Dymon Group of Companies

5051 Harvester Road



Transportation Impact Study

CGH TRANSPORTATION

Dymon 5051 Harvester Road Oakville
Transportation Impact Study

Prepared for:

Dymon Group of Companies
2-1830 Walkley Road
Ottawa, ON, K1H 8K3

Prepared by:

628 Haines Road
Newmarket, ON L3Y 6V5

August 2024

PN: 2021-122

Table of Contents

Executive Summary 1
1 Introduction 3
1.1 Development Lands 3
1.2 Study Area 4
2 Existing Conditions 6
2.1 Existing Road Network 6
2.2 Existing Intersections 6
2.3 Existing Accesses 11
2.4 Existing Cycling and Pedestrian Facilities 11
2.5 Existing Transit 12
2.5.1 Burlington Transit Services 13
2.5.2 Oakville Transit Services 14
2.5.3 GO Transit Services 15
2.6 Existing Conditions Operational Analysis 16
2.6.1 Existing Peak Hour Travel Demand 16
2.6.2 Existing Transportation Network and Modeling Parameters 19
2.6.3 2023 Existing Traffic Conditions 21
3 Future Background 23
3.1 Future Analysis Horizons 23
3.2 Planned Conditions 23
3.2.1 Active Transportation Improvements 23
3.2.2 Appleby Line Widening 24
3.2.3 Appleby GO MTSA Special Planning Area 24
3.2.4 Other Study Area Developments 24
3.2.5 Background Growth 33
3.2.6 Future Background Traffic Volumes 33
3.3 Future Background Operational Analysis 36
3.3.1 2026 Future Background Traffic Conditions 36
3.3.2 Future Background Intersection Design 38
3.3.3 2031 Future Background Traffic Conditions 40
4 Forecasting 42
4.1 Development-Generated Travel Demand 42

4.1.1 Dymon Business Model and Site Context 42
4.1.2 Trip Generation and Mode Shares 43
4.1.3 Truck Trips 48
4.1.4 Trip Distribution 49
4.1.5 Trip Assignment 51
5 Future Total 54
5.1 875 Appleby Line Access Reassignment 54
5.2 Future Total Intersection Design 57
5.3 Future Total Traffic Volumes 59
5.4 Future Total Operational Analysis 62
5.4.1 2026 Future Total Traffic Conditions 62
5.4.2 2031 Future Total Traffic Conditions 64
6 Development Design 67
6.1 Site Circulation 67
6.2 Development Access 68
6.2.1 Access Design 68
6.2.2 Access Spacing 68
6.2.3 Access Alignment 69
6.2.4 Throat Lengths 69
6.2.5 Sightline Analysis 70
6.3 Parking and Loading 71
6.3.1 Zoning By-law Requirements 71
6.3.2 Proxy Site Parking Demand 71
6.3.3 Barrier-free parking 74
6.3.4 Bicycle Parking 74
6.3.5 Loading 75
7 Transportation Demand Management 76
7.1 Transit Measures 76
7.2 Active Modes Measures 76
7.3 Parking Measures 76
7.4 Mixed-Use and Increased Density 77
7.5 Short Trips 77
8 Recommendations 77

9 Conclusions 78

List of Figures

Figure 1: Site Context 4
Figure 2: Concept Plan 5
Figure 3: Harvester Road at Appleby Line 7
Figure 4: South Service Road at Harvester Road 8
Figure 5: Eastbound Highway 403 Appleby Line Ramp Terminal 8
Figure 6: Westbound Highway 403 Appleby Line Ramp Terminal 9
Figure 7: North Service Road at Appleby Line 10
Figure 8: Access at Appleby Line 10
Figure 9: Study Area Existing Driveways 11
Figure 10: Study Area Cycling Facilities 12
Figure 11: Existing Burlington Transit Within the Study Area 13
Figure 12: Existing Study Area Oakville Transit Services 14
Figure 13: Existing Study Area GO Transit Services 15
Figure 14: 2023 Existing Traffic Volumes 18
Figure 15: Study Area Proposed Cycling Network 24
Figure 16: Oval Court 2026 Site Generated Traffic 26
Figure 17: Oval Court 2031 Site Generated Traffic 27
Figure 18: Tico Creek Site Generated Traffic Volumes – Hotel Included 29
Figure 19: Tico Creek Site Generated Traffic Volumes – Hotel Excluded 29
Figure 20: Appleby Mall 5111 New Street Residential Development Trip Generation 32
Figure 21: 2026 Future Background Traffic Volumes 34
Figure 22: 2031 Future Background Traffic Volumes 35
Figure 23: 2026 and 2031 Future Background Conditions Intersection Configuration 39
Figure 24: Existing Self-storage Facilities in Burlington 50
Figure 25: Existing Co-working Spaces in Burlington 50
Figure 26: Site Trip Generation 53
Figure 27: 2026 Future Background Reassigned Traffic Volumes 55
Figure 28: 2031 Future Background Reassigned Traffic Volumes 56
Figure 29: 2026 and 2031 Future Total Conditions Intersection Configuration 58
Figure 30: 2026 Future Total Traffic Volumes 60
Figure 31: 2031 Future Total Traffic Volumes 61

List of Tables

Table 1: TMC and ATR Data Dates 16
Table 2: Peak Hour Factors Applied at Study Area Intersections 19
Table 3: Level of Service Criteria for Signalized Intersections 20
Table 4: Level of Service Criteria for Unsignalized Intersections 20
Table 5: 2023 Existing Conditions Operational Analysis 21

Table 6: Appleby Mall 5111 New Street Trip Generation –2014 TIS 30
Table 7: ITE Trip Generation Rates – 11th Edition 30
Table 8: Appleby Mall 5111 New Street Trip Generation – Revised Concept 31
Table 9: Background Developments Site Trips By 2026 Summary 33
Table 10: Background Developments Site Trips By 2031 Summary 33
Table 11: 2026 Future Background Conditions Operational Analysis 36
Table 12: 2031 Future Background Conditions Operational Analysis 40
Table 13: ITE Trip Generation Vehicle Trip Rates 43
Table 14: Projected 875 Appleby Line Site Trip Generation – All Land Uses 43
Table 15: Site Statistics Comparison 44
Table 16: Proxy Site Trip Generation – Self-storage and Retail 45
Table 17: Proxy Site Trip Generation – Office 45
Table 18: Proxy Site Trip Generation Rates – Self-storage and Retail 46
Table 19: Proxy Site Trip Generation Rates – Office 46
Table 20: Proxy Site Trip Generation Rates – Self-storage and Retail 47
Table 21: Proxy Site Trip Generation Rates – Office 47
Table 22: Projected 5051 Harvester Road Site Trip Generation by Proxy Site Data 48
Table 23: Projected 5051 Harvester Road Site Trip Generation by ITE Rates 48
Table 24: Truck Trips – Proxy Site 49
Table 25: Truck Trips – ITE Truck Trip Generation Rates 49
Table 26: 2016 TTS Trip Distribution 51
Table 27: 2026 Future Total Conditions Operational Analysis 62
Table 28: 2031 Future Total Conditions Operational Analysis 65
Table 29: Sightline Calculations 71
Table 30: 5051 Harvester Road Vehicle Parking Requirements – Zoning By-law Approach 71
Table 31: Parking Count Dates 72
Table 32: 323 Coventry Road Parking Provisions 72
Table 33: Self-Storage and Retail Parking Survey Summary 73
Table 34: Office Parking Survey Summary 73
Table 35: 5051 Harvester Road Total Parking Requirements 73
Table 36: Interior Loading Bay Usage 74
Table 37: Zoning By-law Accessible Parking Requirements 74
Table 38: Bicycle Parking Requirements 75
Table 39: Net Peak Hour Trucks 75

List of Appendices

Appendix A – Scope Confirmation
Appendix B – Turning Movement Count Data
Appendix C – Signal Timing Plan
Appendix D – Heavy Vehicle Percent Calculations
Appendix E – 2023 Existing Conditions Synchro Worksheets
Appendix F – 2026 Future Background Conditions Synchro Worksheets
Appendix G – 2031 Future Background Conditions Synchro Worksheets

Appendix H – ITE Land Use Description
Appendix I – Proxy Site Trip Generation Data
Appendix J – 2016 TTS Data Burlington
Appendix K – 2026 Future Total Conditions Synchro Worksheets
Appendix L – 2031 Future Total Conditions Synchro Worksheets
Appendix M – Vehicle Turning Diagrams
Appendix N – Traffic Signal Warrants
Appendix O – Left Turn Lane Warrants
Appendix P – Sightline Analysis Drawings
Appendix Q – Proxy Site Parking Data

Executive Summary

CGH Transportation Inc. has been retained by Dymon Group of Companies to undertake a Transportation Impact Study to support the development application for a proposed mixed-use development at 5051 Harvester Road in the City of Burlington.

The enclosed Transportation Impact Study evaluates the impacts of the proposed development on the surrounding transportation network, recommends potential mitigation measures for the anticipated operational concerns, and provides a Transportation Demand Management Plan. Included in Transportation Impact Study are an Access Review examining the compliance of the proposed access design with Halton Region's and TAC requirements and a Parking and Loading Justification Study reviewing the parking and loading provisions.

Proposed Development:
The proposed development of 5051 Harvester Road is located at the northeast corner of the intersection of Appleby Line at Harvester Road, south of the Highway 403 interchange at Appleby Line. The development will include a five-storey mixed-use building which consists of:

- 21,828 square metres (234,954 square feet) of self-storage space
- 1,159 square metres (12,475 square feet) of reception / retail space
- 5,195 square metres (55,921 square feet) of co-working office space

A total of 166 vehicle parking spaces will be provided, including nine at-grade and 157 underground. A total of five barrier-free parking spaces will be provided, two at-grade and three on P1 level. A total of 24 bicycle parking spaces will be provided on site, including 12 short-term and 12 long-term spaces. The development will also include a 1,597 square metre (17,187 square feet) interior drive-through area which serves the self-storage customers by providing loading and overflow parking spaces.

The existing access on Appleby Line will remain at its current location, but it will be converted to a right-in / right-out access. A full-movement access will be provided on South Service Road, located approximately 120 metres north of Harvester Road to align with the existing access to the Burkert Fluid Control Systems site (herein referred to as the Burkert Access). Driveways on the west, south, and east sides of the building will provide access to the surface parking spaces, underground parking ramp, interior drive-through loading area, the exterior loading docks, and garbage collection area.

Analysis Process & Key Findings:
Full build-out is estimated to occur in 2026. Traffic analysis for the existing (2023), full build-out (2026), and full build-out plus five years horizons (2031) for weekday AM and PM peak periods was conducted based on Halton Region's Transportation Impact Study Guidelines and MTO's General Guidelines for the Preparation of Traffic Impact Studies.

Pedestrian, cycling, and transit volumes generated by the proposed development are expected to have a minimal impact on the surrounding active transportation modes and transit facilities due to the low site trip volumes and the significant available capacity in the future with the planned bicycle lanes, sidewalks, and transit routes along Appleby Line within the Study Area road network. This study has focused on Level of Service (LOS) analysis for auto mode.

The analysis results indicate that most Study Area intersections operate without constraints in the Existing Conditions, with exceptions at the Appleby Line at Harvester Road and Appleby Line at North Service Road

intersections which operate at or above capacity. Signal timing optimization has been proposed as a mitigation strategy which is expected to reduce delays and queues at specific movements, although it may not significantly impact the overall volume-to-capacity (v/c) ratios.

An annual background growth rate of 1% for the road network within the Study Area was obtained from Halton Region, City of Burlington, and MTO and applied to regional roads, city roads, and Highway 403 terminal ramps. It's worth noting that the widening of Appleby Line from four lanes to six lanes within the Study Area, as instructed by Halton Region staff, is not anticipated to be completed before 2031 and was not included in the Synchro models.

Future Background Conditions are projected to operate with multiple critical movements at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections due to high left-turn and through volumes along Appleby Line. These constraints exist in the 2023 Existing Conditions and are expected to worsen in 2026 and 2031 due to background volume increases. Proposed mitigation measures involve adding double left-turn lanes at these intersections, which are anticipated to offer partial success in reducing delays and queues.

The proposed development is estimated to generate 106 AM and 95 PM net new two-way vehicle trips in 2026 and 2031, including 38 AM and 49 PM net new two-way vehicle trips for the self-storage and retail components, and 68 AM and 46 PM net new two-way vehicle trips for the office component, based on proxy site trip generation rates.

