TRAFFIC IMPACT STUDY UPDATE

2421 & 2431 NEW STREET
RESIDENTIAL DEVELOPMENT
CITY OF BURLINGTON,
REGIONAL MUNICIPALITY OF HALTON

PREPARED FOR:

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CROZIER
CONSULTING ENGINEERS

Identification	Date	Description of Work
Rev. 0	December 2017	First Submission
Rev. 1	April 2019	Second Submission

1.0 EXECUTIVE SUMMARY

C.F. Crozier & Associates Inc. (Crozier) was retained by TRG (New – Guelph) Inc. to undertake a Traffic Impact Study to address the traffic impacts of the proposed residential development located at 2421 & 2431 New Street in the City of Burlington, Regional Municipality of Halton. The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the boundary road network and to recommend any required mitigation measures, if warranted.

A previous Traffic Impact Study was submitted to the City in December 2017. The update herein, addresses the changes in the Site Plan, as well as comments made by the City.

The previous Site Plan (prepared by WZMH Architects, dated December 12, 2017) proposes the removal of the existing commercial buildings and the construction of a residential condominium with 139 units and senior's residence building with 223 units. The proposed building is 11-storeys in height. The development proposes a full-moves access to New Street.

The most recent Site Plan (WZMH Architects, April 2019) proposes a minor reduction in retirement housing units from 223 to 218 units. The number of condominium units are proposed to remain the same at 139 units. As such, the analysis conducted using the previous Site Plan remains valid and is considered conservative.

The Traffic Impact Study analyzes the following existing intersections:

- New Street and Guelph Line
- New Street and 2421 New Street Site Access
- New Street and 2431 New Street Site Access

The initial Traffic Impact Study examined the segment of New Street between Guelph Line and Walker's Line with the implementation of a road-diet configuration which was implemented in August 2016 as a one-year pilot project. Since the road-diet configuration was removed in 2018 after the pilot project, the City has requested new traffic counts to model the updated traffic operations.

Based on new turning movement counts conducted in 2019, a slight decrease in traffic volumes were observed in the boundary road network. As such, the analysis and conclusions contained in the previously submitted Traffic Impact Study using 2017 traffic volumes remain valid and are kept in the herein updated report.

The existing boundary road network (modelled without road-diet) is currently operating at an acceptable levels of service "C" or better, with moderate to low control delays and maximum volume-to-capacity ratios.

It is assumed that the development will be fully built-out by 2022. Therefore, analysis was conducted for the years 2022 (full build-out) and 2027 (five-year horizon). City staff has instructed Crozier to apply a 1% growth rate (compounded annually) to determine future background traffic volumes in 2022 and 2027.

The signalized intersection of New Street and Guelph Line is expected to operate at an unchanged level of service when compared to 2017 existing conditions (modelled without the road-diet). The site accesses are expected to operate at an unchanged level of service during the a.m. peak period, and a level of service "D" during the p.m. peak period. The increase in control delays during the p.m. peak period is minor, no operational or queueing issues are expected.

Based on the previous site plan, the proposed development is forecasted to generate approximately

96 and 112 total two-way trips in the a.m. and p.m. peak hour, respectively.

As the new site plan represents a minor increase of one (1) and two (2) additional trips in the a.m. and p.m. peak periods, respectively, the future total analysis is not expected to materially change.

Overall, the boundary road network is expected to operate at unchanged level of service under 2027 future total conditions compared to 2027 future background conditions. The traffic operations analysis indicates that the addition of site traffic to the boundary road network is not expected to significantly impact traffic operations. In 2027, the boundary road network is forecasted to continue to operate efficiently, with reserved capacity for further growth.

The sight distance from the proposed site access on New Street exceeds sight distance requirements set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Therefore, the proposed development can be supported from a sight distance perspective.

There are existing Transportation Demand Management (TDM) opportunities in the City of Burlington to encourage the use of non-auto transportation to reduce pollution, reduce single-occupancy vehicle (SOV) trips, and improve community health. The existing modal split in the study area is approximately 65% for auto driver trips and 35% for non-auto trips including transit, cycling, walking and auto passenger. This modal split indicates a willingness to utilize alternate modes of transportation.

There is existing pedestrian, transit and cycling infrastructure in the study area to provide sufficient mobility to reduce automobile trips. There are TDM initiatives held by the City of Burlington and Smart Commute Halton including "Bike Month," an annual "Bike to Work Day", carpooling match services and incentives, flexible work arrangements, cycling and walking provisions, and transit pass programs.

The development proposes direct entrance to the senior's residence and condominium buildings fronting New Street, connecting to the existing pedestrian sidewalk infrastructure on New Street. However, there are other opportunities for the development to promote TDM measures, such as providing transit maps and schedules, trail and cycling route maps, information on Smart Commute, and a loadable PRESTO card.

The analysis contained within this report was prepared using the Site Plan prepared by WZMH Architects, dated December 12, 2017. Any minor revisions to the site plan are not expected to affect the conclusions contained with this report.

In conclusion, the proposed development can be supported from a transportation operations and safety perspective.

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2.0 INTRODUCTION

2.1 Background

C.F. Crozier & Associates Inc. (Crozier) was retained by TRG (New – Guelph) Inc. to undertake a Traffic Impact Study to address the transportation impacts of the proposed residential development located at 2421 & 2431 New Street in the City of Burlington, Region Municipality of Halton. A Traffic Impact Study was previously submitted in December 2017. The update herein addresses the Site Plan changes, as well as the comments made by the City. A comment response memo has been attached in **Appendix H.**

2.2 Development Proposal

The Site Plan (prepared by WZMH Architects) proposes the removal of the existing commercial developments and the construction of a residential condominium and senior's residence. The proposed buildings are both 11-storeys in height.

The development also proposes a full-moves access to New Street.

Table 1 below outlines the previous and updated number of condominium and senior units proposed.

Table 1
Proposed Development Statistics

Land Use	Breakdown	Number of Units (Dec 2017)	Number of Units (April 2019)
Condominium	One Bedroom	97	91
	Two Bedroom	42	48
	Total	**139**	**139**
Retirement Living (Senior's Residence)	One Bedroom	136	129
	Two Bedroom	28	19
	Studio	27	38
	Memory Care (Long Term Care)	32	32
	Total	**223**	**218**
Community Institutional Use		--	521 m^2 (5,608 m^2)

As shown in **Table 1**, the most recent Site Plan reduced the number of senior housing units from a total of 223 units to 218 units, an unchanged number of residential condominium units, as well as an additional 521 square metres Community Institutional Use. The additional Community Institutional Use will operate independently from the Retirement Living proposed, and will provide affordable senior's care.

The most recent Site Plan also increased the number of parking supplied to 386 parking spaces. The

parking spaces will be provided at grade, as well as three levels below grade. A Parking Justification Study Update (Crozier, April 2019) has been prepared accordingly.

The Site Plan have been included as **Figure 1**. The site statistics have been included as **Appendix A.**

2.3 Purpose and Scope

The purpose of the study is to evaluate the transportation-related impacts of the proposed development on the boundary road network and to recommend any required mitigation measures, if warranted.

The study reviews the following main aspects of the proposed residential development from a transportation engineering perspective:

- Existing, future background, and future total traffic operations at the study intersections;
- Forecasted trip generation and distribution of the proposed development;
- Mitigation measures to support the proposed development, if required;
- Sight distance requirements at the site access on New Street; and
- Transportation Demand Management opportunities for the proposed development.

The study has been completed in accordance with the Region Municipality of Halton's "Transportation Impact Study Guidelines" (January 2015) and agreed-upon Terms of Reference with City of Burlington staff (City Staff). Refer to **Appendix B** for correspondence, and **Appendix H** for the comment response matrix.

3.0 EXISTING CONDITIONS

3.1 Development Lands

The subject property covers an area of approximately 0.70 hectares (ha) and currently consists of two one-storey commercial developments at 2421 New Street (the west portion of the subject property), and a restaurant at 2431 New Street (the east portion of the subject property).

The subject property is located in a mixed-use neighbourhood with commercial and residential developments, and is located approximately 1.5 kilometres east of the Downtown core. The subject property is bounded by existing residential developments to the north and west, New Street to the south, and existing commercial developments to the east. **Figure 2** illustrates the site location.

The subject property is zoned as "Neighbourhood Commercial – CN1" per the City of Burlington Zoning By-Law 2020.

3.2 Study Intersections

The Traffic Impact Study analyzes the following existing intersections:

- New Street and Guelph Line
- New Street and 2421 New Street Site Access
- New Street and 2431 New Street Site Access

3.3 Boundary Road Network

The boundary road network at the site frontage is described in **Table 2** below. Note that the roadway conditions for New Street are outlined with and without the road-diet configuration in place.

Table 2
Boundary Road Network

Roadway	Guelph Line	New Street (existing conditions - road-diet)	New Street (previous conditions – no road-diet)
Direction	Two-way (North-South)	Two-way (East-West)	
Classification	Minor Arterial	Minor Arterial	
Jurisdiction	City of Burlington	City of Burlington	
Speed Limit (km/h)	50	60 (east of Guelph Line) 50 (west of Guelph Line)	
Span	Lakeshore Road to Wellington County (Regional Road 1 north of Fairview Street)	James Street (Downtown Burlington) to Town of Oakville (continues as Rebecca Street)	
Freeway Connections	Highway 403 / Queen Elizabeth Way and Highway 401	None	
Number of lanes	2 (south of New Street) 4 (north of New Street)	2 (150 metres east of Guelph Line) 4 (Guelph Line to Beverley Drive) 2 (west of Beverley Drive)	4 (east of Beverley Drive) 2 (west of Beverley Drive)
Median type	Two-Way Left-Turn Lane (TWLTL)	Two-Way Left-Turn Lane (TWLTL)	Two-Way Left-Turn Lane (TWLTL) between Guelph Line and Beverley Drive
Pedestrian Facilities	Sidewalks (both sides)	Sidewalks (both sides)	Sidewalks (both sides)
Cycling Facilities	On-street bike lanes (both sides)	Shared (immediately east and west of Guelph Line) On-street bikes lanes (east and west of Guelph Line)	

The previous Traffic Impact Study (Crozier, December 2017) examined the segment of New Street between Guelph Line and Walkers Line with a road-diet configuration which was implemented in August 2016 as a one-year pilot project. As the road-diet was removed after the project, new analysis was conducted to study and forecast future traffic operations without the road-diet.

As shown in **Table 2** above, the road configuration within the study area did not change after the road-diet project. The lane reduction during the road-diet primarily affected New Street 150 metres east of Guelph Line, outside of the study area. It is also noted that the shared bike lanes on New Street, have been kept after the road-diet was removed.

Figure 3 illustrates the boundary road network during the road-diet configuration, storage lengths, bus stop locations, and intersection control for the existing road network. **Figure 4** illustrates the current boundary road network without the road-diet.

3.4 Transit Operations

Burlington Transit operates several bus routes within the study area. **Table 3** below outlines the existing transit routes, direction, days of operation, peak hour headways, and the location of bus stops in the study area.

Table 3
Existing Transit Services

Route	Direction	Span	Days of Operation	Peak Hour Headways (min)	Bus Stops in Study Area
3 (Guelph – Downtown)	Two-Way (North-South)	Burlington GO to Coventry Way	Monday to Sunday (incl. Holidays)	30	Guelph Line (north of New Street; both sides)
3A (Guelph – Downtown)	Two-Way (North-South)	Burlington GO to 407 Carpool	Monday to Friday	30	Guelph Line (north of New Street; both sides)
10 (New – Maple)	Two-Way (East-West)	Burlington GO to Appleby GO	Monday to Sunday (incl. Holidays)	20	New Street (south-west and north-east of Guelph Line)
50 (Burlington South)	One-Way (counter-clockwise)	Burlington GO to Burlington GO	Monday to Saturday (Late-Night)	N/A [1]	New Street (west of Guelph Line; south side)
52 (Burlington Northwest)	One-Way (clockwise)	Burlington GO to Burlington GO	Monday to Saturday (Late-Night)	N/A [1]	Guelph Line (north of New Street; west side)

Note 1: The route does not operate in the study area during the weekday a.m. or p.m. peak hours.

Appendix C contains relevant transit information.

3.5 Traffic Data

The previous TIS turning movement counts for the study intersections were conducted during the road-diet pilot project by Spectrum Traffic staff on Tuesday November 21, 2017 between 6:00 a.m. – 9:00 a.m., and 3:00 p.m. – 6:00 p.m., to reflect commuter peak hours.

As requested by the City, new turning movement counts for the study intersections were conducted after the road-diet was removed. The new counts were conducted by Spectrum Traffic staff, on Thursday January 31st, 2019 between 6:00 a.m. – 9:00 a.m., and 3:00 p.m. – 6:00 p.m., to reflect commuter peak hours without the road-diet.

The properties of 2421 New Street and 2431 New Street each feature two full-moves accesses to New Street, thus totalling four full-moves accesses. However, each "pair" of accesses at the aforementioned properties were counted assuming a consolidated access for each property.

Signal timing plans for the intersection of New Street and Guelph Line were provided by City staff for modelling purposes.

Table 4 below outlines the calculated peak hour factors at each intersection during each peak hour.

Table 4
Peak Hour Factors

Intersection	Peak Hour	2017 Peak Hour Factor	2019 Peak Hour Factor
New Street and Guelph Line	Weekday A.M. 8:00 a.m. – 9:00 a.m.	0.95	0.93
	Weekday P.M. 4:30 p.m. – 5:30 p.m.	0.92	0.97
New Street and 2421 New Street Site Access	Weekday A.M. 8:00 a.m. – 9:00 a.m.	0.93	0.97
	Weekday P.M. 4:15 p.m. – 5:15 p.m.	0.97	0.96
New Street and 2431 New Street Site Access	Weekday A.M. 8:00 a.m. – 9:00 a.m.	0.94	0.96
	Weekday P.M. 4:15 p.m. – 5:15 p.m.	0.97	0.94

The PHFs outlined above represent uniform traffic flow on the boundary road network, are reflective of typical urban commuter travel patterns. The removal of road-diet did not materially change the peak hour factors.

The traffic count data and signal timing cards are provided in **Appendix D**. **Table 5** outlines a summary of the 2017 and 2019 traffic volumes. **Figure 5** and **Figure 6** illustrates the 2017 existing traffic volumes and 2019 existing traffic volumes, respectively.

Table 5
2017 and 2019 Traffic Movement Counts Summary

New Street at Guelph Line Morning Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	203	349	34	41	294	65	64	313	136	200	203	180
2019	194	350	31	42	261	69	57	310	126	184	174	169
Changes	-9	+1	-3	+1	-33	+4	-7	-3	-10	-16	-29	-11
Afternoon Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	191	290	30	86	319	59	74	764	219	140	276	275
2019	155	282	26	41	281	48	91	743	248	140	226	226
Changes	-36	-8	-4	-45	-38	-11	+17	-21	+29	0	-50	-49

As shown in **Figure 5, Figure 6**, and summarized in **Table 5,** 2019 existing traffic volumes remained relatively the same or slightly reduced. As there are no alternative parallel (east-west) roadways available nearby, the implementation and subsequent removal of road-diet, did not materially change traffic patterns in the boundary road network. Accordingly, the 2017 traffic volumes that were previously used in the first submission TIS remain valid and are considered conservative. The analysis and resultant future traffic operations were maintained and detailed shown below.

3.6 Intersection Modelling

The road network was modelled in Synchro 9.0 with measured existing roadway configurations in 2019 without the road-diet.

The 2017 traffic data, signal timing plans provided by City Staff, and default Synchro modelling parameters (with the exception outlined below) were used for the intersection modelling.

Consolidated Access

As the existing site accesses at 2421 & 2431 New Street were counted as a consolidated access for each property, the site accesses were modelled as a consolidated access for each property.

3.7 Intersection Operations

The existing traffic operations at the study intersections were analyzed using the 2017 existing traffic volumes illustrated in **Figure 5**.

Intersection operations for signalized and unsignalized intersections were derived from HCM2010 analysis. 95th percentile queue lengths were derived from Synchro queuing reports.

The Level of Service (LOS) definitions for signalized and unsignalized intersections are included in **Appendix E**. Detailed capacity analysis worksheets are included in **Appendix F**.

Table 6 outlines the 2017 existing traffic operations.

Table 6
2017 Existing Traffic Operations

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length
With Road-Diet						
New Street and Guelph Line	Signal	A.M.	C	26.2 s	0.51 (EBL)	None
		P.M.	D	40.2 s	0.97 (EBL) 0.97 (WBT)	None
New Street and 2421 New Street Site Access	Stop (Minor Street)	A.M.	B	12.6 s	0.01 (SBLR)	None
		P.M.	C	22.0 s	0.12 (SBLR)	None
New Street and 2431 New Street Site Access	Stop (Minor Street)	A.M.	B	14.0 s	0.01 (SBLR)	None
		P.M.	C	15.0 s	0.02 (SBLR)	None
Modelled without Road-Diet						
New Street and Guelph Line	Signal	A.M.	C	25.6 s	0.48 (EBL)	None
		P.M.	C	29.8 s	0.75 (EBL)	None
New Street and 2421 New Street Site Access	Stop (Minor Street)	A.M.	B	12.6 s	0.01 (SBLR)	None
		P.M.	C	22.2 s	0.13 (SBLR)	None
New Street and 2431 New Street Site Access	Stop (Minor Street)	A.M.	B	14.0 s	0.01 (SBLR)	None
		P.M.	C	15.0 s	0.02 (SBLR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (HCM2010). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2010).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through movements or shared through/turning movements, and 0.95 for exclusive turning movements are outlined and highlighted (per Region of Halton TIS Guidelines).

The intersection of New Street at Guelph Line, and the existing site accesses are operating at LOS "C" or better during the weekday a.m. and p.m. peak hours. Without road-diet, all existing intersections are operating at a low control delay with low or moderate maximum volume-to-capacity ratios. These operations indicate that the boundary road network is operating at acceptable levels of service.

4.0 FUTURE BACKGROUND CONDITIONS

4.1 Road Configuration

As mentioned in Section 3.3, the road-diet on New Street was implemented in August 2016 as a one-year pilot project, and would remain in place if public feedback supports the road-diet conditions.

Per the City's staff report TS-11-17, City staff recommended the removal of the "road-diet" on New Street and the conversion back to it's previous four-lane configuration east of Guelph Line in 2018. Accordingly, the update herein considers the future background and future total conditions without the road-diet road configurations.

As mentioned above, although 2017 traffic counts were conducted during the road-diet pilot project, 2019 existing traffic volumes illustrated the same or reduced traffic volumes. Thus, the previously submitted Traffic Impact Study (Crozier, December 2017), remains valid and is considered conservative. Thus, the previous traffic operation analysis and results were maintained and are shown below.

It is also noted that the previously submitted Traffic Impact Study outlined future operations with and without road-diet configurations for comparison.

4.2 Horizon Years

It is assumed that the development will be fully built-out by 2022. Therefore, analysis was conducted for the years 2022 (full build-out) and 2027 (five-year horizon), as confirmed with City Staff in the Terms of Reference.

4.3 Growth Rate

City staff has instructed Crozier to apply a 1% growth rate (compounded annually) to determine future background traffic volumes in 2022 and 2027.

4.4 Intersection Operations

The future background traffic operations at the study intersections were analyzed using the 2022 and 2027 future background traffic volumes illustrated in **Figures 7** and **8**. This section contains analysis of 2022 and 2027 future background operations without the existing road-diet configuration on New Street.

Intersection operations for signalized and unsignalized intersections were derived from HCM2010 analysis. 95th percentile queue lengths were derived from Synchro queuing reports.

The Level of Service (LOS) definitions for signalized and unsignalized intersections are included in **Appendix E**. Detailed capacity analysis worksheets are included in **Appendix F**.

Tables 7 and **8** outline the 2022 and 2027 future background traffic operations, respectively.

Table 7
2022 Future Background Traffic Operations – No Road-Diet

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length
New Street and Guelph Line	Signal	A.M.	C	26.0 s	0.51 (EBL)	None
		P.M.	C	30.4 s	0.73 (EBL)	None
New Street and 2421 New Street Site Access	Stop (Minor Street)	A.M.	B	12.9 s	0.01 (SBLR)	None
		P.M.	C	23.6 s	0.14 (SBLR)	None
New Street and 2431 New Street Site Access	Stop (Minor Street)	A.M.	B	14.4 s	0.01 (SBLR)	None
		P.M.	C	15.5 s	0.02 (SBLR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (HCM2010). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2010).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through movements or shared through/turning movements, and 0.95 for exclusive turning movements are outlined and highlighted (per Region of Halton TIS Guidelines).

Table 8
2027 Future Background Traffic Operations – No Road-Diet

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length
New Street and Guelph Line	Signal	A.M.	C	26.5 s	0.55 (EBL)	None
		P.M.	C	31.7 s	0.78 (EBL)	None
New Street and 2421 New Street Site Access	Stop (Minor Street)	A.M.	B	13.2 s	0.01 (SBLR)	None
		P.M.	D	25.4 s	0.16 (SBLR)	None
New Street and 2431 New Street Site Access	Stop (Minor Street)	A.M.	B	14.8 s	0.01 (SBLR)	None
		P.M.	C	15.9 s	0.02 (SBLR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (HCM2010). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2010).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through movements or shared through/turning movements, and 0.95 for exclusive turning movements are outlined and highlighted (per Region of Halton TIS Guidelines).

The traffic operations under 2027 future background conditions indicate that the intersection of New Street and Guelph Line is expected to operate at an unchanged levels of service "C" at during both peak periods. When compared to the 2017 existing traffic operations, the control delays and maximum volume-to-capacity ratios are forecasted to increase slightly. Nevertheless, no capacity or queueing issues are forecasted to occur.

The existing site access at 2421 New Street is expected to change from LOS "C" to "D" during the p.m. peak hour. However, control delays are expected to be minor, and the overall operations at the site access are not expected to change when compared to 2017 existing conditions.

The existing site access at 2431 New Street is expected to remain unchanged at a level of service "C" during both peak periods. The control delays and maximum volume-to-capacity ratios are expected to increase somewhat, however, operations are not expected to materially change when compared to 2017 existing conditions.

These operations indicate that the boundary road network is expected to continue to operate at an acceptable overall level of service under 2027 future background conditions.

5.0 SITE GENERATED TRAFFIC

5.1 Trip Generation

The proposed development will result in additional vehicles on the boundary road network that would otherwise not exist. The proposed development will also result in additional turning movements at the study intersections. As the development proposes the removal of the existing commercial buildings at 2421 and 2431 New Street, existing trips entering and exiting the sites were removed from the future total traffic volumes (i.e. set to "zero" prior to adding site generated traffic). These volumes were not removed at the intersection of New Street and Guelph Line.

Trip generation for the proposed development was determined using the fitted curve equations provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.

Land Use Category (LUC) 222, Multifamily Housing High-Rise includes apartments, townhouses, and condominiums that have more than 10 floors. As the proposed development is 11-storeys, this LUC was applied to the residential condominium units. Land Use Category 252 ("Senior Adult Housing – Attached") was applied to the senior residential units.

Table 9 below outlines the trip generation for the site based on the previously submitted site plan.

Table 9
Trip Generation (Previous Site Plan)

Land Use	Units	Peak Hour	Trips Generated		
			Inbound	Outbound	Total
LUC 222 Multifamily Housing – High-Rise	139	A.M.	12	40	52
		P.M.	34	22	56
LUC 252 Senior's Adult Housing - Attached	223	A.M.	15	29	44
		P.M.	31	25	56
Total		**A.M.**	**27**	**69**	**96**
		P.M.	**65**	**47**	**112**

The revised Site Plan proposes a reduction in senior housing units, but added an additional Community Institution Use. As a result, the trips generated by the revised site plan is outlined and compared below.

The most appropriate land use assumed to represent the Community Institutional Use for seniors was Land Use Code 254 (Assisted Living). The ITE Trip Generation Manual (10th Edition) defines this as a residential setting that provides either routine general protective oversight or assistance with activities necessary for independent living to mentally or physically limited persons. It should also be noted that uses such as the proposed Community Institutional use typically have low peak hour trip generating characteristics due to the nature of the operations. Facilities such as the proposed are often supported by shuttle operations, higher carpool use and subsidized transit passes, such as Burlington Transit's forthcoming Subsidized Passes for Low Income Transit (SPLIT) program. The Community Institutional Use is expected to benefit from such measures.

Table 10
Trip Generation (Updated)

Land Use	Units / GFA	Peak Hour	Trips Generated		
			Inbound	Outbound	Total
LUC 222 Multifamily Housing – High-Rise	139 units	A.M.	12	40	52
		P.M.	34	22	56
LUC 252 Senior's Adult Housing - Attached	218 units	A.M.	15	28	43
		P.M.	30	25	55
LUC 254 Assisted Living	521 m^2 (5608 sq. ft)	A.M.	2	0	2
		P.M.	1	2	3
Total (Updated)		**A.M.**	**29**	**68**	**97**
		P.M.	**65**	**49**	**114**
Total (Previous Site Plan)		A.M.	27	69	96
		P.M.	65	47	112
Changes		A.M.	+2	-1	+1
		P.M.	0	+2	+2

As shown in **Table 10**, the changes in the revised trips generated is minimum in comparison to the previously submitted Transportation Impact Study (Crozier, December 2017). Hence, the previous analysis is maintained herein and used for future total analysis.

5.2 Trip Distribution and Assignment

The trips generated by the development were distributed to the boundary road network based on Transportation Tomorrow Survey (TTS) data. TTS is a comprehensive survey of transportation characteristics of households in the Golden Horseshoe, Simcoe County and surrounding areas.

For the proposed development, TTS results were filtered to auto trips exiting 2006 GTA Zone 4061, a primarily residential zone in which the subject property is located in. Trips were filtered to the a.m. peak period. From this query, trip destinations were determined and percentage of trips assigned to each destination was accounted for. Trips were assumed to travel to and from their destination based on the most convenient route possible.

The trip distribution that was applied for the a.m. peak period was inversely applied to the p.m. peak period. **Table 10** below outlines the assumed trip distribution for the proposed development.

Table 10
Trip Distribution

Departing To / Arriving From	Percentage
Guelph Line (North)	45%
New Street (East)	20%
New Street (West)	30%
Guelph Line (South)	5%
Total	**100%**

Appendix G contains the TTS data.

Figure 9 outlines the trip distribution for the site and **Figure 10** outlines the trip assignment for the site. The trip assignment does not account for existing trips entering and exiting the site, as the development proposes the removal of the existing commercial businesses.

6.0 FUTURE TOTAL CONDITIONS

6.1 Basis of Assessment

The site generated traffic volumes illustrated in **Figure 10** was added to the 2022 and 2027 future background traffic volumes in **Figures 7** and **8** to determine the future total traffic volumes. **Figures 11** and **12** outline the 2022 and 2027 future total traffic volumes, respectively.

The proposed development will eliminate the existing site accesses on New Street and proposes a single full-moves access for site ingress and egress. Modelling of future total conditions was conducted for one full-moves access on New Street.

6.2 Intersection Operations

The future total traffic operations at the study intersections were analyzed using the 2022 and 2027 future total traffic volumes illustrated in **Figures 11** and **12**. This section contains analysis of 2022 and 2027 future total operations on New Street.

Intersection operations for signalized and unsignalized intersections were derived from HCM2010 analysis. 95th percentile queue lengths were derived from Synchro queuing reports.

The Level of Service (LOS) definitions for signalized and unsignalized intersections are included in **Appendix E.** Detailed capacity analysis worksheets are included in **Appendix F**.

Tables 11 and **12** outline the 2022 and 2027 future total traffic operations, respectively.

Table 11
2022 Future Total Traffic Operations – No Road-Diet

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length
New Street and Guelph Line	Signal	A.M.	C	26.3 s	0.59 (EBL)	None
		P.M.	C	31.7 s	0.79 (EBL)	None
New Street and Site Access	Stop (Minor Street)	A.M.	C	15.0 s	0.17 (SBLR)	None
		P.M.	D	26.3 s	0.22 (SBLR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (HCM2010). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2010).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through movements or shared through/turning movements, and 0.95 for exclusive turning movements are outlined and highlighted (per Region of Halton TIS Guidelines).

Table 12
2027 Future Total Traffic Operations – No Road-Diet

Intersection	Control	Peak Hour	Level of Service [1]	Control Delay	Critical v/c ratio [2]	95th Percentile Queue Length > Storage Length
New Street and Guelph Line	Signal	A.M.	C	26.8 s	0.63 (EBL)	None
		P.M.	C	33.2 s	0.84 (EBL)	87.8 m > 85 m (EBL)
New Street and Site Access	Stop (Minor Street)	A.M.	C	15.5 s	0.18 (SBLR)	None
		P.M.	D	28.4 s	0.24 (SBLR)	None

Note 1: The Level of Service of a signalized intersection is based on the average control delay per vehicle (HCM2010). The Level of Service of a stop-controlled intersection is based on the delay associated with the critical minor road approach (HCM2010).

Note 2: The critical v/c ratio is considered to be the maximum v/c ratio for movements at the intersection. In addition, all v/c ratios greater than 0.85 for through movements or shared through/turning movements, and 0.95 for exclusive turning movements are outlined and highlighted (per Region of Halton TIS Guidelines).

The traffic operations under 2027 future total conditions indicate that the boundary road network is expected to operate at unchanged levels of service compared to 2027 future background conditions. The intersection of New Street and Guelph Line is expected to experience a maximum increase in control delay of 1.5 seconds. The forecasted 95th percentile queue length for the eastbound left-turn movement during the p.m. peak hour is 87.8 metres; 2.8 metres longer than the measured storage length of 85 metres. This is equivalent to approximately half a passenger car in length. Nevertheless, the centre TWLTL on New Street provides additional storage for this movement and thus can accommodate the additional queue length.

The proposed consolidated site access is expected to operate at LOS "C" and "D" during the weekday a.m. and p.m. peak hours, respectively, with minor delays.

These operations indicate that the boundary road network is expected to operate efficiently, at an acceptable level of service with reserved capacity for further growth under 2027 future total conditions. Therefore, the addition of site traffic to the boundary road network is not expected to materially impact traffic operations.

7.0 SIGHT DISTANCE ANALYSIS

The available sightlines at the proposed site access were measured and compared to the standards set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Sight distance was measured from the proposed site access using the following assumptions:

- A standard driver eye height of 1.05 metres for a passenger car, and
- A three-metre setback from the approximate extension of the outer curb to represent a vehicle waiting to exit the site.

The posted speed limit on New Street at the site frontage is 50 km/h. The design speed of an arterial roadway in urban environments is typically 10-20 km/h greater than the posted speed limit. Therefore, a design speed of 70 km/h was assumed for a conservative sight distance analysis.
The assumed time gap for passenger cars is 7.5 seconds (per Table 2.3.3.2a in the GDGCR) to turn left onto a two-lane highway. The extra time gap required for left-turning vehicles to cross lanes in excess of one is 0.5 seconds per lane. As left-turning vehicles will have to cross a second through lane and a centre TWLTL on New Street, the assumed time gap for left-turning vehicles at the New Street site access is increased to 8.5 seconds.

Per the Sight Distance equation 2.3.3 in the GDGCR, the minimum sight distance required at the site access is 166 metres.

The measured sight distance from the proposed site access exceeds 200 metres to the east and west. The geometric alignment of New Street is straight and flat, and thus was not considered as a factor in the sight distance analysis. Moreover, accesses to New Street currently exist at the subject property as well as neighbouring properties; therefore, sight distance issues are not anticipated.

Therefore, the proposed development can be supported from a sight distance perspective.

8.0 VEHICLE MANEUVERABILITY

Analysis of truck turning movements indicate that there is sufficient space for a private garbage truck to manoeuvre in and out of the site, and through the turning circle. Additionally, while the private garbage truck is parked in the designated loading area, passenger cars in both directions can manoeuvre around the site without issues. Thus, the proposed loading, internal roadway configuration and site access are supportable from a traffic operations perspective.

The relevant vehicle turning diagrams are included in **Appendix I**.

9.0 TRANSPORTATION DEMAND MANAGEMENT (TDM) OPPORTUNITIES

There are existing Transportation Demand Management (TDM) opportunities in the City of Burlington to encourage the use of non-auto transportation to reduce pollution, reduce single-occupancy vehicle (SOV) trips, reduce parking demand for the proposed development, and improve community health.

9.1 Existing Modal Split

TTS data was used to determine the existing modal split for trips entering the study area. Results were filtered to trips originating from 2006 GTA zone 4061 during the a.m. peak hour.

The existing modal split is outlined below in **Table 13**.

Table 13
Existing Modal Split

Mode	Percentage
Transit	11%
Cycling	1%
Auto Driver	65%
Auto Passenger	19%
Walking	4%

Approximately 65% of trips originating from the study area in the a.m. peak hour are by auto driver. Therefore, non-auto trips including transit, cycling and walking, as well as auto passenger (carpool) consist of approximately 35% of trips originating from the study area. This modal split indicates a willingness to utilize alternate modes of transportation.

Appendix G contains the TTS data.

9.2 Existing Pedestrian Opportunities

As outlined in Section 3.0, there is existing pedestrian connectivity from the subject property to the surrounding area via concrete sidewalks on both sides of New Street and Guelph Line. The subject property is located approximately 200 metres from the commercial plaza at the north-east corner of New Street and Guelph Line, which features many "walkable" destinations such as commercial and retail businesses, and fast-food and sit-down restaurants.

Burlington Mall is located approximately 1.5 kilometres to the north of the subject property, which is a relatively short walking distance to major shopping destinations. Downtown Burlington is located approximately 1.5 kilometres to the west of the subject property, which is a relatively short walking distance to major destinations in the Downtown area for employment and leisure.

9.3 Existing Transit Opportunities

As outlined in Section 3.0, Burlington Transit provides sufficient transit service at New Street and Guelph

Line during peak hours which connect to major transit hubs such as Burlington GO and Appleby GO. The convenient connections to these major transit hubs provide opportunities to access the Greater Toronto-Hamilton Area (GTHA) via transit, thus reducing the dependency on automobile travel.

9.4 Existing Cycling Opportunities

Despite the removal of the road-diet on New Street, bike lanes on both sides of the roadway remained, thus providing opportunities for cycling as an alternate mode of transportation. Burlington Mall is located approximately 1.5 kilometres to the north of the subject property, which is a relatively short cycling distance to major shopping destinations. Downtown Burlington is located approximately 1.5 kilometres to the west of the subject property, which is a relatively short cycling distance to major destinations in the Downtown area for employment and leisure (per TTS, approximately 10% of outbound trips from the study area travel to the Downtown area). Furthermore, bike racks are installed on all Burlington Transit as well as Go-Transit buses and trains. These free accessories provide more travel mode choices for cyclists should weather change during the day.

The City of Burlington also holds events to promote the use of cycling, such as "Bike Month" an annual "Bike to Work Day" in which the City collaborates with Smart Commute Halton and other local employers.

9.5 Smart Commute Halton

Smart Commute is a non-profit Transportation Management Association (TMA) committed to reducing traffic congestion, improving air quality and taking action on climate change. The subject property is located in the Smart Commute Halton region. Smart Commute Halton works with many organizations/employers in the Burlington area and surrounding areas by providing resources and tools which allow commuters to consider transportation alternatives. The Smart Commute Program has similar initiatives in 13 regions across the Greater Toronto and Hamilton Area (GTHA), which provides services for residents not working in the Burlington and Halton area.

More specifically, the following TDM strategies are provided by Smart Commute and have been historically shown to reduce SOV trips to and from developments similar to the proposed mixed-use development:

a. Carpooling: Smart Commute Halton promotes carpooling as a viable transportation mode choice. The Smart Commute online tool, which is available at the Smart Commute Halton website, helps commuters find and share carpool trips. Employers can also set up their own networks to assist their staff in finding carpool partners. Additionally, Smart Commute Halton highlights the benefits of carpooling such as cost savings, benefits to the environment, and stress reduction, while also providing information on several carpool parking lots located along major corridors within the City of Burlington and Halton area. Highway 403 and Queen Elizabeth Way features two High-Occupancy Vehicle (HOV) lanes (one in each direction) which require two or more passengers in a vehicle to utilize. The HOV lanes offer increased incentive to carpool to major destinations in the GHTA and reduce travel time on the congested freeways.

b. Flexible Work Arrangements: Smart Commute Halton supports many alternative work arrangements as a means to reduce gridlock, clean the air and decrease stress levels for employees.
    - **Flexible work hours** can include a range of work options including compressed work weeks, earned days off, flex time, staggered work hours, and reduced work hours.

These options help to ease congestion by reducing the number of commuters on the road, improving traffic flow and reducing idling times.

- **Telework** allows employees to work from home by connecting to their employer's computer network and also conduct meetings remotely through conference calls. Telework allows employees to remain productive in spite of emergencies such as health issues, storms, natural disasters, transit strikes and road closures. Furthermore, telework reduces greenhouse gas emissions by decreasing the number of peak hour trips generated by the development.

c. Cycling and Walking: Smart Commute Halton encourages increased walking and cycling by offering an online tool where residents can set goals and track active commuting habits and calories burned. Members can also earn rewards for walking and cycling to work. Smart Commute Halton provides information on the Carrot Rewards application which allows users to earn rewards for walking from several programs such as Aeroplan and Scene Rewards. Smart Commute NTV also connects members to cycling tools such as Cycling Maps and Handbooks, Can-Bike Training Courses, and Bicycle User Groups to find bike buddies.

d. Transit Pass Programs: Smart Commute Halton supports the use of PRESTO passes, which makes it easier for commuters to pay their fare while travelling within and between transit systems; PRESTO passes can be used across 11 transit systems in the GTA. Schools and workplaces in the GTHA may offer discounted transit passes which can increase the convenience of public transport use. Smart Commute Halton offers regular transit information which facilitates increased transit use. Residents attending school and/or working in the City of Burlington or other participating municipalities can take advantage of such opportunities. The Government of Canada offers a tax credit for weekly or longer duration transit passes as increased incentive to utilize transit as an alternate mode of transportation.

The Smart Commute Halton program is utilized city wide by many employers and organizations, and will contribute to reduced SOV trips generated by the proposed development. As noted above, the Smart Commute Program has similar initiatives in 13 regions across the GHTA. This presents a collaborative opportunity for reduction in SOV trips and automobile dependency for the subject development through planned initiatives, infrastructure and programs throughout the GTHA.

9.6 Site Specific TDM Opportunities

The Site Plan identifies entrances to the senior's retirement building and condominium building fronting New Street, to be connected to the existing pedestrian sidewalk infrastructure. This direct connection to the existing pedestrian network increases pedestrian safety and convenience of travel.

There are several low impact opportunities for the development to promote TDM measures in support of reduced automobile use.

The provision of trail and cycling route maps within the lobby of the buildings will increase awareness of nearby pedestrian and cycling routes, and provide incentive for residents and visitors to utilize the existing network. Prior to occupancy, future residents can be informed of the active transportation and TDM opportunities of the proposed development.

It is expected that provision of up-to-date transit maps and schedules, and information on Smart Commute Halton within the lobbies will educate residents and visitors on the range of routes available by Burlington Transit and connecting GO Transit services. This increased awareness of convenient transit options has been historically shown to increase transit mode share in similar developments, and

may provide similar benefit to the subject development.

Upon occupancy, a TDM information package can be provided to residents and can comprise of active transportation network maps, transit maps and schedules and a loadable PRESTO card. Information on Smart Commute opportunities may also be beneficial to educate residents of alternative transportation modes for their existing and future areas of employment.

10.0 CONCLUSIONS

The analysis contained within this updated report has resulted in the following key findings:

- The 2019 existing traffic volumes without New Street road-diet are consistent with 2017 traffic volumes with road-diet that was previously used in the Traffic Impact Study submitted in December 2017. Accordingly, the traffic operations analysis and conclusions made in the first submission remain valid and are used in the herein update;

- The boundary road network (without Road-diet) is currently operating at acceptable levels of service "C" or better, with moderate or low control delays and acceptable volume-to-capacity ratios;

- The signalized intersection of New Street and Guelph Line is expected to operate at an unchanged level of service under 2027 future background conditions, when compared to 2017 existing conditions. The site accesses are expected to operate at levels of service "B" during the a.m. peak period, and a level of service "D" or better during the p.m. peak periods. The associated increase in control delays are minor and no operational or queueing issues are expected;

- Based on the previous site plan, the proposed development is forecasted to generate approximately 96 and 112 total two-way trips in the a.m. and p.m. peak hour, respectively;

- As the new site plan represents a minor increase of one (1) and two (2) additional trips in the a.m. and p.m. peak periods, respectively, the previous future total analysis remains valid and are not expected to materially change with the additional one or two trips.

- The boundary road network is expected to operate at an unchanged level of service under 2027 future total conditions when compared to 2027 future background conditions. No operational or queueing issues are expected for all future horizons;

- The traffic operations analysis indicates that the addition of site traffic to the boundary road network is not expected to significantly impact traffic operations;

- The sight distance from the proposed site access on New Street exceeds sight distance requirements set out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR). Therefore, the proposed development can be supported from a sight distance perspective;

- There are existing Transportation Demand Management (TDM) opportunities in the City of Burlington to encourage the use of non-auto transportation to reduce pollution, reduce single-occupancy vehicle (SOV) trips, and improve community health. The existing modal split in the study area is approximately 65% for auto driver trips and 35% for non-auto trips including transit,

cycling, walking and auto passenger. This modal split indicates a willingness to utilize alternate modes of transportation;

- There is existing pedestrian, transit and cycling infrastructure in the study area to provide sufficient mobility to reduce automobile trips. There are TDM initiatives held by the City of Burlington and Smart Commute Halton including "Bike Month," an annual "Bike to Work Day", carpooling match services and incentives, flexible work arrangements, cycling and walking provisions, and transit pass programs;

- The development proposes direct entrance to the senior's residence and condominium buildings fronting New Street, connecting to the existing pedestrian sidewalk infrastructure on New Street; and,

- There are other opportunities for the development to promote TDM measures, such as providing transit maps and schedules, trail and cycling route maps, information on Smart Commute, and a loadable PRESTO card.

The analysis contained within this report was prepared using the Site Plan prepared by WZMH Architects. Any minor revisions to the site plan are not expected to affect the conclusions contained with this report.

In conclusion, the proposed development can be supported from a transportation operations and safety perspective, regardless of the road-diet configuration.

Respectfully submitted by,

C.F. CROZIER & ASSOCIATES INC.



Michael A. Linton, MASc., P. Eng.
Associate, Transportation

C.F. CROZIER & ASSOCIATES INC.



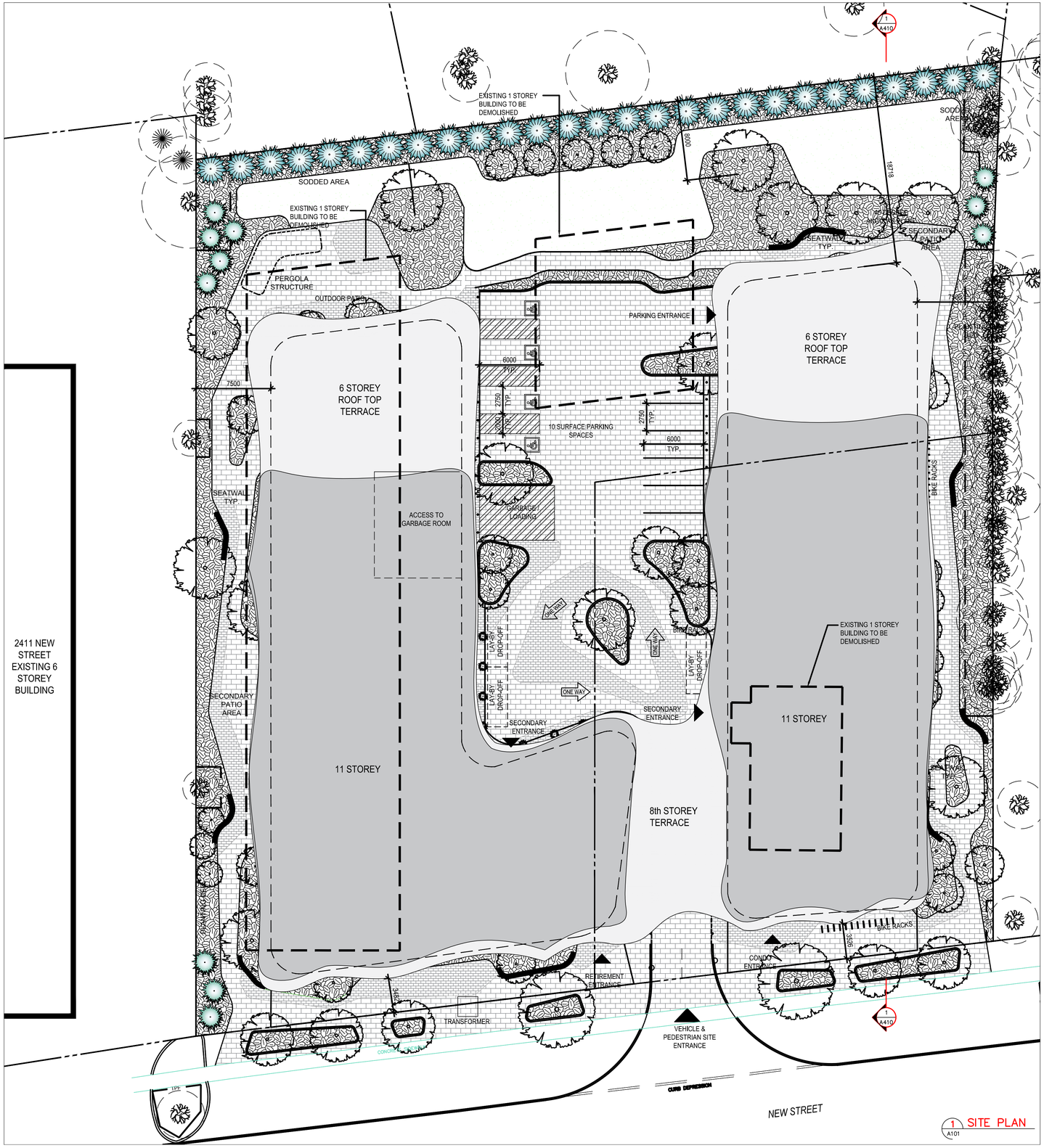
Martin Chan, E.I.T.
EIT, Transportation

/MC

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APPENDIX A

Site Statistics



1. SITE AREA:

DESCRIPTION	AREA (m2)
SITE AREA	7,032.1 m2
DENSITY (FAR)	3.85

2. UNIT COUNTS

FLOORS	RETIREMENT					CONDO (RESIDENTIAL)			
	STUDIO 1	STUDIO 2	1 BEDROOM	2 BEDROOM	TOTAL RETIREMENT	STUDIO	1 BEDROOM	2 BEDROOM	TOTAL RESIDENTIAL
LEVEL 2		2	18	3	23	-	10	7	17
LEVEL 3		2	18	3	23	-	10	7	17
LEVEL 4		2	18	3	23	-	10	7	17
LEVEL 5		2	18	3	23	-	10	7	17
LEVEL 6		6	13	3	22	-	11	8	19
LEVEL 7	32	-	-	-	32	-	-	-	-
LEVEL 8		6	11	1	18	-	10	3	13
LEVEL 9		6	11	1	18	-	10	3	13
LEVEL 10		6	11	1	18	-	10	3	13
LEVEL 11		6	11	1	18	-	10	3	13
TOTAL UNITS	32	38	129	19	218	-	91	48	139
TOTAL RETIREMENT & RESIDENTIAL UNITS (218 + 139) = 357 UNITS									

3. BUILDING AREA (m2)

FLOORS	RETIREMENT	RESIDENTIAL	COMMUNITY INSTITUTION	TOTAL AREA
	m2	m2	m2	m2
LEVEL P2				6,063
LEVEL P1				6,063
SUBTOTAL BELOW GRADE				12,126
GROUND (AMENITY)	1,528	696	521	2,745
LEVEL 2	1,528	1,217		2,745
LEVEL 3	1,528	1,217		2,745
LEVEL 4	1,528	1,217		2,745
LEVEL 5	1,528	1,217		2,745
LEVEL 6	1,480	1,328		2,808
LEVEL 7	2,197			2,197
LEVEL 8	1,190	890		2,080
LEVEL 9	1,190	890		2,080
LEVEL 10	1,190	890		2,080
LEVEL 11	1,190	890		2,080
SUBTOTAL ABOVE GRADE	16,077	10452	521	27,050
TOTAL ABOVE & BELOW GRADE				39,176

4a. AMENITY REQUIREMENT

AMENITY REQUIREMENT**		AREA (m2)
CONDO & RETIREMENT HOUSING		
STUDIO & 1 BEDROOM (<60SM)	290 X 15sm	4,350
2 BEDROOM	67 X 25sm	1,675
TOTAL AMENITY REQUIRED		6,025

**AS PER THE CITY OF BURLINGTON ZONE REQUIREMENTS FOR CN1 ZONE, AMENITY AREA =
25 sm PER UNIT (2 BEDROOMS)
15 sm PER EFFICIENCY UNIT < 60SM (STUDIO & 1BEDROOM)

4b. AMENITY AREA PROVIDED

AMENITY PROVIDED	INDOOR AREA (sm)	OUTDOOR AREA (sm)
RESIDENTIAL		
GROUND	405	1,285
LEVEL 7	-	298
LEVEL 8	-	136
TOTAL CONDO AMENITY	405	1,719
RETIREMENT HOUSING		
GROUND	1,338	1,273
LEVEL 7	-	713
TOTAL RETIREMENT AMENITY	1,338	1,986
TOTAL RETIREMENT & CONDO AMENITY	1,743	3,705
TOTAL INDOOR & OUTDOOR	5,448	

5a. PARKING REQUIREMENTS

	UNIT BREAKDOWN		REQ. RATE	REQ. SPACES	IBI RATE	IBI REQ. SPACES
CONDO (RESIDENTIAL)	1 BEDROOM	91	1.25/unit	114	1.00/unit	97
	2 BEDROOM	48	1.50/unit	72	1.25/unit	60
	VISITOR	139	0.35/unit	49	0.20/unit	28
	SERVICE	139	1/ Building	1	1/ 75 unit	2
TOTAL CONDO REQUIREMENT				236		187
RETIREMENT HOUSING	OCCUPANT SPACES (studio , 1bedroom & 2 bedroom)	186	0.50/unit	93	0.60/unit	112
	VISITOR	186	0.25/unit	47	0.25/unit	47
	EMPLOYEE	0	0	0	0	0
	SERVICE	186	1/ Building	1	1/50 unit	4
TOTAL RETIREMENT REQUIREMENT				141		163
MEMORY CARE (LONG-TERM CARE USE)	PATIENT/ VISITOR	32	0.25/unit	8	0.35/unit	12
	EMPLOYEE	20	0.85/unit	17	0	0
	SERVICE	32	Incl. in retirement	0	1 for every 50	1
TOTAL MEMORY CARE REQUIREMENT				25		13
COMMUNITY INSTITUTION	521 m2	1	-	20	-	20
TOTAL COMMUNITY INSTITUTION REQUIREMENT				20		20
TOTAL SITE REQUIREMENT ON SITE (ALL USES)				422		383
TOTAL ACCESSIBLE PARKING SPACES			3%	13		

5b. PARKING PROVIDED

FLOORS	
LEVEL P3	69
LEVEL P2	157
LEVEL P1	150 (INCLUDES 9 ACCESSIBLE SPACES)
SUBTOTAL BELOW GRADE	376
GROUND	10 (INCLUDES 4 ACCESSIBLE SPACES)
SUBTOTAL ABOVE GRADE	10
TOTAL BELOW & ABOVE GRADE	386

2 A101 STATISTICS

APPENDIX B

Correspondence

Darren Loro

From: Zunic, John <John.Zunic@burlington.ca>
Sent: November-14-17 11:25 AM
To: Darren Loro
Cc: Michael Linton
Subject: RE: 2421 & 2431 New Street TIS Terms of Reference

Hi Darren,
I can confirm that the Terms of Reference for the TIS (2421-2431 New Street) reflects our discussion earlier today and is acceptable from Transportation Planning's perspective.
Thanks,

John Zunic
Transportation Planning Technologist
Transportation Services Department, City of Burlington
426 Brant Street, Burlington, Ontario L7R 3Z6

tel. 905-335-7600 ext. 7691
john.zunic@burlington.ca




Please consider the environment before printing this e-mail.

