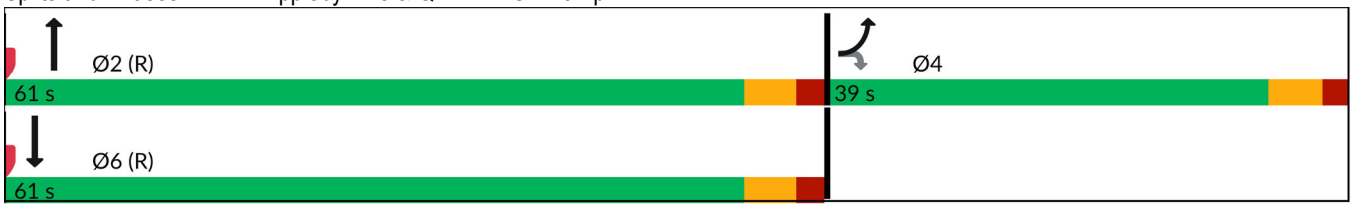
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	39.0	39.0		61.0	61.0	
Total Split (%)	39.0%	39.0%		61.0%	61.0%	
Maximum Green (s)	33.0	33.0		55.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	33.0	33.0		55.0	55.0	
Actuated g/C Ratio	0.33	0.33		0.55	0.55	
v/c Ratio	1.04	0.68		0.93	1.01	
Control Delay (s/veh)	70.9	33.3		28.5	33.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	70.9	33.3		28.5	33.0	
LOS	E	C		C	C	
Approach Delay (s/veh)	57.9			28.5	33.0	
Approach LOS	E			C	C	
Queue Length 50th (m)	~134.3	61.7		169.6	~136.6	
Queue Length 95th (m)	#176.8	84.3		#200.1	#252.1	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1100	894		2691	2691	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	1.04	0.68		0.93	1.01	

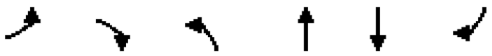
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay (s/veh): 37.6		Intersection LOS: D	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

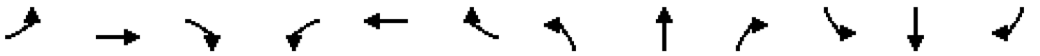




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1026	544	0	2253	2443	0
Future Volume (vph)	1026	544	0	2253	2443	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4893	4893	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4893	4893	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1140	604	0	2503	2714	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1140	603	0	2503	2714	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	33.0	33.0		55.0	55.0	
Effective Green, g (s)	33.0	33.0		55.0	55.0	
Actuated g/C Ratio	0.33	0.33		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1100	893		2691	2691	
v/s Ratio Prot	c0.34			0.51	c0.55	
v/s Ratio Perm		0.22				
v/c Ratio	1.04	0.67		0.93	1.01	
Uniform Delay, d1	33.5	28.9		20.7	22.5	
Progression Factor	1.00	1.00		1.00	0.78	
Incremental Delay, d2	37.0	2.0		7.2	14.2	
Delay (s)	70.5	30.9		28.0	31.9	
Level of Service	E	C		C	C	
Approach Delay (s/veh)	56.8			28.0	31.9	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Future Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99	1.00		0.98
Frt		0.982			0.900				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3263	0	1656	2866	0	1687	5036	1568	3433	4893	1417
Flt Permitted	0.349			0.228			0.266			0.950		
Satd. Flow (perm)	560	3263	0	397	2866	0	472	5036	1548	3432	4893	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			294				209			337
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	227	527	74	112	156	311	90	1526	414	557	1028	337
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	601	0	112	467	0	90	1526	414	557	1028	337
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		11.0	38.4		11.0	39.6	39.6	21.0	49.6	49.6
Total Split (%)	10.0%	34.9%		10.0%	34.9%		10.0%	36.0%	36.0%	19.1%	45.1%	45.1%
Maximum Green (s)	7.0	32.0		7.0	32.0		7.0	33.3	33.3	17.0	43.3	43.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	34.6	25.2		34.6	25.2		44.2	34.2	34.2	23.0	51.6	51.6
Actuated g/C Ratio	0.31	0.23		0.31	0.23		0.40	0.31	0.31	0.21	0.47	0.47
v/c Ratio	0.96	0.79		0.55	0.53		0.33	0.98	0.66	0.78	0.45	0.41
Control Delay (s/veh)	81.1	46.9		34.6	14.8		16.7	55.9	21.8	50.6	21.8	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	81.1	46.9		34.6	14.8		16.7	55.9	21.8	50.6	21.8	4.0
LOS	F	D		C	B		B	E	C	D	C	A
Approach Delay (s/veh)		56.3			18.6			47.2			27.0	
Approach LOS		E			B			D			C	
Queue Length 50th (m)	43.8	69.1		18.6	17.7		9.0	~128.9	41.0	61.9	60.5	0.0
Queue Length 95th (m)	#82.7	84.2		30.2	31.8		19.5	#166.2	78.9	#105.4	81.7	19.9
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	237	959		204	1042		275	1563	624	716	2293	832
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.63		0.55	0.45		0.33	0.98	0.66	0.78	0.45	0.41

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.98	
Intersection Signal Delay (s/veh): 38.3	Intersection LOS: D

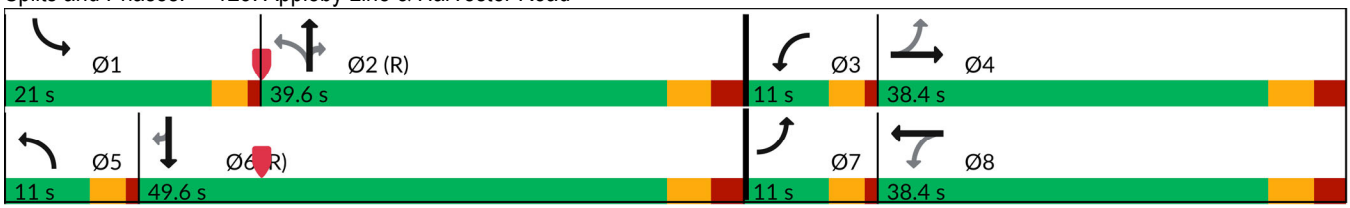
Intersection Capacity Utilization 87.9% ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

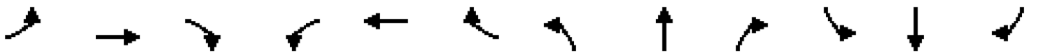


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Future Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3262		1656	2867		1687	5036	1548	3433	4893	1395
Flt Permitted	0.35	1.00		0.23	1.00		0.27	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	562	3262		397	2867		473	5036	1548	3433	4893	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	227	527	74	112	156	311	90	1526	414	557	1028	337
RTOR Reduction (vph)	0	11	0	0	227	0	0	0	144	0	0	182
Lane Group Flow (vph)	227	590	0	112	240	0	90	1526	270	557	1028	155
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	32.2	25.2		32.2	25.2		40.5	34.1	34.1	23.0	50.7	50.7
Effective Green, g (s)	32.2	25.2		32.2	25.2		40.5	34.1	34.1	23.0	50.7	50.7
Actuated g/C Ratio	0.29	0.23		0.29	0.23		0.37	0.31	0.31	0.21	0.46	0.46
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	225	747		196	656		244	1561	479	717	2255	642
v/s Ratio Prot	c0.06	0.18		0.04	0.08		0.02	c0.30		c0.16	0.21	
v/s Ratio Perm	c0.23			0.13			0.11		0.17			0.11
v/c Ratio	1.01	0.79		0.57	0.37		0.37	0.98	0.56	0.78	0.46	0.24
Uniform Delay, d1	37.4	39.9		30.2	35.7		23.2	37.6	31.7	41.1	20.2	18.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	62.3	5.7		4.0	0.3		0.9	18.0	4.7	5.3	0.7	0.9
Delay (s)	99.7	45.6		34.2	36.0		24.1	55.6	36.5	46.4	20.9	18.9
Level of Service	F	D		C	D		C	E	D	D	C	B
Approach Delay (s/veh)		60.4			35.7			50.3			27.9	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Future Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	5085	1538
Flt Permitted	0.950			0.634			0.097			0.097		
Satd. Flow (perm)	3389	1776	1513	1062	1610	1395	182	3539	1403	162	5085	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			153			150			236
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	757	196	296	125	82	232	251	1429	154	334	1472	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	757	196	296	125	82	232	251	1429	154	334	1472	236
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	33.0	47.0	47.0	13.0	27.0	27.0	12.0	48.0	48.0	12.0	48.0	48.0
Total Split (%)	27.5%	39.2%	39.2%	10.8%	22.5%	22.5%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Maximum Green (s)	28.0	40.5	40.5	9.0	20.5	20.5	8.0	41.2	41.2	8.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	28.0	33.8	33.8	24.8	13.6	13.6	58.9	41.2	41.2	58.9	41.2	41.2
Actuated g/C Ratio	0.23	0.28	0.28	0.21	0.11	0.11	0.49	0.34	0.34	0.49	0.34	0.34
v/c Ratio	0.96	0.39	0.50	0.48	0.45	0.79	0.87	1.18	0.27	1.30	0.84	0.35
Control Delay (s/veh)	68.6	36.4	11.4	31.2	56.0	37.3	58.8	124.3	5.9	192.3	41.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.6	36.4	11.4	31.2	56.0	37.3	58.8	124.3	5.9	192.3	41.9	5.0
LOS	E	D	B	C	E	D	E	F	A	F	D	A
Approach Delay (s/veh)		50.0			39.1			105.4			62.2	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	97.9	41.7	13.3	21.6	21.9	20.7	43.5	~226.2	0.7	~97.5	124.6	0.0
Queue Length 95th (m)	#138.0	59.4	36.8	32.8	38.2	50.7	#119.7	#271.3	16.8	#193.2	144.9	18.1
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	793	599	661	262	275	365	289	1215	580	256	1745	674
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.33	0.45	0.48	0.30	0.64	0.87	1.18	0.27	1.30	0.84	0.35

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay (s/veh): 71.9	Intersection LOS: E

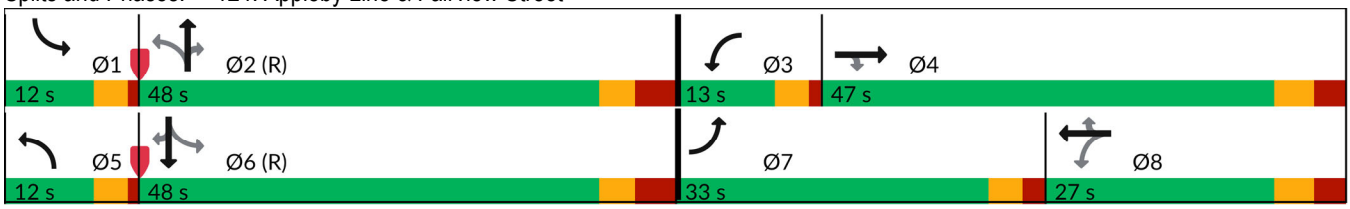
Intersection Capacity Utilization 102.7% ICU Level of Service G

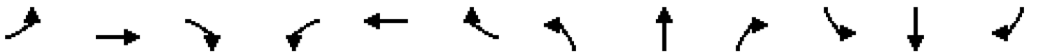
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

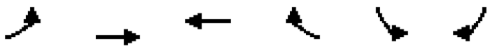




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Future Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	5085	1513
Flt Permitted	0.95	1.00	1.00	0.63	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1065	1610	1395	183	3539	1403	162	5085	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	757	196	296	125	82	232	251	1429	154	334	1472	236
RTOR Reduction (vph)	0	0	164	0	0	136	0	0	99	0	0	155
Lane Group Flow (vph)	757	196	132	125	82	96	251	1429	56	334	1472	81
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	28.0	33.9	33.9	22.3	13.6	13.6	56.1	41.2	41.2	56.1	41.2	41.2
Effective Green, g (s)	28.0	33.9	33.9	22.3	13.6	13.6	56.1	41.2	41.2	56.1	41.2	41.2
Actuated g/C Ratio	0.23	0.28	0.28	0.19	0.11	0.11	0.47	0.34	0.34	0.47	0.34	0.34
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	793	501	427	236	182	158	284	1215	481	252	1745	519
v/s Ratio Prot	c0.22	0.11		0.04	0.05		0.11	0.40		c0.16	0.29	
v/s Ratio Perm			0.09	0.06		c0.07	0.30		0.04	c0.46		0.05
v/c Ratio	0.95	0.39	0.31	0.53	0.45	0.61	0.88	1.18	0.12	1.33	0.84	0.16
Uniform Delay, d1	45.4	34.7	33.9	43.2	49.7	50.7	32.1	39.4	26.9	36.4	36.4	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.4	0.5	0.4	2.1	1.8	6.5	26.0	88.2	0.5	171.3	5.2	0.6
Delay (s)	66.8	35.2	34.3	45.3	51.5	57.2	58.1	127.6	27.4	207.7	41.6	28.0
Level of Service	E	D	C	D	D	E	E	F	C	F	D	C
Approach Delay (s/veh)		54.1			52.7			109.6			67.2	
Approach LOS		D			D			F			E	

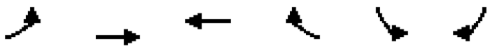
Intersection Summary			
HCM 2000 Control Delay (s/veh)	77.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	1310	783	22	6	22
Future Volume (vph)	66	1310	783	22	6	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.996		0.895	
Flt Protected	0.950				0.989	
Satd. Flow (prot)	1770	3539	3525	0	1649	0
Flt Permitted	0.950				0.989	
Satd. Flow (perm)	1770	3539	3525	0	1649	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		522.8	231.3		95.3	
Travel Time (s)		31.4	13.9		8.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1424	851	24	7	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	1424	875	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

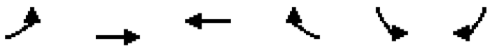
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	1310	783	22	6	22
Future Volume (Veh/h)	66	1310	783	22	6	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	1424	851	24	7	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			231			
pX, platoon unblocked						
vC, conflicting volume	875				1719	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	875				1719	438
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				90	96
cM capacity (veh/h)	767				73	567

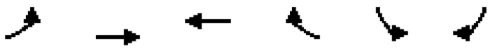
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	72	712	712	567	308	31
Volume Left	72	0	0	0	0	7
Volume Right	0	0	0	0	24	24
cSH	767	1700	1700	1700	1700	224
Volume to Capacity	0.09	0.42	0.42	0.33	0.18	0.14
Queue Length 95th (m)	2.5	0.0	0.0	0.0	0.0	3.8
Control Delay (s/veh)	10.2	0.0	0.0	0.0	0.0	23.6
Lane LOS	B					C
Approach Delay (s/veh)	0.5			0.0		23.6
Approach LOS						C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	630	802	9	2	3
Future Volume (vph)	26	630	802	9	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	0			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.919	
Flt Protected		0.998			0.980	
Satd. Flow (prot)	0	3532	3532	0	1678	0
Flt Permitted		0.998			0.980	
Satd. Flow (perm)	0	3532	3532	0	1678	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		121.9	747.2		127.1	
Travel Time (s)		7.3	44.8		11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	685	872	10	2	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	713	882	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		0.0	0.0		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 46.5%		ICU Level of Service A	
Analysis Period (min) 15			



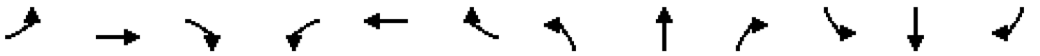
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	630	802	9	2	3
Future Volume (Veh/h)	26	630	802	9	2	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	685	872	10	2	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		122				
pX, platoon unblocked					0.89	
vC, conflicting volume	882				1276	441
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	882				1060	441
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				99	99
cM capacity (veh/h)	762				188	564

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	256	457	581	301	5
Volume Left	28	0	0	0	2
Volume Right	0	0	0	10	3
cSH	762	1700	1700	1700	313
Volume to Capacity	0.04	0.27	0.34	0.18	0.02
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.4
Control Delay (s/veh)	1.5	0.0	0.0	0.0	16.7
Lane LOS	A				C
Approach Delay (s/veh)	0.5		0.0		16.7
Approach LOS					C

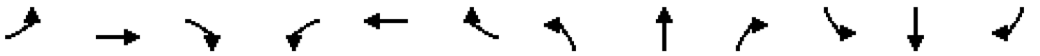
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix R

Full Build-Out Mitigation Traffic Operation Reports



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Future Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.99	1.00		0.98	1.00		0.98	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	5085	1553	3213	4803	1482	3367	4848	1509	3367	4988	1553
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3362	5085	1533	3212	4803	1458	3365	4848	1485	3362	4988	1531
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			169			152			270			186
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Adj. Flow (vph)	246	1459	523	474	677	152	361	715	418	295	978	186
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	1459	523	474	677	152	361	715	418	295	978	186
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	21.0	46.4	46.4	17.0	52.6	52.6	15.0	50.6	50.6
Total Split (%)	15.6%	34.4%	34.4%	15.6%	34.4%	34.4%	12.6%	39.0%	39.0%	11.1%	37.5%	37.5%
Maximum Green (s)	16.0	39.0	39.0	16.0	39.0	39.0	12.0	45.2	45.2	10.0	43.2	43.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.2	39.0	39.0	16.0	39.8	39.8	12.0	45.2	45.2	10.0	43.2	43.2
Actuated g/C Ratio	0.11	0.29	0.29	0.12	0.29	0.29	0.09	0.33	0.33	0.07	0.32	0.32
v/c Ratio	0.65	0.99	0.93	1.25	0.48	0.28	1.21	0.44	0.62	1.18	0.61	0.30
Control Delay (s/veh)	65.7	69.6	55.6	179.2	40.7	6.8	171.0	36.1	17.0	168.4	40.8	5.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.7	69.6	55.6	179.2	40.7	6.8	171.0	36.1	17.0	168.4	40.8	5.8
LOS	E	E	E	F	D	A	F	D	B	F	D	A
Approach Delay (s/veh)		65.9			87.1			63.3			62.2	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	35.3	152.0	107.0	~90.6	61.0	0.0	~65.2	60.1	35.1	~52.5	87.3	0.0
Queue Length 95th (m)	50.5	#188.3	#181.4	#128.6	75.2	17.8	#98.9	73.5	74.4	#84.0	103.7	17.9
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	399	1469	563	380	1414	536	299	1623	676	249	1596	616
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.99	0.93	1.25	0.48	0.28	1.21	0.44	0.62	1.18	0.61	0.30

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.25	
Intersection Signal Delay (s/veh): 68.7	Intersection LOS: E

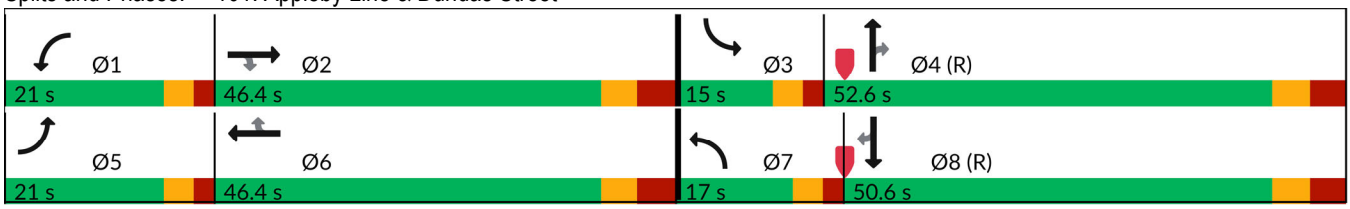
Intersection Capacity Utilization 103.9% ICU Level of Service G

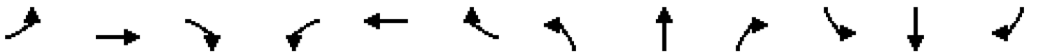
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

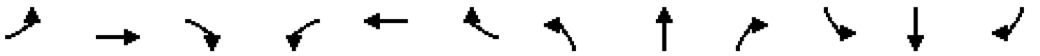




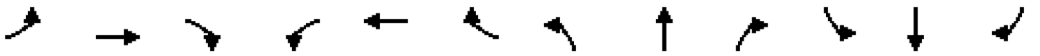
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Future Volume (vph)	231	1371	492	446	636	143	339	672	393	277	919	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	5085	1533	3213	4803	1458	3367	4848	1485	3367	4988	1531
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	246	1459	523	474	677	152	361	715	418	295	978	186
RTOR Reduction (vph)	0	0	120	0	0	107	0	0	180	0	0	126
Lane Group Flow (vph)	246	1459	403	474	677	45	361	715	238	295	978	60
Confl. Peds. (#/hr)	4		1	1		4	2		4	4		2
Heavy Vehicles (%)	4%	2%	4%	9%	8%	9%	4%	7%	7%	4%	4%	4%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.2	39.0	39.0	16.0	39.8	39.8	12.0	45.2	45.2	10.0	43.2	43.2
Effective Green, g (s)	15.2	39.0	39.0	16.0	39.8	39.8	12.0	45.2	45.2	10.0	43.2	43.2
Actuated g/C Ratio	0.11	0.29	0.29	0.12	0.29	0.29	0.09	0.33	0.33	0.07	0.32	0.32
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	379	1469	442	380	1415	429	299	1623	497	249	1596	489
v/s Ratio Prot	0.07	c0.29		c0.15	0.14		c0.11	0.15		0.09	c0.20	
v/s Ratio Perm			0.26			0.03			0.16			0.04
v/c Ratio	0.65	0.99	0.91	1.25	0.48	0.10	1.21	0.44	0.48	1.18	0.61	0.12
Uniform Delay, d1	57.3	47.9	46.3	59.5	39.1	34.6	61.5	35.0	35.6	62.5	38.8	32.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.2	21.7	22.8	131.5	0.3	0.1	120.5	0.9	3.3	116.3	1.8	0.5
Delay (s)	62.5	69.6	69.1	191.0	39.3	34.7	182.0	35.9	38.9	178.8	40.6	33.0
Level of Service	E	E	E	F	D	C	F	D	D	F	D	C
Approach Delay (s/veh)		68.7			94.0			72.0			67.6	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	74.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	103.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Future Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.98		0.99		0.98	1.00	0.99		1.00	1.00	
Frt		0.957				0.850		0.978			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1719	3359	0	3367	5085	1553	3400	4655	0	3400	4954	0
Flt Permitted	0.311			0.950			0.950			0.950		
Satd. Flow (perm)	561	3359	0	3347	5085	1518	3395	4655	0	3385	4954	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46				330		23			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Adj. Flow (vph)	201	1013	403	281	701	584	249	1047	184	578	1719	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	1416	0	281	701	584	249	1231	0	578	1781	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	15.0	59.0		15.0	59.0	59.0	14.0	45.0		26.0	57.0	
Total Split (%)	10.3%	40.7%		10.3%	40.7%	40.7%	9.7%	31.0%		17.9%	39.3%	
Maximum Green (s)	11.0	52.6		11.0	52.6	52.6	9.0	38.5		22.0	50.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	65.9	52.6		11.0	52.7	52.7	9.0	38.5		22.0	50.5	
Actuated g/C Ratio	0.45	0.36		0.08	0.36	0.36	0.06	0.27		0.15	0.35	
v/c Ratio	0.59	1.14		1.10	0.38	0.77	1.18	0.98		1.12	1.03	
Control Delay (s/veh)	30.4	112.0		145.9	34.9	24.6	175.1	73.3		132.1	75.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	30.4	112.0		145.9	34.9	24.6	175.1	73.3		132.1	75.9	
LOS	C	F		F	C	C	F	E		F	E	
Approach Delay (s/veh)		101.9			50.9			90.4			89.7	
Approach LOS		F			D			F			F	
Queue Length 50th (m)	36.2	~259.0		~50.9	58.0	74.3	~47.3	142.8		~105.6	~216.4	
Queue Length 95th (m)	54.3	#304.7		#82.5	70.4	129.4	#77.3	#179.2		#145.2	#248.2	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	343	1247		255	1847	761	211	1252		515	1727	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	0.59	1.14		1.10	0.38	0.77	1.18	0.98		1.12	1.03	

Intersection Summary			
Area Type:	Other		
Cycle Length: 145			
Actuated Cycle Length: 145			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.18			
Intersection Signal Delay (s/veh): 84.0		Intersection LOS: F	

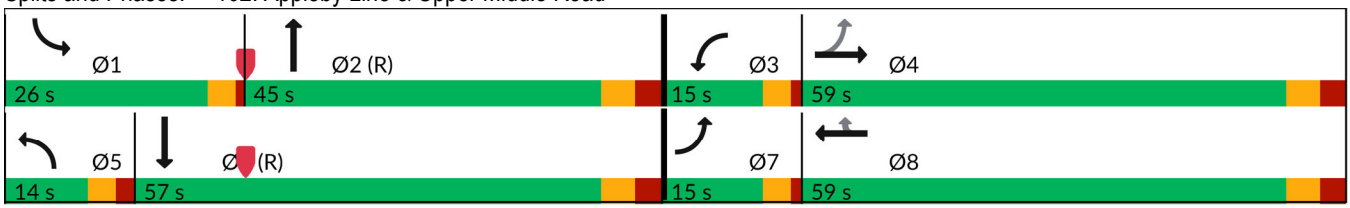
Intersection Capacity Utilization 100.6% ICU Level of Service G

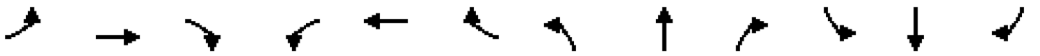
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road



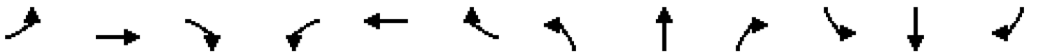


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Future Volume (vph)	181	912	363	253	631	526	224	942	166	520	1547	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	1.00	0.85	1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1717	3360		3367	5085	1518	3400	4653		3400	4953	
Flt Permitted	0.31	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	562	3360		3367	5085	1518	3400	4653		3400	4953	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	201	1013	403	281	701	584	249	1047	184	578	1719	62
RTOR Reduction (vph)	0	29	0	0	0	210	0	17	0	0	3	0
Lane Group Flow (vph)	201	1387	0	281	701	374	249	1214	0	578	1778	0
Confl. Peds. (#/hr)	7		27	27		7	11		15	15		11
Heavy Vehicles (%)	5%	1%	2%	4%	2%	4%	3%	9%	5%	3%	4%	6%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	63.5	52.6		11.0	52.7	52.7	9.0	38.5		22.0	50.5	
Effective Green, g (s)	63.5	52.6		11.0	52.7	52.7	9.0	38.5		22.0	50.5	
Actuated g/C Ratio	0.44	0.36		0.08	0.36	0.36	0.06	0.27		0.15	0.35	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	332	1218		255	1848	551	211	1235		515	1725	
v/s Ratio Prot	0.05	c0.41		c0.08	0.14		0.07	0.26		c0.17	c0.36	
v/s Ratio Perm	0.22					0.25						
v/c Ratio	0.61	1.14		1.10	0.38	0.68	1.18	0.98		1.12	1.03	
Uniform Delay, d1	26.3	46.2		67.0	34.1	39.0	68.0	52.9		61.5	47.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.1	72.7		86.4	0.1	3.3	119.1	21.9		77.8	30.0	
Delay (s)	29.4	118.9		153.4	34.2	42.3	187.1	74.8		139.3	77.3	
Level of Service	C	F		F	C	D	F	E		F	E	
Approach Delay (s/veh)		107.8			58.6			93.7			92.5	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	88.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	100.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Future Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	0.99						1.00	0.98		0.99	
Frt		0.977							0.850		0.905	
Flt Protected	0.950			0.950				0.950			0.985	
Satd. Flow (prot)	1805	4913	0	1805	4988	0	0	1752	1615	0	1564	0
Flt Permitted	0.119			0.076				0.740			0.895	
Satd. Flow (perm)	225	4913	0	144	4988	0	0	1359	1587	0	1420	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		48							136		76	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		521.3			256.9			157.0			83.5	
Travel Time (s)		31.3			15.4			11.3			6.0	
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Adj. Flow (vph)	8	2071	371	64	1665	0	278	0	136	8	0	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	8	2442	0	64	1665	0	0	278	136	0	27	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Detector Phase	2	2		1	6		4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	26.0	26.0		11.0	28.0		36.0	36.0	36.0	36.0	36.0	
Total Split (s)	53.0	53.0		11.0	64.0		36.0	36.0	36.0	36.0	36.0	
Total Split (%)	53.0%	53.0%		11.0%	64.0%		36.0%	36.0%	36.0%	36.0%	36.0%	
Maximum Green (s)	47.0	47.0		7.0	58.0		29.0	29.0	29.0	29.0	29.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	2.0	2.0		1.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	7.0	7.0			7.0		7.0	7.0	7.0	7.0	7.0	
Flash Don't Walk (s)	13.0	13.0			13.0		21.0	21.0	21.0	21.0	21.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	49.2	49.2		60.0	58.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.49	0.49		0.60	0.58			0.29	0.29		0.29	
v/c Ratio	0.07	1.00		0.32	0.58			0.71	0.24		0.06	
Control Delay (s/veh)	16.8	44.6		12.5	14.2			42.9	6.0		0.2	
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Delay (s/veh)	16.8	44.6		12.5	14.2			42.9	6.0		0.2	
LOS	B	D		B	B			D	A		A	
Approach Delay (s/veh)		44.6			14.2			30.8			0.2	
Approach LOS		D			B			C			A	
Queue Length 50th (m)	0.9	~200.4		5.0	75.3			50.5	0.0		0.0	
Queue Length 95th (m)	3.4	158.1		8.9	70.4			65.7	8.5		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			59.5	
Turn Bay Length (m)	30.0			80.0								
Base Capacity (vph)	110	2441		202	2893			394	556		465	
Starvation Cap Reductn	0	0		0	0			0	0		0	
Spillback Cap Reductn	0	0		0	0			0	0		0	
Storage Cap Reductn	0	0		0	0			0	0		0	
Reduced v/c Ratio	0.07	1.00		0.32	0.58			0.71	0.24		0.06	

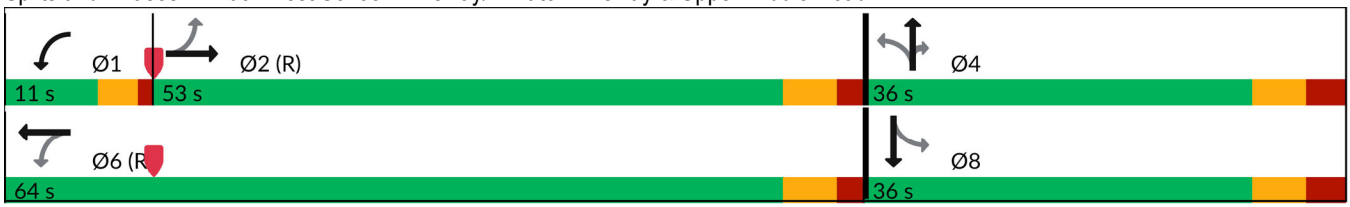
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.00			
Intersection Signal Delay (s/veh): 31.7		Intersection LOS: C	

Intersection Capacity Utilization 100.8% ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Future Volume (vph)	6	1595	286	49	1282	0	214	0	105	6	0	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	0.99		1.00	1.00			1.00	0.98		0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Frt	1.00	0.98		1.00	1.00			1.00	0.85		0.91	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00		0.99	
Satd. Flow (prot)	1800	4914		1805	4988			1745	1587		1563	
Flt Permitted	0.12	1.00		0.08	1.00			0.74	1.00		0.90	
Satd. Flow (perm)	226	4914		145	4988			1359	1587		1421	
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	8	2071	371	64	1665	0	278	0	136	8	0	19
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	97	0	19	0
Lane Group Flow (vph)	8	2417	0	64	1665	0	0	278	39	0	8	0
Confl. Peds. (#/hr)	13		18	18		13	4		5	5		4
Heavy Vehicles (%)	0%	2%	3%	0%	4%	0%	3%	0%	0%	0%	0%	10%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			4			8	
Permitted Phases	2			6			4		4	8		
Actuated Green, G (s)	48.4	48.4		58.0	58.0			29.0	29.0		29.0	
Effective Green, g (s)	48.4	48.4		58.0	58.0			29.0	29.0		29.0	
Actuated g/C Ratio	0.48	0.48		0.58	0.58			0.29	0.29		0.29	
Clearance Time (s)	6.0	6.0		4.0	6.0			7.0	7.0		7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0		3.0	
Lane Grp Cap (vph)	109	2378		177	2893			394	460		412	
v/s Ratio Prot		c0.49		0.02	c0.33							
v/s Ratio Perm	0.04			0.19				c0.20	0.02		0.01	
v/c Ratio	0.07	1.02		0.36	0.58			0.71	0.09		0.02	
Uniform Delay, d1	13.8	25.8		21.3	13.2			31.7	25.8		25.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00		1.00	
Incremental Delay, d2	1.3	22.7		1.3	0.8			10.2	0.4		0.1	
Delay (s)	15.1	48.5		22.5	14.1			41.9	26.2		25.4	
Level of Service	B	D		C	B			D	C		C	
Approach Delay (s/veh)		48.4			14.4			36.7			25.4	
Approach LOS		D			B			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



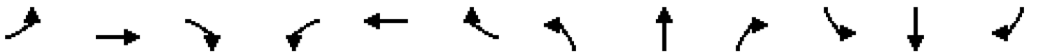
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1516	183	284	1296	52	210
Future Volume (vph)	1516	183	284	1296	52	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt	0.984					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	4966	0	1787	4988	1805	1615
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	4966	0	1787	4988	1805	1615
Link Speed (k/h)	60			60	50	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	9.5	
Confl. Peds. (#/hr)		12	12			
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	3%	1%	1%	4%	0%	0%
Adj. Flow (vph)	2135	258	400	1825	73	296
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2393	0	400	1825	73	296
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			

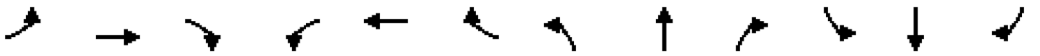
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1516	183	284	1296	52	210
Future Volume (Veh/h)	1516	183	284	1296	52	210
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71
Hourly flow rate (vph)	2135	258	400	1825	73	296
Pedestrians					12	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257			119		
pX, platoon unblocked			0.55		0.71	0.55
vC, conflicting volume			2405		3684	853
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			719		329	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			18		9	51
cM capacity (veh/h)			485		80	598

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	854	854	685	400	608	608	608	73	296
Volume Left	0	0	0	400	0	0	0	73	0
Volume Right	0	0	258	0	0	0	0	0	296
cSH	1700	1700	1700	485	1700	1700	1700	80	598
Volume to Capacity	0.50	0.50	0.40	0.82	0.36	0.36	0.36	0.91	0.49
Queue Length 95th (m)	0.0	0.0	0.0	64.2	0.0	0.0	0.0	38.4	21.9
Control Delay (s/veh)	0.0	0.0	0.0	38.6	0.0	0.0	0.0	166.6	16.8
Lane LOS				E				F	C
Approach Delay (s/veh)	0.0			6.9				46.4	
Approach LOS								E	

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Future Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	120.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					0.99						0.99	
Frt		0.998			0.991			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1752	5075	0	0	4962	0	1770	1583	0	1805	1562	0
Flt Permitted	0.123						0.303			0.757		
Satd. Flow (perm)	227	5075	0	0	4962	0	564	1583	0	1438	1562	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4			15			82			309	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			84.7			285.4	
Travel Time (s)		7.1			17.4			7.6			25.7	
Confl. Peds. (#/hr)	29					29						1
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	222	2020	29	0	1693	113	36	0	1	134	0	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	2049	0	0	1806	0	36	1	0	134	342	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

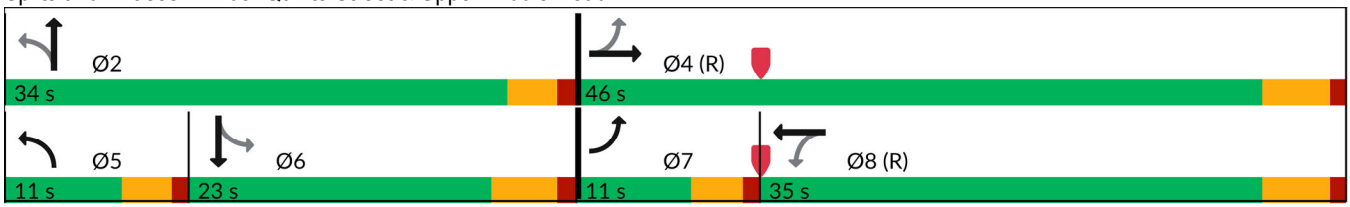


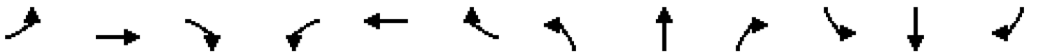
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	11.0	23.0		23.0	23.0		11.0	22.5		23.0	23.0	
Total Split (s)	11.0	46.0		35.0	35.0		11.0	34.0		23.0	23.0	
Total Split (%)	13.8%	57.5%		43.8%	43.8%		13.8%	42.5%		28.8%	28.8%	
Maximum Green (s)	7.0	41.0		30.0	30.0		7.0	30.0		18.0	18.0	
Yellow Time (s)	3.0	4.0		4.0	4.0		3.0	3.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	42.0	41.0			30.0		30.0	30.0		22.5	22.5	
Actuated g/C Ratio	0.53	0.51			0.38		0.38	0.38		0.28	0.28	
v/c Ratio	0.88	0.79			0.97		0.12	0.00		0.33	0.52	
Control Delay (s/veh)	49.7	18.7			39.5		17.0	0.0		27.8	8.0	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	49.7	18.7			39.5		17.0	0.0		27.8	8.0	
LOS	D	B			D		B	A		C	A	
Approach Delay (s/veh)		21.7			39.5			16.5			13.6	
Approach LOS		C			D			B			B	
Queue Length 50th (m)	18.5	93.5			102.8		3.7	0.0		18.3	4.2	
Queue Length 95th (m)	#39.9	85.2			96.1		8.1	0.0		28.8	14.4	
Internal Link Dist (m)		94.7			266.7			60.7			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	252	2602			1870		317	644		404	661	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.88	0.79			0.97		0.11	0.00		0.33	0.52	

Intersection Summary	
Area Type:	Other
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay (s/veh): 27.9	Intersection LOS: C

Intersection Capacity Utilization 91.2% ICU Level of Service F
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road

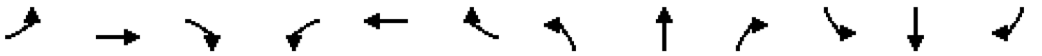




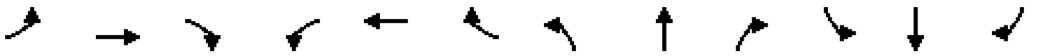
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Future Volume (vph)	169	1535	22	0	1287	86	27	0	1	102	0	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	1.00			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	5074			4960		1770	1583		1805	1562	
Flt Permitted	0.12	1.00			1.00		0.30	1.00		0.76	1.00	
Satd. Flow (perm)	228	5074			4960		565	1583		1439	1562	
Peak-hour factor, PHF	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Adj. Flow (vph)	222	2020	29	0	1693	113	36	0	1	134	0	342
RTOR Reduction (vph)	0	2	0	0	10	0	0	1	0	0	222	0
Lane Group Flow (vph)	222	2047	0	0	1796	0	36	0	0	134	120	0
Confl. Peds. (#/hr)	29					29						1
Heavy Vehicles (%)	3%	2%	2%	2%	3%	4%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA			NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	39.4	39.4			28.4		31.6	31.6		22.5	22.5	
Effective Green, g (s)	39.4	39.4			28.4		31.6	31.6		22.5	22.5	
Actuated g/C Ratio	0.49	0.49			0.36		0.40	0.40		0.28	0.28	
Clearance Time (s)	4.0	5.0			5.0		4.0	4.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	245	2498			1760		284	625		404	439	
v/s Ratio Prot	0.08	c0.40			c0.36		c0.01	0.00			0.08	
v/s Ratio Perm	0.37						0.04			c0.09		
v/c Ratio	0.91	0.82			1.02		0.13	0.00		0.33	0.27	
Uniform Delay, d1	17.5	17.3			25.8		16.0	14.6		22.8	22.4	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	33.3	3.1			26.8		0.2	0.0		2.2	1.5	
Delay (s)	50.8	20.4			52.6		16.2	14.6		25.0	23.9	
Level of Service	D	C			D		B	B		C	C	
Approach Delay (s/veh)		23.4			52.6			16.1			24.2	
Approach LOS		C			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Future Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	30.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.86	0.86	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	0.99				0.99		1.00	0.99		0.98	0.98	
Frt		0.974			0.970			0.939			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	4994	0	1522	4547	0	1770	1728	0	3502	1540	0
Flt Permitted	0.177			0.180			0.508			0.950		
Satd. Flow (perm)	315	4994	0	288	4547	0	943	1728	0	3442	1540	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		44			53			13			93	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			175.8			244.6	
Travel Time (s)		17.4			14.7			15.8			22.0	
Confl. Peds. (#/hr)	24					24	6		16	16		6
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	332	1351	277	4	931	229	315	19	13	631	19	371
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	332	1628	0	4	1160	0	315	32	0	631	390	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	31.0		11.0	31.0		11.0	34.0		11.0	34.0	
Total Split (s)	15.0	35.0		11.0	31.0		18.0	34.0		20.0	36.0	
Total Split (%)	15.0%	35.0%		11.0%	31.0%		18.0%	34.0%		20.0%	36.0%	
Maximum Green (s)	11.0	29.0		7.0	25.0		14.0	27.0		16.0	29.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	45.7	41.5		34.0	26.0		31.7	19.1		26.2	25.3	
Actuated g/C Ratio	0.46	0.42		0.34	0.26		0.32	0.19		0.26	0.25	
v/c Ratio	0.96	0.78		0.02	0.95		0.76	0.09		0.69	0.85	
Control Delay (s/veh)	65.0	29.5		19.7	52.2		36.6	19.9		41.9	44.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	65.0	29.5		19.7	52.2		36.6	19.9		41.9	44.3	
LOS	E	C		B	D		D	B		D	D	
Approach Delay (s/veh)		35.5			52.1			35.1			42.8	
Approach LOS		D			D			D			D	
Queue Length 50th (m)	~56.2	100.8		0.5	91.0		39.3	3.0		~77.2	58.0	
Queue Length 95th (m)	#106.7	#149.7		m1.5	90.8		53.4	9.6		#100.7	83.8	
Internal Link Dist (m)		266.7			220.7			151.8			220.6	
Turn Bay Length (m)	60.0			60.0			30.0			60.0		
Base Capacity (vph)	347	2096		184	1221		414	476		918	512	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.96	0.78		0.02	0.95		0.76	0.07		0.69	0.76	

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay (s/veh): 41.4	Intersection LOS: D

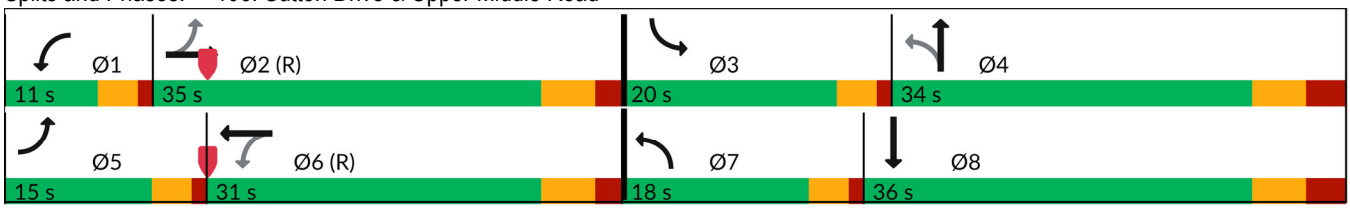
Intersection Capacity Utilization 102.9%	ICU Level of Service G
Analysis Period (min) 15	

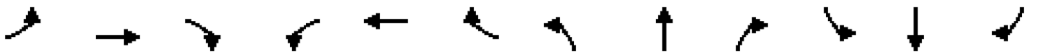
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 106: Sutton Drive & Upper Middle Road