Synchro analysis for 2026 and 2031 Future Total conditions align with the Future Background Conditions, indicating the site-generated travel demand will minimally impact Study Area intersections. The anticipated widening of Appleby Line may improve the traffic conditions at the intersections on Appleby Line.

Site circulation analysis for garbage and loading trucks has revealed no conflicts. Driveways, curbs, and loading bays can accommodate design vehicles (WB-20s and HSUs). Proposed accesses have been reviewed per Halton Region's TIS Guidelines and TAC's Geometric Design Guide with no issues, aside from access throat lengths. The throat length deficiencies at the two accesses are deemed acceptable for this specific site due to site layout minimizing vehicular conflicts.

A total of 166 parking spaces are proposed for all uses, not meeting the City of Burlington Zoning By-law requirements. A parking variance is requested for the proposed development, with justifications based on the proxy site parking demand rates provided in the TIS.

A Transportation Demand Management (TDM) Plan has been developed, outlining various TDM measures, including improvements to transit facilities, pedestrian and cycling facilities, and parking reductions.

Considering the minor impact of the proposed development on the surrounding Study Area road network, the proposed development application is recommended to proceed from a transportation perspective.

1 Introduction

This Transportation Impact Study has been prepared to support the Zoning By-law Amendment and Site Plan Application for Dymon's proposed development at 5051 Harvester Road. Prior to completion of this study, the scope of this TIS has been confirmed in consultation with transportation staff from the City of Burlington, Halton Region, and the Ontario Ministry of Transportation (MTO). The submitted Terms of Reference for this development outlining the scope and assumptions, as well as the email correspondences with the staff, are included in Appendix A. This study has been prepared according to the MTO's *General Guidelines for the Preparation of Traffic Impact Studies Ministry of Transportation* (2023), and Region of Halton's *Transportation Impact Study Guidelines* (2015).

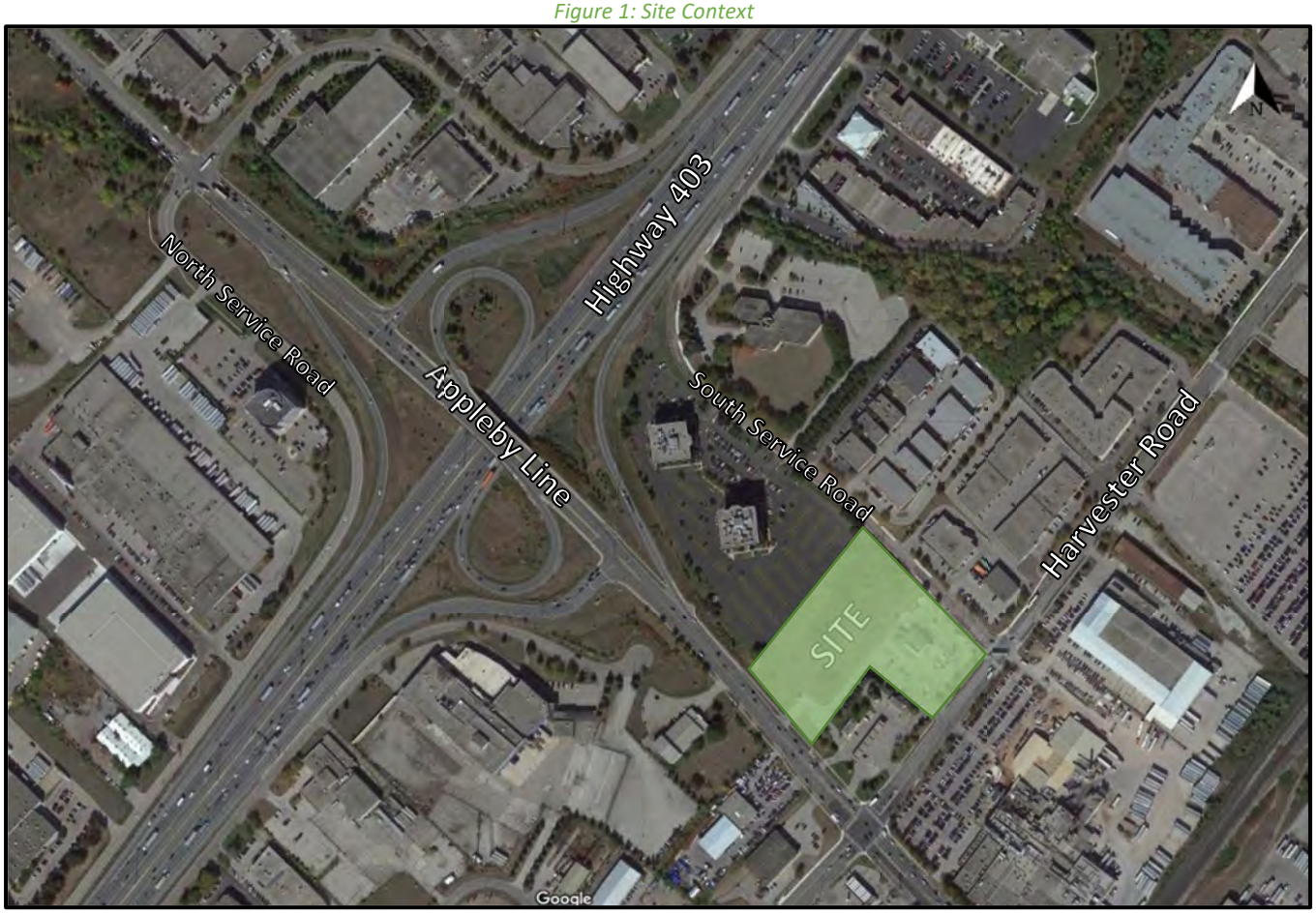
1.1 Development Lands

The subject site is situated to the northeast of the intersection of Appleby Line and Harvester Road, north of the Esso gas station. It is also located south of the Highway 403 interchange at Appleby Line. Within the development lands, the existing Wendy's and Tim Hortons establishments will be maintained, while the proposed Dymon facilities will be constructed on the greenfield north of the existing uses. The site currently resides within a Business Corridor Zone (BC1), a type of Employment Zone. It is surrounded by other Business Corridor Zones, General Employment Zones (GE1) and Open Space Zones (O). Figure 1 illustrates the site context.

The proposed development includes a five-storey building consisting of 21,828 square metres (234,954 square feet) of self-storage space including 117.5 square metres (1,265 square feet) of conditioned storage, 5,195 square metres (55,921 square feet) of co-working space, and 1,159 square metres (12,475 square feet) of reception / retail space that support the self-storage customers.

Access to the site will be facilitated by one right-in/right-out access on Appleby Line, and one full-movement access on South Service Road. A total of 166 parking spaces will be provided on site, including 9 at-grade and 157 underground. Loading for self-storage customers and overflow parking will be provided via a 1,597 square metre (17,187 square feet) interior drive-through located on the south side of the building. Figure 2 illustrates the proposed development concept plan.

Figure 1: Site Context

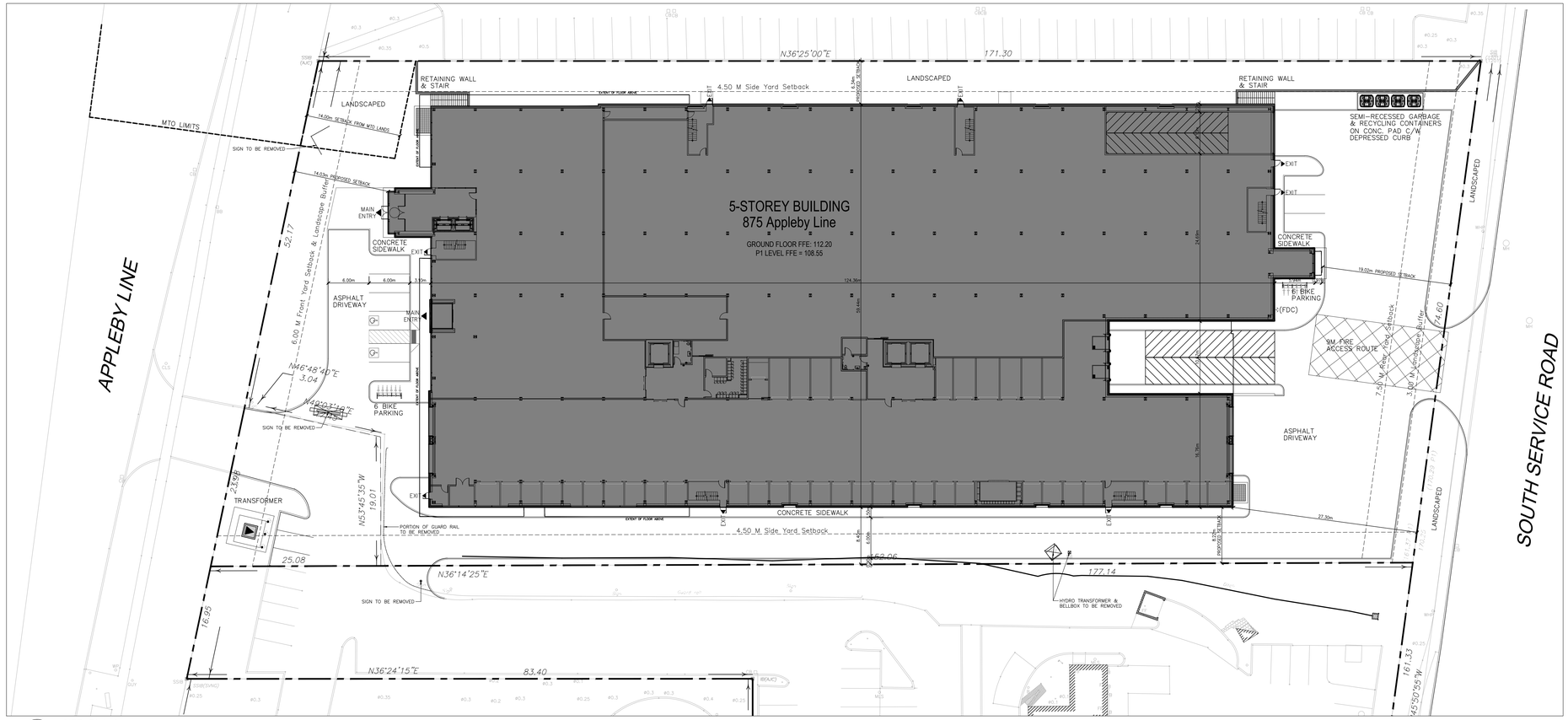


1.2 Study Area

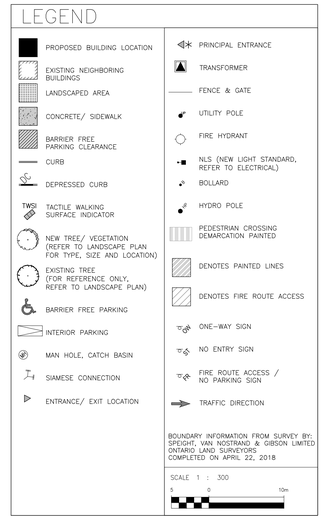
The Study Area consists of the following signalized and unsignalized intersections:

- Harvester Road at Appleby Line (Existing)
- South Service Road at Harvester Road (Existing)
- Eastbound Highway 403 Appleby Line Ramp Terminal (Existing)
- Westbound Highway 403 Appleby Line Ramp Terminal (Existing)
- North Service Road at Appleby Line (Existing)
- One Full-movement Site Access on Appleby Line (Existing)
- One Right-in / Right-out Site Access on Appleby Line (Future)
- One Full-movement Site Access on South Service Road (Future)