From: Darren Loro [mailto:dloro@cfcrozier.ca]
Sent: Tuesday, November 14, 2017 11:13 AM
To: Zunic, John
Cc: Minaji, Rosalind; Michael Linton
Subject: 2421 & 2431 New Street TIS Terms of Reference

Good morning John,

Thank you for calling me back this morning to discuss the 2421 & 2431 New Street TIS Terms of Reference.

Our proposed terms of reference for the Transportation Impact Study per our discussion is outlined below:

1. Analysis of the following intersections will suffice:
    a. New Street and Guelph Line
    b. New Street and Site Access
2. Analysis of the weekday a.m. and p.m. peak hours (6:00am-9:00am and 3:00pm-6:00pm) will suffice.
3. Existing conditions will be analyzed assuming the road diet configuration on New Street currently in place as part of the one-year pilot project.
4. The anticipated year of full-build out will be confirmed.
    a. Should full build-out occur on a short-term scale (i.e. within two years), analysis of the five-year horizon (2022) from the date of study will suffice.
    b. Should full-build out occur beyond the short-term scale, then analysis of the year of full-build out plus the five year horizon will suffice.
5. A background growth rate of 1% compounded annually will be applied to existing traffic to forecast future background traffic.
6. Future background conditions will be analyzed under two scenarios:

    a. With the road diet configuration remaining
    b. Without the road diet configuration (existing configuration)
7. Trip generation for the proposed development will be forecasting using rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition.
8. Trip distribution for the proposed development will be determined using Transportation Tomorrow Survey (TTS) data and will be supported by existing travel patterns.
9. Future total conditions will be analyzed under two scenarios:
    a. With the road diet configuration remaining
    b. Without the road diet configuration (existing configuration)
10. Mitigation measures will be analyzed to accommodate the addition of site generated traffic to the road network, if required.
11. Existing conditions, future background conditions, and future total conditions will be analyzed using Synchro 9.0.
12. The measured sight distance at the proposed access will be compared to the sight distance thresholds sets out in the Transportation Association of Canada (TAC) Geometric Design Guide for Canadian Roads (GDGCR).
13. The TIS will include a "Parking Justification Analysis," which will compare the proposed parking supply against the City's Zoning By-Law minimum parking requirements to justify the proposed parking supply (the current statistics indicate that the proposed parking supply exceeds the Zoning By-law parking requirements). Should the site plan be revised so that the proposed parking supply is deficient compared to Zoning By-law requirements, we will discuss the structure for parking analysis at that later time.
14. Transportation Demand Management (TDM) opportunities that may result in reduced trip generation and parking demand for the proposed development will be identified and evaluated.

John, *please review the proposed terms of reference for the TIS and provide confirmation.*

I looked at the active development applications for Wards 2 and 4, and did not identify any background developments in proximity of the subject property. ***Rosalind,*** *can you please provide confirmation that there are no background developments we are to account for in our TIS?*

If you wish to discuss further, please do not hesitate to give me a call.

Thank you both!

Darren

| **DARREN LORO** | TRANSPORTATION TECHNOLOGIST | C.F. CROZIER & ASSOCIATES
| 40 Huron Street, Suite 301 | Collingwood, ON L9Y 4R3
| cfcrozier.ca | dloro@cfcrozier.ca | tel 705 446 3510

CROZIER & ASSOCIATES
Consulting Engineers

Land development engineering, from the ground up.

Water Resources · Transportation · Structural · Mechanical · Electrical · Building Science

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As I noted in our conversation today, Transportation Staff will need a revised Traffic Impact Study for the resubmission for this proposal. The following is from Kaylan Edgcumbe (copied), Manager of Transportation Planning and Parking:

> *Further to the Stat Public Meeting which was held on Tuesday, Transportation Planning committed to directing the traffic consultant to undertake updated peak hour traffic counts at the intersection of Guelph Line and New Street in order to accurately reflect present-day traffic conditions, and reassess the traffic impacts (re run Synchro) based on the updated traffic data.*
>
> *We experienced some diversion as a result of the New Street Road Diet pilot and the traffic counts used in this TIS were undertaken while the pilot was underway. Given that the pilot was ended and New Street was reinstated to its 4-lane cross section, and also that the lengthy construction is now complete – traffic patterns will have normalized. It's reasonable to request that updated counts be undertaken so we can review the impacts and provide certainty to the public that the traffic assessment is indeed accurate.*

Please connect with the traffic consultants to have them revise the TIS in accordance with the comments from Transportation.

Thank you,

Lauren Vraets, M.U.P.
Planner II, Development Planning
Department of City Building | Planning Section

P. **905 335 7600, ext 7536|** F. **905 335 7880 |** E. **lauren.vraets@burlington.ca**
Address **426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6**
City of Burlington **| www.burlington.ca**

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Martin Chan

From: Stern, Lisa <Lisa.Stern@burlington.ca>
Sent: August 1, 2018 4:18 PM
To: Courtney Heron-Monk
Cc: Martin Quarcoopome; Jacob Dosman; Dan Ozimkovic
Subject: Transportation Comments

Please find transportation's comments below.

Lisa Stern, RPP MCIP
Senior Planner
Department of City Building | Development Planning

P. **905 335 7600, ext 7824** | F. **905 335 7880** | E. **lisa.stern@burlington.ca**
Address **426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6**
City of Burlington | **www.burlington.ca**

When it comes to parking, we will only accept the parking rates from City parking study.

Here is the link to the study:
https://burlingtonpublishing.escribemeetings.com/filestream.ashx?DocumentId=14103

Site Plan comments:

- The entrance to the site will need to be dimensioned. Look at the opportunity of making the entrance pedestrian friendly by reducing the width and the radius as much as possible
- The parking spaces at the ground floor need to be for visitors. Tenant parking needs to be located in the underground garage
- What is the length of the loading space? Will the trucks that are parked in the loading space be blocking the driving aisle?
- Provide truck turning templates for the site
- Provide bike racks near the main entrances for both buildings
- We will require a 6m flat landing area at the top of the ramp that connects ground floor to P1
- Provide pedestrian connection on site from existing sidewalk on New street

Hope this helps,
Please let me know if you require more info.
Thanks,
Dan Ozimkovic, C.E.T
Transportation Planning Technologist
Transportation Services
City of Burlington
(905) 335-7671 ext. 7485
danijel.ozimkovic@burlington.ca

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APPENDIX C

Transit Data

ROUTE SERVICE TIMES

Route		Peak Only	M-F	Sat	Sun	Hol
1	Plains		●	●	●	●
1x	Plains		●			
2	Brant		●	●	●	●
2A	Brant	●	●			
3	Guelph - Downtown		●	●	●	●
3A	Guelph - Downtown		●			
4	Central		●	●	●	
5	Francis - Downtown		●	●		
6	Headon		●	●	●	●
10	New - Maple		●	●	●	●
11	Sutton - Alton		●	●	●	●
12	Upper Middle		●	●	●	●
15A	Appleby - Walkers	AM	●			
15B	Walkers - Appleby	PM	●			
20	Burloak - Lakeshore		●	●	●	●
21	Fairview		●	●	●	●
25	Walkers		●	●	●	
40A	Pinedale - Hampton Heath	AM	●			
40B	Pinedale - Hampton Heath	PM	●			
48	Millcroft	●	●	September to June		
80	Harvester		●			
81	North Service	●	●			
83	North Service	Midday	●			
87	North Service - Aldershot	●	●			
101	Plains Express		●			
50	Burlington South	Late Night	●	●		
51	Burlington Northeast	Late Night	●	●		
52	Burlington Northwest	Late Night	●	●		
300	Aldershot		●			
301	Pinedale		●			
302	Tansley Woods		●			

MAP LEGEND

Transit

- Regular Service Bus Route
- Peak Service Bus Route[1]
- Limited Service Bus Route
- Late Night Service Bus Route
- GO Station
- HSR Transfer Point
- Oakville Transit Transfer Point
- Community Connection Route

Symbols

- Hospital
- Shopping Centre
- Arena
- City Hall
- Courthouse
- Library
- Recreation Centre
- Community Centre
- Museum / Attraction
- Outdoor Pool
- Indoor Pool
- Information
- Public Secondary School
- Public Elementary School
- Catholic Secondary School
- Catholic Elementary School

[1]Peak hours are weekdays approximately 5 to 9 a.m. and 3 to 7 p.m.

0 0.5 1 Km
0 0.5 1 Mi

No 1 Side Rd
Tremaine Rd
407 ETR
Alton Village
Thomas Alton Bl
Tim Dobbie Dr
Dundas-Walmart Plaza
Dr. Frank J. Hayden
Haber
Dundas St
John William Boich
Appleby-Dundas Plaza
Sutton Dr
St. Christopher
Orchard Park
Alexander's
Hwy 407
Headon Forest
Northampton Bl
Berton Av
Berwick Dr
Sarazen Dr
Constable Henshaw Bl
Walkers Line
Charles R. Beaudoin
Sacred Heart Of Jesus
Country Club Dr
Millcroft Park Dr
Appleby Line
Millcroft Centre
St. Elizabeth Seton
Florence Meares
C.H. Norton
Notre Dame
St. Timothy's
Cavendish Dr
Coventry Way
Headon Forest Dr
Brant Hills
Bruce T. Lindley
Ireland House
Paul A. Fisher
Upper Brant Plaza
Upper Middle Rd
Tyandaga Park Dr
Kerns Rd
Brant St
Angela Coughlan
M.M. Robinson
Burlington Supercentre
Walker Place
Heron Way
Tansley Woods
Itabashi Way
Corporate Dr
Burloak Dr
Corpus Christi
Rolling Meadows
Augustine Dr
St. Gabriel's
Mountainside
Fisher Av
Burlington Heights Centre
Canadian Martyrs
Sir E. Macmillan
Dr. Charles Best
Lester B. Pearson
Headon Rd
Guelph Line
Lansdown Dr
Mainway Plaza
Dillon Rd
Mainway
Mainway Business Centre
Davidson Plaza
Clarksdale
Costco
Power Centre
Yorkton Plaza
Mount Forest Dr
Hwy 403
GO Station Access Rd
Waterdown Rd
Aldershot
Royal Botanical Gardens
Plains Rd W
Plains Rd E
King Rd
Holy Rosary
Maplehurst
Fortinos Plaza
Glenview
Townsend Av
North Shore Bl W
North Shore Bl E
Lasalle Park Rd
LaSalle Park (Wading)
Shadeland Av
Surrey La
Warwick Dr
Sainte-Philippe
Mapleview Mall
Maple Mews
Westgate Plaza
Brant Plaza
Burlington Square
Student Theatre
Tom Thomson
Burlington Mall
Prospect St
Woodview Place
Fairview St
Tecumseh
Assumption
Rotary Youth
Central
St. John's
Brant Plaza
Maple Av
Francis Rd
King's Road
Drury La
Cumberland Av
Rexway Dr
Ryerson
Longmoor Dr
Pauline Johnson
Appleby
Eastway Plaza
Nelson
Frontenac
Robert Bateman
Ascension
Appleby Mall
Centennial
Pinedale Av
New St
St. Paul's
YMCA Burlington Seniors
Music Centre
Roseland Plaza
St. Raphael's
Gary Allan
John T. Tuck
Walkers Line
Guelph Line
Renaissance
Ontario St
James St
Pine St
City Hall
Burlington Art Centre
John St
Elizabeth St
Discovery Landing
The Burlington Performing Art Centre
Visitor
Joseph Brant Museum
Joseph Brant Memorial
Lakeshore
Lakeshore Rd
Burlington Bay
Lake Ontario
Ontario Court of Justice
Queensway Dr
North Service Rd
Queen Elizabeth Way
Harvester Rd
Heritage Rd
Mainway
Appleby Ice Centre
Sherwood Forest
Wyecroft Rd
Rio-Can Burloak
Bronte Creek Provincial Park
Pineland
Mohawk Gardens
St. Patrick's
Skyway Arena
Lakeside Plaza
Heath Rd
Hampton
Clive Cr
Aldershot
Burlington
Downtown
Appleby

HAMILTON

Hwy 403
York Bl
Dundurn St N
Main St W
Queen St S
King St W
King St N
Bay
James St N
James St S
John St N
John St S
Catharine St N
Caimon St W
Wilson St
City Hall
Hamilton

MacLean Cartography
Cartography & Design 2017

Burlington Transit Fares

For complete details on fare options and fees, please refer to burlingtontransit.ca

Cash Fares

Note: Drivers cannot make change. If paying with cash, you must have the exact amount of fare.

Age	Price
All ages	$3.50
GO Fare integration*	$0.70

Children 5 and under ride for free.

**with valid GO Ticket or Pass*

Tickets and Monthly Passes

Please note that Burlington Transit does not accept Hamilton Street Railway and Oakville Transit tickets or monthly passes.

- Monthly pass is good for unlimited travel within Burlington
- If you load a monthly pass and need to travel to other transit properties you will require additional funds on your card in order to pay the other system's fare using your PRESTO card.

Age	Tickets	PRESTO Monthly Pass
Adult	10 / $27.50	$97.00
Youth (13 - 19)	10 / $19.00	$71.00
Student U-Pass	N/A	$25
Senior (65+)	10 / $19.00	$59.25
Child (6 - 12)	10 / $18.50	$50.00

PRESTO Card

What is Burlington's PRESTO Loyalty program?

With the PRESTO loyalty program, you'll never pay more than a monthly pass within a calendar month. The card tracks your trips and will stop charging a fare for the remainder of that calendar month on Burlington Transit.

Age	PRESTO Price	PRESTO Loyalty Program
Adult	$2.70	Free after 36 full-fare rides/calendar month
Youth	$1.85	Free after 38 full-fare rides/calendar month
Senior	$1.85	Free after 32 full-fare rides/calendar month
Child	$1.85	Free after 38 full-fare rides/calendar month

Fare Categories Defined

Category	Age	Additional information
Adult	20 +	
Youth	13 to 19	
Post-Secondary Student	19+	With post-secondary Student ID showing current transit endorsement from another provider.
Senior	65 +	
Child	6 to 12	Children five and under ride free when accompanied by a parent/guardian.

Veterans Transit Pass

Apply as part of the Veteran Parking Permit and Transit Pass application process. Applications are available at the Transportation Services counter at City Hall, 426 Brant St. For more information, please call 905-335-7816.

Veterans ride free on the following days:

Date	Event
1st Sunday in May	Battle of the Atlantic
June 6	D-Day
Closest Sunday to Aug. 19	Raid of Dieppe
Sept. 17	Battle of Britain
Nov. 11	Remembrance Day

Subsidized Passes for Low-Income Transit (SPLIT)

Funded by Halton Region, the Subsidized Passes for Low-Income Transit (SPLIT) program provides monthly transit passes at a reduced rate for Burlington residents who meet the low income threshold. Individuals receiving assistance from Ontario Works or the Ontario Disability Support Program may also be eligible.

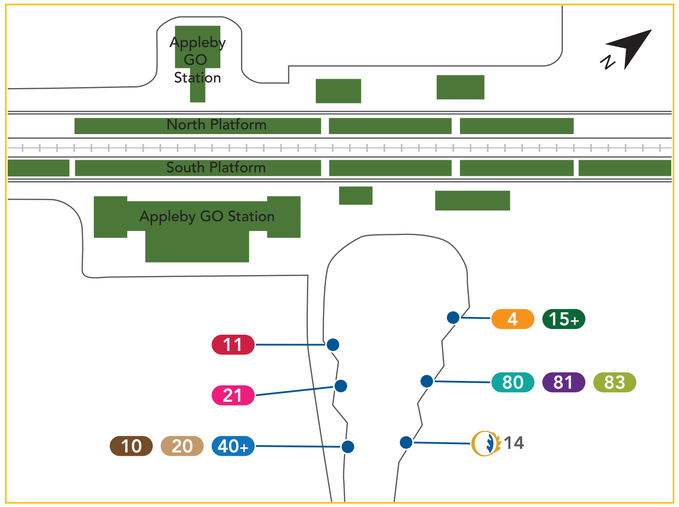
Upon eligibility confirmation, residents can purchase Burlington Transit monthly passes at a discounted rate.

Visit halton.ca/split for more information about eligibility and how to apply or contact Halton Region at 905-825-6000 or dial 311.

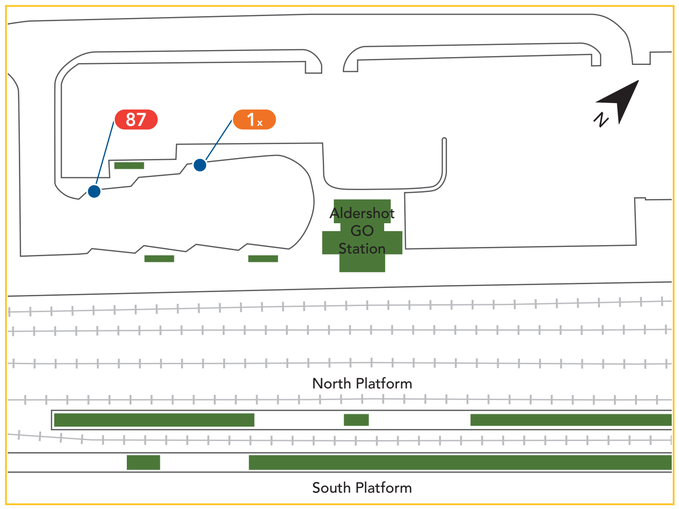
While every effort will be made to keep to the timetables, Burlington Transit will not be responsible for any loss, damage or inconvenience caused by any operating failure or in consequence of any inaccuracies in this timetable. Schedules are subject to change.

Burlington Transit is a service of the City of Burlington. www.burlington.ca

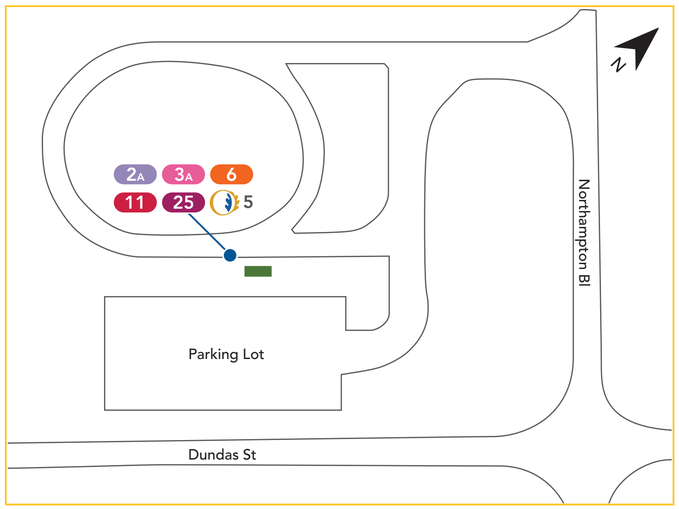
APPLEBY GO



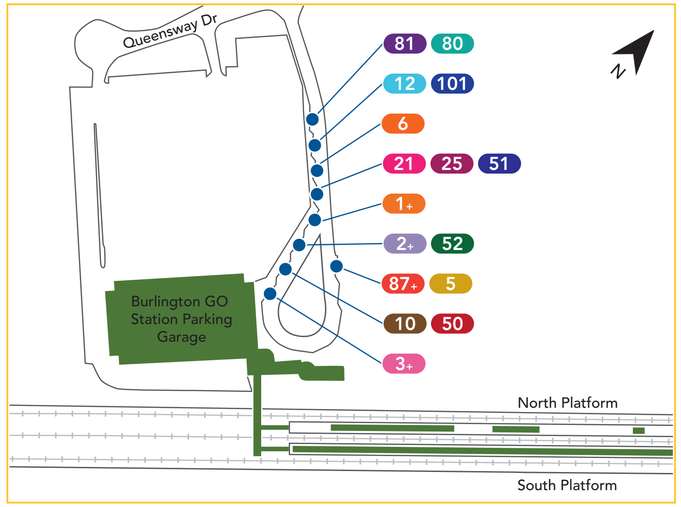
ALDERSHOT GO



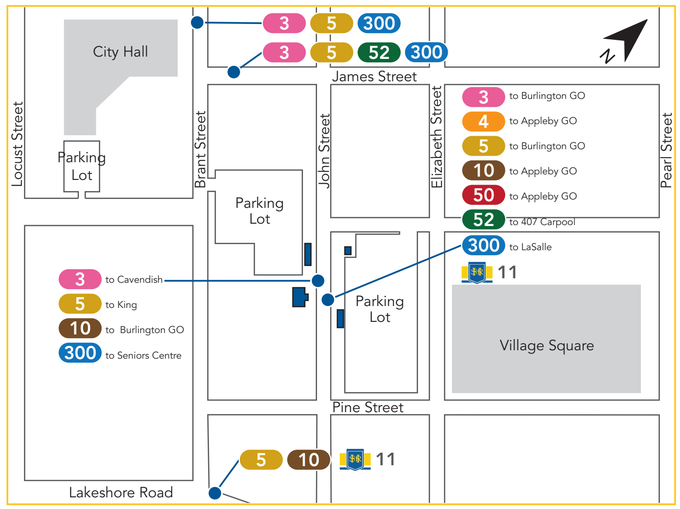
407 CARPOOL GO



BURLINGTON GO



DOWNTOWN



Rider Tips and Safety

Our Rider Guidelines include onboard and travel safety tips that ensure all passengers can move around the city in safety and comfort.

Need to bring a pet onboard?

Please note:
Service animals are permitted on board Burlington Transit buses but all other pets must be in an enclosed, secure container/pet carrier and not inconvenience other passengers. Passengers bringing pets onboard are responsible for their pets.

Safety Tips

- Stand back from the curb when waiting for a bus, especially when a bus is approaching the stop.
- Never run for a bus. You may slip and fall or be hit by a vehicle.
- Leave the bus by the rear doors whenever possible (except when you ask for a Request Stop at night).
- Never walk directly in front of or behind a stopped bus, where drivers may not be able to see you. Wait until the bus moves away before you step into the street so that you can clearly see other traffic.
- Always obey traffic signals and cross the street at corners.
- Take your headphones off when crossing the street or getting off the bus to be sure you can hear the traffic around you.
- Keep knapsacks and large bags in front of you when getting on or off the bus. Knapsacks and bags have big, long straps that can easily get caught in doors and railings.
- Keep your arms, legs and head inside all transit vehicles.

Request Stop

Request Stop allows you to exit between bus stops after dusk and during poor weather. Please notify the driver in advance to allow sufficient time for a safe stop.

General Information

Priority Seating

Priority seating is for the use of passengers with a disability. These seats are located close to the front of the vehicle. Customers are expected to respect and obey the purpose of the designated seating area, which means: if you are sitting in one of these designated seats, you MUST vacate the seat for a passenger with a disability.

Please note:

- A person with a disability occupying a Priority seat is not required to move for another customer with a disability. Use of these seats is on a first come-first served basis.
- You are not required or expected to leave a transit vehicle in order to make room for a customer with a disability.
- Bus drivers/operators will not intervene to enforce the requirement. We ask, however, that you show consideration for those whose need is greater than your own.



Courtesy Seating

Courtesy seating is intended to provide additional seating for people who will benefit from having a seat near the front of the vehicle including:

- seniors
- expectant mothers
- adults traveling with infants or small children
- any other passenger who may benefit from a seat

If you are sitting in one of these designated seats, please respect its purpose and give up your seat to those who need it.



Accessibility

All of our buses are fully accessible and have no stairs to climb at boarding. They are also low floor and can be lowered to curb level to make them fully accessible to all passengers. The driver will even extend a ramp upon request or if there is a visible need.
Great features that will assist passengers who may have difficulty boarding because of their use of a mobility aid, an injury, or even if they have a child in a stroller.

Lost & Found



If you've lost or found an item on Burlington Transit, please email contactbt@burlington.ca or call us at 905-639-0550 during hours of operation (see back cover) to speak with one of our staff (you cannot leave a message on this phone line, so if needed, please call back or email). If you're trying to locate a lost item please include the date, approximate time of travel and the route you travelled on. If you are reporting an item found, please contact us for further details.

All items are held at the downtown Transit Terminal (430 John St.) for a period of 30 days. Any item left unclaimed for longer than 30 days will be donated to a local charity.

Holiday Service

Burlington Transit operates a Holiday Service schedule on select statutory holidays throughout the calendar year. Holiday service is offered on routes 1, 2, 3, 6, 10, 11, 12, 20 & 21 on the following holidays:

- Family Day
- Victoria Day
- Civic Holiday
- Thanksgiving Day
- Good Friday
- Canada Day
- Labour Day

Christmas scheduling varies – watch for our Christmas break schedule in November.

burlingtontransit.ca

CONTACT US

BURLINGTON TRANSIT
3332 Harvester Rd.
Burlington, ON
L7N 3M8

Phone: 905-639-0550
E-mail: contactbt@burlington.ca
Toll-free: 1-877-213-3609, ext. 7154
Handi-Van: 905-639-5158

In Person:
430 John St. during hours of operation:
Monday to Friday 7 a.m. to 7 p.m.
Saturdays 9 a.m. to 5 p.m. and 2 to 6 p.m.

CONNECTING SERVICES

GO TRANSIT
1-888-GET-ON-GO (438-6646)
gotransit.com

HAMILTON STREET RAILWAY
905-527-4441
hamilton.ca/hsr

OAKVILLE TRANSIT
905-815-2020
oakvilletransit.com

4 x 6.5

Burlington Transit

System Map



Effective: September 2017

BURLINGTON TRANSIT

Need to plan a trip or find out when the next bus is?

Get it in real-time by using tripplanner.burlington.ca or calling 905-639-0550 whenever you travel.



All times are approximate and depend on traffic and other conditions. Please arrive at your stop at least 5 minutes prior.

Effective: September 3, 2017

ROUTES 2A Brant

407 Carpool

A is an extension of the route

Branch	Burlington GO Station (Depart)	Mount Royal Plaza	Brant St. & Cavendish Dr.	Guelph Line & Coventry Way	407 Carpool (Arrive)
	A	B	C	D	E
Monday to Friday					
A	5:00	5:07	5:13	5:17	5:24
A	5:30	5:37	5:43	5:47	5:54
A	6:00	6:07	6:13	6:17	6:24
A	6:30	6:37	6:43	6:47	6:54
A	7:00	7:07	7:13	7:17	7:24
A	7:30	7:37	7:43	7:47	7:54
A	8:00	8:07	8:13	8:17	8:24
A	8:30	8:37	8:43	8:47	8:54
A	9:00	9:07	9:13	9:17	9:24
A	9:30	9:37	9:43	9:47	9:54
A	10:00	10:07	10:13	10:17	10:24
A	10:30	10:37	10:43	10:47	10:54
A	11:00	11:07	11:13	11:17	11:24
A	11:30	11:37	11:43	11:47	11:54
A	**12:00**	**12:07**	**12:13**	**12:17**	**12:24**
A	**12:30**	**12:37**	**12:43**	**12:47**	**12:54**
A	**1:00**	**1:07**	**1:13**	**1:17**	**1:24**
A	**1:30**	**1:37**	**1:43**	**1:47**	**1:54**
A	**2:00**	**2:07**	**2:13**	**2:17**	**2:24**
A	**2:30**	**2:37**	**2:43**	**2:47**	**2:54**
A	**3:00**	**3:07**	**3:13**	**3:17**	**3:24**
A	**3:30**	**3:37**	**3:43**	**3:47**	**3:54**
A	**4:00**	**4:07**	**4:13**	**4:17**	**4:24**
A	**4:30**	**4:37**	**4:43**	**4:47**	**4:54**
A	**5:00**	**5:07**	**5:13**	**5:17**	**5:24**
A	**5:30**	**5:37**	**5:43**	**5:47**	**5:54**
A	**6:00**	**6:07**	**6:13**	**6:17**	**6:24**
A	**6:30**	**6:37**	**6:43**	**6:47**	**6:54**
A	**7:00**	**7:07**	**7:13**	**7:17**	**7:24**
A	**7:30**	**7:37**	**7:43**	**7:47**	**7:54**
A	**8:00**	**8:07**	**8:13**	**8:17**	**8:24**
A	**8:30**	**8:37**	**8:43**	**8:47**	**8:54**
A	**9:00**	**9:07**	**9:13**	**9:17**	**9:24**
A	**10:00**	**10:07**	**10:13**	**10:17**	**10:24**

At the end of Rt. 2 / 2A bus changes to Rt. 3 / 3A

ROUTES 3A Guelph - Downtown

to Burlington GO via Downtown

A is an extension of the route

Branch	407 Carpool (Depart)	Guelph Line & Coventry Way	Upper Middle & Cavendish Dr.	Upper Middle & Guelph Line	Guelph Line & Fairview St.	Guelph Line & New St.	Downtown Burlington	Burlington GO Station (Arrive)
	E	D	J	I	H	G	F	A
Monday to Friday								
A					4:26	4:29	4:39	4:50
A					4:56	4:59	5:09	5:20
A					5:26	5:29	5:39	5:50
A	5:34	5:41	5:46	5:48	5:56	5:59	6:09	6:20
A	6:04	6:11	6:16	6:18	6:26	6:29	6:39	6:50
A	6:34	6:41	6:46	6:48	6:56	6:59	7:09	7:20
A	7:04	7:11	7:16	7:18	7:26	7:29	7:39	7:50
A	7:34	7:41	7:46	7:48	7:56	7:59	8:09	8:20
A	8:04	8:11	8:16	8:18	8:26	8:29	8:39	8:50
A	8:34	8:41	8:46	8:48	8:56	8:59	9:09	9:20
A	9:04	9:11	9:16	9:18	9:26	9:29	9:39	9:50
A	9:34	9:41	9:46	9:48	9:56	9:59	10:09	10:20
A	10:04	10:11	10:16	10:18	10:26	10:29	10:39	10:50
A	10:34	10:41	10:46	10:48	10:56	10:59	11:09	11:20
A	11:04	11:11	11:16	11:18	11:26	11:29	11:39	11:50
A	11:34	11:41	11:46	11:48	11:56	11:59	**12:09**	**12:20**
A	**12:04**	**12:11**	**12:16**	**12:18**	**12:26**	**12:29**	**12:39**	**12:50**
A	**12:34**	**12:41**	**12:46**	**12:48**	**12:56**	**12:59**	**1:09**	**1:20**
A	**1:04**	**1:11**	**1:16**	**1:18**	**1:26**	**1:29**	**1:39**	**1:50**
A	**1:34**	**1:41**	**1:46**	**1:48**	**1:56**	**1:59**	**2:09**	**2:20**
A	**2:04**	**2:11**	**2:16**	**2:18**	**2:26**	**2:29**	**2:39**	**2:50**
A	**2:34**	**2:41**	**2:46**	**2:48**	**2:56**	**2:59**	**3:09**	**3:20**
A	**3:04**	**3:11**	**3:16**	**3:18**	**3:26**	**3:29**	**3:39**	**3:50**
A	**3:34**	**3:41**	**3:46**	**3:48**	**3:56**	**3:59**	**4:09**	**4:20**
A	**4:04**	**4:11**	**4:16**	**4:18**	**4:26**	**4:29**	**4:39**	**4:50**
A	**4:34**	**4:41**	**4:46**	**4:48**	**4:56**	**4:59**	**5:09**	**5:20**
A	**5:04**	**5:11**	**5:16**	**5:18**	**5:26**	**5:29**	**5:39**	**5:50**
A	**5:34**	**5:41**	**5:46**	**5:48**	**5:56**	**5:59**	**6:09**	**6:20**
A	**6:04**	**6:11**	**6:16**	**6:18**	**6:26**	**6:29**	**6:39**	**6:50**
A	**6:34**	**6:41**	**6:46**	**6:48**	**6:56**	**6:59**	**7:09**	**7:20**
A	**7:04**	**7:11**	**7:16**	**7:18**	**7:26**	**7:29**	**7:39**	**7:50**
A	**7:34**	**7:41**	**7:46**	**7:48**	**7:56**	**7:59**	**8:09**	**8:20**
A	**8:04**	**8:11**	**8:16**	**8:18**	**8:26**	**8:29**	**8:39**	**8:50**
	-	-	-	-	-	-	-	-
A	**9:04**	**9:11**	**9:16**	**9:18**	**9:26**	**9:29**	**9:39**	**9:50**

All times are approximate and depend on traffic and other conditions. Please arrive at your stop at last 5 minutes prior.

Effective: September 3, 2017

ROUTES **3A** **Guelph- Downtown**

to Cavendish via Downtown

A is an extension of the route

Branch	Burlington GO Station (Depart)	Downtown Burlington	Guelph Line & New St.	Guelph Line & Fairview St.	Upper Middle & Guelph Line	Upper Middle & Cavendish Dr.	Guelph Line & Coventry Way	407 Carpool (Arrive)
	A	F	G	H	I	J	D	E
Monday to Friday								
A	5:30	5:42	5:54	5:57	6:04	6:06	6:10	6:17
A	6:00	6:12	6:24	6:27	6:34	6:36	6:40	6:47
A	6:30	6:42	6:54	6:57	7:04	7:06	7:10	7:17
A	7:00	7:12	7:24	7:27	7:34	7:36	7:40	7:47
A	7:30	7:42	7:54	7:57	8:04	8:06	8:10	8:17
A	8:00	8:12	8:24	8:27	8:34	8:36	8:40	8:47
A	8:30	8:42	8:54	8:57	9:04	9:06	9:10	9:17
A	9:00	9:12	9:24	9:27	9:34	9:36	9:40	9:47
A	9:30	9:42	9:54	9:57	10:04	10:06	10:10	10:17
A	10:00	10:12	10:24	10:27	10:34	10:36	10:40	10:47
A	10:30	10:42	10:54	10:57	11:04	11:06	11:10	11:17
A	11:00	11:12	11:24	11:27	11:34	11:36	11:40	11:47
A	11:30	11:42	11:54	11:57	12:04	12:06	12:10	12:17
A	12:00	12:12	12:24	12:27	12:34	12:36	12:40	12:47
A	12:30	12:42	12:54	12:57	1:04	1:06	1:10	1:17
A	**1:00**	**1:12**	**1:24**	**1:27**	**1:34**	**1:36**	**1:40**	**1:47**
A	**1:30**	**1:42**	**1:54**	**1:57**	**2:04**	**2:06**	**2:10**	**2:17**
A	**2:00**	**2:12**	**2:24**	**2:27**	**2:34**	**2:36**	**2:40**	**2:47**
A	**2:30**	**2:42**	**2:54**	**2:57**	**3:04**	**3:06**	**3:10**	**3:17**
A	**3:00**	**3:12**	**3:24**	**3:27**	**3:34**	**3:36**	**3:40**	**3:47**
A	**3:30**	**3:42**	**3:54**	**3:57**	**4:04**	**4:06**	**4:10**	**4:17**
A	**4:00**	**4:12**	**4:24**	**4:27**	**4:34**	**4:36**	**4:40**	**4:47**
A	**4:30**	**4:42**	**4:54**	**4:57**	**5:04**	**5:06**	**5:10**	**5:17**
A	**5:00**	**5:12**	**5:24**	**5:27**	**5:34**	**5:36**	**5:40**	**5:47**
A	**5:30**	**5:42**	**5:54**	**5:57**	**6:04**	**6:06**	**6:10**	**6:17**
A	**6:00**	**6:12**	**6:24**	**6:27**	**6:34**	**6:36**	**6:40**	**6:47**
A	**6:30**	**6:42**	**6:54**	**6:57**	**7:04**	**7:06**	**7:10**	**7:17**
A	**7:00**	**7:12**	**7:24**	**7:27**	**7:34**	**7:36**	**7:40**	**7:47**
A	**7:30**	**7:42**	**7:54**	**7:57**	**8:04**	**8:06**	**8:10**	**8:17**
A	**8:00**	**8:12**	**8:24**	**8:27**	**8:34**	**8:36**	**8:40**	**8:47**
A	**8:30**	**8:42**	**8:54**	**8:57**	**9:04**	**9:06**	**9:10**	**9:17**
A	**9:00**	**9:12**	**9:24**	**9:27**	**9:34**	**9:36**	**9:40**	**9:47**
A	**10:00**	**10:12**	**10:24**	**10:27**	**10:34**	**10:36**	**10:40**	**10:47**

At the end of Rt.3 / 3A bus changes to Rt. 2 / 2A

ROUTES **2A** **Brant**

to Burlington GO

A is an extension of the route

Branch	407 Carpool (Depart)	Guelph Line & Coventry Way	Brant St. & Cavendish Dr.	Mount Royal Plaza	Burlington GO Station (Arrive)
	E	D	C	B	A
Monday to Friday					
A		4:44	4:48	4:54	5:00
A		5:04	5:08	5:14	5:20
A		5:34	5:38	5:44	5:50
A		6:04	6:08	6:14	6:20
A	6:27	6:34	6:38	6:44	6:50
A	6:57	7:04	7:08	7:14	7:20
A	7:27	7:34	7:38	7:44	7:50
A	7:57	8:04	8:08	8:14	8:20
A	8:27	8:34	8:38	8:44	8:50
A	8:57	9:04	9:08	9:14	9:20
A	9:27	9:34	9:38	9:44	9:50
A	9:57	10:04	10:08	10:14	10:20
A	10:27	10:34	10:38	10:44	10:50
A	10:57	11:04	11:08	11:14	11:20
A	11:27	11:34	11:38	11:44	11:50
A	11:57	12:04	12:08	12:14	12:20
A	12:27	12:34	12:38	12:44	12:50
A	12:57	1:04	1:08	1:14	1:20
A	**1:27**	**1:34**	**1:38**	**1:44**	**1:50**
A	**1:57**	**2:04**	**2:08**	**2:14**	**2:20**
A	**2:27**	**2:34**	**2:38**	**2:44**	**2:50**
A	**2:57**	**3:04**	**3:08**	**3:14**	**3:20**
A	**3:27**	**3:34**	**3:38**	**3:44**	**3:50**
A	**3:57**	**4:04**	**4:08**	**4:14**	**4:20**
A	**4:27**	**4:34**	**4:38**	**4:44**	**4:50**
A	**4:57**	**5:04**	**5:08**	**5:14**	**5:20**
A	**5:27**	**5:34**	**5:38**	**5:44**	**5:50**
A	**5:57**	**6:04**	**6:08**	**6:14**	**6:20**
A	**6:27**	**6:34**	**6:38**	**6:44**	**6:50**
A	**6:57**	**7:04**	**7:08**	**7:14**	**7:20**
A	**7:27**	**7:34**	**7:38**	**7:44**	**7:50**
A	**7:57**	**8:04**	**8:08**	**8:14**	**8:20**
A	**8:27**	**8:34**	**8:38**	**8:44**	**8:50**
	-	-	-	-	-
A	**9:27**	**9:34**	**9:38**	**9:44**	**9:50**

All times are approximate and depend on traffic and other conditions. Please arrive at your stop at least 5 minutes prior.

Effective: September 3, 2017

ROUTE 2 Brant

to Cavendish

Burlington GO Station (Depart)	Mount Royal Plaza	Brant St. & Cavendish Dr.	Guelph Line & Coventry Way (Arrive)	
A	B	C	D	
Saturday				
6:56	7:01	7:07	7:13	→
7:55	8:00	8:06	8:12	→
8:55	9:00	9:06	9:12	→
-	-	-	-	
9:56	10:01	10:07	10:13	→
10:26	10:31	10:37	10:43	→
10:56	11:01	11:07	11:13	→
11:26	11:31	11:37	11:43	→
11:55	**12:00**	**12:06**	**12:12**	→
12:25	**12:31**	**12:37**	**12:43**	→
12:56	**1:01**	**1:07**	**1:13**	→
1:26	**1:31**	**1:37**	**1:43**	→
1:56	**2:01**	**2:07**	**2:13**	→
2:26	**2:31**	**2:37**	**2:43**	→
2:56	**3:01**	**3:07**	**3:13**	→
3:26	**3:31**	**3:37**	**3:43**	→
3:56	**4:01**	**4:07**	**4:13**	→
4:26	**4:31**	**4:37**	**4:43**	→
4:56	**5:01**	**5:07**	**5:13**	→
5:26	**5:31**	**5:37**	**5:43**	→
5:56	**6:01**	**6:07**	**6:13**	→
6:26	**6:31**	**6:37**	**6:43**	→
6:56	**7:01**	**7:07**	**7:13**	→
7:25	**7:30**	**7:36**	**7:42**	→
7:55	**8:00**	**8:06**	**8:12**	→
8:25	**8:30**	**8:36**	**8:42**	→
8:55	**9:00**	**9:06**	**9:12**	→
9:25	**9:30**	**9:36**	**9:42**	→
9:55	**10:00**	**10:06**	**10:12**	→
Sunday				
7:55	8:00	8:06	8:12	→
8:55	9:00	9:06	9:12	→
-	-	-	-	
9:56	10:01	10:07	10:13	→
10:26	10:31	10:37	10:43	→
10:56	11:01	11:07	11:13	→
11:26	11:31	11:37	11:43	→
11:56	**12:01**	**12:07**	**12:13**	→
12:26	**12:31**	**12:37**	**12:43**	→
And every 30 minutes until				
4:56	**5:01**	**5:07**	**5:13**	→
5:26	**5:31**	**5:37**	**5:43**	→
5:56	**6:01**	**6:07**	**6:13**	→
6:26	**6:31**	**6:37**	**6:43**	→
6:56	**7:01**	**7:07**	**7:13**	→
7:25	**7:30**	**7:36**	**7:42**	//
7:55	**8:00**	**8:06**	**8:12**	//

At Guelph Line & Coventry Way, Rt. 2 bus changes to Rt. 3

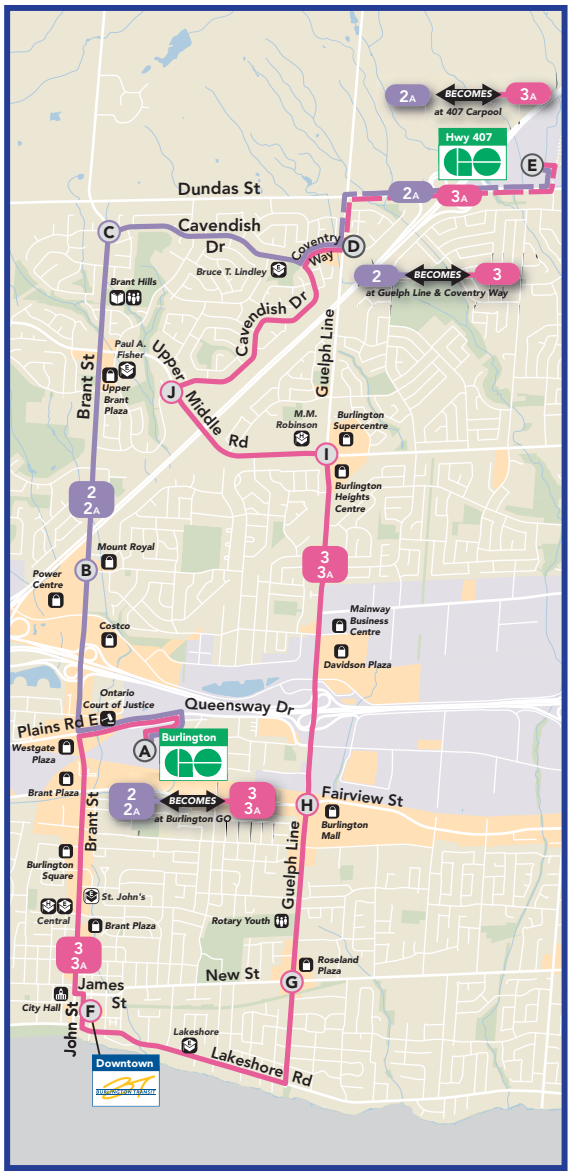
ROUTE 3 Guelph - Downtown

to Burlington GO via Downtown

Guelph Line & Coventry Way (Depart)	Upper Middle & Cavendish Dr.	Upper Middle & Guelph Line	Guelph Line & Fairview St.	Guelph Line & New St.	Downtown Burlington	Burlington GO Station (Arrive)
D	J	I	H	G	F	A
Saturday						
			6:33	6:37	6:44	6:55
7:15	7:18	7:20	7:28	7:32	7:39	7:50
8:15	8:18	8:20	8:28	8:32	8:39	8:50
9:15	9:18	9:20	9:28	9:32	9:39	9:51
9:45	9:48	9:50	9:58	10:02	10:09	10:21
10:15	10:18	10:20	10:28	10:32	10:39	10:51
10:45	10:48	10:50	10:58	11:02	11:09	11:21
11:15	11:18	11:20	11:28	11:32	11:39	11:51
11:45	11:48	11:50	11:58	**12:02**	**12:09**	**12:21**
12:15	**12:18**	**12:20**	**12:28**	**12:32**	**12:39**	**12:51**
12:45	**12:48**	**12:50**	**12:58**	**1:02**	**1:09**	**1:21**
1:15	**1:18**	**1:20**	**1:28**	**1:32**	**1:39**	**1:51**
1:45	**1:48**	**1:50**	**1:58**	**2:02**	**2:09**	**2:21**
2:15	**2:18**	**2:20**	**2:28**	**2:32**	**2:39**	**2:51**
2:45	**2:48**	**2:50**	**2:58**	**3:02**	**3:09**	**3:21**
3:15	**3:18**	**3:20**	**3:28**	**3:32**	**3:39**	**3:51**
3:45	**3:48**	**3:50**	**3:58**	**4:02**	**4:09**	**4:21**
4:15	**4:18**	**4:20**	**4:28**	**4:32**	**4:39**	**4:51**
4:45	**4:48**	**4:50**	**4:58**	**5:02**	**5:09**	**5:21**
5:15	**5:18**	**5:20**	**5:28**	**5:32**	**5:39**	**5:51**
5:45	**5:48**	**5:50**	**5:58**	**6:02**	**6:09**	**6:21**
6:15	**6:18**	**6:20**	**6:28**	**6:32**	**6:39**	**6:51**
6:45	**6:48**	**6:50**	**6:58**	**7:02**	**7:09**	**7:21**
7:15	**7:18**	**7:20**	**7:28**	**7:32**	**7:39**	**7:51**
7:44	**7:47**	**7:49**	**7:56**	**8:00**	**8:07**	**8:18**
8:14	**8:17**	**8:19**	**8:26**	**8:30**	**8:37**	**8:48**
8:44	**8:47**	**8:49**	**8:56**	**9:00**	**9:07**	**9:18**
9:14	**9:17**	**9:19**	**9:26**	**9:30**	**9:37**	**9:48**
9:44	**9:47**	**9:49**	**9:56**	**10:00**	**10:07**	**10:18**
10:14	**10:17**	**10:19**	**10:26**	**10:30**	**10:37**	**10:48**
Sunday						
7:15	7:18	7:20	7:28	7:32	7:39	7:50
8:15	8:18	8:20	8:28	8:32	8:39	8:51
9:15	9:18	9:20	9:28	9:32	9:39	9:51
9:45	9:48	9:50	9:58	10:02	10:09	10:21
10:15	10:18	10:20	10:28	10:32	10:39	10:51
10:45	10:48	10:50	10:58	11:02	11:09	11:21
11:15	11:18	11:20	11:28	11:32	11:39	11:51
11:45	11:48	11:50	11:58	**12:02**	**12:09**	**12:21**
12:15	**12:18**	**12:20**	**12:28**	**12:32**	**12:39**	**12:51**
12:45	**12:48**	**12:50**	**12:58**	**1:02**	**1:09**	**1:21**
And every 30 minutes until						
5:15	**5:18**	**5:20**	**5:28**	**5:32**	**5:39**	**5:51**
5:45	**5:48**	**5:50**	**5:58**	**6:02**	**6:09**	**6:21**
6:15	**6:18**	**6:20**	**6:28**	**6:32**	**6:39**	**6:51**
6:45	**6:48**	**6:50**	**6:58**	**7:02**	**7:09**	**7:21**
7:15	**7:18**	**7:20**	**7:28**	**7:32**	**7:39**	**7:51**

All times are approximate and depend on traffic and other conditions. Please arrive at your stop at least 5 minutes prior.