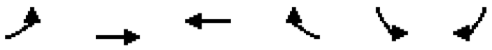




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Future Volume (vph)	279	1135	233	3	782	192	265	16	11	530	16	312
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		0.86	0.86		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.94		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1701	4996		1522	4548		1766	1728		3502	1540	
Flt Permitted	0.18	1.00		0.18	1.00		0.51	1.00		0.95	1.00	
Satd. Flow (perm)	317	4996		289	4548		945	1728		3502	1540	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	332	1351	277	4	931	229	315	19	13	631	19	371
RTOR Reduction (vph)	0	28	0	0	40	0	0	11	0	0	67	0
Lane Group Flow (vph)	332	1600	0	4	1120	0	315	21	0	631	323	0
Confl. Peds. (#/hr)	24					24	6		16	16		6
Heavy Vehicles (%)	6%	1%	2%	2%	3%	4%	2%	2%	2%	0%	2%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	40.9	35.5		23.6	23.6		29.9	15.9		26.2	28.1	
Effective Green, g (s)	40.9	35.5		23.6	23.6		29.9	15.9		26.2	28.1	
Actuated g/C Ratio	0.41	0.36		0.24	0.24		0.30	0.16		0.26	0.28	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	333	1773		85	1073		397	274		917	432	
v/s Ratio Prot	c0.15	0.32		0.00	0.01		c0.11	0.01		c0.18	c0.21	
v/s Ratio Perm	c0.26			0.01	0.23		0.13					
v/c Ratio	1.00	0.90		0.05	1.04		0.79	0.08		0.69	0.75	
Uniform Delay, d1	23.3	30.6		30.1	38.2		30.0	35.8		33.2	32.7	
Progression Factor	1.00	1.00		1.14	1.06		1.00	1.00		1.00	1.00	
Incremental Delay, d2	48.2	7.9		0.2	38.9		10.4	0.1		2.2	6.9	
Delay (s)	71.5	38.5		34.4	79.3		40.4	35.9		35.4	39.7	
Level of Service	E	D		C	E		D	D		D	D	
Approach Delay (s/veh)		44.1			79.1			40.0			37.0	
Approach LOS		D			E			D			D	

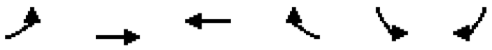
Intersection Summary			
HCM 2000 Control Delay (s/veh)	51.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	41	1643	887	6	0	72
Future Volume (vph)	41	1643	887	6	0	72
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1671	5136	4984	0	0	1611
Flt Permitted	0.950					
Satd. Flow (perm)	1671	5136	4984	0	0	1611
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	18			18		
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	8%	1%	4%	0%	0%	2%
Adj. Flow (vph)	46	1846	997	7	0	81
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	1846	1004	0	0	81
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

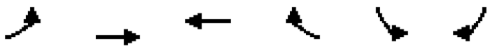
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 35.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	41	1643	887	6	0	72
Future Volume (Veh/h)	41	1643	887	6	0	72
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	46	1846	997	7	0	81
Pedestrians					18	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245	386			
pX, platoon unblocked					0.74	
vC, conflicting volume	1022				1726	354
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1022				735	354
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	93				100	87
cM capacity (veh/h)	630				242	633

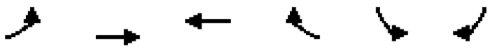
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	46	615	615	615	399	399	206	81
Volume Left	46	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	7	81
cSH	630	1700	1700	1700	1700	1700	1700	633
Volume to Capacity	0.07	0.36	0.36	0.36	0.23	0.23	0.12	0.13
Queue Length 95th (m)	1.9	0.0	0.0	0.0	0.0	0.0	0.0	3.5
Control Delay (s/veh)	11.2	0.0	0.0	0.0	0.0	0.0	0.0	11.5
Lane LOS	B							B
Approach Delay (s/veh)	0.3				0.0			11.5
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	5	1639	901	5	29	9
Future Volume (vph)	5	1639	901	5	29	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.968	
Flt Protected	0.950				0.963	
Satd. Flow (prot)	1805	5136	5023	0	1631	0
Flt Permitted	0.950				0.963	
Satd. Flow (perm)	1805	5136	5023	0	1631	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	14			14		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	3%	33%	6%	17%
Adj. Flow (vph)	5	1782	979	5	32	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	5	1782	984	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 41.7%		ICU Level of Service A	
Analysis Period (min) 15			

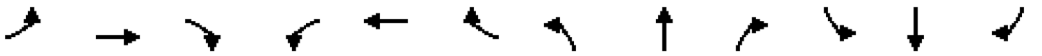


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	1639	901	5	29	9
Future Volume (Veh/h)	5	1639	901	5	29	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	1782	979	5	32	10
Pedestrians					14	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			199			
pX, platoon unblocked	0.96				0.96	0.96
vC, conflicting volume	998				1600	343
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	839				1468	154
tC, single (s)	4.1				6.9	7.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.5
p0 queue free %	99				70	99
cM capacity (veh/h)	761				107	775

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	5	594	594	594	392	392	201	42
Volume Left	5	0	0	0	0	0	0	32
Volume Right	0	0	0	0	0	0	5	10
cSH	761	1700	1700	1700	1700	1700	1700	135
Volume to Capacity	0.00*	0.35	0.35	0.35	0.23	0.23	0.12	0.31
Queue Length 95th (m)	0.2	0.0	0.0	0.0	0.0	0.0	0.0	9.8
Control Delay (s/veh)	9.8	0.0	0.0	0.0	0.0	0.0	0.0	43.3
Lane LOS	A							E
Approach Delay (s/veh)	0.0				0.0			43.3
Approach LOS								E

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Future Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.992			0.992			0.955			0.975	
Flt Protected	0.950			0.950				0.968			0.961	
Satd. Flow (prot)	1703	5092	0	1770	4939	0	0	1722	0	0	1737	0
Flt Permitted	0.340			0.178				0.692			0.638	
Satd. Flow (perm)	607	5092	0	332	4939	0	0	1231	0	0	1153	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			22			33			33	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		198.8			464.6			146.8			226.6	
Travel Time (s)		11.9			27.9			13.2			20.4	
Confl. Peds. (#/hr)	10					10						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	1%	2%	2%	4%	4%	2%	2%	2%	1%	2%	9%
Adj. Flow (vph)	32	1754	104	6	727	41	181	0	90	239	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	1858	0	6	768	0	0	271	0	0	293	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2			2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		2	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	27.0	27.0		27.0	27.0		23.0	23.0		23.0	23.0	
Total Split (%)	54.0%	54.0%		54.0%	54.0%		46.0%	46.0%		46.0%	46.0%	
Maximum Green (s)	22.5	22.5		22.5	22.5		18.5	18.5		18.5	18.5	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	22.5	22.5		22.5	22.5			18.5			18.5	
Actuated g/C Ratio	0.45	0.45		0.45	0.45			0.37			0.37	
v/c Ratio	0.12	0.81		0.04	0.34			0.57			0.66	
Control Delay (s/veh)	12.6	23.8		8.6	9.2			16.7			20.6	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	12.6	23.8		8.6	9.2			16.7			20.6	
LOS	B	C		A	A			B			C	
Approach Delay (s/veh)		23.7			9.2			16.7			20.6	
Approach LOS		C			A			B			C	
Queue Length 50th (m)	3.6	95.9		0.3	15.8			17.0			19.5	
Queue Length 95th (m)	m3.0	136.8		2.0	23.0			37.3			#50.9	
Internal Link Dist (m)		174.8			440.6			122.8			202.6	
Turn Bay Length (m)	100.0			15.0								
Base Capacity (vph)	273	2304		149	2234			476			447	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.12	0.81		0.04	0.34			0.57			0.66	

Intersection Summary	
Area Type:	Other
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.81	
Intersection Signal Delay (s/veh): 19.3	Intersection LOS: B

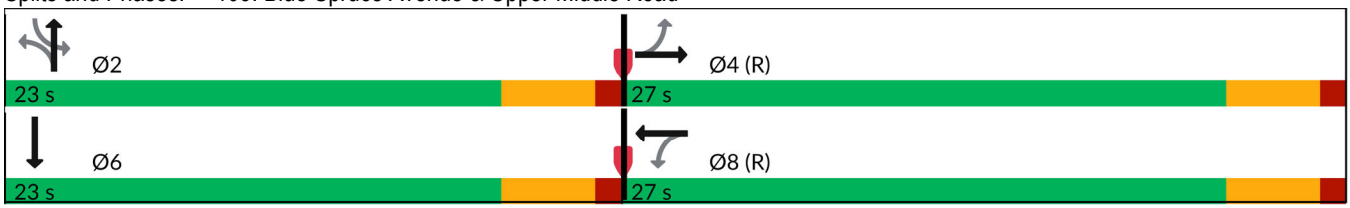
Intersection Capacity Utilization 58.7% ICU Level of Service B

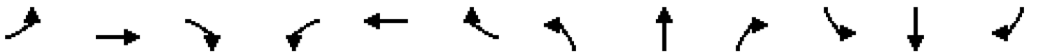
Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 109: Blue Spruce Avenue & Upper Middle Road

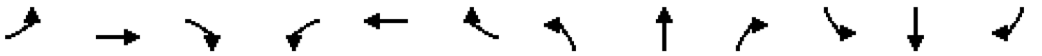




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Future Volume (vph)	29	1579	94	5	654	37	163	0	81	215	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.99		1.00	0.99			0.96			0.98	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.96	
Satd. Flow (prot)	1695	5090		1770	4939			1722			1737	
Flt Permitted	0.34	1.00		0.18	1.00			0.69			0.64	
Satd. Flow (perm)	606	5090		331	4939			1231			1154	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	32	1754	104	6	727	41	181	0	90	239	0	54
RTOR Reduction (vph)	0	13	0	0	12	0	0	21	0	0	21	0
Lane Group Flow (vph)	32	1845	0	6	756	0	0	250	0	0	272	0
Confl. Peds. (#/hr)	10					10						
Heavy Vehicles (%)	6%	1%	2%	2%	4%	4%	2%	2%	2%	1%	2%	9%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Actuated Green, G (s)	22.5	22.5		22.5	22.5			18.5			18.5	
Effective Green, g (s)	22.5	22.5		22.5	22.5			18.5			18.5	
Actuated g/C Ratio	0.45	0.45		0.45	0.45			0.37			0.37	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	272	2290		148	2222			455			426	
v/s Ratio Prot		c0.36			0.15							
v/s Ratio Perm	0.05			0.02				0.20			c0.24	
v/c Ratio	0.12	0.81		0.04	0.34			0.55			0.64	
Uniform Delay, d1	8.0	11.9		7.7	8.9			12.5			13.0	
Progression Factor	1.44	1.83		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.6	2.2		0.5	0.4			4.7			3.1	
Delay (s)	12.1	23.9		8.2	9.3			17.2			16.1	
Level of Service	B	C		A	A			B			B	
Approach Delay (s/veh)		23.7			9.3			17.2			16.1	
Approach LOS		C			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Future Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	120.0		0.0	145.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00		1.00		
Frt		0.879			0.963			0.989			0.997	
Flt Protected		0.995			0.965		0.950			0.950		
Satd. Flow (prot)	0	1629	0	0	1766	0	1770	4983	0	1805	5119	0
Flt Permitted		0.966			0.590		0.104			0.335		
Satd. Flow (perm)	0	1582	0	0	1080	0	194	4983	0	636	5119	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		192			94			33			6	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		167.3			160.8			275.6			464.6	
Travel Time (s)		15.1			14.5			16.5			27.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	3%	0%	0%	1%	2%
Adj. Flow (vph)	46	0	399	16	0	6	191	749	59	26	1958	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	445	0	0	22	0	191	808	0	26	1999	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	22.6	22.6		22.6	22.6		11.2	47.4		36.2	36.2	
Total Split (%)	32.3%	32.3%		32.3%	32.3%		16.0%	67.7%		51.7%	51.7%	
Maximum Green (s)	18.1	18.1		18.1	18.1		6.7	42.9		31.7	31.7	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		15.7			15.7		45.3	45.3		33.8	33.8	
Actuated g/C Ratio		0.22			0.22		0.65	0.65		0.48	0.48	
v/c Ratio		0.88			0.07		0.68	0.25		0.08	0.81	
Control Delay (s/veh)		35.3			0.5		24.3	5.6		12.0	19.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		35.3			0.5		24.3	5.6		12.0	19.4	
LOS		D			A		C	A		B	B	
Approach Delay (s/veh)		35.3			0.5			9.2			19.3	
Approach LOS		D			A			A			B	
Queue Length 50th (m)		32.9			0.0		10.2	16.1		2.0	86.5	
Queue Length 95th (m)		#82.2			0.0		#39.5	21.9		6.3	107.9	
Internal Link Dist (m)		143.3			136.8			251.6			440.6	
Turn Bay Length (m)							120.0			145.0		
Base Capacity (vph)		551			348		281	3233		307	2476	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.81			0.06		0.68	0.25		0.08	0.81	

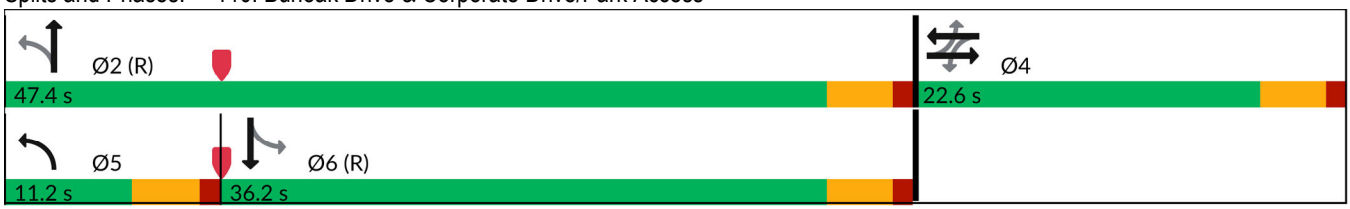
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay (s/veh): 18.3		Intersection LOS: B	

Intersection Capacity Utilization 79.5% ICU Level of Service D

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

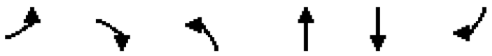
Splits and Phases: 110: Burloak Drive & Corporate Drive/Park Access



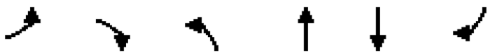
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Future Volume (vph)	41	0	359	14	0	5	172	674	53	23	1762	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.88			0.96		1.00	0.99		1.00	1.00	
Flt Protected		0.99			0.96		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1629			1766		1770	4983		1804	5119	
Flt Permitted		0.97			0.59		0.10	1.00		0.33	1.00	
Satd. Flow (perm)		1582			1079		194	4983		635	5119	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	46	0	399	16	0	6	191	749	59	26	1958	41
RTOR Reduction (vph)	0	149	0	0	17	0	0	12	0	0	3	0
Lane Group Flow (vph)	0	296	0	0	5	0	191	796	0	26	1996	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	3%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)		15.7			15.7		45.3	45.3		33.9	33.9	
Effective Green, g (s)		15.7			15.7		45.3	45.3		33.9	33.9	
Actuated g/C Ratio		0.22			0.22		0.65	0.65		0.48	0.48	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		354			242		280	3224		307	2479	
v/s Ratio Prot							c0.07	0.16			c0.39	
v/s Ratio Perm		c0.19			0.00		0.37			0.04		
v/c Ratio		0.84			0.02		0.68	0.25		0.08	0.81	
Uniform Delay, d1		25.9			21.2		11.6	5.2		9.7	15.3	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		15.6			0.0		6.7	0.2		0.5	2.9	
Delay (s)		41.5			21.2		18.3	5.4		10.2	18.2	
Level of Service		D			C		B	A		B	B	
Approach Delay (s/veh)		41.5			21.2			7.8			18.1	
Approach LOS		D			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	87	372	90	824	2116	20
Future Volume (vph)	87	372	90	824	2116	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0	0.0	120.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	5085	5080	0
Flt Permitted	0.950		0.089			
Satd. Flow (perm)	1770	1583	166	5085	5080	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		136			3	
Link Speed (k/h)	40			60	60	
Link Distance (m)	164.5			440.8	275.6	
Travel Time (s)	14.8			26.4	16.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	404	98	896	2300	22
Shared Lane Traffic (%)						
Lane Group Flow (vph)	95	404	98	896	2322	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4	2			



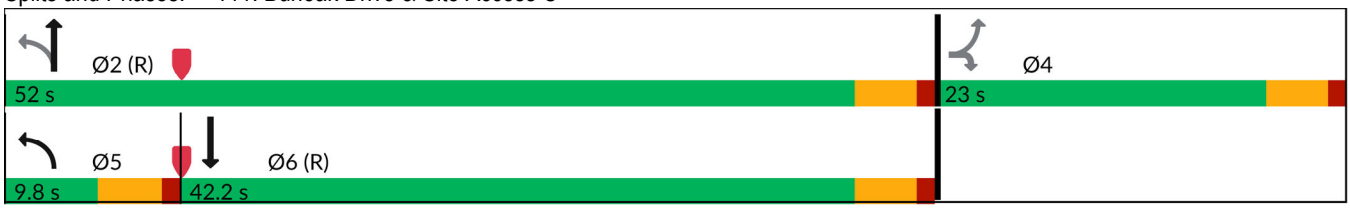
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	23.0	23.0	9.8	52.0	42.2	
Total Split (%)	30.7%	30.7%	13.1%	69.3%	56.3%	
Maximum Green (s)	18.5	18.5	5.3	47.5	37.7	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.6	16.6	49.4	49.4	41.3	
Actuated g/C Ratio	0.22	0.22	0.66	0.66	0.55	
v/c Ratio	0.24	0.89	0.43	0.27	0.83	
Control Delay (s/veh)	24.8	41.1	15.1	3.9	19.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	24.8	41.1	15.1	3.9	19.0	
LOS	C	D	B	A	B	
Approach Delay (s/veh)	38.0			5.0	19.0	
Approach LOS	D			A	B	
Queue Length 50th (m)	11.5	38.5	5.3	20.2	110.4	
Queue Length 95th (m)	23.5	#87.0	18.7	23.9	#139.6	
Internal Link Dist (m)	140.5			416.8	251.6	
Turn Bay Length (m)	15.0		120.0			
Base Capacity (vph)	436	492	228	3346	2798	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.22	0.82	0.43	0.27	0.83	

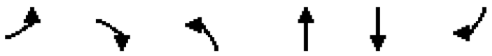
Intersection Summary			
Area Type:	Other		
Cycle Length: 75			
Actuated Cycle Length: 75			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay (s/veh): 17.8		Intersection LOS: B	
Intersection Capacity Utilization 71.9%		ICU Level of Service C	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 111: Burloak Drive & Site Access C

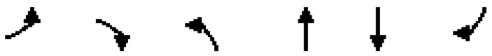




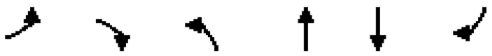
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	87	372	90	824	2116	20
Future Volume (vph)	87	372	90	824	2116	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5078	
Flt Permitted	0.95	1.00	0.09	1.00	1.00	
Satd. Flow (perm)	1770	1583	166	5085	5078	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	404	98	896	2300	22
RTOR Reduction (vph)	0	106	0	0	1	0
Lane Group Flow (vph)	95	298	98	896	2321	0
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4	2			
Actuated Green, G (s)	16.6	16.6	49.4	49.4	40.4	
Effective Green, g (s)	16.6	16.6	49.4	49.4	40.4	
Actuated g/C Ratio	0.22	0.22	0.66	0.66	0.54	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	391	350	205	3349	2735	
v/s Ratio Prot			c0.03	0.18	c0.46	
v/s Ratio Perm	0.05	c0.19	0.29			
v/c Ratio	0.24	0.85	0.48	0.27	0.85	
Uniform Delay, d1	24.0	28.0	12.5	5.3	14.7	
Progression Factor	1.00	1.00	1.84	0.66	1.00	
Incremental Delay, d2	0.3	17.7	1.7	0.2	3.5	
Delay (s)	24.4	45.8	24.6	3.7	18.2	
Level of Service	C	D	C	A	B	
Approach Delay (s/veh)	41.7			5.8	18.2	
Approach LOS	D			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	71.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	597	674	807	2257	239
Future Volume (vph)	107	597	674	807	2257	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.986	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1524	3367	5036	5057	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1524	3366	5036	5057	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		306			16	
Link Speed (k/h)	60			60	60	
Link Distance (m)	747.2			453.2	440.8	
Travel Time (s)	44.8			27.2	26.4	
Confl. Peds. (#/hr)			8			8
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Adj. Flow (vph)	118	656	741	887	2480	263
Shared Lane Traffic (%)						
Lane Group Flow (vph)	118	656	741	887	2743	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	32.0	111.0	79.0	
Total Split (%)	26.0%	26.0%	21.3%	74.0%	52.7%	
Maximum Green (s)	32.0	32.0	28.0	104.0	72.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	32.0	32.0	28.0	104.0	72.0	
Actuated g/C Ratio	0.21	0.21	0.19	0.69	0.48	
v/c Ratio	0.31	1.16	1.18	0.25	1.13	
Control Delay (s/veh)	52.3	117.8	151.5	6.6	93.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	52.3	117.8	151.5	6.6	93.1	
LOS	D	F	F	A	F	
Approach Delay (s/veh)	107.8			72.6	93.1	
Approach LOS	F			E	F	
Queue Length 50th (m)	31.4	~169.7	~146.7	21.6	~369.5	
Queue Length 95th (m)	51.3	#252.0	#189.7	28.0	#396.4	
Internal Link Dist (m)	723.2			429.2	416.8	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	385	565	628	3491	2435	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.31	1.16	1.18	0.25	1.13	

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 88.8	Intersection LOS: F

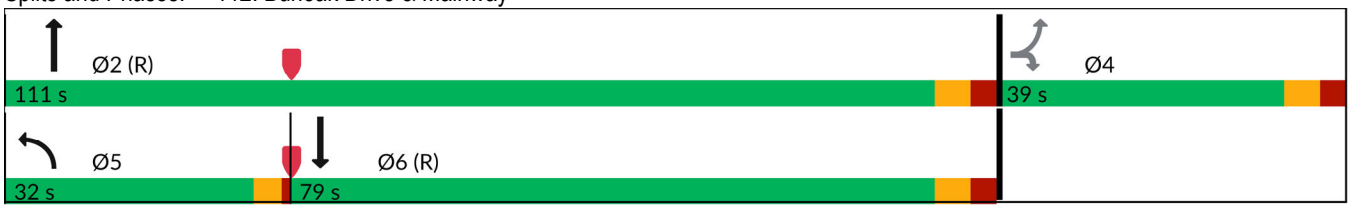
Intersection Capacity Utilization 97.6% ICU Level of Service F

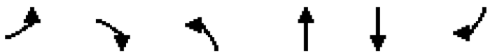
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 112: Burloak Drive & Mainway





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	597	674	807	2257	239
Future Volume (vph)	107	597	674	807	2257	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1524	3367	5036	5055	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1524	3367	5036	5055	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	118	656	741	887	2480	263
RTOR Reduction (vph)	0	241	0	0	8	0
Lane Group Flow (vph)	118	415	741	887	2735	0
Confl. Peds. (#/hr)			8			8
Heavy Vehicles (%)	0%	6%	4%	3%	1%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	32.0	32.0	28.0	104.0	72.0	
Effective Green, g (s)	32.0	32.0	28.0	104.0	72.0	
Actuated g/C Ratio	0.21	0.21	0.19	0.69	0.48	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	385	325	628	3491	2426	
v/s Ratio Prot			c0.22	0.18	c0.54	
v/s Ratio Perm	0.07	c0.27				
v/c Ratio	0.31	1.28	1.18	0.25	1.13	
Uniform Delay, d1	49.7	59.0	61.0	8.6	39.0	
Progression Factor	1.00	1.00	1.09	0.75	0.88	
Incremental Delay, d2	0.5	146.7	96.5	0.2	60.7	
Delay (s)	50.1	205.7	162.7	6.6	95.0	
Level of Service	D	F	F	A	F	
Approach Delay (s/veh)	182.0			77.7	95.0	
Approach LOS	F			E	F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	102.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Future Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.970				0.850		0.993			0.899	
Flt Protected	0.950				0.996			0.997		0.950		
Satd. Flow (prot)	1770	3332	0	0	3409	1583	0	1824	0	1770	1675	0
Flt Permitted	0.300				0.846			0.692		0.511		
Satd. Flow (perm)	559	3332	0	0	2895	1583	0	1266	0	952	1675	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		65				203		4			169	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		231.3			121.9			154.8			109.5	
Travel Time (s)		13.9			7.3			13.9			9.9	
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Adj. Flow (vph)	397	563	142	44	470	263	20	254	15	160	199	415
Shared Lane Traffic (%)												
Lane Group Flow (vph)	397	705	0	0	514	263	0	289	0	160	614	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2			2	1		2		1	2	
Detector Template	Left	Thru			Thru	Right		Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	15.0	40.0		25.0	25.0	25.0	30.0	30.0		30.0	30.0	
Total Split (%)	21.4%	57.1%		35.7%	35.7%	35.7%	42.9%	42.9%		42.9%	42.9%	
Maximum Green (s)	10.5	35.5		20.5	20.5	20.5	25.5	25.5		25.5	25.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	
Act Effct Green (s)	35.5	35.5			20.5	20.5		25.5		25.5	25.5	
Actuated g/C Ratio	0.51	0.51			0.29	0.29		0.36		0.36	0.36	
v/c Ratio	0.85	0.41			0.61	0.43		0.62		0.46	0.86	
Control Delay (s/veh)	32.2	10.5			24.9	8.1		25.2		22.4	29.0	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	32.2	10.5			24.9	8.1		25.2		22.4	29.0	
LOS	C	B			C	A		C		C	C	
Approach Delay (s/veh)		18.3			19.2			25.2			27.6	
Approach LOS		B			B			C			C	
Queue Length 50th (m)	32.9	27.4			33.1	6.1		32.0		16.7	57.3	
Queue Length 95th (m)	#71.5	39.2			48.5	22.8		57.1		33.6	#117.0	
Internal Link Dist (m)		207.3			97.9			130.8			85.5	
Turn Bay Length (m)	130.0					15.0				40.0		
Base Capacity (vph)	465	1721			847	607		463		346	717	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.85	0.41			0.61	0.43		0.62		0.46	0.86	

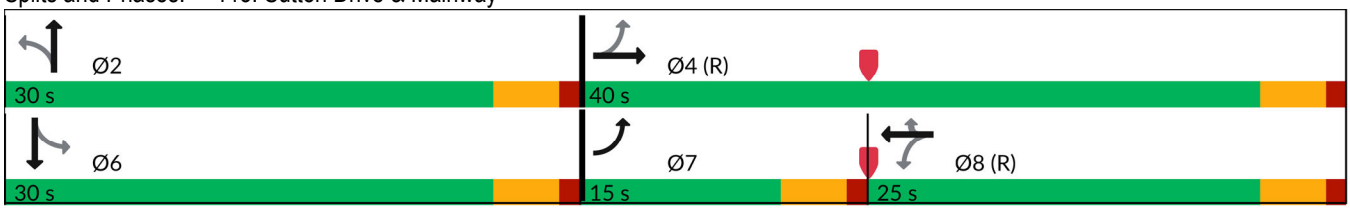
Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.86	
Intersection Signal Delay (s/veh): 21.7	Intersection LOS: C

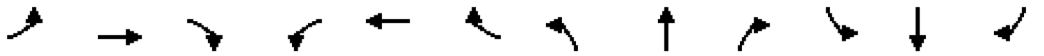
Intersection Capacity Utilization 92.9% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 113: Sutton Drive & Mainway

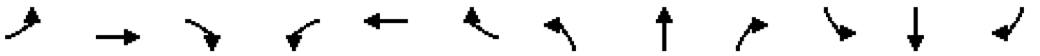




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Future Volume (vph)	353	501	126	39	418	234	18	226	13	142	177	369
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Frt	1.00	0.97			1.00	0.85		0.99		1.00	0.90	
Flt Protected	0.95	1.00			1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	3331			3407	1583		1823		1770	1674	
Flt Permitted	0.30	1.00			0.85	1.00		0.69		0.51	1.00	
Satd. Flow (perm)	560	3331			2896	1583		1265		951	1674	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	397	563	142	44	470	263	20	254	15	160	199	415
RTOR Reduction (vph)	0	32	0	0	0	144	0	3	0	0	107	0
Lane Group Flow (vph)	397	673	0	0	514	119	0	286	0	160	507	0
Confl. Peds. (#/hr)			2	2								
Heavy Vehicles (%)	2%	5%	3%	0%	6%	2%	20%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	35.5	35.5			20.5	20.5		25.5		25.5	25.5	
Effective Green, g (s)	35.5	35.5			20.5	20.5		25.5		25.5	25.5	
Actuated g/C Ratio	0.51	0.51			0.29	0.29		0.36		0.36	0.36	
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	465	1689			848	463		460		346	609	
v/s Ratio Prot	c0.13	0.20									c0.30	
v/s Ratio Perm	c0.30				0.18	0.08		0.23		0.17		
v/c Ratio	0.85	0.40			0.61	0.26		0.62		0.46	0.83	
Uniform Delay, d1	12.0	10.7			21.3	18.9		18.3		17.0	20.3	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	14.1	0.7			3.2	1.3		6.2		4.4	12.5	
Delay (s)	26.1	11.4			24.5	20.3		24.5		21.4	32.8	
Level of Service	C	B			C	C		C		C	C	
Approach Delay (s/veh)		16.7			23.1			24.5			30.5	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	92.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



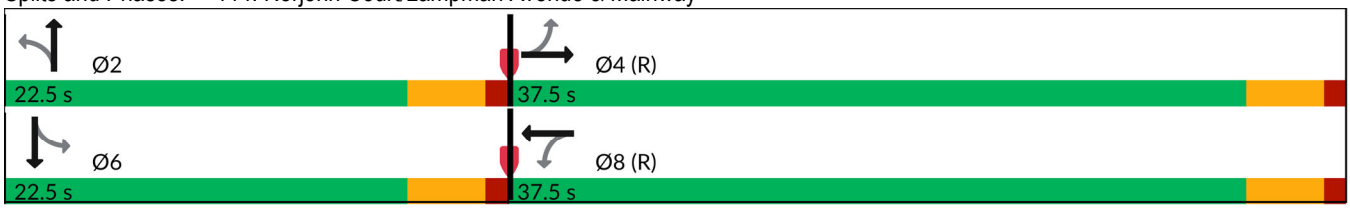
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Future Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.992			0.995			0.968			0.943	
Flt Protected		0.999			0.999			0.963			0.972	
Satd. Flow (prot)	0	3461	0	0	3237	0	0	1508	0	0	1732	0
Flt Permitted		0.933			0.902			0.793			0.810	
Satd. Flow (perm)	0	3233	0	0	2923	0	0	1241	0	0	1443	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			8			27			63	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			522.8			107.7			112.1	
Travel Time (s)		25.6			31.4			9.7			10.1	
Confl. Peds. (#/hr)	5		9	9		5						
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Adj. Flow (vph)	27	1478	81	19	806	26	19	0	6	135	2	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1586	0	0	851	0	0	25	0	0	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

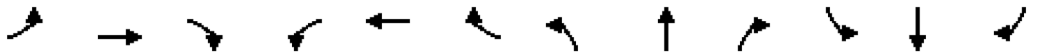


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	37.5	37.5		37.5	37.5		22.5	22.5		22.5	22.5	
Total Split (%)	62.5%	62.5%		62.5%	62.5%		37.5%	37.5%		37.5%	37.5%	
Maximum Green (s)	33.0	33.0		33.0	33.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Min	Min		Min	Min	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		38.5			38.5			12.5			12.5	
Actuated g/C Ratio		0.64			0.64			0.21			0.21	
v/c Ratio		0.76			0.45			0.09			0.68	
Control Delay (s/veh)		12.5			7.2			7.5			25.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		12.5			7.2			7.5			25.1	
LOS		B			A			A			C	
Approach Delay (s/veh)		12.5			7.2			7.5			25.1	
Approach LOS		B			A			A			C	
Queue Length 50th (m)		58.1			23.6			0.0			18.3	
Queue Length 95th (m)		98.4			42.3			4.1			32.0	
Internal Link Dist (m)		402.4			498.8			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		2077			1876			391			477	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.76			0.45			0.06			0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay (s/veh): 11.9		Intersection LOS: B	
Intersection Capacity Utilization 73.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway

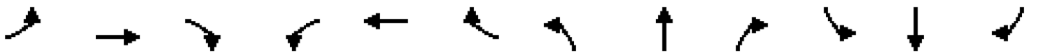




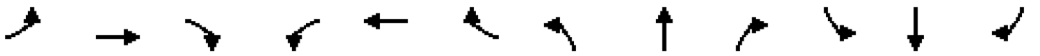
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Future Volume (vph)	23	1256	69	16	685	22	16	0	5	115	2	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			1.00	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			1.00			0.97			0.94	
Flt Protected		1.00			1.00			0.96			0.97	
Satd. Flow (prot)		3463			3238			1508			1732	
Flt Permitted		0.93			0.90			0.79			0.81	
Satd. Flow (perm)		3234			2925			1241			1443	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	27	1478	81	19	806	26	19	0	6	135	2	101
RTOR Reduction (vph)	0	5	0	0	3	0	0	20	0	0	50	0
Lane Group Flow (vph)	0	1581	0	0	848	0	0	5	0	0	188	0
Confl. Peds. (#/hr)	5		9	9		5						
Heavy Vehicles (%)	16%	3%	2%	15%	11%	0%	23%	0%	0%	1%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		38.5			38.5			12.5			12.5	
Effective Green, g (s)		38.5			38.5			12.5			12.5	
Actuated g/C Ratio		0.64			0.64			0.21			0.21	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2075			1876			258			300	
v/s Ratio Prot												
v/s Ratio Perm		c0.49			0.29			0.00			c0.13	
v/c Ratio		0.76			0.45			0.02			0.63	
Uniform Delay, d1		7.5			5.4			18.9			21.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.7			0.8			0.0			4.1	
Delay (s)		10.2			6.2			18.9			25.7	
Level of Service		B			A			B			C	
Approach Delay (s/veh)		10.2			6.2			18.9			25.7	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Future Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	0.99	1.00		1.00	1.00			0.99			1.00	
Frt		0.966			0.970			0.951			0.986	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	3225	0	2894	3157	0	1597	4608	0	3433	4872	0
Flt Permitted	0.483			0.119			0.080			0.078		
Satd. Flow (perm)	814	3225	0	362	3157	0	135	4608	0	282	4872	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		30			24			117			17	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Adj. Flow (vph)	222	664	197	472	302	76	138	1096	532	280	1902	197
Shared Lane Traffic (%)												
Lane Group Flow (vph)	222	861	0	472	378	0	138	1628	0	280	2099	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	17.0	37.6		19.0	39.6		11.0	56.4		12.0	57.4	
Total Split (%)	13.6%	30.1%		15.2%	31.7%		8.8%	45.1%		9.6%	45.9%	
Maximum Green (s)	13.0	31.3		15.0	33.3		7.0	50.1		8.0	51.1	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	46.2	31.3		51.0	33.7		59.4	50.1		61.4	51.1	
Actuated g/C Ratio	0.37	0.25		0.41	0.27		0.48	0.40		0.49	0.41	
v/c Ratio	0.58	1.04		1.05	0.44		0.95	0.85		0.82	1.05	
Control Delay (s/veh)	32.2	85.4		87.6	37.3		85.2	40.9		42.5	70.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	32.2	85.4		87.6	37.3		85.2	40.9		42.5	70.4	
LOS	C	F		F	D		F	D		D	E	
Approach Delay (s/veh)		74.5			65.2			44.4			67.1	
Approach LOS		E			E			D			E	
Queue Length 50th (m)	41.3	~128.4		~61.8	42.9		32.1	102.3		20.1	~223.3	
Queue Length 95th (m)	63.8	#172.5		#102.6	59.7		m#48.3	139.9		#43.1	#255.3	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	386	830		451	867		146	1916		340	2001	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.58	1.04		1.05	0.44		0.95	0.85		0.82	1.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.05	
Intersection Signal Delay (s/veh): 61.5	Intersection LOS: E

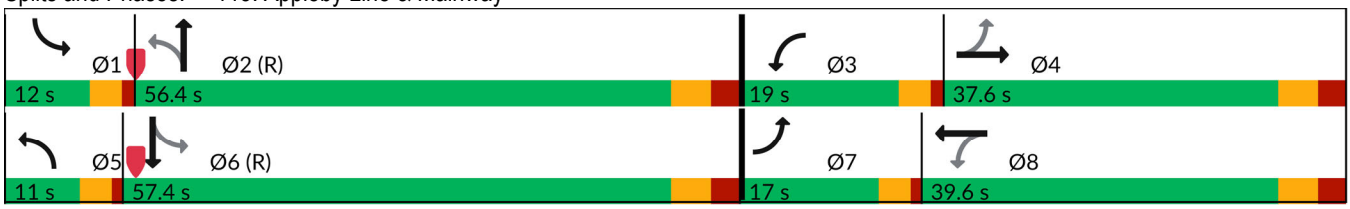
Intersection Capacity Utilization 101.2%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

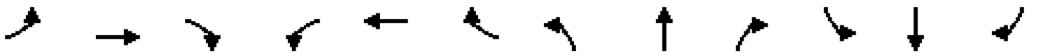
Splits and Phases: 115: Appleby Line & Mainway



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Future Volume (vph)	213	637	189	453	290	73	132	1052	511	269	1826	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.97		1.00	0.95		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1607	3224		2894	3157		1597	4608		3433	4871	
Flt Permitted	0.48	1.00		0.12	1.00		0.08	1.00		0.08	1.00	
Satd. Flow (perm)	817	3224		362	3157		134	4608		283	4871	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	222	664	197	472	302	76	138	1096	532	280	1902	197
RTOR Reduction (vph)	0	22	0	0	18	0	0	70	0	0	10	0
Lane Group Flow (vph)	222	839	0	472	360	0	138	1558	0	280	2089	0
Confl. Peds. (#/hr)	9		8	8		9	4		7	7		4
Heavy Vehicles (%)	12%	6%	13%	21%	10%	12%	13%	6%	7%	2%	5%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	43.9	31.3		48.7	33.7		57.1	50.1		59.1	51.1	
Effective Green, g (s)	43.9	31.3		48.7	33.7		57.1	50.1		59.1	51.1	
Actuated g/C Ratio	0.35	0.25		0.39	0.27		0.46	0.40		0.47	0.41	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	366	807		444	851		143	1846		335	1991	
v/s Ratio Prot	0.06	0.26		c0.13	0.11		c0.05	0.34		0.05	c0.43	
v/s Ratio Perm	0.15			c0.29			0.39			0.34		
v/c Ratio	0.61	1.04		1.06	0.42		0.97	0.84		0.84	1.05	
Uniform Delay, d1	30.6	46.9		35.9	37.6		30.3	33.9		25.4	36.9	
Progression Factor	1.00	1.00		1.00	1.00		1.89	1.20		1.00	1.00	
Incremental Delay, d2	2.8	42.3		60.5	0.3		45.3	2.7		16.3	34.5	
Delay (s)	33.5	89.1		96.4	38.0		102.4	43.5		41.7	71.5	
Level of Service	C	F		F	D		F	D		D	E	
Approach Delay (s/veh)		77.7			70.4			48.1			68.0	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	64.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	101.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Future Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00		1.00	1.00	
Frt		0.931			0.965			0.981			0.996	
Flt Protected		0.984			0.966		0.950			0.950		
Satd. Flow (prot)	0	1323	0	0	1722	0	1530	4736	0	1736	4963	0
Flt Permitted		0.817			0.750		0.136			0.120		
Satd. Flow (perm)	0	1098	0	0	1332	0	219	4736	0	219	4963	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			25			34			6	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Adj. Flow (vph)	21	10	32	388	18	143	41	1151	169	104	2002	55
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	63	0	0	549	0	41	1320	0	104	2057	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	40.0	40.0		40.0	40.0		34.0	34.0		11.0	45.0	
Total Split (%)	47.1%	47.1%		47.1%	47.1%		40.0%	40.0%		12.9%	52.9%	
Maximum Green (s)	33.5	33.5		33.5	33.5		28.0	28.0		7.0	39.0	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		33.5			33.5		30.2	30.2		41.0	39.0	
Actuated g/C Ratio		0.39			0.39		0.36	0.36		0.48	0.46	
v/c Ratio		0.15			1.02		0.53	0.77		0.45	0.90	
Control Delay (s/veh)		17.3			69.9		53.0	28.3		18.7	28.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		17.3			69.9		53.0	28.3		18.7	28.1	
LOS		B			E		D	C		B	C	
Approach Delay (s/veh)		17.3			69.9			29.1			27.7	
Approach LOS		B			E			C			C	
Queue Length 50th (m)		7.1			~92.6		6.5	77.4		9.6	117.3	
Queue Length 95th (m)		16.4			#160.8		#25.6	96.8		18.8	#143.2	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		433			540		78	1704		230	2280	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.15			1.02		0.53	0.77		0.45	0.90	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 33.6	Intersection LOS: C

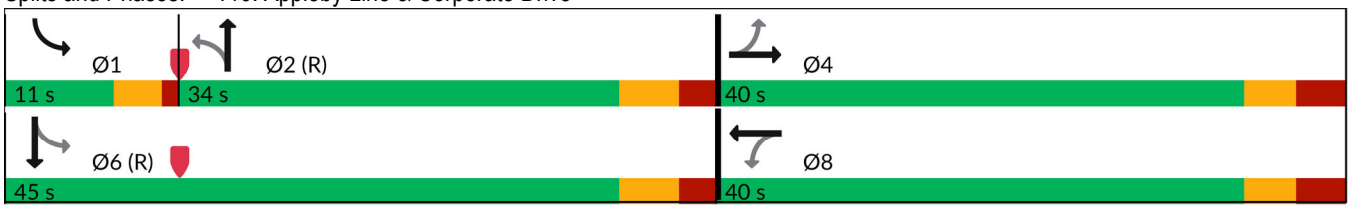
Intersection Capacity Utilization 98.6% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

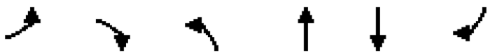
Splits and Phases: 116: Appleby Line & Corporate Drive



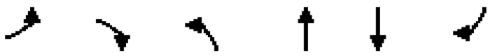
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Future Volume (vph)	21	10	31	380	18	140	40	1128	166	102	1962	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.93			0.96		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1323			1715		1529	4735		1735	4963	
Flt Permitted		0.82			0.75		0.14	1.00		0.12	1.00	
Satd. Flow (perm)		1098			1332		219	4735		219	4963	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	21	10	32	388	18	143	41	1151	169	104	2002	55
RTOR Reduction (vph)	0	1	0	0	15	0	0	22	0	0	3	0
Lane Group Flow (vph)	0	62	0	0	534	0	41	1298	0	104	2054	0
Confl. Peds. (#/hr)	5		7	7		5	5		8	8		5
Heavy Vehicles (%)	24%	13%	40%	2%	0%	4%	18%	7%	7%	4%	4%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		33.5			33.5		29.4	29.4		39.0	39.0	
Effective Green, g (s)		33.5			33.5		29.4	29.4		39.0	39.0	
Actuated g/C Ratio		0.39			0.39		0.35	0.35		0.46	0.46	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		432			524		75	1637		200	2277	
v/s Ratio Prot								0.27		0.03	c0.41	
v/s Ratio Perm		0.06			c0.40		0.19			0.20		
v/c Ratio		0.14			1.02		0.55	0.79		0.52	0.90	
Uniform Delay, d1		16.5			25.8		22.4	25.1		15.8	21.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.2			44.1		25.7	4.0		2.4	6.4	
Delay (s)		16.7			69.9		48.1	29.1		18.2	27.6	
Level of Service		B			E		D	C		B	C	
Approach Delay (s/veh)		16.7			69.9			29.7			27.1	
Approach LOS		B			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	33.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	201	668	1268	2391	122
Future Volume (vph)	34	201	668	1268	2391	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.993	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1313	3335	5036	5049	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1313	3333	5036	5049	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		203			7	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			6			6
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Adj. Flow (vph)	34	203	675	1281	2415	123
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	203	675	1281	2538	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	33.0	111.0	78.0	
Total Split (%)	26.0%	26.0%	22.0%	74.0%	52.0%	
Maximum Green (s)	32.0	32.0	29.0	104.0	71.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	10.4	10.4	42.4	125.6	79.2	
Actuated g/C Ratio	0.07	0.07	0.28	0.84	0.53	
v/c Ratio	0.27	0.73	0.72	0.30	0.95	
Control Delay (s/veh)	70.2	23.3	52.8	1.1	32.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	70.2	23.3	52.8	1.1	32.1	
LOS	E	C	D	A	C	
Approach Delay (s/veh)	30.0			18.9	32.1	
Approach LOS	C			B	C	
Queue Length 50th (m)	10.5	0.0	96.7	8.9	150.9	
Queue Length 95th (m)	21.4	30.8	m84.3	m10.4	m134.7	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	385	439	943	4217	2668	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.09	0.46	0.72	0.30	0.95	