Figure 2: Concept Plan



1 A101 SITE PLAN 1:300



SITE STATISTIC

LEGAL DESCRIPTION OF PROPERTY					
PART OF LOT 5 CONCESSION 3, SOUTH OF DUNDAS STREET (GEOGRAPHIC TOWNSHIP OF NELSON)					
CITY OF BURLINGTON, REGIONAL MUNICIPALITY OF HALTON					
SURVEYED BY SPEIGHT, VAN NOSTRAND & GIBSON LIMITED					
ONTARIO LAND SURVEYORS 2022					
ZONING REGULATION (By-law BC1-62)	**PROPOSED**			**REQUIRED**	**COMPLIANCE**
Lot Area	12,922.9sm	[139,101sf]			
Building Area (footprint)	7,096.2sm	[76,383sf]	54.91%		
Paved Area	3,191.0sm	[34,348sf]	24.69%		
Landscaped Area	2,635.7sm	[28,371sf]	20.40%		
Building Setbacks					
Setback from Appleby Line - Front yard	14.03m (min.)			6.0m	YES
Setback from the northeast property line - Rear yard	27.30m (min.)			7.5m	YES
Setback from the northwest property line - Side yard	6.34 (min.)			4.5m	YES
Setback from the southeast property line - Side yard	8.23m (min.)			4.5m	YES
Building Height	30.78mm - 6 storeys (from ground floor to top of parapet)			No maximum	YES
	34.55m (from ground floor to top of lantern canopy)				
Permited uses	Retails, Offices & Self-Storage Warehouse				NO-storage/retail not permitted
Parking spaces	166 parking spaces			306	NO
Office (Other) - 3 spaces/100 m^2 GFA				156	
Retail Store - 3.5 spaces/100 m^2 GFA				41	
Storage Locker Facility - 0.5 spaces/100 m^2 GFA				109	
Accessible Parking Spaces - 3% of required parking	Total provided: 5 spaces			10	NO
	(2 at grade, 3 at P1)				
Bicycle Parking Spaces - 2 spaces plus 1 spaces/1000 m^2 GFA	24 spaces (12 at grade, 12 at P1)			14	YES
Landscape Buffers					
Abutting South Service Rd.	3.0m			3.0m	YES
Abutting Appleby Line	6.0m			6.0m	YES
Loading	1 interior Loading and Parking			N/A	
Drive Aisle Width	6.0m (two-way)			6.0m	YES

GFA BREAKDOWN

	P1		GF		2F		3F		4F		5F		RF		Total GFA / Use		% over GFA
Dymon Reception (Retail)			1,159.0sm	[12,475sf]											**1,159.0sm**	**[12,475sf]**	3.7%
Dymon Work Refined (Office)					1,508.0sm	[16,232sf]	1,508.0sm	[16,232sf]	1,371.4sm	[14,762sf]	807.8sm	[8,695sf]			**5,195.2sm**	**[55,921sf]**	16.8%
Storage			3,832.7sm	[41,255sf]	5,741.2sm	[61,798sf]	5,741.2sm	[61,798sf]	5,478.9sm	[58,974sf]	916.4sm	[9,864sf]			**21,710.4sm**	**[233,689sf]**	70.1%
Storage 1			3,305.3sm	[35,578sf]													
Storage 2			353.7sm	[3,807sf]													
Storage Lobby 1			96.0sm	[1,033sf]													
Storage Lobby 2			77.8sm	[837sf]													
Conditioned Storage			117.5sm	[1,265sf]											**117.5sm**	**[1,265sf]**	0.4%
Interior Loading			1,596.7sm	[17,187sf]											**1,596.7sm**	**[17,187sf]**	5.2%
Parking	7,003.7sm	[75,387sf]													**7,003.7sm**	**[75,387sf]**	22.6%
Ramp			183.8sm	[1,978sf]											**183.8sm**	**[1,978sf]**	0.6%
Stairs			147.7sm	[1,590sf]	162.2sm	[1,746sf]	162.2sm	[1,746sf]	187.0sm	[2,013sf]	66.9sm	[720sf]			**726.0sm**	**[7,815sf]**	2.3%
Stair A			25.0sm	[269sf]	29.1sm	[313sf]	29.1sm	[313sf]	78.2sm	[842sf]	37.8sm	[407sf]					
Stair B			22.9sm	[246sf]	22.9sm	[246sf]	22.9sm	[246sf]	22.9sm	[246sf]							
Stair C			27.2sm	[293sf]	26.7sm	[287sf]	26.7sm	[287sf]	26.7sm	[287sf]							
Stair D			24.2sm	[260sf]	26.2sm	[282sf]	26.2sm	[282sf]	26.2sm	[282sf]							
Stair E			24.2sm	[260sf]	33.1sm	[356sf]	33.1sm	[356sf]	33.1sm	[356sf]	29.1sm	[313sf]					
Stair F			24.3sm	[262sf]	24.3sm	[262sf]	24.3sm	[262sf]									
Elevator			59.7sm	[643sf]	59.7sm	[643sf]	59.7sm	[643sf]	61.4sm	[661sf]	33.0sm	[355sf]			**273.6sm**	**[2,945sf]**	0.9%
Elevator A			15.9sm	[171sf]	15.9sm	[171sf]	15.9sm	[171sf]	17.6sm	[189sf]	17.6sm	[189sf]					
Elevator B			15.4sm	[166sf]	15.4sm	[166sf]	15.4sm	[166sf]	15.4sm	[166sf]	15.4sm	[166sf]					
Elevator C			28.4sm	[306sf]	28.4sm	[306sf]	28.4sm	[306sf]	28.4sm	[306sf]							
Lantern*													76.2sm	[820sf]		[820sf]	
Marquee*											120.5sm	[1,297sf]	235.7sm	[2,537sf]	356.2sm	[3,834sf]	
Roof*											4,621.2sm	[49,742sf]	1,716.3sm	[18,474sf]	6,337.5sm	[68,216sf]	
Terrace*									359.3sm	[3,868sf]	546.7sm	[5,885sf]			906.1sm	[9,753sf]	
Total GFA / Floor(*)	**7,003.7sm**	**[75,387.0sf]**	**7,097.1sm**	**[76,393.0sf]**	**7,471.2sm**	**[80,419.0sf]**	**7,471.2sm**	**[80,419.0sf]**	**7,098.7sm**	**[76,410.0sf]**	**1,824.1sm**	**[19,634sf]**			**30,962.2sm**	**[333,275sf]**	

Note:
The area is calculated from midpoint to midpoint of demising walls and to the outside edge of exterior walls. The area of elevator shafts, stairs & building services are determined using the exterior perimeter of a walls.
Total Building GFA excludes P1

GLOBAL architect inc
6 Leswyn Road, Toronto, Ontario, M6A 1K2 — tel (416)256-4440, fax (416)256-4449

Design Architect
TACT Architecture Inc
660R College Street (Rear Lane)
Toronto ON. M6G 1B8
tel: (416) 516-1949

Planning, Urban Design & Landscape Architect
MHBC Planning, Urban Design & Landscape Architecture
7050 Weston Road, Suite 230,
Woodbridge ON. L4L 8G7
tel: (905) 761-5588

Civil Engineer
C.F. Crozier & Associates Consulting Engineers
211 Yonge street, Suite 301,
Toronto ON. M5B 1M4
tel: (416) 477-3392

NO.	DATE	DESCRIPTION
6	MAR 13, 24	FOR ZR SUBMISSION
5	FEB 28, 24	PROGRESS FOR COORDINATION
4	NOV 22, 23	FOR COORDINATION
3	NOV 01, 23	FOR COORDINATION
2	OCT 30, 23	REVISED BLDG SIZES FOR COORDINATION
1	JUL 13, 23	FOR REVIEW & COMMENT

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME, REPORTING ANY DISCREPANCIES TO THE ARCHITECT BEFORE COMMENCING WORK.
ALL DRAWINGS, PRINTS AND SPECIFICATIONS ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED TO HIM ON COMPLETION OF WORK.
LATEST APPROVED DRAWINGS ONLY TO BE USED FOR CONSTRUCTION.
PRINTS ARE NOT TO BE SCALED.

PROJECT NORTH / TRUE NORTH

DYMON STORAGE

DYMON CAPITAL CORP.
2-1830 WALKLEY ROAD
OTTAWA ON. K1H 8K3

PROJECT NAME
5 STOREY SELF STORAGE, OFFICE & RETAIL
875 APPLEBY LINE
BURLINGTON, ONTARIO

DRAWN BY: AT
CHECKED BY: R.P.
DATE: November 22, 2023
SCALE: AS NOTED

DRAWING TITLE
SITE PLAN

PROJECT NO. 22-09
DRAWING NO. A101

2 Existing Conditions

2.1 Existing Road Network

Highway 403

Highway 403 is an east-west 400-Series provincial freeway under the jurisdiction of MTO with four lanes in each direction, consisting of three through lanes and one High Occupancy Vehicle (HOV) lane. The approaches are separated by an intermittent raised median. A posted speed limit of 100 km/h applies.

Appleby Line

Appleby Line is a Halton Regional Road, designated as a major arterial north of the Highway 403 interchange and a multi-purpose arterial road south of the Highway 403 interchange. It has a four-lane cross-section and a median. Boulevard-separated sidewalks are provided on both sides of the road. There are no cycling facilities present on Appleby Line. A 60 km/h posted speed limit applies. The Halton Region Official Plan protects a 40-metre right-of-way for Appleby Line.

Harvester Road

Harvester Road is an industrial connector west of Appleby Line and a multi-purpose arterial east of Appleby Line, falling under the jurisdiction of the City of Burlington. The road has a four-lane cross-section. Boulevard-separated sidewalks and curbs are provided on each side of the road. There are no cycling facilities present on Harvester Road. A 60 km/h posted speed limit applies. The City of Burlington Official Plan protects a right-of-way of 32 metres west of Appleby Line, and 36 metres east of Appleby Line.

South Service Road

South Service Road is a City of Burlington industrial connector with a two-lane cross-section. Sidewalks are provided on both sides of the road between Harvester Road and access to Durward Jones Barkwell & Company. North of the access sidewalks are provided on the east / south side only. There are no cycling facilities on South Service Road. A 50 km/h posted speed limit applies. The City of Burlington protects a 26-metre right-of-way for South Service Road.

North Service Road

North Service Road is a City of Burlington industrial connector with a two-lane cross-section. Sidewalks are only provided on the north / west side of the road between the access to 4475 North Service Road and Appleby Line, and no sidewalks are present along the rest of the road segments. To the west of Appleby Line, there are gravel shoulders on both sides of North Service Road. No cycling facilities are provided. A 60 km/h posted speed limit applies. The City of Burlington protects a 22-metre right-of-way for North Service Road.

2.2 Existing Intersections

Harvester Road at Appleby Line

The intersection of Harvester Road at Appleby Line is signalized and has four approaches. The northbound and southbound approaches consist of an auxiliary left-turn lane, two through lanes, and an auxiliary right-turn lane. The eastbound and westbound approaches consist of an auxiliary left-turn lane, a through lane, and a shared through/right-turn lane. Pedestrian crosswalks, associated signal heads, and call buttons are provided on all approaches of the intersection. No turning restrictions are noted. Figure 3 illustrates the intersection of Harvester Road at Appleby Line.

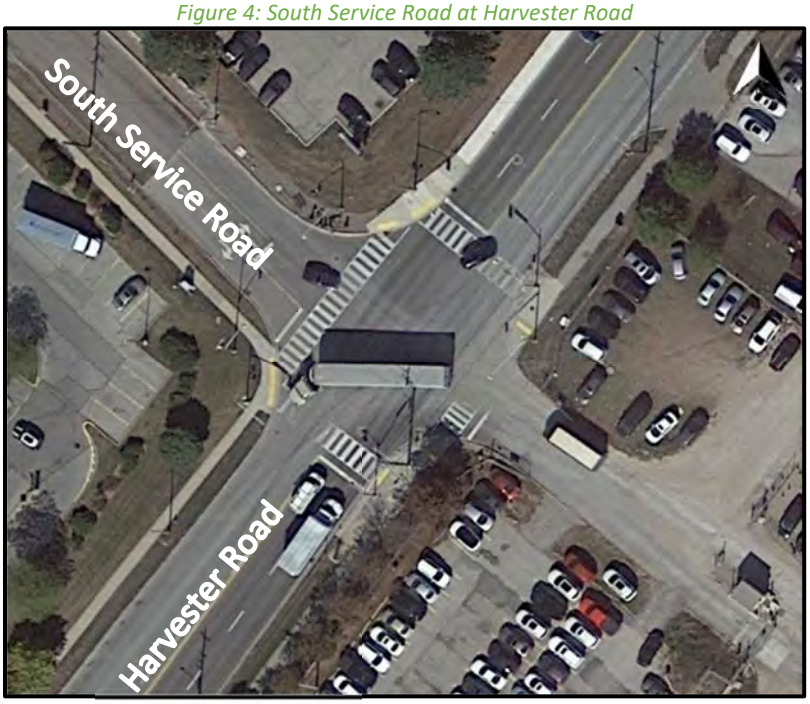
Figure 3: Harvester Road at Appleby Line



South Service Road at Harvester Road

The intersection of South Service Road at Harvester Road is signalized and has four approaches. The access to the industrial site, forming the northbound approach and gated approximately 40 metres south of the curb return, consists of a single shared left-turn/through/right-turn lane. The southbound approach consists of a shared left-turn/through lane, and an auxiliary right-turn lane. The eastbound and westbound approaches both consist of a shared left-turn/through lane, and a shared through/right-turn lane. Pedestrian crosswalks and associated signal heads and call buttons are provided on all sides of the intersection. No turn restrictions are noted at this intersection. Figure 4 illustrates the intersection of South Service Road at Harvester Road.