Effective: September 3, 2017



ROUTE 3 Guelph - Downtown

to Cavendish via Downtown

Burlington GO Station (Depart)	Downtown Burlington	Guelph Line & New St.	Guelph Line & Fairview St.	Upper Middle & Guelph Line	Upper Middle & Cavendish Dr.	Guelph Line & Coventry Way (Arrive)	
A	F	G	H	I	J	D	
Saturday							
6:55	7:05	7:12	7:16	7:24	7:26	7:33	→
7:55	8:05	8:12	8:16	8:24	8:26	8:33	→
8:55	9:05	9:12	9:16	9:24	9:26	9:33	→
9:25	9:35	9:42	9:46	9:54	9:56	10:03	→
9:55	10:05	10:12	10:16	10:24	10:26	10:33	→
10:25	10:35	10:42	10:46	10:54	10:56	11:03	→
10:55	11:05	11:12	11:16	11:24	11:26	11:33	→
11:25	11:35	11:42	11:46	11:54	11:56	**12:03**	→
11:55	**12:05**	**12:12**	**12:16**	**12:24**	**12:26**	**12:33**	→
12:25	**12:35**	**12:42**	**12:46**	**12:54**	**12:56**	**1:03**	→
12:55	**1:05**	**1:12**	**1:16**	**1:24**	**1:26**	**1:33**	→
1:25	**1:35**	**1:42**	**1:46**	**1:54**	**1:56**	**2:03**	→
1:55	**2:05**	**2:12**	**2:16**	**2:24**	**2:26**	**2:33**	→
2:25	**2:35**	**2:42**	**2:46**	**2:54**	**2:56**	**3:03**	→
2:55	**3:05**	**3:12**	**3:16**	**3:24**	**3:26**	**3:33**	→
3:25	**3:35**	**3:42**	**3:46**	**3:54**	**3:56**	**4:03**	→
3:55	**4:05**	**4:12**	**4:16**	**4:24**	**4:26**	**4:33**	→
4:25	**4:35**	**4:42**	**4:46**	**4:54**	**4:56**	**5:03**	→
4:55	**5:05**	**5:12**	**5:16**	**5:24**	**5:26**	**5:33**	→
5:25	**5:35**	**5:42**	**5:46**	**5:54**	**5:56**	**6:03**	→
5:55	**6:05**	**6:12**	**6:16**	**6:24**	**6:26**	**6:33**	→
6:25	**6:35**	**6:42**	**6:46**	**6:54**	**6:56**	**7:03**	→
6:55	**7:05**	**7:12**	**7:16**	**7:23**	**7:25**	**7:31**	→
7:25	**7:35**	**7:42**	**7:46**	**7:53**	**7:55**	**8:01**	→
7:55	**8:05**	**8:12**	**8:16**	**8:23**	**8:25**	**8:31**	→
8:25	**8:35**	**8:42**	**8:46**	**8:53**	**8:55**	**9:01**	→
8:55	**9:05**	**9:12**	**9:16**	**9:23**	**9:25**	**9:31**	→
9:25	**9:35**	**9:42**	**9:46**	**9:53**	**9:55**	**10:01**	\\
9:55	**10:05**	**10:12**	**10:16**	**10:23**	**10:25**	**10:31**	→
Sunday							
7:55	8:05	8:12	8:16	8:24	8:26	8:33	→
8:55	9:05	9:12	9:16	9:24	9:26	9:33	→
9:25	9:35	9:42	9:46	9:54	9:56	10:03	→
9:55	10:05	10:12	10:16	10:24	10:26	10:33	→
10:25	10:35	10:42	10:46	10:54	10:56	11:03	→
10:55	11:05	11:12	11:16	11:24	11:26	11:33	→
11:25	11:35	11:42	11:46	11:54	11:56	**12:03**	→
And every 30 minutes until							
5:55	**6:05**	**6:12**	**6:16**	**6:24**	**6:26**	**6:33**	→
6:25	**6:35**	**6:42**	**6:46**	**6:54**	**6:56**	**7:03**	→
6:55	**7:05**	**7:12**	**7:16**	**7:23**	**7:25**	**7:31**	→
7:25	**7:35**	**7:42**	**7:46**	**7:53**	**7:55**	**8:01**	\\
7:55	**8:05**	**8:12**	**8:16**	**8:23**	**8:25**	**8:31**	\\

At Guelph Line & Coventry Way, Rt. 3 bus changes to Rt. 2

ROUTE 2 Brant

to Burlington GO

Branch	Guelph Line & Coventry Way (Depart)	Brant St. & Cavendish Dr.	Mount Royal Plaza	Burlington GO Station (Arrive)
	D	C	B	A
Saturday				
	6:35	6:39	6:44	6:50
	7:35	7:39	7:44	7:50
	8:35	8:39	8:44	8:50
	9:35	9:38	9:43	9:49
	10:05	10:08	10:13	10:19
	10:35	10:38	10:43	10:49
	11:05	11:08	11:13	11:19
	11:35	11:38	11:43	11:49
	12:05	**12:08**	**12:13**	**12:19**
	12:35	**12:38**	**12:43**	**12:49**
	1:05	**1:08**	**1:13**	**1:19**
	1:35	**1:38**	**1:43**	**1:49**
	2:05	**2:08**	**2:13**	**2:19**
	2:35	**2:39**	**2:45**	**2:53**
	3:05	**3:09**	**3:15**	**3:23**
	3:35	**3:39**	**3:45**	**3:53**
	4:05	**4:09**	**4:15**	**4:23**
	4:35	**4:39**	**4:45**	**4:53**
	5:05	**5:09**	**5:15**	**5:23**
	5:35	**5:39**	**5:45**	**5:53**
	6:05	**6:09**	**6:15**	**6:23**
	6:35	**6:39**	**6:45**	**6:53**
	7:05	**7:08**	**7:13**	**7:19**
	7:35	**7:38**	**7:43**	**7:49**
	8:03	**8:06**	**8:11**	**8:17**
	8:33	**8:36**	**8:41**	**8:47**
	9:03	**9:06**	**9:11**	**9:17**
	9:33	**9:36**	**9:41**	**9:47**
	-	-	-	-
	10:33	**10:36**	**10:41**	**10:47**
Sunday				
	7:35	7:39	7:44	7:50
	8:35	8:39	8:44	8:50
	9:35	9:38	9:43	9:49
	10:05	10:08	10:13	10:19
	10:35	10:38	10:43	10:49
	11:05	11:08	11:13	11:19
	11:35	11:38	11:43	11:49
	12:05	**12:08**	**12:13**	**12:19**
	And every 30 minutes until			
	6:35	**6:39**	**6:45**	**6:53**
	7:05	**7:08**	**7:13**	**7:19**
	7:35	**7:38**	**7:43**	**7:49**

All times are approximate and depend on traffic and other conditions. Please arrive at your stop at least 5 minutes prior.

Effective: March 5, 2017

ROUTE 10 New - Maple

to Appleby GO

Burlington GO Station (Depart)	Downtown Burlington	New St. & Guelph Line	New St. & Walkers Line	New St. & Appleby Line	Appleby GO Station (Arrive)
A	B	C	D	E	F
Monday to Friday					
5:05	5:19	5:23	5:28	5:33	5:37
5:25	5:39	5:43	5:48	5:53	5:57
5:45	5:59	6:03	6:08	6:13	6:17
6:05	6:19	6:23	6:28	6:33	6:37
6:25	6:39	6:43	6:48	6:53	6:57
6:45	6:59	7:03	7:08	7:13	7:17
7:05	7:19	7:23	7:28	7:33	7:37
7:25	7:39	7:43	7:48	7:53	7:57
7:45	7:59	8:03	8:08	8:13	8:17
8:05	8:19	8:23	8:28	8:33	8:37
8:25	8:39	8:43	8:48	8:53	8:57
8:45	8:59	9:03	9:08	9:13	9:17
9:05	9:19	9:23	9:28	9:33	9:37
9:25	9:39	9:43	9:48	9:53	9:57
9:45	9:59	10:03	10:08	10:13	10:17
10:05	10:19	10:23	10:28	10:33	10:37
10:25	10:39	10:43	10:48	10:53	10:57
10:45	10:59	11:03	11:08	11:13	11:17
11:05	11:19	11:23	11:28	11:33	11:37
11:25	11:39	11:43	11:48	11:53	11:57
11:45	11:59	**12:03**	**12:08**	**12:13**	**12:17**
12:05	**12:19**	**12:23**	**12:28**	**12:33**	**12:37**
12:25	**12:39**	**12:43**	**12:48**	**12:53**	**12:57**
12:45	**12:59**	**1:03**	**1:08**	**1:13**	**1:17**
1:05	**1:19**	**1:23**	**1:28**	**1:33**	**1:37**
1:25	**1:39**	**1:43**	**1:48**	**1:53**	**1:57**
1:45	**1:59**	**2:03**	**2:08**	**2:13**	**2:17**
2:05	**2:19**	**2:23**	**2:28**	**2:33**	**2:37**
2:25	**2:39**	**2:43**	**2:48**	**2:53**	**2:57**
2:45	**2:59**	**3:03**	**3:08**	**3:13**	**3:17**
3:05	**3:19**	**3:23**	**3:28**	**3:33**	**3:37**
3:25	**3:39**	**3:43**	**3:48**	**3:53**	**3:57**
3:45	**3:59**	**4:03**	**4:08**	**4:13**	**4:17**
4:05	**4:19**	**4:23**	**4:28**	**4:33**	**4:37**
4:25	**4:39**	**4:43**	**4:48**	**4:53**	**4:57**
4:45	**4:59**	**5:03**	**5:08**	**5:13**	**5:17**
5:05	**5:19**	**5:23**	**5:28**	**5:33**	**5:37**
5:25	**5:39**	**5:43**	**5:48**	**5:53**	**5:57**
5:45	**5:59**	**6:03**	**6:08**	**6:13**	**6:17**
6:05	**6:19**	**6:23**	**6:28**	**6:33**	**6:37**
6:25	**6:39**	**6:43**	**6:48**	**6:53**	**6:57**
6:45	**6:59**	**7:03**	**7:08**	**7:13**	**7:17**
7:05	**7:19**	**7:23**	**7:28**	**7:33**	**7:37**
7:25	**7:37**	**7:41**	**7:46**	**7:51**	**7:55**
7:55	**8:07**	**8:11**	**8:16**	**8:21**	**8:25**
8:25	**8:37**	**8:41**	**8:46**	**8:51**	**8:55**
8:55	**9:07**	**9:11**	**9:16**	**9:21**	**9:25**
9:25	**9:37**	**9:41**	**9:46**	**9:51**	**9:55**
9:55	**10:07**	**10:11**	**10:16**	**10:21**	**10:25**
10:25	**10:37**	**10:41**	**10:46**	**10:51**	**10:55**

to Burlington GO

Appleby GO Station (Depart)	New St. & Appleby Line	New St. & Walkers Line	New St. & Guelph Line	Downtown Burlington	Burlington GO Station (Arrive)
F	E	D	C	B	A
			4:47	4:51	5:05
			5:07	5:11	5:25
			5:27	5:31	5:45
5:28	5:32	5:37	5:42	5:46	6:00
5:48	5:52	5:57	6:02	6:06	6:20
6:08	6:12	6:17	6:22	6:26	6:40
6:28	6:32	6:37	6:42	6:46	7:00
6:48	6:52	6:57	7:02	7:06	7:20
7:08	7:12	7:17	7:22	7:26	7:40
7:28	7:32	7:37	7:42	7:46	8:00
7:48	7:52	7:57	8:02	8:06	8:20
8:08	8:12	8:17	8:22	8:26	8:40
8:28	8:32	8:37	8:42	8:46	9:00
8:48	8:52	8:57	9:02	9:06	9:20
9:08	9:12	9:17	9:22	9:26	9:40
9:28	9:32	9:37	9:42	9:46	10:00
9:48	9:52	9:57	10:02	10:06	10:20
10:08	10:12	10:17	10:22	10:26	10:40
10:28	10:32	10:37	10:42	10:46	11:00
10:48	10:52	10:57	11:02	11:06	11:20
11:08	11:12	11:17	11:22	11:26	11:40
11:28	11:32	11:37	11:42	11:46	**12:00**
11:48	11:52	11:57	12:02	**12:06**	**12:20**
12:08	**12:12**	**12:17**	**12:22**	**12:26**	**12:40**
12:28	**12:32**	**12:37**	**12:42**	**12:46**	**1:00**
12:48	**12:52**	**12:57**	**1:02**	**1:06**	**1:20**
1:08	**1:12**	**1:17**	**1:22**	**1:26**	**1:40**
1:28	**1:32**	**1:37**	**1:42**	**1:46**	**2:00**
1:48	**1:52**	**1:57**	**2:02**	**2:06**	**2:20**
2:08	**2:12**	**2:17**	**2:22**	**2:26**	**2:40**
2:28	**2:32**	**2:37**	**2:42**	**2:46**	**3:00**
2:48	**2:52**	**2:57**	**3:02**	**3:06**	**3:20**
3:08	**3:12**	**3:17**	**3:22**	**3:26**	**3:40**
3:28	**3:32**	**3:37**	**3:42**	**3:46**	**4:00**
3:48	**3:52**	**3:57**	**4:02**	**4:06**	**4:20**
4:08	**4:12**	**4:17**	**4:22**	**4:26**	**4:40**
4:28	**4:32**	**4:37**	**4:42**	**4:46**	**5:00**
4:48	**4:52**	**4:57**	**5:02**	**5:06**	**5:20**
5:08	**5:12**	**5:17**	**5:22**	**5:26**	**5:40**
5:28	**5:32**	**5:37**	**5:42**	**5:46**	**6:00**
5:48	**5:52**	**5:57**	**6:02**	**6:06**	**6:20**
6:08	**6:12**	**6:17**	**6:22**	**6:26**	**6:40**
6:28	**6:32**	**6:37**	**6:42**	**6:46**	**7:00**
6:48	**6:52**	**6:57**	**7:02**	**7:06**	**7:20**
7:08	**7:12**	**7:17**	**7:22**	**7:26**	**7:40**
7:28	**7:32**	**7:37**	**7:42**	**7:46**	**8:00**
7:55	**7:59**	**8:04**	**8:09**	**8:13**	**8:25**
8:25	**8:29**	**8:34**	**8:39**	**8:43**	**8:55**
8:55	**8:59**	**9:04**	**9:09**	**9:13**	**9:25**
9:25	**9:29**	**9:34**	**9:39**	**9:43**	**9:55**
9:55	**9:59**	**10:04**	**10:09**	**10:13**	**10:25**
10:25	**10:29**	**10:34**	**10:39**	**10:43**	**10:55**

All times are approximate and depend on traffic and other conditions. Please arrive at your stop at least 5 minutes prior.

Effective: March 5, 2017

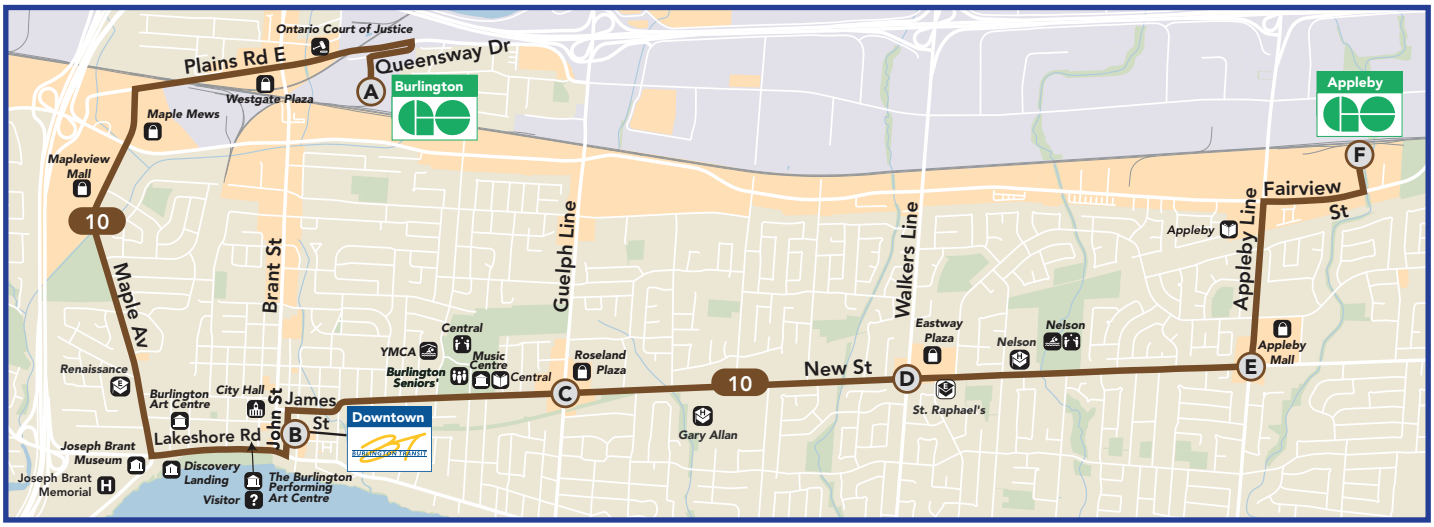
ROUTE 10 New - Maple

to Appleby GO

Burlington GO Station (Depart) A	Downtown Burlington B	New St. & Guelph Line C	New St. & Walkers Line D	New St. & Appleby Line E	Appleby GO Station (Arrive) F
Saturday					
6:55	7:08	7:12	7:15	7:19	7:22
7:25	7:38	7:42	7:45	7:49	7:52
7:55	8:08	8:12	8:15	8:19	8:22
8:25	8:38	8:42	8:45	8:49	8:52
8:55	9:08	9:12	9:15	9:19	9:22
9:25	9:38	9:42	9:45	9:49	9:52
9:55	10:08	10:12	10:15	10:19	10:22
10:25	10:38	10:42	10:45	10:49	10:52
10:55	11:08	11:12	11:15	11:19	11:22
11:25	11:38	11:42	11:45	11:49	**11:52**
11:55	**12:08**	**12:12**	**12:15**	**12:19**	**12:22**
12:25	**12:38**	**12:42**	**12:45**	**12:49**	**12:52**
12:55	**1:08**	**1:12**	**1:15**	**1:19**	**1:22**
1:25	**1:38**	**1:42**	**1:45**	**1:49**	**1:52**
1:55	**2:08**	**2:12**	**2:15**	**2:19**	**2:22**
	And every 30 minutes until				
6:55	**7:08**	**7:12**	**7:15**	**7:19**	**7:22**
7:25	**7:38**	**7:42**	**7:45**	**7:49**	**7:52**
7:55	**8:08**	**8:12**	**8:15**	**8:19**	**8:22**
8:25	**8:38**	**8:42**	**8:45**	**8:49**	**8:52**
8:55	**9:08**	**9:12**	**9:15**	**9:19**	**9:22**
9:25	**9:38**	**9:42**	**9:45**	**9:49**	**9:52**
9:55	**10:08**	**10:12**	**10:15**	**10:19**	**10:22**
10:25	**10:38**	**10:42**	**10:45**	**10:49**	**10:52**
Sunday					
7:55	8:08	8:12	8:15	8:19	8:22
8:25	8:38	8:42	8:45	8:49	8:52
8:55	9:08	9:12	9:15	9:19	9:22
9:25	9:38	9:42	9:45	9:49	9:52
	And every 30 minutes until				
7:25	**7:38**	**7:42**	**7:45**	**7:49**	**7:52**
7:55	**8:08**	**8:12**	**8:15**	**8:19**	**8:22**
8:25	**8:38**	**8:42**	**8:45**	**8:49**	**8:52**
8:55	**9:08**	**9:12**	**9:15**	**9:19**	**9:22**

to Burlington GO

Appleby GO Station (Depart) F	New St. & Appleby Line E	New St. & Walkers Line D	New St. & Guelph Line C	Downtown Burlington B	Burlington GO Station (Arrive) A
Saturday					
7:52	7:55	7:59	8:02	8:06	8:20
8:22	8:25	8:29	8:32	8:36	8:50
8:52	8:55	8:59	9:02	9:06	9:20
9:22	9:25	9:29	9:32	9:36	9:50
9:52	9:55	9:59	10:02	10:06	10:20
10:22	10:25	10:29	10:32	10:36	10:50
10:52	10:55	10:59	11:02	11:06	11:20
11:22	11:25	11:29	11:32	11:36	11:50
11:52	11:55	11:59	12:02	12:06	12:20
12:22	12:25	12:29	12:32	12:36	12:50
12:52	12:55	12:59	1:02	**1:06**	**1:20**
1:22	**1:25**	**1:29**	**1:32**	**1:36**	**1:50**
1:52	**1:55**	**1:59**	**2:02**	**2:06**	**2:20**
2:22	**2:25**	**2:29**	**2:32**	**2:36**	**2:50**
2:52	**2:55**	**2:59**	**3:02**	**3:06**	**3:20**
	And every 30 minutes until				
6:22	**6:25**	**6:29**	**6:32**	**6:36**	**6:50**
6:52	**6:55**	**6:59**	**7:02**	**7:06**	**7:20**
7:22	**7:25**	**7:29**	**7:32**	**7:36**	**7:50**
7:52	**7:55**	**7:59**	**8:02**	**8:06**	**8:20**
8:22	**8:25**	**8:29**	**8:32**	**8:36**	**8:50**
8:52	**8:55**	**8:59**	**9:02**	**9:06**	**9:20**
9:22	**9:25**	**9:29**	**9:32**	**9:36**	**9:50**
9:52	**9:55**	**9:59**	**10:02**	**10:06**	**10:20**
Sunday					
8:52	8:55	8:59	9:02	9:06	9:20
9:22	9:25	9:29	9:32	9:36	9:50
9:52	9:55	9:59	10:02	10:06	10:20
10:22	10:25	10:29	10:32	10:36	10:50
	And every 30 minutes until				
8:22	**8:25**	**8:29**	**8:32**	**8:36**	**8:50**
8:52	**8:55**	**8:59**	**9:02**	**9:06**	**9:20**
9:22	**9:25**	**9:29**	**9:32**	**9:36**	**9:50**
9:52	**9:55**	**9:59**	**10:02**	**10:06**	**10:20**



All times are approximate and depend on traffic and other conditions. Please arrive at your stop at least 5 minutes prior.

ROUTE 50 Burlington South

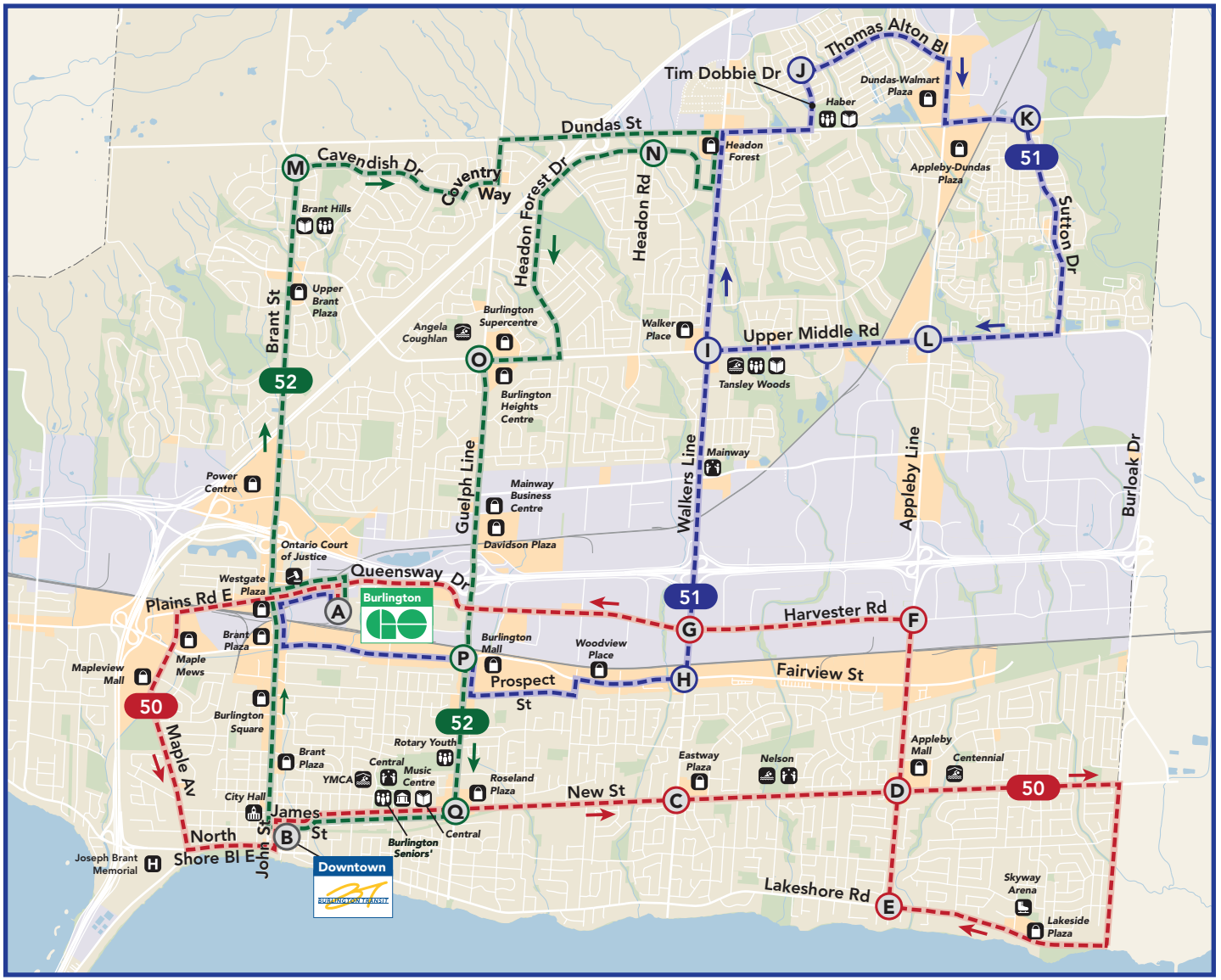
Burlington GO Station (Depart)	Downtown Burlington	Walkers Line & New St.	Appleby Line & New St.	Burloak Dr. & Lakeshore Rd.	Appleby Line & Harvester Rd.	Walkers Line & Harvester Rd.	Burlington GO Station (Arrive)
A	B	C	D	E	F	G	A
Monday to Saturday - Late Night Service							
10:55	**11:07**	**11:12**	**11:16**	**11:24**	**11:32**	**11:37**	**11:46**
11:55	12:07	12:12	12:16	12:24	12:32	12:37	12:46
12:55	1:07	1:12	1:16				

ROUTE 51 Burlington Northeast

Burlington GO Station (Depart)	Walkers Line & Fairview St.	Walkers Line & Upper Middle Rd.	Thomas Alton Bl. & Tim Dobbie	Dundas St. & Sutton Dr.	Appleby Line & Upper Middle	Walkers Line & Upper Middle	Burlington GO Station (Arrive)
A	H	I	J	K	L	I	A
Monday to Saturday - Late Night Service							
10:55	**11:01**	**11:09**	**11:14**	**11:19**	**11:24**	**11:30**	**11:45**
11:55	12:01	12:09	12:14	12:19	12:24	12:30	12:45
12:55	1:01	1:09	1:14	1:19	1:24	1:30	

ROUTE 52 Burlington Northwest

Burlington GO Station (Depart)	Brant St. & Cavendish Rd.	Headon Rd. & Headon Forest	Upper Middle & Guelph Line	Guelph Line & Fairview St.	Guelph Line & New St.	Downtown Burlington	Burlington GO Station (Arrive)
A	M	N	O	P	Q	B	A
Monday to Saturday - Late Night Service							
10:55	**11:05**	**11:15**	**11:22**	**11:30**	**11:34**	**11:37**	**11:45**
11:55	12:05	12:15	12:22	12:30	12:34	12:37	12:45
12:55	1:05	1:15	1:22				



All times are approximate and depend on traffic and other conditions. Please arrive at your stop at least 5 minutes prior.

Effective: March 5, 2017

ROUTE 300 Aldershot

to LaSalle Towers						to Seniors Centre					
Seniors Centre	Downtown Burlington	Joseph Brant Hospital	Mapleview Mall	Plains Rd. E & King Rd.	North Shore Blvd. & Lasalle Park Rd.	North Shore Blvd. & Lasalle Park Rd.	Plains Rd. E & King Rd.	Mapleview Mall	Joseph Brant Hospital	Downtown Burlington	Seniors Centre
A	B	C	D	E	F	F	E	D	C	B	A
Monday to Friday											
11:00	11:04	11:08	11:14	11:20	11:29	10:29	10:37	10:43	10:49	10:53	10:57
12:00	**12:04**	**12:08**	**12:14**	**12:20**	**12:29**	11:29	11:37	11:43	11:49	11:53	11:57
1:00	**1:04**	**1:08**	**1:14**	**1:20**	**1:29**	**12:29**	**12:37**	**12:43**	**12:49**	**12:53**	**12:57**
2:00	**2:04**	**2:08**	**2:14**	**2:20**	**2:29**	**1:29**	**1:37**	**1:43**	**1:49**	**1:53**	**1:57**

ROUTE 302 Tansley Woods

to Tansley Woods Community Centre				to Seniors Centre			
Seniors Centre	Burlington Mall	Upper Middle Rd & Super Centre	Tansley Woods Community Ctr.	Tansley Woods Community Ctr.	Upper Middle Rd & Super Centre	Burlington Mall	Seniors Centre
A	K	L	M	M	L	K	A
Monday to Friday							
11:00	11:06	11:16	11:28	10:28	10:40	10:50	10:56
12:00	**12:06**	**12:16**	**12:28**	11:28	11:40	11:50	11:56
1:00	**1:06**	**1:16**	**1:28**	**12:28**	**12:40**	**12:50**	**12:56**
2:00	**2:06**	**2:16**	**2:28**	**1:28**	**1:40**	**1:50**	**1:56**

ROUTE 301 Pinedale

to Lakeshore Place					to Seniors Centre				
Seniors Centre	New St. & Walkers Ln.	Appleby Village Mall	New St. & Hampton Heath Rd.	Lakeshore Place	Lakeshore Place	New St. & Hampton Heath Rd.	Appleby Village Mall	New St. & Walkers Ln.	Seniors Centre
A	G	H	I	J	J	I	H	G	A
Monday to Friday									
11:00	11:08	11:17	11:22	11:27	10:27	10:32	10:38	10:47	10:55
12:00	**12:08**	**12:17**	**12:22**	**12:27**	11:27	11:32	11:38	11:47	11:55
1:00	**1:08**	**1:17**	**1:22**	**1:27**	**12:27**	**12:32**	**12:38**	**12:47**	**12:55**
2:00	**2:08**	**2:17**	**2:22**	**2:27**	**1:27**	**1:32**	**1:38**	**1:47**	**1:55**

Community Connection

Serviced by smaller transit vehicles to bring passengers to the main entrance doors of popular destination spots in the city such as malls and community centres. An accessible service alternative that is offered mid-days, Monday through Friday (excluding holidays) during off-peak times.



APPENDIX D

Traffic Data

Turning Movement Count (1 . NEW ST & GUELPH LINE)

Start Time	N Approach GUELPH LINE						E Approach NEW ST						S Approach GUELPH LINE						W Approach NEW ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	4	2	4	0	1	10	4	4	1	0	1	9	5	24	1	0	0	30	0	16	16	0	2	32	81	
06:15:00	12	13	13	0	0	38	4	15	2	0	0	21	6	29	1	0	0	36	1	33	21	0	0	55	150	
06:30:00	10	17	20	0	2	47	4	17	1	0	0	22	6	34	1	0	0	41	2	60	29	0	0	91	201	
06:45:00	11	23	21	0	2	55	11	24	5	0	0	40	11	39	2	0	0	52	5	70	30	0	2	105	252	684
07:00:00	19	25	29	0	1	73	10	25	6	0	0	41	15	54	3	0	1	72	4	70	33	0	0	107	293	896
07:15:00	18	42	37	0	3	97	6	30	8	0	0	44	17	41	7	0	0	65	5	75	31	0	4	111	317	1063
07:30:00	22	40	41	0	0	103	12	33	9	0	0	54	15	64	3	0	1	82	7	102	49	0	3	158	397	1259
07:45:00	20	38	54	0	3	112	33	51	10	0	1	94	19	70	11	0	1	100	6	95	61	0	0	162	468	1475
08:00:00	32	39	54	0	2	125	35	61	12	0	1	108	18	57	7	0	1	82	6	90	56	0	1	152	467	1649
08:15:00	52	52	52	0	2	156	39	75	16	0	0	130	15	65	14	0	0	94	10	101	44	0	0	155	535	1867
08:30:00	49	55	47	0	0	151	31	80	21	0	0	132	14	88	11	0	4	113	8	74	56	0	4	138	534	2004
08:45:00	47	57	47	0	1	151	31	97	15	0	0	143	18	84	9	0	4	111	10	84	47	0	5	141	546	2082
BREAK																										
15:00:00	51	62	35	0	10	148	43	103	23	0	0	169	14	62	14	0	0	90	8	90	63	0	3	161	568	
15:15:00	53	57	39	0	9	149	37	123	20	0	0	180	14	84	11	0	4	109	8	75	39	0	10	122	560	
15:30:00	46	63	38	0	4	147	50	126	22	0	3	198	11	79	10	0	3	100	7	73	46	0	9	126	571	
15:45:00	70	70	48	0	10	188	61	137	23	0	0	221	14	76	19	0	3	109	10	75	53	0	3	138	656	2355
16:00:00	46	63	33	0	5	142	69	153	22	1	0	245	10	77	16	0	1	103	8	84	52	0	4	144	634	2421
16:15:00	60	64	35	0	12	159	46	217	19	0	0	282	6	57	13	0	2	76	18	87	37	0	9	142	659	2520
16:30:00	58	66	36	0	4	160	57	181	18	0	0	256	14	75	14	0	1	103	6	75	45	0	3	126	645	2594
16:45:00	77	71	43	0	7	191	56	197	13	0	0	266	13	92	27	0	1	132	6	87	54	0	3	147	736	2674
17:00:00	67	74	27	0	2	168	56	181	20	0	1	257	18	73	20	0	3	111	9	79	43	0	2	131	667	2707
17:15:00	73	65	34	0	3	172	50	205	23	0	1	278	14	79	25	0	2	118	9	49	49	0	5	107	675	2723
17:30:00	81	60	30	0	13	171	41	178	18	0	2	237	9	55	14	0	2	78	13	64	38	0	9	115	601	2679
17:45:00	92	64	24	0	2	180	35	148	24	0	3	207	8	51	21	0	3	80	10	63	35	0	5	108	575	2518
Grand Total	1070	1182	841	0	98	3093	821	2461	351	1	13	3634	304	1509	274	0	37	2087	176	1771	1027	0	86	2974	**11788**	-
Approach%	34.6%	38.2%	27.2%	0%		-	22.6%	67.7%	9.7%	0%		-	14.6%	72.3%	13.1%	0%		-	5.9%	59.5%	34.5%	0%		-	-	-
Totals %	9.1%	10%	7.1%	0%		26.2%	7%	20.9%	3%	0%		30.8%	2.6%	12.8%	2.3%	0%		17.7%	1.5%	15%	8.7%	0%		25.2%	-	-
Heavy	17	37	24	0		-	22	42	9	0		-	7	39	7	0		-	4	53	13	0		-	-	-
Heavy %	1.6%	3.1%	2.9%	0%		-	2.7%	1.7%	2.6%	0%		-	2.3%	2.6%	2.6%	0%		-	2.3%	3%	1.3%	0%		-	-	-
Bicycles	0	3	0	0		-	0	3	0	0		-	0	2	0	0		-	0	1	0	0		-	-	-
Bicycle %	0%	0.3%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0.1%	0%	0%		-	-	-

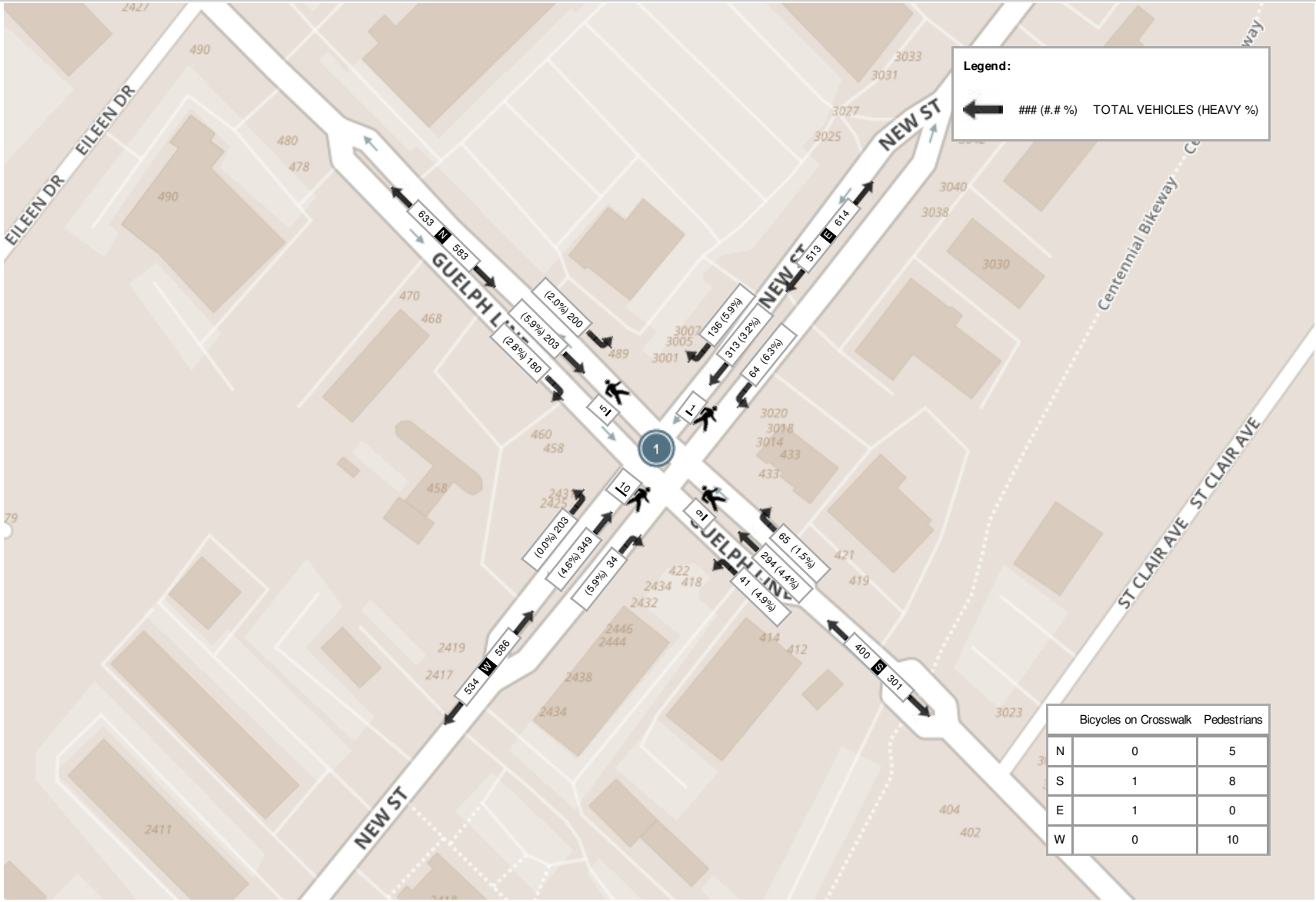
Peak Hour: 08:00 AM - 09:00 AM Weather: Unknown (6.4 °C)

Start Time	N Approach GUELPH LINE						E Approach NEW ST						S Approach GUELPH LINE						W Approach NEW ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	32	39	54	0	2	125	35	61	12	0	1	108	18	57	7	0	1	82	6	90	56	0	1	152	467
08:15:00	52	52	52	0	2	156	39	75	16	0	0	130	15	65	14	0	0	94	10	101	44	0	0	155	535
08:30:00	49	55	47	0	0	151	31	80	21	0	0	132	14	88	11	0	4	113	8	74	56	0	4	138	534
08:45:00	47	57	47	0	1	151	31	97	15	0	0	143	18	84	9	0	4	111	10	84	47	0	5	141	546
Grand Total	180	203	200	0	5	583	136	313	64	0	1	513	65	294	41	0	9	400	34	349	203	0	10	586	**2082**
Approach%	30.9%	34.8%	34.3%	0%		-	26.5%	61%	12.5%	0%		-	16.3%	73.5%	10.3%	0%		-	5.8%	59.6%	34.6%	0%		-	**-**
Totals %	8.6%	9.8%	9.6%	0%		28%	6.5%	15%	3.1%	0%		24.6%	3.1%	14.1%	2%	0%		19.2%	1.6%	16.8%	9.8%	0%		28.1%	**-**
PHF	0.87	0.89	0.93	0		0.93	0.87	0.81	0.76	0		0.9	0.9	0.84	0.73	0		0.88	0.85	0.86	0.91	0		0.95	**-**
Heavy	5	12	4	0		21	8	10	4	0		22	1	13	2	0		16	2	16	0	0		18	**-**
Heavy %	2.8%	5.9%	2%	0%		3.6%	5.9%	3.2%	6.3%	0%		4.3%	1.5%	4.4%	4.9%	0%		4%	5.9%	4.6%	0%	0%		3.1%	**-**
Lights	175	191	196	0		562	128	303	60	0		491	64	281	39	0		384	32	333	203	0		568	**-**
Lights %	97.2%	94.1%	98%	0%		96.4%	94.1%	96.8%	93.8%	0%		95.7%	98.5%	95.6%	95.1%	0%		96%	94.1%	95.4%	100%	0%		96.9%	**-**
Single-Unit Trucks	2	8	4	0		14	3	1	1	0		5	0	9	0	0		9	0	3	0	0		3	**-**
Single-Unit Trucks %	1.1%	3.9%	2%	0%		2.4%	2.2%	0.3%	1.6%	0%		1%	0%	3.1%	0%	0%		2.3%	0%	0.9%	0%	0%		0.5%	**-**
Buses	2	4	0	0		6	4	9	3	0		16	1	4	2	0		7	2	12	0	0		14	**-**
Buses %	1.1%	2%	0%	0%		1%	2.9%	2.9%	4.7%	0%		3.1%	1.5%	1.4%	4.9%	0%		1.8%	5.9%	3.4%	0%	0%		2.4%	**-**
Articulated Trucks	1	0	0	0		1	1	0	0	0		1	0	0	0	0		0	0	1	0	0		1	**-**
Articulated Trucks %	0.6%	0%	0%	0%		0.2%	0.7%	0%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.2%	**-**
Pedestrians	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	8	-	-	-	-	-	10	-	**-**
Pedestrians%	-	-	-	-	20%		-	-	-	-	0%		-	-	-	-	32%		-	-	-	-	40%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	4%		-	-	-	-	4%		-	-	-	-	0%		**-**
Bicycles on Road	0	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Unknown (11.4 °C)

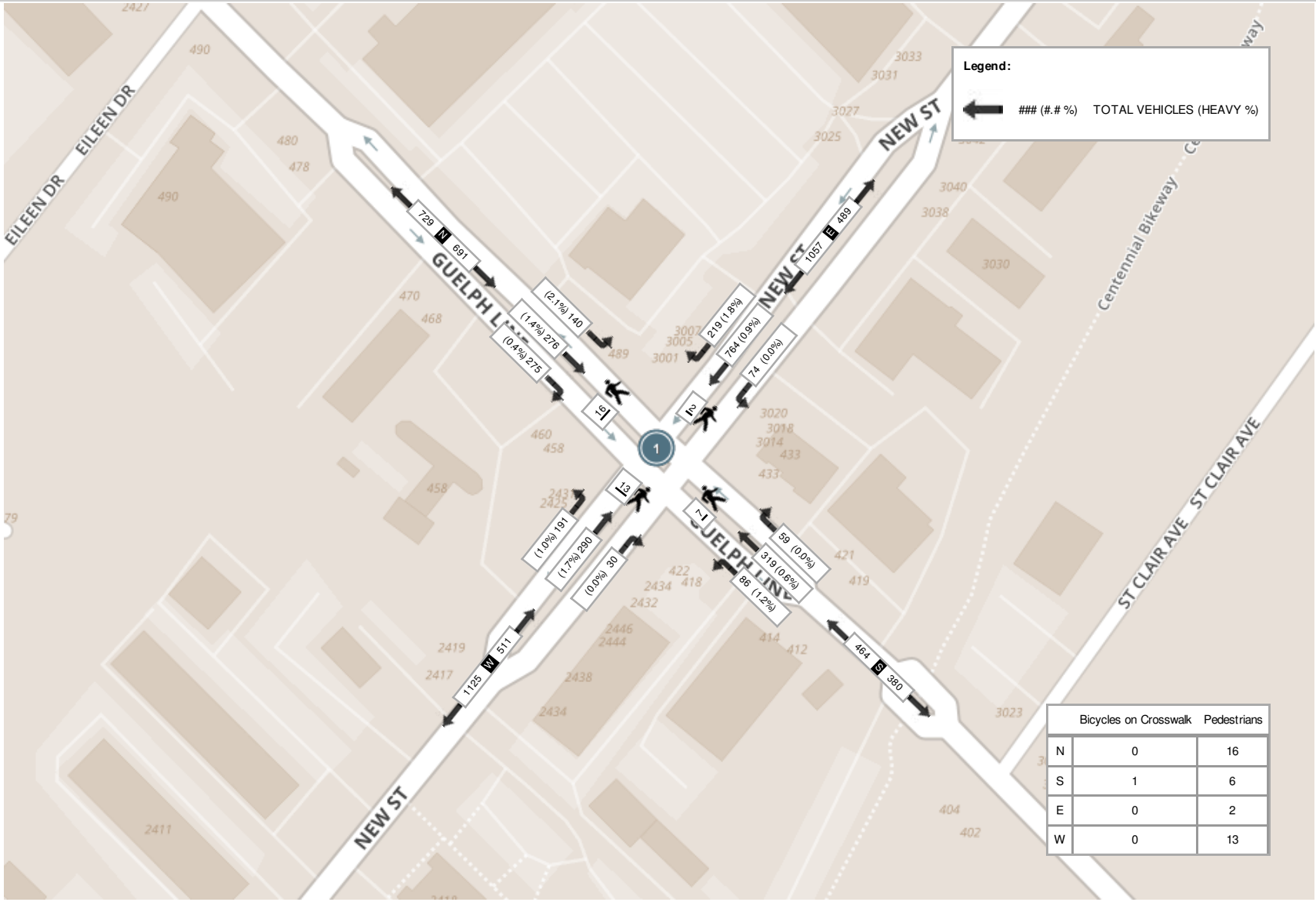
Start Time	N Approach GUELPH LINE						E Approach NEW ST						S Approach GUELPH LINE						W Approach NEW ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:30:00	58	66	36	0	4	160	57	181	18	0	0	256	14	75	14	0	1	103	6	75	45	0	3	126	645
16:45:00	77	71	43	0	7	191	56	197	13	0	0	266	13	92	27	0	1	132	6	87	54	0	3	147	736
17:00:00	67	74	27	0	2	168	56	181	20	0	1	257	18	73	20	0	3	111	9	79	43	0	2	131	667
17:15:00	73	65	34	0	3	172	50	205	23	0	1	278	14	79	25	0	2	118	9	49	49	0	5	107	675
Grand Total	275	276	140	0	16	691	219	764	74	0	2	1057	59	319	86	0	7	464	30	290	191	0	13	511	**2723**
Approach%	39.8%	39.9%	20.3%	0%		-	20.7%	72.3%	7%	0%		-	12.7%	68.8%	18.5%	0%		-	5.9%	56.8%	37.4%	0%		-	**-**
Totals %	10.1%	10.1%	5.1%	0%		25.4%	8%	28.1%	2.7%	0%		38.8%	2.2%	11.7%	3.2%	0%		17%	1.1%	10.7%	7%	0%		18.8%	**-**
PHF	0.89	0.93	0.81	0		0.9	0.96	0.93	0.8	0		0.95	0.82	0.87	0.8	0		0.88	0.83	0.83	0.88	0		0.87	**-**
Heavy	1	4	3	0		8	4	7	0	0		11	0	2	1	0		3	0	5	2	0		7	**-**
Heavy %	0.4%	1.4%	2.1%	0%		1.2%	1.8%	0.9%	0%	0%		1%	0%	0.6%	1.2%	0%		0.6%	0%	1.7%	1%	0%		1.4%	**-**
Lights	274	272	137	0		683	215	757	74	0		1046	59	317	85	0		461	30	285	189	0		504	**-**
Lights %	99.6%	98.6%	97.9%	0%		98.8%	98.2%	99.1%	100%	0%		99%	100%	99.4%	98.8%	0%		99.4%	100%	98.3%	99%	0%		98.6%	**-**
Single-Unit Trucks	1	0	2	0		3	2	1	0	0		3	0	0	1	0		1	0	2	1	0		3	**-**
Single-Unit Trucks %	0.4%	0%	1.4%	0%		0.4%	0.9%	0.1%	0%	0%		0.3%	0%	0%	1.2%	0%		0.2%	0%	0.7%	0.5%	0%		0.6%	**-**
Buses	0	4	1	0		5	1	6	0	0		7	0	2	0	0		2	0	3	0	0		3	**-**
Buses %	0%	1.4%	0.7%	0%		0.7%	0.5%	0.8%	0%	0%		0.7%	0%	0.6%	0%	0%		0.4%	0%	1%	0%	0%		0.6%	**-**
Articulated Trucks	0	0	0	0		0	1	0	0	0		1	0	0	0	0		0	0	0	1	0		1	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0.5%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0%	0.5%	0%		0.2%	**-**
Pedestrians	-	-	-	-	16	-	-	-	-	-	2	-	-	-	-	-	6	-	-	-	-	-	13	-	**-**
Pedestrians%	-	-	-	-	42.1%		-	-	-	-	5.3%		-	-	-	-	15.8%		-	-	-	-	34.2%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	2.6%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Unknown (6.4 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	5
S	1	8
E	1	0
W	0	10

Peak Hour: 04:30 PM - 05:30 PM Weather: Unknown (11.4 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	16
S	1	6
E	0	2
W	0	13

Turning Movement Count (2 . NEW ST & 2421 NEW ST (WEST ACCESSES))