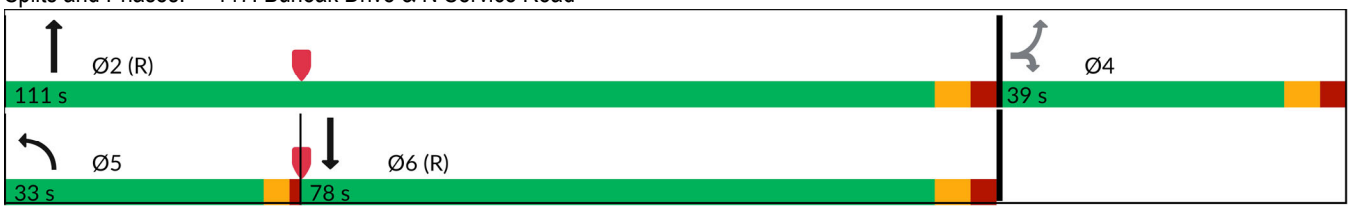
Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 26.6	Intersection LOS: C

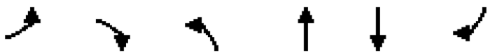
Intersection Capacity Utilization 89.7% ICU Level of Service E

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	34	201	668	1268	2391	122
Future Volume (vph)	34	201	668	1268	2391	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1313	3335	5036	5048	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1313	3335	5036	5048	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	34	203	675	1281	2415	123
RTOR Reduction (vph)	0	189	0	0	3	0
Lane Group Flow (vph)	34	14	675	1281	2535	0
Confl. Peds. (#/hr)			6			6
Heavy Vehicles (%)	0%	23%	5%	3%	2%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	10.4	10.4	42.4	125.6	79.2	
Effective Green, g (s)	10.4	10.4	42.4	125.6	79.2	
Actuated g/C Ratio	0.07	0.07	0.28	0.84	0.53	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	125	91	942	4216	2665	
v/s Ratio Prot			c0.20	0.25	c0.50	
v/s Ratio Perm	c0.02	0.01				
v/c Ratio	0.27	0.15	0.72	0.30	0.95	
Uniform Delay, d1	66.2	65.7	48.4	2.7	33.6	
Progression Factor	1.00	1.00	1.07	0.38	0.92	
Incremental Delay, d2	1.2	0.8	0.3	0.0	1.1	
Delay (s)	67.4	66.5	52.3	1.0	31.9	
Level of Service	E	E	D	A	C	
Approach Delay (s/veh)	66.6			18.7	31.9	
Approach LOS	E			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1612	1269	0	0	3053
Future Volume (vph)	1445	1612	1269	0	0	3053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2760	5036	0	0	5036
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2760	5036	0	0	5036
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		38				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Adj. Flow (vph)	1554	1733	1365	0	0	3283
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1554	1733	1365	0	0	3283
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	73.0	73.0	77.0			77.0
Total Split (%)	48.7%	48.7%	51.3%			51.3%
Maximum Green (s)	66.0	66.0	71.0			71.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
v/c Ratio	1.07	1.40	0.57			1.38
Control Delay (s/veh)	84.8	219.3	29.7			199.3
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	84.8	219.3	29.7			199.3
LOS	F	F	C			F
Approach Delay (s/veh)	155.7		29.7			199.3
Approach LOS	F		C			F
Queue Length 50th (m)	~288.6	~418.5	113.6			~504.8
Queue Length 95th (m)	#334.3	#467.3	129.3			#523.8
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1453	1235	2383			2383
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.07	1.40	0.57			1.38

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.40			
Intersection Signal Delay (s/veh): 152.1		Intersection LOS: F	
Intersection Capacity Utilization 111.0%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

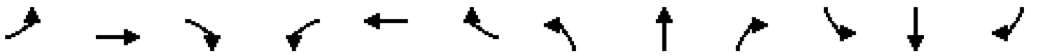
Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp



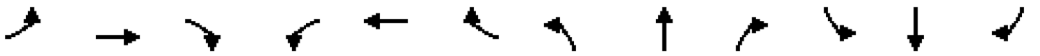


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1445	1612	1269	0	0	3053
Future Volume (vph)	1445	1612	1269	0	0	3053
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3303	2760	5036			5036
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3303	2760	5036			5036
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	1554	1733	1365	0	0	3283
RTOR Reduction (vph)	0	21	0	0	0	0
Lane Group Flow (vph)	1554	1712	1365	0	0	3283
Heavy Vehicles (%)	6%	3%	3%	0%	0%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	66.0	66.0	71.0			71.0
Effective Green, g (s)	66.0	66.0	71.0			71.0
Actuated g/C Ratio	0.44	0.44	0.47			0.47
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1453	1214	2383			2383
v/s Ratio Prot	0.47		0.27			c0.65
v/s Ratio Perm		c0.62				
v/c Ratio	1.07	1.41	0.57			1.38
Uniform Delay, d1	42.0	42.0	28.5			39.5
Progression Factor	1.00	1.00	1.00			0.75
Incremental Delay, d2	44.6	189.5	1.0			171.8
Delay (s)	86.6	231.5	29.5			201.4
Level of Service	F	F	C			F
Approach Delay (s/veh)	163.0		29.5			201.4
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	155.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	111.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Future Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor		1.00	0.99									
Frt		0.951	0.850			0.865		0.999				
Flt Protected	0.950	0.979										
Satd. Flow (prot)	1610	2856	1336	0	0	1417	0	5032	0	0	4941	0
Flt Permitted	0.950	0.979									0.937	
Satd. Flow (perm)	1610	2856	1318	0	0	1417	0	5032	0	0	4629	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		41	94			86		1				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)			1	1			10					10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Adj. Flow (vph)	553	138	456	0	0	104	0	1158	6	6	2812	0
Shared Lane Traffic (%)	46%		42%									
Lane Group Flow (vph)	299	584	264	0	0	104	0	1164	0	0	2818	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

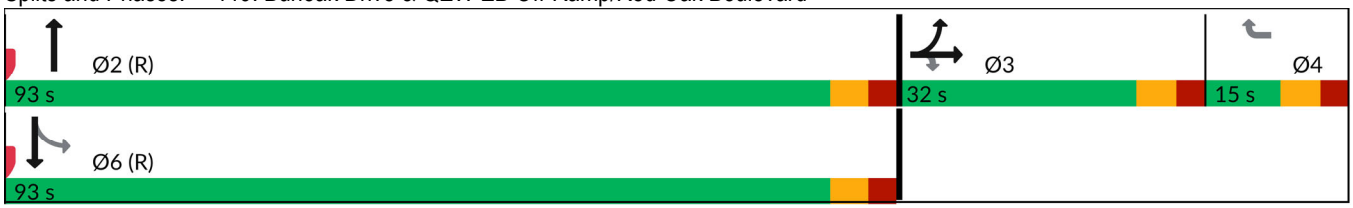


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	15.0	15.0	15.0			15.0		39.0		29.0	29.0	
Total Split (s)	32.0	32.0	32.0			15.0		93.0		93.0	93.0	
Total Split (%)	22.9%	22.9%	22.9%			10.7%		66.4%		66.4%	66.4%	
Maximum Green (s)	25.0	25.0	25.0			8.0		86.0		86.0	86.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)								7.0		7.0	7.0	
Flash Don't Walk (s)								25.0		15.0	15.0	
Pedestrian Calls (#/hr)								0		0	0	
Act Effct Green (s)	25.0	25.0	25.0			8.0		86.0			86.0	
Actuated g/C Ratio	0.18	0.18	0.18			0.06		0.61			0.61	
v/c Ratio	1.04	1.08	0.85			0.64		0.38			0.99	
Control Delay (s/veh)	119.2	110.0	59.5			36.2		14.0			41.6	
Queue Delay	0.0	0.0	0.0			0.0		0.0			4.4	
Total Delay (s/veh)	119.2	110.0	59.5			36.2		14.0			46.0	
LOS	F	F	E			D		B			D	
Approach Delay (s/veh)		100.8			36.2			14.0			46.0	
Approach LOS		F			D			B			D	
Queue Length 50th (m)	~104.6	~109.7	58.7			5.7		60.4			291.8	
Queue Length 95th (m)	#172.0	#156.1	#117.2			#31.9		70.1			#347.1	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	287	543	312			162		3091			2843	
Starvation Cap Reductn	0	0	0			0		0			52	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	1.04	1.08	0.85			0.64		0.38			1.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 50.7	Intersection LOS: D

Intersection Capacity Utilization 81.6% ICU Level of Service D
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

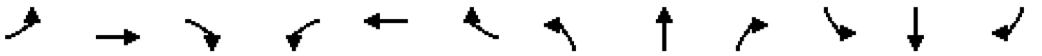
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



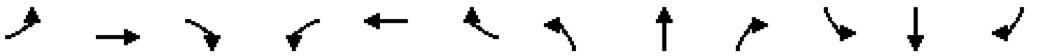
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Future Volume (vph)	514	128	424	0	0	97	0	1077	6	6	2615	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	0.99			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.95	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1610	2854	1318			1417		5033			4940	
Flt Permitted	0.95	0.98	1.00			1.00		1.00			0.94	
Satd. Flow (perm)	1610	2854	1318			1417		5033			4628	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	553	138	456	0	0	104	0	1158	6	6	2812	0
RTOR Reduction (vph)	0	34	77	0	0	81	0	0	0	0	0	0
Lane Group Flow (vph)	299	550	187	0	0	23	0	1164	0	0	2818	0
Confl. Peds. (#/hr)			1	1			10					10
Heavy Vehicles (%)	2%	8%	10%	0%	0%	16%	0%	3%	0%	0%	5%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	25.0	25.0	25.0			8.0		86.0			86.0	
Effective Green, g (s)	25.0	25.0	25.0			8.0		86.0			86.0	
Actuated g/C Ratio	0.18	0.18	0.18			0.06		0.61			0.61	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	287	509	235			80		3091			2842	
v/s Ratio Prot	0.19	c0.19						0.23				
v/s Ratio Perm			0.14			c0.02					c0.61	
v/c Ratio	1.04	1.08	0.79			0.29		0.38			0.99	
Uniform Delay, d1	57.5	57.5	55.0			63.3		13.5			26.6	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	64.4	63.6	16.7			2.0		0.4			15.0	
Delay (s)	121.9	121.1	71.8			65.2		13.9			41.7	
Level of Service	F	F	E			E		B			D	
Approach Delay (s/veh)		110.0			65.2			13.9			41.7	
Approach LOS		F			E			B			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	81.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Future Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00			1.00	
Frt		0.957			0.884			0.967			0.997	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1583	1681	0	1504	1571	0	1719	4773	0	1752	4925	0
Flt Permitted	0.717			0.332			0.058			0.062		
Satd. Flow (perm)	1195	1681	0	526	1571	0	105	4773	0	114	4925	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			48			78			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)							2		1	1		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Adj. Flow (vph)	57	140	56	92	14	48	172	1778	505	115	2353	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	196	0	92	62	0	172	2283	0	115	2396	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		11.8	47.0		13.6	66.2		11.8	64.4	
Total Split (%)	28.2%	28.2%		9.4%	37.6%		10.9%	53.0%		9.4%	51.5%	
Maximum Green (s)	29.1	29.1		7.8	40.9		9.6	59.6		7.8	57.8	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	18.8	18.8		32.6	30.5		83.7	68.5		76.5	64.6	
Actuated g/C Ratio	0.15	0.15		0.26	0.24		0.67	0.55		0.61	0.52	
v/c Ratio	0.32	0.74		0.47	0.15		0.71	0.86		0.60	0.94	
Control Delay (s/veh)	50.2	62.6		42.9	13.3		44.1	28.8		25.5	37.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.6		0.0	0.0	
Total Delay (s/veh)	50.2	62.6		42.9	13.3		44.1	29.3		25.5	37.3	
LOS	D	E		D	B		D	C		C	D	
Approach Delay (s/veh)		59.8			31.0			30.4			36.7	
Approach LOS		E			C			C			D	
Queue Length 50th (m)	14.7	46.3		21.5	3.0		27.2	180.3		0.0	175.8	
Queue Length 95th (m)	28.1	69.4		35.8	14.4		#66.0	#256.6		m20.5	m#168.9	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	278	402		198	546		241	2649		194	2544	
Starvation Cap Reductn	0	0		0	0		0	108		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.21	0.49		0.46	0.11		0.71	0.90		0.59	0.94	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.94	
Intersection Signal Delay (s/veh): 34.7	Intersection LOS: C

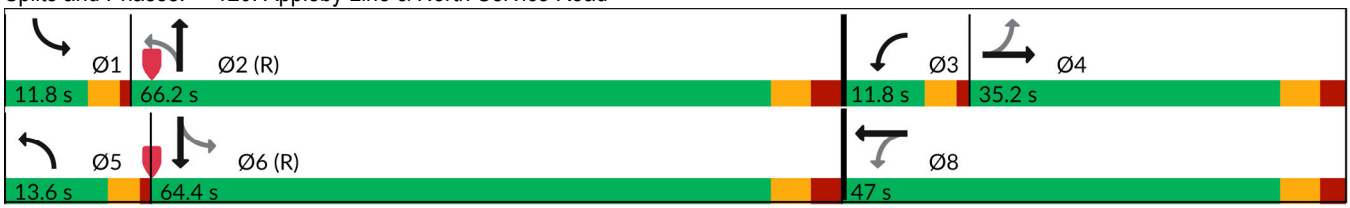
Intersection Capacity Utilization 86.4% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Future Volume (vph)	54	133	53	87	13	46	163	1689	480	109	2235	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.88		1.00	0.97		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1583	1682		1504	1571		1719	4773		1752	4926	
Flt Permitted	0.72	1.00		0.33	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1194	1682		525	1571		106	4773		114	4926	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	57	140	56	92	14	48	172	1778	505	115	2353	43
RTOR Reduction (vph)	0	13	0	0	36	0	0	35	0	0	1	0
Lane Group Flow (vph)	57	183	0	92	26	0	172	2248	0	115	2395	0
Confl. Peds. (#/hr)							2		1	1		2
Heavy Vehicles (%)	14%	3%	21%	20%	10%	6%	5%	5%	3%	3%	5%	3%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.8	18.8		30.5	30.5		81.7	68.5		73.9	64.6	
Effective Green, g (s)	18.8	18.8		30.5	30.5		81.7	68.5		73.9	64.6	
Actuated g/C Ratio	0.15	0.15		0.24	0.24		0.65	0.55		0.59	0.52	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	179	252		188	383		239	2615		189	2545	
v/s Ratio Prot		c0.11		c0.03	0.02		c0.08	0.47		0.05	c0.49	
v/s Ratio Perm	0.05			0.09			0.39			0.31		
v/c Ratio	0.32	0.73		0.49	0.07		0.72	0.86		0.61	0.94	
Uniform Delay, d1	47.4	50.7		38.6	36.3		35.3	24.1		21.4	28.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.13	1.26	
Incremental Delay, d2	1.0	10.0		2.0	0.1		9.9	4.0		0.5	1.0	
Delay (s)	48.4	60.7		40.6	36.4		45.2	28.1		24.7	36.7	
Level of Service	D	E		D	D		D	C		C	D	
Approach Delay (s/veh)		57.9			38.9			29.3			36.1	
Approach LOS		E			D			C			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2774	0	0	2421
Future Volume (vph)	586	663	2774	0	0	2421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3183	2632	4988	0	0	4893
Flt Permitted	0.950					
Satd. Flow (perm)	3183	2632	4988	0	0	4893
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Adj. Flow (vph)	644	729	3048	0	0	2660
Shared Lane Traffic (%)						
Lane Group Flow (vph)	644	729	3048	0	0	2660
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

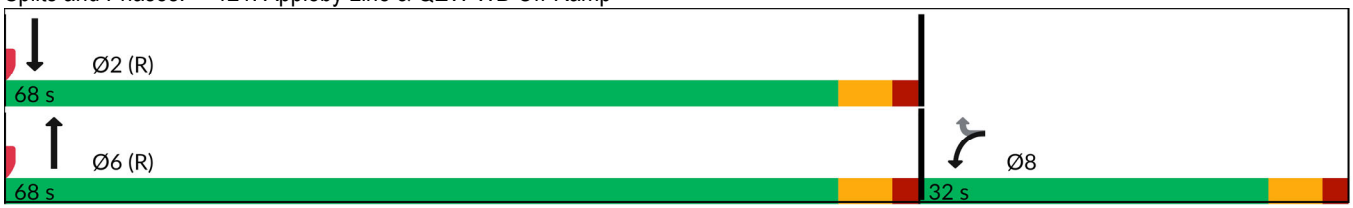


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	32.0	32.0	68.0			68.0
Total Split (%)	32.0%	32.0%	68.0%			68.0%
Maximum Green (s)	26.0	26.0	62.0			62.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	26.0	26.0	62.0			62.0
Actuated g/C Ratio	0.26	0.26	0.62			0.62
v/c Ratio	0.78	1.06	0.99			0.88
Control Delay (s/veh)	42.0	89.4	19.9			20.2
Queue Delay	0.0	0.0	0.0			0.4
Total Delay (s/veh)	42.0	89.4	19.9			20.6
LOS	D	F	B			C
Approach Delay (s/veh)	67.1		19.9			20.6
Approach LOS	E		B			C
Queue Length 50th (m)	67.3	~99.0	125.1			158.3
Queue Length 95th (m)	89.9	#142.7 m	#207.8			185.7
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	827	685	3092			3033
Starvation Cap Reductn	0	0	0			79
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.78	1.06	0.99			0.90

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.06			
Intersection Signal Delay (s/veh): 29.3		Intersection LOS: C	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

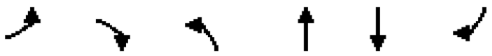
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



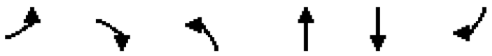


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	586	663	2774	0	0	2421
Future Volume (vph)	586	663	2774	0	0	2421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3183	2632	4988			4893
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3183	2632	4988			4893
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	644	729	3048	0	0	2660
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	644	728	3048	0	0	2660
Heavy Vehicles (%)	10%	8%	4%	0%	0%	6%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	26.0	26.0	62.0			62.0
Effective Green, g (s)	26.0	26.0	62.0			62.0
Actuated g/C Ratio	0.26	0.26	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	827	684	3092			3033
v/s Ratio Prot	0.20		c0.61			0.54
v/s Ratio Perm		c0.28				
v/c Ratio	0.78	1.06	0.99			0.88
Uniform Delay, d1	34.3	37.0	18.6			15.8
Progression Factor	1.00	1.00	0.68			1.00
Incremental Delay, d2	4.7	52.6	6.1			4.0
Delay (s)	39.0	89.6	18.8			19.8
Level of Service	D	F	B			B
Approach Delay (s/veh)	65.9		18.8			19.8
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1026	544	0	2253	2443	0
Future Volume (vph)	1026	544	0	2253	2443	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2707	0	4893	4893	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2707	0	4893	4893	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Adj. Flow (vph)	1140	604	0	2503	2714	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1140	604	0	2503	2714	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



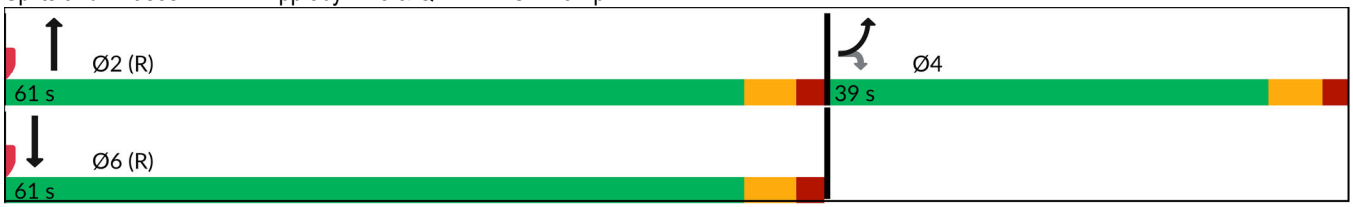
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	39.0	39.0		61.0	61.0	
Total Split (%)	39.0%	39.0%		61.0%	61.0%	
Maximum Green (s)	33.0	33.0		55.0	55.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	33.0	33.0		55.0	55.0	
Actuated g/C Ratio	0.33	0.33		0.55	0.55	
v/c Ratio	1.04	0.68		0.93	1.01	
Control Delay (s/veh)	70.9	33.3		28.5	33.0	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	70.9	33.3		28.5	33.0	
LOS	E	C		C	C	
Approach Delay (s/veh)	57.9			28.5	33.0	
Approach LOS	E			C	C	
Queue Length 50th (m)	~134.3	61.7		169.6	~136.6	
Queue Length 95th (m)	#176.8	84.3		#200.1	#252.1	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	1100	894		2691	2691	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	1.04	0.68		0.93	1.01	

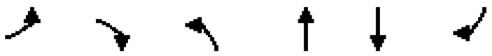
Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.04			
Intersection Signal Delay (s/veh): 37.6		Intersection LOS: D	
Intersection Capacity Utilization 86.8%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

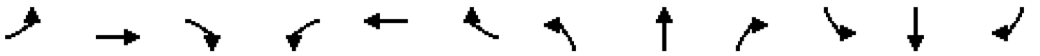




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1026	544	0	2253	2443	0
Future Volume (vph)	1026	544	0	2253	2443	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2707		4893	4893	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2707		4893	4893	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	1140	604	0	2503	2714	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	1140	603	0	2503	2714	0
Heavy Vehicles (%)	5%	5%	0%	6%	6%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	33.0	33.0		55.0	55.0	
Effective Green, g (s)	33.0	33.0		55.0	55.0	
Actuated g/C Ratio	0.33	0.33		0.55	0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1100	893		2691	2691	
v/s Ratio Prot	c0.34			0.51	c0.55	
v/s Ratio Perm		0.22				
v/c Ratio	1.04	0.67		0.93	1.01	
Uniform Delay, d1	33.5	28.9		20.7	22.5	
Progression Factor	1.00	1.00		1.00	0.78	
Incremental Delay, d2	37.0	2.0		7.2	14.2	
Delay (s)	70.5	30.9		28.0	31.9	
Level of Service	E	C		C	C	
Approach Delay (s/veh)	56.8			28.0	31.9	
Approach LOS	E			C	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Future Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00	1.00		1.00	0.99		1.00		0.99	1.00		0.98
Frt		0.982			0.900				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1530	3263	0	1656	2866	0	1687	5036	1568	3433	4893	1417
Flt Permitted	0.349			0.228			0.266			0.950		
Satd. Flow (perm)	560	3263	0	397	2866	0	472	5036	1548	3432	4893	1395
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			294				209			337
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Adj. Flow (vph)	227	527	74	112	156	311	90	1526	414	557	1028	337
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	601	0	112	467	0	90	1526	414	557	1028	337
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		11.0	38.4		11.0	39.6	39.6	21.0	49.6	49.6
Total Split (%)	10.0%	34.9%		10.0%	34.9%		10.0%	36.0%	36.0%	19.1%	45.1%	45.1%
Maximum Green (s)	7.0	32.0		7.0	32.0		7.0	33.3	33.3	17.0	43.3	43.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	34.6	25.2		34.6	25.2		44.2	34.2	34.2	23.0	51.6	51.6
Actuated g/C Ratio	0.31	0.23		0.31	0.23		0.40	0.31	0.31	0.21	0.47	0.47
v/c Ratio	0.96	0.79		0.55	0.53		0.33	0.98	0.66	0.78	0.45	0.41
Control Delay (s/veh)	81.1	46.9		34.6	14.8		16.7	55.9	21.8	50.6	21.8	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	81.1	46.9		34.6	14.8		16.7	55.9	21.8	50.6	21.8	4.0
LOS	F	D		C	B		B	E	C	D	C	A
Approach Delay (s/veh)		56.3			18.6			47.2			27.0	
Approach LOS		E			B			D			C	
Queue Length 50th (m)	43.8	69.1		18.6	17.7		9.0	~128.9	41.0	61.9	60.5	0.0
Queue Length 95th (m)	#82.7	84.2		30.2	31.8		19.5	#166.2	78.9	#105.4	81.7	19.9
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	237	959		204	1042		275	1563	624	716	2293	832
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.63		0.55	0.45		0.33	0.98	0.66	0.78	0.45	0.41

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 110			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.98			
Intersection Signal Delay (s/veh): 38.3		Intersection LOS: D	

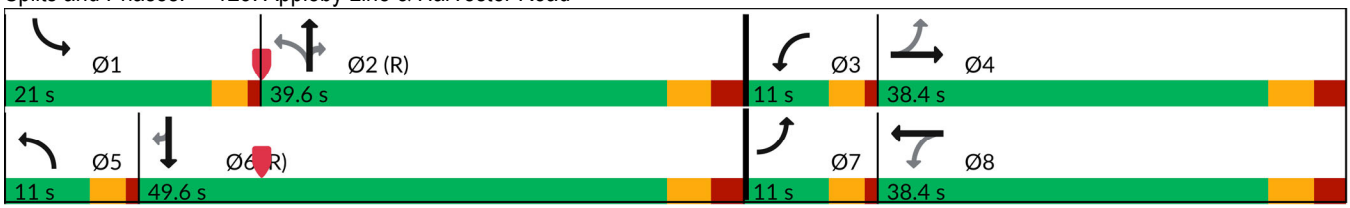
Intersection Capacity Utilization 87.9% ICU Level of Service E

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

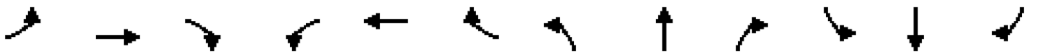
Splits and Phases: 123: Appleby Line & Harvester Road



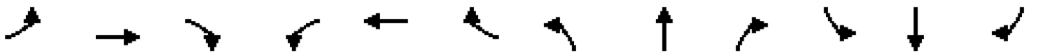
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Future Volume (vph)	213	495	70	105	147	292	85	1434	389	524	966	317
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.98		1.00	0.90		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1528	3262		1656	2867		1687	5036	1548	3433	4893	1395
Flt Permitted	0.35	1.00		0.23	1.00		0.27	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	562	3262		397	2867		473	5036	1548	3433	4893	1395
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	227	527	74	112	156	311	90	1526	414	557	1028	337
RTOR Reduction (vph)	0	11	0	0	227	0	0	0	144	0	0	182
Lane Group Flow (vph)	227	590	0	112	240	0	90	1526	270	557	1028	155
Confl. Peds. (#/hr)	6		1	1		6	3		1	1		3
Heavy Vehicles (%)	18%	6%	26%	9%	6%	15%	7%	3%	3%	2%	6%	14%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	32.2	25.2		32.2	25.2		40.5	34.1	34.1	23.0	50.7	50.7
Effective Green, g (s)	32.2	25.2		32.2	25.2		40.5	34.1	34.1	23.0	50.7	50.7
Actuated g/C Ratio	0.29	0.23		0.29	0.23		0.37	0.31	0.31	0.21	0.46	0.46
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	225	747		196	656		244	1561	479	717	2255	642
v/s Ratio Prot	c0.06	0.18		0.04	0.08		0.02	c0.30		c0.16	0.21	
v/s Ratio Perm	c0.23			0.13			0.11		0.17			0.11
v/c Ratio	1.01	0.79		0.57	0.37		0.37	0.98	0.56	0.78	0.46	0.24
Uniform Delay, d1	37.4	39.9		30.2	35.7		23.2	37.6	31.7	41.1	20.2	18.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	62.3	5.7		4.0	0.3		0.9	18.0	4.7	5.3	0.7	0.9
Delay (s)	99.7	45.6		34.2	36.0		24.1	55.6	36.5	46.4	20.9	18.9
Level of Service	F	D		C	D		C	E	D	D	C	B
Approach Delay (s/veh)		60.4			35.7			50.3			27.9	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	42.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Future Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.98	1.00		0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1538	1597	1610	1417	1787	3539	1429	1583	5085	1538
Flt Permitted	0.950			0.634			0.097			0.097		
Satd. Flow (perm)	3389	1776	1513	1062	1610	1395	182	3539	1403	162	5085	1513
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			228			153			150			236
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Adj. Flow (vph)	757	196	296	125	82	232	251	1429	154	334	1472	236
Shared Lane Traffic (%)												
Lane Group Flow (vph)	757	196	296	125	82	232	251	1429	154	334	1472	236
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	33.0	47.0	47.0	13.0	27.0	27.0	12.0	48.0	48.0	12.0	48.0	48.0
Total Split (%)	27.5%	39.2%	39.2%	10.8%	22.5%	22.5%	10.0%	40.0%	40.0%	10.0%	40.0%	40.0%
Maximum Green (s)	28.0	40.5	40.5	9.0	20.5	20.5	8.0	41.2	41.2	8.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	28.0	33.8	33.8	24.8	13.6	13.6	58.9	41.2	41.2	58.9	41.2	41.2
Actuated g/C Ratio	0.23	0.28	0.28	0.21	0.11	0.11	0.49	0.34	0.34	0.49	0.34	0.34
v/c Ratio	0.96	0.39	0.50	0.48	0.45	0.79	0.87	1.18	0.27	1.30	0.84	0.35
Control Delay (s/veh)	68.6	36.4	11.4	31.2	56.0	37.3	58.8	124.3	5.9	192.3	41.9	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	68.6	36.4	11.4	31.2	56.0	37.3	58.8	124.3	5.9	192.3	41.9	5.0
LOS	E	D	B	C	E	D	E	F	A	F	D	A
Approach Delay (s/veh)		50.0			39.1			105.4			62.2	
Approach LOS		D			D			F			E	
Queue Length 50th (m)	97.9	41.7	13.3	21.6	21.9	20.7	43.5	~226.2	0.7	~97.5	124.6	0.0
Queue Length 95th (m)	#138.0	59.4	36.8	32.8	38.2	50.7	#119.7	#271.3	16.8	#193.2	144.9	18.1
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	793	599	661	262	275	365	289	1215	580	256	1745	674
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.33	0.45	0.48	0.30	0.64	0.87	1.18	0.27	1.30	0.84	0.35

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 56 (47%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.30	
Intersection Signal Delay (s/veh): 71.9	Intersection LOS: E

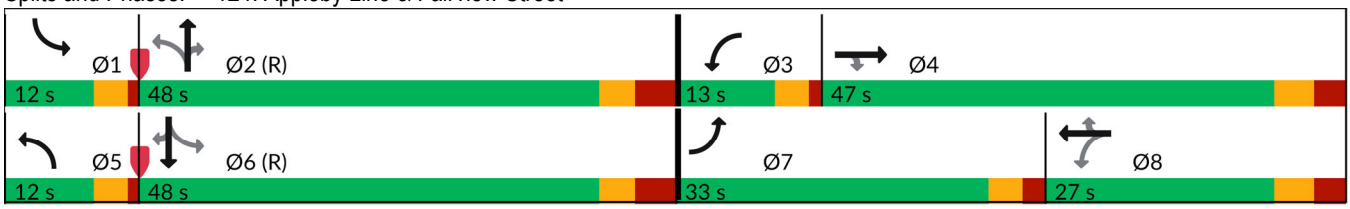
Intersection Capacity Utilization 102.7% ICU Level of Service G

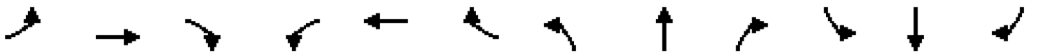
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

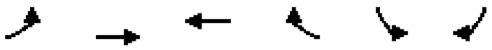




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Future Volume (vph)	719	186	281	119	78	220	238	1358	146	317	1398	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1513	1594	1610	1395	1787	3539	1403	1583	5085	1513
Flt Permitted	0.95	1.00	1.00	0.63	1.00	1.00	0.10	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	3400	1776	1513	1065	1610	1395	183	3539	1403	162	5085	1513
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	757	196	296	125	82	232	251	1429	154	334	1472	236
RTOR Reduction (vph)	0	0	164	0	0	136	0	0	99	0	0	155
Lane Group Flow (vph)	757	196	132	125	82	96	251	1429	56	334	1472	81
Confl. Peds. (#/hr)	3		4	4		3	4		6	6		4
Heavy Vehicles (%)	3%	7%	5%	13%	18%	14%	1%	2%	13%	14%	2%	5%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	28.0	33.9	33.9	22.3	13.6	13.6	56.1	41.2	41.2	56.1	41.2	41.2
Effective Green, g (s)	28.0	33.9	33.9	22.3	13.6	13.6	56.1	41.2	41.2	56.1	41.2	41.2
Actuated g/C Ratio	0.23	0.28	0.28	0.19	0.11	0.11	0.47	0.34	0.34	0.47	0.34	0.34
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	793	501	427	236	182	158	284	1215	481	252	1745	519
v/s Ratio Prot	c0.22	0.11		0.04	0.05		0.11	0.40		c0.16	0.29	
v/s Ratio Perm			0.09	0.06		c0.07	0.30		0.04	c0.46		0.05
v/c Ratio	0.95	0.39	0.31	0.53	0.45	0.61	0.88	1.18	0.12	1.33	0.84	0.16
Uniform Delay, d1	45.4	34.7	33.9	43.2	49.7	50.7	32.1	39.4	26.9	36.4	36.4	27.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	21.4	0.5	0.4	2.1	1.8	6.5	26.0	88.2	0.5	171.3	5.2	0.6
Delay (s)	66.8	35.2	34.3	45.3	51.5	57.2	58.1	127.6	27.4	207.7	41.6	28.0
Level of Service	E	D	C	D	D	E	E	F	C	F	D	C
Approach Delay (s/veh)		54.1			52.7			109.6			67.2	
Approach LOS		D			D			F			E	

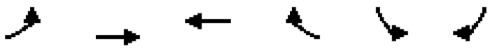
Intersection Summary			
HCM 2000 Control Delay (s/veh)	77.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	102.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	66	1310	783	22	6	22
Future Volume (vph)	66	1310	783	22	6	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.996		0.895	
Flt Protected	0.950				0.989	
Satd. Flow (prot)	1770	3539	3525	0	1649	0
Flt Permitted	0.950				0.989	
Satd. Flow (perm)	1770	3539	3525	0	1649	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		522.8	231.3		95.3	
Travel Time (s)		31.4	13.9		8.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	72	1424	851	24	7	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	72	1424	875	0	31	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

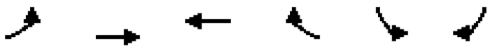
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	66	1310	783	22	6	22
Future Volume (Veh/h)	66	1310	783	22	6	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	72	1424	851	24	7	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			231			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	875				1719	438
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	683				1603	206
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				91	97
cM capacity (veh/h)	831				81	734

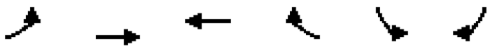
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	72	712	712	567	308	31
Volume Left	72	0	0	0	0	7
Volume Right	0	0	0	0	24	24
cSH	831	1700	1700	1700	1700	259
Volume to Capacity	0.09	0.42	0.42	0.33	0.18	0.12
Queue Length 95th (m)	2.3	0.0	0.0	0.0	0.0	3.2
Control Delay (s/veh)	9.7	0.0	0.0	0.0	0.0	20.7
Lane LOS	A					C
Approach Delay (s/veh)	0.5			0.0		20.7
Approach LOS						C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	630	802	9	2	3
Future Volume (vph)	26	630	802	9	2	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.998		0.919	
Flt Protected	0.950				0.980	
Satd. Flow (prot)	1770	3539	3532	0	1678	0
Flt Permitted	0.950				0.980	
Satd. Flow (perm)	1770	3539	3532	0	1678	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		121.9	747.2		127.1	
Travel Time (s)		7.3	44.8		11.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	28	685	872	10	2	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	685	882	0	5	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

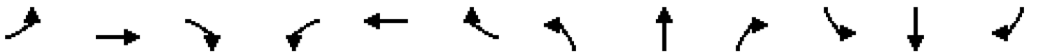
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.5%		ICU Level of Service A	
Analysis Period (min) 15			



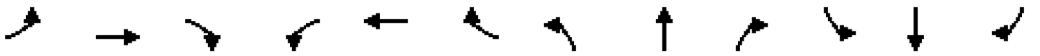
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	26	630	802	9	2	3
Future Volume (Veh/h)	26	630	802	9	2	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	685	872	10	2	3
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		122				
pX, platoon unblocked					0.92	
vC, conflicting volume	882				1276	441
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	882				1116	441
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				99	99
cM capacity (veh/h)	762				178	564

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	28	343	343	581	301	5
Volume Left	28	0	0	0	0	2
Volume Right	0	0	0	0	10	3
cSH	762	1700	1700	1700	1700	302
Volume to Capacity	0.04	0.20	0.20	0.34	0.18	0.02
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	0.4
Control Delay (s/veh)	9.9	0.0	0.0	0.0	0.0	17.1
Lane LOS	A					C
Approach Delay (s/veh)	0.4			0.0		17.1
Approach LOS						C

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Future Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.96	0.99		0.97	0.99		0.97	1.00		0.97
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5036	1583	3367	5085	1553	3502	5085	1568	3433	5085	1599
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3429	5036	1521	3337	5085	1514	3483	5085	1520	3423	5085	1543
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			279			298			237			146
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		273.4			294.0			2002.0			234.2	
Travel Time (s)		16.4			17.6			120.1			14.1	
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Adj. Flow (vph)	210	830	426	593	1779	298	605	1342	498	374	1055	271
Shared Lane Traffic (%)												
Lane Group Flow (vph)	210	830	426	593	1779	298	605	1342	498	374	1055	271
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	14.0	46.4	46.4	25.0	57.4	57.4	25.0	49.6	49.6	24.0	48.6	48.6
Total Split (%)	9.7%	32.0%	32.0%	17.2%	39.6%	39.6%	17.2%	34.2%	34.2%	16.6%	33.5%	33.5%
Maximum Green (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.2	42.2	19.0	41.2	41.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Actuated g/C Ratio	0.06	0.27	0.27	0.14	0.34	0.34	0.14	0.29	0.29	0.13	0.28	0.28
v/c Ratio	0.99	0.61	0.69	1.28	1.01	0.42	1.25	0.90	0.82	0.84	0.73	0.50
Control Delay (s/veh)	124.8	48.7	22.4	189.3	71.9	5.3	169.6	35.7	12.7	78.7	50.4	22.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	124.8	48.7	22.4	189.3	71.9	5.3	169.6	35.7	12.7	78.7	50.4	22.8
LOS	F	D	C	F	E	A	F	D	B	E	D	C
Approach Delay (s/veh)		52.0			90.5			64.1			52.2	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	33.7	82.6	40.8	~119.8	~210.1	0.0	~115.5	152.8	72.2	58.5	107.4	30.8
Queue Length 95th (m)	#62.1	98.4	83.6	#160.1	#241.3	21.2	m#95.6	m130.5	m52.4	#83.6	125.3	60.2
Internal Link Dist (m)		249.4			270.0			1978.0			210.2	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	213	1354	613	464	1753	717	483	1485	611	449	1444	542
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.61	0.69	1.28	1.01	0.42	1.25	0.90	0.82	0.83	0.73	0.50

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay (s/veh): 68.1	Intersection LOS: E

Intersection Capacity Utilization 113.1% ICU Level of Service H

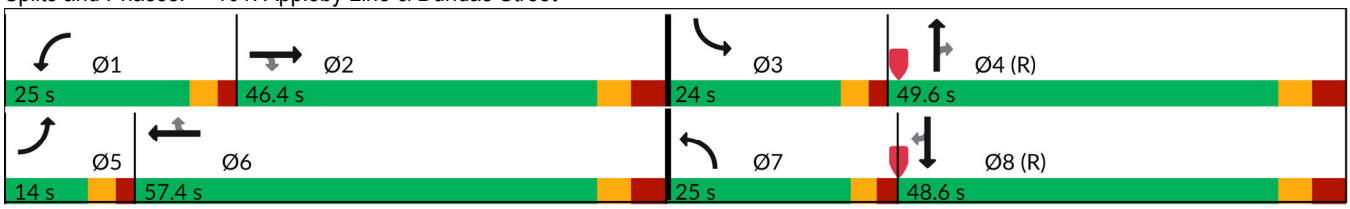
Analysis Period (min) 15

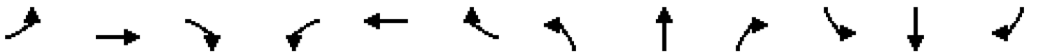
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 101: Appleby Line & Dundas Street

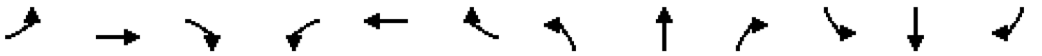




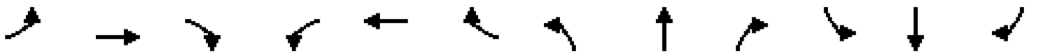
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Future Volume (vph)	204	805	413	575	1726	289	587	1302	483	363	1023	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.96	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3433	5036	1521	3367	5085	1514	3502	5085	1520	3433	5085	1543
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	210	830	426	593	1779	298	605	1342	498	374	1055	271
RTOR Reduction (vph)	0	0	204	0	0	195	0	0	168	0	0	105
Lane Group Flow (vph)	210	830	222	593	1779	103	605	1342	330	374	1055	166
Confl. Peds. (#/hr)	12		25	25		12	22		18	18		22
Heavy Vehicles (%)	2%	3%	2%	4%	2%	4%	0%	2%	3%	2%	2%	1%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Effective Green, g (s)	9.0	39.0	39.0	20.0	50.0	50.0	20.0	42.4	42.4	18.8	41.2	41.2
Actuated g/C Ratio	0.06	0.27	0.27	0.14	0.34	0.34	0.14	0.29	0.29	0.13	0.28	0.28
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	213	1354	409	464	1753	522	483	1486	444	445	1444	438
v/s Ratio Prot	0.06	0.16		c0.18	c0.35		c0.17	c0.26		0.11	0.21	
v/s Ratio Perm			0.15			0.07			0.22			0.11
v/c Ratio	0.99	0.61	0.54	1.28	1.01	0.20	1.25	0.90	0.74	0.84	0.73	0.38
Uniform Delay, d1	67.9	46.4	45.4	62.5	47.5	33.4	62.5	49.3	46.4	61.6	46.9	41.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.13	0.69	0.45	1.00	1.00	1.00
Incremental Delay, d2	57.5	0.8	1.5	140.9	25.2	0.2	115.3	1.0	1.1	14.7	3.3	2.5
Delay (s)	125.5	47.2	46.8	203.4	72.7	33.6	185.7	35.3	21.8	76.3	50.2	44.1
Level of Service	F	D	D	F	E	C	F	D	C	E	D	D
Approach Delay (s/veh)		58.3			97.4			69.8			55.0	
Approach LOS		E			F			E			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	73.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	113.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Future Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		0.99		0.97	1.00	1.00		1.00	0.99	
Frt		0.955				0.850		0.989			0.968	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3403	0	3367	5187	1599	3502	4959	0	3467	4880	0
Flt Permitted	0.106			0.950			0.950			0.950		
Satd. Flow (perm)	193	3403	0	3343	5187	1548	3490	4959	0	3461	4880	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		47				290		10			52	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		140.5			521.3			544.4			2002.0	
Travel Time (s)		8.4			31.3			32.7			120.1	
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Adj. Flow (vph)	218	740	319	162	1074	740	440	1842	144	602	1020	272
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	1059	0	162	1074	740	440	1986	0	602	1292	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	13.0	49.0		11.0	47.0	47.0	26.0	60.0		25.0	59.0	
Total Split (%)	9.0%	33.8%		7.6%	32.4%	32.4%	17.9%	41.4%		17.2%	40.7%	
Maximum Green (s)	9.0	42.6		7.0	40.6	40.6	21.0	53.5		21.0	52.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	54.0	42.6		7.0	40.6	40.6	20.5	53.5		21.0	53.0	
Actuated g/C Ratio	0.37	0.29		0.05	0.28	0.28	0.14	0.37		0.14	0.37	
v/c Ratio	1.31	1.03		1.00	0.74	1.15	0.89	1.08		1.20	0.71	
Control Delay (s/veh)	203.6	82.4		138.1	51.1	114.0	81.4	89.9		149.5	20.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	203.6	82.4		138.1	51.1	114.0	81.4	89.9		149.5	20.9	
LOS	F	F		F	D	F	F	F		F	C	
Approach Delay (s/veh)		103.1			81.8			88.3			61.8	
Approach LOS		F			F			F			E	
Queue Length 50th (m)	~67.1	~173.4		26.4	108.5	~197.6	68.0	~250.2		~110.4	99.3	
Queue Length 95th (m)	#124.0	#218.3		#52.4	126.3	#278.9	#96.1	#281.1		m#127.9	m102.3	
Internal Link Dist (m)		116.5			497.3			520.4			1978.0	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	167	1032		162	1452	642	507	1836		502	1816	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.31	1.03		1.00	0.74	1.15	0.87	1.08		1.20	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.31	
Intersection Signal Delay (s/veh): 82.5	Intersection LOS: F