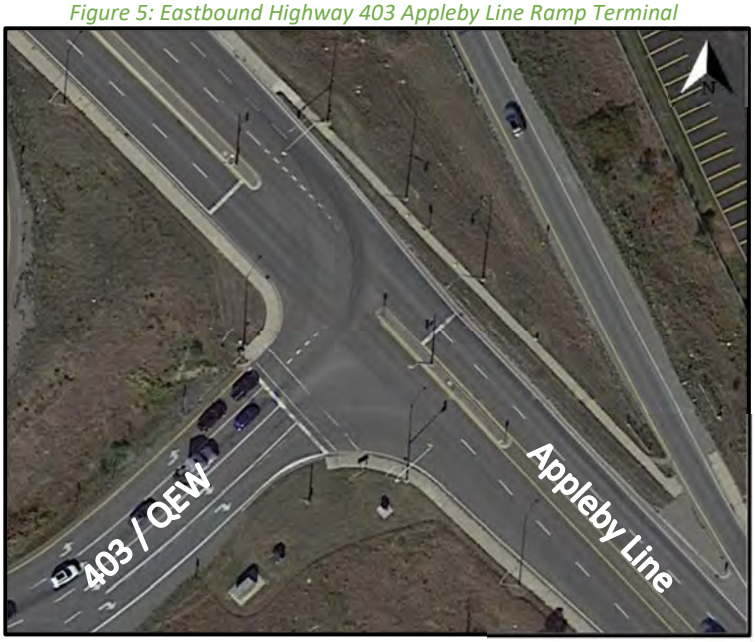
Figure 4: South Service Road at Harvester Road



Eastbound Highway 403 Appleby Line Ramp Terminal

The intersection of the Eastbound Highway 403 Exit Ramp at Appleby Line is signalized and has three approaches. The eastbound approach is exit-only and has two auxiliary left-turn lanes and two auxiliary right-turn lanes. The northbound and southbound approaches both have two through lanes. North of the intersection there is an extra receiving lane provided for the on-ramp for Highway 403. Pedestrian crosswalks and signal heads are provided on the west leg. Signages are displayed at the intersection indicating that vehicular, pedestrian, and cyclist traffic travelling onto the off-ramp are prohibited. Figure 5 illustrates the intersection of the Eastbound Highway 403 Exit Ramp at Appleby Line.

Figure 5: Eastbound Highway 403 Appleby Line Ramp Terminal



Westbound Highway 403 Appleby Line Ramp Terminal

The intersection of Westbound Highway 403 Exit Ramp at Appleby Line is signalized and has three approaches. The westbound approach is exit-only, and has two auxiliary left-turn lanes, and a channelized right-turn lane. The northbound and southbound approaches have two through lanes. The southbound direction south of the intersection has an extra through lane leading to the on-ramp for Highway 403. Pedestrian crosswalks and signal heads are provided on the east leg. The channelized right-turn is uncontrolled. Signs indicating one-way traffic on the off-ramp for vehicles, cyclists, and pedestrians are present at the intersection. Figure 6 illustrates the intersection of the Westbound Highway 403 Off Ramp at Appleby Line.

Figure 6: Westbound Highway 403 Appleby Line Ramp Terminal



North Service Road at Appleby Line

The intersection of North Service Road at Appleby Line is signalized and has four approaches. The northbound and southbound approaches consist of an auxiliary left-turn lane, a through lane, and a shared through/right-turn lane. The eastbound and westbound approaches consist of an auxiliary left-turn lane, and a shared through/right-turn lane. Pedestrian crosswalks, signal heads, and call buttons are provided on all legs of the intersection. No turn restrictions are noted at this intersection. Figure 7 illustrates the intersection of North Service Road at Appleby Line.

Figure 7: North Service Road at Appleby Line



875 Appleby Line Access on Appleby Line

The access on forms a three-legged unsignalized intersection with Appleby Line. The northbound approach consists of a through lane and a shared through / right-turn lane. The southbound approach consists of a left-turn lane and two through lanes. The westbound approach consists of a shared left-turn / right-turn lane. Sidewalk continues across the access driveway. No turn restrictions are noted at this intersection. Figure 8 illustrates the intersection of the existing access on Appleby Line.

Figure 8: Access at Appleby Line



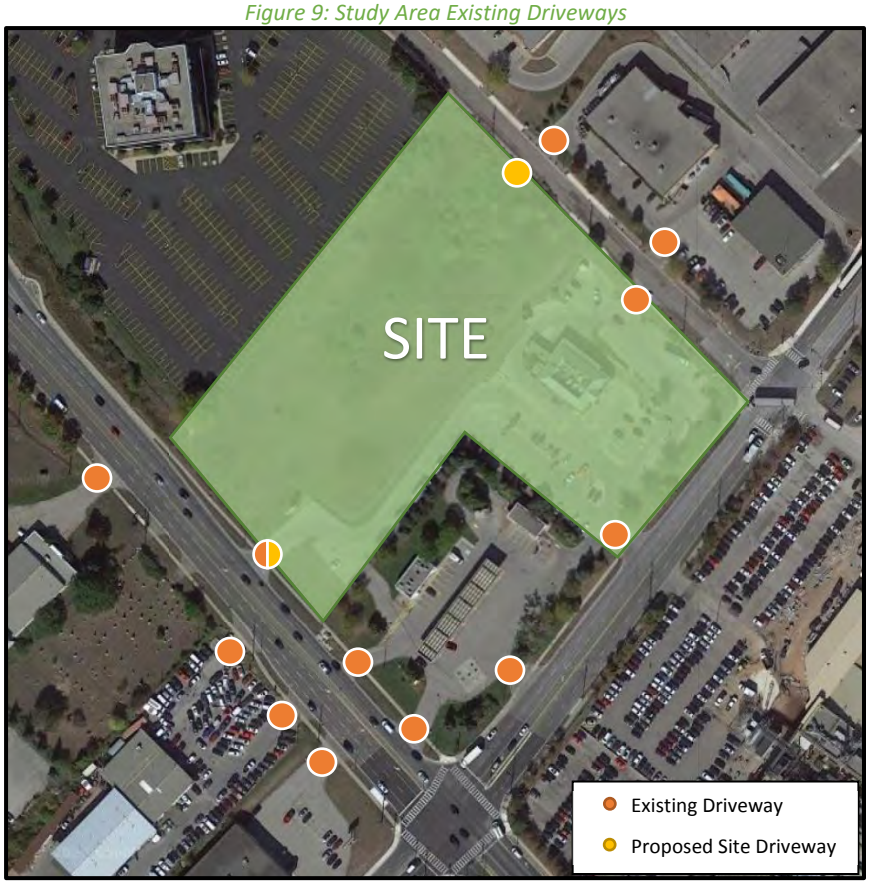
2.3 Existing Accesses

Within proximity to the proposed development, there are twelve existing driveways as illustrated in Figure 9. On the west side of Appleby Line, there is an access to an industrial manufacturer (Oak-Burl Industries), two driveways to a used car dealership (Good Cars Only), and an access to a flooring store (Alexnian Carpet & Flooring Cleaning) counting from north to south. On the east side of Appleby Line, there is the existing full-movement access to 875 Appleby Line, and an egress and an ingress for the gas station (Esso) with a convenience store (Circle K).

On the north side of Harvester Road, a full-movement access is located approximately 50 metres east of the intersection of Appleby Line at Harvester Road that also serves the gas station (Esso). Approximately 70 metres east of this access, there is an access leading to the parking lot which serves the two fast-food restaurants (Tim Hortons and Wendys).

On the west side of South Service Road, there is an existing access located approximately 60 metres north of the intersection of Harvester Road at South Service Road that also serves the fast-food restaurants. On the east side of South Service Road, two accesses are available for the shared commercial lot. The southern access is positioned approximately 7.5 meters north of the access to the fast-food restaurants, while the northern access is approximately 60 meters north of the southern access.

Figure 9: Study Area Existing Driveways



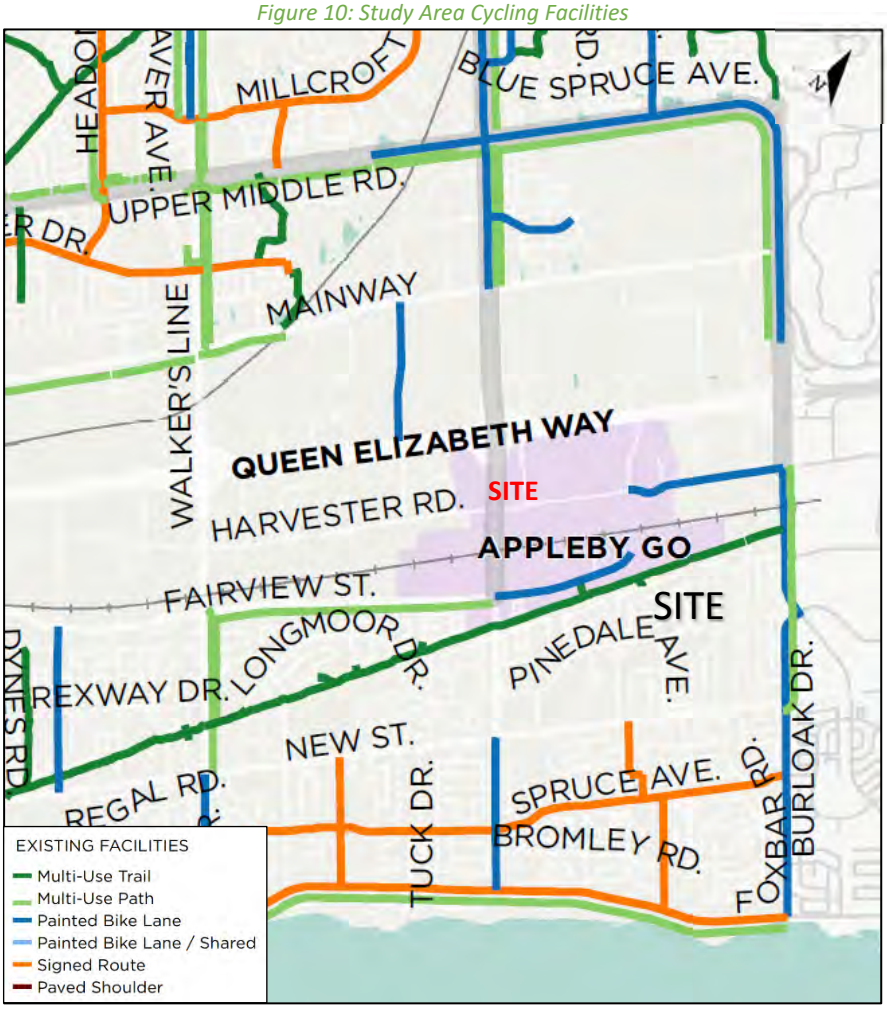
2.4 Existing Cycling and Pedestrian Facilities

Boulevard-separated sidewalks are provided along both sides of Appleby Line, Harvester Road, and the section of South Service Road up to the access to 5045 South Service Road approximately 370 metres north of Harvester Road. Sidewalks are provided along the north / west side of North Service Road west of Appleby Line and the east

/ south side of South Service Road north of the 5045 South Service Road access. There are no sidewalks provided on North Service Road east of Appleby Line. Pedestrian crosswalks, call buttons, and signal heads are provided on all sides at the intersections of Appleby Line at North Service Road, Appleby Line at Harvester Road, and Harvester Road at South Service Road. At the eastbound and westbound Highway 403 off-ramp terminals, crosswalks and signal heads are provided for the off-ramp leg at the intersection.

There are no cycling facilities provided within the Study Area as per the 2018 City of Burlington Cycling Plan. Figure 10 illustrates an excerpt from the 2018 City of Burlington Cycling Plan showing the existing cycling facilities around the Study Area. Painted bike lanes are provided along Harvester Road from 735 metres east of South Service Road up to Burloak Drive and along Fairview Street beside Appleby GO. A multi-use path is provided along Fairview Road west of Appleby Line.