Start Time	N Approach 2421 NEW ST (WEST ACCESSES)						E Approach NEW ST						S Approach SOUTH LEG DRIVEWAY						W Approach NEW ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	0	0	0	0	1	0	0	9	0	0	0	9	0	0	0	0	0	0	0	33	0	0	0	33	42	
06:15:00	0	0	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	0	1	51	0	0	0	52	77	
06:30:00	0	0	0	0	3	0	1	27	0	0	0	28	0	0	0	0	0	0	0	93	1	0	0	94	122	
06:45:00	0	0	0	0	0	0	0	29	0	0	0	29	0	0	0	0	0	0	0	102	0	0	0	102	131	372
07:00:00	0	0	0	0	1	0	0	50	0	0	0	50	0	0	0	0	0	0	0	103	0	0	0	103	153	483
07:15:00	1	0	0	0	3	1	0	50	0	0	0	50	0	0	0	0	0	0	0	116	0	0	0	116	167	573
07:30:00	0	0	0	0	1	0	0	55	0	0	1	55	0	0	0	0	0	0	0	164	1	0	0	165	220	671
07:45:00	0	0	0	0	4	0	1	85	0	0	0	86	0	0	0	0	0	0	0	168	1	0	1	169	255	795
08:00:00	0	0	1	0	3	1	0	94	0	0	0	94	0	0	0	0	0	0	0	135	1	0	0	136	231	873
08:15:00	0	0	1	0	4	1	1	137	3	0	0	141	0	0	0	0	0	0	1	145	0	0	0	146	288	994
08:30:00	1	0	0	0	4	1	1	142	1	0	0	144	0	0	0	0	3	0	0	135	0	0	0	135	280	1054
08:45:00	1	0	1	0	7	2	4	145	0	0	1	149	0	0	0	0	0	0	1	140	3	0	0	144	295	1094
BREAK																										
15:00:00	4	0	7	0	8	11	8	153	2	0	0	163	0	0	0	0	0	0	0	147	1	0	0	148	322	
15:15:00	4	0	4	0	5	8	6	186	0	0	0	192	0	0	0	0	0	0	0	117	4	0	0	121	321	
15:30:00	2	0	5	0	8	7	1	185	1	0	2	187	0	0	0	0	0	0	0	125	3	0	2	128	322	
15:45:00	2	0	6	0	3	8	10	215	3	0	1	228	0	0	0	0	0	0	0	124	4	0	0	128	364	1329
16:00:00	1	0	4	0	6	5	8	191	2	0	1	201	0	0	0	0	0	0	0	134	1	0	0	135	341	1348
16:15:00	0	0	2	0	9	2	6	289	0	0	0	295	0	0	0	0	0	0	0	137	3	0	0	140	437	1464
16:30:00	0	0	2	0	4	2	8	255	1	0	3	264	0	0	0	0	0	0	0	138	2	0	1	140	406	1548
16:45:00	0	0	12	0	8	12	11	283	0	0	0	294	0	0	0	0	0	0	1	125	7	0	2	133	439	1623
17:00:00	8	0	5	0	3	13	11	271	7	0	0	289	0	0	0	0	0	0	1	139	2	0	0	142	444	1726
17:15:00	5	0	4	0	7	9	12	284	0	0	0	296	1	0	0	0	0	1	0	85	1	0	0	86	392	1681
17:30:00	7	0	10	0	10	17	12	265	0	0	0	277	0	0	0	0	0	0	1	103	2	0	0	106	400	1675
17:45:00	7	0	5	0	5	12	15	254	4	0	0	273	0	0	0	0	0	0	2	100	3	0	0	105	390	1626
Grand Total	43	0	69	0	107	112	116	3679	24	0	9	3819	1	0	0	0	3	1	8	2859	40	0	6	2907	**6839**	-
Approach%	38.4%	0%	61.6%	0%		-	3%	96.3%	0.6%	0%		-	100%	0%	0%	0%		-	0.3%	98.3%	1.4%	0%		-	-	-
Totals %	0.6%	0%	1%	0%		1.6%	1.7%	53.8%	0.4%	0%		55.8%	0%	0%	0%	0%		0%	0.1%	41.8%	0.6%	0%		42.5%	-	-
Heavy	0	0	0	0		-	1	65	0	0		-	0	0	0	0		-	0	73	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0.9%	1.8%	0%	0%		-	0%	0%	0%	0%		-	0%	2.6%	0%	0%		-	-	-
Bicycles	0	0	0	0		-	0	5	0	0		-	0	0	0	0		-	0	2	0	0		-	-	-
Bicycle %	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	-	-

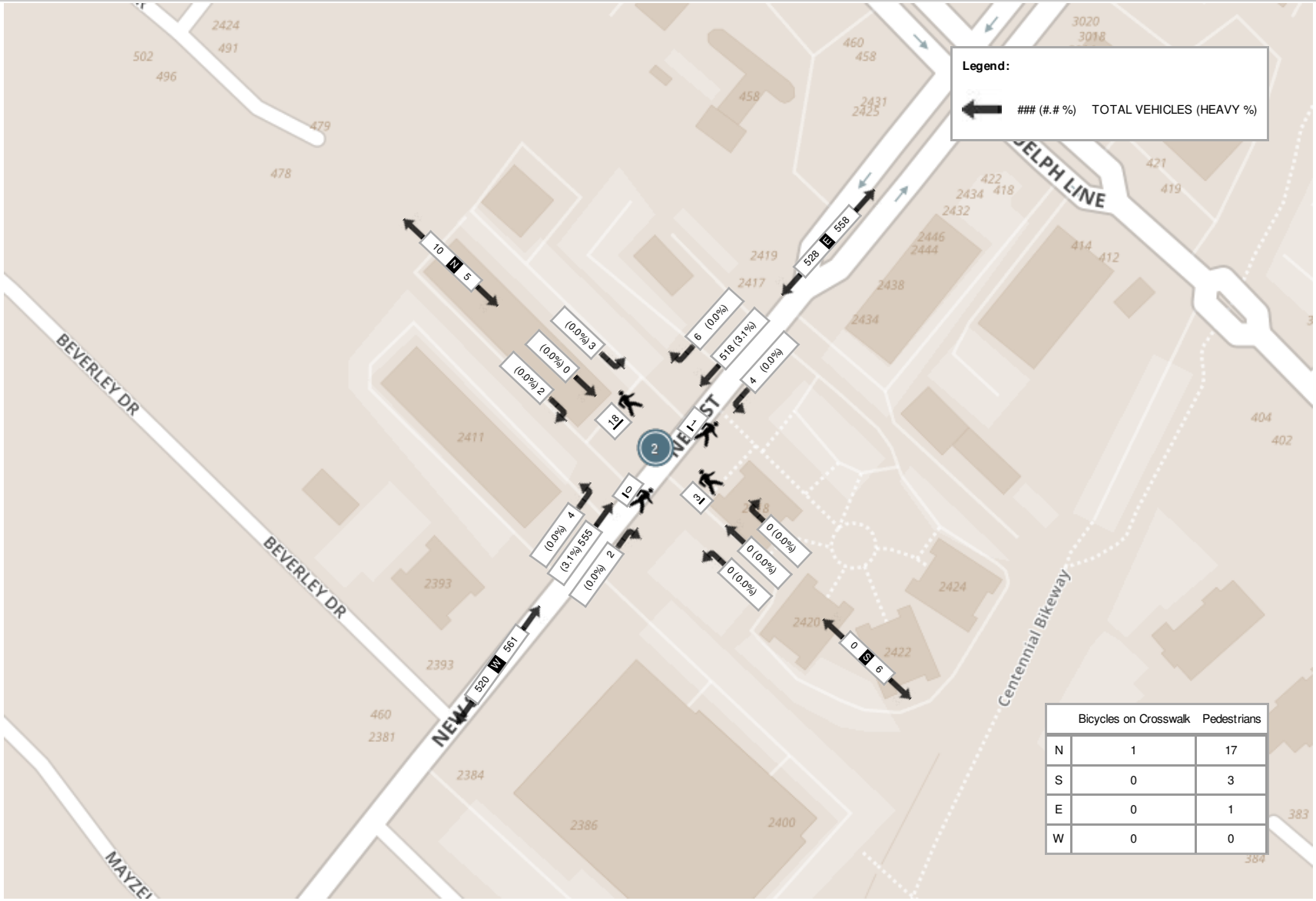
Peak Hour: 08:00 AM - 09:00 AM Weather: Unknown (6.4 °C)

Start Time	N Approach 2421 NEW ST (WEST ACCESSES)						E Approach NEW ST						S Approach SOUTH LEG DRIVEWAY						W Approach NEW ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	0	0	1	0	3	1	0	94	0	0	0	94	0	0	0	0	0	0	0	135	1	0	0	136	231
08:15:00	0	0	1	0	4	1	1	137	3	0	0	141	0	0	0	0	0	0	1	145	0	0	0	146	288
08:30:00	1	0	0	0	4	1	1	142	1	0	0	144	0	0	0	0	3	0	0	135	0	0	0	135	280
08:45:00	1	0	1	0	7	2	4	145	0	0	1	149	0	0	0	0	0	0	1	140	3	0	0	144	295
Grand Total	2	0	3	0	18	5	6	518	4	0	1	528	0	0	0	0	3	0	2	555	4	0	0	561	**1094**
Approach%	40%	0%	60%	0%		-	1.1%	98.1%	0.8%	0%		-	0%	0%	0%	0%		-	0.4%	98.9%	0.7%	0%		-	**-**
Totals %	0.2%	0%	0.3%	0%		0.5%	0.5%	47.3%	0.4%	0%		48.3%	0%	0%	0%	0%		0%	0.2%	50.7%	0.4%	0%		51.3%	**-**
PHF	0.5	0	0.75	0		0.63	0.38	0.89	0.33	0		0.89	0	0	0	0		0	0.5	0.96	0.33	0		0.96	**-**
Heavy	0	0	0	0		0	0	16	0	0		16	0	0	0	0		0	0	17	0	0		17	**-**
Heavy %	0%	0%	0%	0%		0%	0%	3.1%	0%	0%		3%	0%	0%	0%	0%		0%	0%	3.1%	0%	0%		3%	**-**
Lights	2	0	3	0		5	6	502	4	0		512	0	0	0	0		0	2	538	4	0		544	**-**
Lights %	100%	0%	100%	0%		100%	100%	96.9%	100%	0%		97%	0%	0%	0%	0%		0%	100%	96.9%	100%	0%		97%	**-**
Single-Unit Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	5	0	0		5	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	**-**
Buses	0	0	0	0		0	0	12	0	0		12	0	0	0	0		0	0	12	0	0		12	**-**
Buses %	0%	0%	0%	0%		0%	0%	2.3%	0%	0%		2.3%	0%	0%	0%	0%		0%	0%	2.2%	0%	0%		2.1%	**-**
Articulated Trucks	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	17	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	77.3%		-	-	-	-	4.5%		-	-	-	-	13.6%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	4.5%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 04:15 PM - 05:15 PM Weather: Unknown (11.4 °C)

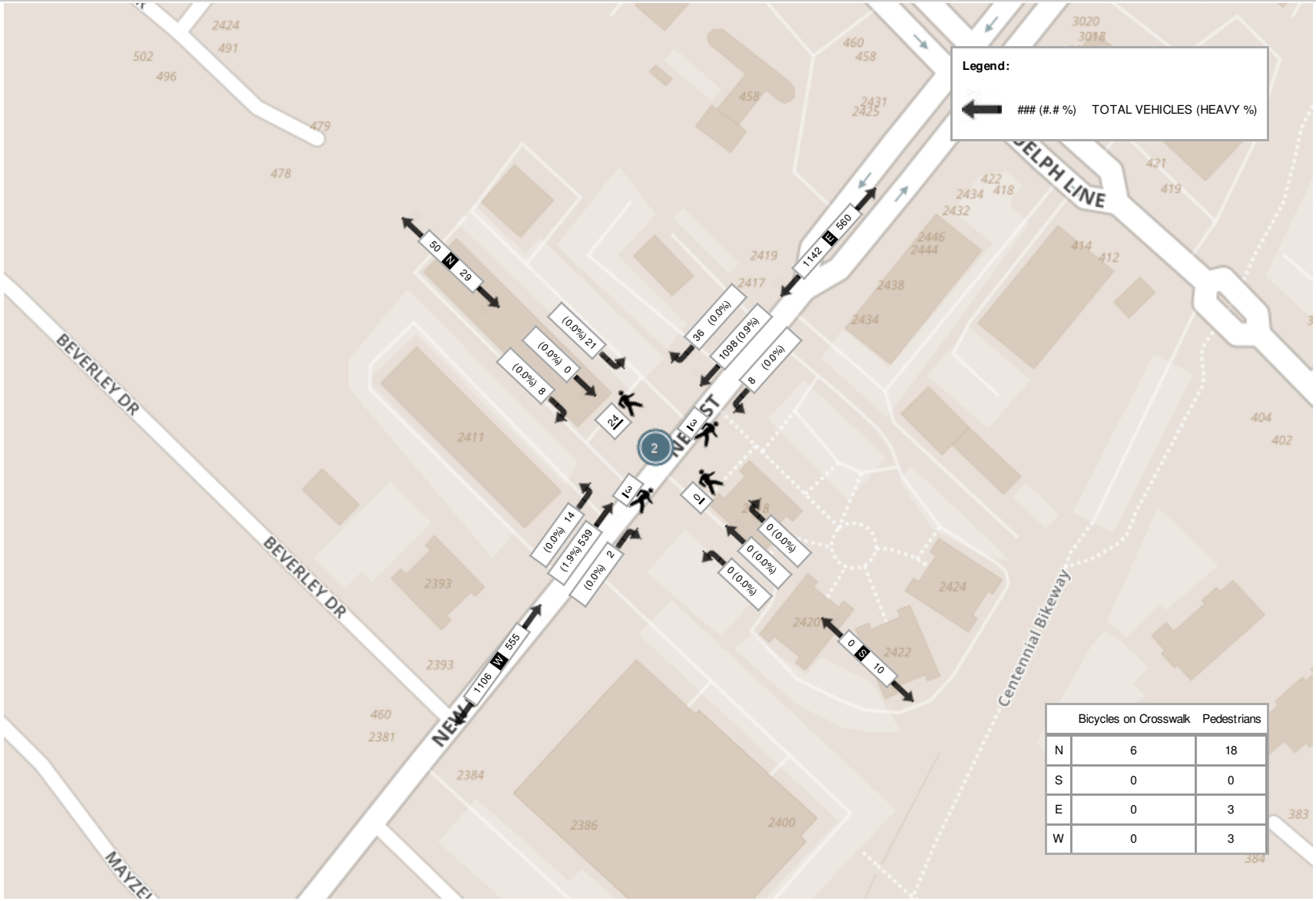
Start Time	N Approach 2421 NEW ST (WEST ACCESSES)						E Approach NEW ST						S Approach SOUTH LEG DRIVEWAY						W Approach NEW ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:15:00	0	0	2	0	9	2	6	289	0	0	0	295	0	0	0	0	0	0	0	137	3	0	0	140	437
16:30:00	0	0	2	0	4	2	8	255	1	0	3	264	0	0	0	0	0	0	0	138	2	0	1	140	406
16:45:00	0	0	12	0	8	12	11	283	0	0	0	294	0	0	0	0	0	0	1	125	7	0	2	133	439
17:00:00	8	0	5	0	3	13	11	271	7	0	0	289	0	0	0	0	0	0	1	139	2	0	0	142	444
Grand Total	8	0	21	0	24	29	36	1098	8	0	3	1142	0	0	0	0	0	0	2	539	14	0	3	555	**1726**
Approach%	27.6%	0%	72.4%	0%		-	3.2%	96.1%	0.7%	0%		-	0%	0%	0%	0%		-	0.4%	97.1%	2.5%	0%		-	**-**
Totals %	0.5%	0%	1.2%	0%		1.7%	2.1%	63.6%	0.5%	0%		66.2%	0%	0%	0%	0%		0%	0.1%	31.2%	0.8%	0%		32.2%	**-**
PHF	0.25	0	0.44	0		0.56	0.82	0.95	0.29	0		0.97	0	0	0	0		0	0.5	0.97	0.5	0		0.98	**-**
Heavy	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	0	10	0	0		10	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.8%	**-**
Lights	8	0	21	0		29	36	1088	8	0		1132	0	0	0	0		0	2	529	14	0		545	**-**
Lights %	100%	0%	100%	0%		100%	100%	99.1%	100%	0%		99.1%	0%	0%	0%	0%		0%	100%	98.1%	100%	0%		98.2%	**-**
Single-Unit Trucks	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	5	0	0		5	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	**-**
Buses	0	0	0	0		0	0	7	0	0		7	0	0	0	0		0	0	4	0	0		4	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.6%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.7%	0%	0%		0.7%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	**-**
Pedestrians	-	-	-	-	18	-	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	3	-	**-**
Pedestrians%	-	-	-	-	60%		-	-	-	-	10%		-	-	-	-	0%		-	-	-	-	10%		**-**
Bicycles on Crosswalk	-	-	-	-	6	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	20%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	**-**
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Unknown (6.4 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	17
S	0	3
E	0	1
W	0	0

Peak Hour: 04:15 PM - 05:15 PM Weather: Unknown (11.4 °C)



	Bicycles on Crosswalk	Pedestrians
N	6	18
S	0	0
E	0	3
W	0	3

Turning Movement Count (3 . NEW ST & 2431 NEW ST (EAST ACCESSES))

Start Time	N Approach 2431 NEW ST (EAST ACCESSES)					E Approach NEW ST					W Approach NEW ST					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	U-Turn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	0	0	0	0	0	0	9	0	0	9	33	0	0	0	33	42	
06:15:00	0	0	0	0	0	0	25	0	0	25	51	0	0	0	51	76	
06:30:00	0	0	0	0	0	0	28	1	0	29	93	0	0	0	93	122	
06:45:00	0	0	0	0	0	0	29	0	3	29	100	0	0	0	100	129	369
07:00:00	0	0	0	1	0	0	49	1	0	50	105	0	0	0	105	155	482
07:15:00	0	0	0	3	0	0	49	0	0	49	114	0	0	0	114	163	569
07:30:00	0	0	0	2	0	0	56	0	0	56	161	0	0	0	161	217	664
07:45:00	0	0	0	3	0	0	85	0	0	85	166	0	0	0	166	251	786
08:00:00	0	0	0	3	0	0	93	0	0	93	140	0	0	0	140	233	864
08:15:00	0	0	0	5	0	0	139	1	0	140	148	0	0	0	148	288	989
08:30:00	0	1	0	1	1	0	144	2	0	146	135	0	0	0	135	282	1054
08:45:00	0	0	0	8	0	0	149	0	0	149	143	0	0	1	143	292	1095
BREAK																	
15:00:00	0	0	0	7	0	0	154	5	1	159	153	0	0	0	153	312	
15:15:00	0	1	0	4	1	0	187	4	0	191	119	1	0	0	120	312	
15:30:00	1	0	0	8	1	0	186	5	0	191	130	1	0	0	131	323	
15:45:00	1	2	0	8	3	1	225	2	0	228	128	0	0	2	128	359	1306
16:00:00	0	0	0	6	0	0	193	0	0	193	138	0	0	0	138	331	1325
16:15:00	1	0	0	7	1	2	292	1	0	295	140	0	0	0	140	436	1449
16:30:00	0	0	0	5	0	0	263	1	1	264	139	0	0	1	139	403	1529
16:45:00	2	1	0	7	3	3	294	1	1	298	140	0	0	0	140	441	1611
17:00:00	2	0	0	1	2	0	289	0	0	289	145	0	0	0	145	436	1716
17:15:00	0	0	0	2	0	0	299	1	1	300	89	0	0	0	89	389	1669
17:30:00	0	1	0	1	1	1	272	0	0	273	110	1	0	0	111	385	1651

17:45:00	2	0	0	1	2	3	272	1	0	276	103	0	0	0	103	381	1591
Grand Total	9	6	0	83	15	10	3781	26	7	3817	2923	3	0	4	2926	**6758**	-
Approach%	60%	40%	0%		-	0.3%	99.1%	0.7%		-	99.9%	0.1%	0%		-	**-**	-
Totals %	0.1%	0.1%	0%		0.2%	0.1%	55.9%	0.4%		56.5%	43.3%	0%	0%		43.3%	**-**	-
Heavy	0	0	0		-	0	63	1		-	70	0	0		-	**-**	-
Heavy %	0%	0%	0%		-	0%	1.7%	3.8%		-	2.4%	0%	0%		-	**-**	-
Bicycles	0	0	0		-	0	3	0		-	2	0	0		-	**-**	-
Bicycle %	0%	0%	0%		-	0%	0.1%	0%		-	0.1%	0%	0%		-	**-**	-

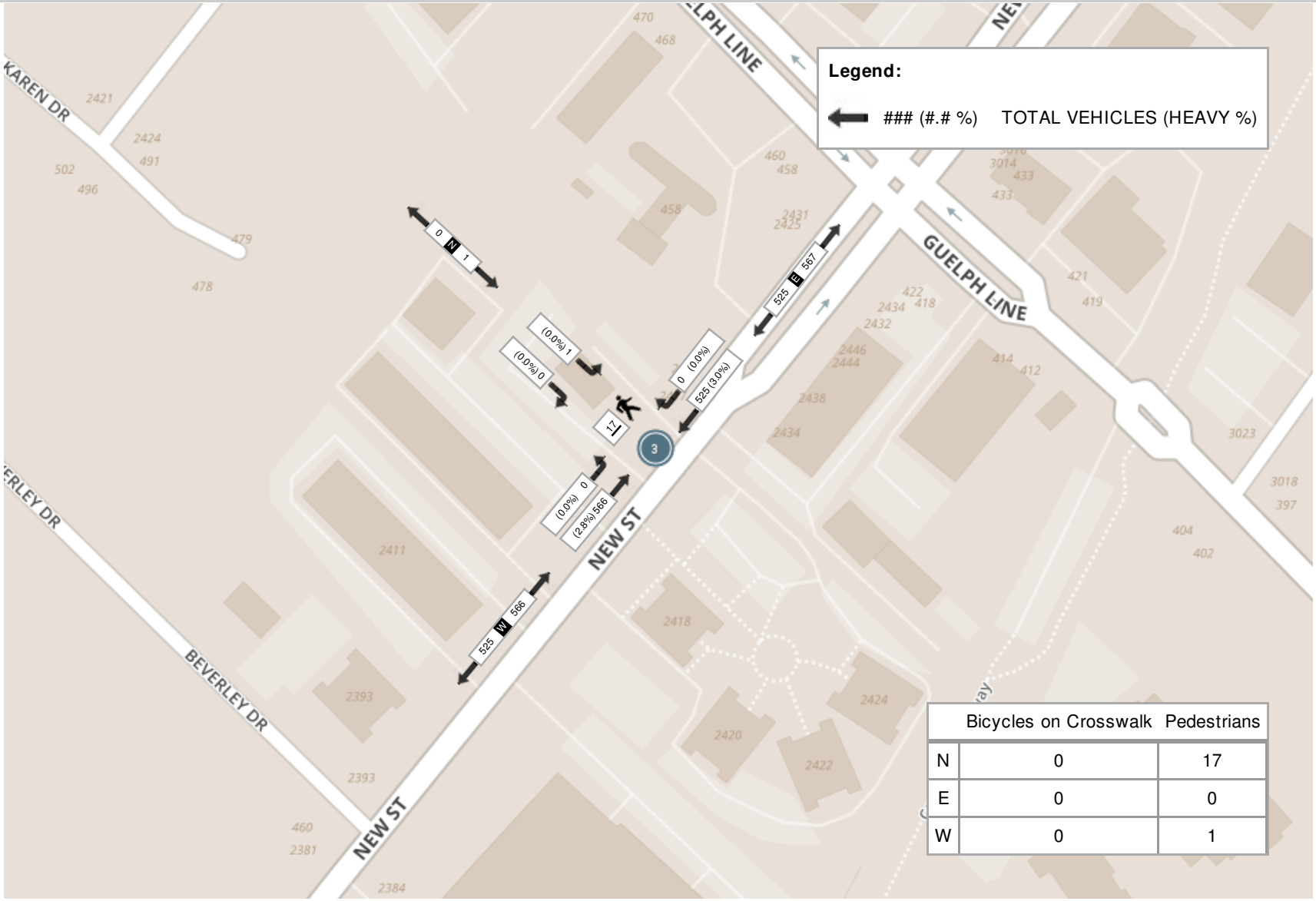
Peak Hour: 08:00 AM - 09:00 AM Weather: Unknown (6.4 °C)

Start Time	N Approach 2431 NEW ST (EAST ACCESSES)					E Approach NEW ST					W Approach NEW ST					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	0	0	0	3	0	0	93	0	0	93	140	0	0	0	140	233
08:15:00	0	0	0	5	0	0	139	1	0	140	148	0	0	0	148	288
08:30:00	0	1	0	1	1	0	144	2	0	146	135	0	0	0	135	282
08:45:00	0	0	0	8	0	0	149	0	0	149	143	0	0	1	143	292
Grand Total	0	1	0	17	1	0	525	3	0	528	566	0	0	1	566	**1095**
Approach%	0%	100%	0%		-	0%	99.4%	0.6%		-	100%	0%	0%		-	-
Totals %	0%	0.1%	0%		0.1%	0%	47.9%	0.3%		48.2%	51.7%	0%	0%		51.7%	-
PHF	0	0.25	0		0.25	0	0.88	0.38		0.89	0.96	0	0		0.96	-
Heavy	0	0	0		0	0	16	0		16	16	0	0		16	-
Heavy %	0%	0%	0%		0%	0%	3%	0%		3%	2.8%	0%	0%		2.8%	-
Lights	0	1	0		1	0	509	3		512	550	0	0		550	-
Lights %	0%	100%	0%		100%	0%	97%	100%		97%	97.2%	0%	0%		97.2%	-
Single-Unit Trucks	0	0	0		0	0	3	0		3	4	0	0		4	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.6%	0%		0.6%	0.7%	0%	0%		0.7%	-
Buses	0	0	0		0	0	13	0		13	12	0	0		12	-
Buses %	0%	0%	0%		0%	0%	2.5%	0%		2.5%	2.1%	0%	0%		2.1%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	17	-	-	-	-	0	-	-	-	-	1	-	-
Pedestrians%	-	-	-	94.4%		-	-	-	0%		-	-	-	5.6%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

Peak Hour: 04:15 PM - 05:15 PM Weather: Unknown (11.4 °C)

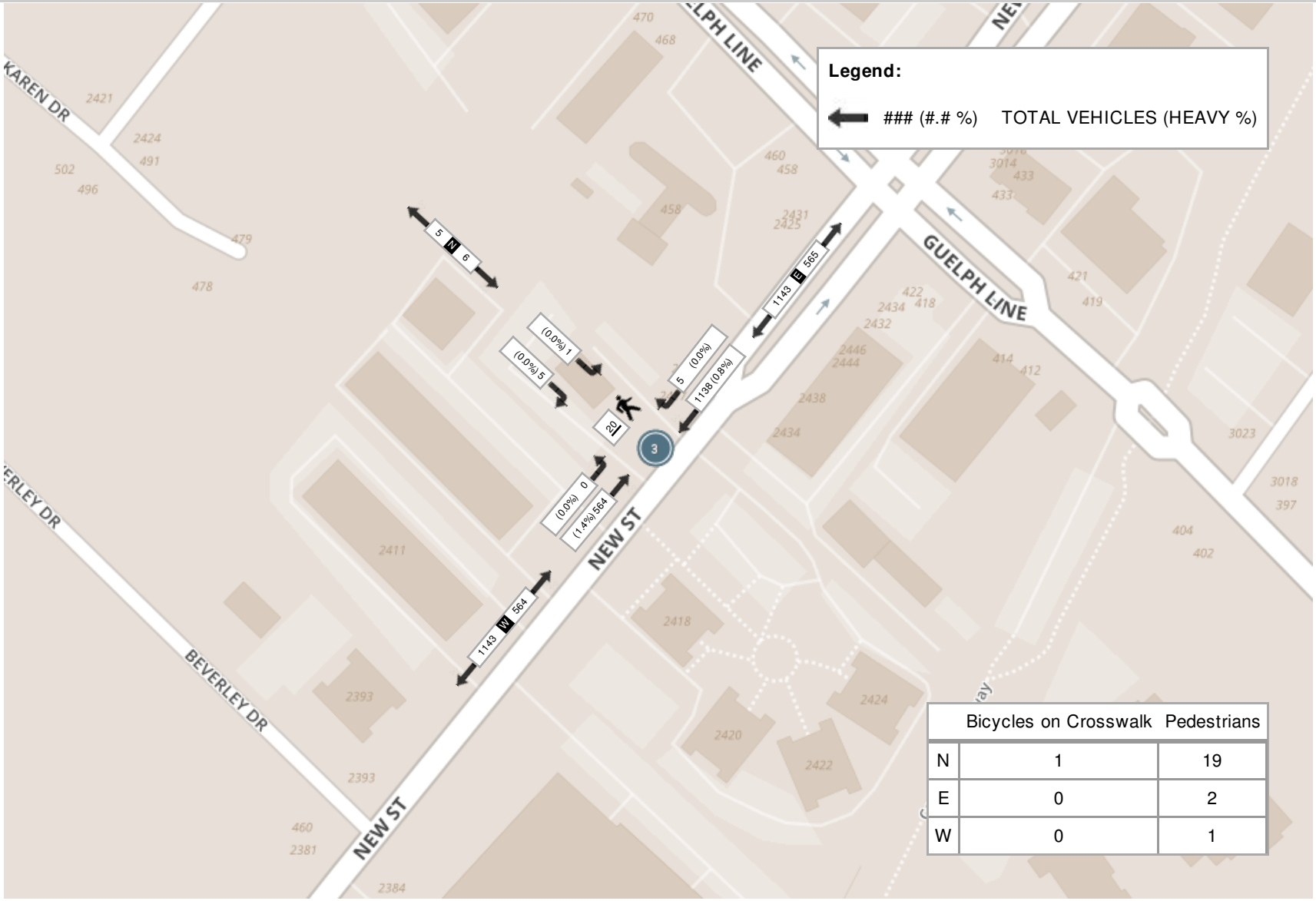
Start Time	N Approach 2431 NEW ST (EAST ACCESSES)					E Approach NEW ST					W Approach NEW ST					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
16:15:00	1	0	0	7	1	2	292	1	0	295	140	0	0	0	140	436
16:30:00	0	0	0	5	0	0	263	1	1	264	139	0	0	1	139	403
16:45:00	2	1	0	7	3	3	294	1	1	298	140	0	0	0	140	441
17:00:00	2	0	0	1	2	0	289	0	0	289	145	0	0	0	145	436
Grand Total	5	1	0	20	6	5	1138	3	2	1146	564	0	0	1	564	**1716**
Approach%	83.3%	16.7%	0%		-	0.4%	99.3%	0.3%		-	100%	0%	0%		-	-
Totals %	0.3%	0.1%	0%		0.3%	0.3%	66.3%	0.2%		66.8%	32.9%	0%	0%		32.9%	-
PHF	0.63	0.25	0		0.5	0.42	0.97	0.75		0.96	0.97	0	0		0.97	-
Heavy	0	0	0		0	0	9	0		9	8	0	0		8	-
Heavy %	0%	0%	0%		0%	0%	0.8%	0%		0.8%	1.4%	0%	0%		1.4%	-
Lights	5	1	0		6	5	1129	3		1137	556	0	0		556	-
Lights %	100%	100%	0%		100%	100%	99.2%	100%		99.2%	98.6%	0%	0%		98.6%	-
Single-Unit Trucks	0	0	0		0	0	3	0		3	4	0	0		4	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.3%	0%		0.3%	0.7%	0%	0%		0.7%	-
Buses	0	0	0		0	0	6	0		6	3	0	0		3	-
Buses %	0%	0%	0%		0%	0%	0.5%	0%		0.5%	0.5%	0%	0%		0.5%	-
Articulated Trucks	0	0	0		0	0	0	0		0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.2%	0%	0%		0.2%	-
Pedestrians	-	-	-	19	-	-	-	-	2	-	-	-	-	1	-	-
Pedestrians%	-	-	-	82.6%		-	-	-	8.7%		-	-	-	4.3%		-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	4.3%		-	-	-	0%		-	-	-	0%		-
Bicycles on Road	0	0	0	0	-	0	1	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

Peak Hour: 08:00 AM - 09:00 AM Weather: Unknown (6.4 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	17
E	0	0
W	0	1

Peak Hour: 04:15 PM - 05:15 PM Weather: Unknown (11.4 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	19
E	0	2
W	0	1

Turning Movement Count (2 . NEW ST & 2421 NEW ST (WEST ACCESSES))

Start Time	N Approach 2421 NEW ST (WEST ACCESSES)							NE Approach Southwestbound Approach							E Approach NEW ST							S Approach SOUTH LEG DRIVEWAY							W Approach NEW ST							Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	Hard Left N:NE	U-Turn N:N	Peds N:	Approach Total	Hard Right NE:N	Bear Right NE:W	Bear Left NE:S	Hard Left NE:E	U-Turn NE:NE	Peds NE:	Approach Total	Hard Right E:NE	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Bear Right S:NE	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Bear Left W:NE	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	10	0	0	0	11	0	0	0	0	0	0	0	1	36	1	1	0	0	39	52	
06:15:00	0	0	1	0	0	0	1	0	1	0	0	0	0	1	1	0	17	0	0	0	18	0	0	0	0	0	0	0	0	58	0	0	0	0	58	78	
06:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	25	0	0	0	0	0	0	0	0	77	0	0	0	0	77	102	
06:45:00	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	36	0	0	0	36	0	0	0	0	0	0	0	0	80	0	0	0	0	80	117	349
07:00:00	0	0	1	0	0	1	1	0	1	0	0	0	0	1	1	0	34	0	0	0	35	0	0	0	0	0	0	0	0	82	0	0	0	0	82	119	416
07:15:00	0	0	2	0	0	1	2	0	0	0	0	0	0	0	0	0	44	0	0	0	44	0	0	0	0	0	0	0	1	123	0	0	0	0	124	170	508
07:30:00	0	0	1	0	0	0	1	0	1	0	0	0	0	1	1	2	49	2	0	0	54	0	0	0	0	0	0	0	0	138	0	0	0	0	138	194	600
07:45:00	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	1	97	0	0	0	98	0	0	0	0	0	0	0	0	138	0	0	0	0	138	237	720
08:00:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	115	0	0	0	115	0	0	0	0	0	0	0	0	148	1	1	0	0	150	265	866
08:15:00	0	0	0	0	0	1	0	0	0	0	2	0	0	2	0	0	116	2	0	0	118	0	0	0	0	0	0	0	0	147	0	1	0	0	148	268	964
08:30:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	120	3	0	0	124	0	0	0	0	0	0	0	1	147	0	0	0	0	148	272	1042
08:45:00	0	0	0	0	0	4	0	0	1	0	1	0	0	2	3	1	151	0	0	0	155	0	0	0	0	0	0	0	0	121	1	1	0	0	123	280	1085
BREAK																																					
15:00:00	0	0	2	0	0	1	2	1	2	0	5	0	1	8	4	1	163	2	0	0	170	0	0	0	0	0	0	0	2	138	1	0	0	0	141	321	
15:15:00	0	0	1	0	0	2	1	0	3	0	7	0	1	10	4	0	190	3	0	0	197	0	0	0	0	0	0	0	1	124	3	0	0	0	128	336	
15:30:00	0	0	0	0	0	0	0	0	0	0	3	0	0	3	5	0	189	1	0	0	195	0	0	0	0	0	0	0	0	127	1	0	0	0	128	326	
15:45:00	0	0	0	0	0	2	0	0	4	0	4	0	1	8	6	0	191	1	0	0	198	0	0	0	0	0	0	0	0	124	0	0	0	0	124	330	1313
16:00:00	0	0	0	0	0	3	0	0	4	0	2	0	0	6	4	1	199	3	0	0	207	0	0	0	0	0	0	0	2	115	0	0	0	0	117	330	1322
16:15:00	0	0	0	0	0	6	0	0	1	0	1	0	0	2	6	0	250	0	0	0	256	0	0	0	0	0	0	0	0	107	0	0	0	0	107	365	1351
16:30:00	0	0	0	0	0	5	0	0	1	0	3	0	0	4	7	2	239	1	0	0	249	0	0	0	0	0	0	0	1	119	1	0	0	0	121	374	1399
16:45:00	0	0	0	0	0	2	0	0	5	0	5	0	0	10	7	0	252	0	0	0	259	0	0	0	0	0	0	0	1	101	1	0	0	0	103	372	1441
17:00:00	0	0	2	0	0	1	2	0	8	0	7	0	0	15	8	0	228	0	0	0	236	0	0	0	0	0	0	0	0	119	0	0	0	0	119	372	1483
17:15:00	0	0	0	0	0	4	0	0	3	0	5	0	0	8	8	0	250	2	0	0	260	0	0	0	0	0	0	0	0	125	3	0	0	0	128	396	1514
17:30:00	0	0	0	0	0	2	0	0	3	0	8	0	0	11	10	0	216	2	0	0	228	0	0	0	0	0	0	0	0	102	2	0	0	0	104	343	1483
17:45:00	0	0	0	0	0	3	0	0	4	0	11	0	0	15	23	0	208	1	2	0	234	0	0	0	0	0	0	0	0	99	2	0	0	0	101	350	1461
Grand Total	0	0	14	0	0	42	14	1	42	0	64	0	3	107	98	10	3389	23	2	0	3522	0	0	0	0	0	0	0	10	2695	17	4	0	0	2726	**6369**	-
Approach%	0%	0%	100%	0%	0%		-	0.9%	39.3%	0%	59.8%	0%		-	2.8%	0.3%	96.2%	0.7%	0.1%		-	0%	0%	0%	0%	0%		-	0.4%	98.9%	0.6%	0.1%	0%		-	**-**	-
Totals %	0%	0%	0.2%	0%	0%		0.2%	0%	0.7%	0%	1%	0%		1.7%	1.5%	0.2%	53.2%	0.4%	0%		55.3%	0%	0%	0%	0%	0%		0%	0.2%	42.3%	0.3%	0.1%	0%		42.8%	**-**	-
Heavy	0	0	0	0	0		-	0	0	0	0	0		-	0	0	0	0	0		-	0	0	0	0	0		-	0	1	0	0	0		-	**-**	-
Heavy %	0%	0%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	0%	0%	0%	0%	0%		-	**-**	-
Bicycles	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	-	-	-	-	-		-	**-**	-

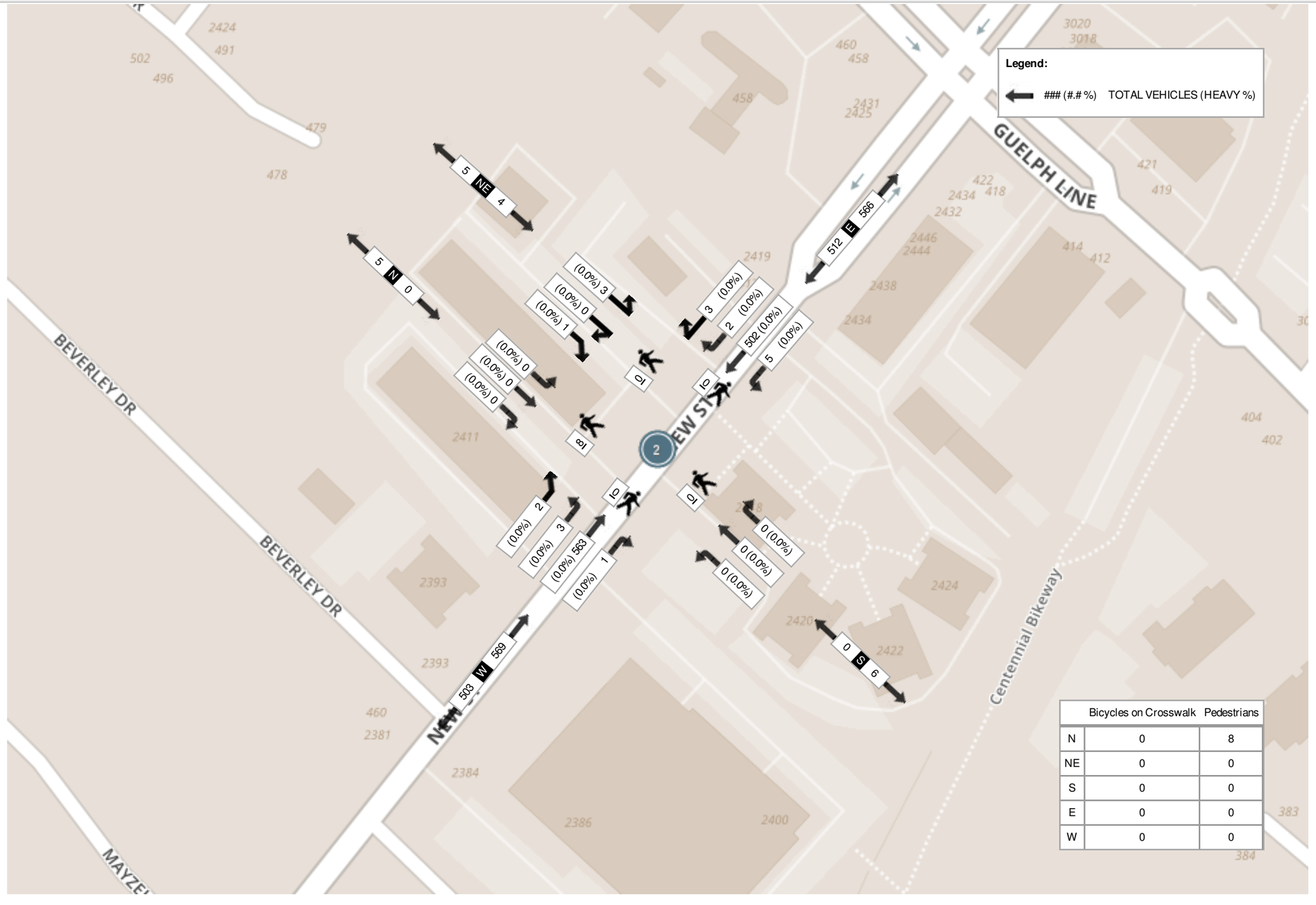
Peak Hour: 08:00 AM - 09:00 AM Weather: Haze (-21.96 °C)

Start Time	N Approach 2421 NEW ST (WEST ACCESSES)							NE Approach Southwestbound Approach							E Approach NEW ST							S Approach SOUTH LEG DRIVEWAY							W Approach NEW ST							Int. Total (15 min)
	Right	Thru	Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Bear Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Bear Left	Left	U-Turn	Peds	Approach Total	
08:00:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	115	0	0	0	115	0	0	0	0	0	0	0	0	148	1	1	0	0	150	265
08:15:00	0	0	0	0	0	1	0	0	0	0	2	0	0	2	0	0	116	2	0	0	118	0	0	0	0	0	0	0	0	147	0	1	0	0	148	268
08:30:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	120	3	0	0	124	0	0	0	0	0	0	0	1	147	0	0	0	0	148	272
08:45:00	0	0	0	0	0	4	0	0	1	0	1	0	0	2	3	1	151	0	0	0	155	0	0	0	0	0	0	0	0	121	1	1	0	0	123	280
Grand Total	0	0	0	0	0	8	0	0	1	0	3	0	0	4	3	2	502	5	0	0	512	0	0	0	0	0	0	0	1	563	2	3	0	0	569	**1085**
Approach%	0%	0%	0%	0%	0%		-	0%	25%	0%	75%	0%		-	0.6%	0.4%	98%	1%	0%		-	0%	0%	0%	0%	0%		-	0.2%	98.9%	0.4%	0.5%	0%		-	-
Totals %	0%	0%	0%	0%	0%		0%	0%	0.1%	0%	0.3%	0%		0.4%	0.3%	0.2%	46.3%	0.5%	0%		47.2%	0%	0%	0%	0%	0%		0%	0.1%	51.9%	0.2%	0.3%	0%		52.4%	-
PHF	0	0	0	0	0		0	0	0.25	0	0.38	0		0.5	0.25	0.5	0.83	0.42	0		0.83	0	0	0	0	0		0	0.25	0.95	0.5	0.75	0		0.95	-
Heavy	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	-
Heavy %	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	-
Lights	0	0	0	0	0		0	0	1	0	3	0		4	3	2	483	5	0		493	0	0	0	0	0		0	1	548	2	2	0		553	-
Lights %	0%	0%	0%	0%	0%		0%	0%	100%	0%	100%	0%		100%	100%	100%	96.2%	100%	0%		96.3%	0%	0%	0%	0%	0%		0%	100%	97.3%	100%	66.7%	0%		97.2%	-
Mediums	0	0	0	0	0		0	0	0	0	0	0		0	0	0	19	0	0		19	0	0	0	0	0		0	0	15	0	1	0		16	-
Mediums %	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	3.8%	0%	0%		3.7%	0%	0%	0%	0%	0%		0%	0%	2.7%	0%	33.3%	0%		2.8%	-
Articulated Trucks	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	-	8	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	-	100%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-

Peak Hour: 04:30 PM - 05:30 PM Weather: Haze (-14.78 °C)

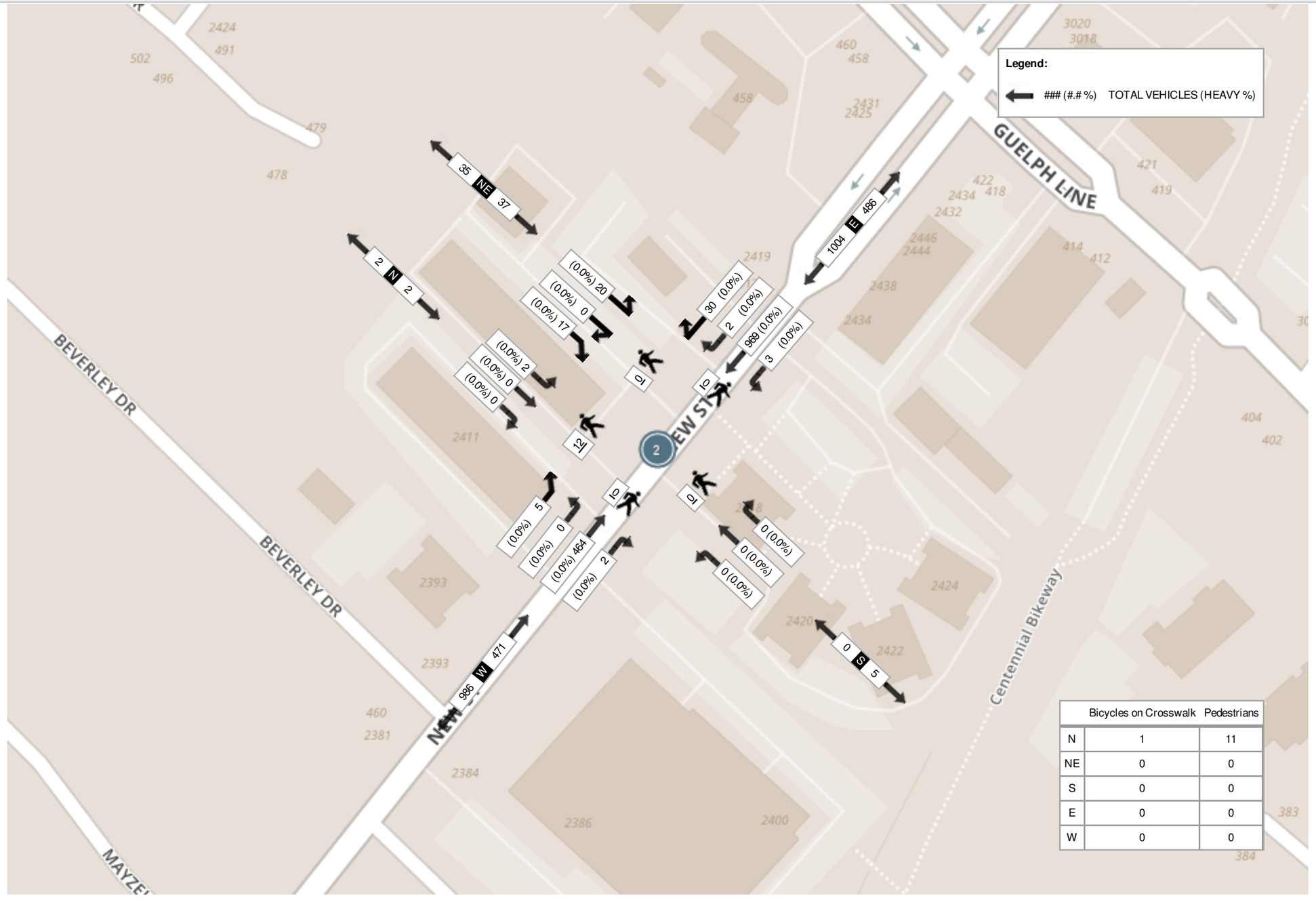
Start Time	N Approach 2421 NEW ST (WEST ACCESSES)							NE Approach Southwestbound Approach							E Approach NEW ST							S Approach SOUTH LEG DRIVEWAY							W Approach NEW ST							Int. Total (15 min)
	Right	Thru	Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Bear Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Bear Left	Left	U-Turn	Peds	Approach Total	
16:30:00	0	0	0	0	0	5	0	0	1	0	3	0	0	4	7	2	239	1	0	0	249	0	0	0	0	0	0	0	1	119	1	0	0	0	121	374
16:45:00	0	0	0	0	0	2	0	0	5	0	5	0	0	10	7	0	252	0	0	0	259	0	0	0	0	0	0	0	1	101	1	0	0	0	103	372
17:00:00	0	0	2	0	0	1	2	0	8	0	7	0	0	15	8	0	228	0	0	0	236	0	0	0	0	0	0	0	0	119	0	0	0	0	119	372
17:15:00	0	0	0	0	0	4	0	0	3	0	5	0	0	8	8	0	250	2	0	0	260	0	0	0	0	0	0	0	0	125	3	0	0	0	128	396
Grand Total	0	0	2	0	0	12	2	0	17	0	20	0	0	37	30	2	969	3	0	0	1004	0	0	0	0	0	0	0	2	464	5	0	0	0	471	**1514**
Approach%	0%	0%	100%	0%	0%		-	0%	45.9%	0%	54.1%	0%		-	3%	0.2%	96.5%	0.3%	0%		-	0%	0%	0%	0%	0%		-	0.4%	98.5%	1.1%	0%	0%		-	-
Totals %	0%	0%	0.1%	0%	0%		0.1%	0%	1.1%	0%	1.3%	0%		2.4%	2%	0.1%	64%	0.2%	0%		66.3%	0%	0%	0%	0%	0%		0%	0.1%	30.6%	0.3%	0%	0%		31.1%	-
PHF	0	0	0.25	0	0		0.25	0	0.53	0	0.71	0		0.62	0.94	0.25	0.96	0.38	0		0.97	0	0	0	0	0		0	0.5	0.93	0.42	0	0		0.92	-
Heavy	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	-
Heavy %	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	-
Lights	0	0	2	0	0		2	0	17	0	20	0		37	30	2	964	3	0		999	0	0	0	0	0		0	2	459	5	0	0		466	-
Lights %	0%	0%	100%	0%	0%		100%	0%	100%	0%	100%	0%		100%	100%	100%	99.5%	100%	0%		99.5%	0%	0%	0%	0%	0%		0%	100%	98.9%	100%	0%	0%		98.9%	-
Mediums	0	0	0	0	0		0	0	0	0	0	0		0	0	0	5	0	0		5	0	0	0	0	0		0	0	5	0	0	0		5	-
Mediums %	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0.5%	0%	0%		0.5%	0%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%	0%		1.1%	-
Articulated Trucks	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	-	11	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	-	91.7%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	-	-	1	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	-	8.3%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-	-	-	-	-	0%		-

Peak Hour: 08:00 AM - 09:00 AM Weather: Haze (-21.96 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	8
NE	0	0
S	0	0
E	0	0
W	0	0

Peak Hour: 04:30 PM - 05:30 PM Weather: Haze (-14.78 °C)



	Bicycles on Crosswalk	Pedestrians
N	1	11
NE	0	0
S	0	0
E	0	0
W	0	0

Turning Movement Count (3 . NEW ST & 2431 NEW ST (EAST ACCESSES))