Intersection Capacity Utilization 111.3% ICU Level of Service H

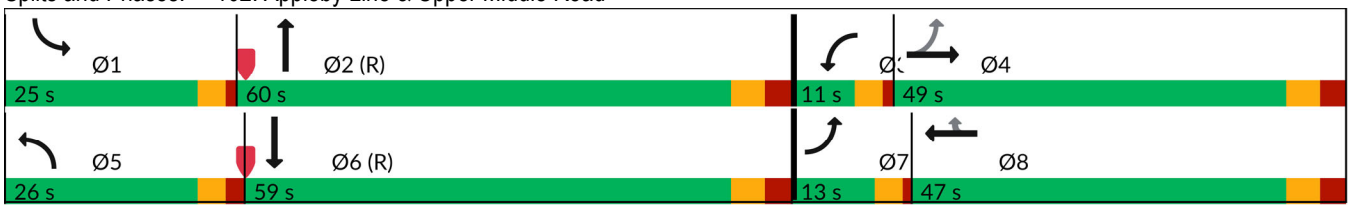
Analysis Period (min) 15

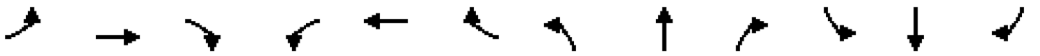
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 102: Appleby Line & Upper Middle Road



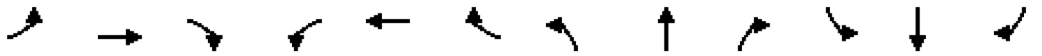


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Future Volume (vph)	216	733	316	160	1063	733	436	1824	143	596	1010	269
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1735	3403		3367	5187	1548	3502	4959		3467	4882	
Flt Permitted	0.11	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	194	3403		3367	5187	1548	3502	4959		3467	4882	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	218	740	319	162	1074	740	440	1842	144	602	1020	272
RTOR Reduction (vph)	0	33	0	0	0	209	0	6	0	0	33	0
Lane Group Flow (vph)	218	1026	0	162	1074	531	440	1980	0	602	1259	0
Confl. Peds. (#/hr)	13		20	20		13	13		19	19		13
Heavy Vehicles (%)	4%	0%	0%	4%	0%	1%	0%	3%	5%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	51.6	42.6		7.0	40.6	40.6	20.5	53.5		21.0	53.0	
Effective Green, g (s)	51.6	42.6		7.0	40.6	40.6	20.5	53.5		21.0	53.0	
Actuated g/C Ratio	0.36	0.29		0.05	0.28	0.28	0.14	0.37		0.14	0.37	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	164	999		162	1452	433	495	1829		502	1784	
v/s Ratio Prot	c0.08	0.30		0.05	0.21		0.13	c0.40		c0.17	0.26	
v/s Ratio Perm	c0.39					0.34						
v/c Ratio	1.33	1.03		1.00	0.74	1.23	0.89	1.08		1.20	0.71	
Uniform Delay, d1	38.5	51.2		69.0	47.4	52.2	61.1	45.8		62.0	39.3	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	0.52	
Incremental Delay, d2	183.9	35.5		70.7	2.0	121.0	17.4	47.2		98.5	1.1	
Delay (s)	222.4	86.7		139.7	49.4	173.2	78.6	93.0		160.2	21.6	
Level of Service	F	F		F	D	F	E	F		F	C	
Approach Delay (s/veh)		109.9			103.2			90.4			65.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	90.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	111.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Future Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	80.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		1	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00	1.00						1.00	0.99		0.99	
Frt		0.997							0.850		0.916	
Flt Protected	0.950							0.950			0.982	
Satd. Flow (prot)	1805	5111	0	1900	5136	0	0	1805	1615	0	1695	0
Flt Permitted	0.111							0.752			0.955	
Satd. Flow (perm)	211	5111	0	1900	5136	0	0	1428	1594	0	1648	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5							78		78	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		521.3			256.9			157.0			58.0	
Travel Time (s)		31.3			15.4			14.1			5.2	
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	3	1598	31	0	2288	0	81	0	17	3	0	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	3	1629	0	0	2288	0	0	81	17	0	8	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2	1		2	
Detector Template	Left	Thru		Left	Thru			Thru	Right		Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0	2.0		10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6	2.0		0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

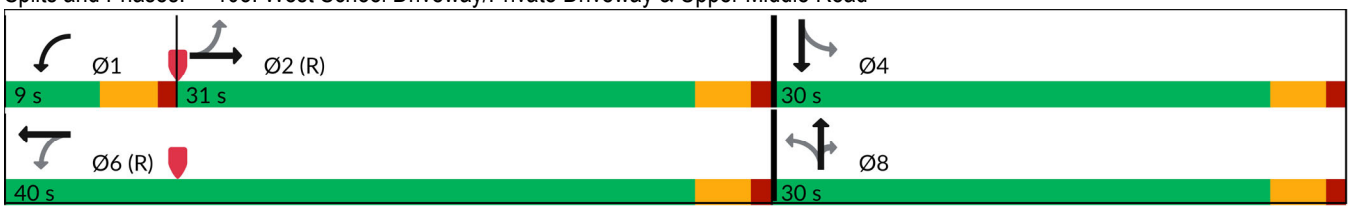


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Detector Phase	2	2		1	6		8	8	8	4	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	30.0	30.0		9.0	30.0		30.0	30.0	30.0	30.0	30.0	
Total Split (s)	31.0	31.0		9.0	40.0		30.0	30.0	30.0	30.0	30.0	
Total Split (%)	44.3%	44.3%		12.9%	57.1%		42.9%	42.9%	42.9%	42.9%	42.9%	
Maximum Green (s)	27.0	27.0		5.0	36.0		26.0	26.0	26.0	26.0	26.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0	4.0		4.0	
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Recall Mode	C-Max	C-Max		None	C-Max		Max	Max	Max	Max	Max	
Walk Time (s)	10.0	10.0			10.0		10.0	10.0	10.0	10.0	10.0	
Flash Don't Walk (s)	16.0	16.0			16.0		16.0	16.0	16.0	16.0	16.0	
Pedestrian Calls (#/hr)	0	0			0		0	0	0	0	0	
Act Effct Green (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
v/c Ratio	0.03	0.62			0.87			0.15	0.03		0.01	
Control Delay (s/veh)	9.3	13.4			19.6			15.7	0.1		0.0	
Queue Delay	0.0	0.0			0.0			0.0	0.0		0.0	
Total Delay (s/veh)	9.3	13.4			19.6			15.7	0.1		0.0	
LOS	A	B			B			B	A		A	
Approach Delay (s/veh)		13.4			19.6			13.0				
Approach LOS		B			B			B				
Queue Length 50th (m)	0.2	54.6			95.0			7.3	0.0		0.0	
Queue Length 95th (m)	1.5	68.9			117.7			16.1	0.0		0.0	
Internal Link Dist (m)		497.3			232.9			133.0			34.0	
Turn Bay Length (m)	30.0											
Base Capacity (vph)	108	2630			2641			530	641		661	
Starvation Cap Reductn	0	0			0			0	0		0	
Spillback Cap Reductn	0	0			0			0	0		0	
Storage Cap Reductn	0	0			0			0	0		0	
Reduced v/c Ratio	0.03	0.62			0.87			0.15	0.03		0.01	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay (s/veh): 16.9	Intersection LOS: B

Intersection Capacity Utilization 83.3% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 103: West School Driveway/Private Driveway & Upper Middle Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Future Volume (vph)	3	1518	29	0	2174	0	77	0	16	3	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Lane Util. Factor	1.00	0.91			0.91			1.00	1.00		1.00	
Frpb, ped/bikes	1.00	1.00			1.00			1.00	0.99		0.99	
Flpb, ped/bikes	1.00	1.00			1.00			1.00	1.00		1.00	
Frt	1.00	1.00			1.00			1.00	0.85		0.92	
Flt Protected	0.95	1.00			1.00			0.95	1.00		0.98	
Satd. Flow (prot)	1804	5112			5136			1804	1594		1694	
Flt Permitted	0.11	1.00			1.00			0.75	1.00		0.95	
Satd. Flow (perm)	211	5112			5136			1428	1594		1647	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	3	1598	31	0	2288	0	81	0	17	3	0	5
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	11	0	5	0
Lane Group Flow (vph)	3	1627	0	0	2288	0	0	81	6	0	3	0
Confl. Peds. (#/hr)	10		20	20		10	1		1	1		1
Heavy Vehicles (%)	0%	1%	6%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		2		1	6			8			4	
Permitted Phases	2			6			8		8	4		
Actuated Green, G (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Effective Green, g (s)	36.0	36.0			36.0			26.0	26.0		26.0	
Actuated g/C Ratio	0.51	0.51			0.51			0.37	0.37		0.37	
Clearance Time (s)	4.0	4.0			4.0			4.0	4.0		4.0	
Vehicle Extension (s)	5.0	5.0			5.0			5.0	5.0		5.0	
Lane Grp Cap (vph)	108	2629			2641			530	592		611	
v/s Ratio Prot		0.32			c0.45							
v/s Ratio Perm	0.01							c0.06	0.00		0.00	
v/c Ratio	0.03	0.62			0.87			0.15	0.01		0.00	
Uniform Delay, d1	8.4	12.1			14.9			14.7	13.9		13.9	
Progression Factor	1.00	1.00			1.00			1.00	1.00		1.00	
Incremental Delay, d2	0.5	1.1			4.1			0.6	0.0		0.0	
Delay (s)	8.9	13.2			19.0			15.3	13.9		13.9	
Level of Service	A	B			B			B	B		B	
Approach Delay (s/veh)		13.2			19.0			15.0			13.9	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1541	10	21	2144	32	62
Future Volume (vph)	1541	10	21	2144	32	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)		0.0	30.0		0.0	0.0
Storage Lanes		0	1		1	1
Taper Length (m)			7.5		7.5	
Lane Util. Factor	0.91	0.91	1.00	0.91	1.00	1.00
Ped Bike Factor						
Frt	0.999					0.850
Flt Protected			0.950		0.950	
Satd. Flow (prot)	5131	0	1570	5136	1805	1568
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	5131	0	1570	5136	1805	1568
Link Speed (k/h)	60			60	50	
Link Distance (m)	256.9			118.7	132.2	
Travel Time (s)	15.4			7.1	9.5	
Confl. Peds. (#/hr)		17	17			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	1%	0%	15%	1%	0%	3%
Adj. Flow (vph)	1639	11	22	2281	34	66
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1650	0	22	2281	34	66
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)		15	25		25	15
Sign Control	Free			Free	Stop	

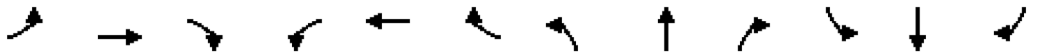
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 51.4%		ICU Level of Service A	
Analysis Period (min) 15			



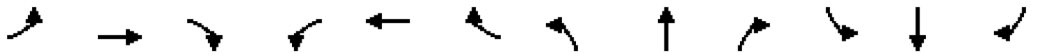
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1541	10	21	2144	32	62
Future Volume (Veh/h)	1541	10	21	2144	32	62
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1639	11	22	2281	34	66
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	257			119		
pX, platoon unblocked			0.78		0.68	0.78
vC, conflicting volume			1667		2466	569
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			853		0	0
tC, single (s)			4.4		6.8	7.0
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			96		95	92
cM capacity (veh/h)			539		658	828

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	WB 4	NB 1	NB 2
Volume Total	656	656	339	22	760	760	760	34	66
Volume Left	0	0	0	22	0	0	0	34	0
Volume Right	0	0	11	0	0	0	0	0	66
cSH	1700	1700	1700	539	1700	1700	1700	658	828
Volume to Capacity	0.39	0.39	0.20	0.04	0.45	0.45	0.45	0.05	0.08
Queue Length 95th (m)	0.0	0.0	0.0	1.0	0.0	0.0	0.0	1.3	2.1
Control Delay (s/veh)	0.0	0.0	0.0	12.0	0.0	0.0	0.0	10.8	9.7
Lane LOS				B				B	A
Approach Delay (s/veh)	0.0			0.1				10.1	
Approach LOS								B	

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Future Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt		0.991			0.986			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1805	5087	0	0	5039	0	1770	1583	0	1805	1593	0
Flt Permitted	0.090				0.940		0.564			0.757		
Satd. Flow (perm)	171	5087	0	0	4737	0	1051	1583	0	1438	1593	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			26			61			222	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			140.3			235.5	
Travel Time (s)		7.1			17.4			12.6			21.2	
Confl. Peds. (#/hr)	13					13						1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	188	1386	85	1	2101	214	15	0	1	57	0	129
Shared Lane Traffic (%)												
Lane Group Flow (vph)	188	1471	0	0	2316	0	15	1	0	57	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	10.2	58.0		47.8	47.8		9.5	32.0		22.5	22.5	
Total Split (%)	11.3%	64.4%		53.1%	53.1%		10.6%	35.6%		25.0%	25.0%	
Maximum Green (s)	6.2	54.0		43.8	43.8		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	54.0	54.0			43.8		28.0	28.0		26.1	26.1	
Actuated g/C Ratio	0.60	0.60			0.49		0.31	0.31		0.29	0.29	
v/c Ratio	0.87	0.48			1.00		0.04	0.00		0.14	0.21	
Control Delay (s/veh)	53.3	10.6			42.3		22.0	0.0		26.5	0.8	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	53.3	10.6			42.3		22.0	0.0		26.5	0.8	
LOS	D	B			D		C	A		C	A	
Approach Delay (s/veh)		15.5			42.3			20.6			8.7	
Approach LOS		B			D			C			A	
Queue Length 50th (m)	16.0	50.1			147.5		1.9	0.0		7.4	0.0	
Queue Length 95th (m)	#55.4	61.0			#193.8		6.5	0.0		19.4	0.0	
Internal Link Dist (m)		94.7			266.7			116.3			211.5	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	215	3059			2318		370	534		417	619	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.87	0.48			1.00		0.04	0.00		0.14	0.21	

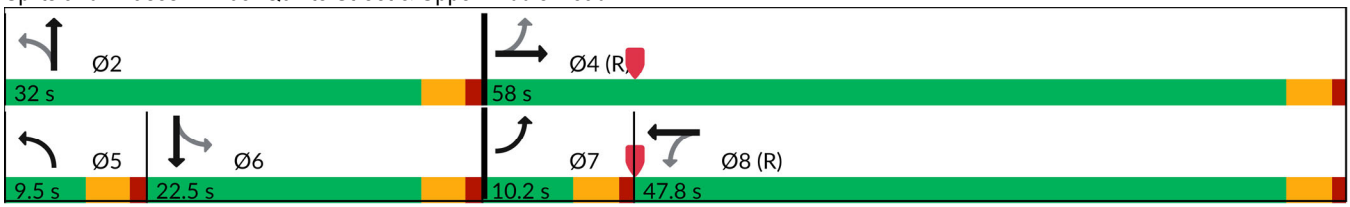
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 30.0	Intersection LOS: C

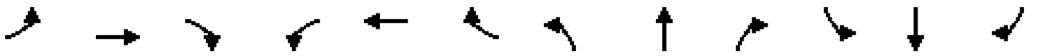
Intersection Capacity Utilization 96.2% ICU Level of Service F

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road

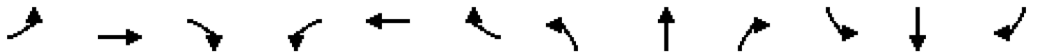




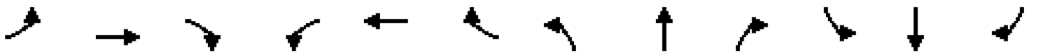
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Future Volume (vph)	180	1331	82	1	2017	205	14	0	1	55	0	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	5088			5040		1770	1583		1805	1593	
Flt Permitted	0.09	1.00			0.94		0.56	1.00		0.76	1.00	
Satd. Flow (perm)	170	5088			4736		1050	1583		1439	1593	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	188	1386	85	1	2101	214	15	0	1	57	0	129
RTOR Reduction (vph)	0	8	0	0	14	0	0	1	0	0	92	0
Lane Group Flow (vph)	188	1463	0	0	2302	0	15	0	0	57	37	0
Confl. Peds. (#/hr)	13					13						1
Heavy Vehicles (%)	0%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	50.8	50.8			40.6		31.2	31.2		26.1	26.1	
Effective Green, g (s)	50.8	50.8			40.6		31.2	31.2		26.1	26.1	
Actuated g/C Ratio	0.56	0.56			0.45		0.35	0.35		0.29	0.29	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	208	2871			2136		372	548		417	461	
v/s Ratio Prot	c0.06	0.29					c0.00	0.00			0.02	
v/s Ratio Perm	0.45				c0.49		0.01			c0.04		
v/c Ratio	0.90	0.51			1.08		0.04	0.00		0.14	0.08	
Uniform Delay, d1	21.7	12.0			24.7		19.5	19.2		23.6	23.2	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	36.9	0.6			44.2		0.0	0.0		0.7	0.3	
Delay (s)	58.6	12.6			68.9		19.6	19.2		24.3	23.6	
Level of Service	E	B			E		B	B		C	C	
Approach Delay (s/veh)		17.8			68.9			19.5			23.8	
Approach LOS		B			E			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Future Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor					0.99					0.99	0.99	
Frt		0.977			0.963			0.937			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	5010	0	1770	4897	0	1770	1745	0	3502	1588	0
Flt Permitted	0.059			0.202			0.620			0.950		
Satd. Flow (perm)	109	5010	0	376	4897	0	1155	1745	0	3476	1588	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		43			92			11			156	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			131.5			321.0	
Travel Time (s)		17.4			14.7			11.8			28.9	
Confl. Peds. (#/hr)	8					8				5		2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Adj. Flow (vph)	233	1047	185	16	1928	638	177	15	11	252	20	202
Shared Lane Traffic (%)												
Lane Group Flow (vph)	233	1232	0	16	2566	0	177	26	0	252	222	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.0	30.0		9.5	30.0		9.0	30.0		9.0	30.5	
Total Split (s)	17.0	76.4		9.6	69.0		12.0	30.0		14.0	32.0	
Total Split (%)	13.1%	58.8%		7.4%	53.1%		9.2%	23.1%		10.8%	24.6%	
Maximum Green (s)	13.0	72.4		5.6	65.0		8.0	26.0		10.0	28.0	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	Max	
Walk Time (s)		10.0			10.0			10.0			10.0	
Flash Don't Walk (s)		16.0			16.0			16.0			16.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	82.0	78.2		70.6	65.0		23.6	18.6		22.0	28.0	
Actuated g/C Ratio	0.63	0.60		0.54	0.50		0.18	0.14		0.17	0.22	
v/c Ratio	1.00	0.41		0.06	1.03		0.72	0.10		0.43	0.48	
Control Delay (s/veh)	95.1	14.1		8.4	47.4		60.5	29.8		54.5	17.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	95.1	14.1		8.4	47.4		60.5	29.8		54.5	17.9	
LOS	F	B		A	D		E	C		D	B	
Approach Delay (s/veh)		27.0			47.2			56.6			37.4	
Approach LOS		C			D			E			D	
Queue Length 50th (m)	48.0	54.1		1.0	~262.0		37.3	3.3		35.4	14.9	
Queue Length 95th (m)	#105.4	77.9		m1.4	#292.1		58.6	11.9		#62.1	40.6	
Internal Link Dist (m)		266.7			220.7			107.5			297.0	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	233	3029		264	2494		247	357		592	464	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.00	0.41		0.06	1.03		0.72	0.07		0.43	0.48	

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 40.3	Intersection LOS: D

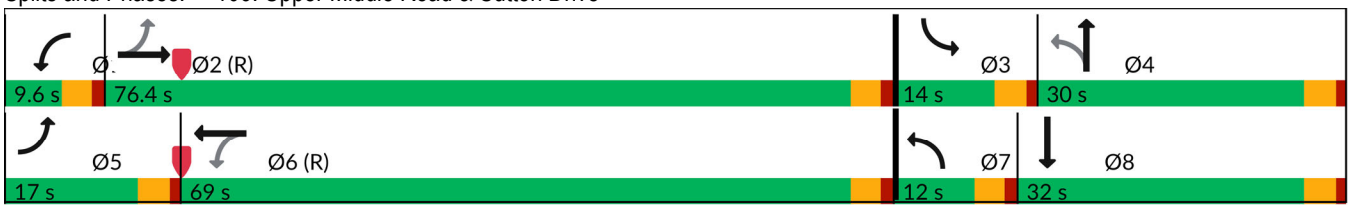
Intersection Capacity Utilization 105.7%	ICU Level of Service G
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

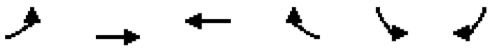
Splits and Phases: 106: Upper Middle Road & Sutton Drive



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Future Volume (vph)	221	995	176	15	1832	606	168	14	10	239	19	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.96		1.00	0.94		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1752	5013		1770	4895		1770	1745		3502	1587	
Flt Permitted	0.06	1.00		0.20	1.00		0.62	1.00		0.95	1.00	
Satd. Flow (perm)	109	5013		376	4895		1154	1745		3502	1587	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	233	1047	185	16	1928	638	177	15	11	252	20	202
RTOR Reduction (vph)	0	18	0	0	47	0	0	10	0	0	120	0
Lane Group Flow (vph)	233	1214	0	16	2519	0	177	16	0	252	102	0
Confl. Peds. (#/hr)	8					8				5		2
Heavy Vehicles (%)	3%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		Prot	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4					
Actuated Green, G (s)	80.4	74.2		65.6	63.4		23.6	15.6		22.0	29.6	
Effective Green, g (s)	80.4	74.2		65.6	63.4		23.6	15.6		22.0	29.6	
Actuated g/C Ratio	0.62	0.57		0.50	0.49		0.18	0.12		0.17	0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lane Grp Cap (vph)	231	2861		213	2387		247	209		592	361	
v/s Ratio Prot	c0.10	0.24		0.00	c0.51		c0.04	0.01		c0.07	0.06	
v/s Ratio Perm	0.52			0.04			c0.09					
v/c Ratio	1.01	0.42		0.08	1.06		0.72	0.08		0.43	0.28	
Uniform Delay, d1	44.2	15.8		16.2	33.3		48.7	50.8		48.3	41.4	
Progression Factor	1.00	1.00		0.85	0.79		1.00	1.00		1.00	1.00	
Incremental Delay, d2	61.5	0.5		0.2	31.6		11.7	0.3		1.0	1.9	
Delay (s)	105.6	16.3		13.9	58.0		60.4	51.1		49.4	43.4	
Level of Service	F	B		B	E		E	D		D	D	
Approach Delay (s/veh)		30.5			57.7			59.2			46.6	
Approach LOS		C			E			E			D	

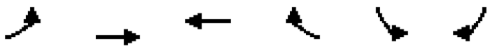
Intersection Summary			
HCM 2000 Control Delay (s/veh)	48.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	105.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	61	1185	2223	30	0	70
Future Volume (vph)	61	1185	2223	30	0	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	0	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.998			0.865
Flt Protected	0.950					
Satd. Flow (prot)	1805	5136	5126	0	0	1644
Flt Permitted	0.950					
Satd. Flow (perm)	1805	5136	5126	0	0	1644
Link Speed (k/h)		60	60		40	
Link Distance (m)		244.7	187.3		193.0	
Travel Time (s)		14.7	11.2		17.4	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	64	1247	2340	32	0	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	64	1247	2372	0	0	74
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		0.0	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

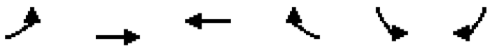
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	61	1185	2223	30	0	70
Future Volume (Veh/h)	61	1185	2223	30	0	70
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	64	1247	2340	32	0	74
Pedestrians					9	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		245	386			
pX, platoon unblocked	0.57				0.62	0.57
vC, conflicting volume	2381				2909	805
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	756				752	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	87				100	88
cM capacity (veh/h)	485				187	613

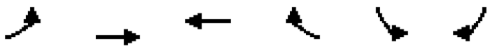
Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	64	416	416	416	936	936	500	74
Volume Left	64	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	32	74
cSH	485	1700	1700	1700	1700	1700	1700	613
Volume to Capacity	0.13	0.24	0.24	0.24	0.55	0.55	0.29	0.12
Queue Length 95th (m)	3.6	0.0	0.0	0.0	0.0	0.0	0.0	3.3
Control Delay (s/veh)	13.5	0.0	0.0	0.0	0.0	0.0	0.0	11.7
Lane LOS	B							B
Approach Delay (s/veh)	0.7				0.0			11.7
Approach LOS								B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	13	1178	2415	10	6	9
Future Volume (vph)	13	1178	2415	10	6	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.91	0.91	0.91	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.916	
Flt Protected	0.950				0.982	
Satd. Flow (prot)	1805	5136	5131	0	1709	0
Flt Permitted	0.950				0.982	
Satd. Flow (perm)	1805	5136	5131	0	1709	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		187.3	198.8		150.4	
Travel Time (s)		11.2	11.9		13.5	
Confl. Peds. (#/hr)	16			16		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	14	1253	2569	11	6	10
Shared Lane Traffic (%)						
Lane Group Flow (vph)	14	1253	2580	0	16	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

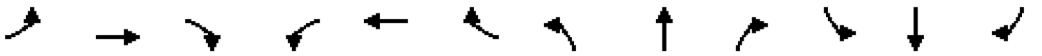
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 56.9%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	1178	2415	10	6	9
Future Volume (Veh/h)	13	1178	2415	10	6	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	14	1253	2569	11	6	10
Pedestrians					16	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			199			
pX, platoon unblocked	0.52				0.52	0.52
vC, conflicting volume	2596				3036	878
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	814				1666	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				86	98
cM capacity (veh/h)	419				44	556

Direction, Lane #	EB 1	EB 2	EB 3	EB 4	WB 1	WB 2	WB 3	SB 1
Volume Total	14	418	418	418	1028	1028	525	16
Volume Left	14	0	0	0	0	0	0	6
Volume Right	0	0	0	0	0	0	11	10
cSH	419	1700	1700	1700	1700	1700	1700	104
Volume to Capacity	0.03	0.25	0.25	0.25	0.60	0.60	0.31	0.15
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	0.0	0.0	4.2
Control Delay (s/veh)	13.9	0.0	0.0	0.0	0.0	0.0	0.0	46.0
Lane LOS	B							E
Approach Delay (s/veh)	0.2				0.0			46.0
Approach LOS								E

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Future Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00							
Frt		0.963			0.990			0.950			0.945	
Flt Protected	0.950			0.950				0.970			0.971	
Satd. Flow (prot)	1805	4933	0	1770	5073	0	0	1717	0	0	1722	0
Flt Permitted	0.104			0.185				0.784			0.790	
Satd. Flow (perm)	198	4933	0	345	5073	0	0	1387	0	0	1401	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		224			29			46			17	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		198.8			459.4			105.8			226.6	
Travel Time (s)		11.9			27.6			9.5			20.4	
Confl. Peds. (#/hr)	14					14						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	47	935	309	23	2534	176	96	0	57	76	0	52
Shared Lane Traffic (%)												
Lane Group Flow (vph)	47	1244	0	23	2710	0	0	153	0	0	128	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2			2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	42.4	42.4		42.4	42.4		22.6	22.6		22.6	22.6	
Total Split (%)	65.2%	65.2%		65.2%	65.2%		34.8%	34.8%		34.8%	34.8%	
Maximum Green (s)	38.4	38.4		38.4	38.4		18.6	18.6		18.1	18.1	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.0	4.0		4.0	4.0			4.0			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		None	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	38.4	38.4		38.4	38.4			18.6			18.1	
Actuated g/C Ratio	0.59	0.59		0.59	0.59			0.29			0.28	
v/c Ratio	0.41	0.41		0.11	0.90			0.36			0.32	
Control Delay (s/veh)	24.5	8.9		7.5	17.2			15.8			18.7	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	24.5	8.9		7.5	17.2			15.8			18.7	
LOS	C	A		A	B			B			B	
Approach Delay (s/veh)		9.5			17.1			15.8			18.7	
Approach LOS		A			B			B			B	
Queue Length 50th (m)	2.7	23.4		1.2	96.9			10.6			11.1	
Queue Length 95th (m)	16.8	60.0		4.4	#124.3			25.1			24.6	
Internal Link Dist (m)		174.8			435.4			81.8			202.6	
Turn Bay Length (m)	100.0			15.0								
Base Capacity (vph)	116	3005		203	3008			429			402	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.41	0.41		0.11	0.90			0.36			0.32	

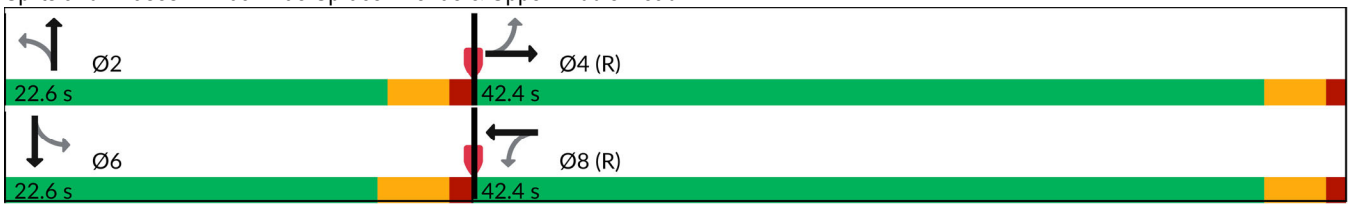
Intersection Summary	
Area Type:	Other
Cycle Length: 65	
Actuated Cycle Length: 65	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	
Intersection Signal Delay (s/veh): 14.8	Intersection LOS: B

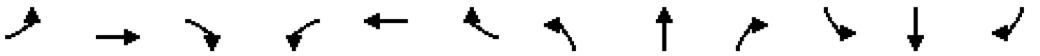
Intersection Capacity Utilization 65.3% ICU Level of Service C

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 109: Blue Spruce Avenue & Upper Middle Road

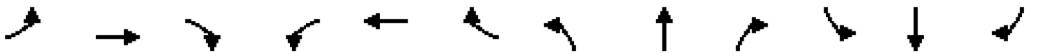




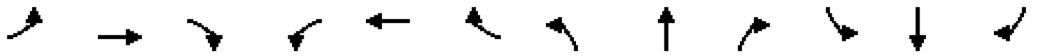
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Future Volume (vph)	43	860	284	21	2331	162	88	0	52	70	0	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0			4.0			4.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.96		1.00	0.99			0.95			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.97	
Satd. Flow (prot)	1805	4932		1770	5074			1715			1723	
Flt Permitted	0.10	1.00		0.18	1.00			0.78			0.79	
Satd. Flow (perm)	198	4932		344	5074			1388			1401	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	47	935	309	23	2534	176	96	0	57	76	0	52
RTOR Reduction (vph)	0	92	0	0	12	0	0	33	0	0	12	0
Lane Group Flow (vph)	47	1152	0	23	2698	0	0	120	0	0	116	0
Confl. Peds. (#/hr)	14					14						
Heavy Vehicles (%)	0%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	38.4	38.4		38.4	38.4			18.6			18.1	
Effective Green, g (s)	38.4	38.4		38.4	38.4			18.6			18.1	
Actuated g/C Ratio	0.59	0.59		0.59	0.59			0.29			0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0			4.0			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	116	2913		203	2997			397			390	
v/s Ratio Prot		0.23			c0.53							
v/s Ratio Perm	0.24			0.07				c0.09			0.08	
v/c Ratio	0.41	0.40		0.11	0.90			0.30			0.30	
Uniform Delay, d1	7.2	7.1		5.8	11.6			18.1			18.4	
Progression Factor	1.74	1.48		1.00	1.00			1.00			1.00	
Incremental Delay, d2	9.6	0.4		1.1	4.9			2.0			0.4	
Delay (s)	22.0	10.9		7.0	16.5			20.1			18.9	
Level of Service	C	B		A	B			C			B	
Approach Delay (s/veh)		11.3			16.4			20.1			18.9	
Approach LOS		B			B			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	65.0	Sum of lost time (s)	8.5
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Future Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	120.0		0.0	145.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00		1.00		
Frt		0.891			0.931			0.998			0.987	
Flt Protected		0.990			0.976		0.950			0.950		
Satd. Flow (prot)	0	1643	0	0	1726	0	1770	5125	0	1805	5064	0
Flt Permitted		0.916			0.535		0.209			0.148		
Satd. Flow (perm)	0	1520	0	0	946	0	389	5125	0	281	5064	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		301			109			4			29	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		78.6			160.8			306.9			459.4	
Travel Time (s)		7.1			14.5			18.4			27.6	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Adj. Flow (vph)	73	0	301	34	0	36	293	2523	26	43	887	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	374	0	0	70	0	293	2549	0	43	974	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5		22.5	22.5		13.0	37.5		24.5	24.5	
Total Split (%)	37.5%	37.5%		37.5%	37.5%		21.7%	62.5%		40.8%	40.8%	
Maximum Green (s)	18.0	18.0		18.0	18.0		8.5	33.0		20.0	20.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		10.1			10.1		40.9	40.9		27.0	27.0	
Actuated g/C Ratio		0.17			0.17		0.68	0.68		0.45	0.45	
v/c Ratio		0.74			0.28		0.61	0.73		0.34	0.42	
Control Delay (s/veh)		14.7			4.7		12.6	9.4		26.1	12.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		14.7			4.7		12.6	9.4		26.1	12.9	
LOS		B			A		B	A		C	B	
Approach Delay (s/veh)		14.7			4.7			9.7			13.4	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		7.8			0.0		9.4	49.5		3.0	25.0	
Queue Length 95th (m)		26.5			4.3		#43.5	#118.7		#16.7	44.2	
Internal Link Dist (m)		54.6			136.8			282.9			435.4	
Turn Bay Length (m)							120.0			145.0		
Base Capacity (vph)		666			360		487	3494		126	2293	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.56			0.19		0.60	0.73		0.34	0.42	

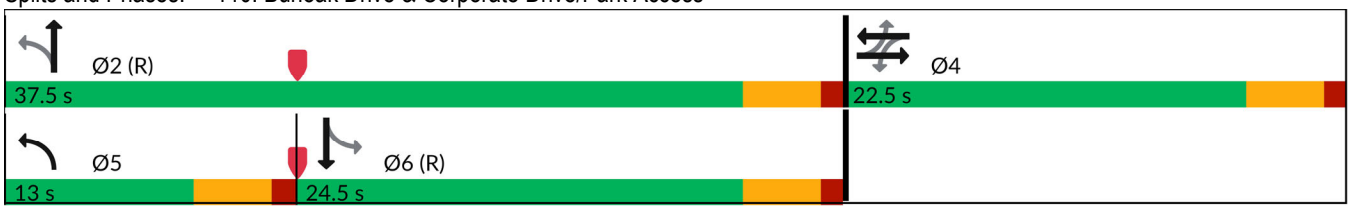
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 10.9		Intersection LOS: B	

Intersection Capacity Utilization 84.7% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

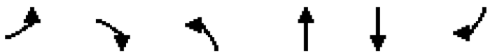
Splits and Phases: 110: Burloak Drive & Corporate Drive/Park Access



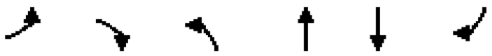
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Future Volume (vph)	69	0	286	32	0	34	278	2397	25	41	843	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.93		1.00	1.00		1.00	0.99	
Flt Protected		0.99			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1644			1726		1770	5127		1805	5062	
Flt Permitted		0.92			0.54		0.21	1.00		0.15	1.00	
Satd. Flow (perm)		1521			947		389	5127		281	5062	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	73	0	301	34	0	36	293	2523	26	43	887	87
RTOR Reduction (vph)	0	250	0	0	58	0	0	1	0	0	16	0
Lane Group Flow (vph)	0	124	0	0	12	0	293	2548	0	43	958	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	1%	0%	0%	1%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)		10.1			10.1		40.9	40.9		27.0	27.0	
Effective Green, g (s)		10.1			10.1		40.9	40.9		27.0	27.0	
Actuated g/C Ratio		0.17			0.17		0.68	0.68		0.45	0.45	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		256			159		481	3494		126	2277	
v/s Ratio Prot							0.10	c0.50			0.19	
v/s Ratio Perm		c0.08			0.01		0.32			0.15		
v/c Ratio		0.48			0.07		0.61	0.73		0.34	0.42	
Uniform Delay, d1		22.6			21.0		4.9	6.0		10.7	11.2	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.4			0.2		2.2	1.4		7.2	0.6	
Delay (s)		24.0			21.2		7.1	7.4		17.9	11.8	
Level of Service		C			C		A	A		B	B	
Approach Delay (s/veh)		24.0			21.2			7.4			12.0	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



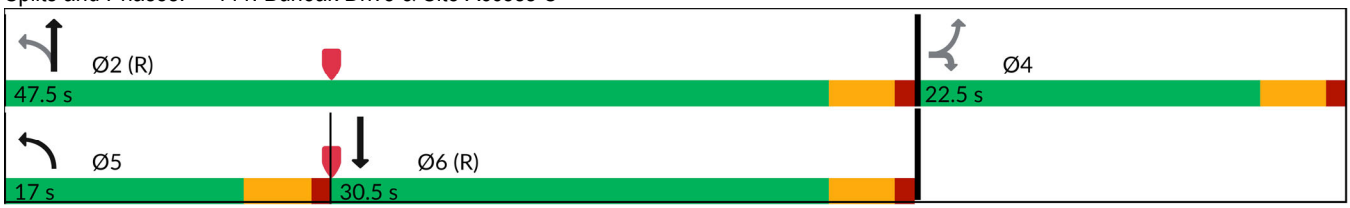
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	241	195	2608	1077	81
Future Volume (vph)	64	241	195	2608	1077	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0	0.0	120.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	5085	5034	0
Flt Permitted	0.950		0.158			
Satd. Flow (perm)	1770	1583	294	5085	5034	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		262			19	
Link Speed (k/h)	40			60	60	
Link Distance (m)	134.4			409.5	306.9	
Travel Time (s)	12.1			24.6	18.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	262	212	2835	1171	88
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	262	212	2835	1259	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4	2			

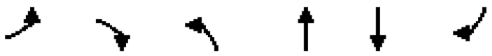


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	22.5	22.5	17.0	47.5	30.5	
Total Split (%)	32.1%	32.1%	24.3%	67.9%	43.6%	
Maximum Green (s)	18.0	18.0	12.5	43.0	26.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.6	8.6	52.4	52.4	39.2	
Actuated g/C Ratio	0.12	0.12	0.75	0.75	0.56	
v/c Ratio	0.32	0.62	0.52	0.74	0.45	
Control Delay (s/veh)	30.9	10.9	8.9	7.1	10.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	30.9	10.9	8.9	7.1	10.5	
LOS	C	B	A	A	B	
Approach Delay (s/veh)	15.1			7.2	10.5	
Approach LOS	B			A	B	
Queue Length 50th (m)	9.2	0.0	6.0	58.8	31.8	
Queue Length 95th (m)	19.1	18.4	20.7	107.4	59.8	
Internal Link Dist (m)	110.4			385.5	282.9	
Turn Bay Length (m)	15.0		120.0			
Base Capacity (vph)	455	601	487	3807	2824	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.15	0.44	0.44	0.74	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 70			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay (s/veh): 8.7		Intersection LOS: A	
Intersection Capacity Utilization 62.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 111: Burloak Drive & Site Access C

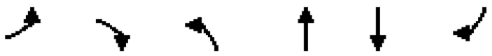




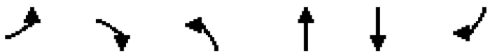
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	64	241	195	2608	1077	81
Future Volume (vph)	64	241	195	2608	1077	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5032	
Flt Permitted	0.95	1.00	0.16	1.00	1.00	
Satd. Flow (perm)	1770	1583	295	5085	5032	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	70	262	212	2835	1171	88
RTOR Reduction (vph)	0	230	0	0	8	0
Lane Group Flow (vph)	70	32	212	2835	1251	0
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4	2			
Actuated Green, G (s)	8.6	8.6	52.4	52.4	39.1	
Effective Green, g (s)	8.6	8.6	52.4	52.4	39.1	
Actuated g/C Ratio	0.12	0.12	0.75	0.75	0.56	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	217	194	406	3806	2810	
v/s Ratio Prot			0.07	c0.56	0.25	
v/s Ratio Perm	c0.04	0.02	0.33			
v/c Ratio	0.32	0.17	0.52	0.74	0.45	
Uniform Delay, d1	28.0	27.5	4.3	5.0	9.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.4	1.2	1.4	0.5	
Delay (s)	28.9	27.9	5.5	6.4	9.6	
Level of Service	C	C	A	A	A	
Approach Delay (s/veh)	28.1			6.3	9.6	
Approach LOS	C			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	272	725	857	2531	1172	137
Future Volume (vph)	272	725	857	2531	1172	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.984	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1752	1583	3367	5136	5072	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1752	1583	3361	5136	5072	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		537			18	
Link Speed (k/h)	60			60	60	
Link Distance (m)	769.5			453.2	409.5	
Travel Time (s)	46.2			27.2	24.6	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Adj. Flow (vph)	299	797	942	2781	1288	151
Shared Lane Traffic (%)						
Lane Group Flow (vph)	299	797	942	2781	1439	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	34.0	71.0	37.0	
Total Split (%)	35.5%	35.5%	30.9%	64.5%	33.6%	
Maximum Green (s)	32.0	32.0	29.0	64.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	29.5	29.5	31.5	66.5	30.0	
Actuated g/C Ratio	0.27	0.27	0.29	0.60	0.27	
v/c Ratio	0.64	0.98	0.98	0.90	1.03	
Control Delay (s/veh)	41.8	39.5	63.1	28.7	71.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	41.8	39.5	63.1	28.7	71.5	
LOS	D	D	E	C	E	
Approach Delay (s/veh)	40.1			37.4	71.5	
Approach LOS	D			D	E	
Queue Length 50th (m)	59.0	70.4	~128.4	172.5	~126.8	
Queue Length 95th (m)	89.2	#163.0	m#137.5	m175.1	#157.9	
Internal Link Dist (m)	745.5			429.2	385.5	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	509	841	965	3107	1396	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.59	0.95	0.98	0.90	1.03	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay (s/veh): 45.7	Intersection LOS: D

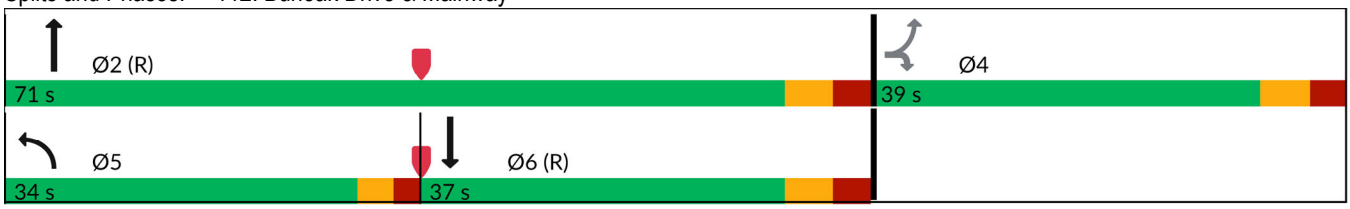
Intersection Capacity Utilization 82.3%	ICU Level of Service E
Analysis Period (min) 15	

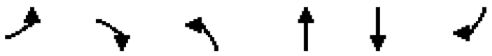
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 112: Burloak Drive & Mainway