Figure 10: Study Area Cycling Facilities



Source: Excerpt from City of Burlington Cycling Plan (2018)

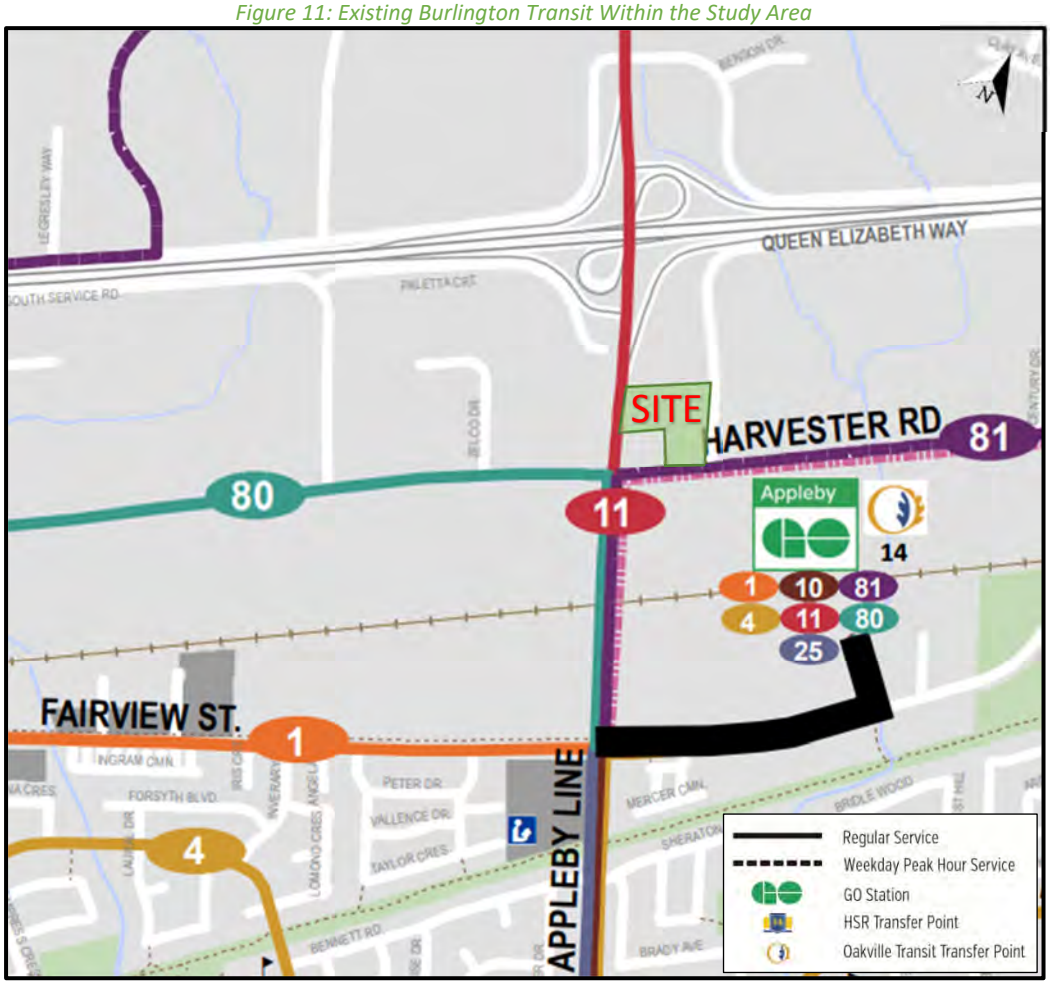
2.5 Existing Transit

The proposed development is well situated from the perspective of public transit service. Within proximity to the Study Area, there are bus routes and transit route operated by Burlington Transit, Oakville Transit, and GO Transit ensuring convenient access to both local and long-distance travel options.

2.5.1 Burlington Transit Services

As of August 2023, the four local transit routes operated by Burlington Transit present within proximity to the proposed development are routes #11, #50, #80, and #81 shown in Figure 11.

Figure 11: Existing Burlington Transit Within the Study Area



Source: 2021 Route Map

Route #11 Sutton-Alton runs between Highway 407 GO Station on Dundas Street and Appleby GO station on Fairview Street. The closest stop is located approximately 40 metres south of the existing access to 875 Appleby Line.

Route #50 Burlington South operates in a loop with its terminal at Burlington GO Station via Fairview Street, Maple Avenue, New Street, Burloak Drive, Lakeshore Road, Appleby Line, and Harvester Road. The closest stop is located approximately 110 metres west of the Appleby Line at Harvester Road intersection.

Route #80 Harvester operates between Appleby GO Station and Burlington GO Station via Harvester Road. The closest stop is located at the intersection of Harvester Road at Appleby Line.

Route #81 North Service runs between the same origin and destination as Route #80, but it mostly operates along North Service Road and Mainway with a much longer travelling distance. The closest stop is located at the intersection of South Service Road at Harvester Road.

The frequencies of these routes within proximity of the proposed site (as of August 2023) are:

- Route #11 – every 30 minutes on weekdays, Saturdays, Sundays, and holidays
- Route #50 – late night service only, operates between 10:56 PM and 1:16 AM on the next day from Mondays to Saturdays only, with a headway of 60 minutes.
- Route #80 – every 30 minutes on weekdays only
- Route #81 – every 30 minutes on weekdays only

2.5.2 Oakville Transit Services

As of August 2023, Oakville Transit also operates a route within the Study Area as shown in Figure 12.

Figure 12: Existing Study Area Oakville Transit Services



Source: https://www.oakvilletransit.ca/schedules-maps/14-14a-lakeshore-west/ Accessed: August 12, 2023

Route #14 and Route #14A Lakeshore West travel between Oakville GO Station and Appleby GO Station along Rebecca Street, Lakeshore Road West, and Harvester Road. However, the routes divert as Route #14 heads toward Appleby GO station via Great Lakes Boulevard before merging into Burloak Drive while Route #14A heads directly

onto Burloak Drive. Despite the differences mid-way, both routes stop at the intersection of Harvester Road and South Service Road, which is the closest stop to the proposed development.

The frequency of Route #14 (as of August 2023) is every 30 minutes during weekday AM and PM peak periods, and every 60 minutes during weekday off-peak periods, Saturdays and Sundays/holidays. Route #14A operates with the same headways except that they depart between two consecutive route #14 buses and form an alternating pattern.

2.5.3 GO Transit Services

Appleby GO Station is located approximately 1.6 km of walking distance from the proposed development. Due to the presence of railway tracks, pedestrians must take a slight detour along Appleby Line and Fairview Street. However, Appleby GO Station can be conveniently accessed via bus routes operated by Burlington Transit (#11, #80, #81) and Oakville Transit (#14 and #14A), which offer stops at Appleby GO Station. Figure 13 illustrates the GO Transit services through the existing areas.

At Appleby GO Station, two GO Transit routes are available:

- **Lakeshore West Train Route:** This train route operates between Union Station in Toronto and Niagara Falls, with a stop at Appleby GO Station. Eastbound trips from Appleby GO Station occur between 5:07 AM and 11:46 PM, and westbound trips occur between 7:06 AM and 1:38 AM on the following day. On weekdays, the headway between trains is approximately 30 minutes. On Saturdays and Sundays, eastbound trains depart between 7:47 AM and 11:47 PM, while westbound trains depart between 9:39 AM and 1:38 AM the next day, also at a headway of about 30 minutes.
- **Bus Route #18:** This bus route follows a similar direction to the train route, providing service during the midnight and early morning hours. Eastbound service from 5:55 AM to 7:25 AM is available, with westbound service offered between 2:05 AM and 3:35 AM and between 7:33 AM and 9:03 AM.

Figure 13: Existing Study Area GO Transit Services



Source: GO Transit System Map (April 2023)

2.6 Existing Conditions Operational Analysis

2.6.1 Existing Peak Hour Travel Demand

To determine what analysis periods, and hence what data collection periods, should be included in this study, the proposed and existing land uses have been examined. The proposed new development consists of mainly office and self-storage land uses.

The proposed office use is anticipated to follow typical business hours, and its peak hour of trip generation will likely coincide with the AM and PM street peak hours.

The proposed self-storage use is anticipated to primarily attract clientele outside of typical working hours, with the site peak trip generation coinciding with the PM street peak hour and occurring on the weekend.

The total site trip generation, and the resulting peak hours, will be a combination of the two land uses. The office land use is anticipated to be the largest single trip generator of the two land uses. As all land uses will also have some trip generation during the AM and PM peak hours, and this coincides with the AM and PM street peak hours, the analysis periods for this study will include the AM and PM peak hours. Therefore, data collection has been undertaken at the study area intersections during the AM and PM peak hours.

As confirmed in the Terms of Reference for this study, only the AM and PM peak periods have been selected as the analysis periods given that the trip generation of the office land use dominates that of the other uses on this site.

To understand the existing AM and PM peak hour traffic volumes, turning movement counts have been collected for the existing Study Area intersections. Table 1 summarizes the dates of the turning movement counts used for each Study Area intersection and the sources of the data. Turning movement count data is included in Appendix B.

Table 1: TMC and ATR Data Dates

Data Type	Location	Count Date	Data Source
Turning Movement Counts (TMC)	Appleby Line & Harvester Road	June 14, 2023	Ontario Traffic Inc.
	Harvester Road & South Service Road	June 14, 2023	Ontario Traffic Inc.
	Appleby Line & 875 Appleby Line Access	June 14, 2023	Ontario Traffic Inc.
	Appleby Line & North Service Road	July 5, 2023	Ontario Traffic Inc.
	Appleby Line & Highway 403 South Ramp Terminal	June 14, 2022	MTO
	Appleby Line & Highway 403 North Ramp Terminal	June 14, 2022	MTO

New turning moving counts were collected in the same horizon year as the 2023 Existing Conditions for four of the Study Area intersections, namely Appleby Line at Harvester Road, Harvester Road at South Service Road, 875 Appleby Line Access on Appleby Line, and Appleby Line at North Service Road. Historical counts were also provided by the Halton Region and City of Burlington. The majority of this data was collected concurrently, with the exception of the Appleby Line at North Service Road intersection north of Highway 403, which was conducted less than a month after the other turning movement counts. A comparative analysis was carried out for these four intersections, revealing only minor volume imbalances (<10%). Consequently, there was no need for further adjustments to the counts.