Start Time	N Approach 2431 NEW ST (EAST ACCESSES)						NE Approach Southwestbound Approach						E Approach NEW ST						W Approach NEW ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	Hard Left N:NE	U-Turn N:N	Peds N:	Approach Total	Hard Right NE:N	Bear Right NE:W	Hard Left NE:E	U-Turn NE:NE	Peds NE:	Approach Total	Hard Right E:NE	Right E:N	Thru E:W	U-Turn E:E	Peds E:	Approach Total	Thru W:E	Bear Left W:NE	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	0	0	0	0	1	0	0	0	0	0	1	0	0	0	11	0	0	11	37	0	0	0	0	37	48	
06:15:00	0	0	0	0	1	0	0	0	0	0	1	0	0	0	20	0	0	20	58	0	0	0	0	58	78	
06:30:00	0	0	0	0	2	0	0	0	0	0	2	0	0	0	25	0	0	25	76	0	0	0	0	76	101	
06:45:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	39	0	0	39	80	0	0	0	0	80	119	346
07:00:00	0	0	0	0	1	0	0	0	0	0	1	0	0	0	35	0	0	35	83	0	0	0	0	83	118	416
07:15:00	0	0	0	0	1	0	0	0	0	0	1	0	0	0	46	0	0	46	120	0	0	0	0	120	166	504
07:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52	0	0	52	138	0	0	0	0	138	190	593
07:45:00	0	0	0	0	1	0	0	0	0	0	1	0	0	0	96	0	0	96	139	0	0	0	0	139	235	709
08:00:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	119	0	0	119	146	0	0	0	0	146	265	856
08:15:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	120	0	0	120	149	0	0	0	0	149	269	959
08:30:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	123	0	0	123	145	0	0	0	0	145	268	1037
08:45:00	0	0	0	0	5	0	0	0	0	0	0	0	0	0	158	1	0	159	122	0	0	0	0	122	281	1083
BREAK																										
15:00:00	0	0	0	0	6	0	0	0	0	0	5	0	0	0	174	2	0	176	144	0	0	0	0	144	320	
15:15:00	0	0	0	0	3	0	0	0	0	0	3	0	0	0	200	2	0	202	130	0	0	0	0	130	332	
15:30:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198	1	0	199	126	0	0	0	0	126	325	
15:45:00	0	0	0	0	2	0	0	0	0	0	2	0	0	0	197	1	0	198	128	0	0	0	0	128	326	1303
16:00:00	0	0	0	0	2	0	0	0	0	0	2	0	0	0	217	0	0	217	116	0	0	0	0	116	333	1316
16:15:00	0	0	0	0	4	0	0	0	0	0	3	0	0	0	259	2	0	261	106	0	0	0	0	106	367	1351
16:30:00	0	0	0	0	8	0	0	0	0	0	9	0	0	0	242	0	0	242	121	0	0	0	0	121	363	1389
16:45:00	0	0	0	0	3	0	0	0	0	0	2	0	0	0	255	2	0	257	107	0	0	0	0	107	364	1427
17:00:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	247	0	0	247	122	0	0	0	0	122	369	1463
17:15:00	0	0	0	0	4	0	0	0	0	0	6	0	0	0	264	0	0	264	132	0	0	0	0	132	396	1492
17:30:00	0	0	0	0	2	0	0	0	0	0	1	0	0	0	233	0	0	233	109	0	0	0	0	109	342	1471
17:45:00	0	0	0	0	4	0	0	0	0	0	4	0	0	0	229	0	0	229	110	0	0	0	0	110	339	1446
Grand Total	0	0	0	0	55	0	0	0	0	0	46	0	0	0	3559	11	0	3570	2744	0	0	0	0	2744	**6314**	-
Approach%	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	99.7%	0.3%		-	100%	0%	0%	0%		-	-	-
Totals %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	56.4%	0.2%		56.5%	43.5%	0%	0%	0%		43.5%	-	-
Heavy	0	0	0	0		-	0	0	0	0		-	0	0	0	0		-	1	0	0	0		-	-	-
Heavy %	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

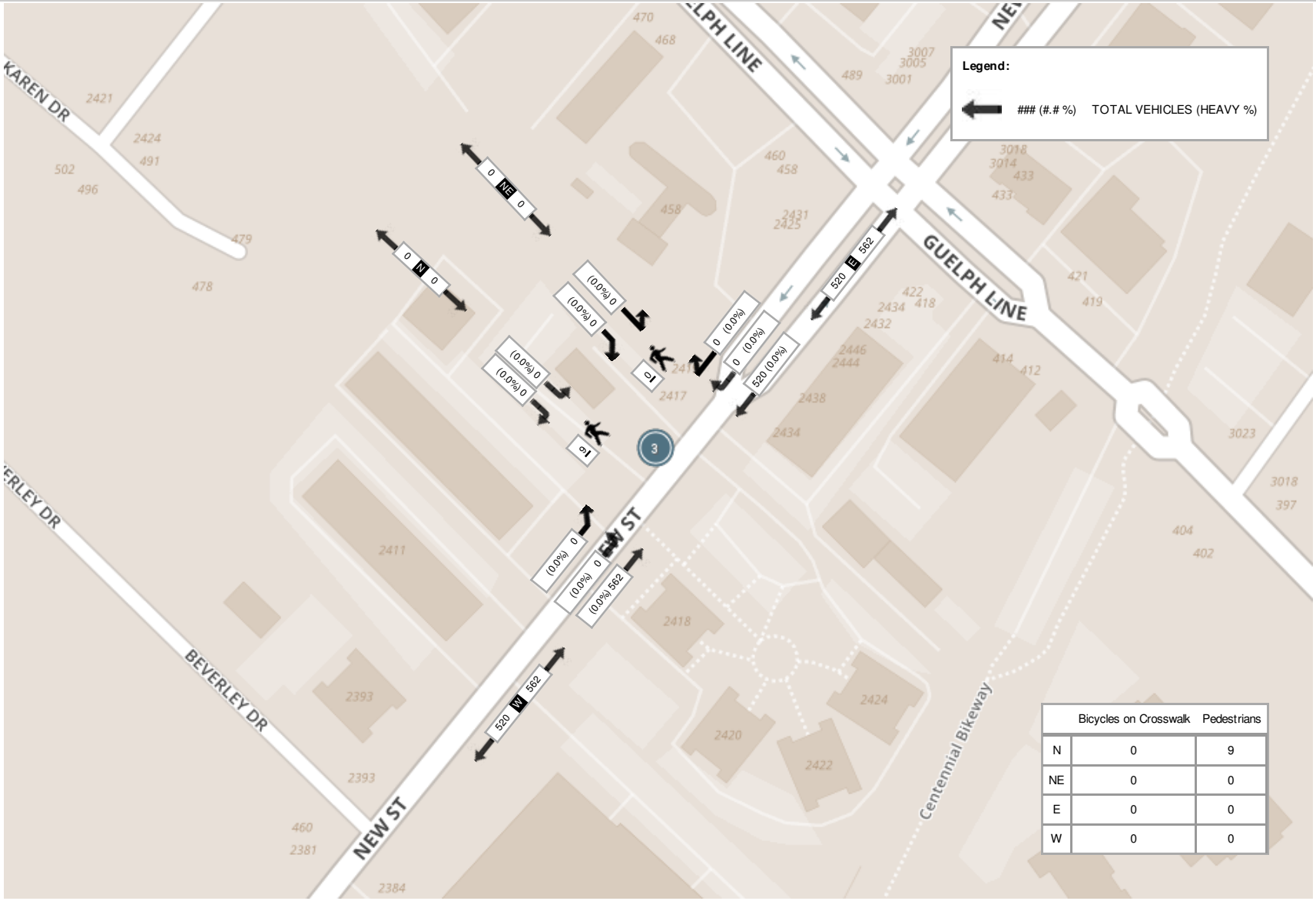
Peak Hour: 08:00 AM - 09:00 AM Weather: Haze (-21.96 °C)

Start Time	N Approach 2431 NEW ST (EAST ACCESSES)						NE Approach Southwestbound Approach						E Approach NEW ST						W Approach NEW ST						Int. Total (15 min)
	Right	Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Bear Right	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Right	Thru	U-Turn	Peds	Approach Total	Thru	Bear Left	Left	U-Turn	Peds	Approach Total	
08:00:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	119	0	0	119	146	0	0	0	0	146	265
08:15:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	120	0	0	120	149	0	0	0	0	149	269
08:30:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	123	0	0	123	145	0	0	0	0	145	268
08:45:00	0	0	0	0	5	0	0	0	0	0	0	0	0	0	158	1	0	159	122	0	0	0	0	122	281
Grand Total	0	0	0	0	9	0	0	0	0	0	0	0	0	0	520	1	0	521	562	0	0	0	0	562	**1083**
Approach%	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	99.8%	0.2%		-	100%	0%	0%	0%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	48%	0.1%		48.1%	51.9%	0%	0%	0%		51.9%	**-**
PHF	0	0	0	0		0	0	0	0	0		0	0	0	0.82	0.25		0.82	0.94	0	0	0		0.94	**-**
Heavy	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Lights	0	0	0	0		0	0	0	0	0		0	0	0	501	1		502	547	0	0	0		547	**-**
Lights %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	96.3%	100%		96.4%	97.3%	0%	0%	0%		97.3%	**-**
Mediums	0	0	0	0		0	0	0	0	0		0	0	0	19	0		19	15	0	0	0		15	**-**
Mediums %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	3.7%	0%		3.6%	2.7%	0%	0%	0%		2.7%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	9	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	100%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 04:30 PM - 05:30 PM Weather: Haze (-14.78 °C)

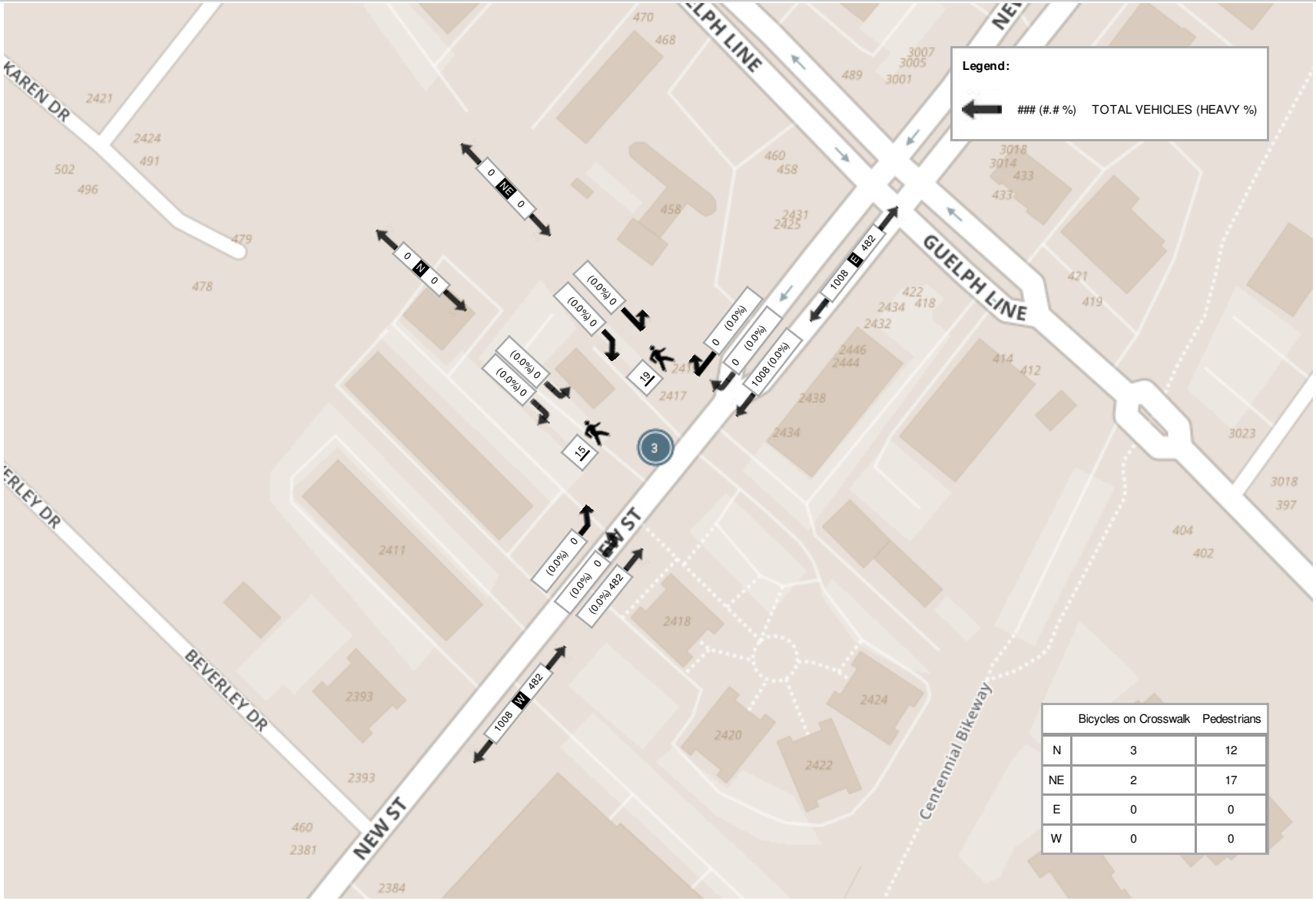
Start Time	N Approach 2431 NEW ST (EAST ACCESSES)						NE Approach Southwestbound Approach						E Approach NEW ST						W Approach NEW ST						Int. Total (15 min)
	Right	Left	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Bear Right	Hard Left	U-Turn	Peds	Approach Total	Hard Right	Right	Thru	U-Turn	Peds	Approach Total	Thru	Bear Left	Left	U-Turn	Peds	Approach Total	
16:30:00	0	0	0	0	8	0	0	0	0	0	9	0	0	0	242	0	0	242	121	0	0	0	0	121	363
16:45:00	0	0	0	0	3	0	0	0	0	0	2	0	0	0	255	2	0	257	107	0	0	0	0	107	364
17:00:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	247	0	0	247	122	0	0	0	0	122	369
17:15:00	0	0	0	0	4	0	0	0	0	0	6	0	0	0	264	0	0	264	132	0	0	0	0	132	396
Grand Total	0	0	0	0	15	0	0	0	0	0	19	0	0	0	1008	2	0	1010	482	0	0	0	0	482	**1492**
Approach%	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	99.8%	0.2%		-	100%	0%	0%	0%		-	**-**
Totals %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	67.6%	0.1%		67.7%	32.3%	0%	0%	0%		32.3%	**-**
PHF	0	0	0	0		0	0	0	0	0		0	0	0	0.95	0.25		0.96	0.91	0	0	0		0.91	**-**
Heavy	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Lights	0	0	0	0		0	0	0	0	0		0	0	0	1003	2		1005	476	0	0	0		476	**-**
Lights %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	99.5%	100%		99.5%	98.8%	0%	0%	0%		98.8%	**-**
Mediums	0	0	0	0		0	0	0	0	0		0	0	0	5	0		5	6	0	0	0		6	**-**
Mediums %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0.5%	0%		0.5%	1.2%	0%	0%	0%		1.2%	**-**
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	12	-	-	-	-	-	17	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	35.3%		-	-	-	-	50%		-	-	-	-	0%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	8.8%		-	-	-	-	5.9%		-	-	-	-	0%		-	-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM Weather: Haze (-21.96 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	9
NE	0	0
E	0	0
W	0	0

Peak Hour: 04:30 PM - 05:30 PM Weather: Haze (-14.78 °C)



	Bicycles on Crosswalk	Pedestrians
N	3	12
NE	2	17
E	0	0
W	0	0

Turning Movement Count (1 . NEW ST & GUELPH LINE)

Start Time	N Approach GUELPH LINE						E Approach NEW ST						S Approach GUELPH LINE						W Approach NEW ST						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
06:00:00	5	6	6	0	1	17	9	5	3	0	0	17	7	22	1	0	0	30	1	20	16	0	1	37	101	
06:15:00	5	7	8	0	1	20	8	10	0	0	1	18	6	25	2	0	0	33	0	32	27	0	3	59	130	
06:30:00	4	9	18	0	2	31	7	21	4	0	0	32	7	42	2	0	0	51	0	43	33	0	1	76	190	
06:45:00	13	17	13	0	0	43	12	25	3	0	0	40	8	48	1	0	0	57	2	61	22	0	0	85	225	646
07:00:00	11	13	20	0	1	44	10	21	7	0	1	38	12	34	1	0	0	47	5	46	30	0	0	81	210	755
07:15:00	12	20	26	0	1	58	15	28	5	0	1	48	13	57	2	0	1	72	1	77	42	0	1	120	298	923
07:30:00	16	21	35	0	0	72	22	33	10	0	1	65	20	47	3	0	1	70	4	91	37	0	2	132	339	1072
07:45:00	27	26	59	0	1	112	42	61	7	0	0	110	9	67	10	0	0	86	3	86	51	0	2	140	448	1295
08:00:00	33	32	40	0	1	105	26	70	17	0	1	113	22	59	11	0	1	92	6	104	42	0	1	152	462	1547
08:15:00	36	39	48	0	0	123	35	78	11	0	0	124	15	64	9	0	0	88	5	92	61	0	1	158	493	1742
08:30:00	40	59	53	1	0	153	37	75	14	0	2	126	19	66	13	0	1	98	9	92	52	0	2	153	530	1933
08:45:00	60	44	43	0	2	147	28	87	15	0	0	130	13	72	9	0	0	94	11	62	39	0	0	112	483	1968
BREAK																										
15:00:00	56	59	35	0	4	150	44	106	13	0	1	163	13	61	7	0	1	81	8	82	66	0	1	156	550	
15:15:00	66	53	22	0	1	141	48	124	15	0	2	187	14	53	9	0	2	76	8	84	39	0	1	131	535	
15:30:00	47	52	34	0	0	133	45	139	11	0	1	195	6	54	10	0	1	70	7	84	36	0	0	127	525	
15:45:00	46	54	33	0	3	133	61	143	19	0	0	223	17	57	9	0	0	83	8	70	56	0	2	134	573	2183
16:00:00	55	59	49	0	2	163	48	136	17	0	0	201	16	51	15	0	0	82	9	77	35	0	1	121	567	2200
16:15:00	59	62	33	0	1	154	66	200	23	0	1	289	18	67	10	0	0	95	5	65	38	0	1	108	646	2311
16:30:00	50	50	32	0	5	132	49	182	25	0	2	256	11	63	11	1	0	86	6	75	41	0	1	122	596	2382
16:45:00	60	53	39	0	2	152	69	188	23	0	1	280	7	73	10	0	1	90	9	66	36	0	4	111	633	2442
17:00:00	57	61	36	0	1	154	64	173	20	0	4	257	12	78	10	0	2	100	6	76	40	0	4	122	633	2508
17:15:00	57	52	30	0	3	139	58	189	16	0	2	263	9	64	8	0	0	81	12	85	40	0	2	137	620	2482
17:30:00	59	56	26	0	2	141	55	157	24	0	0	236	10	56	8	0	0	74	8	69	32	0	2	109	560	2446
17:45:00	69	59	29	0	1	157	49	142	23	0	3	214	14	45	10	0	6	69	8	64	36	0	2	108	548	2361
Grand Total	943	963	767	1	35	2674	907	2393	325	0	24	3625	298	1325	181	1	17	1805	141	1703	947	0	35	2791	**10895**	-
Approach%	35.3%	36%	28.7%	0%		-	25%	66%	9%	0%		-	16.5%	73.4%	10%	0.1%		-	5.1%	61%	33.9%	0%		-	-	-
Totals %	8.7%	8.8%	7%	0%		24.5%	8.3%	22%	3%	0%		33.3%	2.7%	12.2%	1.7%	0%		16.6%	1.3%	15.6%	8.7%	0%		25.6%	-	-
Heavy	0	3	0	0		-	0	0	0	0		-	0	0	0	0		-	0	1	0	0		-	-	-
Heavy %	0%	0.3%	0%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	-	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-

Peak Hour: 08:00 AM - 09:00 AM Weather: Haze (-21.96 °C)

Start Time	N Approach GUELPH LINE						E Approach NEW ST						S Approach GUELPH LINE						W Approach NEW ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	33	32	40	0	1	105	26	70	17	0	1	113	22	59	11	0	1	92	6	104	42	0	1	152	462
08:15:00	36	39	48	0	0	123	35	78	11	0	0	124	15	64	9	0	0	88	5	92	61	0	1	158	493
08:30:00	40	59	53	1	0	153	37	75	14	0	2	126	19	66	13	0	1	98	9	92	52	0	2	153	530
08:45:00	60	44	43	0	2	147	28	87	15	0	0	130	13	72	9	0	0	94	11	62	39	0	0	112	483
Grand Total	169	174	184	1	3	528	126	310	57	0	3	493	69	261	42	0	2	372	31	350	194	0	4	575	**1968**
Approach%	32%	33%	34.8%	0.2%		-	25.6%	62.9%	11.6%	0%		-	18.5%	70.2%	11.3%	0%		-	5.4%	60.9%	33.7%	0%		-	**-**
Totals %	8.6%	8.8%	9.3%	0.1%		26.8%	6.4%	15.8%	2.9%	0%		25.1%	3.5%	13.3%	2.1%	0%		18.9%	1.6%	17.8%	9.9%	0%		29.2%	**-**
PHF	0.7	0.74	0.87	0.25		0.86	0.85	0.89	0.84	0		0.95	0.78	0.91	0.81	0		0.95	0.7	0.84	0.8	0		0.91	**-**
Heavy	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Heavy %	0%	0.6%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Lights	158	166	181	1		506	121	303	55	0		479	67	256	40	0		363	29	339	191	0		559	**-**
Lights %	93.5%	95.4%	98.4%	100%		95.8%	96%	97.7%	96.5%	0%		97.2%	97.1%	98.1%	95.2%	0%		97.6%	93.5%	96.9%	98.5%	0%		97.2%	**-**
Mediums	11	7	3	0		21	5	7	2	0		14	2	5	2	0		9	2	11	3	0		16	**-**
Mediums %	6.5%	4%	1.6%	0%		4%	4%	2.3%	3.5%	0%		2.8%	2.9%	1.9%	4.8%	0%		2.4%	6.5%	3.1%	1.5%	0%		2.8%	**-**
Articulated Trucks	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Articulated Trucks %	0%	0.6%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	3	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	4	-	**-**
Pedestrians%	-	-	-	-	25%		-	-	-	-	25%		-	-	-	-	16.7%		-	-	-	-	33.3%		**-**

Peak Hour: 04:15 PM - 05:15 PM Weather: Haze (-14.78 °C)

Start Time	N Approach GUELPH LINE						E Approach NEW ST						S Approach GUELPH LINE						W Approach NEW ST						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:15:00	59	62	33	0	1	154	66	200	23	0	1	289	18	67	10	0	0	95	5	65	38	0	1	108	646
16:30:00	50	50	32	0	5	132	49	182	25	0	2	256	11	63	11	1	0	86	6	75	41	0	1	122	596
16:45:00	60	53	39	0	2	152	69	188	23	0	1	280	7	73	10	0	1	90	9	66	36	0	4	111	633
17:00:00	57	61	36	0	1	154	64	173	20	0	4	257	12	78	10	0	2	100	6	76	40	0	4	122	633
Grand Total	226	226	140	0	9	592	248	743	91	0	8	1082	48	281	41	1	3	371	26	282	155	0	10	463	**2508**
Approach%	38.2%	38.2%	23.6%	0%		-	22.9%	68.7%	8.4%	0%		-	12.9%	75.7%	11.1%	0.3%		-	5.6%	60.9%	33.5%	0%		-	-
Totals %	9%	9%	5.6%	0%		23.6%	9.9%	29.6%	3.6%	0%		43.1%	1.9%	11.2%	1.6%	0%		14.8%	1%	11.2%	6.2%	0%		18.5%	-
PHF	0.94	0.91	0.9	0		0.96	0.9	0.93	0.91	0		0.94	0.67	0.9	0.93	0.25		0.93	0.72	0.93	0.95	0		0.95	-
Heavy	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Lights	223	224	138	0		585	242	736	90	0		1068	48	277	41	1		367	26	278	154	0		458	-
Lights %	98.7%	99.1%	98.6%	0%		98.8%	97.6%	99.1%	98.9%	0%		98.7%	100%	98.6%	100%	100%		98.9%	100%	98.6%	99.4%	0%		98.9%	-
Mediums	3	2	2	0		7	6	7	1	0		14	0	4	0	0		4	0	4	1	0		5	-
Mediums %	1.3%	0.9%	1.4%	0%		1.2%	2.4%	0.9%	1.1%	0%		1.3%	0%	1.4%	0%	0%		1.1%	0%	1.4%	0.6%	0%		1.1%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	9	-	-	-	-	-	8	-	-	-	-	-	3	-	-	-	-	-	10	-	-
Pedestrians%	-	-	-	-	30%		-	-	-	-	26.7%		-	-	-	-	10%		-	-	-	-	33.3%		-

Peak Hour: 08:00 AM - 09:00 AM Weather: Haze (-21.96 °C)



Peak Hour: 04:15 PM - 05:15 PM Weather: Haze (-14.78 °C)



Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
New Street @ Guelph Line	220	2	ACS/3	172.22.81.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		EN
4	17	9	1	Increased Ped timings (Cycle length increased and redistribution of timings)	

PHASE DESCRIPTION

Ph1	SBL-Guelph Ln	Ph5	NBL-Guelph Ln
Ph2	NB - Guelph Ln	Ph6	SB - Guelph Ln
Ph3	WBL- New St	Ph7	EBL- New St
Ph4	EB- New St	Ph8	WB- New St

CONFIGURATION (PHASE SEQ): PHASE IN USE/EXCLUSIVE PED (MM) *- 1 - 2

Phase:	1	2	3	4	5	6	7	8
Phase in Use	X	X	X	X	X	X	X	X
Exclusive PED								

CONTROLLER TIMING DATA - VEHICLE TIMING * - 2 - 1

Timing Plan: 1	Phase: 1	2	3	4	5	6	7	8
Minimum Green	6	8	6	8	6	8	6	8
Walk		17		17		17		17
Ped. Clearance		19		19		19		19
Pedestrian Carry Over								
Vehicle Extension	3	3	3	3	3	3	5	3
MAX 1	10	30	10	25	10	30	10	25
MAX 2	10	30	30	25	10	30	10	25
Yellow Change	3	4	3	4	3	4	3	4
Red Clearance	0	2	0	2	0	2	0	2
Phase Minimum:	9	43	9	43	9	43	9	43

PHASE DATA - VEHICLE AND PEDESTRIAN RECALLS * - 2 - 8

Phase:	1	2	3	4	5	6	7	8
Lock Detector								
Vehicle Recall								
Pedestrian Recall		X				X		
MAX Recall		X				X		
Min Recall								

COORDINATION: COORDINATOR PATTERN, SPLIT PATTERN * - 3 - 2, - 3 - 3

Coordinator	Cycle	Offset (sec)	Timing Plan	Split	Phases (sec)							
					1	2	3	4	5	6	7	8
1	110	48	1	1	12	43	12	43	12	43	12	43
2	110	80	1	2	12	43	12	43	12	43	12	43
3	110	25	1	3	12	43	12	43	12	43	12	43
4	110	8	1	4	12	43	12	43	12	43	12	43
10	0	0	1	10	0	0	0	0	0	0	0	0

TIME BASE: ACTION PLAN, DAY PLAN * - 5 - 2, - 5 - 3, -5 - 4

Day Plan	Sched. #	Action Plan	Time Period	Pattern	Timing Plan
1	1	1	07:00	1	1
1	1	2	09:00	2	1
1	1	3	15:00	3	1
1	1	4	19:00	4	1
1	1	10	22:00	254	1
2	2	1	07:00	1	1
2	2	10	22:00	254	1
3	3	1	08:30	1	1
3	3	10	20:30	254	1

Schedule 1 = Day Plan 1
Schedule 2 = Day Plan 2
Schedule 3 = Day Plan 3

Day Plan 1 (Weekday)
Day Plan 2 (Saturday)
Day Plan 3 (Sunday, Holidays)

Action Plan 10 = free (254)

Special Programming:

TIME BASE DATA - TIME OF YEAR EVENTS * - 5 - 5

Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

APPENDIX E

Level of Service Definitions

Level of Service Definitions

Two-Way Stop Controlled Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Large and frequent gaps in traffic on the main roadway. Queuing on the minor street is rare.
B	> 10 and ≤ 15	VERY GOOD. Many gaps exist in traffic on the main roadway. Queuing on the minor street is minimal.
C	> 15 and ≤ 25	GOOD. Fewer gaps exist in traffic on the main roadway. Delay on minor approach becomes more noticeable.
D	> 25 and ≤ 35	FAIR. Infrequent and shorter gaps in traffic on the main roadway. Queue lengths develop on the minor street.
E	> 35 and ≤ 50	POOR. Very infrequent gaps in traffic on the main roadway. Queue lengths become noticeable.
F	> 50	UNSATISFACTORY. Very few gaps in traffic on the main roadway. Excessive delay with significant queue lengths on the minor street.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

Level of Service Definitions

Signalized Intersections

Level of Service	Control Delay per Vehicle (seconds)	Interpretation
A	≤ 10	EXCELLENT. Extremely favourable progression with most vehicles arriving during the green phase. Most vehicles do not stop and short cycle lengths may contribute to low delay.
B	> 10 and ≤ 20	VERY GOOD. Very good progression and/or short cycle lengths with slightly more vehicles stopping than LOS "A" causing slightly higher levels of average delay.
C	> 20 and ≤ 35	GOOD. Fair progression and longer cycle lengths lead to a greater number of vehicles stopping than LOS "B".
D	> 35 and ≤ 55	FAIR. Congestion becomes noticeable with higher average delays resulting from a combination of long cycle lengths, high volume-to-capacity ratios and unfavourable progression.
E	> 55 and ≤ 80	POOR. Lengthy delays values are indicative of poor progression, long cycle lengths and high volume-to-capacity ratios. Individual cycle failures are common with individual movement failures also common.
F	> 80	UNSATISFACTORY. Indicative of oversaturated conditions with vehicular demand greater than the capacity of the intersection.

Adapted from Highway Capacity Manual 2000, Transportation Research Board

APPENDIX F

Detailed Capacity Analysis Worksheets



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	214	403	67	329	143	43	377	211	403
v/c Ratio	0.54	0.49	0.20	0.41	0.26	0.10	0.34	0.49	0.31
Control Delay	24.0	29.9	17.6	30.1	5.6	16.5	26.4	22.4	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.0	29.9	17.6	30.1	5.6	16.5	26.4	22.4	13.7
Queue Length 50th (m)	28.3	52.6	8.1	42.4	0.0	5.1	30.9	27.9	17.5
Queue Length 95th (m)	45.2	76.3	16.4	61.7	13.8	11.7	44.2	44.6	31.0
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	393	828	352	794	559	445	1099	432	1283
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.49	0.19	0.41	0.26	0.10	0.34	0.49	0.31

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	349	34	64	313	136	41	294	65	200	203	180
Future Volume (veh/h)	203	349	34	64	313	136	41	294	65	200	203	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1824	1808	1900	1721	1845	1721	1737	1833	1900	1788	1817	1900
Adj Flow Rate, veh/h	214	367	36	67	329	143	43	309	68	211	214	189
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	6	3	6	5	4	4	2	6	6
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	418	1003	98	388	831	482	393	956	207	448	672	563
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.04	0.34	0.34	0.08	0.38	0.38
Ln Grp Delay, s/veh	22.0	27.5	26.8	22.2	29.4	28.5	22.2	28.6	28.7	21.4	25.4	25.9
Ln Grp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		617			539			420			614	
Approach Delay, s/veh		25.3			28.2			28.0			24.2	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	12.0	43.0	8.2	46.8	7.4	47.6	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	9.0	37.0	9.0	37.0	9.0	37.0	9.0	37.0
Max Allow Headway (MAH), s	4.6	5.8	4.6	5.6	4.6	5.8	4.6	5.6
Max Q Clear (g_c+I1), s	10.8	11.0	4.9	12.9	3.8	11.9	10.7	13.2
Green Ext Time (g_e), s	0.0	6.2	0.1	6.5	0.0	6.1	0.0	6.5
Prob of Phs Call (p_c)	1.00	1.00	0.87	1.00	0.73	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	0.51	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1639		1654		1737	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2843		2706		1776		2472

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		617		264		1489		1433

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	211	0	67	0	43	0	214	0
Grp Sat Flow (s), veh/h/ln	1703	0	1639	0	1654	0	1737	0
Q Serve Time (g_s), s	8.8	0.0	2.9	0.0	1.8	0.0	8.7	0.0
Cycle Q Clear Time (g_c), s	8.8	0.0	2.9	0.0	1.8	0.0	8.7	0.0
Perm LT Sat Flow (s_l), veh/h/ln	958	0	900	0	908	0	896	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	39.0	0.0	37.0	0.0	37.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	28.0	0.0	29.9	0.0	31.7	0.0	25.8	0.0
Perm LT Q Serve Time (g_ps), s	3.1	0.0	0.6	0.0	0.3	0.0	4.1	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	448	0	388	0	393	0	418	0
V/C Ratio (X)	0.47	0.00	0.17	0.00	0.11	0.00	0.51	0.00
Avail Cap (c_a), veh/h	448	0	444	0	462	0	418	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	20.7	0.0	22.0	0.0	22.1	0.0	21.0	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.2	0.0	0.1	0.0	1.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	21.4	0.0	22.2	0.0	22.2	0.0	22.0	0.0
1st-Term Q (Q1), veh/ln	4.0	0.0	1.3	0.0	0.8	0.0	4.1	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	4.1	0.0	1.3	0.0	0.8	0.0	4.2	0.0
%ile Storage Ratio (RQ%)	17.28	0.00	5.36	0.00	4.68	0.00	12.07	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	188	0	163	0	208	0	329
Grp Sat Flow (s), veh/h/ln	0	1742	0	1211	0	1726	0	1236
Q Serve Time (g_s), s	0.0	8.8	0.0	10.8	0.0	9.4	0.0	11.2
Cycle Q Clear Time (g_c), s	0.0	8.8	0.0	10.8	0.0	9.4	0.0	11.2
Lane Grp Cap (c), veh/h	0	586	0	449	0	653	0	831
V/C Ratio (X)	0.00	0.32	0.00	0.36	0.00	0.32	0.00	0.40
Avail Cap (c_a), veh/h	0	586	0	449	0	653	0	831
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.1	0.0	25.2	0.0	24.2	0.0	27.9
Incr Delay (d2), s/veh	0.0	1.4	0.0	2.3	0.0	1.3	0.0	1.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.6	0.0	27.5	0.0	25.4	0.0	29.4
1st-Term Q (Q1), veh/ln	0.0	4.2	0.0	3.6	0.0	4.4	0.0	3.8

2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.3	0.0	0.2	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.5	0.0	3.9	0.0	4.7	0.0	4.0
%ile Storage Ratio (RQ%)	0.00	19.45	0.00	13.77	0.00	8.46	0.00	6.87
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	189	0	240	0	195	0	143
Grp Sat Flow (s), veh/h/ln	0	1718	0	1759	0	1540	0	1433
Q Serve Time (g_s), s	0.0	9.0	0.0	10.9	0.0	9.9	0.0	8.1
Cycle Q Clear Time (g_c), s	0.0	9.0	0.0	10.9	0.0	9.9	0.0	8.1
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.36	0.00	0.15	0.00	0.97	0.00	1.00
Lane Grp Cap (c), veh/h	0	578	0	652	0	582	0	482
V/C Ratio (X)	0.00	0.33	0.00	0.37	0.00	0.34	0.00	0.30
Avail Cap (c_a), veh/h	0	578	0	652	0	582	0	482
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.2	0.0	25.2	0.0	24.3	0.0	26.9
Incr Delay (d2), s/veh	0.0	1.5	0.0	1.6	0.0	1.6	0.0	1.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.7	0.0	26.8	0.0	25.9	0.0	28.5
1st-Term Q (Q1), veh/ln	0.0	4.3	0.0	5.3	0.0	4.2	0.0	3.2
2nd-Term Q (Q2), veh/ln	0.0	0.2	0.0	0.3	0.0	0.3	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.5	0.0	5.6	0.0	4.5	0.0	3.4
%ile Storage Ratio (RQ%)	0.00	19.67	0.00	19.96	0.00	8.13	0.00	7.13
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.2
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	555	518	6	3	2
Future Vol, veh/h	4	555	518	6	3	2
Conflicting Peds, #/hr	18	0	0	18	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	4	597	557	6	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	581	0	-	0	886	300
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1003	-	-	-	288	702
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1003	-	-	-	278	691
Mov Cap-2 Maneuver	-	-	-	-	396	-
Stage 1	-	-	-	-	522	-
Stage 2	-	-	-	-	711	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1003	-	-	-	478
HCM Lane V/C Ratio	0.004	-	-	-	0.011
HCM Control Delay (s)	8.6	-	-	-	12.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	566	525	0	1	0
Future Vol, veh/h	0	566	525	0	1	0
Conflicting Peds, #/hr	17	0	0	17	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	0	602	559	0	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	576	0	-	0	877	296
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1007	-	-	-	292	706
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1007	-	-	-	284	696
Mov Cap-2 Maneuver	-	-	-	-	400	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	720	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1007	-	-	-	400
HCM Lane V/C Ratio	-	-	-	-	0.003
HCM Control Delay (s)	0	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	208	348	80	830	238	93	411	152	599
v/c Ratio	1.03	0.41	0.20	1.02	0.37	0.27	0.36	0.37	0.47
Control Delay	98.6	28.3	17.5	74.1	5.2	18.5	27.1	19.8	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	98.6	28.3	17.5	74.1	5.2	18.5	27.1	19.8	17.3
Queue Length 50th (m)	~34.8	43.9	9.7	~149.4	0.0	11.4	34.7	19.3	32.0
Queue Length 95th (m)	#84.4	64.6	18.8	#206.0	17.2	21.3	48.5	32.7	49.2
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	202	854	412	812	637	354	1134	415	1280
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.41	0.19	1.02	0.37	0.26	0.36	0.37	0.47

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	290	30	74	764	219	86	319	59	140	276	275
Future Volume (veh/h)	191	290	30	74	764	219	86	319	59	140	276	275
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1806	1866	1900	1824	1881	1788	1806	1884	1900	1788	1891	1900
Adj Flow Rate, veh/h	208	315	33	80	830	238	93	347	64	152	300	299
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	2	0	1	2	1	1	1	2	1	1
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	215	1030	107	443	855	502	323	1024	187	426	649	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.05	0.34	0.34	0.07	0.36	0.36
Ln Grp Delay, s/veh	78.1	26.0	25.5	21.7	60.0	31.6	22.9	28.4	28.5	20.8	29.0	30.7
Ln Grp LOS	E	C	C	C	E	C	C	C	C	C	C	C
Approach Vol, veh/h		556			1148			504			751	
Approach Delay, s/veh		45.3			51.4			27.4			28.1	
Approach LOS		D			D			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	11.1	43.0	8.5	46.5	8.6	45.5	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	9.0	37.0	9.0	37.0	9.0	37.0	9.0	37.0
Max Allow Headway (MAH), s	4.6	5.9	4.6	5.6	4.6	5.9	4.6	5.6
Max Q Clear (g_c+I1), s	8.1	11.5	5.2	10.8	5.8	18.1	10.5	37.4
Green Ext Time (g_e), s	0.0	8.4	0.1	12.3	0.1	7.4	0.0	0.0
Prob of Phs Call (p_c)	0.99	1.00	0.91	1.00	0.94	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1737		1720		1720	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3019		2772		1796		2521

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		551		289		1590		1481

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	152	0	80	0	93	0	208	0
Grp Sat Flow (s), veh/h/ln	1703	0	1737	0	1720	0	1720	0
Q Serve Time (g_s), s	6.1	0.0	3.2	0.0	3.8	0.0	8.5	0.0
Cycle Q Clear Time (g_c), s	6.1	0.0	3.2	0.0	3.8	0.0	8.5	0.0
Perm LT Sat Flow (s_l), veh/h/ln	927	0	999	0	788	0	510	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	38.5	0.0	37.0	0.0	37.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	27.5	0.0	31.7	0.0	23.3	0.0	1.6	0.0
Perm LT Q Serve Time (g_ps), s	2.1	0.0	0.5	0.0	1.8	0.0	1.6	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	426	0	443	0	323	0	215	0
V/C Ratio (X)	0.36	0.00	0.18	0.00	0.29	0.00	0.97	0.00
Avail Cap (c_a), veh/h	440	0	500	0	376	0	215	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	20.3	0.0	21.5	0.0	22.4	0.0	26.7	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.2	0.0	0.5	0.0	51.4	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	20.8	0.0	21.7	0.0	22.9	0.0	78.1	0.0
1st-Term Q (Q1), veh/ln	2.9	0.0	1.5	0.0	1.8	0.0	6.2	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	3.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	2.9	0.0	1.5	0.0	1.8	0.0	9.3	0.0
%ile Storage Ratio (RQ%)	12.23	0.00	6.46	0.00	10.39	0.00	26.49	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	204	0	141	0	300	0	830
Grp Sat Flow (s), veh/h/ln	0	1790	0	1250	0	1796	0	1260
Q Serve Time (g_s), s	0.0	9.3	0.0	8.7	0.0	14.0	0.0	35.4
Cycle Q Clear Time (g_c), s	0.0	9.3	0.0	8.7	0.0	14.0	0.0	35.4
Lane Grp Cap (c), veh/h	0	607	0	465	0	649	0	855
V/C Ratio (X)	0.00	0.34	0.00	0.30	0.00	0.46	0.00	0.97
Avail Cap (c_a), veh/h	0	607	0	465	0	649	0	855
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	26.9	0.0	24.3	0.0	26.7	0.0	35.5
Incr Delay (d2), s/veh	0.0	1.5	0.0	1.7	0.0	2.4	0.0	24.5
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.4	0.0	26.0	0.0	29.0	0.0	60.0
1st-Term Q (Q1), veh/ln	0.0	4.6	0.0	3.0	0.0	6.9	0.0	12.3

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.4	0.0	2.9
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.8	0.0	3.2	0.0	7.3	0.0	15.2
%ile Storage Ratio (RQ%)	0.00	21.44	0.00	11.66	0.00	13.60	0.00	26.39
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	207	0	207	0	299	0	238
Grp Sat Flow (s), veh/h/ln	0	1779	0	1811	0	1590	0	1481
Q Serve Time (g_s), s	0.0	9.5	0.0	8.8	0.0	16.1	0.0	13.8
Cycle Q Clear Time (g_c), s	0.0	9.5	0.0	8.8	0.0	16.1	0.0	13.8
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.31	0.00	0.16	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	603	0	673	0	575	0	502
V/C Ratio (X)	0.00	0.34	0.00	0.31	0.00	0.52	0.00	0.47
Avail Cap (c_a), veh/h	0	603	0	673	0	575	0	502
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.0	0.0	24.3	0.0	27.4	0.0	28.4
Incr Delay (d2), s/veh	0.0	1.5	0.0	1.2	0.0	3.3	0.0	3.2
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.5	0.0	25.5	0.0	30.7	0.0	31.6
1st-Term Q (Q1), veh/ln	0.0	4.7	0.0	4.4	0.0	7.1	0.0	5.6
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.5	0.0	0.4
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.9	0.0	4.6	0.0	7.6	0.0	6.1
%ile Storage Ratio (RQ%)	0.00	21.74	0.00	16.75	0.00	14.07	0.00	13.01
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	40.2
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	539	1098	36	21	8
Future Vol, veh/h	14	539	1098	36	21	8
Conflicting Peds, #/hr	24	0	0	24	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	14	556	1132	37	22	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1193	0	-	0	1485	612
Stage 1	-	-	-	-	1175	-
Stage 2	-	-	-	-	310	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	592	-	-	-	118	441
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	723	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	591	-	-	-	111	431
Mov Cap-2 Maneuver	-	-	-	-	207	-
Stage 1	-	-	-	-	255	-
Stage 2	-	-	-	-	692	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	22
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	591	-	-	-	242
HCM Lane V/C Ratio	0.024	-	-	-	0.124
HCM Control Delay (s)	11.2	-	-	-	22
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	564	1138	5	1	5
Future Vol, veh/h	0	564	1138	5	1	5
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	581	1173	5	1	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1198	0	-	0	1487	609
Stage 1	-	-	-	-	1196	-
Stage 2	-	-	-	-	291	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	590	-	-	-	117	443
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	590	-	-	-	113	435
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	726	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	590	-	-	-	366
HCM Lane V/C Ratio	-	-	-	-	0.017
HCM Control Delay (s)	0	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	203	349	34	64	313	136	41	294	65	200	203	180
Future Volume (veh/h)	203	349	34	64	313	136	41	294	65	200	203	180
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1824	1808	1900	1721	1845	1721	1737	1833	1900	1788	1817	1900
Adj Flow Rate, veh/h	214	367	36	67	329	143	43	309	68	211	214	189
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	6	3	6	5	4	4	2	6	6
Cap, veh/h	447	1171	114	402	1179	482	393	956	207	448	672	563
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.04	0.34	0.34	0.08	0.38	0.38
Sat Flow, veh/h	1737	3160	308	1639	3505	1433	1654	2843	617	1703	1776	1489
Grp Volume(v), veh/h	214	198	205	67	329	143	43	188	189	211	208	195
Grp Sat Flow(s),veh/h/ln	1737	1718	1751	1639	1752	1433	1654	1742	1718	1703	1726	1540
Q Serve(g_s), s	8.7	9.0	9.2	2.9	7.6	8.1	1.8	8.8	9.0	8.8	9.4	9.9
Cycle Q Clear(g_c), s	8.7	9.0	9.2	2.9	7.6	8.1	1.8	8.8	9.0	8.8	9.4	9.9
Prop In Lane	1.00		0.18	1.00		1.00	1.00		0.36	1.00		0.97
Lane Grp Cap(c), veh/h	447	637	649	402	1179	482	393	586	578	448	653	582
V/C Ratio(X)	0.48	0.31	0.32	0.17	0.28	0.30	0.11	0.32	0.33	0.47	0.32	0.34
Avail Cap(c_a), veh/h	447	637	649	458	1179	482	462	586	578	448	653	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.5	24.6	24.7	21.9	26.7	26.9	22.1	27.1	27.2	20.7	24.2	24.3
Incr Delay (d2), s/veh	0.8	1.3	1.3	0.2	0.6	1.6	0.1	1.4	1.5	0.8	1.3	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	4.5	4.7	1.3	3.8	3.4	0.8	4.5	4.5	4.1	4.7	4.5
LnGrp Delay(d),s/veh	21.3	25.9	25.9	22.1	27.3	28.5	22.2	28.6	28.7	21.4	25.4	25.9
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		617			539			420			614	
Approach Delay, s/veh		24.3			27.0			28.0			24.2	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	43.0	8.2	46.8	7.4	47.6	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green Setting (Gmax), s	9.0	37.0	9.0	37.0	9.0	37.0	9.0	37.0
Max Q Clear Time (g_c+I1), s	10.8	11.0	4.9	11.2	3.8	11.9	10.7	10.1
Green Ext Time (p_c), s	0.0	2.8	0.1	2.9	0.0	3.0	0.0	3.4

Intersection Summary	
HCM 2010 Ctrl Delay	25.6
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	555	518	6	3	2
Future Vol, veh/h	4	555	518	6	3	2
Conflicting Peds, #/hr	18	0	0	18	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	4	597	557	6	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	581	0	-	0	886	300
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	308	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1003	-	-	-	288	702
Stage 1	-	-	-	-	530	-
Stage 2	-	-	-	-	725	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	988	-	-	-	278	691
Mov Cap-2 Maneuver	-	-	-	-	396	-
Stage 1	-	-	-	-	520	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	988	-	-	-	478
HCM Lane V/C Ratio	0.004	-	-	-	0.011
HCM Control Delay (s)	8.7	-	-	-	12.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	566	525	0	1	0
Future Vol, veh/h	0	566	525	0	1	0
Conflicting Peds, #/hr	17	0	0	17	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	0	602	559	0	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	576	0	-	0	877	297
Stage 1	-	-	-	-	576	-
Stage 2	-	-	-	-	301	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1007	-	-	-	292	705
Stage 1	-	-	-	-	531	-
Stage 2	-	-	-	-	731	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	993	-	-	-	284	695
Mov Cap-2 Maneuver	-	-	-	-	401	-
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	721	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	993	-	-	-	401
HCM Lane V/C Ratio	-	-	-	-	0.003
HCM Control Delay (s)	0	-	-	-	14
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection: 1: Guelph Line & New Street

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	TR	L	T
Maximum Queue (m)	55.4	65.5	54.7	29.9	66.6	60.4	27.0	32.1	49.0	54.8	59.6	68.5
Average Queue (m)	28.4	38.1	24.6	12.7	38.6	23.2	11.7	8.7	24.1	26.0	27.9	30.3
95th Queue (m)	47.6	61.4	49.6	25.1	63.5	52.5	20.9	21.5	40.6	43.8	49.9	58.0
Link Distance (m)		65.3	65.3		137.4	137.4			52.3	52.3		128.2
Upstream Blk Time (%)	0	0	0					0	0	0		
Queuing Penalty (veh)	0	1	0					0	0	0		
Storage Bay Dist (m)	85.0			55.0			110.0	40.0			55.0	
Storage Blk Time (%)	0	0			2				1		0	1
Queuing Penalty (veh)	0	0			1				0		0	2

Intersection: 1: Guelph Line & New Street

Movement	SB
Directions Served	TR
Maximum Queue (m)	45.8
Average Queue (m)	11.9
95th Queue (m)	26.5
Link Distance (m)	128.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: New Street & 2421 Access

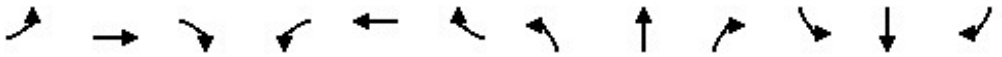
Movement	EB	WB	SB
Directions Served	L	T	LR
Maximum Queue (m)	9.1	3.8	8.8
Average Queue (m)	0.4	0.1	1.1
95th Queue (m)	3.3	2.4	5.9
Link Distance (m)		25.2	34.8
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	15.0		
Storage Blk Time (%)	0		
Queuing Penalty (veh)	0		

Intersection: 3: New Street & 2431 Access

Movement	EB	SB
Directions Served	T	LR
Maximum Queue (m)	12.5	4.4
Average Queue (m)	0.5	0.3
95th Queue (m)	4.4	2.9
Link Distance (m)	25.2	36.5
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (m)		
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Network Summary