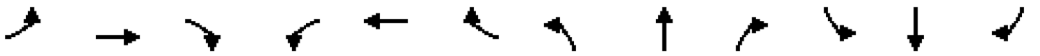




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	272	725	857	2531	1172	137
Future Volume (vph)	272	725	857	2531	1172	137
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1752	1583	3367	5136	5074	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1752	1583	3367	5136	5074	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	299	797	942	2781	1288	151
RTOR Reduction (vph)	0	393	0	0	13	0
Lane Group Flow (vph)	299	404	942	2781	1426	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	3%	2%	4%	1%	0%	4%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	29.5	29.5	31.5	66.5	30.0	
Effective Green, g (s)	29.5	29.5	31.5	66.5	30.0	
Actuated g/C Ratio	0.27	0.27	0.29	0.60	0.27	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	469	424	964	3104	1383	
v/s Ratio Prot			c0.28	0.54	c0.28	
v/s Ratio Perm	0.17	c0.26				
v/c Ratio	0.64	0.95	0.98	0.90	1.03	
Uniform Delay, d1	35.5	39.6	38.9	18.8	40.0	
Progression Factor	1.00	1.00	1.18	1.32	1.00	
Incremental Delay, d2	2.8	31.7	16.4	2.6	32.5	
Delay (s)	38.4	71.2	62.2	27.4	72.5	
Level of Service	D	E	E	C	E	
Approach Delay (s/veh)	62.3			36.2	72.5	
Approach LOS	E			D	E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	49.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Future Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.992				0.850		0.985			0.898	
Flt Protected	0.950				0.999			0.983		0.950		
Satd. Flow (prot)	1770	3419	0	0	3530	1583	0	1795	0	1770	1673	0
Flt Permitted	0.118				0.929			0.429		0.409		
Satd. Flow (perm)	220	3419	0	0	3282	1583	0	783	0	762	1673	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6				55		8			135	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		108.6			99.6			154.8			115.8	
Travel Time (s)		6.5			6.0			13.9			10.4	
Confl. Peds. (#/hr)			5	5								
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Adj. Flow (vph)	446	586	33	21	935	155	217	335	67	289	180	388
Shared Lane Traffic (%)												
Lane Group Flow (vph)	446	619	0	0	956	155	0	619	0	289	568	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2	1		2		1	2	
Detector Template	Left	Thru			Thru	Right		Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	19.0	53.0		34.0	34.0	34.0	67.0	67.0		67.0	67.0	
Total Split (%)	15.8%	44.2%		28.3%	28.3%	28.3%	55.8%	55.8%		55.8%	55.8%	
Maximum Green (s)	14.5	48.5		29.5	29.5	29.5	62.5	62.5		62.5	62.5	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	
Act Effct Green (s)	48.5	48.5			29.5	29.5		62.5		62.5	62.5	
Actuated g/C Ratio	0.40	0.40			0.25	0.25		0.52		0.52	0.52	
v/c Ratio	1.62	0.45			1.19	0.36		1.51		0.73	0.61	
Control Delay (s/veh)	319.4	27.0			136.2	26.5		265.9		35.2	18.1	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	319.4	27.0			136.2	26.5		265.9		35.2	18.1	
LOS	F	C			F	C		F		D	B	
Approach Delay (s/veh)		149.5			120.9			265.9			23.9	
Approach LOS		F			F			F			C	
Queue Length 50th (m)	~145.7	58.9			~152.1	20.3		~217.0		54.1	73.5	
Queue Length 95th (m)	#192.6	69.7			#174.4	36.6		#264.3		84.0	97.1	
Internal Link Dist (m)		84.6			75.6			130.8			91.8	
Turn Bay Length (m)	130.0					15.0				40.0		
Base Capacity (vph)	276	1385			806	430		411		396	936	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	1.62	0.45			1.19	0.36		1.51		0.73	0.61	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay (s/veh): 131.0	Intersection LOS: F

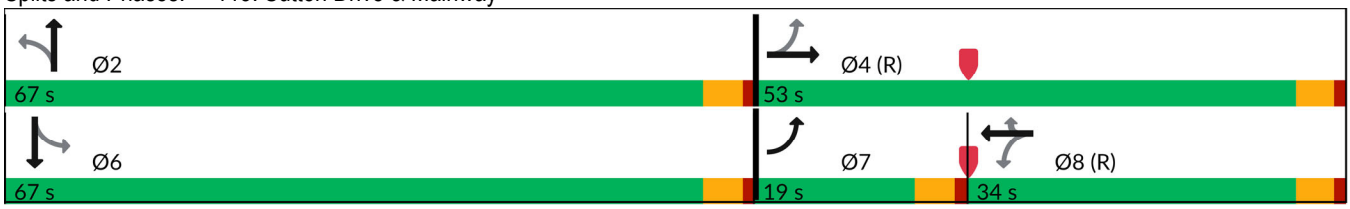
Intersection Capacity Utilization 114.2% ICU Level of Service H

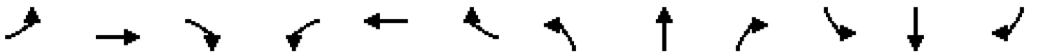
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 113: Sutton Drive & Mainway

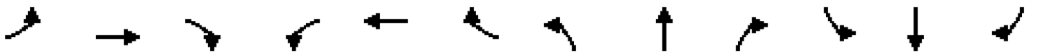




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Future Volume (vph)	375	492	28	18	785	130	182	281	56	243	151	326
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Frt	1.00	0.99			1.00	0.85		0.99		1.00	0.90	
Flt Protected	0.95	1.00			1.00	1.00		0.98		0.95	1.00	
Satd. Flow (prot)	1770	3419			3529	1583		1795		1770	1672	
Flt Permitted	0.12	1.00			0.93	1.00		0.43		0.41	1.00	
Satd. Flow (perm)	219	3419			3284	1583		783		762	1672	
Peak-hour factor, PHF	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Adj. Flow (vph)	446	586	33	21	935	155	217	335	67	289	180	388
RTOR Reduction (vph)	0	4	0	0	0	41	0	4	0	0	65	0
Lane Group Flow (vph)	446	615	0	0	956	114	0	615	0	289	503	0
Confl. Peds. (#/hr)			5	5								
Heavy Vehicles (%)	2%	4%	14%	9%	2%	2%	4%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	48.5	48.5			29.5	29.5		62.5		62.5	62.5	
Effective Green, g (s)	48.5	48.5			29.5	29.5		62.5		62.5	62.5	
Actuated g/C Ratio	0.40	0.40			0.25	0.25		0.52		0.52	0.52	
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	275	1381			807	389		407		396	870	
v/s Ratio Prot	c0.20	0.18									0.30	
v/s Ratio Perm	c0.46				0.29	0.07		c0.79		0.38		
v/c Ratio	1.62	0.45			1.18	0.29		1.51		0.73	0.58	
Uniform Delay, d1	34.5	26.0			45.3	36.8		28.7		22.2	19.7	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	296.0	1.0			95.5	1.9		242.6		11.2	2.8	
Delay (s)	330.5	27.0			140.8	38.7		271.3		33.5	22.5	
Level of Service	F	C			F	D		F		C	C	
Approach Delay (s/veh)		154.1			126.5			271.3			26.2	
Approach LOS		F			F			F			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	135.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.59		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	114.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



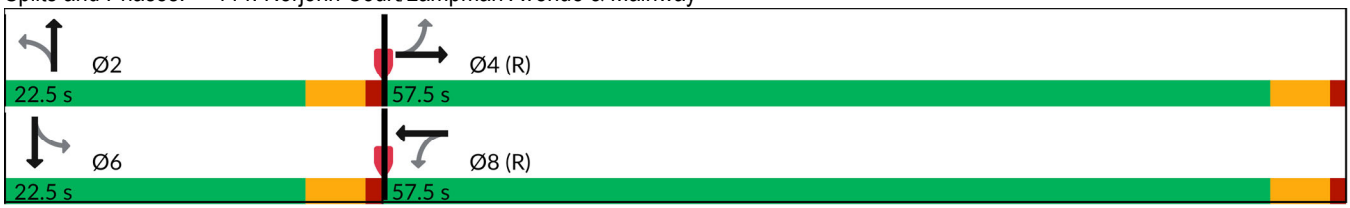
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Future Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			0.99	
Frt		0.994			0.989			0.977			0.927	
Flt Protected		0.998						0.963			0.978	
Satd. Flow (prot)	0	3420	0	0	3497	0	0	1783	0	0	1686	0
Flt Permitted		0.683			0.952			0.705			0.844	
Satd. Flow (perm)	0	2340	0	0	3329	0	0	1303	0	0	1453	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		11			22			12			25	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		426.4			645.5			107.7			112.1	
Travel Time (s)		25.6			38.7			9.7			10.1	
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Adj. Flow (vph)	48	941	41	7	1847	151	91	9	20	58	2	70
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1030	0	0	2005	0	0	120	0	0	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2			2			2	
Detector Template		Thru			Thru			Thru			Thru	
Leading Detector (m)		10.0			10.0			10.0			10.0	
Trailing Detector (m)		0.0			0.0			0.0			0.0	
Detector 1 Position(m)		0.0			0.0			0.0			0.0	
Detector 1 Size(m)		0.6			0.6			0.6			0.6	
Detector 1 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0			0.0			0.0	
Detector 1 Queue (s)		0.0			0.0			0.0			0.0	
Detector 1 Delay (s)		0.0			0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		

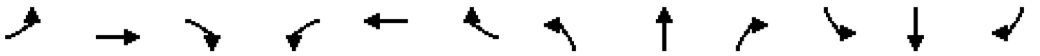


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	57.5	57.5		57.5	57.5		22.5	22.5		22.5	22.5	
Total Split (%)	71.9%	71.9%		71.9%	71.9%		28.1%	28.1%		28.1%	28.1%	
Maximum Green (s)	53.0	53.0		53.0	53.0		18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		53.0			53.0			18.0			18.0	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
v/c Ratio		0.66			0.91			0.40			0.38	
Control Delay (s/veh)		10.7			19.1			28.3			24.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		10.7			19.1			28.3			24.8	
LOS		B			B			C			C	
Approach Delay (s/veh)		10.7			19.1			28.3			24.8	
Approach LOS		B			B			C			C	
Queue Length 50th (m)		46.2			124.2			14.7			14.1	
Queue Length 95th (m)		54.0			126.8			26.6			26.0	
Internal Link Dist (m)		402.4			621.5			83.7			88.1	
Turn Bay Length (m)												
Base Capacity (vph)		1553			2212			302			346	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.66			0.91			0.40			0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 80			
Actuated Cycle Length: 80			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay (s/veh): 17.0		Intersection LOS: B	
Intersection Capacity Utilization 73.7%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 114: Norjohn Court/Lampman Avenue & Mainway



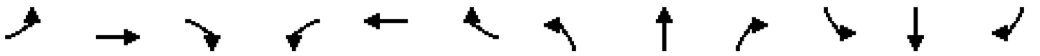


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Future Volume (vph)	39	762	33	6	1496	122	74	7	16	47	2	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5			4.5			4.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frpb, ped/bikes		1.00			1.00			1.00			0.99	
Flpb, ped/bikes		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.98			0.93	
Flt Protected		1.00			1.00			0.96			0.98	
Satd. Flow (prot)		3419			3495			1782			1685	
Flt Permitted		0.68			0.95			0.70			0.84	
Satd. Flow (perm)		2342			3327			1304			1454	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	48	941	41	7	1847	151	91	9	20	58	2	70
RTOR Reduction (vph)	0	4	0	0	7	0	0	9	0	0	19	0
Lane Group Flow (vph)	0	1026	0	0	1998	0	0	111	0	0	111	0
Confl. Peds. (#/hr)	2		7	7		2	2		3	3		2
Heavy Vehicles (%)	0%	5%	0%	0%	2%	1%	0%	0%	0%	3%	0%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		53.0			53.0			18.0			18.0	
Effective Green, g (s)		53.0			53.0			18.0			18.0	
Actuated g/C Ratio		0.66			0.66			0.23			0.23	
Clearance Time (s)		4.5			4.5			4.5			4.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		1551			2204			293			327	
v/s Ratio Prot												
v/s Ratio Perm		0.44			c0.60			c0.08			0.08	
v/c Ratio		0.66			0.91			0.38			0.34	
Uniform Delay, d1		8.1			11.4			26.3			26.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.2			6.8			3.7			2.8	
Delay (s)		10.3			18.2			29.9			28.8	
Level of Service		B			B			C			C	
Approach Delay (s/veh)		10.3			18.2			29.9			28.8	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Future Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor		0.99		1.00	0.99			1.00		1.00	1.00	
Frt		0.954			0.962			0.977			0.980	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1703	3211	0	3273	3383	0	1703	4903	0	3467	4960	0
Flt Permitted	0.110			0.950			0.086			0.950		
Satd. Flow (perm)	197	3211	0	3265	3383	0	154	4903	0	3466	4960	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		46			34			30			20	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		145.0			426.4			629.5			499.2	
Travel Time (s)		8.7			25.6			37.8			30.0	
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Adj. Flow (vph)	260	428	189	471	1004	340	422	1999	362	123	1344	205
Shared Lane Traffic (%)												
Lane Group Flow (vph)	260	617	0	471	1344	0	422	2361	0	123	1549	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	18.0	42.0		28.0	52.0		26.0	64.0		11.0	49.0	
Total Split (%)	12.4%	29.0%		19.3%	35.9%		17.9%	44.1%		7.6%	33.8%	
Maximum Green (s)	14.0	35.7		24.0	45.7		22.0	57.7		7.0	42.7	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	52.7	36.4		23.3	45.7		71.0	57.7		7.0	42.7	
Actuated g/C Ratio	0.36	0.25		0.16	0.32		0.49	0.40		0.05	0.29	
v/c Ratio	1.20	0.74		0.90	1.23		1.36	1.20		0.74	1.05	
Control Delay (s/veh)	161.1	52.2		79.8	154.2		217.0	133.0		92.8	86.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	161.1	52.2		79.8	154.2		217.0	133.0		92.8	86.3	
LOS	F	D		E	F		F	F		F	F	
Approach Delay (s/veh)		84.5			134.9			145.7			86.7	
Approach LOS		F			F			F			F	
Queue Length 50th (m)	~82.4	89.2		76.0	~264.6		~157.9	~319.7		19.4	~187.5	
Queue Length 95th (m)	#144.1	113.7		#106.2	#310.7		#230.2	#348.4		#35.5	#219.7	
Internal Link Dist (m)		121.0			402.4			605.5			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	217	839		541	1089		310	1969		167	1474	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.20	0.74		0.87	1.23		1.36	1.20		0.74	1.05	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.36	
Intersection Signal Delay (s/veh): 121.7	Intersection LOS: F

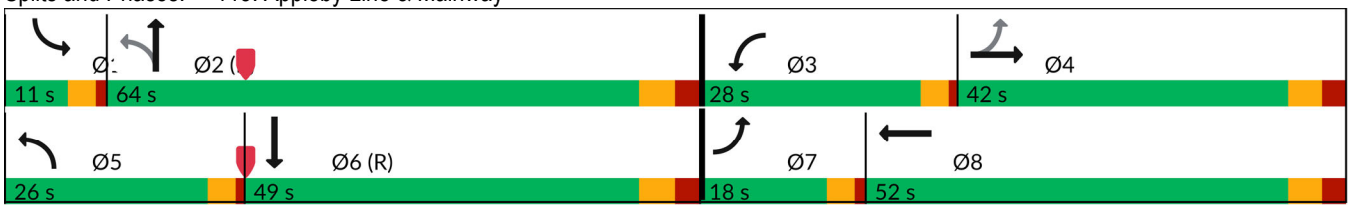
Intersection Capacity Utilization 117.0% ICU Level of Service H

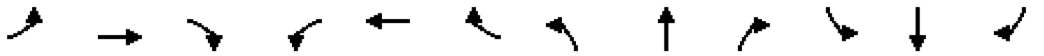
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 115: Appleby Line & Mainway

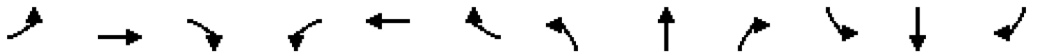




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Future Volume (vph)	242	398	176	438	934	316	392	1859	337	114	1250	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.96		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1703	3211		3273	3383		1703	4903		3467	4960	
Flt Permitted	0.11	1.00		0.95	1.00		0.09	1.00		0.95	1.00	
Satd. Flow (perm)	197	3211		3273	3383		154	4903		3467	4960	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	260	428	189	471	1004	340	422	1999	362	123	1344	205
RTOR Reduction (vph)	0	34	0	0	23	0	0	18	0	0	14	0
Lane Group Flow (vph)	260	583	0	471	1321	0	422	2343	0	123	1535	0
Confl. Peds. (#/hr)	10		4	4		10	10		4	4		10
Heavy Vehicles (%)	6%	7%	6%	7%	2%	2%	6%	2%	9%	1%	2%	3%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	50.4	36.4		23.3	45.7		68.7	57.7		7.0	42.7	
Effective Green, g (s)	50.4	36.4		23.3	45.7		68.7	57.7		7.0	42.7	
Actuated g/C Ratio	0.35	0.25		0.16	0.32		0.47	0.40		0.05	0.29	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	213	806		525	1066		307	1951		167	1460	
v/s Ratio Prot	c0.12	0.18		0.14	c0.39		c0.21	0.48		0.04	0.31	
v/s Ratio Perm	0.31						c0.44					
v/c Ratio	1.22	0.72		0.90	1.24		1.37	1.20		0.74	1.05	
Uniform Delay, d1	41.4	49.7		59.7	49.7		47.1	43.7		68.1	51.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	134.0	3.2		17.8	115.7		187.9	95.6		15.5	38.3	
Delay (s)	175.4	52.9		77.5	165.3		235.0	139.3		83.6	89.5	
Level of Service	F	D		E	F		F	F		F	F	
Approach Delay (s/veh)		89.2			142.5			153.8			89.0	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	127.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	117.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Future Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.942			0.945			0.983			0.997	
Flt Protected		0.977			0.974		0.950			0.950		
Satd. Flow (prot)	0	1735	0	0	1733	0	1641	4943	0	1805	5062	0
Flt Permitted		0.716			0.780		0.175			0.073		
Satd. Flow (perm)	0	1269	0	0	1384	0	301	4943	0	139	5062	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		37			34			29			5	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Adj. Flow (vph)	57	12	52	212	21	162	51	2270	289	149	1395	30
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	121	0	0	395	0	51	2559	0	149	1425	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.6	38.6		38.6	38.6		55.4	55.4		11.0	66.4	
Total Split (%)	36.8%	36.8%		36.8%	36.8%		52.8%	52.8%		10.5%	63.2%	
Maximum Green (s)	32.1	32.1		32.1	32.1		49.4	49.4		7.0	60.4	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		30.3			30.3		50.8	50.8		64.2	62.2	
Actuated g/C Ratio		0.29			0.29		0.48	0.48		0.61	0.59	
v/c Ratio		0.31			0.93		0.35	1.06		0.74	0.48	
Control Delay (s/veh)		21.6			63.5		26.6	65.4		40.3	13.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		21.6			63.5		26.6	65.4		40.3	13.1	
LOS		C			E		C	E		D	B	
Approach Delay (s/veh)		21.6			63.5			64.6			15.6	
Approach LOS		C			E			E			B	
Queue Length 50th (m)		13.4			74.5		7.3	~232.6		14.6	63.0	
Queue Length 95th (m)		29.0			#131.6		19.9	#263.8		#47.6	74.9	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		413			446		145	2407		201	2998	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.29			0.89		0.35	1.06		0.74	0.48	

Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.06	
Intersection Signal Delay (s/veh): 47.0	Intersection LOS: D

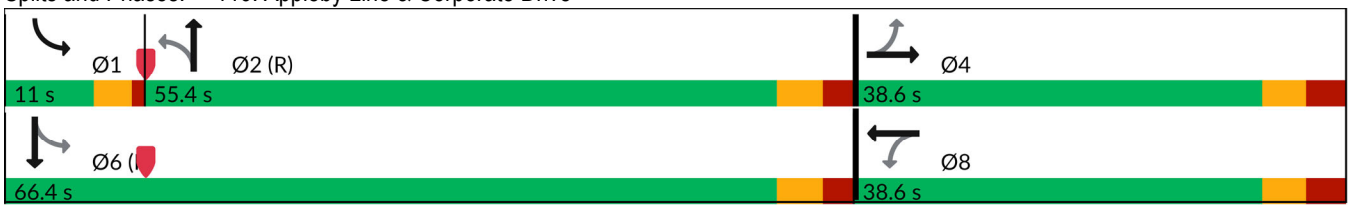
Intersection Capacity Utilization 97.4% ICU Level of Service F

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

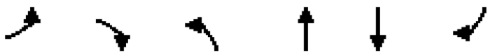
Splits and Phases: 116: Appleby Line & Corporate Drive



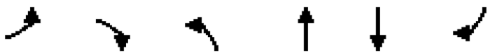
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Future Volume (vph)	54	11	49	199	20	152	48	2134	272	140	1311	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.94			0.94		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1731			1727		1635	4943		1805	5061	
Flt Permitted		0.72			0.78		0.17	1.00		0.07	1.00	
Satd. Flow (perm)		1269			1383		301	4943		138	5061	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	57	12	52	212	21	162	51	2270	289	149	1395	30
RTOR Reduction (vph)	0	26	0	0	24	0	0	15	0	0	2	0
Lane Group Flow (vph)	0	95	0	0	371	0	51	2544	0	149	1423	0
Confl. Peds. (#/hr)	10		7	7		10	13		12	12		13
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	2%	5%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		30.3			30.3		50.9	50.9		62.2	62.2	
Effective Green, g (s)		30.3			30.3		50.9	50.9		62.2	62.2	
Actuated g/C Ratio		0.29			0.29		0.48	0.48		0.59	0.59	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		366			399		145	2396		197	2998	
v/s Ratio Prot								c0.51		c0.05	0.28	
v/s Ratio Perm		0.07			c0.27		0.17			0.39		
v/c Ratio		0.26			0.93		0.35	1.06		0.76	0.47	
Uniform Delay, d1		28.7			36.3		16.8	27.1		24.6	12.1	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.4			27.7		6.6	37.4		15.2	0.5	
Delay (s)		29.1			64.0		23.4	64.5		39.8	12.7	
Level of Service		C			E		C	E		D	B	
Approach Delay (s/veh)		29.1			64.0			63.7			15.2	
Approach LOS		C			E			E			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	97.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	594	351	2660	1735	31
Future Volume (vph)	166	594	351	2660	1735	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.997	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1787	1553	3242	5085	5063	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1787	1553	3240	5085	5063	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		260			3	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			5			5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Adj. Flow (vph)	184	660	390	2956	1928	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	184	660	390	2956	1962	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

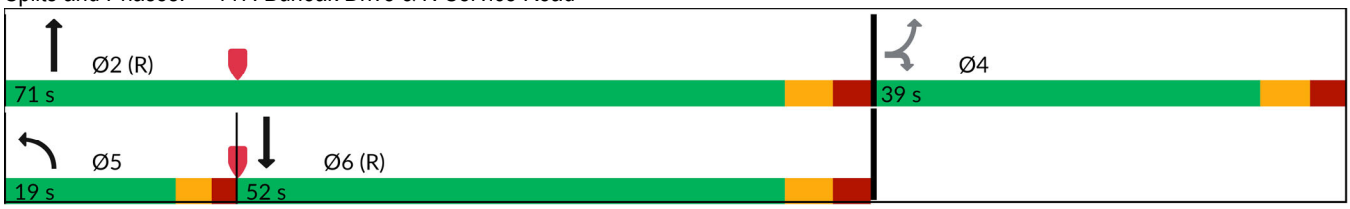


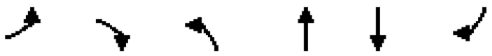
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	19.0	71.0	52.0	
Total Split (%)	35.5%	35.5%	17.3%	64.5%	47.3%	
Maximum Green (s)	32.0	32.0	14.0	64.0	45.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	32.0	32.0	14.0	64.0	45.0	
Actuated g/C Ratio	0.29	0.29	0.13	0.58	0.41	
v/c Ratio	0.35	1.04	0.95	1.00	0.95	
Control Delay (s/veh)	33.2	70.1	81.1	39.8	32.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	33.2	70.1	81.1	39.8	32.8	
LOS	C	E	F	D	C	
Approach Delay (s/veh)	62.0			44.6	32.8	
Approach LOS	E			D	C	
Queue Length 50th (m)	33.1	~119.6	48.3	233.1	102.0	
Queue Length 95th (m)	53.7	#194.7	#80.0	#287.4	m102.9	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	519	636	412	2958	2073	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.35	1.04	0.95	1.00	0.95	

Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay (s/veh): 43.3	Intersection LOS: D

Intersection Capacity Utilization 82.7% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	166	594	351	2660	1735	31
Future Volume (vph)	166	594	351	2660	1735	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1787	1553	3242	5085	5065	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1787	1553	3242	5085	5065	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	184	660	390	2956	1928	34
RTOR Reduction (vph)	0	184	0	0	2	0
Lane Group Flow (vph)	184	476	390	2956	1960	0
Confl. Peds. (#/hr)			5			5
Heavy Vehicles (%)	1%	4%	8%	2%	2%	8%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	32.0	32.0	14.0	64.0	45.0	
Effective Green, g (s)	32.0	32.0	14.0	64.0	45.0	
Actuated g/C Ratio	0.29	0.29	0.13	0.58	0.41	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	519	451	412	2958	2072	
v/s Ratio Prot			0.12	c0.58	0.39	
v/s Ratio Perm	0.10	c0.31				
v/c Ratio	0.35	1.05	0.95	1.00	0.95	
Uniform Delay, d1	30.8	39.0	47.6	23.0	31.3	
Progression Factor	1.00	1.00	1.00	1.00	0.93	
Incremental Delay, d2	0.4	57.5	30.7	16.4	3.1	
Delay (s)	31.3	96.5	78.4	39.4	32.3	
Level of Service	C	F	E	D	C	
Approach Delay (s/veh)	82.3			43.9	32.3	
Approach LOS	F			D	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2900	1827	0	0	2817
Future Volume (vph)	2713	2900	1827	0	0	2817
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2787	5036	0	0	5085
Flt Permitted	0.950					
Satd. Flow (perm)	3433	2787	5036	0	0	5085
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		1				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)				1	1	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Adj. Flow (vph)	2917	3118	1965	0	0	3029
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2917	3118	1965	0	0	3029
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	90.0	90.0	60.0			60.0
Total Split (%)	60.0%	60.0%	40.0%			40.0%
Maximum Green (s)	83.0	83.0	54.0			54.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	83.0	83.0	54.0			54.0
Actuated g/C Ratio	0.55	0.55	0.36			0.36
v/c Ratio	1.54	2.02	1.08			1.66
Control Delay (s/veh)	271.7	485.4	93.0			329.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	271.7	485.4	93.0			329.2
LOS	F	F	F			F
Approach Delay (s/veh)	382.1		93.0			329.2
Approach LOS	F		F			F
Queue Length 50th (m)	~667.5	~885.7	~257.0			~509.7
Queue Length 95th (m)	#701.5	#920.9	#287.4			#533.1
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	1899	1542	1812			1830
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.54	2.02	1.08			1.66

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 2.02	
Intersection Signal Delay (s/veh): 316.1	Intersection LOS: F

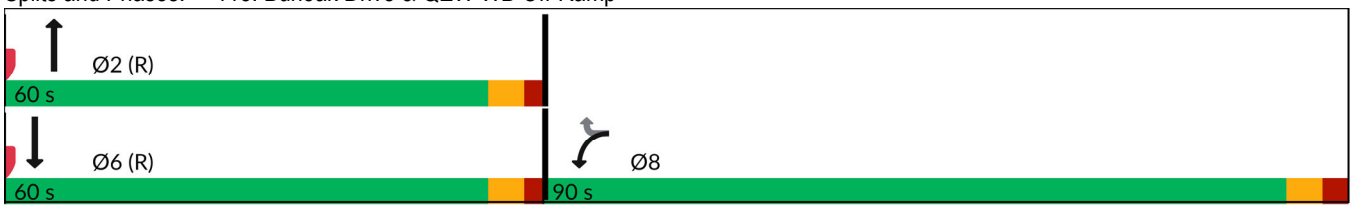
Intersection Capacity Utilization 147.6% ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

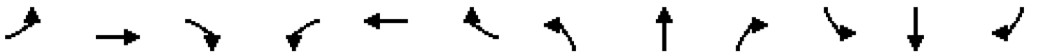




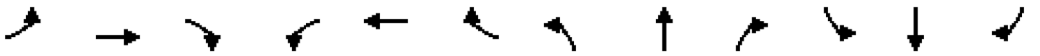
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2713	2900	1827	0	0	2817
Future Volume (vph)	2713	2900	1827	0	0	2817
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2787	5036			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2787	5036			5085
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	2917	3118	1965	0	0	3029
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	2917	3118	1965	0	0	3029
Confl. Peds. (#/hr)				1	1	
Heavy Vehicles (%)	2%	2%	3%	0%	0%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	83.0	83.0	54.0			54.0
Effective Green, g (s)	83.0	83.0	54.0			54.0
Actuated g/C Ratio	0.55	0.55	0.36			0.36
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1899	1542	1812			1830
v/s Ratio Prot	0.85		0.39			c0.60
v/s Ratio Perm		c1.12				
v/c Ratio	1.54	2.02	1.08			1.66
Uniform Delay, d1	33.5	33.5	48.0			48.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	243.9	462.1	48.1			297.3
Delay (s)	277.4	495.6	96.1			345.3
Level of Service	F	F	F			F
Approach Delay (s/veh)	390.1		96.1			345.3
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	325.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.88		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	147.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Future Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Ped Bike Factor								1.00			1.00	
Frt		0.938	0.850			0.865		0.998				
Flt Protected	0.950	0.981										
Satd. Flow (prot)	1493	2812	1413	0	0	1596	0	5125	0	0	5136	0
Flt Permitted	0.950	0.981									0.928	
Satd. Flow (perm)	1493	2812	1413	0	0	1596	0	5125	0	0	4766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		81	174			83		2				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Confl. Peds. (#/hr)							5		1	1		5
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	472	97	448	0	0	213	0	1357	17	14	4195	0
Shared Lane Traffic (%)	43%		47%									
Lane Group Flow (vph)	269	511	237	0	0	213	0	1374	0	0	4209	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	

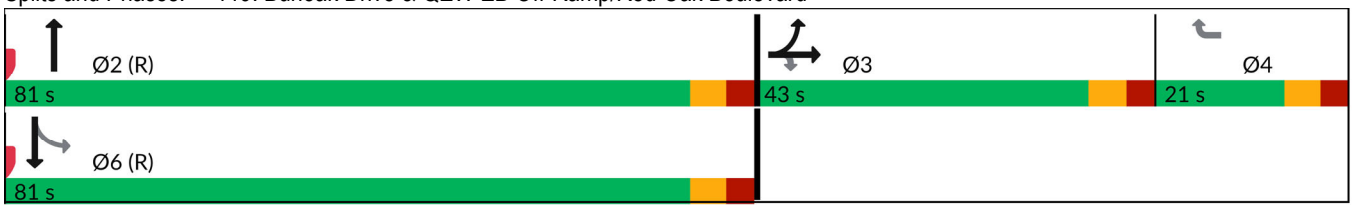


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			15.0		39.0		15.0	15.0	
Total Split (s)	43.0	43.0	43.0			21.0		81.0		81.0	81.0	
Total Split (%)	29.7%	29.7%	29.7%			14.5%		55.9%		55.9%	55.9%	
Maximum Green (s)	36.0	36.0	36.0			14.0		74.0		74.0	74.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0	7.0					7.0				
Flash Don't Walk (s)	25.0	25.0	25.0					25.0				
Pedestrian Calls (#/hr)	0	0	0					0				
Act Effct Green (s)	30.9	30.9	30.9			15.2		77.9			77.9	
Actuated g/C Ratio	0.21	0.21	0.21			0.10		0.54			0.54	
v/c Ratio	0.85	0.77	0.54			0.88		0.50			1.64	
Control Delay (s/veh)	77.8	52.8	18.4			72.5		22.6			318.0	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	77.8	52.8	18.4			72.5		22.6			318.0	
LOS	E	D	B			E		C			F	
Approach Delay (s/veh)		51.4			72.5			22.6			318.0	
Approach LOS		D			E			C			F	
Queue Length 50th (m)	91.0	74.8	17.5			40.2		99.8			~692.1	
Queue Length 95th (m)	129.3	97.0	48.1			#94.7		113.9			#705.5	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	370	759	481			244		2755			2561	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.73	0.67	0.49			0.87		0.50			1.64	

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.64	
Intersection Signal Delay (s/veh): 211.0	Intersection LOS: F

Intersection Capacity Utilization 110.9% ICU Level of Service H
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

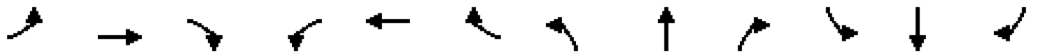
Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard



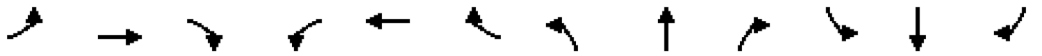
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Future Volume (vph)	448	92	426	0	0	202	0	1289	16	13	3985	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Flpb, ped/bikes	1.00	1.00	1.00			1.00		1.00			1.00	
Frt	1.00	0.94	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1493	2810	1413			1596		5126			5135	
Flt Permitted	0.95	0.98	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1493	2810	1413			1596		5126			4767	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	472	97	448	0	0	213	0	1357	17	14	4195	0
RTOR Reduction (vph)	0	64	137	0	0	74	0	1	0	0	0	0
Lane Group Flow (vph)	269	447	100	0	0	139	0	1373	0	0	4209	0
Confl. Peds. (#/hr)							5		1	1		5
Heavy Vehicles (%)	10%	7%	4%	0%	0%	3%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	30.9	30.9	30.9			15.2		77.9			77.9	
Effective Green, g (s)	30.9	30.9	30.9			15.2		77.9			77.9	
Actuated g/C Ratio	0.21	0.21	0.21			0.10		0.54			0.54	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	318	598	301			167		2753			2561	
v/s Ratio Prot	c0.18	0.16						0.27				
v/s Ratio Perm			0.07			c0.09					c0.88	
v/c Ratio	0.85	0.75	0.33			0.83		0.50			1.64	
Uniform Delay, d1	54.8	53.4	48.3			63.6		21.2			33.6	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	18.3	5.1	0.7			28.1		0.6			291.4	
Delay (s)	73.1	58.5	49.0			91.7		21.9			324.9	
Level of Service	E	E	D			F		C			F	
Approach Delay (s/veh)		60.1			91.7			21.9			324.9	
Approach LOS		E			F			C			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	217.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	110.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Future Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00			1.00	
Frt		0.881			0.933			0.990			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1600	0	1770	1737	0	1736	4975	0	1805	4962	0
Flt Permitted	0.281			0.237			0.073			0.078		
Satd. Flow (perm)	523	1600	0	441	1737	0	133	4975	0	148	4962	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			33			11			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		353.6			146.5			237.0			629.5	
Travel Time (s)		21.2			8.8			14.2			37.8	
Confl. Peds. (#/hr)	1					1	2		1	1		2
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Adj. Flow (vph)	73	48	186	329	260	208	369	2458	170	65	1772	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	73	234	0	329	468	0	369	2628	0	65	1835	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		18.7	53.9		29.2	69.5		11.6	51.9	
Total Split (%)	26.1%	26.1%		13.9%	39.9%		21.6%	51.5%		8.6%	38.4%	
Maximum Green (s)	29.1	29.1		14.7	47.8		25.2	62.9		7.6	45.3	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	20.5	20.5		41.3	39.2		85.7	73.9		61.0	51.0	
Actuated g/C Ratio	0.15	0.15		0.31	0.29		0.63	0.55		0.45	0.38	
v/c Ratio	0.92	0.66		1.18	0.89		0.88	0.96		0.41	0.98	
Control Delay (s/veh)	136.7	31.0		147.6	61.2		61.0	41.1		26.2	57.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	17.8		0.0	0.0	
Total Delay (s/veh)	136.7	31.0		147.6	61.2		61.0	58.9		26.2	57.8	
LOS	F	C		F	E		E	E		C	E	
Approach Delay (s/veh)		56.1			96.9			59.1			56.7	
Approach LOS		E			F			E			E	
Queue Length 50th (m)	20.6	27.1		~83.5	117.7		83.0	~271.9		6.7	~219.9	
Queue Length 95th (m)	#44.1	53.7		#130.7	151.4		#159.7	#348.3		17.5	#252.0	
Internal Link Dist (m)		329.6			122.5			213.0			605.5	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	112	448		279	636		420	2726		162	1877	
Starvation Cap Reductn	0	0		0	0		0	196		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.65	0.52		1.18	0.74		0.88	1.04		0.40	0.98	

Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 63.2	Intersection LOS: E

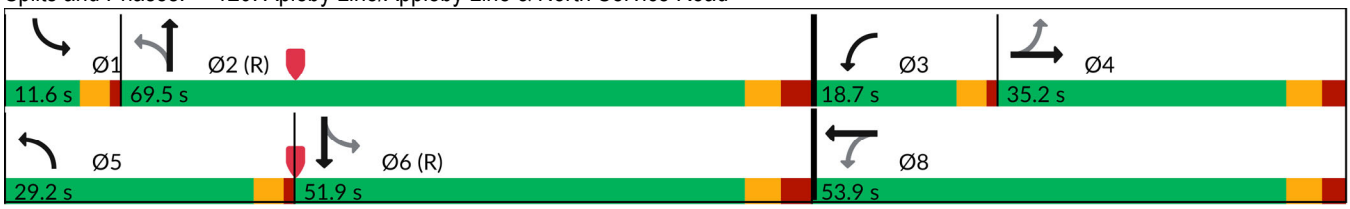
Intersection Capacity Utilization 107.7% ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 120: Apleby Line/Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Future Volume (vph)	72	47	182	322	255	204	362	2409	167	64	1737	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.93		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1769	1600		1770	1738		1736	4977		1805	4961	
Flt Permitted	0.28	1.00		0.24	1.00		0.07	1.00		0.08	1.00	
Satd. Flow (perm)	523	1600		442	1738		133	4977		149	4961	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	73	48	186	329	260	208	369	2458	170	65	1772	63
RTOR Reduction (vph)	0	112	0	0	23	0	0	5	0	0	2	0
Lane Group Flow (vph)	73	122	0	329	445	0	369	2623	0	65	1833	0
Confl. Peds. (#/hr)	1					1	2		1	1		2
Heavy Vehicles (%)	2%	3%	5%	2%	1%	2%	4%	3%	4%	0%	4%	2%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.5	20.5		39.2	39.2		83.1	73.1		57.0	51.0	
Effective Green, g (s)	20.5	20.5		39.2	39.2		83.1	73.1		57.0	51.0	
Actuated g/C Ratio	0.15	0.15		0.29	0.29		0.62	0.54		0.42	0.38	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	79	242		272	504		415	2694		136	1874	
v/s Ratio Prot		0.08		c0.13	0.26		c0.18	c0.53		0.02	0.37	
v/s Ratio Perm	0.14			c0.22			0.36			0.18		
v/c Ratio	0.92	0.50		1.21	0.88		0.89	0.97		0.48	0.98	
Uniform Delay, d1	56.5	52.6		43.5	45.7		41.7	30.0		30.6	41.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	75.4	1.7		123.5	16.5		20.1	12.2		2.6	16.2	
Delay (s)	131.9	54.2		167.0	62.2		61.8	42.2		33.2	57.6	
Level of Service	F	D		F	E		E	D		C	E	
Approach Delay (s/veh)		72.7			105.4			44.6			56.8	
Approach LOS		E			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	58.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	107.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	3023	0	0	2727
Future Volume (vph)	1353	1424	3023	0	0	2727
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		0.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2733	5085	0	0	4988
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2733	5085	0	0	4988
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)						
Link Speed (k/h)	60		60			60
Link Distance (m)	178.1		324.0			237.0
Travel Time (s)	10.7		19.4			14.2
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Adj. Flow (vph)	1395	1468	3116	0	0	2811
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1395	1468	3116	0	0	2811
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2



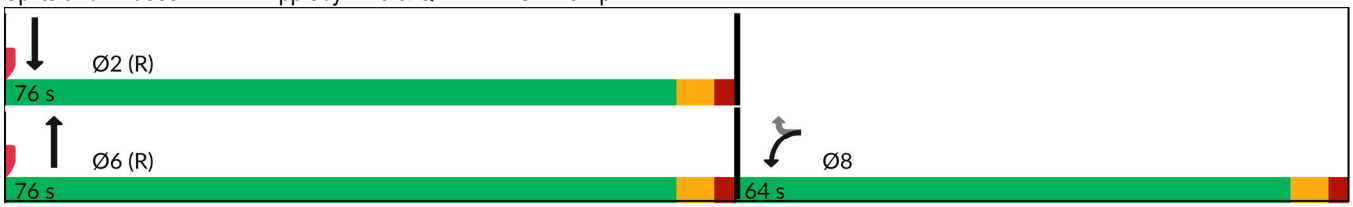
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	64.0	64.0	76.0			76.0
Total Split (%)	45.7%	45.7%	54.3%			54.3%
Maximum Green (s)	58.0	58.0	70.0			70.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	58.0	58.0	70.0			70.0
Actuated g/C Ratio	0.41	0.41	0.50			0.50
v/c Ratio	0.99	1.30	1.23			1.13
Control Delay (s/veh)	62.5	175.1	137.6			96.5
Queue Delay	0.0	0.0	0.0			0.2
Total Delay (s/veh)	62.5	175.1	137.6			96.7
LOS	E	F	F			F
Approach Delay (s/veh)	120.3		137.6			96.7
Approach LOS	F		F			F
Queue Length 50th (m)	210.4	~318.6	~414.4			~356.3
Queue Length 95th (m)	#264.7	#368.5	#438.6			#382.9
Internal Link Dist (m)	154.1		300.0			213.0
Turn Bay Length (m)	210.0					
Base Capacity (vph)	1408	1132	2542			2494
Starvation Cap Reductn	0	0	0			204
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.99	1.30	1.23			1.23

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.30			
Intersection Signal Delay (s/veh): 118.9		Intersection LOS: F	
Intersection Capacity Utilization 118.2%		ICU Level of Service H	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

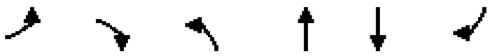
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



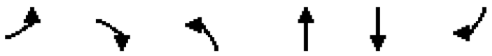


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	1353	1424	3023	0	0	2727
Future Volume (vph)	1353	1424	3023	0	0	2727
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2733	5085			4988
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2733	5085			4988
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	1395	1468	3116	0	0	2811
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	1395	1468	3116	0	0	2811
Heavy Vehicles (%)	3%	4%	2%	0%	0%	4%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	58.0	58.0	70.0			70.0
Effective Green, g (s)	58.0	58.0	70.0			70.0
Actuated g/C Ratio	0.41	0.41	0.50			0.50
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	1408	1132	2542			2494
v/s Ratio Prot	0.41		c0.61			0.56
v/s Ratio Perm		c0.54				
v/c Ratio	0.99	1.30	1.23			1.13
Uniform Delay, d1	40.7	41.0	35.0			35.0
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	21.7	140.2	105.3			63.0
Delay (s)	62.4	181.2	140.3			98.0
Level of Service	E	F	F			F
Approach Delay (s/veh)	123.3		140.3			98.0
Approach LOS	F		F			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	121.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	819	611	0	2383	3331	0
Future Volume (vph)	819	611	0	2383	3331	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	5036	4940	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	5036	4940	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		1				
Link Speed (k/h)	60			60	60	
Link Distance (m)	219.9			352.8	324.0	
Travel Time (s)	13.2			21.2	19.4	
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Adj. Flow (vph)	827	617	0	2407	3365	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	827	617	0	2407	3365	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



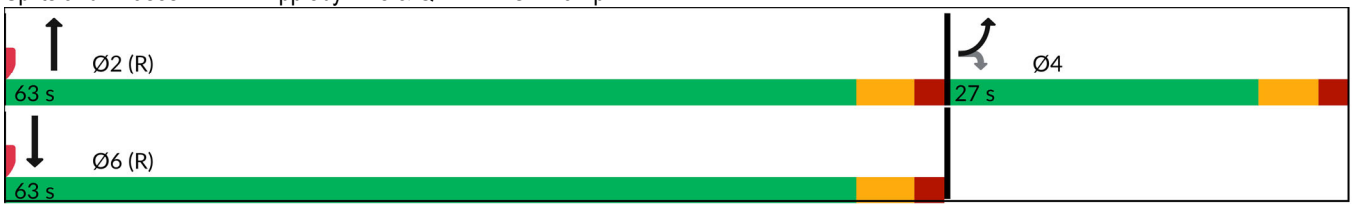
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	27.0	27.0		63.0	63.0	
Total Split (%)	30.0%	30.0%		70.0%	70.0%	
Maximum Green (s)	21.0	21.0		57.0	57.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	21.0	21.0		57.0	57.0	
Actuated g/C Ratio	0.23	0.23		0.63	0.63	
v/c Ratio	1.06	0.99		0.75	1.08	
Control Delay (s/veh)	85.1	68.5		13.6	59.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	85.1	68.5		13.6	59.3	
LOS	F	E		B	E	
Approach Delay (s/veh)	78.0			13.6	59.3	
Approach LOS	E			B	E	
Queue Length 50th (m)	~89.4	66.3		103.7	~261.2	
Queue Length 95th (m)	#127.3	#108.2		123.1	#291.2	
Internal Link Dist (m)	195.9			328.8	300.0	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	778	626		3189	3128	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	1.06	0.99		0.75	1.08	