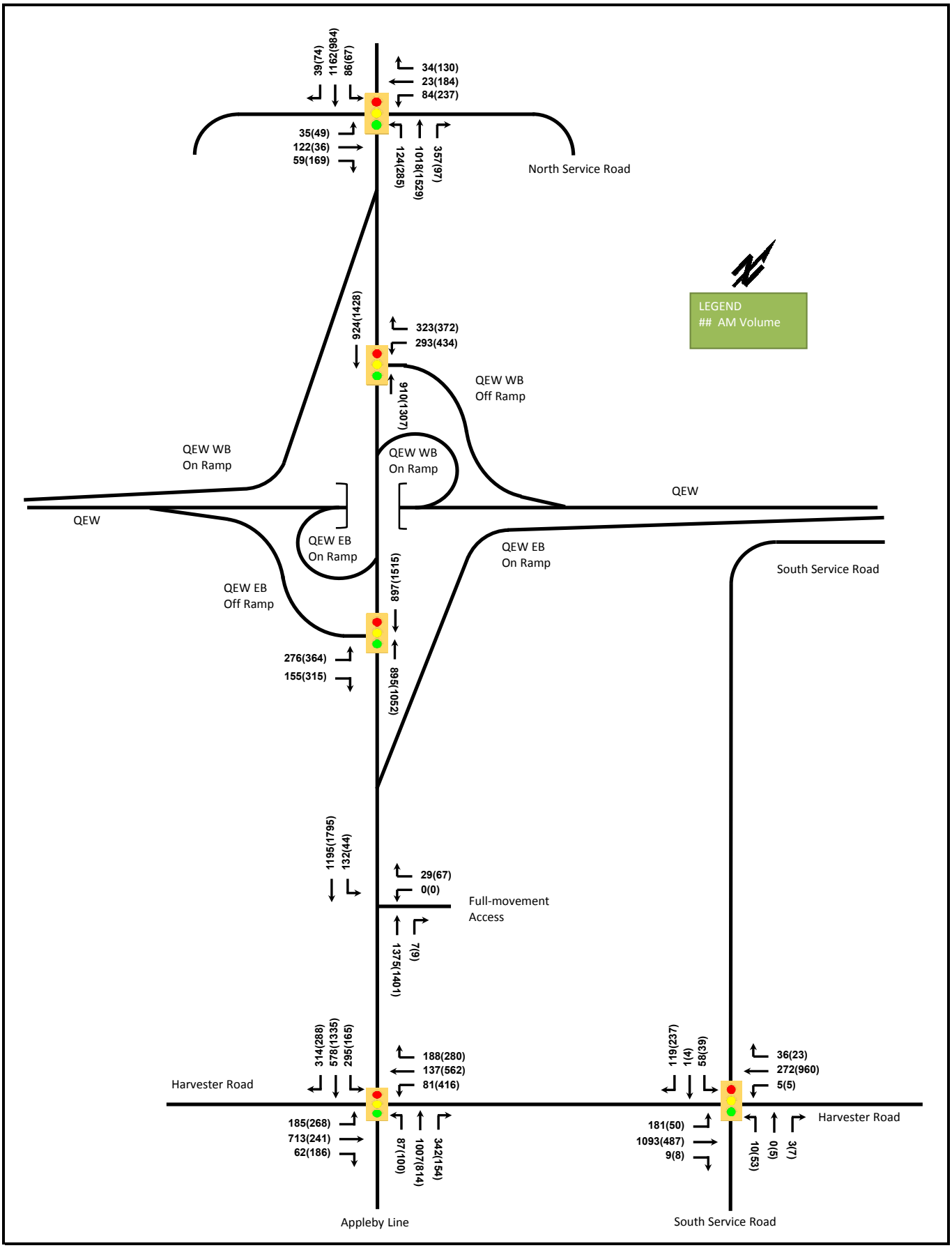
The turning moving counts for the Highway 403 South Ramp Terminal and Highway 403 North Ramp Terminal on Appleby Line have been obtained from MTO. The two counts were undertaken in 2022, one year prior to the study

date. To ensure a consistent 2023 horizon, an annual growth rate of 1% was applied to these counts to reflect growth beyond the Study Area. Additional information regarding the annual growth rate used can be found in Section 3.2.4.4.

Cyclist and pedestrian volumes in the turning movement counts at the Study Area intersections were relatively low. Consequently, these counts were not factored into the operational analysis, as their impact on the transportation network was deemed minimal.

Figure 14 illustrates the existing 2023 vehicular traffic volumes.

Figure 14: 2023 Existing Traffic Volumes



2.6.2 Existing Transportation Network and Modeling Parameters

To assess the operational characteristics of automobile traffic at the Study Area intersections, a Synchro model was constructed using Trafficware's Synchro (Version 11). The analysis results derived from Synchro for signalized intersections are based on v/c calculations from the Highway Capacity Manual 6th Edition for individual lane movements, and Highway Capacity Manual 2000 for the intersection overall. For unsignalized intersections, analysis results are based on the Highway Capacity Manual 2000, with average delay used for calculations.

The configurations of the Study Area intersections were coded using aerial and ground-level imagery, as detailed in Section 2.2. Lane widths were coded based on measurements obtained from the aerial imagery, and turning-lane storage lengths were rounded to the nearest five meters. The Synchro model was coded using the existing traffic signal timing plans provided by Halton Region and the City of Burlington, which are available in Appendix C.

The AM and PM peak hour factors (PHF) were applied to each intersection based on the corresponding values obtained from the turning movement counts. The values can be found in the turning movement count summary sheets in Appendix B. A summary of the PHF values applied at each intersection can be found in Table 2. For the off-ramp intersections, the MTO counts received did not include the necessary 15-minute volumes during the peak hours for PHF calculations. As a result, a default peak hour factor of 0.92 was applied to the AM and PM volumes at these intersections. Similarly, in future scenarios, at the new intersection formed by the proposed accesses, a default peak hour factor of 0.92 was applied to all movements.

Table 2: Peak Hour Factors Applied at Study Area Intersections

Intersection	Peak Hour Factor	
	AM	PM
Appleby Line & Harvester Road	0.95	0.96
Harvester Road & South Service Road	0.91	0.94
875 Appleby Line Access & Appleby Line	0.94	0.94
Appleby Line & North Service Road	0.96	0.96
Appleby Line & Highway 403 South Ramp Terminal	0.92*	0.92*
Appleby Line & Highway 403 North Ramp Terminal	0.92*	0.92*
Full Moves Access & South Service Road	0.92*	0.92*

*A default PHF of 0.92 has been applied.

To account for the presence of heavy vehicles at the intersections within the Study Area, Heavy Vehicle percentages (HV%) were computed based on the turning movement counts. All Heavy Vehicle percentages found to be less than 2% were conservatively recorded as 2% in the Synchro model. Further details of these calculations are available in Appendix D.

Pedestrian and cyclist volumes from the turning movement counts were incorporated into the Synchro model. Additionally, bus blockage numbers were determined based on the operation of the existing routes, considering factors including bus stop locations, intersection configurations (i.e. the presence of dedicated right turn lanes or shared right/through lanes), and bus frequencies as per the current schedules provided by transit agencies.

An ideal saturation flow of 1,900 vehicles/hour/lane was applied to all movements at each Study Area intersection. All other parameters were coded using industry best practices and Synchro default values where applicable.

The Level of Service (LOS) at signalized and unsignalized intersections was assessed in accordance with the criteria outlined in the Highway Capacity Manual 2000. The criteria for LOS at signalized and unsignalized intersections are presented in Table 3 and Table 4, respectively.

Table 3: Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (Seconds/Vehicle)
A	≤10
B	>10 – 20
C	>20 – 35
D	>35 – 55
E	>55 – 80
F	>80

Table 4: Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (Second/Vehicle)
A	≤10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F	>50

Criteria for identifying critical movements and critical intersections at both signalized and unsignalized intersections are in alignment with the *Halton Region Transportation Impact Study Guidelines*.

Critical movements and critical intersections for signalized intersections have been defined as where:

- Volume/capacity (V/C) ratios for overall intersection operations, through movements, or shared through/turning movements increased to 0.85 or above;
- V/C ratios for exclusive movements increased to 0.95 or above; or
- Queues for an individual movement are projected to exceed available turning lane storage.

Critical movements and critical intersections for unsignalized intersections have been defined as where:

- Level of service (LOS), based on average delay per vehicle, on individual movements exceeds LOS “D”, or
- The estimated 95th percentile queue length for an individual movement exceeds the available queue storage.

As the Study Area also includes MTO intersections, the critical movements and intersections as defined by MTO’s General Guidelines for the Preparation of Traffic Impact Studies (2023) will be identified for the Appleby Line & Highway 403 South Ramp Terminal (eastbound) and Appleby Line & Highway 403 North Ramp Terminal (westbound).

As the Study Area encompasses MTO-controlled intersections, namely the Appleby Line & Highway 403 South Ramp Terminal (eastbound) and Appleby Line & Highway 403 North Ramp Terminal (westbound), critical movements and intersections, as defined in MTO's *General Guidelines for the Preparation of Traffic Impact Studies (2023)*, are identified. The criteria are summarized as follows:

- At signalized intersections, movements with a volume/capacity (v/c) ratio greater than 0.85 are deemed to be "critical" in terms of operations. Movements that experience a v/c ratio of 0.85 or greater shall be evaluated for possible operational improvements.
- For ramps, a v/c ratio for terminal ramp approaches with a value greater than 0.75 would be deemed critical and shall be evaluated for possible operational improvements.

2.6.3 2023 Existing Traffic Conditions

The existing intersection volumes have been analyzed to establish a baseline condition and determine the impact of the subject development as well as the surrounding background developments on the Study Area road network. Table 5 summarizes the operational analysis of the 2023 Existing Conditions. Appendix E contains the 2023 Existing Conditions Synchro Sheets.

Table 5: 2023 Existing Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & Harvester Road (Signalized)	EBL	E	0.85	65	#71	F	0.95	82	#117
	EBT/R	E	1.00	77	#151	E	0.78	71	#77
	WBL	E	0.59	55	33	F	0.99	81	#177
	WBT/R	D	0.35	44	32	F	1.18	150	#198
	NBL	B	0.23	19	17	D	0.76	52	#47
	NBT	D	0.78	37	153	C	0.59	34	128
	NBR	C	0.41	29	60	C	0.11	26	17
	SBL	E	0.90	74	#107	C	0.56	24	m33
	SBT	B	0.38	16	50	D	0.88	41	215
	SBR	C	0.23	21	20	C	0.31	34	m31
	Overall	**D**	**0.94**	**44**	**-**	**E**	**0.98**	**66**	**-**
	Mitigation Measure: Signal Optimization								
	EBL	E	0.84	65	#81	E	0.96	77	#114
	EBT/R	E	0.88	57	#145	D	0.42	43	54
	WBL	D	0.48	51	33	E	1.00	75	#132
	WBT/R	D	0.26	40	31	E	0.96	70	#160
	NBL	C	0.26	25	20	D	0.71	47	#40
	NBT	D	0.85	46	169	D	0.68	39	129
	NBR	C	0.45	35	70	C	0.14	29	22
	SBL	E	0.94	74	#122	C	0.63	28	40
	SBT	C	0.39	24	71	E	1.01	66	#252
	SBR	C	0.23	22	17	C	0.33	30	43
	Overall	**D**	**0.92**	**44**	**-**	**E**	**1.01**	**57**	**-**
Harvester Road & South Service Road (Signalized)	EBL/T/R	A	0.73	9	91	A	0.31	5	31
	WBL/T/R	A	0.16	4	13	A	0.46	6	61
	NBL/T/R	C	0.02	25	1	C	0.34	33	22
	SBL/T	C	0.41	28	17	C	0.23	32	16
	SBR	C	0.09	25	13	D	0.60	38	44
	Overall	**A**	**0.68**	**10**	**-**	**B**	**0.49**	**12**	**-**
Appleby Line & QEW Eastbound Off-ramp (Signalized)	EBL	D	0.67	53	50	E	0.74	62	72
	EBR	D	0.07	45	11	E	0.70	61	63
	NBT	A	0.37	4	36	A	0.43	7	m76
	SBT	B	0.52	11	106	A	0.80	8	46
	Overall	**B**	**0.54**	**15**	**-**	**B**	**0.79**	**18**	**-**

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & QEW Westbound Off-ramp (Signalized)	WBL	D	0.49	43	46	D	0.52	44	74
	WBR	E	0.82	62	85	E	0.90	72	#152
	NBT	B	0.55	10	114	B	0.72	16	172
	SBT	A	0.43	10	90	B	0.69	10	m79
	Overall	**B**	**0.61**	**20**	-	**C**	**0.77**	**23**	-
Appleby Line & Existing Access to 875 Appleby (Unsignalized)	WBL/R	A	0.04	9.9	1.0	B	0.12	11.9	3.3
	NBT/R	-	0.57	0.0	0	-	0.60	0.0	0
	SBL	B	0.26	14.0	8.2	B	0.10	13.6	2.7
	SBT	-	0.37	0.0	0	-	0.57	0.0	0
	Overall	**B**	-	**0.8**	-	**B**	-	**0.4**	-
Appleby Line & North Service Road (Signalized)	EBL	D	0.19	46	17	E	0.55	67	28
	EBT/R	E	0.70	58	62	E	0.51	63	44
	WBL	D	0.40	37	29	F	0.97	97	#92
	WBT/R	C	0.08	34	14	E	0.74	57	110
	NBL	B	0.51	16	m17	D	0.67	44	m#96
	NBT/R	C	0.81	25	#227	B	0.83	17	#304
	SBL	B	0.43	18	17	C	0.50	26	17
	SBT/R	C	0.72	25	175	D	0.73	35	164
	Overall	**C**	**0.75**	**27**	-	**D**	**0.89**	**36**	-
	Mitigation Measure: Signal Optimization								
	EBL	-	-	-	-	E	0.54	62	27
	EBT/R	-	-	-	-	E	0.40	57	37
	WBL	-	-	-	-	E	0.91	76	#82
	WBT/R	-	-	-	-	D	0.70	50	102
	NBL	-	-	-	-	C	0.65	32	#97
	NBT/R	-	-	-	-	C	0.87	30	#297
	SBL	-	-	-	-	C	0.50	28	16
	SBT/R	-	-	-	-	D	0.83	42	168
	Overall	-	-	-	-	**D**	**0.90**	**40**	-
Notes:	m - volume for the 95th percentile queue is metered by an upstream signal which controls the arrival of vehicles at the downstream intersection, limiting the queue length								
	# - 95% percentile volume exceeds capacity								

The table above summarizes the operational analysis results for the existing volumes at the Study Area intersections in 2023. In general, these intersections exhibit good overall LOS and low delays, with operational constraints primarily evident at the intersection of Appleby Line at Harvester Road and Appleby Line at North Service Road.