Network wide Queuing Penalty: 5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	290	30	74	764	219	86	319	59	140	276	275
Future Volume (veh/h)	191	290	30	74	764	219	86	319	59	140	276	275
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1806	1866	1900	1824	1881	1788	1806	1884	1900	1788	1891	1900
Adj Flow Rate, veh/h	208	315	33	80	830	238	93	347	64	152	300	299
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	2	0	1	2	1	1	1	2	1	1
Cap, veh/h	279	1203	125	456	1212	502	323	1024	187	426	649	575
Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.05	0.34	0.34	0.07	0.36	0.36
Sat Flow, veh/h	1720	3238	337	1737	3574	1481	1720	3019	551	1703	1796	1590
Grp Volume(v), veh/h	208	171	177	80	830	238	93	204	207	152	300	299
Grp Sat Flow(s),veh/h/ln	1720	1773	1802	1737	1787	1481	1720	1790	1779	1703	1796	1590
Q Serve(g_s), s	8.4	7.3	7.5	3.2	21.8	13.8	3.8	9.3	9.5	6.1	14.0	16.1
Cycle Q Clear(g_c), s	8.4	7.3	7.5	3.2	21.8	13.8	3.8	9.3	9.5	6.1	14.0	16.1
Prop In Lane	1.00		0.19	1.00		1.00	1.00		0.31	1.00		1.00
Lane Grp Cap(c), veh/h	279	659	669	456	1212	502	323	607	603	426	649	575
V/C Ratio(X)	0.75	0.26	0.26	0.18	0.68	0.47	0.29	0.34	0.34	0.36	0.46	0.52
Avail Cap(c_a), veh/h	279	659	669	512	1212	502	376	607	603	440	649	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.8	23.8	23.9	21.4	31.0	28.4	22.4	26.9	27.0	20.3	26.7	27.4
Incr Delay (d2), s/veh	10.5	1.0	1.0	0.2	3.2	3.2	0.5	1.5	1.5	0.5	2.4	3.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	3.7	3.9	1.5	11.3	6.1	1.8	4.8	4.9	2.9	7.3	7.6
LnGrp Delay(d),s/veh	34.3	24.8	24.8	21.6	34.2	31.6	22.9	28.4	28.5	20.8	29.0	30.7
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		556			1148			504			751	
Approach Delay, s/veh		28.4			32.8			27.4			28.1	
Approach LOS		C			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	43.0	8.5	46.5	8.6	45.5	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green Setting (Gmax), s	9.0	37.0	9.0	37.0	9.0	37.0	9.0	37.0
Max Q Clear Time (g_c+I1), s	8.1	11.5	5.2	9.5	5.8	18.1	10.4	23.8
Green Ext Time (p_c), s	0.0	3.0	0.1	2.5	0.1	4.4	0.0	6.4

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	14	539	1098	36	21	8
Future Vol, veh/h	14	539	1098	36	21	8
Conflicting Peds, #/hr	24	0	0	24	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	14	556	1132	37	22	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1193	0	-	0	1484	612
Stage 1	-	-	-	-	1175	-
Stage 2	-	-	-	-	309	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	592	-	-	-	118	441
Stage 1	-	-	-	-	260	-
Stage 2	-	-	-	-	724	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	580	-	-	-	111	431
Mov Cap-2 Maneuver	-	-	-	-	204	-
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	22.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	580	-	-	-	239
HCM Lane V/C Ratio	0.025	-	-	-	0.125
HCM Control Delay (s)	11.4	-	-	-	22.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	564	1138	5	1	5
Future Vol, veh/h	0	564	1138	5	1	5
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	581	1173	5	1	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1198	0	-	0	1487	609
Stage 1	-	-	-	-	1196	-
Stage 2	-	-	-	-	291	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	590	-	-	-	117	443
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	739	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	580	-	-	-	113	435
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	249	-
Stage 2	-	-	-	-	726	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	580	-	-	-	366
HCM Lane V/C Ratio	-	-	-	-	0.017
HCM Control Delay (s)	0	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection: 1: Guelph Line & New Street

Movement	EB	EB	EB	WB	WB	WB	WB	B11	NB	NB	NB	SB
Directions Served	L	T	TR	L	T	T	R	T	L	T	TR	L
Maximum Queue (m)	65.1	74.6	64.2	95.0	162.0	159.1	137.4	67.9	43.6	53.2	53.5	62.3
Average Queue (m)	41.4	44.7	23.1	63.7	141.1	125.4	49.6	39.2	16.3	28.3	28.0	22.6
95th Queue (m)	70.6	77.6	54.6	129.9	188.2	173.9	135.3	87.2	33.5	47.2	46.5	47.0
Link Distance (m)		65.3	65.3		137.4	137.4		57.2		52.3	52.3	
Upstream Blk Time (%)	7	11	0		35	5	0	27	0	0	1	
Queuing Penalty (veh)	0	32	1		0	0	0	0	0	0	0	
Storage Bay Dist (m)	85.0			55.0			110.0		40.0			55.0
Storage Blk Time (%)	7	11			78	21			0	3		1
Queuing Penalty (veh)	10	21			58	45			0	2		1

Intersection: 1: Guelph Line & New Street

Movement	SB	SB
Directions Served	T	TR
Maximum Queue (m)	102.4	95.2
Average Queue (m)	40.8	26.7
95th Queue (m)	77.4	59.2
Link Distance (m)	128.2	128.2
Upstream Blk Time (%)	1	0
Queuing Penalty (veh)	0	0
Storage Bay Dist (m)		
Storage Blk Time (%)	4	
Queuing Penalty (veh)	6	

Intersection: 2: New Street & 2421 Access

Movement	EB	EB	EB	B7	WB	WB	SB
Directions Served	L	T	T	T	T	TR	LR
Maximum Queue (m)	14.3	38.8	30.7	2.3	30.9	8.2	24.6
Average Queue (m)	2.9	9.0	5.2	0.1	3.1	0.3	8.6
95th Queue (m)	10.5	45.9	31.0	1.5	16.5	3.7	21.6
Link Distance (m)		71.6	71.6	105.6	25.2	25.2	34.8
Upstream Blk Time (%)		1	0		0		2
Queuing Penalty (veh)		0	0		2		0
Storage Bay Dist (m)	15.0						
Storage Blk Time (%)	0	8					
Queuing Penalty (veh)	1	1					

Intersection: 3: New Street & 2431 Access

Movement	EB	EB	WB	WB	SB
Directions Served	T	T	T	TR	LR
Maximum Queue (m)	22.9	12.6	96.3	79.5	11.9
Average Queue (m)	5.9	1.7	32.9	11.0	2.6
95th Queue (m)	23.9	11.9	96.1	52.9	10.0
Link Distance (m)	25.2	25.2	65.3	65.3	36.5
Upstream Blk Time (%)	8	0	3	0	
Queuing Penalty (veh)	23	0	16	3	
Storage Bay Dist (m)					
Storage Blk Time (%)	10				
Queuing Penalty (veh)	0				

Network Summary

Network wide Queuing Penalty: 222



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	224	424	71	346	151	45	397	221	423
v/c Ratio	0.48	0.35	0.18	0.31	0.27	0.11	0.36	0.52	0.33
Control Delay	21.8	25.2	17.5	28.0	5.5	16.7	26.8	22.8	13.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	25.2	17.5	28.0	5.5	16.7	26.8	22.8	13.6
Queue Length 50th (m)	29.9	35.5	8.6	30.2	0.0	5.4	33.0	29.5	18.1
Queue Length 95th (m)	47.3	49.2	17.1	42.7	14.2	11.9	46.6	46.8	31.0
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	465	1228	392	1126	565	396	1099	429	1271
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.35	0.18	0.31	0.27	0.11	0.36	0.52	0.33

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	213	367	36	67	329	143	43	309	68	210	213	189
Future Volume (veh/h)	213	367	36	67	329	143	43	309	68	210	213	189
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1824	1808	1900	1721	1845	1721	1737	1833	1900	1788	1817	1900
Adj Flow Rate, veh/h	224	386	38	71	346	151	45	325	72	221	224	199
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	6	3	6	5	4	4	2	6	6
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	438	1168	114	393	1179	482	384	955	209	439	667	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.04	0.34	0.34	0.08	0.38	0.38
Ln Grp Delay, s/veh	21.8	26.2	26.3	22.2	27.5	28.8	22.2	28.9	29.0	22.0	25.8	26.3
Ln Grp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		648			568			442			644	
Approach Delay, s/veh		24.7			27.2			28.3			24.6	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	12.0	43.0	8.3	46.7	7.5	47.5	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	9.0	37.0	6.0	40.0	6.0	40.0	9.0	37.0
Max Allow Headway (MAH), s	4.6	5.8	4.6	5.6	4.6	5.8	4.6	5.6
Max Q Clear (g_c+I1), s	11.0	11.6	5.1	11.7	3.9	12.5	11.0	10.6
Green Ext Time (g_e), s	0.0	6.5	0.0	7.3	0.0	6.7	0.0	7.1
Prob of Phs Call (p_c)	1.00	1.00	0.89	1.00	0.75	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1639		1654		1737	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2839		3159		1768		3505

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		620		309		1496		1433

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	221	0	71	0	45	0	224	0
Grp Sat Flow (s), veh/h/ln	1703	0	1639	0	1654	0	1737	0
Q Serve Time (g_s), s	9.0	0.0	3.1	0.0	1.9	0.0	9.0	0.0
Cycle Q Clear Time (g_c), s	9.0	0.0	3.1	0.0	1.9	0.0	9.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	940	0	883	0	891	0	875	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	39.0	0.0	37.0	0.0	37.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	27.4	0.0	31.0	0.0	31.0	0.0	29.0	0.0
Perm LT Q Serve Time (g_ps), s	4.1	0.0	0.5	0.0	0.3	0.0	3.9	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	439	0	393	0	384	0	438	0
V/C Ratio (X)	0.50	0.00	0.18	0.00	0.12	0.00	0.51	0.00
Avail Cap (c_a), veh/h	439	0	403	0	407	0	438	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	21.1	0.0	21.9	0.0	22.1	0.0	20.8	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.2	0.0	0.1	0.0	1.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	22.0	0.0	22.2	0.0	22.2	0.0	21.8	0.0
1st-Term Q (Q1), veh/ln	1.0	0.0	1.4	0.0	0.9	0.0	0.9	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.1	0.0	1.4	0.0	0.9	0.0	1.0	0.0
%ile Storage Ratio (RQ%)	4.73	0.00	5.68	0.00	4.90	0.00	2.87	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	198	0	209	0	218	0	346
Grp Sat Flow (s), veh/h/ln	0	1742	0	1718	0	1726	0	1752
Q Serve Time (g_s), s	0.0	9.3	0.0	9.6	0.0	9.9	0.0	8.0
Cycle Q Clear Time (g_c), s	0.0	9.3	0.0	9.6	0.0	9.9	0.0	8.0
Lane Grp Cap (c), veh/h	0	586	0	635	0	651	0	1179
V/C Ratio (X)	0.00	0.34	0.00	0.33	0.00	0.34	0.00	0.29
Avail Cap (c_a), veh/h	0	586	0	635	0	651	0	1179
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.3	0.0	24.9	0.0	24.4	0.0	26.9
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.4	0.0	1.4	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.9	0.0	26.2	0.0	25.8	0.0	27.5
1st-Term Q (Q1), veh/ln	0.0	4.5	0.0	4.5	0.0	4.7	0.0	3.8

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.8	0.0	4.8	0.0	5.0	0.0	3.9
%ile Storage Ratio (RQ%)	0.00	20.77	0.00	16.97	0.00	9.02	0.00	6.78
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	199	0	215	0	205	0	151
Grp Sat Flow (s), veh/h/ln	0	1717	0	1751	0	1539	0	1433
Q Serve Time (g_s), s	0.0	9.6	0.0	9.7	0.0	10.5	0.0	8.6
Cycle Q Clear Time (g_c), s	0.0	9.6	0.0	9.7	0.0	10.5	0.0	8.6
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.36	0.00	0.18	0.00	0.97	0.00	1.00
Lane Grp Cap (c), veh/h	0	578	0	648	0	581	0	482
V/C Ratio (X)	0.00	0.35	0.00	0.33	0.00	0.35	0.00	0.31
Avail Cap (c_a), veh/h	0	578	0	648	0	581	0	482
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.4	0.0	24.9	0.0	24.6	0.0	27.1
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.4	0.0	1.7	0.0	1.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.0	0.0	26.3	0.0	26.3	0.0	28.8
1st-Term Q (Q1), veh/ln	0.0	4.5	0.0	4.7	0.0	4.4	0.0	3.4
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.3	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.8	0.0	4.9	0.0	4.7	0.0	3.6
%ile Storage Ratio (RQ%)	0.00	20.97	0.00	17.46	0.00	8.52	0.00	7.63
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.0
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	583	544	6	3	2
Future Vol, veh/h	4	583	544	6	3	2
Conflicting Peds, #/hr	18	0	0	18	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	4	627	585	6	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	609	0	-	0	929	314
Stage 1	-	-	-	-	606	-
Stage 2	-	-	-	-	323	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	979	-	-	-	270	688
Stage 1	-	-	-	-	513	-
Stage 2	-	-	-	-	712	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	979	-	-	-	261	678
Mov Cap-2 Maneuver	-	-	-	-	381	-
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	698	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	979	-	-	-	462
HCM Lane V/C Ratio	0.004	-	-	-	0.012
HCM Control Delay (s)	8.7	-	-	-	12.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	595	552	0	1	0
Future Vol, veh/h	0	595	552	0	1	0
Conflicting Peds, #/hr	17	0	0	17	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	0	633	587	0	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	604	0	-	0	920	311
Stage 1	-	-	-	-	604	-
Stage 2	-	-	-	-	316	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	984	-	-	-	274	691
Stage 1	-	-	-	-	514	-
Stage 2	-	-	-	-	718	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	984	-	-	-	266	681
Mov Cap-2 Maneuver	-	-	-	-	385	-
Stage 1	-	-	-	-	507	-
Stage 2	-	-	-	-	708	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	984	-	-	-	385
HCM Lane V/C Ratio	-	-	-	-	0.003
HCM Control Delay (s)	0	-	-	-	14.4
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	218	367	85	873	250	98	431	160	629
v/c Ratio	0.78	0.27	0.20	0.76	0.39	0.35	0.38	0.43	0.52
Control Delay	37.2	22.2	16.1	37.6	5.2	21.9	27.5	23.8	18.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.2	22.2	16.1	37.6	5.2	21.9	27.5	23.8	18.9
Queue Length 50th (m)	27.3	28.4	9.8	91.9	0.0	12.7	36.7	21.7	35.4
Queue Length 95th (m)	#59.4	40.1	18.6	116.5	17.6	23.5	51.0	36.2	53.3
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	284	1352	435	1151	645	279	1134	368	1216
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	0.27	0.20	0.76	0.39	0.35	0.38	0.43	0.52

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	201	305	32	78	803	230	90	335	62	147	290	289
Future Volume (veh/h)	201	305	32	78	803	230	90	335	62	147	290	289
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1806	1866	1900	1824	1881	1788	1806	1884	1900	1788	1891	1900
Adj Flow Rate, veh/h	218	332	35	85	873	250	98	364	67	160	315	314
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	2	0	1	2	1	1	1	2	1	1
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	298	1270	133	470	1236	512	292	1020	186	383	611	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.39	0.39	0.05	0.35	0.35	0.05	0.34	0.34	0.05	0.34	0.34
Ln Grp Delay, s/veh	31.0	23.4	23.5	21.2	34.4	31.5	23.9	28.9	29.0	24.6	32.0	34.2
Ln Grp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		585			1208			529			789	
Approach Delay, s/veh		26.3			32.9			28.0			31.4	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	9.0	43.0	8.5	49.0	8.7	43.3	13.7	43.9
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	6.0	37.0	6.0	43.0	6.0	37.0	12.0	37.0
Max Allow Headway (MAH), s	4.6	5.9	4.6	5.6	4.6	5.9	4.6	5.6
Max Q Clear (g_c+I1), s	8.0	12.1	5.4	9.7	6.0	19.8	10.6	25.2
Green Ext Time (g_e), s	0.0	8.9	0.0	14.6	0.0	7.4	0.1	7.8
Prob of Phs Call (p_c)	0.99	1.00	0.92	1.00	0.95	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1737		1720		1720	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3019		3236		1796		3574

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		550		339		1589		1481

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	160	0	85	0	98	0	218	0
Grp Sat Flow (s), veh/h/ln	1703	0	1737	0	1720	0	1720	0
Q Serve Time (g_s), s	6.0	0.0	3.4	0.0	4.0	0.0	8.6	0.0
Cycle Q Clear Time (g_c), s	6.0	0.0	3.4	0.0	4.0	0.0	8.6	0.0
Perm LT Sat Flow (s_l), veh/h/ln	910	0	982	0	767	0	484	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	37.0	0.0	37.9	0.0	37.0	0.0	39.9	0.0
Perm LT Serve Time (g_u), s	26.9	0.0	35.3	0.0	19.5	0.0	14.7	0.0
Perm LT Q Serve Time (g_ps), s	4.0	0.0	0.2	0.0	2.6	0.0	14.7	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	383	0	470	0	292	0	298	0
V/C Ratio (X)	0.42	0.00	0.18	0.00	0.34	0.00	0.73	0.00
Avail Cap (c_a), veh/h	383	0	478	0	296	0	319	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	23.9	0.0	21.0	0.0	23.2	0.0	23.3	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.2	0.0	0.7	0.0	7.8	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	24.6	0.0	21.2	0.0	23.9	0.0	31.0	0.0
1st-Term Q (Q1), veh/ln	1.0	0.0	1.6	0.0	1.9	0.0	4.1	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.1	0.0	0.6	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.0	0.0	1.7	0.0	1.9	0.0	4.7	0.0
%ile Storage Ratio (RQ%)	4.34	0.00	6.96	0.00	11.00	0.00	13.37	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	214	0	181	0	315	0	873
Grp Sat Flow (s), veh/h/ln	0	1790	0	1773	0	1796	0	1787
Q Serve Time (g_s), s	0.0	9.9	0.0	7.6	0.0	15.4	0.0	23.2
Cycle Q Clear Time (g_c), s	0.0	9.9	0.0	7.6	0.0	15.4	0.0	23.2
Lane Grp Cap (c), veh/h	0	605	0	696	0	611	0	1236
V/C Ratio (X)	0.00	0.35	0.00	0.26	0.00	0.52	0.00	0.71
Avail Cap (c_a), veh/h	0	605	0	696	0	611	0	1236
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.3	0.0	22.5	0.0	28.9	0.0	31.0
Incr Delay (d2), s/veh	0.0	1.6	0.0	0.9	0.0	3.1	0.0	3.4
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.9	0.0	23.4	0.0	32.0	0.0	34.4
1st-Term Q (Q1), veh/ln	0.0	4.9	0.0	3.7	0.0	7.6	0.0	11.4

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.5	0.0	0.6
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.2	0.0	3.9	0.0	8.1	0.0	12.0
%ile Storage Ratio (RQ%)	0.00	22.80	0.00	14.03	0.00	15.07	0.00	20.75
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	217	0	186	0	314	0	250
Grp Sat Flow (s), veh/h/ln	0	1779	0	1802	0	1589	0	1481
Q Serve Time (g_s), s	0.0	10.1	0.0	7.7	0.0	17.8	0.0	14.6
Cycle Q Clear Time (g_c), s	0.0	10.1	0.0	7.7	0.0	17.8	0.0	14.6
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.31	0.00	0.19	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	601	0	707	0	540	0	512
V/C Ratio (X)	0.00	0.36	0.00	0.26	0.00	0.58	0.00	0.49
Avail Cap (c_a), veh/h	0	601	0	707	0	540	0	512
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.4	0.0	22.5	0.0	29.7	0.0	28.2
Incr Delay (d2), s/veh	0.0	1.7	0.0	0.9	0.0	4.5	0.0	3.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.0	0.0	23.5	0.0	34.2	0.0	31.5
1st-Term Q (Q1), veh/ln	0.0	4.9	0.0	3.8	0.0	7.8	0.0	5.9
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.7	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.2	0.0	4.0	0.0	8.4	0.0	6.4
%ile Storage Ratio (RQ%)	0.00	23.09	0.00	14.44	0.00	15.63	0.00	13.76
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	566	1154	38	22	8
Future Vol, veh/h	15	566	1154	38	22	8
Conflicting Peds, #/hr	24	0	0	24	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	15	584	1190	39	23	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1253	0	-	0	1559	641
Stage 1	-	-	-	-	1233	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	562	-	-	-	105	422
Stage 1	-	-	-	-	242	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	561	-	-	-	98	413
Mov Cap-2 Maneuver	-	-	-	-	192	-
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	677	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	23.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	561	-	-	-	224
HCM Lane V/C Ratio	0.028	-	-	-	0.138
HCM Control Delay (s)	11.6	-	-	-	23.6
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	593	1196	5	1	5
Future Vol, veh/h	0	593	1196	5	1	5
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	611	1233	5	1	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1258	0	-	0	1562	639
Stage 1	-	-	-	-	1256	-
Stage 2	-	-	-	-	306	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	560	-	-	-	105	424
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	726	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	560	-	-	-	101	417
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	560	-	-	-	348
HCM Lane V/C Ratio	-	-	-	-	0.018
HCM Control Delay (s)	0	-	-	-	15.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	236	446	75	364	158	47	418	233	445
v/c Ratio	0.52	0.36	0.20	0.32	0.28	0.12	0.38	0.56	0.35
Control Delay	22.8	25.5	17.6	28.2	5.5	16.8	27.2	24.0	13.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.8	25.5	17.6	28.2	5.5	16.8	27.2	24.0	13.7
Queue Length 50th (m)	31.8	37.7	9.1	32.0	0.0	5.6	35.1	31.4	19.1
Queue Length 95th (m)	49.8	52.0	17.8	45.0	14.3	12.4	49.2	49.3	32.5
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	455	1228	384	1126	569	388	1099	418	1279
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.52	0.36	0.20	0.32	0.28	0.12	0.38	0.56	0.35

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	224	386	38	71	346	150	45	325	72	221	224	199
Future Volume (veh/h)	224	386	38	71	346	150	45	325	72	221	224	199
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1824	1808	1900	1721	1845	1721	1737	1833	1900	1788	1817	1900
Adj Flow Rate, veh/h	236	406	40	75	364	158	47	342	76	233	236	209
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	6	3	6	5	4	4	2	6	6
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	430	1166	114	384	1179	482	375	954	209	430	666	564
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.04	0.34	0.34	0.08	0.38	0.38
Ln Grp Delay, s/veh	23.0	26.6	26.6	22.2	27.7	29.0	22.3	29.2	29.4	23.3	26.2	26.7
Ln Grp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		682			597			465			678	
Approach Delay, s/veh		25.4			27.4			28.6			25.3	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	12.0	43.0	8.4	46.6	7.6	47.4	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	9.0	37.0	6.0	40.0	6.0	40.0	9.0	37.0
Max Allow Headway (MAH), s	4.6	5.8	4.6	5.6	4.6	5.8	4.6	5.6
Max Q Clear (g_c+I1), s	11.0	12.2	5.2	12.3	4.0	13.1	11.0	11.0
Green Ext Time (g_e), s	0.0	6.8	0.0	7.7	0.0	7.0	0.0	7.5
Prob of Phs Call (p_c)	1.00	1.00	0.90	1.00	0.76	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1639		1654		1737	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2836		3159		1768		3505

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		622		310		1496		1433

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	233	0	75	0	47	0	236	0
Grp Sat Flow (s), veh/h/ln	1703	0	1639	0	1654	0	1737	0
Q Serve Time (g_s), s	9.0	0.0	3.2	0.0	2.0	0.0	9.0	0.0
Cycle Q Clear Time (g_c), s	9.0	0.0	3.2	0.0	2.0	0.0	9.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	923	0	865	0	874	0	856	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	39.0	0.0	37.0	0.0	37.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	26.8	0.0	30.3	0.0	30.3	0.0	28.5	0.0
Perm LT Q Serve Time (g_ps), s	5.9	0.0	0.6	0.0	0.4	0.0	5.8	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	430	0	384	0	375	0	430	0
V/C Ratio (X)	0.54	0.00	0.20	0.00	0.13	0.00	0.55	0.00
Avail Cap (c_a), veh/h	430	0	393	0	396	0	430	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	21.9	0.0	22.0	0.0	22.1	0.0	21.6	0.0
Incr Delay (d2), s/veh	1.4	0.0	0.2	0.0	0.1	0.0	1.5	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	23.3	0.0	22.2	0.0	22.3	0.0	23.0	0.0
1st-Term Q (Q1), veh/ln	1.4	0.0	1.4	0.0	0.9	0.0	1.3	0.0
2nd-Term Q (Q2), veh/ln	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.6	0.0	1.5	0.0	0.9	0.0	1.5	0.0
%ile Storage Ratio (RQ%)	6.69	0.00	6.00	0.00	5.12	0.00	4.21	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	208	0	220	0	230	0	364
Grp Sat Flow (s), veh/h/ln	0	1742	0	1718	0	1726	0	1752
Q Serve Time (g_s), s	0.0	9.9	0.0	10.2	0.0	10.6	0.0	8.5
Cycle Q Clear Time (g_c), s	0.0	9.9	0.0	10.2	0.0	10.6	0.0	8.5
Lane Grp Cap (c), veh/h	0	586	0	634	0	650	0	1179
V/C Ratio (X)	0.00	0.36	0.00	0.35	0.00	0.35	0.00	0.31
Avail Cap (c_a), veh/h	0	586	0	634	0	650	0	1179
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.5	0.0	25.1	0.0	24.7	0.0	27.0
Incr Delay (d2), s/veh	0.0	1.7	0.0	1.5	0.0	1.5	0.0	0.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.2	0.0	26.6	0.0	26.2	0.0	27.7
1st-Term Q (Q1), veh/ln	0.0	4.7	0.0	4.8	0.0	5.1	0.0	4.1

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.0	0.0	5.1	0.0	5.3	0.0	4.2
%ile Storage Ratio (RQ%)	0.00	21.92	0.00	18.10	0.00	9.64	0.00	7.22
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	210	0	226	0	215	0	158
Grp Sat Flow (s), veh/h/ln	0	1717	0	1751	0	1538	0	1433
Q Serve Time (g_s), s	0.0	10.2	0.0	10.3	0.0	11.1	0.0	9.0
Cycle Q Clear Time (g_c), s	0.0	10.2	0.0	10.3	0.0	11.1	0.0	9.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.36	0.00	0.18	0.00	0.97	0.00	1.00
Lane Grp Cap (c), veh/h	0	578	0	646	0	579	0	482
V/C Ratio (X)	0.00	0.36	0.00	0.35	0.00	0.37	0.00	0.33
Avail Cap (c_a), veh/h	0	578	0	646	0	579	0	482
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.6	0.0	25.1	0.0	24.8	0.0	27.2
Incr Delay (d2), s/veh	0.0	1.8	0.0	1.5	0.0	1.8	0.0	1.8
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.4	0.0	26.6	0.0	26.7	0.0	29.0
1st-Term Q (Q1), veh/ln	0.0	4.8	0.0	5.0	0.0	4.7	0.0	3.6
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.1	0.0	5.2	0.0	5.0	0.0	3.8
%ile Storage Ratio (RQ%)	0.00	22.35	0.00	18.60	0.00	9.07	0.00	7.99
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.5
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	613	572	7	3	2
Future Vol, veh/h	4	613	572	7	3	2
Conflicting Peds, #/hr	18	0	0	18	1	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	4	659	615	8	3	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	641	0	-	0	976	329
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	339	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	953	-	-	-	252	673
Stage 1	-	-	-	-	494	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	953	-	-	-	243	663
Mov Cap-2 Maneuver	-	-	-	-	365	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	685	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	953	-	-	-	445
HCM Lane V/C Ratio	0.005	-	-	-	0.012
HCM Control Delay (s)	8.8	-	-	-	13.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	625	580	0	1	0
Future Vol, veh/h	0	625	580	0	1	0
Conflicting Peds, #/hr	17	0	0	17	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	0	665	617	0	1	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	634	0	-	0	966	326
Stage 1	-	-	-	-	634	-
Stage 2	-	-	-	-	332	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	959	-	-	-	256	676
Stage 1	-	-	-	-	496	-
Stage 2	-	-	-	-	705	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	959	-	-	-	249	666
Mov Cap-2 Maneuver	-	-	-	-	370	-
Stage 1	-	-	-	-	489	-
Stage 2	-	-	-	-	695	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	959	-	-	-	370
HCM Lane V/C Ratio	-	-	-	-	0.003
HCM Control Delay (s)	0	-	-	-	14.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	229	384	89	917	263	103	454	168	662
v/c Ratio	0.85	0.28	0.21	0.80	0.40	0.39	0.40	0.47	0.54
Control Delay	48.3	22.4	16.3	39.4	5.2	22.9	27.9	24.9	19.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.3	22.4	16.3	39.4	5.2	22.9	27.9	24.9	19.8
Queue Length 50th (m)	29.3	29.9	10.2	98.2	0.0	13.4	39.2	22.9	39.1
Queue Length 95th (m)	#72.7	42.0	19.3	124.2	18.0	24.5	54.0	37.9	57.7
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	270	1357	428	1148	652	265	1131	355	1215
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.28	0.21	0.80	0.40	0.39	0.40	0.47	0.54

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	211	320	33	82	844	242	95	352	65	155	305	304
Future Volume (veh/h)	211	320	33	82	844	242	95	352	65	155	305	304
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1806	1866	1900	1824	1881	1788	1806	1884	1900	1788	1891	1900
Adj Flow Rate, veh/h	229	348	36	89	917	263	103	383	71	168	332	330
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	2	0	1	2	1	1	1	2	1	1
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	293	1272	131	463	1222	506	282	1018	187	373	607	537
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.10	0.39	0.39	0.05	0.34	0.34	0.05	0.34	0.34	0.05	0.34	0.34
Ln Grp Delay, s/veh	35.8	23.6	23.7	21.5	36.2	32.7	24.2	29.3	29.4	25.4	33.0	35.5
Ln Grp LOS	D	C	C	C	D	C	C	C	C	C	C	D
Approach Vol, veh/h		613			1269			557			830	
Approach Delay, s/veh		28.2			34.4			28.4			32.5	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	9.0	43.0	8.6	49.0	9.0	43.0	14.1	43.5
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	6.0	37.0	6.0	43.0	6.0	37.0	12.0	37.0
Max Allow Headway (MAH), s	4.6	5.9	4.6	5.6	4.6	5.9	4.6	5.6
Max Q Clear (g_c+I1), s	8.0	12.7	5.6	10.1	6.2	21.0	11.1	26.9
Green Ext Time (g_e), s	0.0	9.3	0.0	15.5	0.0	7.5	0.1	7.1
Prob of Phs Call (p_c)	0.99	1.00	0.93	1.00	0.96	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1737		1720		1720	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3015		3242		1796		3574

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		554		333		1588		1481

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	168	0	89	0	103	0	229	0
Grp Sat Flow (s), veh/h/ln	1703	0	1737	0	1720	0	1720	0
Q Serve Time (g_s), s	6.0	0.0	3.6	0.0	4.2	0.0	9.1	0.0
Cycle Q Clear Time (g_c), s	6.0	0.0	3.6	0.0	4.2	0.0	9.1	0.0
Perm LT Sat Flow (s_l), veh/h/ln	891	0	967	0	744	0	458	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	37.0	0.0	37.5	0.0	37.0	0.0	39.5	0.0
Perm LT Serve Time (g_u), s	26.3	0.0	34.9	0.0	18.0	0.0	12.6	0.0
Perm LT Q Serve Time (g_ps), s	5.2	0.0	0.3	0.0	3.1	0.0	12.6	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	373	0	463	0	282	0	293	0
V/C Ratio (X)	0.45	0.00	0.19	0.00	0.37	0.00	0.78	0.00
Avail Cap (c_a), veh/h	373	0	469	0	282	0	307	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	24.6	0.0	21.3	0.0	23.5	0.0	24.0	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.2	0.0	0.8	0.0	11.8	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	25.4	0.0	21.5	0.0	24.2	0.0	35.8	0.0
1st-Term Q (Q1), veh/ln	1.2	0.0	1.7	0.0	2.0	0.0	4.3	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.1	0.0	1.0	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.3	0.0	1.7	0.0	2.0	0.0	5.2	0.0
%ile Storage Ratio (RQ%)	5.58	0.00	7.29	0.00	11.58	0.00	14.86	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	226	0	189	0	332	0	917
Grp Sat Flow (s), veh/h/ln	0	1790	0	1773	0	1796	0	1787
Q Serve Time (g_s), s	0.0	10.5	0.0	8.0	0.0	16.5	0.0	24.9
Cycle Q Clear Time (g_c), s	0.0	10.5	0.0	8.0	0.0	16.5	0.0	24.9
Lane Grp Cap (c), veh/h	0	604	0	696	0	607	0	1222
V/C Ratio (X)	0.00	0.37	0.00	0.27	0.00	0.55	0.00	0.75
Avail Cap (c_a), veh/h	0	604	0	696	0	607	0	1222
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.5	0.0	22.7	0.0	29.5	0.0	31.9
Incr Delay (d2), s/veh	0.0	1.8	0.0	1.0	0.0	3.5	0.0	4.3
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.3	0.0	23.6	0.0	33.0	0.0	36.2
1st-Term Q (Q1), veh/ln	0.0	5.2	0.0	3.9	0.0	8.1	0.0	12.2

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.6	0.0	0.7
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.5	0.0	4.1	0.0	8.7	0.0	13.0
%ile Storage Ratio (RQ%)	0.00	24.36	0.00	14.69	0.00	16.13	0.00	22.43
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	228	0	195	0	330	0	263
Grp Sat Flow (s), veh/h/ln	0	1779	0	1803	0	1588	0	1481
Q Serve Time (g_s), s	0.0	10.7	0.0	8.1	0.0	19.0	0.0	15.6
Cycle Q Clear Time (g_c), s	0.0	10.7	0.0	8.1	0.0	19.0	0.0	15.6
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.31	0.00	0.18	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	601	0	707	0	537	0	506
V/C Ratio (X)	0.00	0.38	0.00	0.28	0.00	0.61	0.00	0.52
Avail Cap (c_a), veh/h	0	601	0	707	0	537	0	506
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.6	0.0	22.7	0.0	30.3	0.0	28.9
Incr Delay (d2), s/veh	0.0	1.8	0.0	1.0	0.0	5.2	0.0	3.8
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.4	0.0	23.7	0.0	35.5	0.0	32.7
1st-Term Q (Q1), veh/ln	0.0	5.3	0.0	4.0	0.0	8.3	0.0	6.4
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.8	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.6	0.0	4.2	0.0	9.1	0.0	6.9
%ile Storage Ratio (RQ%)	0.00	24.62	0.00	15.12	0.00	16.89	0.00	14.76
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.7
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	595	1213	40	23	9
Future Vol, veh/h	15	595	1213	40	23	9
Conflicting Peds, #/hr	24	0	0	24	3	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	2	1	0	0	0
Mvmt Flow	15	613	1251	41	24	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1316	0	-	0	1636	673
Stage 1	-	-	-	-	1295	-
Stage 2	-	-	-	-	341	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	532	-	-	-	93	402
Stage 1	-	-	-	-	224	-
Stage 2	-	-	-	-	698	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	531	-	-	-	87	393
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	219	-
Stage 2	-	-	-	-	664	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	25.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	531	-	-	-	209
HCM Lane V/C Ratio	0.029	-	-	-	0.158
HCM Control Delay (s)	12	-	-	-	25.4
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	623	1257	6	1	6
Future Vol, veh/h	0	623	1257	6	1	6
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	642	1296	6	1	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1322	0	-	0	1640	671
Stage 1	-	-	-	-	1319	-
Stage 2	-	-	-	-	321	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	529	-	-	-	93	404
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	714	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	529	-	-	-	90	397
Mov Cap-2 Maneuver	-	-	-	-	176	-
Stage 1	-	-	-	-	214	-
Stage 2	-	-	-	-	702	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	529	-	-	-	337
HCM Lane V/C Ratio	-	-	-	-	0.021
HCM Control Delay (s)	0	-	-	-	15.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	257	442	71	352	151	46	397	221	436
v/c Ratio	0.56	0.36	0.18	0.31	0.27	0.12	0.36	0.52	0.34
Control Delay	23.9	25.4	17.5	28.0	5.5	16.8	26.8	22.8	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	23.9	25.4	17.5	28.0	5.5	16.8	26.8	22.8	13.2
Queue Length 50th (m)	35.1	37.3	8.6	30.8	0.0	5.5	33.0	29.5	18.1
Queue Length 95th (m)	54.2	51.4	17.1	43.4	14.2	12.2	46.6	46.8	31.2
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	461	1226	385	1126	565	392	1099	429	1277
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.36	0.18	0.31	0.27	0.12	0.36	0.52	0.34

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	381	39	67	334	143	44	309	68	210	213	201
Future Volume (veh/h)	244	381	39	67	334	143	44	309	68	210	213	201
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1824	1808	1900	1721	1845	1721	1737	1833	1900	1788	1817	1900
Adj Flow Rate, veh/h	257	401	41	71	352	151	46	325	72	221	224	212
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	6	3	6	5	4	4	2	6	6
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	436	1164	118	385	1179	482	378	955	209	439	651	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.04	0.34	0.34	0.08	0.38	0.38
Ln Grp Delay, s/veh	24.7	26.5	26.5	22.2	27.6	28.8	22.3	28.9	29.0	22.0	26.0	26.6
Ln Grp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		699			574			443			657	
Approach Delay, s/veh		25.8			27.2			28.3			24.8	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	12.0	43.0	8.3	46.7	7.5	47.5	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	9.0	37.0	6.0	40.0	6.0	40.0	9.0	37.0
Max Allow Headway (MAH), s	4.6	5.8	4.6	5.6	4.6	5.8	4.6	5.6
Max Q Clear (g_c+I1), s	11.0	11.6	5.1	12.2	4.0	13.0	11.0	10.6
Green Ext Time (g_e), s	0.0	6.6	0.0	7.5	0.0	6.8	0.0	7.4
Prob of Phs Call (p_c)	1.00	1.00	0.89	1.00	0.75	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1639		1654		1737	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2839		3146		1727		3505

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		620		320		1533		1433

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	221	0	71	0	46	0	257	0
Grp Sat Flow (s), veh/h/ln	1703	0	1639	0	1654	0	1737	0
Q Serve Time (g_s), s	9.0	0.0	3.1	0.0	2.0	0.0	9.0	0.0
Cycle Q Clear Time (g_c), s	9.0	0.0	3.1	0.0	2.0	0.0	9.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	940	0	868	0	881	0	871	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	39.0	0.0	37.0	0.0	37.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	27.4	0.0	30.5	0.0	30.5	0.0	28.8	0.0
Perm LT Q Serve Time (g_ps), s	4.1	0.0	0.6	0.0	0.4	0.0	8.5	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	439	0	385	0	378	0	436	0
V/C Ratio (X)	0.50	0.00	0.18	0.00	0.12	0.00	0.59	0.00
Avail Cap (c_a), veh/h	439	0	396	0	400	0	436	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	21.1	0.0	22.0	0.0	22.1	0.0	22.6	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.2	0.0	0.1	0.0	2.1	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	22.0	0.0	22.2	0.0	22.3	0.0	24.7	0.0
1st-Term Q (Q1), veh/ln	4.2	0.0	1.4	0.0	0.9	0.0	4.9	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.0	0.0	0.3	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	4.3	0.0	1.4	0.0	0.9	0.0	5.2	0.0
%ile Storage Ratio (RQ%)	18.14	0.00	5.68	0.00	5.01	0.00	14.80	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	198	0	218	0	224	0	352
Grp Sat Flow (s), veh/h/ln	0	1742	0	1718	0	1727	0	1752
Q Serve Time (g_s), s	0.0	9.3	0.0	10.1	0.0	10.2	0.0	8.2
Cycle Q Clear Time (g_c), s	0.0	9.3	0.0	10.1	0.0	10.2	0.0	8.2
Lane Grp Cap (c), veh/h	0	586	0	635	0	651	0	1179
V/C Ratio (X)	0.00	0.34	0.00	0.34	0.00	0.34	0.00	0.30
Avail Cap (c_a), veh/h	0	586	0	635	0	651	0	1179
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.3	0.0	25.0	0.0	24.5	0.0	26.9
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.5	0.0	1.4	0.0	0.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.9	0.0	26.5	0.0	26.0	0.0	27.6
1st-Term Q (Q1), veh/ln	0.0	4.5	0.0	4.8	0.0	4.9	0.0	4.0

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.8	0.0	5.0	0.0	5.1	0.0	4.1
%ile Storage Ratio (RQ%)	0.00	20.77	0.00	17.93	0.00	9.27	0.00	6.98
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	199	0	224	0	212	0	151
Grp Sat Flow (s), veh/h/ln	0	1717	0	1749	0	1533	0	1433
Q Serve Time (g_s), s	0.0	9.6	0.0	10.2	0.0	11.0	0.0	8.6
Cycle Q Clear Time (g_c), s	0.0	9.6	0.0	10.2	0.0	11.0	0.0	8.6
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.36	0.00	0.18	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	578	0	647	0	578	0	482
V/C Ratio (X)	0.00	0.35	0.00	0.35	0.00	0.37	0.00	0.31
Avail Cap (c_a), veh/h	0	578	0	647	0	578	0	482
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.4	0.0	25.0	0.0	24.8	0.0	27.1
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.5	0.0	1.8	0.0	1.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.0	0.0	26.5	0.0	26.6	0.0	28.8
1st-Term Q (Q1), veh/ln	0.0	4.5	0.0	4.9	0.0	4.7	0.0	3.4
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	4.8	0.0	5.2	0.0	4.9	0.0	3.6
%ile Storage Ratio (RQ%)	0.00	20.97	0.00	18.43	0.00	8.95	0.00	7.63
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.3
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	595	552	19	48	21
Future Vol, veh/h	8	595	552	19	48	21
Conflicting Peds, #/hr	17	0	0	17	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	9	633	587	20	51	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	624	0	-	0	948	321
Stage 1	-	-	-	-	614	-
Stage 2	-	-	-	-	334	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	967	-	-	-	263	681
Stage 1	-	-	-	-	508	-
Stage 2	-	-	-	-	703	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	967	-	-	-	253	671
Mov Cap-2 Maneuver	-	-	-	-	375	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	686	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	967	-	-	-	433
HCM Lane V/C Ratio	0.009	-	-	-	0.17
HCM Control Delay (s)	8.8	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.6



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	241	378	85	887	250	101	431	160	661
v/c Ratio	0.86	0.28	0.20	0.77	0.39	0.38	0.38	0.44	0.54
Control Delay	48.9	22.3	16.2	38.2	5.2	22.7	27.5	23.8	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.9	22.3	16.2	38.2	5.2	22.7	27.5	23.8	19.0
Queue Length 50th (m)	30.7	29.3	9.8	93.9	0.0	13.1	36.7	21.7	37.2
Queue Length 95th (m)	#75.0	41.3	18.6	118.9	17.6	24.1	51.0	36.2	55.8
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	279	1356	431	1148	644	265	1131	367	1220
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.28	0.20	0.77	0.39	0.38	0.38	0.44	0.54

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	222	314	34	78	816	230	93	335	62	147	290	318
Future Volume (veh/h)	222	314	34	78	816	230	93	335	62	147	290	318
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1806	1866	1900	1824	1881	1788	1806	1884	1900	1788	1891	1900
Adj Flow Rate, veh/h	241	341	37	85	887	250	101	364	67	160	315	346
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	2	0	1	2	1	1	1	2	1	1
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	305	1268	137	465	1206	500	273	1019	186	382	608	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.11	0.39	0.39	0.05	0.34	0.34	0.05	0.34	0.34	0.05	0.34	0.34
Ln Grp Delay, s/veh	36.6	23.5	23.5	21.8	36.0	32.5	24.6	29.0	29.1	24.7	32.2	36.5
Ln Grp LOS	D	C	C	C	D	C	C	C	C	C	C	D
Approach Vol, veh/h		619			1222			532			821	
Approach Delay, s/veh		28.6			34.3			28.2			32.5	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	9.0	43.0	8.5	49.1	8.9	43.1	14.6	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	6.0	37.0	6.0	43.0	6.0	37.0	12.0	37.0
Max Allow Headway (MAH), s	4.6	5.9	4.6	5.6	4.6	5.9	4.6	5.6
Max Q Clear (g_c+I1), s	8.0	12.1	5.5	9.9	6.2	22.2	11.6	26.0
Green Ext Time (g_e), s	0.0	9.2	0.0	14.9	0.0	7.0	0.0	7.5
Prob of Phs Call (p_c)	0.99	1.00	0.92	1.00	0.95	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1737		1720		1720	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3019		3226		1796		3574

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		550		347		1589		1480

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	160	0	85	0	101	0	241	0
Grp Sat Flow (s), veh/h/ln	1703	0	1737	0	1720	0	1720	0
Q Serve Time (g_s), s	6.0	0.0	3.5	0.0	4.2	0.0	9.6	0.0
Cycle Q Clear Time (g_c), s	6.0	0.0	3.5	0.0	4.2	0.0	9.6	0.0
Perm LT Sat Flow (s_l), veh/h/ln	910	0	972	0	745	0	477	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	37.0	0.0	37.0	0.0	37.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	26.9	0.0	35.2	0.0	16.9	0.0	13.0	0.0
Perm LT Q Serve Time (g_ps), s	4.0	0.0	0.2	0.0	3.1	0.0	13.0	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	382	0	465	0	273	0	305	0
V/C Ratio (X)	0.42	0.00	0.18	0.00	0.37	0.00	0.79	0.00
Avail Cap (c_a), veh/h	382	0	472	0	275	0	311	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	23.9	0.0	21.6	0.0	23.7	0.0	23.9	0.0
Incr Delay (d2), s/veh	0.7	0.0	0.2	0.0	0.8	0.0	12.7	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	24.7	0.0	21.8	0.0	24.6	0.0	36.6	0.0
1st-Term Q (Q1), veh/ln	1.0	0.0	1.6	0.0	1.9	0.0	4.5	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.1	0.0	1.1	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.0	0.0	1.7	0.0	2.0	0.0	5.6	0.0
%ile Storage Ratio (RQ%)	4.36	0.00	6.96	0.00	11.37	0.00	15.82	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	214	0	186	0	315	0	887
Grp Sat Flow (s), veh/h/ln	0	1790	0	1773	0	1796	0	1787
Q Serve Time (g_s), s	0.0	9.9	0.0	7.8	0.0	15.4	0.0	24.0
Cycle Q Clear Time (g_c), s	0.0	9.9	0.0	7.8	0.0	15.4	0.0	24.0
Lane Grp Cap (c), veh/h	0	604	0	697	0	608	0	1206
V/C Ratio (X)	0.00	0.35	0.00	0.27	0.00	0.52	0.00	0.74
Avail Cap (c_a), veh/h	0	604	0	697	0	608	0	1206
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.3	0.0	22.6	0.0	29.1	0.0	32.0
Incr Delay (d2), s/veh	0.0	1.6	0.0	0.9	0.0	3.1	0.0	4.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.0	0.0	23.5	0.0	32.2	0.0	36.0
1st-Term Q (Q1), veh/ln	0.0	4.9	0.0	3.8	0.0	7.6	0.0	11.8

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.5	0.0	0.7
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.2	0.0	4.0	0.0	8.1	0.0	12.5
%ile Storage Ratio (RQ%)	0.00	22.80	0.00	14.46	0.00	15.08	0.00	21.64
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	217	0	192	0	346	0	250
Grp Sat Flow (s), veh/h/ln	0	1779	0	1800	0	1589	0	1480
Q Serve Time (g_s), s	0.0	10.1	0.0	7.9	0.0	20.2	0.0	14.8
Cycle Q Clear Time (g_c), s	0.0	10.1	0.0	7.9	0.0	20.2	0.0	14.8
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.31	0.00	0.19	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	600	0	708	0	538	0	500
V/C Ratio (X)	0.00	0.36	0.00	0.27	0.00	0.64	0.00	0.50
Avail Cap (c_a), veh/h	0	600	0	708	0	538	0	500
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.4	0.0	22.6	0.0	30.7	0.0	29.0
Incr Delay (d2), s/veh	0.0	1.7	0.0	0.9	0.0	5.8	0.0	3.6
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.1	0.0	23.5	0.0	36.5	0.0	32.5
1st-Term Q (Q1), veh/ln	0.0	4.9	0.0	3.9	0.0	8.8	0.0	6.0
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.9	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.2	0.0	4.1	0.0	9.7	0.0	6.5
%ile Storage Ratio (RQ%)	0.00	23.09	0.00	14.87	0.00	17.99	0.00	13.95
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	31.7
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	593	1196	46	33	14
Future Vol, veh/h	20	593	1196	46	33	14
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	21	611	1233	47	34	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1300	0	-	0	1624	660
Stage 1	-	-	-	-	1277	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	540	-	-	-	95	410
Stage 1	-	-	-	-	229	-
Stage 2	-	-	-	-	693	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	540	-	-	-	88	403
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	225	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	26.3
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	540	-	-	-	217
HCM Lane V/C Ratio	0.038	-	-	-	0.223
HCM Control Delay (s)	11.9	-	-	-	26.3
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	268	464	75	369	158	48	418	233	458
v/c Ratio	0.59	0.38	0.20	0.33	0.28	0.13	0.37	0.57	0.36
Control Delay	25.0	25.7	17.7	28.2	5.5	16.8	26.4	25.0	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	25.7	17.7	28.2	5.5	16.8	26.4	25.0	13.4
Queue Length 50th (m)	36.9	39.5	9.1	32.5	0.0	5.7	34.5	31.4	19.1
Queue Length 95th (m)	56.7	54.1	17.8	45.5	14.3	12.6	48.5	49.3	32.6
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	452	1226	375	1126	569	381	1128	407	1283
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.38	0.20	0.33	0.28	0.13	0.37	0.57	0.36

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	255	400	41	71	351	150	46	325	72	221	224	211
Future Volume (veh/h)	255	400	41	71	351	150	46	325	72	221	224	211
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1824	1808	1900	1721	1845	1721	1737	1833	1900	1788	1817	1900
Adj Flow Rate, veh/h	268	421	43	75	369	158	48	342	76	233	236	222
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	6	3	6	5	4	4	2	6	6
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	428	1162	118	377	1179	482	369	980	215	424	650	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.08	0.37	0.37	0.05	0.34	0.34	0.04	0.35	0.35	0.07	0.38	0.38
Ln Grp Delay, s/veh	26.3	26.8	26.9	22.3	27.8	29.0	21.7	28.3	28.5	24.4	26.4	27.0
Ln Grp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		732			602			466			691	
Approach Delay, s/veh		26.6			27.4			27.7			25.9	
Approach LOS		C			C			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	11.0	44.0	8.4	46.6	7.6	47.4	12.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	8.0	38.0	6.0	40.0	6.0	40.0	9.0	37.0
Max Allow Headway (MAH), s	4.6	5.8	4.6	5.6	4.6	5.8	4.6	5.6
Max Q Clear (g_c+I1), s	10.0	12.0	5.2	12.8	4.0	13.6	11.0	11.0
Green Ext Time (g_e), s	0.0	7.1	0.0	7.9	0.0	7.1	0.0	7.8
Prob of Phs Call (p_c)	1.00	1.00	0.90	1.00	0.77	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1639		1654		1737	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		2836		3146		1727		3505