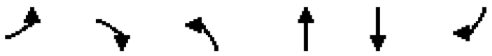
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay (s/veh): 47.8	Intersection LOS: D
Intersection Capacity Utilization 118.2%	ICU Level of Service H
Analysis Period (min) 15	

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

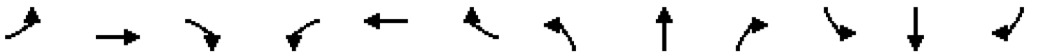




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	819	611	0	2383	3331	0
Future Volume (vph)	819	611	0	2383	3331	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		5036	4940	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		5036	4940	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	827	617	0	2407	3365	0
RTOR Reduction (vph)	0	1	0	0	0	0
Lane Group Flow (vph)	827	616	0	2407	3365	0
Heavy Vehicles (%)	5%	6%	0%	3%	5%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	21.0	21.0		57.0	57.0	
Effective Green, g (s)	21.0	21.0		57.0	57.0	
Actuated g/C Ratio	0.23	0.23		0.63	0.63	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	778	625		3189	3128	
v/s Ratio Prot	c0.25			0.48	c0.68	
v/s Ratio Perm		0.23				
v/c Ratio	1.06	0.99		0.75	1.08	
Uniform Delay, d1	34.5	34.4		11.6	16.5	
Progression Factor	1.00	1.00		1.00	1.00	
Incremental Delay, d2	50.3	32.2		1.7	40.9	
Delay (s)	84.8	66.5		13.3	57.4	
Level of Service	F	E		B	E	
Approach Delay (s/veh)	77.0			13.3	57.4	
Approach LOS	E			B	E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	46.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Future Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor		0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.939			0.932				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3225	0	1752	3250	0	1687	5085	1538	3367	5085	1404
Flt Permitted	0.116			0.279			0.095			0.950		
Satd. Flow (perm)	212	3225	0	513	3250	0	169	5085	1514	3363	5085	1375
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		113			151				151			240
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		165.7			160.7			610.4			352.8	
Travel Time (s)		9.9			9.6			36.6			21.2	
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Adj. Flow (vph)	404	297	202	509	645	539	115	1168	207	267	1815	348
Shared Lane Traffic (%)												
Lane Group Flow (vph)	404	499	0	509	1184	0	115	1168	207	267	1815	348
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	27.0	41.0		33.0	47.0		11.0	48.0	48.0	18.0	55.0	55.0
Total Split (%)	19.3%	29.3%		23.6%	33.6%		7.9%	34.3%	34.3%	12.9%	39.3%	39.3%
Maximum Green (s)	23.0	34.6		29.0	40.6		7.0	41.7	41.7	14.0	48.7	48.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	60.0	34.6		70.0	40.6		51.3	42.0	42.0	13.7	48.7	48.7
Actuated g/C Ratio	0.43	0.25		0.50	0.29		0.37	0.30	0.30	0.10	0.35	0.35
v/c Ratio	1.18	0.57		0.99	1.13		0.84	0.77	0.37	0.81	1.03	0.55
Control Delay (s/veh)	146.6	38.0		64.7	109.6		71.1	48.6	13.4	81.2	73.1	14.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	146.6	38.0		64.7	109.6		71.1	48.6	13.4	81.2	73.1	14.5
LOS	F	D		E	F		E	D	B	F	E	B
Approach Delay (s/veh)		86.6			96.1			45.4			65.6	
Approach LOS		F			F			D			E	
Queue Length 50th (m)	~127.8	53.3		104.2	~194.2		20.8	115.5	12.4	40.9	~209.0	25.7
Queue Length 95th (m)	#197.8	73.0		#182.1	#239.7		#56.3	134.2	35.2	#62.4	#240.0	61.9
Internal Link Dist (m)		141.7			136.7			586.4			328.8	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	341	882		513	1049		137	1526	559	336	1768	634
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.18	0.57		0.99	1.13		0.84	0.77	0.37	0.79	1.03	0.55

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.18	
Intersection Signal Delay (s/veh): 71.8	Intersection LOS: E

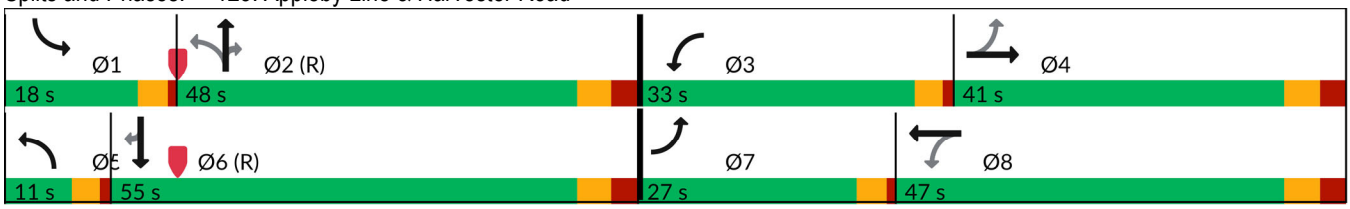
Intersection Capacity Utilization 114.7% ICU Level of Service H

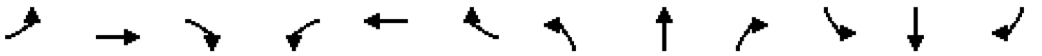
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

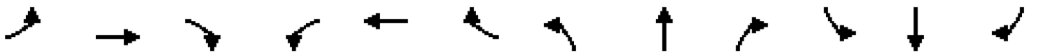




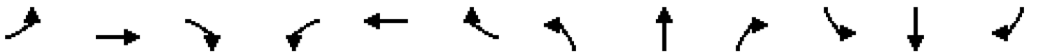
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Future Volume (vph)	396	291	198	499	632	528	113	1145	203	262	1779	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3226		1751	3249		1687	5085	1514	3367	5085	1375
Flt Permitted	0.12	1.00		0.28	1.00		0.10	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	211	3226		515	3249		169	5085	1514	3367	5085	1375
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	404	297	202	509	645	539	115	1168	207	267	1815	348
RTOR Reduction (vph)	0	85	0	0	107	0	0	0	106	0	0	157
Lane Group Flow (vph)	404	414	0	509	1077	0	115	1168	101	267	1815	191
Confl. Peds. (#/hr)	10		7	7		10	7		3	3		7
Heavy Vehicles (%)	4%	3%	6%	3%	1%	4%	7%	2%	5%	4%	2%	15%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	57.6	34.6		67.6	40.6		49.0	42.0	42.0	13.7	48.7	48.7
Effective Green, g (s)	57.6	34.6		67.6	40.6		49.0	42.0	42.0	13.7	48.7	48.7
Actuated g/C Ratio	0.41	0.25		0.48	0.29		0.35	0.30	0.30	0.10	0.35	0.35
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	337	797		504	942		135	1525	454	329	1768	478
v/s Ratio Prot	c0.20	0.13		c0.21	c0.33		0.04	0.23		c0.08	c0.36	
v/s Ratio Perm	0.30			0.28			0.26		0.07			0.14
v/c Ratio	1.20	0.52		1.01	1.14		0.85	0.77	0.22	0.81	1.03	0.40
Uniform Delay, d1	43.6	45.5		28.5	49.7		37.3	44.5	36.8	61.9	45.7	34.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	114.6	0.6		42.6	77.1		37.3	3.7	1.1	14.1	28.5	2.5
Delay (s)	158.2	46.1		71.1	126.8		74.6	48.3	37.9	76.0	74.1	37.1
Level of Service	F	D		E	F		E	D	D	E	E	D
Approach Delay (s/veh)		96.3			110.1			48.9			69.0	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	78.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	114.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Future Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	0.99		0.94	0.96		0.97	1.00		0.93	0.99		0.93
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3400	1776	1599	1736	1810	1468	1787	3574	1482	1626	5136	1599
Flt Permitted	0.950			0.673			0.065			0.225		
Satd. Flow (perm)	3351	1776	1502	1179	1810	1421	122	3574	1376	381	5136	1490
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			187			208			149			392
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		194.2			264.9			224.4			610.4	
Travel Time (s)		11.7			15.9			13.5			36.6	
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Adj. Flow (vph)	622	132	508	296	253	248	290	805	139	243	1649	1301
Shared Lane Traffic (%)												
Lane Group Flow (vph)	622	132	508	296	253	248	290	805	139	243	1649	1301
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.0	37.5	37.5	11.0	38.8	38.8	11.0	38.8	38.8
Total Split (s)	24.5	45.5	45.5	16.5	37.5	37.5	16.0	66.0	66.0	22.0	72.0	72.0
Total Split (%)	16.3%	30.3%	30.3%	11.0%	25.0%	25.0%	10.7%	44.0%	44.0%	14.7%	48.0%	48.0%
Maximum Green (s)	19.5	39.0	39.0	12.5	31.0	31.0	12.0	59.2	59.2	18.0	65.2	65.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	19.5	37.9	37.9	44.9	29.9	29.9	77.9	62.4	62.4	82.9	65.2	65.2
Actuated g/C Ratio	0.13	0.25	0.25	0.30	0.20	0.20	0.52	0.42	0.42	0.55	0.43	0.43
v/c Ratio	1.41	0.29	0.98	0.74	0.70	0.55	1.39	0.54	0.21	0.71	0.74	1.50
Control Delay (s/veh)	241.7	46.9	69.3	52.0	67.0	15.7	237.3	35.3	4.2	29.0	37.8	253.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	241.7	46.9	69.3	52.0	67.0	15.7	237.3	35.3	4.2	29.0	37.8	253.5
LOS	F	D	E	D	E	B	F	D	A	C	D	F
Approach Delay (s/veh)		151.9			45.5			79.3			125.0	
Approach LOS		F			D			E			F	
Queue Length 50th (m)	~137.0	34.9	110.3	70.2	76.5	11.1	~109.8	102.6	0.0	41.1	157.0	~495.8
Queue Length 95th (m)	#177.7	56.1	#187.5	99.6	110.1	41.9	#172.6	125.7	13.0	60.0	175.7	#583.3
Internal Link Dist (m)		170.2			240.9			200.4			586.4	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	442	461	528	399	374	458	208	1487	659	363	2232	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.41	0.29	0.96	0.74	0.68	0.54	1.39	0.54	0.21	0.67	0.74	1.50

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.50	
Intersection Signal Delay (s/veh): 111.8	Intersection LOS: F

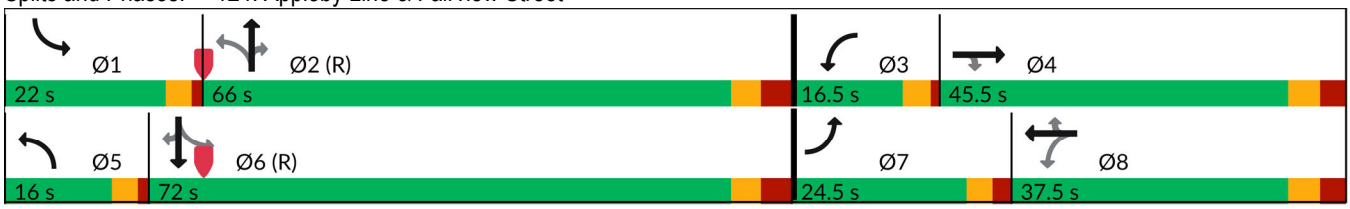
Intersection Capacity Utilization 126.8% ICU Level of Service H

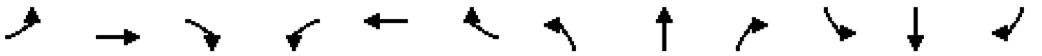
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

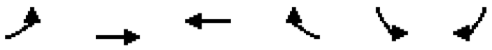




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Future Volume (vph)	597	127	488	284	243	238	278	773	133	233	1583	1249
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.94	1.00	1.00	0.97	1.00	1.00	0.93	1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3400	1776	1502	1689	1810	1421	1787	3574	1376	1622	5136	1490
Flt Permitted	0.95	1.00	1.00	0.67	1.00	1.00	0.06	1.00	1.00	0.23	1.00	1.00
Satd. Flow (perm)	3400	1776	1502	1196	1810	1421	122	3574	1376	385	5136	1490
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	622	132	508	296	253	248	290	805	139	243	1649	1301
RTOR Reduction (vph)	0	0	140	0	0	167	0	0	81	0	0	222
Lane Group Flow (vph)	622	132	368	296	253	81	290	805	58	243	1649	1079
Confl. Peds. (#/hr)	14		34	34		14	21		43	43		21
Heavy Vehicles (%)	3%	7%	1%	4%	5%	10%	1%	1%	9%	11%	1%	1%
Turn Type	Prot	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4	8		8	2		2	6		6
Actuated Green, G (s)	19.5	37.9	37.9	42.4	29.9	29.9	75.5	62.4	62.4	81.1	65.2	65.2
Effective Green, g (s)	19.5	37.9	37.9	42.4	29.9	29.9	75.5	62.4	62.4	81.1	65.2	65.2
Actuated g/C Ratio	0.13	0.25	0.25	0.28	0.20	0.20	0.50	0.42	0.42	0.54	0.43	0.43
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	442	448	379	379	360	283	206	1486	572	339	2232	647
v/s Ratio Prot	c0.18	0.07		0.07	0.14		c0.12	0.23		c0.08	0.32	
v/s Ratio Perm			c0.25	0.16		0.06	0.59		0.04	0.31		c0.72
v/c Ratio	1.41	0.29	0.97	0.78	0.70	0.29	1.41	0.54	0.10	0.72	0.74	1.67
Uniform Delay, d1	65.3	45.3	55.5	47.7	55.9	51.0	44.9	33.0	26.7	21.6	35.3	42.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	196.4	0.4	38.5	10.0	6.1	0.6	209.9	1.4	0.4	7.1	2.2	307.5
Delay (s)	261.6	45.6	94.1	57.7	62.0	51.6	254.8	34.4	27.1	28.6	37.5	349.9
Level of Service	F	D	F	E	E	D	F	C	C	C	D	F
Approach Delay (s/veh)		171.6			57.2			85.4			164.1	
Approach LOS		F			E			F			F	

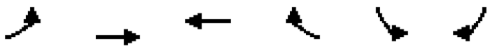
Intersection Summary			
HCM 2000 Control Delay (s/veh)	137.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.46		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	126.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	17	809	1288	5	22	106
Future Volume (vph)	17	809	1288	5	22	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.999		0.888	
Flt Protected	0.950				0.991	
Satd. Flow (prot)	1770	3539	3536	0	1639	0
Flt Permitted	0.950				0.991	
Satd. Flow (perm)	1770	3539	3536	0	1639	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		645.5	108.6		140.4	
Travel Time (s)		38.7	6.5		12.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	879	1400	5	24	115
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	879	1405	0	139	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	

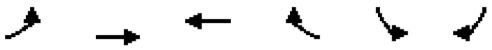
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.2%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	17	809	1288	5	22	106
Future Volume (Veh/h)	17	809	1288	5	22	106
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	18	879	1400	5	24	115
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			109			
pX, platoon unblocked	0.76				0.76	0.76
vC, conflicting volume	1405				1878	703
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	900				1523	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				70	86
cM capacity (veh/h)	570				80	824

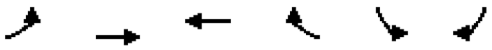
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	18	440	440	933	472	139
Volume Left	18	0	0	0	0	24
Volume Right	0	0	0	0	5	115
cSH	570	1700	1700	1700	1700	316
Volume to Capacity	0.03	0.26	0.26	0.55	0.28	0.44
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	17.1
Control Delay (s/veh)	11.5	0.0	0.0	0.0	0.0	25.0
Lane LOS	B					C
Approach Delay (s/veh)	0.2			0.0		25.0
Approach LOS						C

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	789	835	0	15	45
Future Volume (vph)	2	789	835	0	15	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	1.00	1.00	1.00
Frt					0.898	
Flt Protected	0.950				0.988	
Satd. Flow (prot)	1770	3539	3539	0	1653	0
Flt Permitted	0.950				0.988	
Satd. Flow (perm)	1770	3539	3539	0	1653	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		99.6	769.5		145.5	
Travel Time (s)		6.0	46.2		13.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	2	858	908	0	16	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2	858	908	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.4%		ICU Level of Service A	
Analysis Period (min) 15			

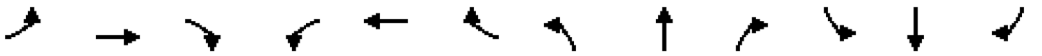


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	789	835	0	15	45
Future Volume (Veh/h)	2	789	835	0	15	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	858	908	0	16	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		100				
pX, platoon unblocked					0.88	
vC, conflicting volume	908				1341	454
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	908				1113	454
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				91	91
cM capacity (veh/h)	745				178	553

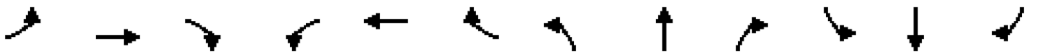
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	2	429	429	454	454	65
Volume Left	2	0	0	0	0	16
Volume Right	0	0	0	0	0	49
cSH	745	1700	1700	1700	1700	364
Volume to Capacity	0.00*	0.25	0.25	0.27	0.27	0.18
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	5.1
Control Delay (s/veh)	9.8	0.0	0.0	0.0	0.0	17.0
Lane LOS	A					C
Approach Delay (s/veh)	0.0			0.0		17.0
Approach LOS						C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

* Value less than 0.01.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Future Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Storage Lanes	2		1	2		1	2		1	2		1
Taper Length (m)	15.0			20.0			15.0			15.0		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor	1.00		0.98	1.00		0.97	1.00		0.97	0.99		0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5136	1615	3467	5136	1568	3502	5136	1615	3467	5136	1615
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3486	5136	1576	3453	5136	1527	3497	5136	1560	3446	5136	1587
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			274			234			248			245
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		232.8			266.9			2014.5			279.4	
Travel Time (s)		14.0			16.0			120.9			16.8	
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	246	790	466	527	867	234	554	928	388	453	1022	268
Shared Lane Traffic (%)												
Lane Group Flow (vph)	246	790	466	527	867	234	554	928	388	453	1022	268
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Detector Phase	5	2	2	1	6	6	7	4	4	3	8	8
Switch Phase												
Minimum Initial (s)	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0	8.0	15.0	15.0
Minimum Split (s)	13.0	46.4	46.4	13.0	46.4	46.4	13.0	48.4	48.4	13.0	48.4	48.4
Total Split (s)	21.0	46.4	46.4	24.0	49.4	49.4	25.0	50.6	50.6	24.0	49.6	49.6
Total Split (%)	14.5%	32.0%	32.0%	16.6%	34.1%	34.1%	17.2%	34.9%	34.9%	16.6%	34.2%	34.2%
Maximum Green (s)	16.0	39.0	39.0	19.0	42.0	42.0	20.0	43.2	43.2	19.0	42.2	42.2
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7	2.0	3.7	3.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		32.0	32.0		32.0	32.0		34.0	34.0		34.0	34.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	15.4	31.2	31.2	19.0	34.8	34.8	27.8	45.6	45.6	24.4	42.2	42.2
Actuated g/C Ratio	0.11	0.22	0.22	0.13	0.24	0.24	0.19	0.31	0.31	0.17	0.29	0.29
v/c Ratio	0.66	0.72	0.84	1.16	0.70	0.43	0.82	0.57	0.59	0.78	0.68	0.42
Control Delay (s/veh)	71.4	56.2	35.9	147.9	53.4	7.2	67.3	43.7	18.8	67.6	48.3	8.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.4	56.2	35.9	147.9	53.4	7.2	67.3	43.7	18.8	67.6	48.3	8.4
LOS	E	E	D	F	D	A	E	D	B	E	D	A
Approach Delay (s/veh)		52.4			77.4			45.5			47.2	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	37.3	83.3	60.8	~97.5	90.5	0.0	83.0	88.9	35.3	66.7	101.2	5.0
Queue Length 95th (m)	52.7	91.6	101.4	#135.6	98.4	20.9	#139.1	104.8	71.8	#109.6	118.4	28.4
Internal Link Dist (m)		208.8			242.9			1990.5			255.4	
Turn Bay Length (m)	105.0		180.0	190.0		215.0	135.0		120.0	135.0		180.0
Base Capacity (vph)	386	1381	624	454	1487	608	672	1616	660	583	1494	635
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.57	0.75	1.16	0.58	0.38	0.82	0.57	0.59	0.78	0.68	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 145	
Actuated Cycle Length: 145	
Offset: 0 (0%), Referenced to phase 4:NBT and 8:SBT, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.16	
Intersection Signal Delay (s/veh): 55.2	Intersection LOS: E

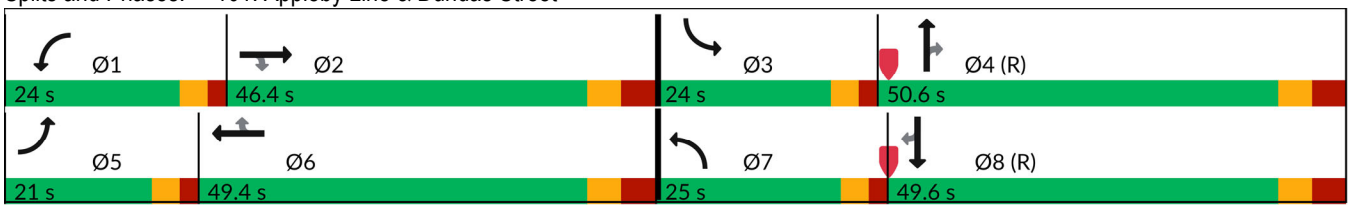
Intersection Capacity Utilization 105.4% ICU Level of Service G

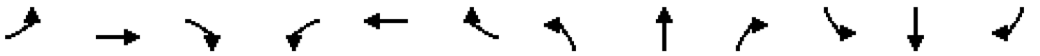
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 101: Appleby Line & Dundas Street

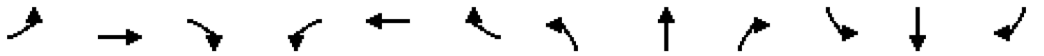




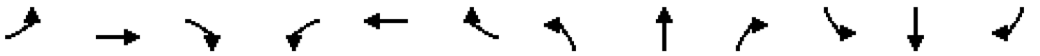
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Future Volume (vph)	241	774	457	516	850	229	543	909	380	444	1002	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3502	5136	1576	3467	5136	1527	3502	5136	1560	3467	5136	1587
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	246	790	466	527	867	234	554	928	388	453	1022	268
RTOR Reduction (vph)	0	0	215	0	0	178	0	0	170	0	0	174
Lane Group Flow (vph)	246	790	251	527	867	56	554	928	218	453	1022	94
Confl. Peds. (#/hr)	13		11	11		13	5		21	21		5
Heavy Vehicles (%)	0%	1%	0%	1%	1%	3%	0%	1%	0%	1%	1%	0%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases			2			6			4			8
Actuated Green, G (s)	15.4	31.2	31.2	19.0	34.8	34.8	27.8	45.6	45.6	24.4	42.2	42.2
Effective Green, g (s)	15.4	31.2	31.2	19.0	34.8	34.8	27.8	45.6	45.6	24.4	42.2	42.2
Actuated g/C Ratio	0.11	0.22	0.22	0.13	0.24	0.24	0.19	0.31	0.31	0.17	0.29	0.29
Clearance Time (s)	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4	5.0	7.4	7.4
Vehicle Extension (s)	5.0	3.0	3.0	5.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Grp Cap (vph)	371	1105	339	454	1232	366	671	1615	490	583	1494	461
v/s Ratio Prot	0.07	0.15		c0.15	c0.17		c0.16	c0.18		0.13	c0.20	
v/s Ratio Perm			0.16			0.04			0.14			0.06
v/c Ratio	0.66	0.71	0.74	1.16	0.70	0.15	0.83	0.57	0.44	0.78	0.68	0.20
Uniform Delay, d1	62.3	52.8	53.1	63.0	50.4	43.5	56.3	41.6	39.6	57.7	45.5	38.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	2.2	8.4	94.3	1.8	0.2	9.1	1.5	2.9	7.5	2.6	1.0
Delay (s)	68.1	55.0	61.5	157.3	52.2	43.7	65.4	43.1	42.5	65.2	48.1	39.7
Level of Service	E	D	E	F	D	D	E	D	D	E	D	D
Approach Delay (s/veh)		59.2			85.0			49.6			51.2	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	60.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	145.0	Sum of lost time (s)	24.8
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Future Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	55.0		0.0	125.0		80.0	100.0		0.0	55.0		0.0
Storage Lanes	1		0	2		1	2		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.91	1.00	0.97	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00		0.97	1.00	1.00		1.00	1.00	
Frt		0.944				0.850		0.986			0.974	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	3365	0	3467	5136	1615	3502	5047	0	3467	4979	0
Flt Permitted	0.268			0.950			0.950			0.950		
Satd. Flow (perm)	492	3365	0	3457	5136	1572	3495	5047	0	3462	4979	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		98				274		14			41	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		177.6			521.3			544.4			2014.5	
Travel Time (s)		10.7			31.3			32.7			120.9	
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Adj. Flow (vph)	277	639	381	230	731	701	342	1452	149	583	1206	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	277	1020	0	230	731	701	342	1601	0	583	1463	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2	1	1	2		1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0	2.0	2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6	2.0	2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Detector Phase	7	4		3	8	8	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0	8.0	7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	34.4		11.0	34.4	34.4	12.0	34.5		11.0	34.5	
Total Split (s)	13.0	42.0		13.0	42.0	42.0	20.0	46.0		24.0	50.0	
Total Split (%)	10.4%	33.6%		10.4%	33.6%	33.6%	16.0%	36.8%		19.2%	40.0%	
Maximum Green (s)	9.0	35.6		9.0	35.6	35.6	15.0	39.5		20.0	43.5	
Yellow Time (s)	3.0	3.7		3.0	3.7	3.7	3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.7		1.0	2.7	2.7	2.0	2.8		1.0	2.8	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0	7.0		7.0			7.0	
Flash Don't Walk (s)		21.0			21.0	21.0		21.0			21.0	
Pedestrian Calls (#/hr)		0			0	0		0			0	
Act Effct Green (s)	47.0	35.6		9.0	35.6	35.6	14.7	39.5		20.0	43.8	
Actuated g/C Ratio	0.38	0.28		0.07	0.28	0.28	0.12	0.32		0.16	0.35	
v/c Ratio	1.01	0.99		0.92	0.50	1.09	0.83	1.00		1.05	0.83	
Control Delay (s/veh)	88.8	66.7		97.9	38.7	88.8	71.7	64.4		102.9	40.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	88.8	66.7		97.9	38.7	88.8	71.7	64.4		102.9	40.9	
LOS	F	E		F	D	F	E	E		F	D	
Approach Delay (s/veh)		71.4			68.0			65.7			58.6	
Approach LOS		E			E			E			E	
Queue Length 50th (m)	~51.2	128.1		31.2	58.2	~150.1	45.2	151.3		~85.3	124.3	
Queue Length 95th (m)	#110.8	#176.6		#56.7	71.9	#227.2	#67.9	#189.4		#122.5	144.8	
Internal Link Dist (m)		153.6			497.3			520.4			1990.5	
Turn Bay Length (m)	55.0			125.0		80.0	100.0			55.0		
Base Capacity (vph)	275	1028		249	1462	643	420	1604		554	1772	
Starvation Cap Reductn	0	0		0	0	0	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0		0	0	
Storage Cap Reductn	0	0		0	0	0	0	0		0	0	
Reduced v/c Ratio	1.01	0.99		0.92	0.50	1.09	0.81	1.00		1.05	0.83	

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 65.2	Intersection LOS: E

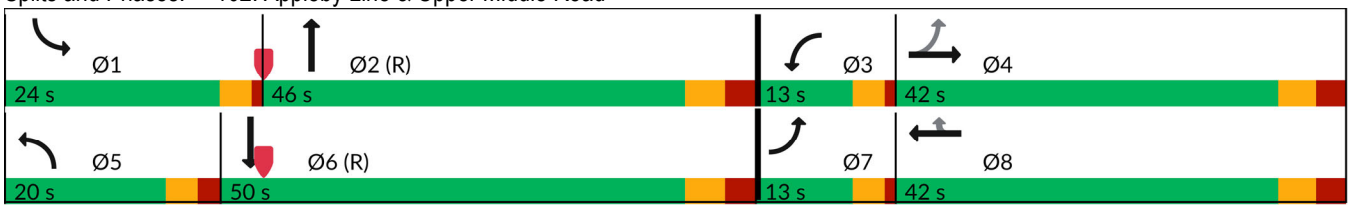
Intersection Capacity Utilization 103.6% ICU Level of Service G

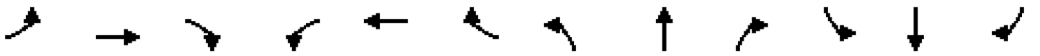
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 102: Appleby Line & Upper Middle Road

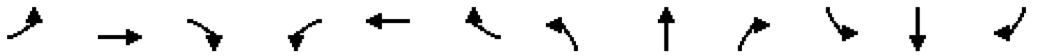




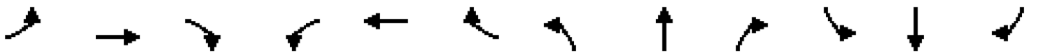
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Future Volume (vph)	271	626	373	225	716	687	335	1423	146	571	1182	252
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Lane Util. Factor	1.00	0.95		0.97	0.91	1.00	0.97	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1751	3365		3467	5136	1572	3502	5047		3467	4977	
Flt Permitted	0.27	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	495	3365		3467	5136	1572	3502	5047		3467	4977	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	277	639	381	230	731	701	342	1452	149	583	1206	257
RTOR Reduction (vph)	0	70	0	0	0	196	0	10	0	0	27	0
Lane Group Flow (vph)	277	950	0	230	731	505	342	1591	0	583	1436	0
Confl. Peds. (#/hr)	11		9	9		11	11		10	10		11
Heavy Vehicles (%)	3%	0%	1%	1%	1%	0%	0%	1%	2%	1%	1%	1%
Turn Type	pm+pt	NA		Prot	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4					8						
Actuated Green, G (s)	44.6	35.6		9.0	35.6	35.6	14.7	39.5		20.0	43.8	
Effective Green, g (s)	44.6	35.6		9.0	35.6	35.6	14.7	39.5		20.0	43.8	
Actuated g/C Ratio	0.36	0.28		0.07	0.28	0.28	0.12	0.32		0.16	0.35	
Clearance Time (s)	4.0	6.4		4.0	6.4	6.4	5.0	6.5		4.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	267	958		249	1462	447	411	1594		554	1743	
v/s Ratio Prot	c0.07	0.28		0.07	0.14		0.10	c0.32		c0.17	0.29	
v/s Ratio Perm	0.30					c0.32						
v/c Ratio	1.04	0.99		0.92	0.50	1.13	0.83	1.00		1.05	0.82	
Uniform Delay, d1	36.6	44.6		57.7	37.3	44.7	53.9	42.7		52.5	37.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	65.2	26.9		36.8	0.3	83.1	13.4	22.2		52.7	4.6	
Delay (s)	101.8	71.4		94.5	37.5	127.8	67.4	64.9		105.2	41.7	
Level of Service	F	E		F	D	F	E	E		F	D	
Approach Delay (s/veh)		77.9			83.5			65.3			59.8	
Approach LOS		E			F			E			E	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	70.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	21.9
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Future Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	25.0		0.0	30.0		0.0	45.0		0.0
Storage Lanes	1		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	0.91	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor					1.00						0.99	
Frt		0.992			0.993			0.850			0.850	
Flt Protected	0.950						0.950			0.950		
Satd. Flow (prot)	1608	4583	0	0	4579	0	1593	1425	0	1624	1434	0
Flt Permitted	0.111				0.940		0.588			0.757		
Satd. Flow (perm)	188	4583	0	0	4304	0	986	1425	0	1294	1434	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			11			68			253	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		118.7			290.7			162.0			285.4	
Travel Time (s)		7.1			17.4			14.6			25.7	
Confl. Peds. (#/hr)	18					18						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Adj. Flow (vph)	136	1217	73	1	1623	79	23	0	1	61	0	111
Shared Lane Traffic (%)												
Lane Group Flow (vph)	136	1290	0	0	1703	0	23	1	0	61	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2			2		1	2		1	2	
Detector Template	Left	Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		8	8		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	9.5	48.0		38.5	38.5		9.5	32.0		22.5	22.5	
Total Split (%)	11.9%	60.0%		48.1%	48.1%		11.9%	40.0%		28.1%	28.1%	
Maximum Green (s)	5.5	44.0		34.5	34.5		5.5	28.0		18.5	18.5	
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lead/Lag	Lead			Lag	Lag		Lead			Lag	Lag	
Lead-Lag Optimize?	Yes			Yes	Yes		Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max		None	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0			0		0	0	
Act Effct Green (s)	44.0	44.0			34.5		28.0	28.0		24.2	24.2	
Actuated g/C Ratio	0.55	0.55			0.43		0.35	0.35		0.30	0.30	
v/c Ratio	0.68	0.51			0.91		0.06	0.00		0.16	0.18	
Control Delay (s/veh)	28.9	12.0			30.5		17.7	0.0		24.2	0.7	
Queue Delay	0.0	0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	28.9	12.0			30.5		17.7	0.0		24.2	0.7	
LOS	C	B			C		B	A		C	A	
Approach Delay (s/veh)		13.6			30.5			16.9			9.0	
Approach LOS		B			C			B			A	
Queue Length 50th (m)	10.0	43.5			90.5		2.4	0.0		6.5	0.0	
Queue Length 95th (m)	#31.3	55.1			#125.8		7.4	0.0		18.1	0.0	
Internal Link Dist (m)		94.7			266.7			138.0			261.4	
Turn Bay Length (m)	60.0						30.0			45.0		
Base Capacity (vph)	201	2528			1862		386	542		391	610	
Starvation Cap Reductn	0	0			0		0	0		0	0	
Spillback Cap Reductn	0	0			0		0	0		0	0	
Storage Cap Reductn	0	0			0		0	0		0	0	
Reduced v/c Ratio	0.68	0.51			0.91		0.06	0.00		0.16	0.18	

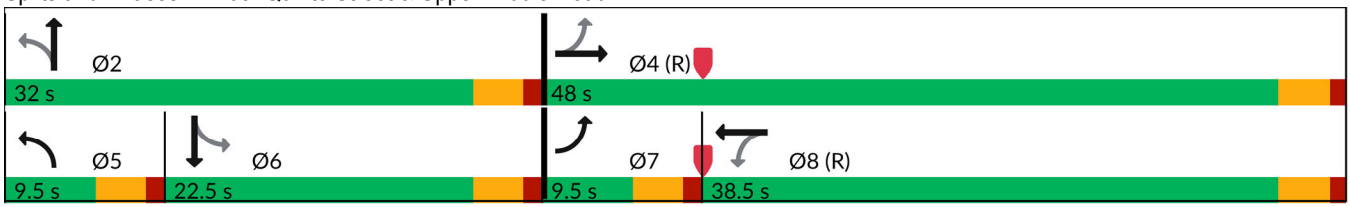
Intersection Summary	
Area Type:	CBD
Cycle Length: 80	
Actuated Cycle Length: 80	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay (s/veh): 22.1	Intersection LOS: C

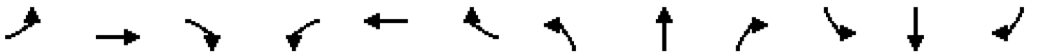
Intersection Capacity Utilization 86.6% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 105: Quinte Street & Upper Middle Road

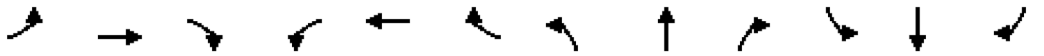




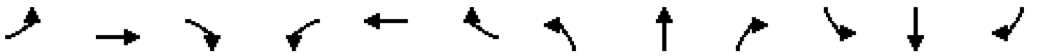
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Future Volume (vph)	129	1156	69	1	1542	75	22	0	1	58	0	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Lane Util. Factor	1.00	0.91			0.91		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.99			0.99		1.00	0.85		1.00	0.85	
Flt Protected	0.95	1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1608	4580			4579		1593	1425		1625	1434	
Flt Permitted	0.11	1.00			0.94		0.59	1.00		0.76	1.00	
Satd. Flow (perm)	188	4580			4302		986	1425		1295	1434	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	136	1217	73	1	1623	79	23	0	1	61	0	111
RTOR Reduction (vph)	0	9	0	0	7	0	0	1	0	0	77	0
Lane Group Flow (vph)	136	1281	0	0	1696	0	23	0	0	61	34	0
Confl. Peds. (#/hr)	18					18						1
Heavy Vehicles (%)	1%	1%	2%	2%	1%	0%	2%	2%	2%	0%	2%	0%
Turn Type	pm+pt	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases	7	4			8		5	2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	41.6	41.6			32.1		30.4	30.4		24.2	24.2	
Effective Green, g (s)	41.6	41.6			32.1		30.4	30.4		24.2	24.2	
Actuated g/C Ratio	0.52	0.52			0.40		0.38	0.38		0.30	0.30	
Clearance Time (s)	4.0	4.0			4.0		4.0	4.0		4.0	4.0	
Vehicle Extension (s)	3.0	3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	195	2381			1726		391	541		391	433	
v/s Ratio Prot	c0.05	0.28					c0.00	0.00			0.02	
v/s Ratio Perm	0.31				c0.39		0.02			c0.05		
v/c Ratio	0.70	0.54			0.98		0.06	0.00		0.16	0.08	
Uniform Delay, d1	15.2	12.8			23.7		15.7	15.4		20.4	19.9	
Progression Factor	1.00	1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	10.4	0.9			18.0		0.1	0.0		0.8	0.3	
Delay (s)	25.6	13.7			41.6		15.8	15.4		21.3	20.3	
Level of Service	C	B			D		B	B		C	C	
Approach Delay (s/veh)		14.8			41.6			15.8			20.6	
Approach LOS		B			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Future Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0		0.0	60.0		0.0	55.0		0.0	60.0		0.0
Storage Lanes	1		0	1		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	0.97	1.00	1.00
Ped Bike Factor	1.00				0.99							
Frt		0.981			0.977			0.910			0.864	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5032	0	1770	4986	0	1770	1695	0	3502	1595	0
Flt Permitted	0.094			0.251			0.851			0.460		
Satd. Flow (perm)	175	5032	0	468	4986	0	1585	1695	0	1696	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		29			41			15			184	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		290.7			244.7			158.3			244.6	
Travel Time (s)		17.4			14.7			14.2			22.0	
Confl. Peds. (#/hr)	12					12						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Adj. Flow (vph)	150	950	136	13	1359	246	144	10	15	226	19	184
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	1086	0	13	1605	0	144	25	0	226	203	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		100	100		15	100		100	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

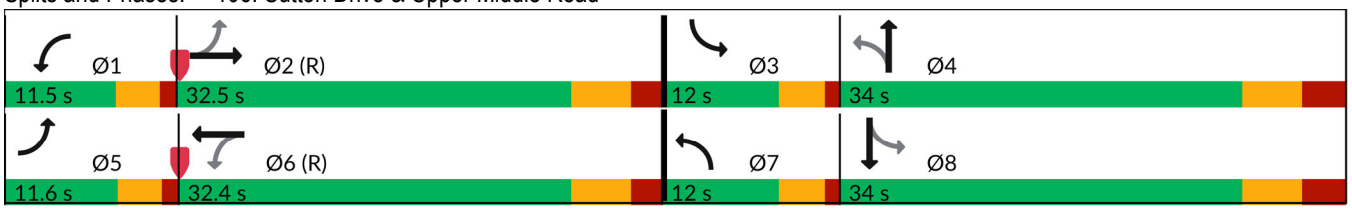


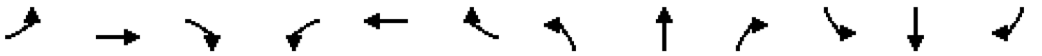
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Detector Phase	5	2		1	6		7	4		3	8	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		8.0	8.0		8.0	8.0	
Minimum Split (s)	11.5	31.0		11.5	31.0		12.0	34.0		12.0	34.0	
Total Split (s)	11.6	32.5		11.5	32.4		12.0	34.0		12.0	34.0	
Total Split (%)	12.9%	36.1%		12.8%	36.0%		13.3%	37.8%		13.3%	37.8%	
Maximum Green (s)	7.6	26.5		7.5	26.4		8.0	27.0		8.0	27.0	
Yellow Time (s)	3.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		18.0			18.0			20.0			20.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	57.5	53.3		51.7	42.7		13.9	9.5		22.9	9.5	
Actuated g/C Ratio	0.64	0.59		0.57	0.47		0.15	0.11		0.25	0.11	
v/c Ratio	0.56	0.36		0.04	0.67		0.55	0.13		0.29	0.61	
Control Delay (s/veh)	18.8	10.6		7.3	20.2		39.6	23.0		26.2	16.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	18.8	10.6		7.3	20.2		39.6	23.0		26.2	16.0	
LOS	B	B		A	C		D	C		C	B	
Approach Delay (s/veh)		11.6			20.1			37.1			21.4	
Approach LOS		B			C			D			C	
Queue Length 50th (m)	9.3	29.7		0.8	74.4		26.9	1.7		16.9	3.3	
Queue Length 95th (m)	28.2	60.6		3.3	110.9		34.8	8.8		24.1	22.9	
Internal Link Dist (m)		266.7			220.7			134.3			220.6	
Turn Bay Length (m)	60.0			60.0			55.0			60.0		
Base Capacity (vph)	270	2991		379	2385		261	519		772	607	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.56	0.36		0.03	0.67		0.55	0.05		0.29	0.33	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay (s/veh): 18.1		Intersection LOS: B	

Intersection Capacity Utilization 75.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 106: Sutton Drive & Upper Middle Road