At the Highway 403 eastbound and westbound off-ramp intersections on Appleby Line, conditions are favorable during both the AM and PM peak hours, with an overall LOS of C or better. While the westbound right movement has V/C ratios exceeding the MTO critical threshold of 0.75, the queues at the off-ramp are shorter than the provided storage lengths, and they do not disrupt traffic on the highway itself.

The existing full-movement access to 875 Appleby Line, situated south of the Highway 403 interchange, also maintains a good LOS and low delays on all movements during peak periods. Queues for southbound left turns do not exceed 10 meters, which can be accommodated by the storage length. Through movements along Appleby Line in front of the access show no delays or queues, with V/C ratios at 0.60 or lower, indicating substantial residual

capacity. Importantly, this access does not negatively impact vehicles exiting Highway 403 and travelling southbound or those travelling northbound heading for the on-ramps.

At the intersection of Appleby Line at Harvester Road, the eastbound shared through / right movement experiences critical conditions during the AM peak hour and the eastbound left, westbound left, and westbound through/right movements experience critical conditions during the PM peak hour. These issues are largely due to the high north-south volumes along Appleby Line, which consume a substantial portion of the green time per cycle, resulting in an insufficient allocation of green time for the eastbound and westbound movements. To mitigate these concerns, signal optimization measures were explored. Adjustments to the green time allocation for each phase were made during both the AM and PM conditions at the Appleby Line at Harvester Road intersection. While this could result in a reduction in delay times and V/C ratios for certain movements, other critical movements and the overall V/C ratio either remained unchanged or worsened. Given that Appleby Line and Harvester Road are arterial roads with high traffic volumes intersecting in competing north-south and east-west directions, high delays for certain movements during the peak hours are expected at this intersection. Queues at the 95th percentile volume exceed capacity at some movements of this intersection.

At the Appleby Line at North Service Road intersection, the westbound left movement exhibits V/C ratios exceeding the Halton Region threshold of 0.95, and the intersection as a whole surpasses the Halton Region threshold of 0.85 for V/C ratios. Signal optimization measures were proposed for the PM conditions at Appleby Line at North Service Road. While these measures effectively mitigated the operational constraints at the westbound left movement, the overall intersection performance did not experience significant improvements.

3 Future Background

3.1 Future Analysis Horizons

The subject development is anticipated to be built and reach full occupancy in three years (2026). As per Halton Region's Transportation Impact Study Guidelines, the evaluation will encompass both the 2026 full build-out future horizon and the 2031 full build-out plus 5 years horizon.

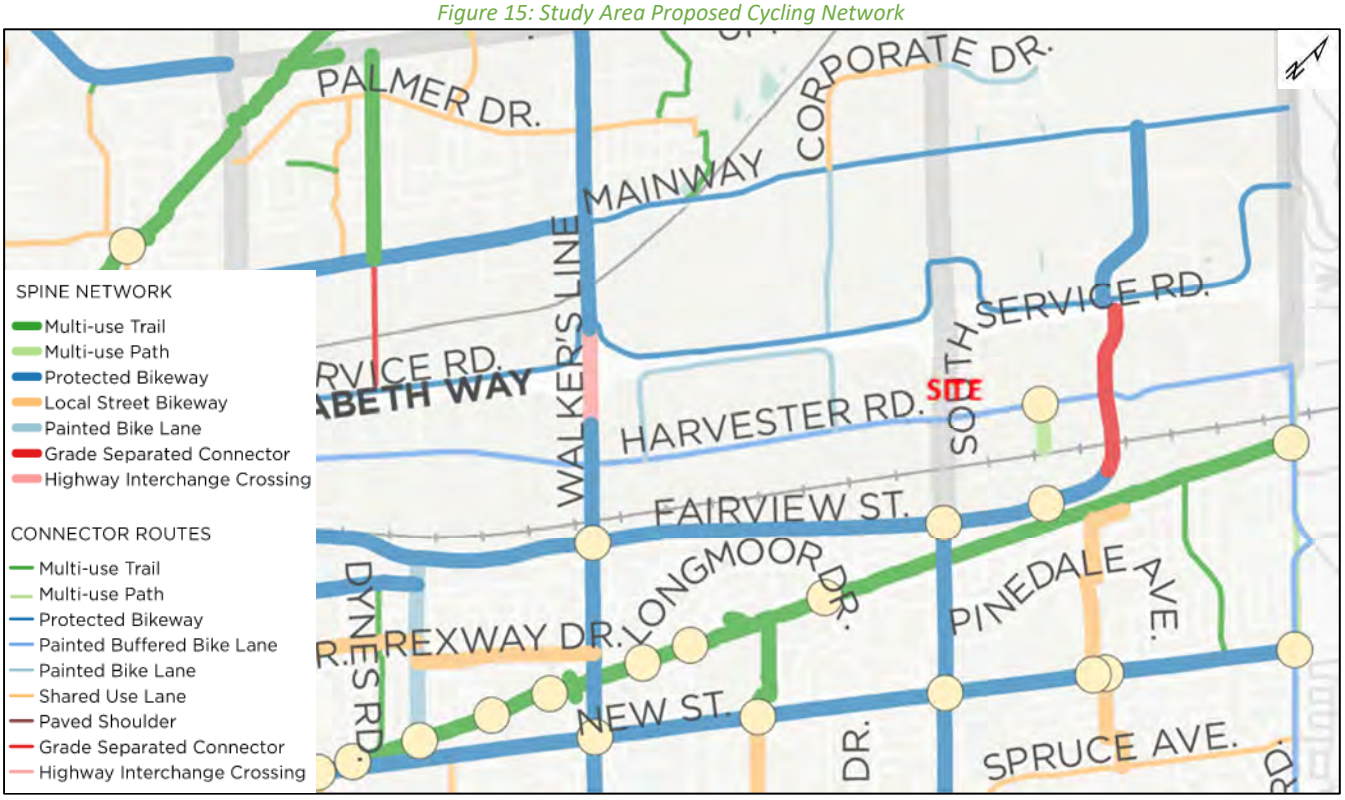
3.2 Planned Conditions

3.2.1 Active Transportation Improvements

As noted in Section 2.4, there are currently no cycling facilities within the Study Area. However, the City of Burlington, as part of its Cycling Master Plan, has put forth a proposal for the implementation of various bike lanes and intersection enhancements to improve its cycling infrastructure. These planned improvements include a Protected Bikeway along North Service Road, a painted buffer bike lane along Harvester Road, a painted bike lane along the segment of South Service Road west of Appleby Line, and an intersection upgrade at the Appleby GO North Parking Lot access on Harvester Road. A multi-use path is planned to run along Harvester Road, approximately 370 meters east of the Harvester Road at South Service Road intersection, connecting to the Appleby GO station and terminating at the rail line. Figure 15 illustrates the cycling network in close proximity to the subject site after the implementation of these Burlington-planned improvements.

Halton Region has also introduced initiatives to improve cycling and pedestrian facilities within the Study Area network, with the goal of addressing existing gaps. Notably, the Highway 403 at Harvester Road interchange is to undergo improvements to support the Regional Walk Network.

Figure 15: Study Area Proposed Cycling Network



Source: Excerpt from City of Burlington Cycling Plan (2018)

3.2.2 Appleby Line Widening

Appleby Line (Regional Road 20) is planned to be widened from 4 to 6 lanes from Fairview Street to Taywood Drive. Although the *Capital Budget Plan 2023-2032* the planned project has a Start of Construction date of 2029 in, Halton Region staff has advised that the in-operation date could extend into 2032 and is subject to a Council-approved funding plan. As such, it is assumed that 6-lane cross-section on Appleby Line will not be in-operation by the 2031 horizon, for the purposes of the TIS analysis. The Appleby Line is modelled the same as the existing configurations.

3.2.3 Appleby GO MTSA Special Planning Area

The proposed development is located within Appleby GO Major Transit Station Area. Appleby GO Major Transit Station Area encompasses the industrial lands from Queen Elizabeth Way to Centennial Bikeway and from west of Appleby Line to Sheldon Creek. The MTSA team is currently under the progress of preparing draft official plan policies and a draft community planning permit by-law for the MTSAs, as directed by City Council on July 11, 2023. The project team will also be finalizing the remaining technical studies including the Transportation Assessment. Within an MTSA, the density of the area will be increased and better connection to transit services will be provided.

3.2.4 Other Study Area Developments

A review of the Planning and Development section of City of Burlington's website has identified the following developments proposed that are within close proximity to 5051 Harvester Road:

- Oval Court
- Tico Creek

- Appleby Mall Residential Development

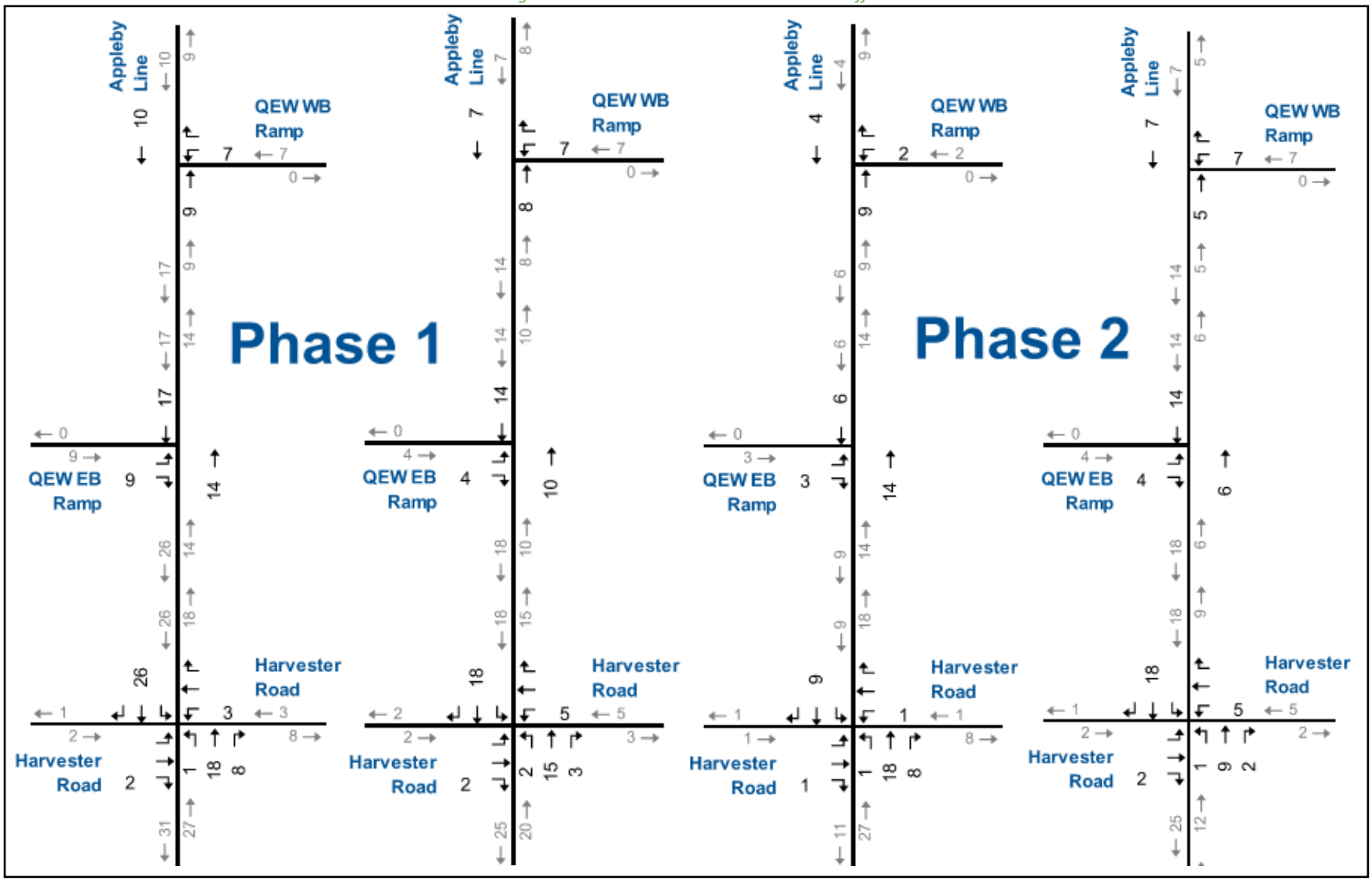
The traffic generated by these developments will be included in the background growth considered in this study.