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		622		320		1532		1433

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	233	0	75	0	48	0	268	0
Grp Sat Flow (s), veh/h/ln	1703	0	1639	0	1654	0	1737	0
Q Serve Time (g_s), s	8.0	0.0	3.2	0.0	2.0	0.0	9.0	0.0
Cycle Q Clear Time (g_c), s	8.0	0.0	3.2	0.0	2.0	0.0	9.0	0.0
Perm LT Sat Flow (s_l), veh/h/ln	923	0	851	0	864	0	852	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	40.0	0.0	37.0	0.0	38.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	28.0	0.0	29.8	0.0	29.8	0.0	28.4	0.0
Perm LT Q Serve Time (g_ps), s	8.0	0.0	0.7	0.0	0.5	0.0	10.7	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	424	0	377	0	369	0	428	0
V/C Ratio (X)	0.55	0.00	0.20	0.00	0.13	0.00	0.63	0.00
Avail Cap (c_a), veh/h	424	0	386	0	389	0	428	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	22.9	0.0	22.0	0.0	21.6	0.0	23.4	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.3	0.0	0.2	0.0	2.9	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	24.4	0.0	22.3	0.0	21.7	0.0	26.3	0.0
1st-Term Q (Q1), veh/ln	2.0	0.0	1.4	0.0	0.9	0.0	2.4	0.0
2nd-Term Q (Q2), veh/ln	0.2	0.0	0.0	0.0	0.0	0.0	0.3	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	2.2	0.0	1.5	0.0	0.9	0.0	2.8	0.0
%ile Storage Ratio (RQ%)	8.99	0.00	6.00	0.00	5.16	0.00	7.93	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	208	0	229	0	236	0	369
Grp Sat Flow (s), veh/h/ln	0	1742	0	1718	0	1727	0	1752
Q Serve Time (g_s), s	0.0	9.8	0.0	10.7	0.0	10.9	0.0	8.6
Cycle Q Clear Time (g_c), s	0.0	9.8	0.0	10.7	0.0	10.9	0.0	8.6
Lane Grp Cap (c), veh/h	0	602	0	634	0	650	0	1179
V/C Ratio (X)	0.00	0.35	0.00	0.36	0.00	0.36	0.00	0.31
Avail Cap (c_a), veh/h	0	602	0	634	0	650	0	1179
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	26.8	0.0	25.3	0.0	24.8	0.0	27.1
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.6	0.0	1.6	0.0	0.7
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.3	0.0	26.8	0.0	26.4	0.0	27.8
1st-Term Q (Q1), veh/ln	0.0	4.7	0.0	5.0	0.0	5.2	0.0	4.2

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.1
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.0	0.0	5.3	0.0	5.5	0.0	4.3
%ile Storage Ratio (RQ%)	0.00	21.62	0.00	18.86	0.00	9.90	0.00	7.32
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	210	0	235	0	222	0	158
Grp Sat Flow (s), veh/h/ln	0	1717	0	1749	0	1532	0	1433
Q Serve Time (g_s), s	0.0	10.0	0.0	10.8	0.0	11.6	0.0	9.0
Cycle Q Clear Time (g_c), s	0.0	10.0	0.0	10.8	0.0	11.6	0.0	9.0
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.36	0.00	0.18	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	593	0	646	0	577	0	482
V/C Ratio (X)	0.00	0.35	0.00	0.36	0.00	0.39	0.00	0.33
Avail Cap (c_a), veh/h	0	593	0	646	0	577	0	482
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	26.8	0.0	25.3	0.0	25.0	0.0	27.2
Incr Delay (d2), s/veh	0.0	1.6	0.0	1.6	0.0	1.9	0.0	1.8
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	28.5	0.0	26.9	0.0	27.0	0.0	29.0
1st-Term Q (Q1), veh/ln	0.0	4.7	0.0	5.2	0.0	4.9	0.0	3.6
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.3	0.0	0.3	0.0	0.2
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.0	0.0	5.5	0.0	5.2	0.0	3.8
%ile Storage Ratio (RQ%)	0.00	21.79	0.00	19.60	0.00	9.50	0.00	7.99
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.8
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	625	580	19	48	21
Future Vol, veh/h	8	625	580	19	48	21
Conflicting Peds, #/hr	17	0	0	17	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	9	665	617	20	51	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	654	0	-	0	993	336
Stage 1	-	-	-	-	644	-
Stage 2	-	-	-	-	349	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	943	-	-	-	246	666
Stage 1	-	-	-	-	490	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	943	-	-	-	237	656
Mov Cap-2 Maneuver	-	-	-	-	360	-
Stage 1	-	-	-	-	483	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	943	-	-	-	417
HCM Lane V/C Ratio	0.009	-	-	-	0.176
HCM Control Delay (s)	8.9	-	-	-	15.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.6



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	252	396	89	932	263	107	454	168	694
v/c Ratio	0.95	0.29	0.21	0.81	0.40	0.42	0.40	0.47	0.57
Control Delay	67.7	22.5	16.3	40.1	5.2	23.9	27.9	24.9	20.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	67.7	22.5	16.3	40.1	5.2	23.9	27.9	24.9	20.4
Queue Length 50th (m)	36.5	31.0	10.2	100.5	0.0	14.0	39.2	22.9	42.0
Queue Length 95th (m)	#87.8	43.4	19.3	126.6	18.0	25.3	54.0	37.9	61.4
Internal Link Dist (m)		64.7		135.3			50.2		120.0
Turn Bay Length (m)	85.0		55.0		110.0	40.0		55.0	
Base Capacity (vph)	266	1357	424	1148	652	252	1131	355	1216
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.29	0.21	0.81	0.40	0.42	0.40	0.47	0.57

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	232	329	35	82	857	242	98	352	65	155	305	333
Future Volume (veh/h)	232	329	35	82	857	242	98	352	65	155	305	333
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj (A_pbT)	1.00		0.99	0.99		0.99	1.00		0.99	0.99		0.99
Parking Bus Adj	1.00	1.00	1.00	1.00	1.00	0.99	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1806	1866	1900	1824	1881	1788	1806	1884	1900	1788	1891	1900
Adj Flow Rate, veh/h	252	358	38	89	932	263	107	383	71	168	332	362
Adj No. of Lanes	1	2	0	1	2	1	1	2	0	1	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	1	2	2	0	1	2	1	1	1	2	1	1
Opposing Right Turn Influence	Yes			Yes			Yes			Yes		
Cap, veh/h	299	1276	134	459	1202	498	261	1014	186	371	604	534
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Prop Arrive On Green	0.11	0.39	0.39	0.05	0.34	0.34	0.05	0.34	0.34	0.05	0.34	0.34
Ln Grp Delay, s/veh	43.4	23.7	23.7	22.0	37.7	33.4	25.3	29.5	29.6	25.7	33.3	38.1
Ln Grp LOS	D	C	C	C	D	C	C	C	C	C	C	D
Approach Vol, veh/h		648			1284			561			862	
Approach Delay, s/veh		31.4			35.7			28.7			33.8	
Approach LOS		C			D			C			C	

Timer:	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Case No	1.1	4.0	1.1	4.0	1.1	4.0	1.1	3.0
Phs Duration (G+Y+Rc), s	9.0	43.0	8.6	49.4	9.0	43.0	15.0	43.0
Change Period (Y+Rc), s	3.0	6.0	3.0	6.0	3.0	6.0	3.0	6.0
Max Green (Gmax), s	6.0	37.0	6.0	43.0	6.0	37.0	12.0	37.0
Max Allow Headway (MAH), s	4.6	5.9	4.6	5.6	4.6	5.9	4.6	5.6
Max Q Clear (g_c+I1), s	8.0	12.7	5.6	10.4	6.4	23.5	12.1	27.7
Green Ext Time (g_e), s	0.0	9.6	0.0	15.8	0.0	7.0	0.0	6.7
Prob of Phs Call (p_c)	0.99	1.00	0.93	1.00	0.96	1.00	1.00	1.00
Prob of Max Out (p_x)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00

Left-Turn Movement Data								
Assigned Mvmt	1		3		5		7	
Mvmt Sat Flow, veh/h	1703		1737		1720		1720	

Through Movement Data								
Assigned Mvmt		2		4		6		8
Mvmt Sat Flow, veh/h		3015		3233		1796		3574

Right-Turn Movement Data								
Assigned Mvmt		12		14		16		18
Mvmt Sat Flow, veh/h		554		341		1589		1480

Left Lane Group Data								
Assigned Mvmt	1	0	3	0	5	0	7	0
Lane Assignment	(Pr/Pm)		(Pr/Pm)		(Pr/Pm)		(Pr/Pm)	

Lanes in Grp	1	0	1	0	1	0	1	0
Grp Vol (v), veh/h	168	0	89	0	107	0	252	0
Grp Sat Flow (s), veh/h/ln	1703	0	1737	0	1720	0	1720	0
Q Serve Time (g_s), s	6.0	0.0	3.6	0.0	4.4	0.0	10.1	0.0
Cycle Q Clear Time (g_c), s	6.0	0.0	3.6	0.0	4.4	0.0	10.1	0.0
Perm LT Sat Flow (s_l), veh/h/ln	891	0	956	0	722	0	452	0
Shared LT Sat Flow (s_sh), veh/h/ln	0	0	0	0	0	0	0	0
Perm LT Eff Green (g_p), s	37.0	0.0	37.0	0.0	37.0	0.0	39.0	0.0
Perm LT Serve Time (g_u), s	26.3	0.0	35.0	0.0	15.5	0.0	11.3	0.0
Perm LT Q Serve Time (g_ps), s	5.3	0.0	0.2	0.0	3.7	0.0	11.3	0.0
Time to First Blk (g_f), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Serve Time pre Blk (g_fs), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop LT Inside Lane (P_L)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Lane Grp Cap (c), veh/h	371	0	459	0	261	0	299	0
V/C Ratio (X)	0.45	0.00	0.19	0.00	0.41	0.00	0.84	0.00
Avail Cap (c_a), veh/h	371	0	465	0	261	0	299	0
Upstream Filter (I)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
Uniform Delay (d1), s/veh	24.8	0.0	21.8	0.0	24.2	0.0	24.4	0.0
Incr Delay (d2), s/veh	0.9	0.0	0.2	0.0	1.0	0.0	19.0	0.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	25.7	0.0	22.0	0.0	25.3	0.0	43.4	0.0
1st-Term Q (Q1), veh/ln	1.3	0.0	1.7	0.0	2.1	0.0	4.7	0.0
2nd-Term Q (Q2), veh/ln	0.1	0.0	0.0	0.0	0.1	0.0	1.6	0.0
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	1.00	0.00	1.00	0.00	1.00	0.00	1.00	0.00
%ile Back of Q (50%), veh/ln	1.4	0.0	1.7	0.0	2.2	0.0	6.3	0.0
%ile Storage Ratio (RQ%)	5.66	0.00	7.29	0.00	12.26	0.00	17.84	0.00
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Middle Lane Group Data								
Assigned Mvmt	0	2	0	4	0	6	0	8
Lane Assignment		T		T		T		T
Lanes in Grp	0	1	0	1	0	1	0	2
Grp Vol (v), veh/h	0	226	0	195	0	332	0	932
Grp Sat Flow (s), veh/h/ln	0	1790	0	1773	0	1796	0	1787
Q Serve Time (g_s), s	0.0	10.5	0.0	8.2	0.0	16.6	0.0	25.7
Cycle Q Clear Time (g_c), s	0.0	10.5	0.0	8.2	0.0	16.6	0.0	25.7
Lane Grp Cap (c), veh/h	0	602	0	699	0	604	0	1202
V/C Ratio (X)	0.00	0.38	0.00	0.28	0.00	0.55	0.00	0.78
Avail Cap (c_a), veh/h	0	602	0	699	0	604	0	1202
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.7	0.0	22.7	0.0	29.7	0.0	32.8
Incr Delay (d2), s/veh	0.0	1.8	0.0	1.0	0.0	3.6	0.0	4.9
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.5	0.0	23.7	0.0	33.3	0.0	37.7
1st-Term Q (Q1), veh/ln	0.0	5.2	0.0	4.0	0.0	8.2	0.0	12.7

2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	0.6	0.0	0.8
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.5	0.0	4.2	0.0	8.8	0.0	13.5
%ile Storage Ratio (RQ%)	0.00	24.36	0.00	15.16	0.00	16.31	0.00	23.39
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Right Lane Group Data								
Assigned Mvmt	0	12	0	14	0	16	0	18
Lane Assignment		T+R		T+R		T+R		R
Lanes in Grp	0	1	0	1	0	1	0	1
Grp Vol (v), veh/h	0	228	0	201	0	362	0	263
Grp Sat Flow (s), veh/h/ln	0	1779	0	1801	0	1589	0	1480
Q Serve Time (g_s), s	0.0	10.7	0.0	8.4	0.0	21.5	0.0	15.8
Cycle Q Clear Time (g_c), s	0.0	10.7	0.0	8.4	0.0	21.5	0.0	15.8
Prot RT Sat Flow (s_R), veh/h/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prot RT Eff Green (g_R), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop RT Outside Lane (P_R)	0.00	0.31	0.00	0.19	0.00	1.00	0.00	1.00
Lane Grp Cap (c), veh/h	0	598	0	711	0	534	0	498
V/C Ratio (X)	0.00	0.38	0.00	0.28	0.00	0.68	0.00	0.53
Avail Cap (c_a), veh/h	0	598	0	711	0	534	0	498
Upstream Filter (I)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
Uniform Delay (d1), s/veh	0.0	27.8	0.0	22.7	0.0	31.4	0.0	29.5
Incr Delay (d2), s/veh	0.0	1.8	0.0	1.0	0.0	6.8	0.0	4.0
Initial Q Delay (d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (d), s/veh	0.0	29.6	0.0	23.7	0.0	38.1	0.0	33.4
1st-Term Q (Q1), veh/ln	0.0	5.3	0.0	4.1	0.0	9.5	0.0	6.4
2nd-Term Q (Q2), veh/ln	0.0	0.3	0.0	0.2	0.0	1.0	0.0	0.5
3rd-Term Q (Q3), veh/ln	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile Back of Q Factor (f_B%)	0.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00
%ile Back of Q (50%), veh/ln	0.0	5.6	0.0	4.3	0.0	10.5	0.0	7.0
%ile Storage Ratio (RQ%)	0.00	24.62	0.00	15.58	0.00	19.37	0.00	14.96
Initial Q (Qb), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Final (Residual) Q (Qe), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Delay (ds), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Q (Qs), veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sat Cap (cs), veh/h	0	0	0	0	0	0	0	0
Initial Q Clear Time (tc), h	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.2
HCM 2010 LOS	C

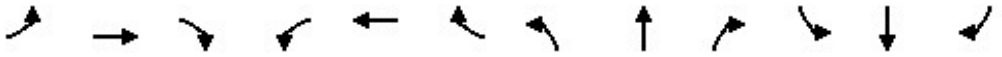
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	623	1257	46	33	14
Future Vol, veh/h	20	623	1257	46	33	14
Conflicting Peds, #/hr	20	0	0	20	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	21	642	1296	47	34	14

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1363	0	-	0	1702	692
Stage 1	-	-	-	-	1340	-
Stage 2	-	-	-	-	362	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	511	-	-	-	85	391
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	681	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	511	-	-	-	79	384
Mov Cap-2 Maneuver	-	-	-	-	168	-
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	642	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	28.4
HCM LOS			D

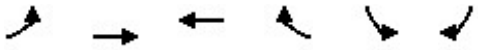
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	511	-	-	-	202
HCM Lane V/C Ratio	0.04	-	-	-	0.24
HCM Control Delay (s)	12.3	-	-	-	28.4
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	350	31	57	310	126	42	261	69	184	174	169
Future Volume (vph)	194	350	31	57	310	126	42	261	69	184	174	169
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.2	3.2	3.0	3.2	3.0	3.0	3.2	3.2	3.0	3.2	3.2
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	*0.67		1.00	*0.67	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.97		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1684	2270		1589	2362	1384	1603	3203		1650	3021	
Flt Permitted	0.39	1.00		0.37	1.00	1.00	0.54	1.00		0.47	1.00	
Satd. Flow (perm)	688	2270		625	2362	1384	905	3203		821	3021	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	204	368	33	60	326	133	44	275	73	194	183	178
RTOR Reduction (vph)	0	4	0	0	0	88	0	22	0	0	113	0
Lane Group Flow (vph)	204	397	0	60	326	45	44	326	0	194	248	0
Confl. Peds. (#/hr)	3		2	2		3	4		3	3		4
Heavy Vehicles (%)	0%	5%	6%	6%	3%	6%	5%	4%	2%	2%	6%	3%
Bus Blockages (#/hr)	0	3	0	0	0	3	0	2	0	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	49.2	40.2		44.0	37.6	37.6	43.7	37.6		49.5	40.5	
Effective Green, g (s)	49.2	40.2		44.0	37.6	37.6	43.7	37.6		49.5	40.5	
Actuated g/C Ratio	0.44	0.36		0.40	0.34	0.34	0.39	0.34		0.45	0.36	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	385	820		302	798	467	393	1083		432	1100	
v/s Ratio Prot	c0.04	0.17		0.01	0.14		0.01	0.10		c0.04	0.08	
v/s Ratio Perm	c0.19			0.07		0.03	0.04			c0.16		
v/c Ratio	0.53	0.48		0.20	0.41	0.10	0.11	0.30		0.45	0.23	
Uniform Delay, d1	20.1	27.5		21.3	28.3	25.2	21.1	27.1		19.6	24.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.3	2.0		0.3	1.5	0.4	0.1	0.7		0.7	0.5	
Delay (s)	21.4	29.5		21.6	29.8	25.6	21.2	27.8		20.3	25.0	
Level of Service	C	C		C	C	C	C	C		C	C	
Approach Delay (s)		26.8			27.8			27.1			23.3	
Approach LOS		C			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	111.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

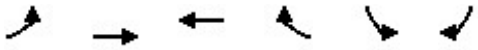
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	563	502	5	3	1
Future Volume (Veh/h)	5	563	502	5	3	1
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	5	605	540	5	3	1
Pedestrians			1		18	
Lane Width (m)			3.2		3.7	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		2	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (m)			131			
pX, platoon unblocked	0.94				0.94	0.94
vC, conflicting volume	563				874	290
vC1, stage 1 conf vol					560	
vC2, stage 2 conf vol					314	
vCu, unblocked vol	411				741	121
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1074				525	847

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	302	302	360	185	4
Volume Left	5	0	0	0	0	3
Volume Right	0	0	0	0	5	1
cSH	1074	1700	1700	1700	1700	581
Volume to Capacity	0.00	0.18	0.18	0.21	0.11	0.01
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	0.2
Control Delay (s)	8.4	0.0	0.0	0.0	0.0	11.2
Lane LOS	A					B
Approach Delay (s)	0.1			0.0		11.2
Approach LOS						B

Intersection Summary				
Average Delay	0.1			
Intersection Capacity Utilization	25.6%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	562	520	0	0	0
Future Volume (Veh/h)	0	562	520	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	598	553	0	0	0
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (m)			89			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	570				869	294
vC1, stage 1 conf vol					570	
vC2, stage 2 conf vol					299	
vCu, unblocked vol	376				699	78
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1090				540	889

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	0	299	299	369	184	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.18	0.18	0.22	0.11	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0			0.0		0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: Guelph Line & New Street

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	TR	L	T
Maximum Queue (m)	53.0	68.0	56.0	28.6	67.8	55.1	32.5	29.1	44.1	47.8	47.2	53.2
Average Queue (m)	27.6	38.7	26.6	10.8	37.2	21.4	11.9	7.6	22.8	24.9	24.0	23.5
95th Queue (m)	45.7	61.0	51.4	22.7	58.8	50.2	23.4	19.2	38.2	41.9	42.9	43.4
Link Distance (m)		65.3	65.3		137.4	137.4			52.3	52.3		128.2
Upstream Blk Time (%)		0	0						0	0		
Queuing Penalty (veh)		1	0						0	0		
Storage Bay Dist (m)	85.0			55.0			110.0	40.0			55.0	
Storage Blk Time (%)		0			1			0	1		0	0
Queuing Penalty (veh)		1			1			0	0		0	0

Intersection: 1: Guelph Line & New Street

Movement	SB
Directions Served	TR
Maximum Queue (m)	30.0
Average Queue (m)	11.1
95th Queue (m)	22.1
Link Distance (m)	128.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2: New Street & 2421 Access

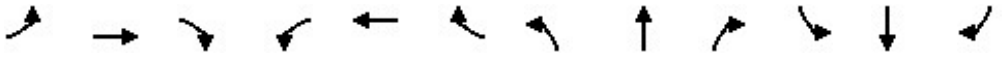
Movement	EB	EB	WB	SB
Directions Served	L	T	T	LR
Maximum Queue (m)	9.0	2.3	4.5	10.7
Average Queue (m)	0.4	0.1	0.2	1.4
95th Queue (m)	3.7	1.4	2.1	6.8
Link Distance (m)		71.6	25.2	34.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	15.0			
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: New Street & 2431 Access

Movement	EB
Directions Served	T
Maximum Queue (m)	12.9
Average Queue (m)	0.4
95th Queue (m)	5.1
Link Distance (m)	25.2
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (m)	
Storage Blk Time (%)	0
Queuing Penalty (veh)	0

Network Summary

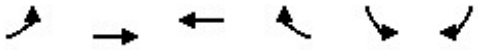
Network wide Queuing Penalty: 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	282	26	91	743	248	41	281	48	140	226	226
Future Volume (vph)	155	282	26	91	743	248	41	281	48	140	226	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.2	3.2	3.0	3.2	3.0	3.0	3.2	3.2	3.0	3.2	3.2
Total Lost time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	*0.67		1.00	*0.67	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.98	1.00	1.00		1.00	0.99	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.98		1.00	0.93	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1685	2270		1588	2362	1377	1601	3231		1648	3009	
Flt Permitted	0.10	1.00		0.45	1.00	1.00	0.46	1.00		0.47	1.00	
Satd. Flow (perm)	179	2270		747	2362	1377	783	3231		822	3009	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	163	297	27	96	782	261	43	296	51	147	238	238
RTOR Reduction (vph)	0	4	0	0	0	173	0	12	0	0	148	0
Lane Group Flow (vph)	163	320	0	96	782	88	43	335	0	147	328	0
Confl. Peds. (#/hr)	9		3	3		9	10		8	8		10
Heavy Vehicles (%)	0%	5%	6%	6%	3%	6%	5%	4%	2%	2%	6%	3%
Bus Blockages (#/hr)	0	3	0	0	0	3	0	2	0	0	2	0
Turn Type	pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	48.6	39.6		44.6	37.6	37.6	42.9	38.2		49.9	42.2	
Effective Green, g (s)	48.6	39.6		44.6	37.6	37.6	42.9	38.2		49.9	42.2	
Actuated g/C Ratio	0.44	0.36		0.40	0.34	0.34	0.38	0.34		0.45	0.38	
Clearance Time (s)	3.0	6.0		3.0	6.0	6.0	3.0	6.0		3.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	199	806		351	796	464	335	1106		432	1138	
v/s Ratio Prot	c0.07	0.14		0.02	c0.33		0.01	0.10		c0.03	0.11	
v/s Ratio Perm	0.29			0.09		0.06	0.04			c0.13		
v/c Ratio	0.82	0.40		0.27	0.98	0.19	0.13	0.30		0.34	0.29	
Uniform Delay, d1	25.1	27.0		21.4	36.6	26.2	21.7	26.9		18.8	24.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	22.4	1.5		0.4	27.9	0.9	0.2	0.7		0.5	0.6	
Delay (s)	47.5	28.5		21.8	64.5	27.1	21.9	27.6		19.3	24.8	
Level of Service	D	C		C	E	C	C	C		B	C	
Approach Delay (s)		34.8			52.3			27.0			23.5	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	111.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	93.0%	ICU Level of Service	F
Analysis Period (min)	15		

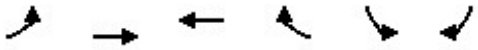
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	464	969	32	22	17
Future Volume (Veh/h)	5	464	969	32	22	17
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	5	499	1042	34	24	18
Pedestrians			1		12	
Lane Width (m)			3.2		3.7	
Walking Speed (m/s)			1.2		1.2	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (m)			131			
pX, platoon unblocked	0.71				0.71	0.71
vC, conflicting volume	1088				1332	550
vC1, stage 1 conf vol					1071	
vC2, stage 2 conf vol					260	
vCu, unblocked vol	323				664	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	99				95	98
cM capacity (veh/h)	883				473	771

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	5	250	250	695	381	42
Volume Left	5	0	0	0	0	24
Volume Right	0	0	0	0	34	18
cSH	883	1700	1700	1700	1700	567
Volume to Capacity	0.01	0.15	0.15	0.41	0.22	0.07
Queue Length 95th (m)	0.1	0.0	0.0	0.0	0.0	1.9
Control Delay (s)	9.1	0.0	0.0	0.0	0.0	11.9
Lane LOS	A					B
Approach Delay (s)	0.1			0.0		11.9
Approach LOS						B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	482	1008	0	0	0
Future Volume (Veh/h)	0	482	1008	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	513	1072	0	0	0
Pedestrians					17	
Lane Width (m)					3.6	
Walking Speed (m/s)					1.2	
Percent Blockage					1	
Right turn flare (veh)						
Median type		TWLTL	TWLTL			
Median storage veh)		2	2			
Upstream signal (m)			89			
pX, platoon unblocked	0.70				0.70	0.70
vC, conflicting volume	1089				1346	553
vC1, stage 1 conf vol					1089	
vC2, stage 2 conf vol					256	
vCu, unblocked vol	280				645	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	896				475	756

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	0	256	256	715	357	0
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.15	0.15	0.42	0.21	0.00
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						A
Approach Delay (s)	0.0			0.0		0.0
Approach LOS						A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	31.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection: 1: Guelph Line & New Street

Movement	EB	EB	EB	WB	WB	WB	WB	B11	NB	NB	NB	B6
Directions Served	L	T	TR	L	T	T	R	T	L	T	TR	T
Maximum Queue (m)	61.7	66.2	56.9	94.9	162.6	153.6	116.0	59.4	40.2	52.7	53.1	20.9
Average Queue (m)	32.9	38.1	19.6	63.7	132.3	113.9	39.2	30.3	8.8	26.7	24.9	0.9
95th Queue (m)	58.5	66.9	48.2	128.5	183.7	168.0	108.6	81.8	23.5	46.4	45.1	13.9
Link Distance (m)		65.3	65.3		137.4	137.4		57.2		52.3	52.3	79.1
Upstream Blk Time (%)	1	2	0		21	3	0	18	0	1	1	0
Queuing Penalty (veh)	0	4	0		0	0	0	0	0	0	0	0
Storage Bay Dist (m)	85.0			55.0			110.0		40.0			
Storage Blk Time (%)	1	2		0	72	10				4		
Queuing Penalty (veh)	1	3		0	66	25				2		

Intersection: 1: Guelph Line & New Street

Movement	SB	SB	SB
Directions Served	L	T	TR
Maximum Queue (m)	58.8	79.8	63.0
Average Queue (m)	22.5	30.1	18.9
95th Queue (m)	43.2	58.2	43.1
Link Distance (m)		128.2	128.2
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (m)	55.0		
Storage Blk Time (%)	0	2	
Queuing Penalty (veh)	0	3	

Intersection: 2: New Street & 2421 Access

Movement	EB	EB	WB	SB
Directions Served	L	T	T	LR
Maximum Queue (m)	9.2	5.5	7.9	15.6
Average Queue (m)	0.8	0.3	0.3	7.6
95th Queue (m)	4.9	4.6	4.0	16.3
Link Distance (m)		71.6	25.2	34.8
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (m)	15.0			
Storage Blk Time (%)	0	0		
Queuing Penalty (veh)	0	0		

Intersection: 3: New Street & 2431 Access

Movement	EB	EB	WB	WB
Directions Served	T	T	T	TR
Maximum Queue (m)	20.7	8.6	93.4	59.4
Average Queue (m)	2.3	0.9	29.6	6.9
95th Queue (m)	13.9	8.1	93.4	41.5
Link Distance (m)	25.2	25.2	65.3	65.3
Upstream Blk Time (%)	1	0	2	0
Queuing Penalty (veh)	1	0	12	1
Storage Bay Dist (m)				
Storage Blk Time (%)	1			
Queuing Penalty (veh)	0			

Network Summary

Network wide Queuing Penalty: 120

APPENDIX G

TTS Data

Thu Nov 16 2017 12:20:32 GMT-0500 (Eastern Standard Time) - Run Time: 3564ms

Cross Tabulation Query Form - Trip - 2011

Row: 2006 GTA zone of destination - gta06_dest
Column: Primary travel mode of trip - mode_prime
Table: Planning district of destination - pd_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 4061
and
Start time of trip - start_time In 600-900
and
Primary travel mode of trip - mode_prime In D)

Trip 2011
Table: Mississauga

	Auto driver	**ROUTE**
3612	23	Guelph Line (North)
3613	20	Guelph Line (North)
3642	43	Guelph Line (North)
3674	23	Guelph Line (North)
3701	23	Guelph Line (North)
3703	15	Guelph Line (North)
3721	23	Guelph Line (North)

ROUTE	TRIPS	%	**Assumed**
Guelph Line (North)	536	46%	45%
New Street (East)	261	22%	20%
New Street (West)	335	29%	30%
Guelph Line (South)	37	3%	5%
	1169	1	

Trip 2011
Table: Milton

	Auto driver	
4113	23	Guelph Line (North)

Trip 2011
Table: Oakville

	Auto driver	
4008	20	New Street (East)
4015	23	New Street (East)
4023	23	New Street (East)
4039	20	New Street (East)
4180	20	New Street (East)

Trip 2011
Table: Burlington

	Auto driver	
4054	15	New Street (West)
4056	23	New Street (West)
4057	23	New Street (West)
4059	70	New Street (West)
4060	43	New Street (West)
4,061	148	3/4 New Street (West) and 1/4 Guelph Line (South)
4062	67	Guelph Line (North)
4063	55	Guelph Line (North)
4,064	111	Guelph Line (North)
4067	20	New Street (East)

4068	13	New Street (East)
4069	49	New Street (East)
4071	15	New Street (East)
4078	13	New Street (East)
4081	45	New Street (East)
4082	45	Guelph Line (North)
4083	23	Guelph Line (North)

Trip 2011
Table: Hamilton PD

	Auto driver	
5197	20	New Street (West)
5212	16	Guelph Line (North)

Trip 2011
Table: Grimsby

	Auto driver	
6014	30	New Street (West)

Trip 2011
Table: Brantford

	Auto driver	
8904	26	Guelph Line (North)

Thu Nov 16 2017 12:56:11 GMT-0500 (Eastern Standard Time) - Run Time: 2766ms

Cross Tabulation Query Form - Trip - 2011

Row: 2006 GTA zone of destination - gta06_dest
Column: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of origin - gta06_orig In 4061
and
Start time of trip - start_time In 600-900)

Trip 2011
Table:

	Transit excluding GO rail	Cycle	Auto driver	GO rail only	Joint GO rail and local transit	Auto passenger	School bus	Walk
64	0	0	0	23	0	0	0	0
66	0	0	0	30	0	0	0	0
69	0	0	0	0	20	0	0	0
2367	0	0	0	0	0	30	0	0
3325	23	0	0	0	0	0	0	0
3612	0	0	23	0	0	0	0	0
3613	0	0	20	0	0	0	0	0
3642	0	0	43	0	0	0	0	0
3674	0	0	23	0	0	0	0	0
3701	0	0	23	0	0	0	0	0
3703	0	0	15	0	0	0	0	0
3721	0	0	23	0	0	0	0	0
4008	0	0	20	0	0	0	0	0
4015	0	0	23	0	0	0	0	0
4023	0	0	23	0	0	0	0	0
4039	0	0	20	0	0	0	0	0
4054	0	0	15	0	0	0	0	0
4056	0	0	23	0	0	0	0	0
4057	23	0	23	0	0	0	0	0
4059	0	0	70	0	0	65	22	43
4060	0	0	43	0	0	0	0	0
4061	0	15	148	0	0	0	0	0
4062	0	0	67	0	0	23	0	0
4063	0	0	55	0	0	15	0	30
4064	0	0	111	0	0	95	0	0
4065	29	0	0	0	0	0	0	0
4067	0	0	20	0	0	0	0	0
4068	0	0	13	0	0	0	0	0
4069	0	0	49	0	0	0	0	0
4071	0	0	15	0	0	15	0	0
4077	23	0	0	0	0	0	0	0
4078	0	0	13	0	0	15	0	0
4080	0	0	0	0	0	0	22	0
4081	0	0	45	0	0	0	0	0
4082	23	0	45	0	0	0	0	0
4083	0	0	23	0	0	0	0	0
4113	0	0	23	0	0	0	0	0
4124	0	0	0	0	0	54	0	0
4180	0	0	20	0	0	0	0	0
5142	0	0	0	0	0	30	0	0
5197	0	0	20	0	0	0	0	0
5212	0	0	16	0	0	0	0	0
6014	0	0	30	0	0	0	0	0
8904	0	0	26	0	0	0	0	0
	121	15	1169	53	20	342	44	73

Transit	194	11%
Cycle	15	1%
Walk	73	4%
Auto Driver	1169	65%
Auto Passenger	342	19%
	1793	

APPENDIX H

Comment Response Memo

CROZIER
CONSULTING ENGINEERS

211 Yonge St., Suite 301 | T. 416.477.3392
Toronto, ON | cfcrozier.ca
M5B 1M4

MEMO

DATE	April 15th, 2019	**PROJECT NO.**	1473-4780
RE	Transportation Comment Response		

TO	Dan Ozimkovic, C.E.T. (City of Burlington)
FROM	C.F. Crozier & Associates
CC	Lisa Stern, RPP MCIP (City of Burlington)

Dear Mr. Ozimkovic,

This Transportation Comment Response Letter has been prepared to summarize and address the City's concerns regarding the proposed condominium and retirement housing development at 2421 & 2431 New Street, in the City of Burlington. This letter accompanies the latest Traffic Impact Study Update (April 2019) and Parking Justification Study Update (April 2019) in support of a Re-zoning and Site Plan Application.

1.0 Comment Response

1) *City: Further to the Public Meeting which was held on Tuesday, Transportation Planning committed to directing the traffic consultant to undertake updated peak hour traffic counts at the intersection of Guelph Line and New Street in order to accurately reflect present-day traffic conditions, and reassess the traffic impacts (re run Synchro) based on the updated traffic data.*

   We experienced some diversion as a result of the New Street Road Diet pilot and the traffic counts used in this TIS were undertaken while the pilot was underway. Given that the pilot was ended and New Street was reinstated to its 4-lane cross section, and also that the lengthy construction is now complete – traffic patterns will have normalized. It's reasonable to request that updated counts be undertaken so we can review the impacts and provide certainty to the public that the traffic assessment is indeed accurate.

   Crozier: New traffic movement counts were conducted in 2019 after the road-diet project was removed. The updated counts concluded that 2019 traffic volumes were relatively the same or reduced when compared to traffic counts conducted at the end of 2017. Thus, the analysis and conclusions made in the previously submitted Traffic Impact Study (December 2017) remain valid and are kept in the Traffic Impact Study Update (April 2019).

   As shown in **Table 1**, the 2019 traffic movement counts were compared with 2017 traffic movement counts. 2019 traffic movement counts were conducted by Spectrum Traffic staff, on Thursday January 31st, 2019 between 6:00 a.m. – 9:00 a.m., and 3:00 p.m. – 6:00 p.m., to reflect commuter peak hours without the road-diet. 2017 turning movement

The material in this memo reflects best judgment in light of the information available at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. C.F. Crozier & Associates Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

counts for the previously submitted Traffic Impact Study (December 2017) were conducted during the road-diet by Spectrum Traffic staff on Tuesday November 21, 2017 between 6:00 a.m. – 9:00 a.m., and 3:00 p.m. – 6:00 p.m., to reflect commuter peak hours.

Table 1
2017 and 2019 Traffic Movement Counts Summary

New Street at Guelph Line Morning Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	203	349	34	41	294	65	64	313	136	200	203	180
2019	194	350	31	42	261	69	57	310	126	184	174	169
Changes	-9	+1	-3	+1	-33	+4	-7	-3	-10	-16	-29	-11
Afternoon Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	191	290	30	86	319	59	74	764	219	140	276	275
2019	155	282	26	41	281	48	91	743	248	140	226	226
Changes	-36	-8	-4	-45	-38	-11	+17	-21	+29	0	-50	-49
New Street at 2421 New Street (West Site Access) Morning Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	4	555	2	0	0	0	4	518	6	3	0	2
2019	5	563	1	0	0	0	5	502	5	3	0	1
Changes	+1	+8	-1	0	0	0	+1	-16	-1	0	0	-1
Afternoon Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	14	539	2	0	0	0	8	1098	36	21	0	8
2019	5	464	2	0	0	0	3	969	32	22	0	17
Changes	-9	-75	0	0	0	0	-5	-129	-4	-1	0	+9
New Street at 2431 New Street (East Site Access) Morning Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	0	566	0	0	0	0	0	525	0	1	0	0
2019	0	562	0	0	0	0	0	520	0	0	0	0
Changes	0	-4	0	0	0	0	0	-5	0	-1	0	0
Afternoon Peak Period												
	EBL	**EBT**	**EBR**	**NBL**	**NBT**	**NBR**	**WBL**	**WBT**	**WBR**	**SBL**	**SBT**	**SBR**
2017	0	564	0	0	0	0	0	1138	5	1	0	5
2019	0	482	0	0	0	0	0	1008	0	0	0	0
Changes	0	-82	0	0	0	0	0	-130	-5	-1	0	-5

As outlined in **Table 1**, 2019 existing traffic volumes remained relatively the same or slightly reduced when compared to the end of 2017 traffic volumes.

Accordingly, 2017 traffic volumes that were previously used in the first submission Traffic Impact Study (December 2017) remain valid and are considered conservative. The analysis and resulting future traffic operations are kept and are shown in the Traffic Impact Study Update (April 2019).

2) *City: (In regards to the number of parking spaces provided) When it comes to parking, we will only accept the parking rates from City parking study.*

   Here is the link to the study:
   https://burlingtonpublishing.escribemeetings.com/filestream.ashx?DocumentId=14103

   We will not be accepting lower rates.

   Crozier: The Site Plan has been revised to provide 386 parking spaces at grade and in three underground parking levels. The proposed parking spaces supplied are adequate per the City-wide Parking Study.

3) *City: The entrance to the site will need to be dimensioned. Look at the opportunity of making the entrance pedestrian friendly by reducing the width and the radius as much as possible*

   Crozier: See revised Site Plan

4) *City: The parking spaces at the ground floor need to be for visitors. Tenant parking needs to be located in the underground garage*

   Crozier: Noted, see revised Site Plan

5) *City: What is the length of the loading space? Will the trucks that are parked in the loading space be blocking the driving aisle?*

   Crozier: The length of the loading space is 7.5 metres. As shown in the truck turning diagrams (attached in the updated Traffic Impact Study), there is adequate space for vehicles in both directions to maneuver around the private garbage truck when the loading space is occupied.

6) *City: Provide truck turning templates for the site*

   Crozier: Attached in the updated Traffic Impact Study (March 2019).

7) *City: Provide bike racks near the main entrances for both buildings*

   Crozier: See revised Site Plan

8) *City: We will require a 6m flat landing area at the top of the ramp that connects ground floor to P1*

   Crozier: See revised Site Plan

9) *City: Provide pedestrian connection on site from existing sidewalk on New street*

   Crozier: See revised Site Plan

2.0 Conclusions

In conclusion, the proposed development at 2421 & 2431 New Street can be supported from Traffic Operation and Safety perspectives as discussed extensively in the Traffic Impact Study Update (April 2019). As requested by the City, new traffic movement counts were conducted in 2019. The examination of the 2019 traffic volumes concluded that the traffic volumes within the study area remain relatively the same. Thus, the analysis and conclusions made in the previously submitted Traffic Impact Study (December 2017), remain valid and are kept in the updated report.

We trust that the above satisfies your concerns. Should you have any questions or require any further information, please do not hesitate to contact the undersigned.

Respectfully submitted by,

C.F. CROZIER & ASSOCIATES INC.



Michael A. Linton, MASc., P. Eng.
Associate, Transportation

C.F. CROZIER & ASSOCIATES INC.



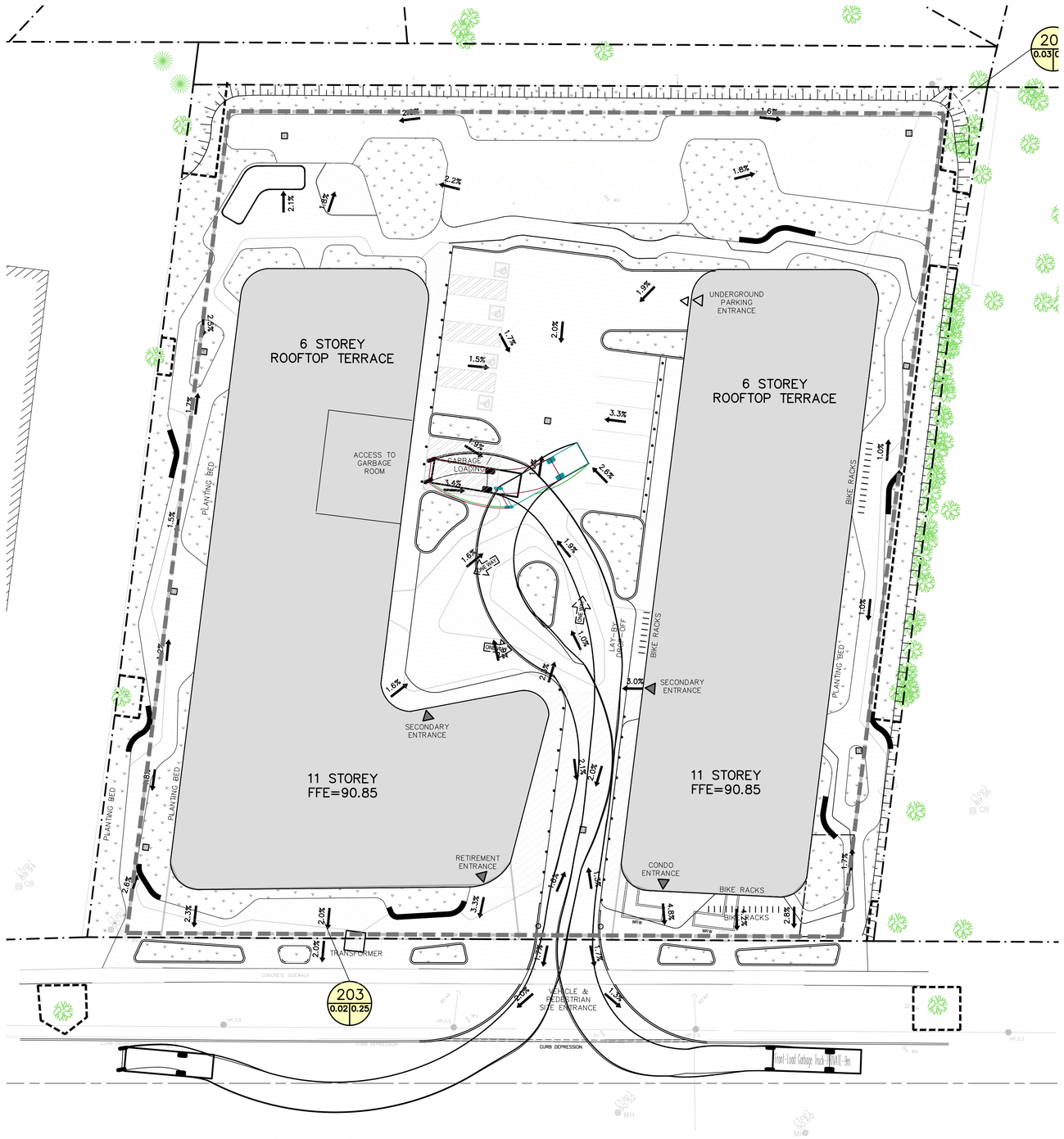
Martin Chan, E.I.T.
EIT, Transportation

/MC

i:\1400\1473-trg\4780-2421 & 2431 new st\reports\traffic (2nd submission)\2019.03.07 4780_2421 & 2431 new street comment response memo.docx

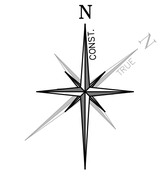
APPENDIX I

Vehicle Turning Diagrams



5 0m 5 10 15 20

SCALE: 1:250



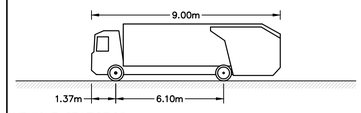


LEGEND

- PROPERTY LINE
- SU-12 TRUCK
- DIRECTION OF TRUCK MOVEMENT
- PROPOSED FIRE HYDRANT LOCATION

FRONT LOAD GARBAGE TRUCK

SCALE: N.T.S.



VEHICLE STATISTICS:

OVERALL VEHICLE LENGTH:	9.65 m
OVERALL VEHICLE WIDTH:	2.44 m
OVERALL VEHICLE HEIGHT:	3.69 m
MIN. BODY/GROUND CLEARANCE:	0.30 m
VEHICLE TRACK WIDTH:	2.44 m
LOCK-TO-LOCK TIME:	6.00 sec
CURB TO CURB TURNING RADIUS:	13.00 m

No.	ISSUE / REVISION	YYYY/MMM/DD
0	ISSUED FOR FIRST SUBMISSION	2017/DEC/15

ELEVATION NOTE:

ELEVATIONS SHOWN HEREON ARE GEODETIC AND ARE REFERRED TO CITY OF BURLINGTON BENCHMARK No. 360
ELEVATION = 87.949m

SURVEY NOTES:

SURVEY COMPLETED BY KRCMAR (2017/NOV/29)
REFERENCE No.: 17-2181P01

DISTANCES SHOWN HEREON ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

SITE PLAN NOTE:

DESIGN ELEMENTS SHOWN ARE BASED ON SITE PLAN PREPARED BY WZMH ARCHITECTS, DEC. 12, 2017

DRAWING NOTES:

THIS DRAWING IS THE EXCLUSIVE PROPERTY OF C.F. CROZIER & ASSOCIATES INC. AND THE REPRODUCTION OF ANY PART OF IT WITHOUT PRIOR WRITTEN CONSENT OF THIS OFFICE IS STRICTLY PROHIBITED.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, AND DATUMS ON SITE AND REPORT ANY DISCREPANCIES OR OMISSIONS TO THIS OFFICE PRIOR TO CONSTRUCTION.

THIS DRAWING IS TO BE READ AND UNDERSTOOD IN CONJUNCTION WITH ALL OTHER PLANS AND DOCUMENTS APPLICABLE TO THIS PROJECT. DO NOT SCALE THIS DRAWING.

ALL EXISTING UNDERGROUND UTILITIES TO BE VERIFIED IN THE FIELD BY THE CONTRACTOR PRIOR TO CONSTRUCTION.