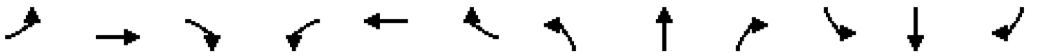




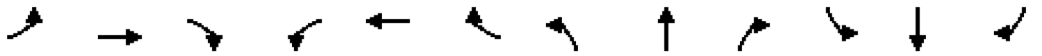
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Future Volume (vph)	144	912	131	12	1305	236	138	10	14	217	18	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	0.91		1.00	0.91		1.00	1.00		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.98		1.00	0.91		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	5033		1770	4986		1770	1695		3502	1595	
Flt Permitted	0.09	1.00		0.25	1.00		0.85	1.00		0.46	1.00	
Satd. Flow (perm)	175	5033		467	4986		1585	1695		1695	1595	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	150	950	136	12	1359	246	144	10	15	226	19	184
RTOR Reduction (vph)	0	14	0	0	23	0	0	14	0	0	156	0
Lane Group Flow (vph)	150	1072	0	13	1582	0	144	11	0	226	47	0
Confl. Peds. (#/hr)	12					12						
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	0%	2%	3%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		7	4		3	8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)	51.3	45.9		39.9	38.5		12.7	4.7		25.7	13.7	
Effective Green, g (s)	51.3	45.9		39.9	38.5		12.7	4.7		25.7	13.7	
Actuated g/C Ratio	0.57	0.51		0.44	0.43		0.14	0.05		0.29	0.15	
Clearance Time (s)	4.0	6.0		4.0	6.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	255	2566		227	2132		240	88		825	242	
v/s Ratio Prot	c0.06	0.21		0.00	c0.32		c0.05	0.01		c0.05	0.03	
v/s Ratio Perm	0.28			0.02			c0.03			0.03		
v/c Ratio	0.59	0.42		0.06	0.74		0.60	0.12		0.27	0.19	
Uniform Delay, d1	13.9	13.7		14.0	21.6		36.1	40.7		24.6	33.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	3.4	0.5		0.1	2.4		4.2	0.6		0.2	0.4	
Delay (s)	17.4	14.2		14.2	24.0		40.3	41.3		24.8	33.7	
Level of Service	B	B		B	C		D	D		C	C	
Approach Delay (s/veh)		14.6			23.9			40.5			29.0	
Approach LOS		B			C			D			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Future Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	15.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.91	0.91	1.00	0.91	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00				1.00							
Frt		0.966			0.991			0.949			0.954	
Flt Protected	0.950			0.950				0.970			0.968	
Satd. Flow (prot)	1805	4988	0	1770	5131	0	0	1715	0	0	1731	0
Flt Permitted	0.125			0.212				0.775			0.771	
Satd. Flow (perm)	237	4988	0	395	5131	0	0	1370	0	0	1379	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		193			26			52			32	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		198.8			464.6			106.0			226.6	
Travel Time (s)		11.9			27.9			9.5			20.4	
Confl. Peds. (#/hr)	7					7						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	2%	2%	2%	0%	2%	4%
Adj. Flow (vph)	40	880	256	18	1413	91	118	0	72	69	0	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	1136	0	18	1504	0	0	190	0	0	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2			2			2	
Detector Template	Left	Thru		Left	Thru			Thru			Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0			10.0			10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6			0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex			Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Detector Phase	4	4		8	8		2	2		2	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		22.5	22.5		22.5	22.5	
Total Split (s)	37.4	37.4		37.4	37.4		22.6	22.6		22.6	22.6	
Total Split (%)	62.3%	62.3%		62.3%	62.3%		37.7%	37.7%		37.7%	37.7%	
Maximum Green (s)	32.9	32.9		32.9	32.9		18.1	18.1		18.1	18.1	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0			0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		Max	Max		Max	None	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	32.9	32.9		32.9	32.9			18.1			18.1	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.30			0.30	
v/c Ratio	0.31	0.40		0.08	0.53			0.42			0.24	
Control Delay (s/veh)	15.4	6.9		8.8	7.8			15.5			13.4	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay (s/veh)	15.4	6.9		8.8	7.8			15.5			13.4	
LOS	B	A		A	A			B			B	
Approach Delay (s/veh)		7.1			7.9			15.5			13.4	
Approach LOS		A			A			B			B	
Queue Length 50th (m)	2.3	20.0		0.6	16.2			12.4			6.2	
Queue Length 95th (m)	9.5	27.9		m2.7	41.1			28.6			16.7	
Internal Link Dist (m)		174.8			440.6			82.0			202.6	
Turn Bay Length (m)	100.0			15.0								
Base Capacity (vph)	129	2822		216	2825			449			438	
Starvation Cap Reductn	0	0		0	0			0			0	
Spillback Cap Reductn	0	0		0	0			0			0	
Storage Cap Reductn	0	0		0	0			0			0	
Reduced v/c Ratio	0.31	0.40		0.08	0.53			0.42			0.24	

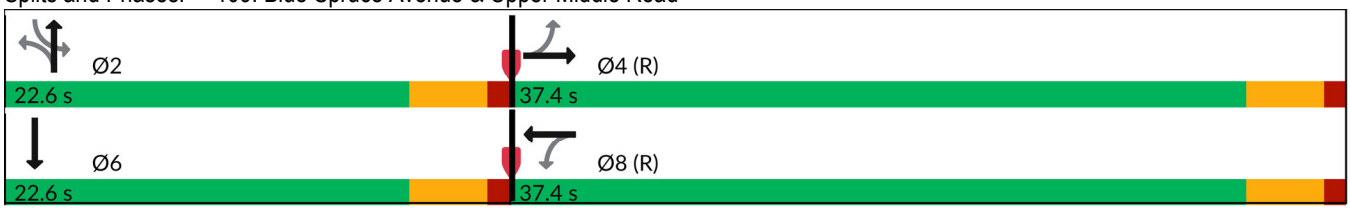
Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay (s/veh): 8.3		Intersection LOS: A	

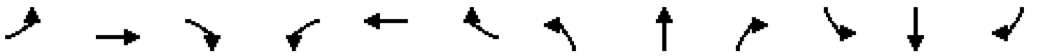
Intersection Capacity Utilization 51.0% ICU Level of Service A

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 109: Blue Spruce Avenue & Upper Middle Road

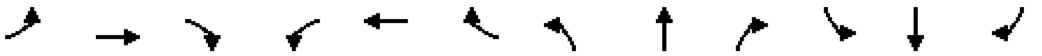




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Future Volume (vph)	38	836	243	17	1342	86	112	0	68	66	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	0.97		1.00	0.99			0.95			0.95	
Flt Protected	0.95	1.00		0.95	1.00			0.97			0.97	
Satd. Flow (prot)	1803	4989		1770	5130			1714			1731	
Flt Permitted	0.12	1.00		0.21	1.00			0.77			0.77	
Satd. Flow (perm)	237	4989		394	5130			1369			1378	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	880	256	18	1413	91	118	0	72	69	0	36
RTOR Reduction (vph)	0	87	0	0	12	0	0	36	0	0	22	0
Lane Group Flow (vph)	40	1049	0	18	1492	0	0	154	0	0	83	0
Confl. Peds. (#/hr)	7					7						
Heavy Vehicles (%)	0%	0%	2%	2%	0%	0%	2%	2%	2%	0%	2%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		D.Pm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			2		
Actuated Green, G (s)	32.9	32.9		32.9	32.9			18.1			18.1	
Effective Green, g (s)	32.9	32.9		32.9	32.9			18.1			18.1	
Actuated g/C Ratio	0.55	0.55		0.55	0.55			0.30			0.30	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	129	2735		216	2812			412			415	
v/s Ratio Prot		0.21			c0.29							
v/s Ratio Perm	0.17			0.05				c0.11			0.06	
v/c Ratio	0.31	0.38		0.08	0.53			0.37			0.20	
Uniform Delay, d1	7.4	7.7		6.4	8.6			16.5			15.6	
Progression Factor	1.00	1.00		1.17	0.83			1.00			1.00	
Incremental Delay, d2	6.1	0.4		0.7	0.7			2.6			0.2	
Delay (s)	13.5	8.2		8.2	7.9			19.1			15.8	
Level of Service	B	A		A	A			B			B	
Approach Delay (s/veh)		8.3			7.9			19.1			15.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Future Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	120.0		0.0	145.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor								1.00		1.00		
Frt		0.886			0.940			0.994			0.985	
Flt Protected		0.992			0.973		0.950			0.950		
Satd. Flow (prot)	0	1637	0	0	1738	0	1770	5151	0	1805	5099	0
Flt Permitted		0.939			0.407		0.191			0.163		
Satd. Flow (perm)	0	1550	0	0	727	0	356	5151	0	310	5099	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		325			109			16			31	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		120.8			160.8			285.5			464.6	
Travel Time (s)		10.9			14.5			17.1			27.9	
Confl. Peds. (#/hr)									1	1		
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Adj. Flow (vph)	60	0	325	58	0	47	317	1435	60	17	929	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	385	0	0	105	0	317	1495	0	17	1030	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

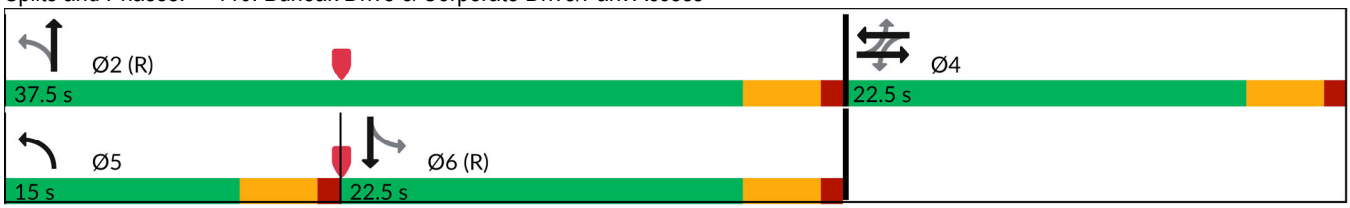


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Detector Phase	4	4		4	4		5	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		22.5	22.5	
Total Split (s)	22.5	22.5		22.5	22.5		15.0	37.5		22.5	22.5	
Total Split (%)	37.5%	37.5%		37.5%	37.5%		25.0%	62.5%		37.5%	37.5%	
Maximum Green (s)	18.0	18.0		18.0	18.0		10.5	33.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead			Lag	Lag	
Lead-Lag Optimize?							Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0			11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0			0		0	0	
Act Effct Green (s)		9.9			9.9		41.1	41.1		26.8	26.8	
Actuated g/C Ratio		0.17			0.17		0.69	0.69		0.45	0.45	
v/c Ratio		0.73			0.50		0.67	0.42		0.12	0.45	
Control Delay (s/veh)		13.4			13.0		23.0	4.4		21.3	17.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		13.4			13.0		23.0	4.4		21.3	17.1	
LOS		B			B		C	A		C	B	
Approach Delay (s/veh)		13.4			13.0			7.6			17.2	
Approach LOS		B			B			A			B	
Queue Length 50th (m)		6.4			0.0		17.8	18.1		1.3	35.6	
Queue Length 95th (m)		24.9			9.8		#54.5	27.7		m4.9	55.3	
Internal Link Dist (m)		96.8			136.8			261.5			440.6	
Turn Bay Length (m)							120.0			145.0		
Base Capacity (vph)		692			294		504	3535		138	2294	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.56			0.36		0.63	0.42		0.12	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.73			
Intersection Signal Delay (s/veh): 11.5		Intersection LOS: B	

Intersection Capacity Utilization 68.3% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

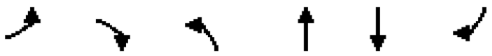
Splits and Phases: 110: Burloak Drive & Corporate Drive/Park Access



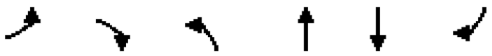
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Future Volume (vph)	56	0	302	54	0	44	295	1335	56	16	864	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.89			0.94		1.00	0.99		1.00	0.99	
Flt Protected		0.99			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1638			1737		1770	5151		1805	5101	
Flt Permitted		0.94			0.41		0.19	1.00		0.16	1.00	
Satd. Flow (perm)		1549			726		356	5151		310	5101	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	60	0	325	58	0	47	317	1435	60	17	929	101
RTOR Reduction (vph)	0	271	0	0	88	0	0	5	0	0	17	0
Lane Group Flow (vph)	0	114	0	0	17	0	317	1490	0	17	1013	0
Confl. Peds. (#/hr)									1	1		
Heavy Vehicles (%)	2%	2%	2%	0%	2%	0%	2%	0%	0%	0%	0%	2%
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA	
Protected Phases		4			4		5	2			6	
Permitted Phases	4			4			2			6		
Actuated Green, G (s)		9.9			9.9		41.1	41.1		26.8	26.8	
Effective Green, g (s)		9.9			9.9		41.1	41.1		26.8	26.8	
Actuated g/C Ratio		0.17			0.17		0.69	0.69		0.45	0.45	
Clearance Time (s)		4.5			4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		255			119		474	3528		138	2278	
v/s Ratio Prot							c0.11	0.29			0.20	
v/s Ratio Perm		c0.07			0.02		c0.35			0.05		
v/c Ratio		0.45			0.15		0.67	0.42		0.12	0.44	
Uniform Delay, d1		22.6			21.4		5.4	4.2		9.7	11.5	
Progression Factor		1.00			1.00		2.49	0.81		1.27	1.29	
Incremental Delay, d2		1.2			0.6		3.2	0.3		1.7	0.6	
Delay (s)		23.8			22.0		16.7	3.7		14.1	15.4	
Level of Service		C			C		B	A		B	B	
Approach Delay (s/veh)		23.8			22.0			6.0			15.4	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



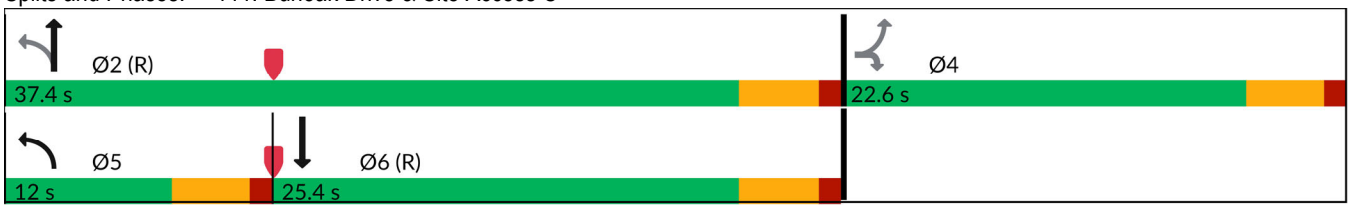
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	268	169	1635	1135	84
Future Volume (vph)	68	268	169	1635	1135	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0	0.0	120.0			0.0
Storage Lanes	1	1	1			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	0.91
Frt		0.850			0.990	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1770	1583	1770	5085	5034	0
Flt Permitted	0.950		0.134			
Satd. Flow (perm)	1770	1583	250	5085	5034	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		291			21	
Link Speed (k/h)	40			60	60	
Link Distance (m)	129.8			430.9	285.5	
Travel Time (s)	11.7			25.9	17.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	291	184	1777	1234	91
Shared Lane Traffic (%)						
Lane Group Flow (vph)	74	291	184	1777	1325	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4	2			

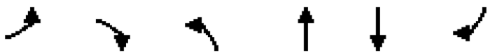


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5	9.5	22.5	22.5	
Total Split (s)	22.6	22.6	12.0	37.4	25.4	
Total Split (%)	37.7%	37.7%	20.0%	62.3%	42.3%	
Maximum Green (s)	18.1	18.1	7.5	32.9	20.9	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.4	8.4	42.6	42.6	30.3	
Actuated g/C Ratio	0.14	0.14	0.71	0.71	0.51	
v/c Ratio	0.30	0.62	0.49	0.49	0.52	
Control Delay (s/veh)	25.1	9.5	9.4	4.8	12.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	25.1	9.5	9.4	4.8	12.5	
LOS	C	A	A	A	B	
Approach Delay (s/veh)	12.7			5.3	12.5	
Approach LOS	B			A	B	
Queue Length 50th (m)	8.0	0.0	5.0	24.5	16.2	
Queue Length 95th (m)	16.9	17.2	19.5	46.7	62.4	
Internal Link Dist (m)	105.8			406.9	261.5	
Turn Bay Length (m)	15.0		120.0			
Base Capacity (vph)	533	680	388	3608	2549	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.14	0.43	0.47	0.49	0.52	

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay (s/veh): 8.6		Intersection LOS: A	
Intersection Capacity Utilization 48.6%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 111: Burloak Drive & Site Access C

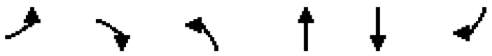




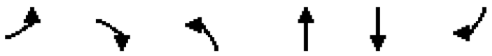
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	68	268	169	1635	1135	84
Future Volume (vph)	68	268	169	1635	1135	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1770	1583	1770	5085	5033	
Flt Permitted	0.95	1.00	0.13	1.00	1.00	
Satd. Flow (perm)	1770	1583	249	5085	5033	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	74	291	184	1777	1234	91
RTOR Reduction (vph)	0	250	0	0	10	0
Lane Group Flow (vph)	74	41	184	1777	1315	0
Turn Type	Perm	Perm	pm+pt	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4	2			
Actuated Green, G (s)	8.4	8.4	42.6	42.6	30.3	
Effective Green, g (s)	8.4	8.4	42.6	42.6	30.3	
Actuated g/C Ratio	0.14	0.14	0.71	0.71	0.51	
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	247	221	374	3610	2541	
v/s Ratio Prot			0.06	c0.35	0.26	
v/s Ratio Perm	c0.04	0.03	0.28			
v/c Ratio	0.30	0.18	0.49	0.49	0.52	
Uniform Delay, d1	23.2	22.8	4.8	3.9	10.0	
Progression Factor	1.00	1.00	1.00	1.00	1.08	
Incremental Delay, d2	0.7	0.4	1.0	0.5	0.7	
Delay (s)	23.8	23.2	5.9	4.4	11.4	
Level of Service	C	C	A	A	B	
Approach Delay (s/veh)	23.3			4.5	11.4	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	279	499	1600	1238	152
Future Volume (vph)	203	279	499	1600	1238	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0	110.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.984	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1615	3467	5187	5094	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1615	3462	5187	5094	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		276			26	
Link Speed (k/h)	60			60	60	
Link Distance (m)	744.3			453.2	430.9	
Travel Time (s)	44.7			27.2	25.9	
Confl. Peds. (#/hr)			7			7
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Adj. Flow (vph)	214	294	525	1684	1303	160
Shared Lane Traffic (%)						
Lane Group Flow (vph)	214	294	525	1684	1463	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

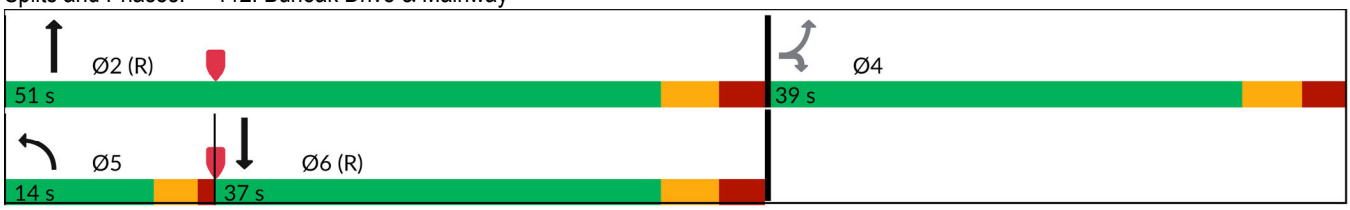


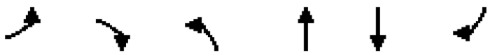
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	11.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	10.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	1.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	4.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.1	16.1	24.4	59.9	31.5	
Actuated g/C Ratio	0.18	0.18	0.27	0.67	0.35	
v/c Ratio	0.66	0.57	0.56	0.49	0.81	
Control Delay (s/veh)	44.0	9.6	41.4	7.1	30.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	44.0	9.6	41.4	7.1	30.6	
LOS	D	A	D	A	C	
Approach Delay (s/veh)	24.1			15.3	30.6	
Approach LOS	C			B	C	
Queue Length 50th (m)	36.6	2.8	47.5	38.6	83.5	
Queue Length 95th (m)	55.4	22.9	66.1	45.2	107.8	
Internal Link Dist (m)	720.3			429.2	406.9	
Turn Bay Length (m)			110.0			
Base Capacity (vph)	641	752	939	3453	1801	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.33	0.39	0.56	0.49	0.81	

Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 90			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay (s/veh): 21.7		Intersection LOS: C	

Intersection Capacity Utilization 67.9% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 112: Burloak Drive & Mainway

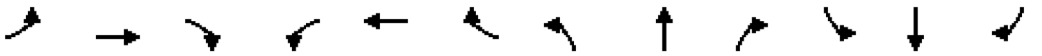




Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	203	279	499	1600	1238	152
Future Volume (vph)	203	279	499	1600	1238	152
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	4.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	3467	5187	5092	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	3467	5187	5092	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	214	294	525	1684	1303	160
RTOR Reduction (vph)	0	227	0	0	17	0
Lane Group Flow (vph)	214	67	525	1684	1446	0
Confl. Peds. (#/hr)			7			7
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%
Turn Type	Perm	Perm	Prot	NA	NA	
Protected Phases			5	2	6	
Permitted Phases	4	4				
Actuated Green, G (s)	16.1	16.1	24.4	59.9	31.5	
Effective Green, g (s)	16.1	16.1	24.4	59.9	31.5	
Actuated g/C Ratio	0.18	0.18	0.27	0.67	0.35	
Clearance Time (s)	7.0	7.0	4.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	322	288	939	3452	1782	
v/s Ratio Prot			c0.15	0.32	c0.28	
v/s Ratio Perm	c0.12	0.04				
v/c Ratio	0.66	0.23	0.56	0.49	0.81	
Uniform Delay, d1	34.4	31.7	28.2	7.5	26.6	
Progression Factor	1.00	1.00	1.32	0.83	1.00	
Incremental Delay, d2	5.1	0.4	0.7	0.5	4.1	
Delay (s)	39.5	32.1	38.0	6.6	30.7	
Level of Service	D	C	D	A	C	
Approach Delay (s/veh)	35.2			14.1	30.7	
Approach LOS	D			B	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Future Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	130.0		0.0	0.0		15.0	0.0		0.0	40.0		0.0
Storage Lanes	1		0	0		1	0		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00							
Frt		0.992				0.850		0.995			0.895	
Flt Protected	0.950				0.999			0.996		0.950		
Satd. Flow (prot)	1770	3577	0	0	3606	1583	0	1850	0	1770	1667	0
Flt Permitted	0.378				0.945			0.955		0.531		
Satd. Flow (perm)	704	3577	0	0	3411	1583	0	1774	0	989	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14				119		4			228	
Link Speed (k/h)		60			60			40			40	
Link Distance (m)		153.9			124.8			154.8			210.9	
Travel Time (s)		9.2			7.5			13.9			19.0	
Confl. Peds. (#/hr)			3	3								
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Adj. Flow (vph)	284	278	15	11	427	104	22	249	10	128	113	265
Shared Lane Traffic (%)												
Lane Group Flow (vph)	284	293	0	0	438	104	0	281	0	128	378	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100		15	25		100	25		15	100		100
Number of Detectors	1	2			2	1		2		1	2	
Detector Template	Left	Thru			Thru	Right		Thru		Left	Thru	
Leading Detector (m)	2.0	10.0			10.0	2.0		10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6			0.6	2.0		0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex			Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

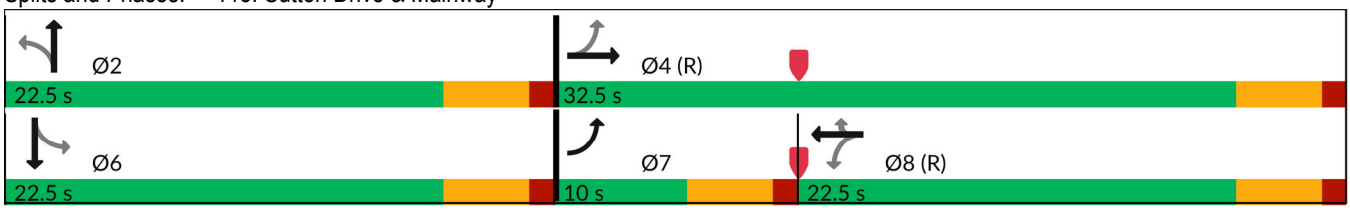


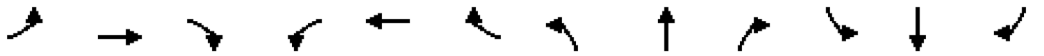
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Detector Phase	7	4		8	8	8	2	2		6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	10.0	32.5		22.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (%)	18.2%	59.1%		40.9%	40.9%	40.9%	40.9%	40.9%		40.9%	40.9%	
Maximum Green (s)	5.5	28.0		18.0	18.0	18.0	18.0	18.0		18.0	18.0	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Lead/Lag	Lead			Lag	Lag	Lag						
Lead-Lag Optimize?	Yes			Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max		C-Max	C-Max	C-Max	Max	Max		Max	Max	
Walk Time (s)		7.0		7.0	7.0	7.0	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)		11.0		11.0	11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0	0	0	0		0	0	
Act Effct Green (s)	28.0	28.0			18.0	18.0		18.0		18.0	18.0	
Actuated g/C Ratio	0.51	0.51			0.33	0.33		0.33		0.33	0.33	
v/c Ratio	0.61	0.16			0.39	0.17		0.48		0.40	0.54	
Control Delay (s/veh)	14.7	7.1			15.6	3.6		18.0		18.9	9.5	
Queue Delay	0.0	0.0			0.0	0.0		0.0		0.0	0.0	
Total Delay (s/veh)	14.7	7.1			15.6	3.6		18.0		18.9	9.5	
LOS	B	A			B	A		B		B	A	
Approach Delay (s/veh)		10.9			13.3			18.0			11.8	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	16.0	7.4			18.2	0.0		23.0		10.3	11.6	
Queue Length 95th (m)	29.2	12.7			28.8	7.2		42.2		23.5	32.1	
Internal Link Dist (m)		129.9			100.8			130.8			186.9	
Turn Bay Length (m)	130.0					15.0				40.0		
Base Capacity (vph)	465	1827			1116	598		583		323	698	
Starvation Cap Reductn	0	0			0	0		0		0	0	
Spillback Cap Reductn	0	0			0	0		0		0	0	
Storage Cap Reductn	0	0			0	0		0		0	0	
Reduced v/c Ratio	0.61	0.16			0.39	0.17		0.48		0.40	0.54	

Intersection Summary	
Area Type:	Other
Cycle Length: 55	
Actuated Cycle Length: 55	
Offset: 0 (0%), Referenced to phase 4:EBTL and 8:WBTL, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay (s/veh): 12.9	Intersection LOS: B

Intersection Capacity Utilization 78.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 113: Sutton Drive & Mainway

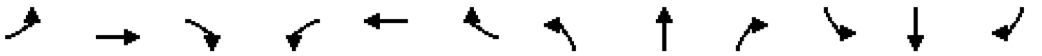




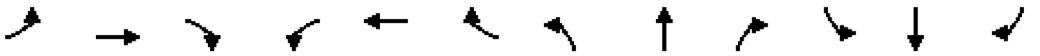
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Future Volume (vph)	278	272	15	11	418	102	22	244	10	125	111	260
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95			0.95	1.00		1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Frt	1.00	0.99			1.00	0.85		1.00		1.00	0.89	
Flt Protected	0.95	1.00			1.00	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1770	3578			3605	1583		1851		1770	1667	
Flt Permitted	0.38	1.00			0.94	1.00		0.95		0.53	1.00	
Satd. Flow (perm)	703	3578			3411	1583		1774		990	1667	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	284	278	15	11	427	104	22	249	10	128	113	265
RTOR Reduction (vph)	0	7	0	0	0	70	0	3	0	0	153	0
Lane Group Flow (vph)	284	286	0	0	438	34	0	278	0	128	225	0
Confl. Peds. (#/hr)			3	3								
Heavy Vehicles (%)	2%	0%	0%	0%	0%	2%	0%	2%	0%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	7	4			8			2			6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	28.0	28.0			18.0	18.0		18.0		18.0	18.0	
Effective Green, g (s)	28.0	28.0			18.0	18.0		18.0		18.0	18.0	
Actuated g/C Ratio	0.51	0.51			0.33	0.33		0.33		0.33	0.33	
Clearance Time (s)	4.5	4.5			4.5	4.5		4.5		4.5	4.5	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	464	1821			1116	518		580		324	545	
v/s Ratio Prot	c0.06	0.08									0.13	
v/s Ratio Perm	c0.25				0.13	0.02		c0.16		0.13		
v/c Ratio	0.61	0.16			0.39	0.07		0.48		0.40	0.41	
Uniform Delay, d1	8.3	7.2			14.3	12.7		14.8		14.3	14.4	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	2.4	0.2			1.0	0.2		2.8		3.6	2.3	
Delay (s)	10.7	7.4			15.3	13.0		17.6		17.9	16.7	
Level of Service	B	A			B	B		B		B	B	
Approach Delay (s/veh)		9.0			14.9			17.6			17.0	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	55.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Future Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		0.0	90.0		0.0	95.0		0.0	65.0		0.0
Storage Lanes	1		0	2		0	1		0	2		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	0.97	0.95	0.95	1.00	0.91	0.91	0.97	0.91	0.91
Ped Bike Factor	1.00	0.99		1.00	1.00			1.00		1.00	1.00	
Frt		0.938			0.970			0.977			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3329	0	3433	3438	0	1805	5000	0	3433	5031	0
Flt Permitted	0.298			0.950			0.085			0.950		
Satd. Flow (perm)	566	3329	0	3431	3438	0	162	5000	0	3433	5031	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		154			31			38			20	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		200.9			426.4			629.4			499.2	
Travel Time (s)		12.1			25.6			37.8			30.0	
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Adj. Flow (vph)	205	274	192	294	404	103	207	1583	286	72	1579	179
Shared Lane Traffic (%)												
Lane Group Flow (vph)	205	466	0	294	507	0	207	1869	0	72	1758	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	11.0	37.3		11.0	37.3		11.0	35.3		11.0	35.3	
Total Split (s)	11.0	37.3		13.0	39.3		12.0	43.7		11.0	42.7	
Total Split (%)	10.5%	35.5%		12.4%	37.4%		11.4%	41.6%		10.5%	40.7%	
Maximum Green (s)	7.0	31.0		9.0	33.0		8.0	37.4		7.0	36.4	
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6		1.0	2.6	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Don't Walk (s)		24.0			24.0			22.0			22.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	27.3	18.0		9.0	20.0		63.7	51.7		7.9	43.1	
Actuated g/C Ratio	0.26	0.17		0.09	0.19		0.61	0.49		0.08	0.41	
v/c Ratio	0.90	0.67		1.00	0.74		0.64	0.75		0.28	0.85	
Control Delay (s/veh)	68.8	31.3		101.6	44.3		39.8	29.6		48.4	33.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	68.8	31.3		101.6	44.3		39.8	29.6		48.4	33.5	
LOS	E	C		F	D		D	C		D	C	
Approach Delay (s/veh)		42.8			65.4			30.7			34.1	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	33.7	33.5		33.6	52.0		38.5	92.0		7.8	121.8	
Queue Length 95th (m)	#63.3	48.5		#62.4	66.7		64.5	#128.6		15.1	#176.3	
Internal Link Dist (m)		176.9			402.4			605.4			475.2	
Turn Bay Length (m)	85.0			90.0			95.0			65.0		
Base Capacity (vph)	229	1091		294	1101		321	2479		258	2075	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.90	0.43		1.00	0.46		0.64	0.75		0.28	0.85	

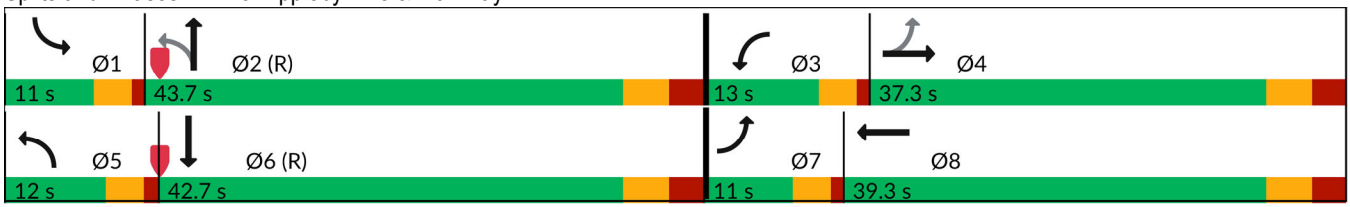
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.00	
Intersection Signal Delay (s/veh): 38.5	Intersection LOS: D

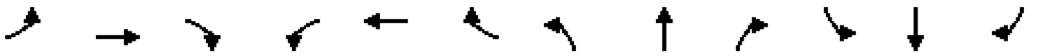
Intersection Capacity Utilization 88.6% ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 115: Appleby Line & Mainway

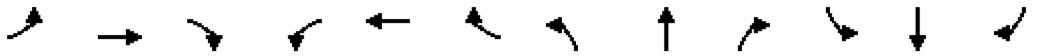




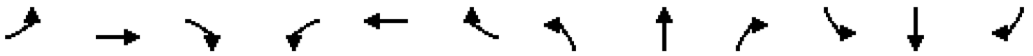
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Future Volume (vph)	203	271	190	291	400	102	205	1567	283	71	1563	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Lane Util. Factor	1.00	0.95		0.97	0.95		1.00	0.91		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.97		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	3330		3433	3436		1805	5000		3433	5030	
Flt Permitted	0.30	1.00		0.95	1.00		0.08	1.00		0.95	1.00	
Satd. Flow (perm)	565	3330		3433	3436		161	5000		3433	5030	
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Adj. Flow (vph)	205	274	192	294	404	103	207	1583	286	72	1579	179
RTOR Reduction (vph)	0	128	0	0	25	0	0	20	0	0	12	0
Lane Group Flow (vph)	205	338	0	294	482	0	207	1849	0	72	1746	0
Confl. Peds. (#/hr)	1		1	1		1	2		1	1		2
Heavy Vehicles (%)	0%	2%	0%	2%	2%	0%	0%	1%	2%	2%	1%	5%
Turn Type	pm+pt	NA		Prot	NA		pm+pt	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4						2					
Actuated Green, G (s)	25.0	18.0		9.0	20.0		61.4	50.9		6.5	43.1	
Effective Green, g (s)	25.0	18.0		9.0	20.0		61.4	50.9		6.5	43.1	
Actuated g/C Ratio	0.24	0.17		0.09	0.19		0.58	0.48		0.06	0.41	
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3		4.0	6.3	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	217	570		294	654		318	2423		212	2064	
v/s Ratio Prot	0.06	0.10		c0.09	0.14		c0.09	0.37		0.02	c0.35	
v/s Ratio Perm	c0.16						0.29					
v/c Ratio	0.94	0.59		1.00	0.74		0.65	0.76		0.34	0.85	
Uniform Delay, d1	37.2	40.1		48.0	40.0		23.1	22.1		47.2	28.0	
Progression Factor	1.00	1.00		1.00	1.00		1.68	1.22		1.00	1.00	
Incremental Delay, d2	45.4	1.7		52.5	4.3		3.7	1.8		1.0	4.5	
Delay (s)	82.6	41.8		100.5	44.3		42.5	28.9		48.2	32.5	
Level of Service	F	D		F	D		D	C		D	C	
Approach Delay (s/veh)		54.3			65.0			30.3			33.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Future Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	50.0		0.0	120.0		0.0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor		0.99			0.99		1.00	1.00			1.00	
Frt		0.948			0.960			0.981			0.998	
Flt Protected		0.979			0.968		0.950			0.950		
Satd. Flow (prot)	0	1734	0	0	1733	0	1805	5027	0	1805	5124	0
Flt Permitted		0.767			0.738		0.116			0.104		
Satd. Flow (perm)	0	1357	0	0	1320	0	220	5027	0	198	5124	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			28			34			2	
Link Speed (k/h)		40			40			60			60	
Link Distance (m)		135.0			108.7			499.2			544.4	
Travel Time (s)		12.2			9.8			30.0			32.7	
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	47	19	41	267	17	119	35	1746	251	111	1721	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	107	0	0	403	0	35	1997	0	111	1740	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		0.0			0.0			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors		2			2		1	2		1	2	
Detector Template		Thru			Thru		Left	Thru		Left	Thru	
Leading Detector (m)		10.0			10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)		0.6			0.6		2.0	0.6		2.0	0.6	
Detector 1 Type		Cl+Ex			Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		8.0	8.0		7.0	8.0	
Minimum Split (s)	38.5	38.5		38.5	38.5		34.0	34.0		11.0	34.0	
Total Split (s)	38.5	38.5		38.5	38.5		35.5	35.5		11.0	46.5	
Total Split (%)	45.3%	45.3%		45.3%	45.3%		41.8%	41.8%		12.9%	54.7%	
Maximum Green (s)	32.0	32.0		32.0	32.0		29.5	29.5		7.0	40.5	
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.0	3.7	
All-Red Time (s)	3.2	3.2		3.2	3.2		2.3	2.3		1.0	2.3	
Lost Time Adjust (s)		0.0			0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lead/Lag							Lag	Lag		Lead		
Lead-Lag Optimize?							Yes	Yes		Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0		7.0	7.0			7.0	
Flash Don't Walk (s)	25.0	25.0		25.0	25.0		21.0	21.0			21.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0			0	
Act Effct Green (s)		28.2			28.2		35.3	35.3		46.3	44.3	
Actuated g/C Ratio		0.33			0.33		0.42	0.42		0.54	0.52	
v/c Ratio		0.24			0.88		0.38	0.95		0.45	0.65	
Control Delay (s/veh)		19.2			46.4		37.8	38.1		16.9	17.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)		19.2			46.4		37.8	38.1		16.9	17.0	
LOS		B			D		D	D		B	B	
Approach Delay (s/veh)		19.2			46.4			38.1			17.0	
Approach LOS		B			D			D			B	
Queue Length 50th (m)		11.6			57.6		4.6	~145.9		9.2	80.1	
Queue Length 95th (m)		23.0			#104.7		#18.0	#178.6		18.8	100.8	
Internal Link Dist (m)		111.0			84.7			475.2			520.4	
Turn Bay Length (m)							50.0			120.0		
Base Capacity (vph)		515			514		91	2105		244	2670	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.21			0.78		0.38	0.95		0.45	0.65	

Intersection Summary	
Area Type:	Other
Cycle Length: 85	
Actuated Cycle Length: 85	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 29.5	Intersection LOS: C

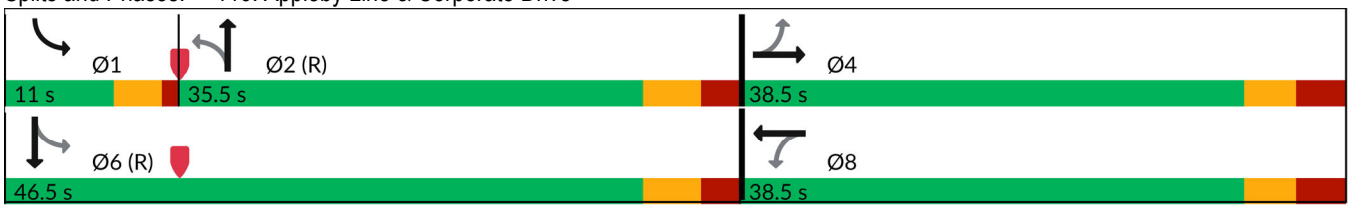
Intersection Capacity Utilization 85.1% ICU Level of Service E

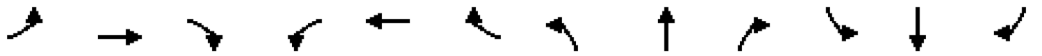
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 116: Appleby Line & Corporate Drive

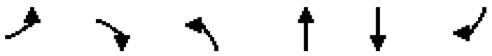




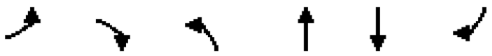
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Future Volume (vph)	44	18	39	251	16	112	33	1641	236	104	1618	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00		1.00	1.00	
Frt		0.95			0.96		1.00	0.98		1.00	1.00	
Flt Protected		0.98			0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1732			1732		1804	5028		1805	5126	
Flt Permitted		0.77			0.74		0.12	1.00		0.10	1.00	
Satd. Flow (perm)		1358			1321		220	5028		197	5126	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	47	19	41	267	17	119	35	1746	251	111	1721	19
RTOR Reduction (vph)	0	5	0	0	19	0	0	20	0	0	1	0
Lane Group Flow (vph)	0	102	0	0	384	0	35	1977	0	111	1739	0
Confl. Peds. (#/hr)	8		2	2		8	6		5	5		6
Heavy Vehicles (%)	0%	0%	3%	2%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.2			28.2		34.5	34.5		44.3	44.3	
Effective Green, g (s)		28.2			28.2		34.5	34.5		44.3	44.3	
Actuated g/C Ratio		0.33			0.33		0.41	0.41		0.52	0.52	
Clearance Time (s)		6.5			6.5		6.0	6.0		4.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		450			438		89	2040		212	2671	
v/s Ratio Prot								c0.39		0.04	c0.34	
v/s Ratio Perm		0.08			c0.29		0.16			0.24		
v/c Ratio		0.23			0.88		0.39	0.97		0.52	0.65	
Uniform Delay, d1		20.5			26.8		17.9	24.7		17.2	14.7	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.3			17.6		12.5	13.8		2.3	1.2	
Delay (s)		20.8			44.4		30.4	38.6		19.5	16.0	
Level of Service		C			D		C	D		B	B	
Approach Delay (s/veh)		20.8			44.4			38.4			16.2	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	29.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	85.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	150	327	1757	1372	13
Future Volume (vph)	14	150	327	1757	1372	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	60.0	0.0	140.0			0.0
Storage Lanes	1	1	2			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	0.91
Ped Bike Factor			1.00		1.00	
Frt		0.850			0.999	
Flt Protected	0.950		0.950			
Satd. Flow (prot)	1805	1509	3367	5187	5176	0
Flt Permitted	0.950		0.950			
Satd. Flow (perm)	1805	1509	3360	5187	5176	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		160			2	
Link Speed (k/h)	60			60	60	
Link Distance (m)	170.0			400.3	453.2	
Travel Time (s)	10.2			24.0	27.2	
Confl. Peds. (#/hr)			11			11
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Adj. Flow (vph)	15	160	348	1869	1460	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	15	160	348	1869	1474	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1	1	2	2	
Detector Template	Left	Right	Left	Thru	Thru	
Leading Detector (m)	2.0	2.0	2.0	10.0	10.0	
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Size(m)	2.0	2.0	2.0	0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

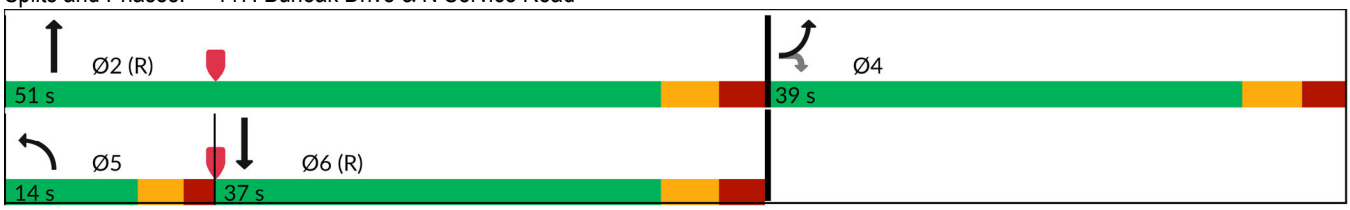


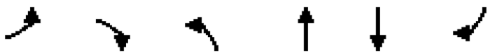
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Detector Phase	4	4	5	2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0	7.0	8.0	8.0	
Minimum Split (s)	39.0	39.0	12.0	37.0	37.0	
Total Split (s)	39.0	39.0	14.0	51.0	37.0	
Total Split (%)	43.3%	43.3%	15.6%	56.7%	41.1%	
Maximum Green (s)	32.0	32.0	9.0	44.0	30.0	
Yellow Time (s)	4.0	4.0	3.0	4.0	4.0	
All-Red Time (s)	3.0	3.0	2.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0	5.0	7.0	7.0	
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Recall Mode	None	None	None	C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0	
Flash Don't Walk (s)	25.0	25.0		23.0	23.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	8.9	8.9	18.6	67.1	43.5	
Actuated g/C Ratio	0.10	0.10	0.21	0.75	0.48	
v/c Ratio	0.08	0.55	0.50	0.48	0.59	
Control Delay (s/veh)	37.0	13.9	34.2	5.2	35.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	
Total Delay (s/veh)	37.0	13.9	34.2	5.2	35.2	
LOS	D	B	C	A	D	
Approach Delay (s/veh)	15.9			9.7	35.2	
Approach LOS	B			A	D	
Queue Length 50th (m)	2.6	0.0	30.0	38.1	81.2	
Queue Length 95th (m)	8.2	18.5	42.6	57.5	110.9	
Internal Link Dist (m)	146.0			376.3	429.2	
Turn Bay Length (m)	60.0		140.0			
Base Capacity (vph)	641	639	695	3868	2503	
Starvation Cap Reductn	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	
Reduced v/c Ratio	0.02	0.25	0.50	0.48	0.59	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay (s/veh): 19.7	Intersection LOS: B

Intersection Capacity Utilization 58.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 117: Burloak Drive & N Service Road