Project

#2421 AND #2431 NEW STREET CITY OF BURLINGTON

Drawing

TRUCK TURNING PLAN

NOT FOR SUBMISSION

Stamp

DRAFT ISSUE

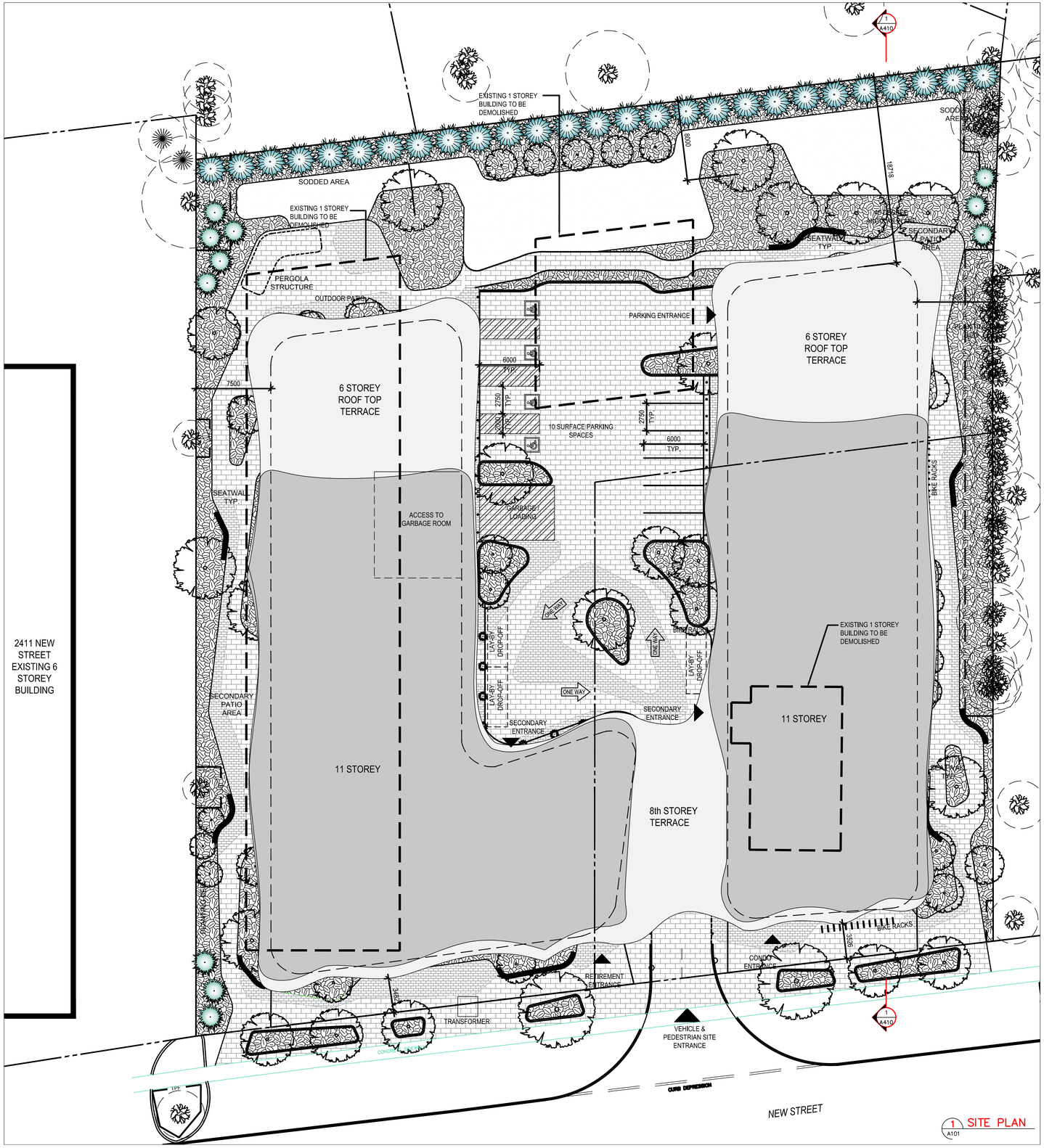
Stamp

CROZIER & ASSOCIATES Consulting Engineers
2800 High Point Drive
Suite 100
Milton, ON L9T 6P4
905 875-0026 T
905 875-4915 F
www.cfcrozier.ca

Drawn	Design	Project No.	
S.T.T.	S.T.T.	1473-4780	
Check	Check	Scale	Dwg.
M.L.	M.L.	1:250	T 304

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FIGURES



1. SITE AREA:

DESCRIPTION	AREA (m2)
SITE AREA	7,032.1 m2
DENSITY (FAR)	3.85

2. UNIT COUNTS

FLOORS	RETIREMENT					CONDO (RESIDENTIAL)			
	STUDIO 1	STUDIO 2	1 BEDROOM	2 BEDROOM	TOTAL RETIREMENT	STUDIO	1 BEDROOM	2 BEDROOM	TOTAL RESIDENTIAL
LEVEL 2		2	18	3	23	-	10	7	17
LEVEL 3		2	18	3	23	-	10	7	17
LEVEL 4		2	18	3	23	-	10	7	17
LEVEL 5		2	18	3	23	-	10	7	17
LEVEL 6		6	13	3	22	-	11	8	19
LEVEL 7	32	-	-	-	32	-	-	-	-
LEVEL 8		6	11	1	18	-	10	3	13
LEVEL 9		6	11	1	18	-	10	3	13
LEVEL 10		6	11	1	18	-	10	3	13
LEVEL 11		6	11	1	18	-	10	3	13
TOTAL UNITS	32	38	129	19	218	-	91	48	139
TOTAL RETIREMENT & RESIDENTIAL UNITS (218 + 139) = 357 UNITS									

3. BUILDING AREA (m2)

FLOORS	RETIREMENT	RESIDENTIAL	COMMUNITY INSTITUTION	TOTAL AREA
	m2	m2	m2	m2
LEVEL P2				6,063
LEVEL P1				6,063
SUBTOTAL BELOW GRADE				12,126
GROUND (AMENITY)	1,528	696	521	2,745
LEVEL 2	1,528	1,217		2,745
LEVEL 3	1,528	1,217		2,745
LEVEL 4	1,528	1,217		2,745
LEVEL 5	1,528	1,217		2,745
LEVEL 6	1,480	1,328		2,808
LEVEL 7	2,197			2,197
LEVEL 8	1,190	890		2,080
LEVEL 9	1,190	890		2,080
LEVEL 10	1,190	890		2,080
LEVEL 11	1,190	890		2,080
SUBTOTAL ABOVE GRADE	16,077	10452	521	27,050
TOTAL ABOVE & BELOW GRADE				39,176

4a. AMENITY REQUIREMENT

AMENITY REQUIREMENT**		AREA (m2)
CONDO & RETIREMENT HOUSING		
STUDIO & 1 BEDROOM (<60SM)	290 X 15sm	4,350
2 BEDROOM	67 X 25sm	1,675
TOTAL AMENITY REQUIRED		6,025

**AS PER THE CITY OF BURLINGTON ZONE REQUIREMENTS FOR CN1 ZONE, AMENITY AREA =
25 sm PER UNIT (2 BEDROOMS)
15 sm PER EFFICIENCY UNIT < 60SM (STUDIO & 1BEDROOM)

4b. AMENITY AREA PROVIDED

AMENITY PROVIDED	INDOOR AREA (sm)	OUTDOOR AREA (sm)
RESIDENTIAL		
GROUND	405	1,285
LEVEL 7	-	298
LEVEL 8	-	136
TOTAL CONDO AMENITY	405	1,719
RETIREMENT HOUSING		
GROUND	1,338	1,273
LEVEL 7	-	713
TOTAL RETIREMENT AMENITY	1,338	1,986
TOTAL RETIREMENT & CONDO AMENITY	1,743	3,705
TOTAL INDOOR & OUTDOOR	5,448	

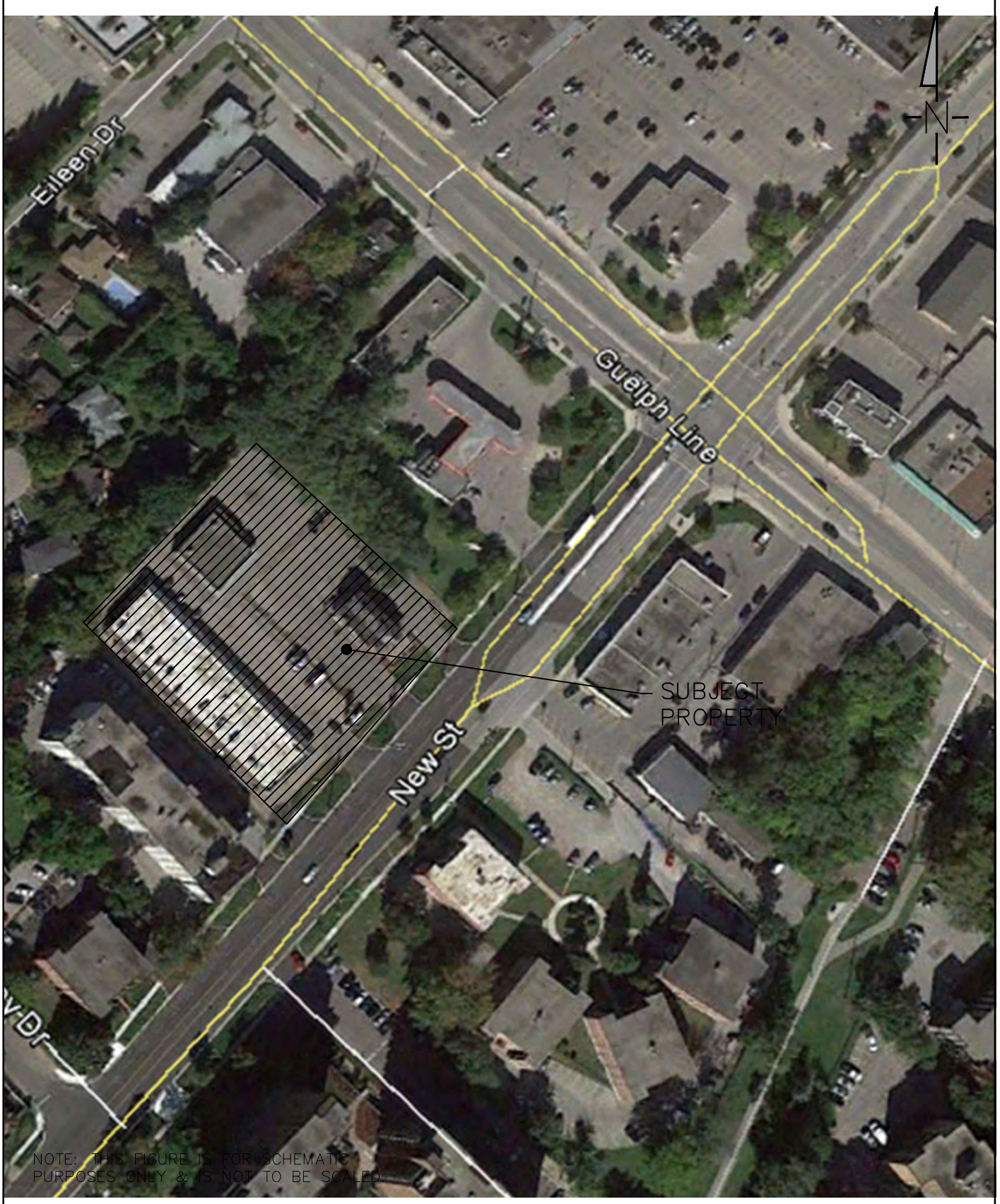
5a. PARKING REQUIREMENTS

	UNIT BREAKDOWN		REQ. RATE	REQ. SPACES	IBI RATE	IBI REQ. SPACES
CONDO (RESIDENTIAL)	1 BEDROOM	91	1.25/unit	114	1.00/unit	97
	2 BEDROOM	48	1.50/unit	72	1.25/unit	60
	VISITOR	139	0.35/unit	49	0.20/unit	28
	SERVICE	139	1/ Building	1	1/ 75 unit	2
TOTAL CONDO REQUIREMENT				236		187
RETIREMENT HOUSING	OCCUPANT SPACES (studio , 1bedroom & 2 bedroom)	186	0.50/unit	93	0.60/unit	112
	VISITOR	186	0.25/unit	47	0.25/unit	47
	EMPLOYEE	0	0	0	0	0
	SERVICE	186	1/ Building	1	1/50 unit	4
TOTAL RETIREMENT REQUIREMENT				141		163
MEMORY CARE (LONG-TERM CARE USE)	PATIENT/ VISITOR	32	0.25/unit	8	0.35/unit	12
	EMPLOYEE	20	0.85/unit	17	0	0
	SERVICE	32	Incl. in retirement	0	1 for every 50	1
TOTAL MEMORY CARE REQUIREMENT				25		13
COMMUNITY INSTITUTION	521 m2	1	-	20	-	20
TOTAL COMMUNITY INSTITUTION REQUIREMENT				20		20
TOTAL SITE REQUIREMENT ON SITE (ALL USES)				422		383
TOTAL ACCESSIBLE PARKING SPACES			3%	13		

5b. PARKING PROVIDED

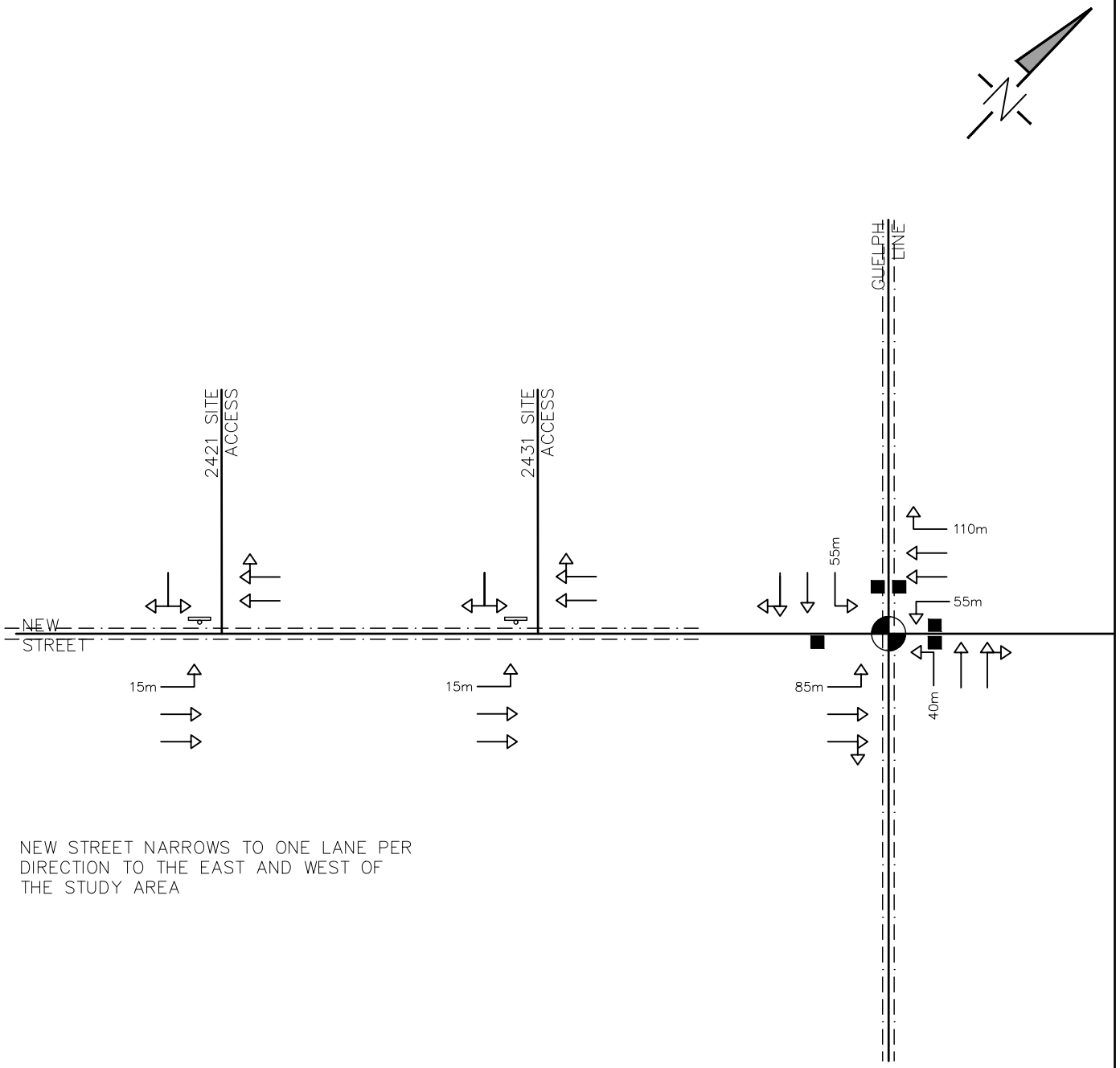
FLOORS	
LEVEL P3	69
LEVEL P2	157
LEVEL P1	150 (INCLUDES 9 ACCESSIBLE SPACES)
SUBTOTAL BELOW GRADE	376
GROUND	10 (INCLUDES 4 ACCESSIBLE SPACES)
SUBTOTAL ABOVE GRADE	10
TOTAL BELOW & ABOVE GRADE	386

2 A101 STATISTICS



Legend	Project: 2421 & 2431 NEW STREET Drawing: SITE LOCATION	CROZIER & ASSOCIATES Consulting Engineers The HarbourEdge Building, 40 Huron Street, Suite 301, Collingwood, ON L9Y 4R3 705 446-3510 T 705 446-3520 F www.cfcrozier.ca info@cfcrozier.ca

Drawn By	Design By	Project	Scale	Date	Check By	Drawing
D.L.	D.L.	1473-4780	N.T.S.	DEC. 12, 2017	M.L.	FIG. 2



NEW STREET NARROWS TO ONE LANE PER DIRECTION TO THE EAST AND WEST OF THE STUDY AREA

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- BUS STOP
- ON-STREET BIKE LANE

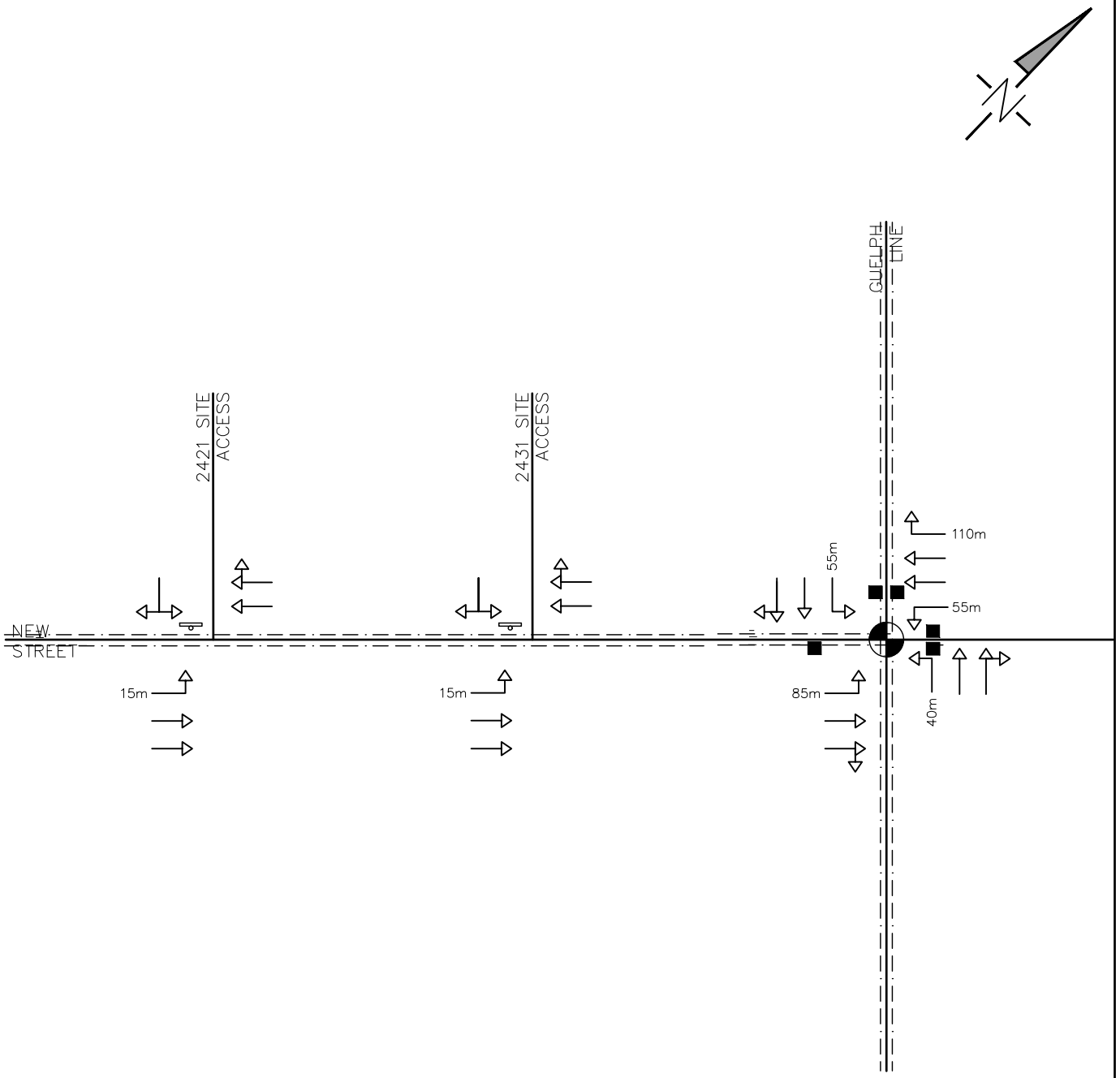
Project: 2421 & 2431 NEW STREET

Drawing: BOUNDARY ROAD NETWORK (WITH ROAD-DIET)

CROZIER & ASSOCIATES Consulting Engineers
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40 Huron Street, Suite 301,
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705 446-3520 F
www.cfcrozier.ca
info@cfcrozier.ca

Drawn By	Design By	Project
D.L.	D.L.	1473-4780

Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 3



NOTE
LEFT TURNS WEST OF GUELPH LINE ARE SHARED

NEW STREET NARROWS TO ONE LANE PER DIRECTION TO THE WEST OF THE STUDY AREA

NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

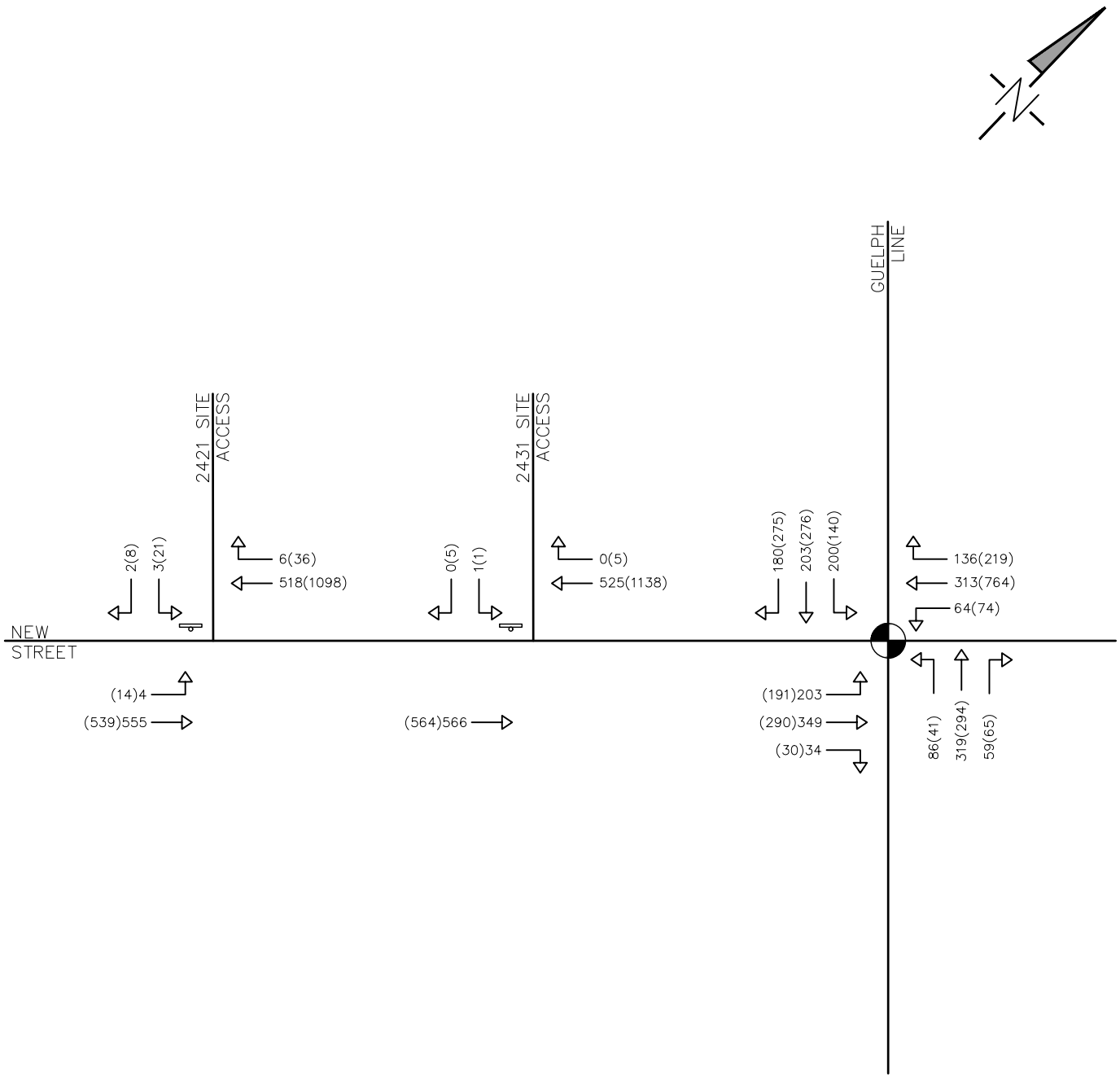
Legend
- SIGNAL CONTROL
- STOP CONTROL
- BUS STOP
- ON-STREET BIKE LANE

Project: 2421 & 2431 NEW STREET

Drawing: BOUNDARY ROAD NETWORK (WITHOUT ROAD-DIET)

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Drawn By	Design By	Project	Scale	Date	Check By	Drawing
D.L.	D.L.	1473-4780	N.T.S.	DEC. 11, 2017	A.F.	FIG. 4



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

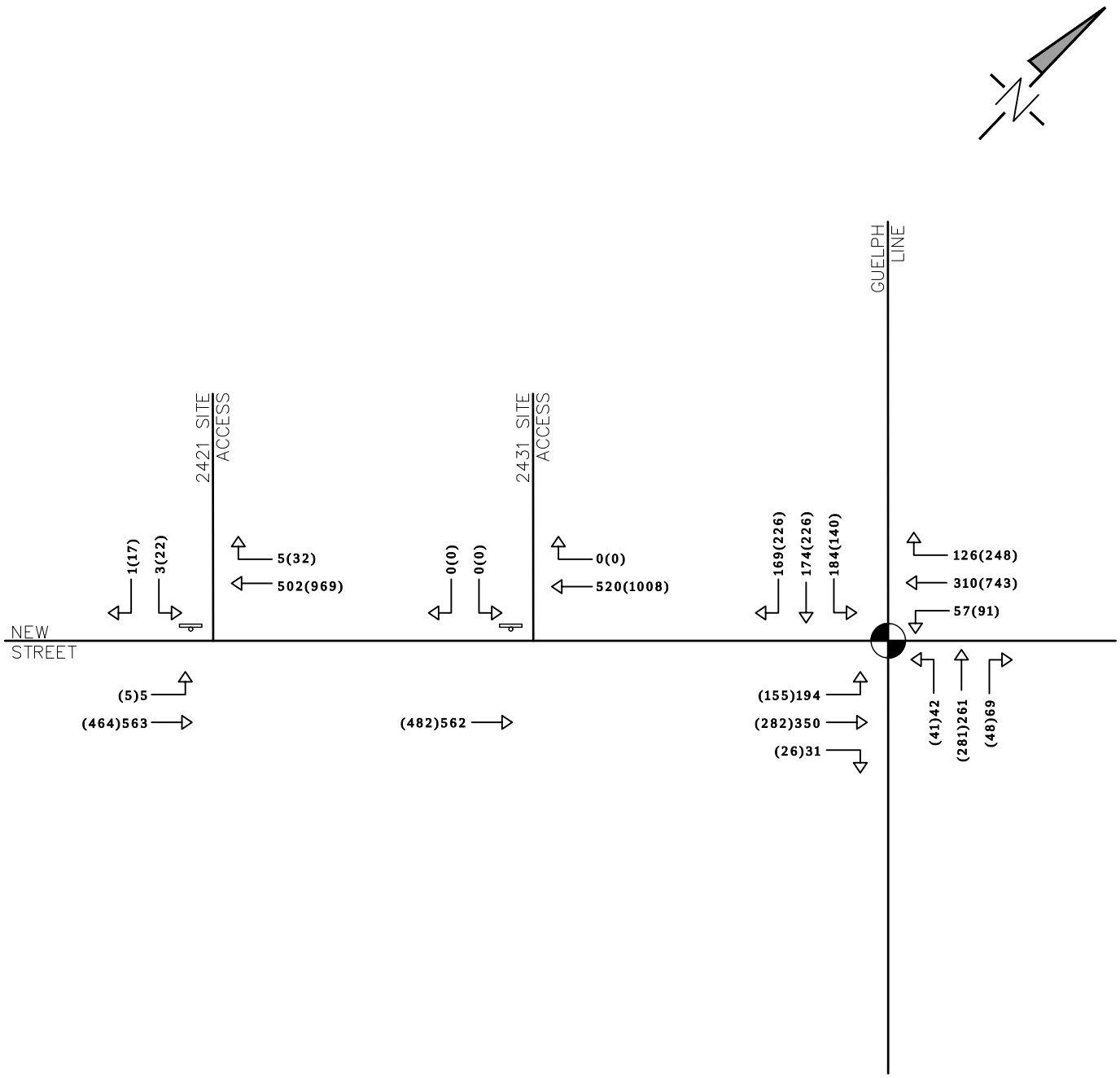
Project: 2421 & 2431 NEW STREET

Drawing: 2017 EXISTING TRAFFIC VOLUMES

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Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 5



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

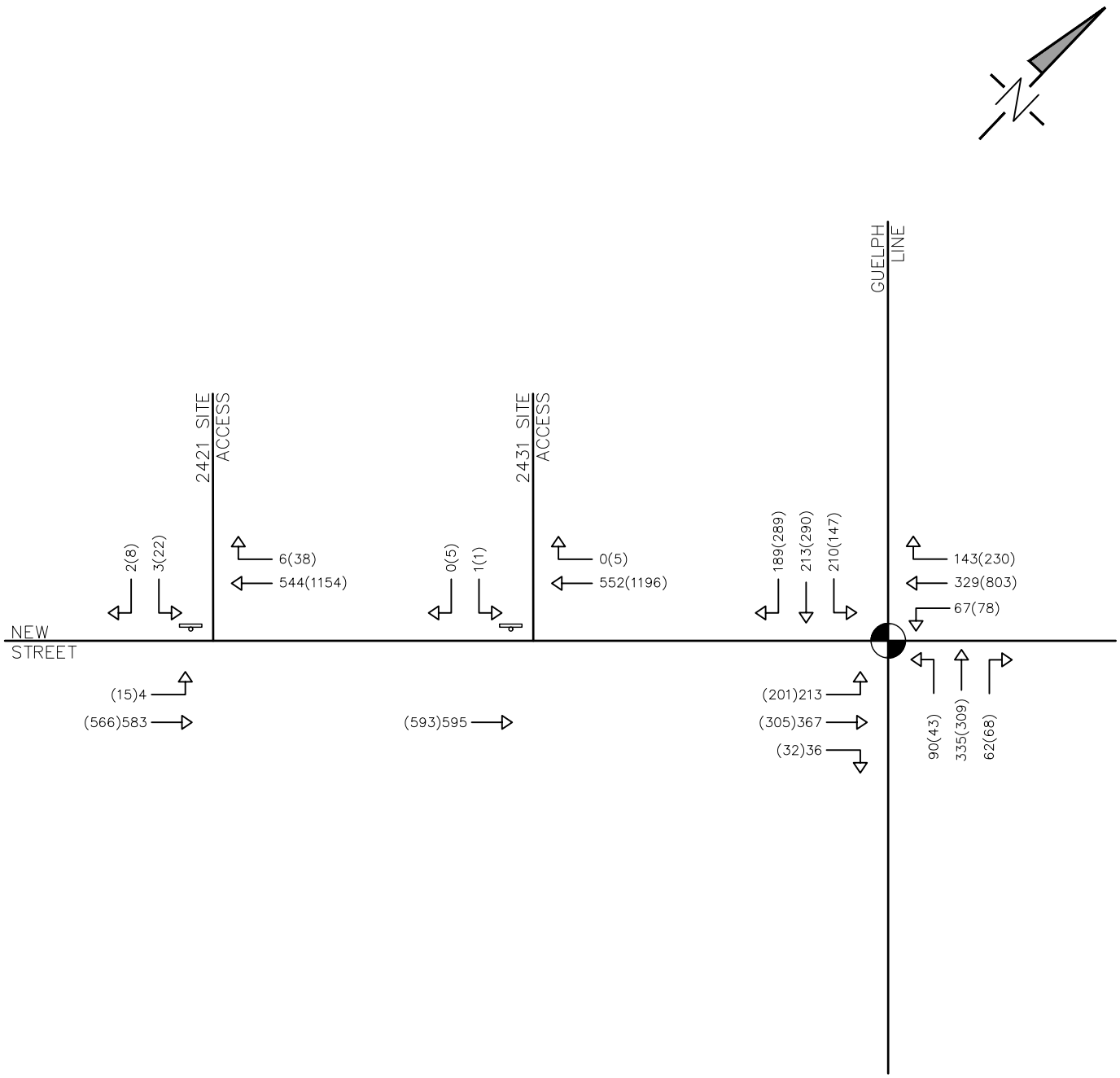
Project: **2421 & 2431 NEW STREET**

Drawing: **2019 TRAFFIC VOLUMES**

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Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 6



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

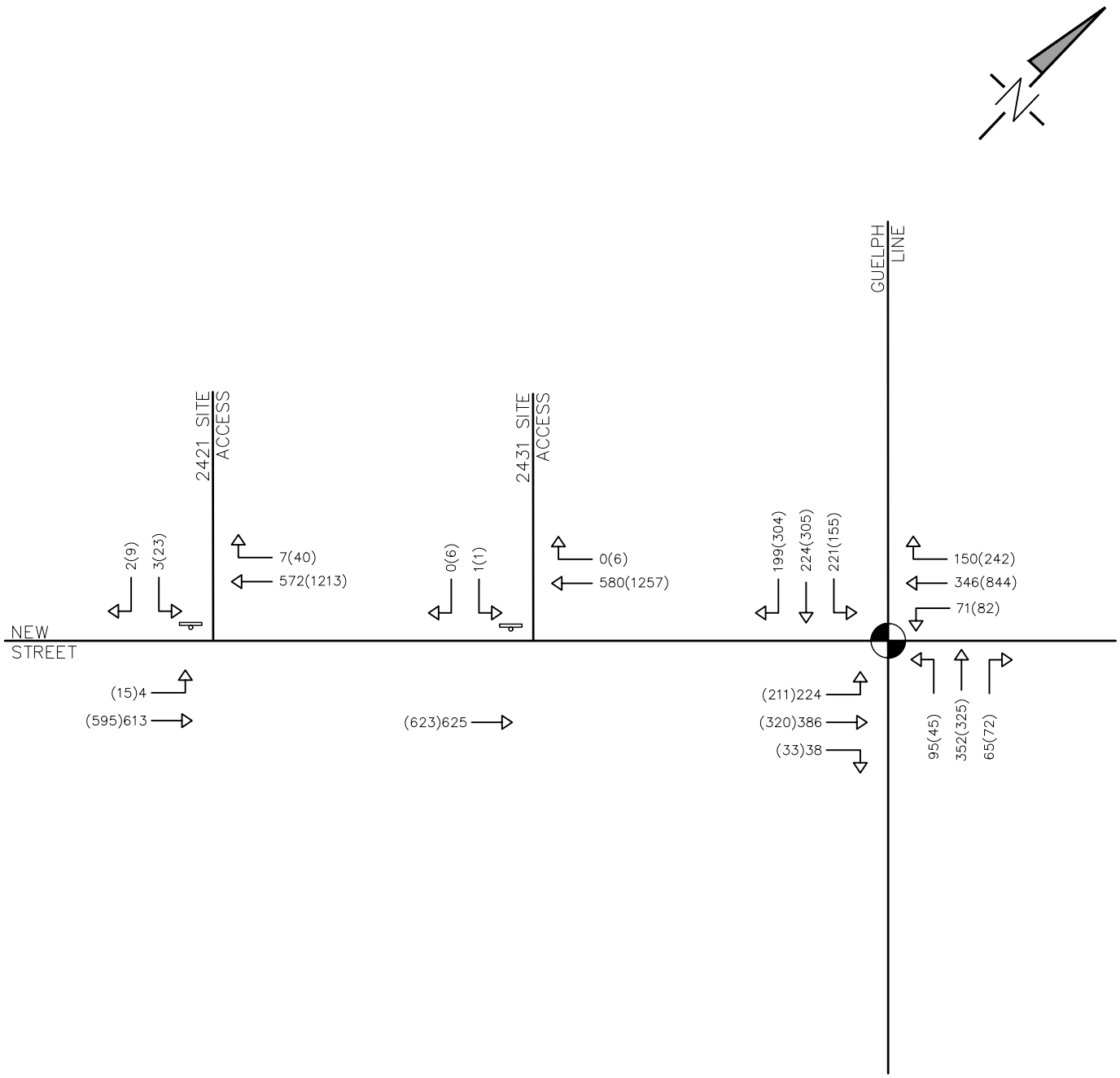
Project: 2421 & 2431 NEW STREET

Drawing: 2022 FUTURE BACKGROUND TRAFFIC VOLUMES

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Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 7



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

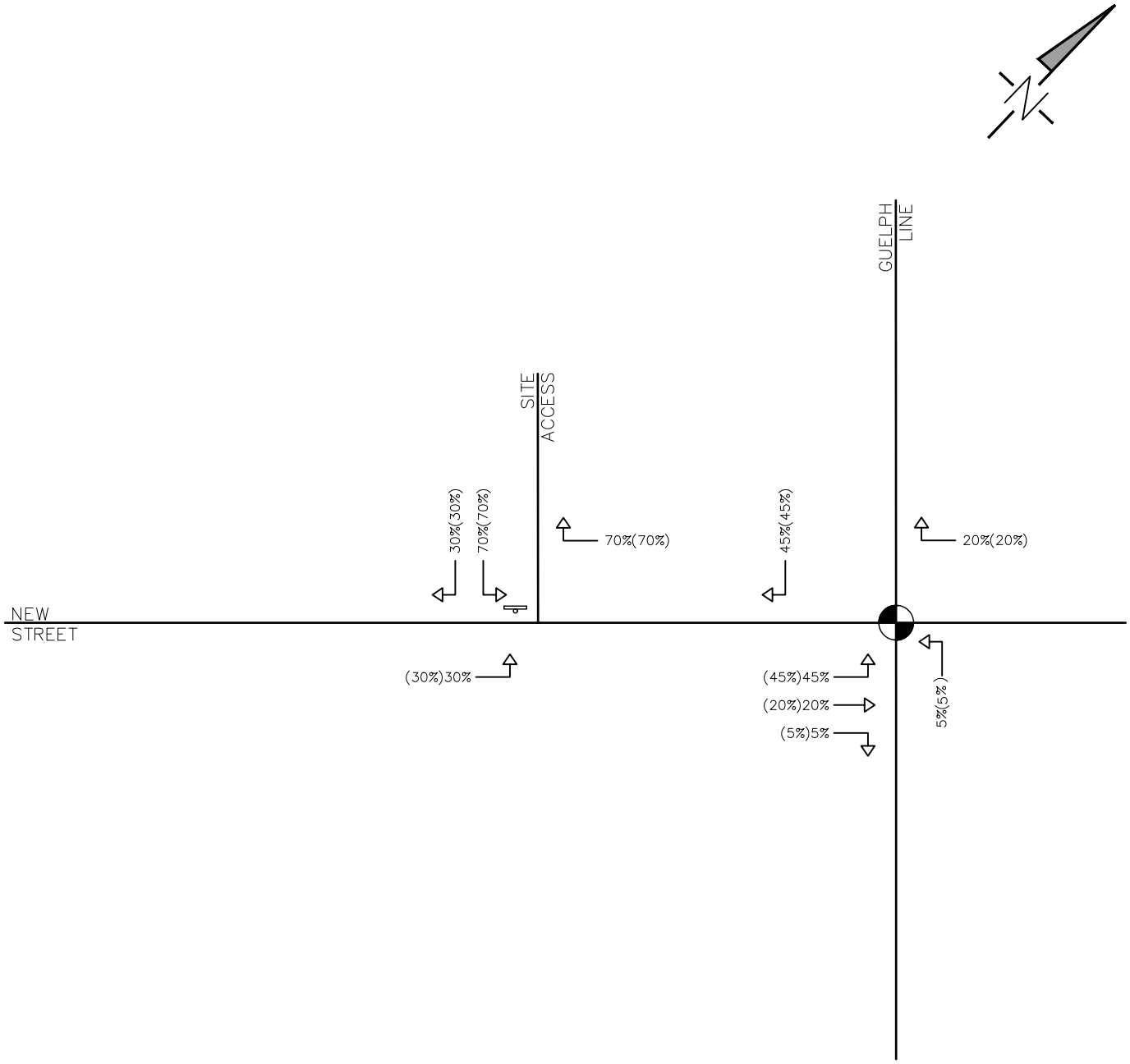
Project: 2421 & 2431 NEW STREET

Drawing: 2027 FUTURE BACKGROUND TRAFFIC VOLUMES

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T.T.	D.L.	1473-4780

Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 8



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

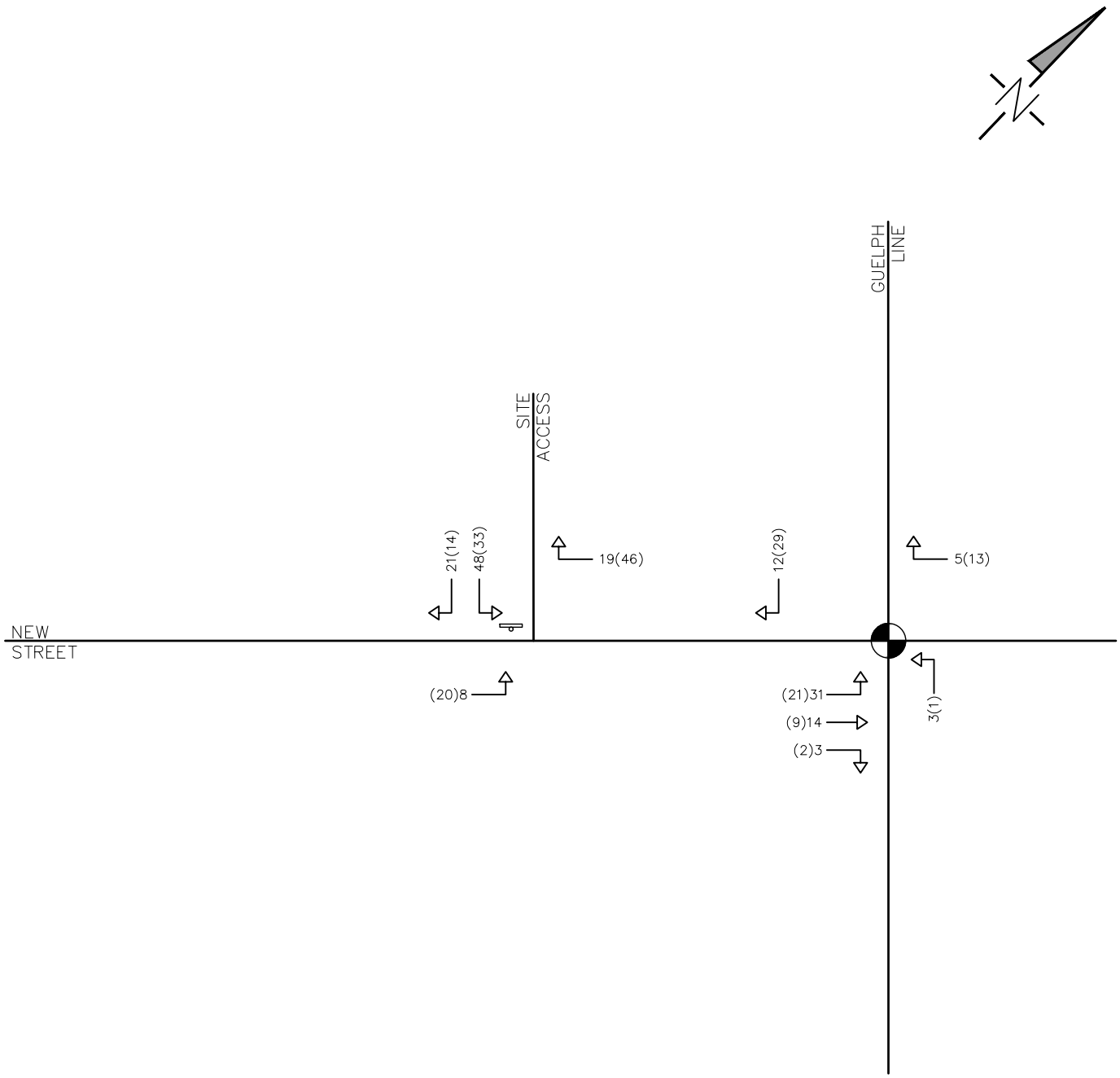
Project: 2421 & 2431 NEW STREET

Drawing: TRIP DISTRIBUTION

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Drawn By	Design By	Project
T.T.	D.L.	1473-4780

Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 9



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

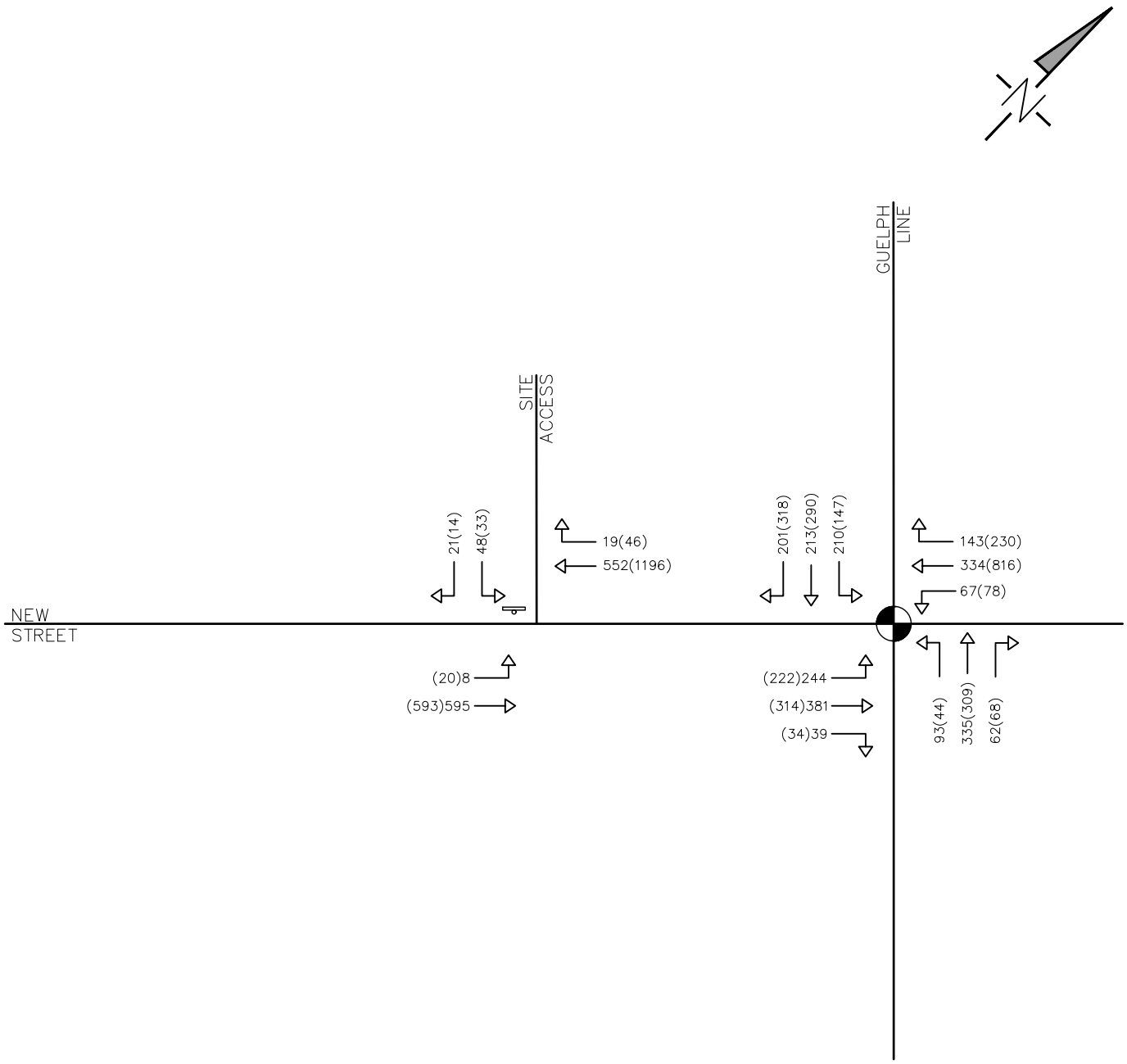
Project: 2421 & 2431 NEW STREET

Drawing: TRIP ASSIGNMENT

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Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 10



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

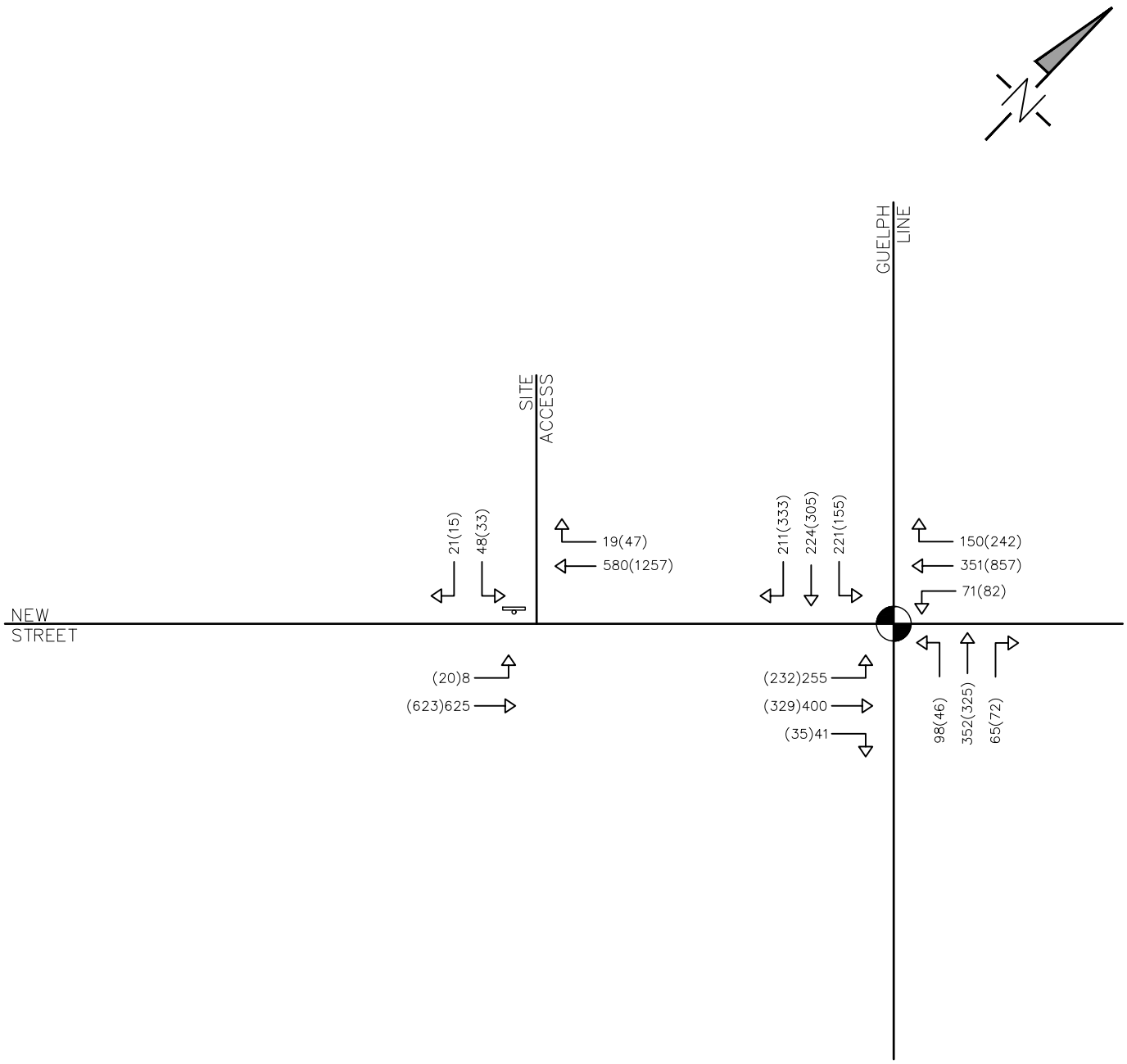
Project: 2421 & 2431 NEW STREET

Drawing: 2022 FUTURE TOTAL TRAFFIC VOLUMES

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Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 11



NOTE: THIS FIGURE IS FOR SCHEMATIC PURPOSES ONLY & IS NOT TO BE SCALED.

Legend

- SIGNAL CONTROL
- STOP CONTROL
- XX(YY) A.M. (P.M.) PEAK HOUR TRAFFIC VOLUMES

Project: 2421 & 2431 NEW STREET

Drawing: 2027 FUTURE TOTAL TRAFFIC VOLUMES

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Scale	Date	Check By	Drawing
N.T.S.	DEC. 11, 2017	A.F.	FIG. 12