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	150	327	1757	1372	13
Future Volume (vph)	14	150	327	1757	1372	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	5.0	7.0	7.0	
Lane Util. Factor	1.00	1.00	0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1509	3367	5187	5174	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1509	3367	5187	5174	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	15	160	348	1869	1460	14
RTOR Reduction (vph)	0	144	0	0	1	0
Lane Group Flow (vph)	15	16	348	1869	1473	0
Confl. Peds. (#/hr)			11			11
Heavy Vehicles (%)	0%	7%	4%	0%	0%	10%
Turn Type	Prot	Perm	Prot	NA	NA	
Protected Phases	4		5	2	6	
Permitted Phases		4				
Actuated Green, G (s)	8.9	8.9	18.6	67.1	43.5	
Effective Green, g (s)	8.9	8.9	18.6	67.1	43.5	
Actuated g/C Ratio	0.10	0.10	0.21	0.75	0.48	
Clearance Time (s)	7.0	7.0	5.0	7.0	7.0	
Vehicle Extension (s)	3.0	3.0	5.0	3.0	3.0	
Lane Grp Cap (vph)	178	149	695	3867	2500	
v/s Ratio Prot	0.01		0.10	c0.36	c0.28	
v/s Ratio Perm		c0.01				
v/c Ratio	0.08	0.11	0.50	0.48	0.59	
Uniform Delay, d1	36.8	36.9	31.6	4.6	16.8	
Progression Factor	1.00	1.00	1.00	1.00	2.00	
Incremental Delay, d2	0.2	0.3	1.2	0.4	0.7	
Delay (s)	37.1	37.2	32.8	5.0	34.2	
Level of Service	D	D	C	A	C	
Approach Delay (s/veh)	37.2			9.4	34.2	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	20.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1773	1270	0	0	1613
Future Volume (vph)	2146	1773	1270	0	0	1613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	160.0		0.0	0.0	
Storage Lanes	2	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Ped Bike Factor	1.00					
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3433	2814	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3427	2814	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60		60			60
Link Distance (m)	309.2		314.0			400.3
Travel Time (s)	18.6		18.8			24.0
Confl. Peds. (#/hr)	1					
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Adj. Flow (vph)	2235	1847	1323	0	0	1680
Shared Lane Traffic (%)						
Lane Group Flow (vph)	2235	1847	1323	0	0	1680
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Detector Phase	8	8	2			6
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	33.0	33.0	32.0			32.0
Total Split (s)	91.0	91.0	49.0			49.0
Total Split (%)	65.0%	65.0%	35.0%			35.0%
Maximum Green (s)	84.0	84.0	43.0			43.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	3.0	3.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	7.0	7.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	7.0	7.0	7.0			7.0
Flash Don't Walk (s)	19.0	19.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	84.0	84.0	43.0			43.0
Actuated g/C Ratio	0.60	0.60	0.31			0.31
v/c Ratio	1.09	1.09	0.83			1.07
Control Delay (s/veh)	75.5	79.9	50.6			88.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	75.5	79.9	50.6			88.4
LOS	E	E	D			F
Approach Delay (s/veh)	77.5		50.6			88.4
Approach LOS	E		D			F
Queue Length 50th (m)	~380.9	~347.0	131.6			~198.8
Queue Length 95th (m)	#422.3	#395.5	150.9			#230.0
Internal Link Dist (m)	285.2		290.0			376.3
Turn Bay Length (m)		160.0				
Base Capacity (vph)	2059	1690	1593			1577
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	1.09	1.09	0.83			1.07

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 140			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay (s/veh): 75.0		Intersection LOS: E	

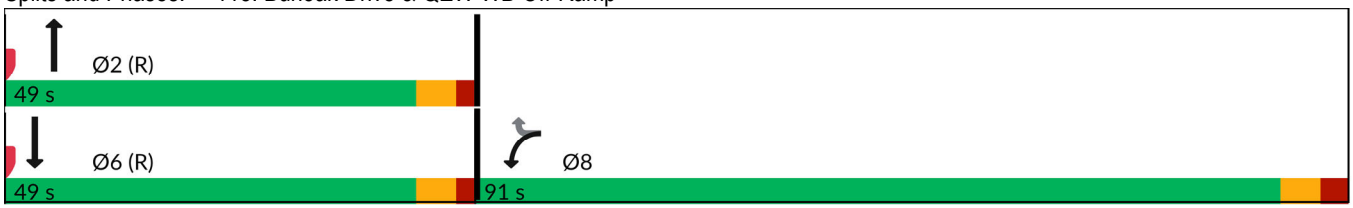
Intersection Capacity Utilization 103.2% ICU Level of Service G

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 118: Burloak Drive & QEW WB Off-Ramp

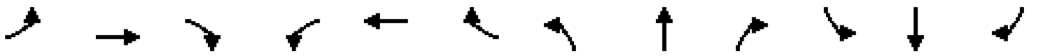




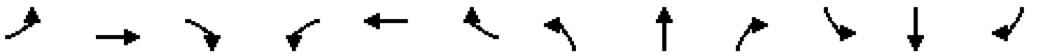
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2146	1773	1270	0	0	1613
Future Volume (vph)	2146	1773	1270	0	0	1613
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3433	2814	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3433	2814	5187			5136
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	2235	1847	1323	0	0	1680
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	2235	1845	1323	0	0	1680
Confl. Peds. (#/hr)	1					
Heavy Vehicles (%)	2%	1%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		2			6
Permitted Phases		8				
Actuated Green, G (s)	84.0	84.0	43.0			43.0
Effective Green, g (s)	84.0	84.0	43.0			43.0
Actuated g/C Ratio	0.60	0.60	0.31			0.31
Clearance Time (s)	7.0	7.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	2059	1688	1593			1577
v/s Ratio Prot	0.65		0.26			c0.33
v/s Ratio Perm		c0.66				
v/c Ratio	1.09	1.09	0.83			1.07
Uniform Delay, d1	28.0	28.0	45.1			48.5
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	47.5	52.0	5.2			42.3
Delay (s)	75.5	80.0	50.3			90.8
Level of Service	E	E	D			F
Approach Delay (s/veh)	77.5		50.3			90.8
Approach LOS	E		D			F

Intersection Summary			
HCM 2000 Control Delay (s/veh)	75.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.0
Intersection Capacity Utilization	103.2%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Future Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		70.0	0.0		0.0	0.0		0.0	0.0		0.0
Storage Lanes	1		1	0		1	0		0	0		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.91	0.86	0.91	1.00	1.00	1.00	1.00	0.91	0.91	0.91	0.91	1.00
Frt		0.971	0.850			0.865		0.996				
Flt Protected	0.950	0.983										
Satd. Flow (prot)	1643	3093	1441	0	0	1611	0	5116	0	0	5136	0
Flt Permitted	0.950	0.983									0.925	
Satd. Flow (perm)	1643	3093	1441	0	0	1611	0	5116	0	0	4751	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15	204			80		3				
Link Speed (k/h)		60			50			60			60	
Link Distance (m)		217.1			163.4			161.6			314.0	
Travel Time (s)		13.0			11.8			9.7			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Adj. Flow (vph)	382	209	291	0	0	336	0	1000	26	17	2882	0
Shared Lane Traffic (%)	41%		30%									
Lane Group Flow (vph)	225	453	204	0	0	336	0	1026	0	0	2899	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1		2	1		2			2	
Detector Template	Left	Thru	Right		Thru	Right		Thru			Thru	
Leading Detector (m)	2.0	10.0	2.0		10.0	2.0		10.0			10.0	
Trailing Detector (m)	0.0	0.0	0.0		0.0	0.0		0.0			0.0	
Detector 1 Position(m)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Size(m)	2.0	0.6	2.0			2.0		0.6			0.6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex		Cl+Ex			Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Queue (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 1 Delay (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Detector 2 Position(m)		9.4						9.4			9.4	
Detector 2 Size(m)		0.6						0.6			0.6	
Detector 2 Type		Cl+Ex						Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0						0.0			0.0	
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	



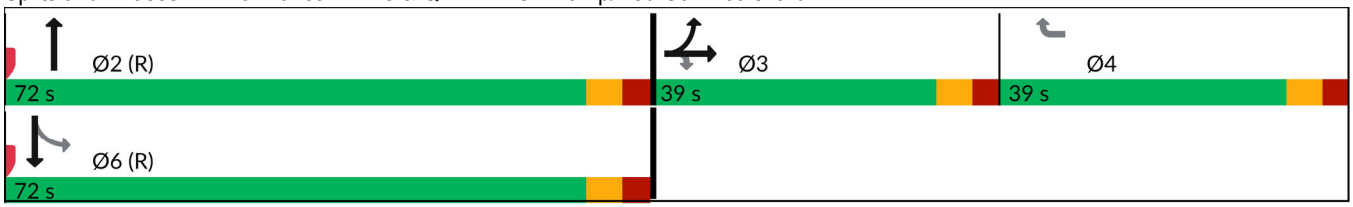
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases			3			4				6		
Detector Phase	3	3	3			4		2		6	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0			8.0		8.0		8.0	8.0	
Minimum Split (s)	39.0	39.0	39.0			39.0		39.0		29.0	29.0	
Total Split (s)	39.0	39.0	39.0			39.0		72.0		72.0	72.0	
Total Split (%)	26.0%	26.0%	26.0%			26.0%		48.0%		48.0%	48.0%	
Maximum Green (s)	32.0	32.0	32.0			32.0		65.0		65.0	65.0	
Yellow Time (s)	4.0	4.0	4.0			4.0		4.0		4.0	4.0	
All-Red Time (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Lost Time Adjust (s)	0.0	0.0	0.0			0.0		0.0			0.0	
Total Lost Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lead/Lag	Lead	Lead	Lead			Lag						
Lead-Lag Optimize?	Yes	Yes	Yes			Yes						
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0		3.0	3.0	
Recall Mode	None	None	None			None		C-Max		C-Max	C-Max	
Walk Time (s)	0.0	0.0	0.0			7.0		7.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0	0.0			25.0		15.0		15.0	15.0	
Pedestrian Calls (#/hr)	0	0	0			0		0		0	0	
Act Effct Green (s)	27.0	27.0	27.0			28.7		73.3			73.3	
Actuated g/C Ratio	0.18	0.18	0.18			0.19		0.49			0.49	
v/c Ratio	0.76	0.80	0.48			0.90		0.41			1.25	
Control Delay (s/veh)	74.8	67.4	10.0			71.9		26.3			149.5	
Queue Delay	0.0	0.0	0.0			0.0		0.0			0.0	
Total Delay (s/veh)	74.8	67.4	10.0			71.9		26.3			149.5	
LOS	E	E	B			E		C			F	
Approach Delay (s/veh)		56.0			71.9			26.3			149.5	
Approach LOS		E			E			C			F	
Queue Length 50th (m)	74.2	77.7	0.0			80.9		77.2			~427.2	
Queue Length 95th (m)	104.9	97.5	24.9			#132.2		96.5			#471.9	
Internal Link Dist (m)		193.1			139.4			137.6			290.0	
Turn Bay Length (m)			70.0									
Base Capacity (vph)	350	671	467			408		2501			2321	
Starvation Cap Reductn	0	0	0			0		0			0	
Spillback Cap Reductn	0	0	0			0		0			0	
Storage Cap Reductn	0	0	0			0		0			0	
Reduced v/c Ratio	0.64	0.68	0.44			0.82		0.41			1.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 150			
Actuated Cycle Length: 150			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.25			
Intersection Signal Delay (s/veh): 103.8		Intersection LOS: F	
Intersection Capacity Utilization 87.5%		ICU Level of Service E	
Analysis Period (min) 15			

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

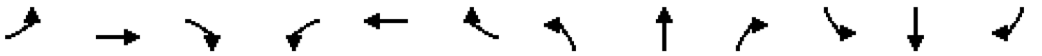
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 119: Burloak Drive & QEW EB Off-Ramp/Red Oak Boulevard

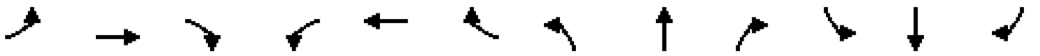


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Future Volume (vph)	359	196	274	0	0	316	0	940	24	16	2709	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Lane Util. Factor	0.91	0.86	0.91			1.00		0.91			0.91	
Frt	1.00	0.97	0.85			0.87		1.00			1.00	
Flt Protected	0.95	0.98	1.00			1.00		1.00			1.00	
Satd. Flow (prot)	1643	3094	1441			1611		5117			5134	
Flt Permitted	0.95	0.98	1.00			1.00		1.00			0.93	
Satd. Flow (perm)	1643	3094	1441			1611		5117			4752	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	382	209	291	0	0	336	0	1000	26	17	2882	0
RTOR Reduction (vph)	0	12	167	0	0	65	0	2	0	0	0	0
Lane Group Flow (vph)	225	441	37	0	0	271	0	1024	0	0	2899	0
Heavy Vehicles (%)	0%	1%	2%	0%	0%	2%	0%	1%	0%	0%	1%	0%
Turn Type	Split	NA	Perm			Perm		NA		Perm	NA	
Protected Phases	3	3						2			6	
Permitted Phases			3			4				6		
Actuated Green, G (s)	27.0	27.0	27.0			28.7		73.3			73.3	
Effective Green, g (s)	27.0	27.0	27.0			28.7		73.3			73.3	
Actuated g/C Ratio	0.18	0.18	0.18			0.19		0.49			0.49	
Clearance Time (s)	7.0	7.0	7.0			7.0		7.0			7.0	
Vehicle Extension (s)	3.0	3.0	3.0			3.0		3.0			3.0	
Lane Grp Cap (vph)	295	556	259			308		2500			2322	
v/s Ratio Prot	0.14	c0.14						0.20				
v/s Ratio Perm			0.03			c0.17					c0.61	
v/c Ratio	0.76	0.79	0.14			0.88		0.41			1.25	
Uniform Delay, d1	58.5	58.8	51.8			59.0		24.5			38.4	
Progression Factor	1.00	1.00	1.00			1.00		1.00			1.00	
Incremental Delay, d2	11.1	7.6	0.3			24.1		0.5			115.6	
Delay (s)	69.5	66.4	52.0			83.1		25.0			153.9	
Level of Service	E	E	D			F		C			F	
Approach Delay (s/veh)		63.9			83.1			25.0			153.9	
Approach LOS		E			F			C			F	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	108.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	21.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Future Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	40.0		0.0	65.0		0.0	65.0		0.0	65.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.91	0.91	1.00	0.91	0.91
Ped Bike Factor	1.00				0.99			1.00				
Frt		0.883			0.912			0.994			0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	1591	0	1787	1720	0	1656	5102	0	1805	5116	0
Flt Permitted	0.693			0.489			0.065			0.063		
Satd. Flow (perm)	1315	1591	0	920	1720	0	113	5102	0	120	5116	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		57			58			7			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		366.3			168.7			243.8			629.4	
Travel Time (s)		22.0			10.1			14.6			37.8	
Confl. Peds. (#/hr)	1					1			3	3		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Adj. Flow (vph)	58	16	57	104	41	58	42	1958	81	48	2011	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	73	0	104	99	0	42	2039	0	48	2060	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane					Yes							
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	35.1	35.1		11.5	35.1		11.5	32.6		11.5	32.6	
Total Split (s)	35.2	35.2		11.6	46.8		11.6	46.6		11.6	46.6	
Total Split (%)	33.5%	33.5%		11.0%	44.6%		11.0%	44.4%		11.0%	44.4%	
Maximum Green (s)	29.1	29.1		7.6	40.7		7.6	40.0		7.6	40.0	
Yellow Time (s)	3.7	3.7		3.0	3.7		3.0	3.7		3.0	3.7	
All-Red Time (s)	2.4	2.4		1.0	2.4		1.0	2.9		1.0	2.9	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Don't Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	10.5	10.5		21.9	19.8		71.9	63.6		72.7	65.8	
Actuated g/C Ratio	0.10	0.10		0.21	0.19		0.68	0.61		0.69	0.63	
v/c Ratio	0.44	0.35		0.40	0.27		0.23	0.66		0.24	0.64	
Control Delay (s/veh)	54.4	20.3		37.7	17.6		9.0	16.7		15.3	29.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay (s/veh)	54.4	20.3		37.7	17.6		9.0	16.7		15.3	29.1	
LOS	D	C		D	B		A	B		B	C	
Approach Delay (s/veh)		35.4			27.9			16.5			28.7	
Approach LOS		D			C			B			C	
Queue Length 50th (m)	12.0	3.2		18.6	7.2		2.6	108.9		5.4	141.1	
Queue Length 95th (m)	24.4	16.5		32.1	20.5		7.1	143.4		m9.3	m180.8	
Internal Link Dist (m)		342.3			144.7			219.8			605.4	
Turn Bay Length (m)	40.0			65.0			65.0			65.0		
Base Capacity (vph)	364	482		258	702		189	3093		205	3207	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.16	0.15		0.40	0.14		0.22	0.66		0.23	0.64	

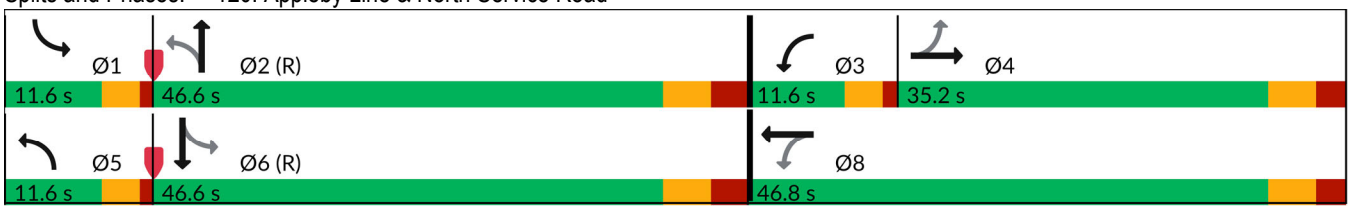
Intersection Summary	
Area Type:	Other
Cycle Length: 105	
Actuated Cycle Length: 105	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay (s/veh): 23.3	Intersection LOS: C

Intersection Capacity Utilization 61.5% ICU Level of Service B

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 120: Appleby Line & North Service Road



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Future Volume (vph)	56	15	55	100	39	56	40	1880	78	46	1931	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1803	1591		1787	1720		1656	5102		1805	5119	
Flt Permitted	0.69	1.00		0.49	1.00		0.06	1.00		0.06	1.00	
Satd. Flow (perm)	1315	1591		921	1720		113	5102		121	5119	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	58	16	57	104	41	58	42	1958	81	48	2011	49
RTOR Reduction (vph)	0	52	0	0	46	0	0	3	0	0	2	0
Lane Group Flow (vph)	58	21	0	104	53	0	42	2036	0	48	2058	0
Confl. Peds. (#/hr)	1					1			3	3		
Heavy Vehicles (%)	0%	0%	7%	1%	0%	0%	9%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	8.9	8.9		21.0	21.0		65.9	61.6		68.7	63.0	
Effective Green, g (s)	8.9	8.9		21.0	21.0		65.9	61.6		68.7	63.0	
Actuated g/C Ratio	0.08	0.08		0.20	0.20		0.63	0.59		0.65	0.60	
Clearance Time (s)	6.1	6.1		4.0	6.1		4.0	6.6		4.0	6.6	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	111	134		251	344		134	2993		170	3071	
v/s Ratio Prot		0.01		c0.03	0.03		0.01	0.40		c0.02	c0.40	
v/s Ratio Perm	0.04			c0.05			0.18			0.17		
v/c Ratio	0.52	0.16		0.41	0.15		0.31	0.68		0.28	0.67	
Uniform Delay, d1	46.0	44.6		35.8	34.7		10.6	14.9		10.5	14.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		2.29	1.97	
Incremental Delay, d2	4.4	0.5		1.1	0.2		1.3	1.3		0.5	0.7	
Delay (s)	50.4	45.1		36.9	34.9		11.9	16.2		24.6	28.3	
Level of Service	D	D		D	C		B	B		C	C	
Approach Delay (s/veh)		47.4			35.9			16.1			28.2	
Approach LOS		D			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2506	0	0	2196
Future Volume (vph)	630	461	2506	0	0	2196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	210.0	0.0		15.0	0.0	
Storage Lanes	1	2		0	0	
Taper Length (m)	7.5				7.5	
Lane Util. Factor	0.97	0.88	0.91	1.00	1.00	0.91
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3400	2787	5187	0	0	5136
Flt Permitted	0.950					
Satd. Flow (perm)	3400	2787	5187	0	0	5136
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		2				
Link Speed (k/h)	60		60			60
Link Distance (m)	347.7		319.6			243.8
Travel Time (s)	20.9		19.2			14.6
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Adj. Flow (vph)	677	496	2695	0	0	2361
Shared Lane Traffic (%)						
Lane Group Flow (vph)	677	496	2695	0	0	2361
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2

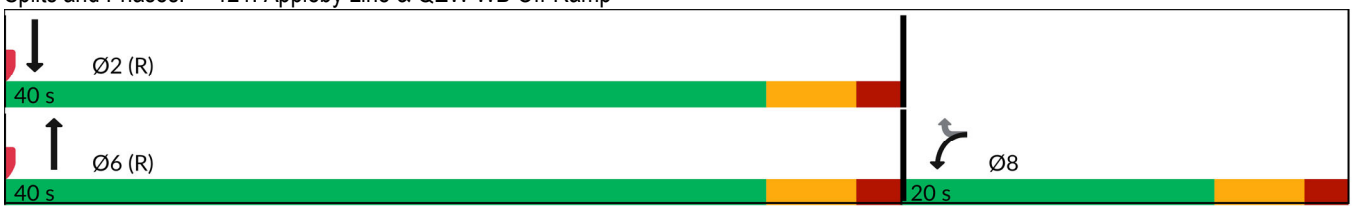


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	20.0	20.0	40.0			40.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	14.0	14.0	34.0			34.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)	0.0	0.0	7.0			7.0
Flash Don't Walk (s)	0.0	0.0	19.0			19.0
Pedestrian Calls (#/hr)	0	0	0			0
Act Effct Green (s)	13.9	13.9	34.1			34.1
Actuated g/C Ratio	0.23	0.23	0.57			0.57
v/c Ratio	0.86	0.77	0.91			0.81
Control Delay (s/veh)	35.8	31.3	14.5			13.2
Queue Delay	0.0	0.0	0.0			0.0
Total Delay (s/veh)	35.8	31.3	14.5			13.2
LOS	D	C	B			B
Approach Delay (s/veh)	33.9		14.5			13.2
Approach LOS	C		B			B
Queue Length 50th (m)	39.5	30.7	76.0			71.7
Queue Length 95th (m)	#67.0	#54.1	#100.2			92.2
Internal Link Dist (m)	323.7		295.6			219.8
Turn Bay Length (m)	210.0					
Base Capacity (vph)	793	651	2951			2922
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.85	0.76	0.91			0.81

Intersection Summary			
Area Type:	Other		
Cycle Length: 60			
Actuated Cycle Length: 60			
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.91			
Intersection Signal Delay (s/veh): 17.6		Intersection LOS: B	
Intersection Capacity Utilization 76.4%		ICU Level of Service D	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

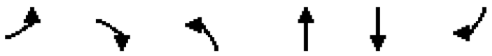
Splits and Phases: 121: Appleby Line & QEW WB Off-Ramp



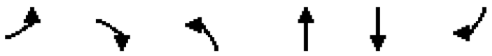


Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	630	461	2506	0	0	2196
Future Volume (vph)	630	461	2506	0	0	2196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	0.88	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3400	2787	5187			5136
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3400	2787	5187			5136
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	677	496	2695	0	0	2361
RTOR Reduction (vph)	0	2	0	0	0	0
Lane Group Flow (vph)	677	494	2695	0	0	2361
Heavy Vehicles (%)	3%	2%	0%	0%	0%	1%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	13.9	13.9	34.1			34.1
Effective Green, g (s)	13.9	13.9	34.1			34.1
Actuated g/C Ratio	0.23	0.23	0.57			0.57
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	787	645	2947			2918
v/s Ratio Prot	c0.20		c0.52			0.46
v/s Ratio Perm		0.18				
v/c Ratio	0.86	0.77	0.91			0.81
Uniform Delay, d1	22.1	21.5	11.6			10.3
Progression Factor	1.00	1.00	0.89			1.00
Incremental Delay, d2	9.5	5.4	3.2			2.5
Delay (s)	31.6	27.0	13.5			12.9
Level of Service	C	C	B			B
Approach Delay (s/veh)	29.6		13.5			12.9
Approach LOS	C		B			B

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	803	496	0	2149	2162	0
Future Volume (vph)	803	496	0	2149	2162	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	180.0	70.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	7.5		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.91	0.91	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3502	2814	0	5136	5136	0
Flt Permitted	0.950					
Satd. Flow (perm)	3502	2814	0	5136	5136	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		5				
Link Speed (k/h)	60			60	60	
Link Distance (m)	273.0			349.5	319.6	
Travel Time (s)	16.4			21.0	19.2	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Adj. Flow (vph)	828	511	0	2215	2229	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	828	511	0	2215	2229	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	14.0	14.0		32.0	32.0	
Total Split (s)	23.0	23.0		37.0	37.0	
Total Split (%)	38.3%	38.3%		61.7%	61.7%	
Maximum Green (s)	17.0	17.0		31.0	31.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)	0.0	0.0		7.0	7.0	
Flash Don't Walk (s)	0.0	0.0		19.0	19.0	
Pedestrian Calls (#/hr)	0	0		0	0	
Act Effct Green (s)	16.7	16.7		31.3	31.3	
Actuated g/C Ratio	0.28	0.28		0.52	0.52	
v/c Ratio	0.85	0.65		0.83	0.83	
Control Delay (s/veh)	30.7	23.3		15.7	15.3	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	30.7	23.3		15.7	15.3	
LOS	C	C		B	B	
Approach Delay (s/veh)	27.8			15.7	15.3	
Approach LOS	C			B	B	
Queue Length 50th (m)	46.0	29.0		73.4	72.3	
Queue Length 95th (m)	#74.4	45.1		94.4	90.7	
Internal Link Dist (m)	249.0			325.5	295.6	
Turn Bay Length (m)	180.0	70.0				
Base Capacity (vph)	992	800		2675	2675	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.83	0.64		0.83	0.83	

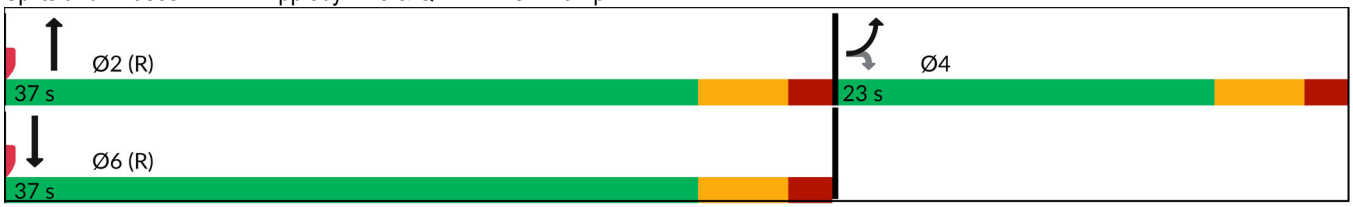
Intersection Summary	
Area Type:	Other
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay (s/veh): 18.4	Intersection LOS: B

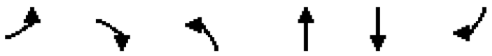
Intersection Capacity Utilization 76.4% ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 122: Appleby Line & QEW EB Off-Ramp

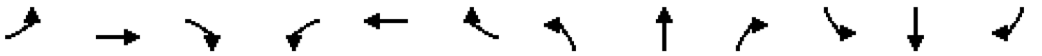




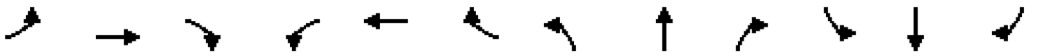
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	803	496	0	2149	2162	0
Future Volume (vph)	803	496	0	2149	2162	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3502	2814		5136	5136	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3502	2814		5136	5136	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	828	511	0	2215	2229	0
RTOR Reduction (vph)	0	4	0	0	0	0
Lane Group Flow (vph)	828	507	0	2215	2229	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	0%	1%	0%	1%	1%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.7	16.7		31.3	31.3	
Effective Green, g (s)	16.7	16.7		31.3	31.3	
Actuated g/C Ratio	0.28	0.28		0.52	0.52	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	974	783		2679	2679	
v/s Ratio Prot	c0.24			0.43	c0.43	
v/s Ratio Perm		0.18				
v/c Ratio	0.85	0.65		0.83	0.83	
Uniform Delay, d1	20.5	19.1		12.1	12.1	
Progression Factor	1.00	1.00		1.00	1.07	
Incremental Delay, d2	7.2	1.9		3.1	1.8	
Delay (s)	27.7	20.9		15.2	14.7	
Level of Service	C	C		B	B	
Approach Delay (s/veh)	25.1			15.2	14.7	
Approach LOS	C			B	B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Future Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	115.0		0.0	120.0		0.0	50.0		50.0	80.0		85.0
Storage Lanes	1		0	1		0	1		1	2		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.91	1.00	0.97	0.91	1.00
Ped Bike Factor		0.99		1.00			1.00		0.99	1.00		0.99
Frt		0.905			0.936				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3218	0	1787	3281	0	1736	5136	1599	3502	5136	1553
Flt Permitted	0.204			0.591			0.191			0.950		
Satd. Flow (perm)	373	3218	0	1110	3281	0	349	5136	1575	3500	5136	1533
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		132			196				215			156
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		204.4			228.0			599.0			349.5	
Travel Time (s)		12.3			13.7			35.9			21.0	
Confl. Peds. (#/hr)			2	2			1		3	3		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Adj. Flow (vph)	186	77	132	582	378	283	86	1467	299	206	1182	156
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	209	0	582	661	0	86	1467	299	206	1182	156
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.4		11.0	38.4		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.4		12.0	39.4		11.0	38.6	38.6	11.0	38.6	38.6
Total Split (%)	11.0%	38.4%		12.0%	39.4%		11.0%	38.6%	38.6%	11.0%	38.6%	38.6%
Maximum Green (s)	7.0	32.0		8.0	33.0		7.0	32.3	32.3	7.0	32.3	32.3
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.7		1.0	2.7		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Don't Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	29.0	19.6		31.0	20.6		50.8	40.4	40.4	11.4	45.8	45.8
Actuated g/C Ratio	0.29	0.20		0.31	0.21		0.51	0.40	0.40	0.11	0.46	0.46
v/c Ratio	0.92	0.28		1.47	0.80		0.30	0.71	0.39	0.52	0.50	0.20
Control Delay (s/veh)	72.7	13.3		250.8	33.4		13.8	28.6	9.0	46.4	21.8	4.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	72.7	13.3		250.8	33.4		13.8	28.6	9.0	46.4	21.8	4.3
LOS	E	B		F	C		B	C	A	D	C	A
Approach Delay (s/veh)		41.3			135.2			24.7			23.3	
Approach LOS		D			F			C			C	
Queue Length 50th (m)	28.7	6.8		~165.3	49.5		7.4	90.7	10.7	20.6	62.4	0.0
Queue Length 95th (m)	#51.9	15.5		#215.5	64.8		17.3	#124.5	35.4	32.0	90.9	13.8
Internal Link Dist (m)		180.4			204.0			575.0			325.5	
Turn Bay Length (m)	115.0			120.0			50.0		50.0	80.0		85.0
Base Capacity (vph)	203	1119		397	1214		289	2073	764	397	2354	787
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.19		1.47	0.54		0.30	0.71	0.39	0.52	0.50	0.20

Intersection Summary	
Area Type:	Other
Cycle Length: 100	
Actuated Cycle Length: 100	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.47	
Intersection Signal Delay (s/veh): 52.9	Intersection LOS: D

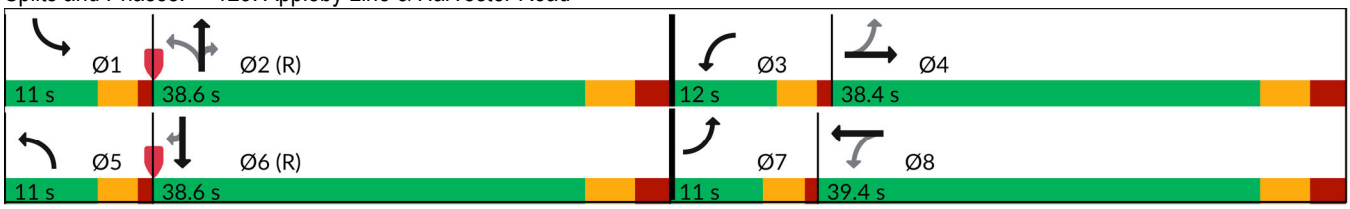
Intersection Capacity Utilization 90.4% ICU Level of Service E

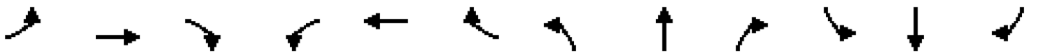
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 123: Appleby Line & Harvester Road

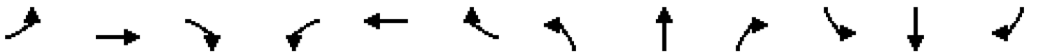




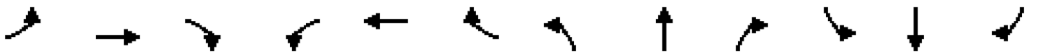
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Future Volume (vph)	182	75	129	570	370	277	84	1438	293	202	1158	153
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.91	1.00	0.97	0.91	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.91		1.00	0.94		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1736	3219		1786	3280		1736	5136	1575	3502	5136	1533
Flt Permitted	0.20	1.00		0.59	1.00		0.19	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	373	3219		1110	3280		348	5136	1575	3502	5136	1533
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	186	77	132	582	378	283	86	1467	299	206	1182	156
RTOR Reduction (vph)	0	106	0	0	156	0	0	0	128	0	0	86
Lane Group Flow (vph)	186	103	0	582	505	0	86	1467	171	206	1182	70
Confl. Peds. (#/hr)			2	2			1		3	3		1
Heavy Vehicles (%)	4%	0%	1%	1%	3%	3%	4%	1%	1%	0%	1%	4%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2			6
Actuated Green, G (s)	26.6	19.6		28.6	20.6		47.0	40.3	40.3	11.4	45.0	45.0
Effective Green, g (s)	26.6	19.6		28.6	20.6		47.0	40.3	40.3	11.4	45.0	45.0
Actuated g/C Ratio	0.27	0.20		0.29	0.21		0.47	0.40	0.40	0.11	0.45	0.45
Clearance Time (s)	4.0	6.4		4.0	6.4		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	630		371	675		256	2069	634	399	2311	689
v/s Ratio Prot	0.07	0.03		c0.13	0.15		0.02	c0.29		c0.06	0.23	
v/s Ratio Perm	0.19			c0.32			0.13		0.11			0.05
v/c Ratio	0.96	0.16		1.57	0.75		0.34	0.71	0.27	0.52	0.51	0.10
Uniform Delay, d1	33.4	33.4		34.5	37.3		15.0	24.9	20.0	41.7	19.6	15.9
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	52.1	0.1		268.7	4.6		0.8	2.1	1.0	1.1	0.8	0.3
Delay (s)	85.5	33.5		303.2	41.8		15.8	27.0	21.0	42.8	20.5	16.1
Level of Service	F	C		F	D		B	C	C	D	C	B
Approach Delay (s/veh)		58.0			164.2			25.5			23.0	
Approach LOS		E			F			C			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	61.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	20.7
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Future Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	85.0		50.0	80.0		0.0	75.0		55.0	75.0		100.0
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Ped Bike Factor	1.00		0.98	0.99		0.99			0.98			0.98
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	1792	1615	1671	1792	1553	1805	3574	1442	1736	5136	1615
Flt Permitted	0.673			0.685			0.083			0.090		
Satd. Flow (perm)	2478	1792	1576	1192	1792	1533	158	3574	1414	164	5136	1589
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			283			171			109			525
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		345.3			480.3			337.2			599.0	
Travel Time (s)		20.7			28.8			20.2			35.9	
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Adj. Flow (vph)	584	111	416	167	107	223	337	1494	116	174	1681	525
Shared Lane Traffic (%)												
Lane Group Flow (vph)	584	111	416	167	107	223	337	1494	116	174	1681	525
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	12.0	37.5	37.5	11.5	37.5	37.5	11.5	38.8	38.8	12.5	38.8	38.8
Total Split (s)	12.0	38.0	38.0	11.6	37.6	37.6	19.6	52.9	52.9	12.5	45.8	45.8
Total Split (%)	10.4%	33.0%	33.0%	10.1%	32.7%	32.7%	17.0%	46.0%	46.0%	10.9%	39.8%	39.8%
Maximum Green (s)	7.0	31.5	31.5	7.6	31.1	31.1	15.6	46.1	46.1	8.5	39.0	39.0
Yellow Time (s)	3.0	3.7	3.7	3.0	3.7	3.7	3.0	3.3	3.3	3.0	3.3	3.3
All-Red Time (s)	2.0	2.8	2.8	1.0	2.8	2.8	1.0	3.5	3.5	1.0	3.5	3.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0	7.0		7.0	7.0		7.0	7.0		7.0	7.0
Flash Don't Walk (s)		24.0	24.0		24.0	24.0		25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	26.6	18.1	18.1	27.8	17.7	17.7	74.8	55.9	55.9	59.3	44.4	44.4
Actuated g/C Ratio	0.23	0.16	0.16	0.24	0.15	0.15	0.65	0.49	0.49	0.52	0.39	0.39
v/c Ratio	0.92	0.40	0.86	0.52	0.39	0.59	0.76	0.86	0.16	0.70	0.85	0.56
Control Delay (s/veh)	60.3	45.1	31.5	38.5	45.3	17.4	40.7	34.1	5.2	40.5	38.3	5.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	60.3	45.1	31.5	38.5	45.3	17.4	40.7	34.1	5.2	40.5	38.3	5.0
LOS	E	D	C	D	D	B	D	C	A	D	D	A
Approach Delay (s/veh)		48.0			30.5			33.6			31.1	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	63.1	25.2	31.8	33.9	24.3	11.4	55.1	163.9	0.9	22.8	134.9	0.0
Queue Length 95th (m)	68.5	38.0	63.8	46.0	37.0	32.0	#129.8	#248.2	13.7	#68.4	#178.6	24.7
Internal Link Dist (m)		321.3			456.3			313.2			575.0	
Turn Bay Length (m)	85.0		50.0	80.0			75.0		55.0	75.0		100.0
Base Capacity (vph)	635	490	637	319	484	539	441	1737	743	249	1981	935
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.92	0.23	0.65	0.52	0.22	0.41	0.76	0.86	0.16	0.70	0.85	0.56

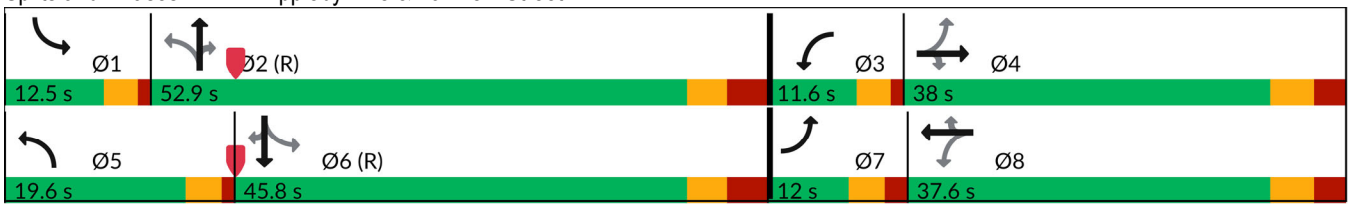
Intersection Summary	
Area Type:	Other
Cycle Length: 115	
Actuated Cycle Length: 115	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.92	
Intersection Signal Delay (s/veh): 35.0	Intersection LOS: D

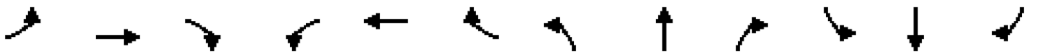
Intersection Capacity Utilization 87.8% ICU Level of Service E

Analysis Period (min) 15

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 124: Appleby Line & Fairview Street

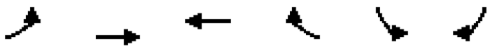




Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Future Volume (vph)	566	108	404	162	104	216	327	1449	113	169	1631	509
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Lane Util. Factor	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3500	1792	1576	1660	1792	1533	1805	3574	1414	1736	5136	1589
Flt Permitted	0.67	1.00	1.00	0.69	1.00	1.00	0.08	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	2478	1792	1576	1197	1792	1533	157	3574	1414	165	5136	1589
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	584	111	416	167	107	223	337	1494	116	174	1681	525
RTOR Reduction (vph)	0	0	238	0	0	145	0	0	56	0	0	323
Lane Group Flow (vph)	584	111	178	167	107	78	337	1494	60	174	1681	202
Confl. Peds. (#/hr)	1		11	11		1	4		7	7		4
Heavy Vehicles (%)	0%	6%	0%	8%	6%	4%	0%	1%	12%	4%	1%	0%
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	25.1	18.1	18.1	25.3	17.7	17.7	72.0	55.9	55.9	56.4	44.3	44.3
Effective Green, g (s)	25.1	18.1	18.1	25.3	17.7	17.7	72.0	55.9	55.9	56.4	44.3	44.3
Actuated g/C Ratio	0.22	0.16	0.16	0.22	0.15	0.15	0.63	0.49	0.49	0.49	0.39	0.39
Clearance Time (s)	5.0	6.5	6.5	4.0	6.5	6.5	4.0	6.8	6.8	4.0	6.8	6.8
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	603	282	248	293	275	235	437	1737	687	246	1978	612
v/s Ratio Prot	c0.06	0.06		0.04	0.06		c0.16	c0.42		0.07	0.33	
v/s Ratio Perm	c0.15		0.11	0.09		0.05	0.32		0.04	0.27		0.13
v/c Ratio	0.97	0.39	0.72	0.57	0.39	0.33	0.77	0.86	0.09	0.71	0.85	0.33
Uniform Delay, d1	43.7	43.5	46.0	39.0	43.8	43.4	31.1	26.1	15.9	23.4	32.3	24.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	0.9	9.4	2.5	0.9	0.8	8.2	5.8	0.3	8.9	4.8	1.4
Delay (s)	72.2	44.4	55.4	41.5	44.7	44.2	39.3	31.9	16.1	32.3	37.1	26.3
Level of Service	E	D	E	D	D	D	D	C	B	C	D	C
Approach Delay (s/veh)		63.2			43.4			32.3			34.4	
Approach LOS		E			D			C			C	

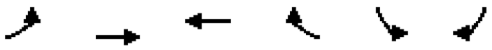
Intersection Summary			
HCM 2000 Control Delay (s/veh)	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	22.3
Intersection Capacity Utilization	87.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	15	611	696	4	5	23
Future Volume (vph)	15	611	696	4	5	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	25.0			0.0	0.0	0.0
Storage Lanes	1			0	1	1
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt			0.999			0.850
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	3539	3536	0	1770	1583
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	3539	3536	0	1770	1583
Link Speed (k/h)		60	60		40	
Link Distance (m)		600.1	153.9		177.5	
Travel Time (s)		36.0	9.2		16.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	664	757	4	5	25
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	664	761	0	5	25
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	100			100	100	100
Sign Control		Free	Free		Stop	

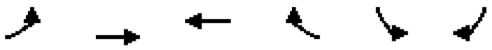
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 29.4%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	15	611	696	4	5	23
Future Volume (Veh/h)	15	611	696	4	5	23
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	664	757	4	5	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			154			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	761				1123	381
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	584				974	173
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				98	97
cM capacity (veh/h)	914				227	779

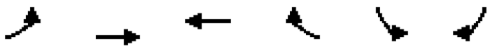
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1	SB 2
Volume Total	16	332	332	505	256	5	25
Volume Left	16	0	0	0	0	5	0
Volume Right	0	0	0	0	4	0	25
cSH	914	1700	1700	1700	1700	227	779
Volume to Capacity	0.02	0.20	0.20	0.30	0.15	0.02	0.03
Queue Length 95th (m)	0.4	0.0	0.0	0.0	0.0	0.5	0.8
Control Delay (s/veh)	9.0	0.0	0.0	0.0	0.0	21.2	9.8
Lane LOS	A					C	A
Approach Delay (s/veh)	0.2			0.0		11.7	
Approach LOS						B	

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	29.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	408	571	0	0	0
Future Volume (vph)	0	408	571	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	15.0			0.0	0.0	0.0
Storage Lanes	1			0	1	0
Taper Length (m)	7.5				7.5	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	1863	3539	3539	0	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	3539	3539	0	1863	0
Link Speed (k/h)		60	60		40	
Link Distance (m)		124.8	744.3		141.5	
Travel Time (s)		7.5	44.7		12.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	443	621	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	443	621	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(m)		3.6	3.6		3.6	
Link Offset(m)		0.0	0.0		0.0	
Crosswalk Width(m)		4.8	4.8		4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25			15	25	15
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	408	571	0	0	0
Future Volume (Veh/h)	0	408	571	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	443	621	0	0	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)		125				
pX, platoon unblocked					0.99	
vC, conflicting volume	621				843	311
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	621				824	311
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	956				308	685

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	0	222	222	414	207	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.13	0.13	0.24	0.12	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s/veh)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s/veh)	0.0			0.0		0.0
Approach LOS						A

Intersection Summary				
Average Delay	0.0			
Intersection Capacity Utilization	19.1%	ICU Level of Service		A
Analysis Period (min)	15			