3.2.4.1 Oval Court

The site is located north of Fairview Street, east of the Appleby GO station, west of the Sherwood Forest Park, and south of the rail corridor. The development consists of a total of eight mixed-use towers ranging between 11 and 30 storeys to be built in seven blocks. A total of approximately 1,996 residential units and 12,019 square metres of retail, office, library, and daycare land uses will be included in these buildings. Among them, Block B will include a senior rental apartment with memory care and assisted care clinics as amenities. Vehicular access will be provided via six private driveways to Oval Court and a full-movement driveway on Fairview Street located approximately 80 metres east of Oval Court intersection. Pedestrian and bicycle friendly connections are proposed to all buildings and to the adjacent Appleby GO station and Sherwood Forest Park. A parking supply reduction is proposed for the site and 2,422 spaces allocated as 1,709 occupant spaces and 713 visitor spaces.

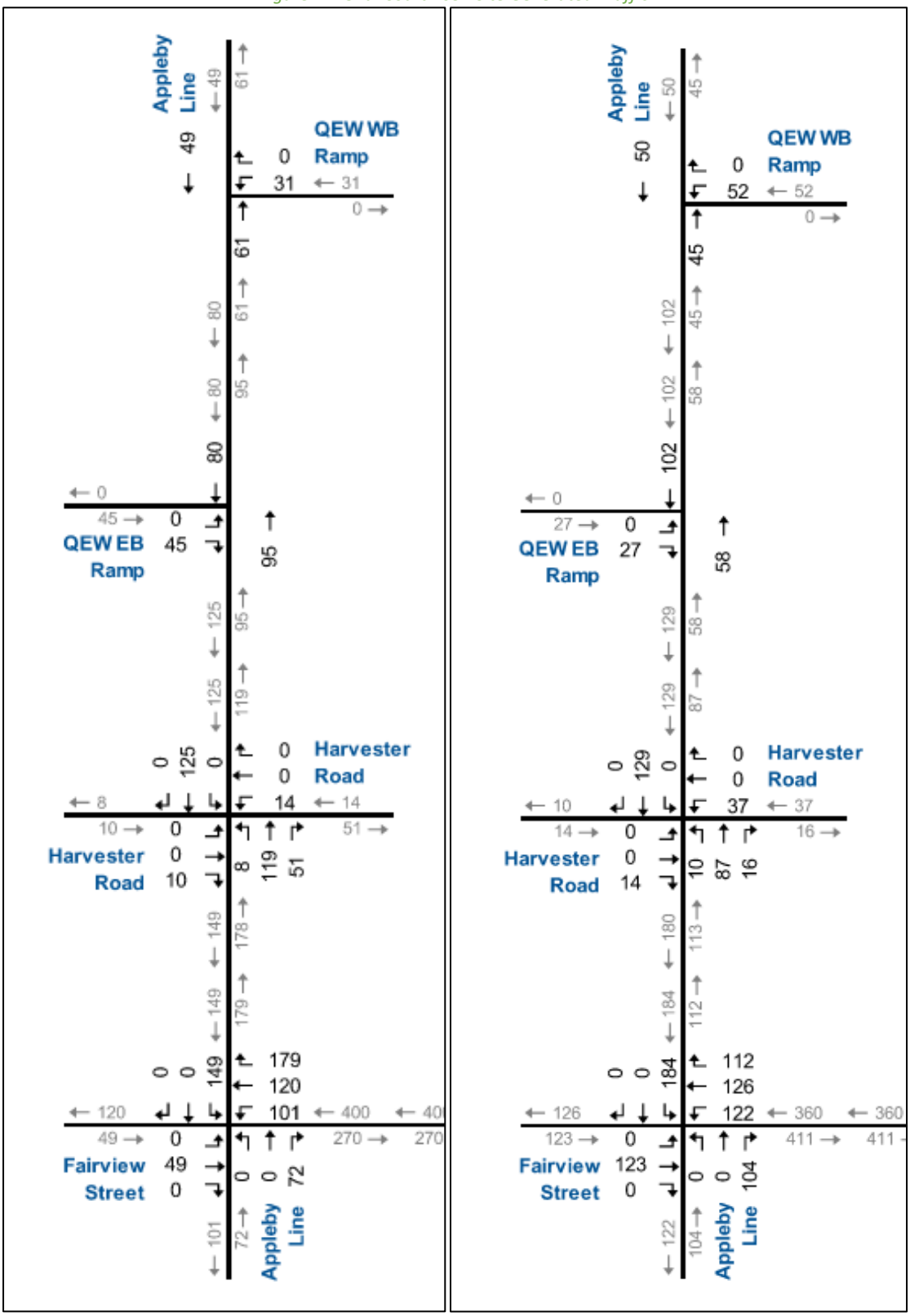
The development will be completed in six phases. Phase 1 and phase 2 are expected to be complete before 2026, and all phases are expected to be completed and occupied before 2031. The corresponding site trip volumes are considered for the future horizons investigated in this study. The subject site, after completion of Phase 1 and 2, is estimated to generate approximately 196 vehicle trips during the AM peak hour and 215 vehicle trips during the PM peak hour. The subject site, following build-out, is estimated to generate approximately 670 vehicle trips during the AM peak hour and 771 vehicle trips during the PM peak hour. Figure 16 and Figure 17 illustrate the trip generation of the Oval Court development in 2026 and 2031.

Figure 16: Oval Court 2026 Site Generated Traffic



Source: Oval Court, Burlington ON Transportation Impact Study, Parking Justification & Transportation Demand Management Plan; Paradigm; May 2021

Figure 17: Oval Court 2031 Site Generated Traffic



Source: Oval Court, Burlington ON Transportation Impact Study, Parking Justification & Transportation Demand Management Plan; Paradigm; May 2021

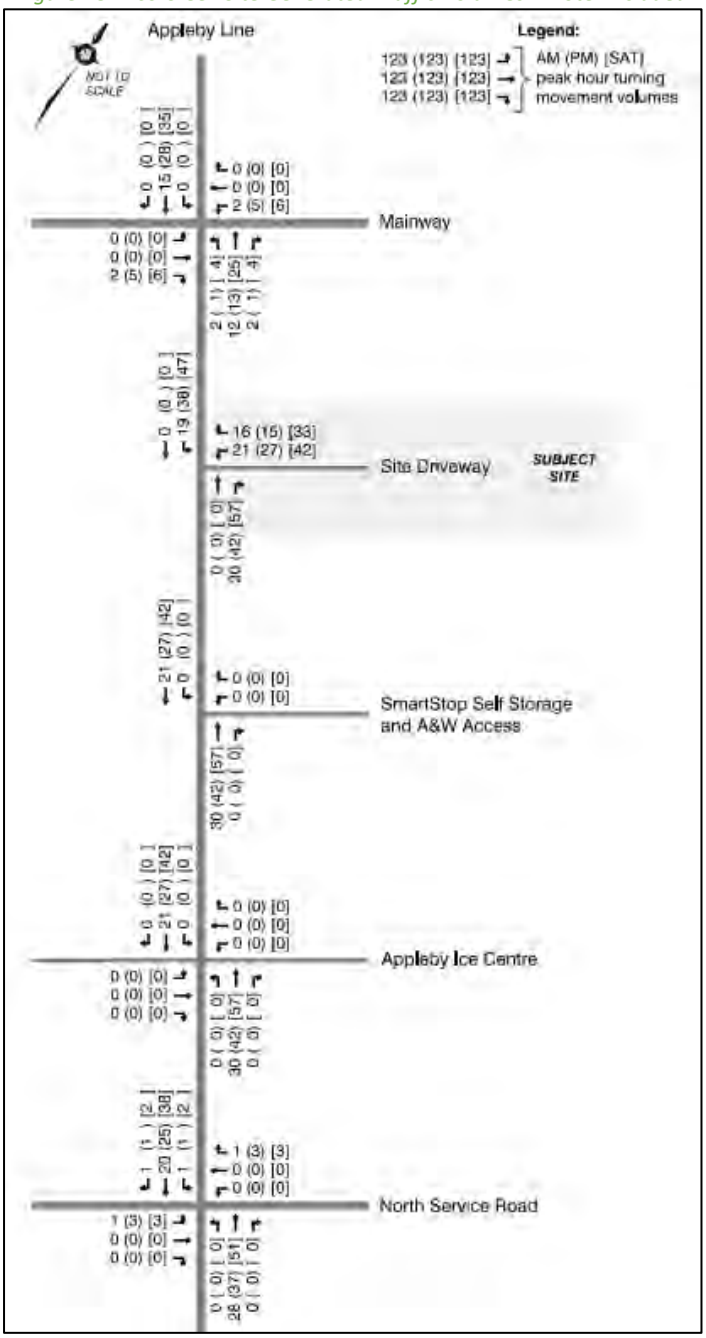
3.2.4.2 Tico Creek

A rezoning application has been filed for the development at 5030, 5035, 5040 and 5045 Tico Creek Common (formerly 1215 Appleby Line) in the City of Burlington. The subject site is located on the east side of Appleby Line between Mainway and North Service Road. The subject lands were previously the subject of a development application with commercial land uses active between 2013 and 2016. The proposed development consists of the two remaining undeveloped buildings in the subject lands where two of the four proposed buildings have been built. Building A will have a GFA of 558 m² divided into four separate units of equal size, two of which are envisioned to house restaurants and two of which are envisioned to house general retail uses. Building B will have a GFA of 294 m² divided into two separate units, one of which is envisioned to house general retail uses, and the other will house a fast-food restaurant with a drive-through lane. The site access currently permits the inbound right turn, inbound left turn and outbound right turn movements, but prohibits the outbound left turn movement. The application proposed to change the driveway to a full-movement driveway and rescind the outbound left turn prohibition. The development is expected to be completed by 2026.

By the time the Transportation Impact Study was completed by Dillon, the 383 m² Master Mechanic franchise building had been occupied but the 6,714 m² Hampton Inn and Suites hotel with 108 rooms had not yet opened for business due to the COVID-19 pandemic. Therefore, the trip generated by the hotel is also included in the total trip generation of the site. Overall, the site is expected to generate approximately 86 net new vehicle trips (i.e., 49 inbound and 37 outbound) during the AM peak hour, and 122 net new vehicle trips (i.e., 80 inbound and 42 outbound) during the PM peak hour. However, by the existing study horizon of 2023 of this study for 5051 Harvester Road, the hotel has opened for business and the existing turning movement counts at the adjacent intersections would have captured the site trips generated by the hotel. The background development volumes to be considered in this study will exclude the site trips generated by the hotel and only include the Building A and Building B. Excluding the hotel, the site is expected to generate approximately 38 net new vehicle trips (i.e., 20 inbound and 18 outbound) during the AM peak hour, and 65 net new vehicle trips (i.e., 51 inbound and 14 outbound) during the PM peak hour.

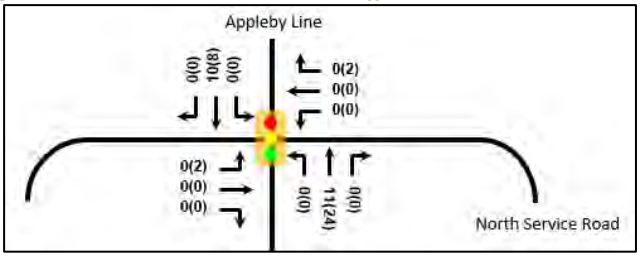
Figure 18 illustrates the site traffic assignment figure at the Study Area intersection of Appleby Line at North Service Road for the Tico Creek development. Figure 19 illustrates the site traffic assignment figure at the same intersection but with the trips from the hotel excluded. As the trip distribution applied in Dillon's Transportation Impact Study is the same for different land uses involved in the development, the inbound and outbound site trips at the access to Tico Creek Common have been scaled down linearly and balanced at all the adjacent intersections.

Figure 18: Tico Creek Site Generated Traffic Volumes – Hotel Included



Source: Proposed Commercial Development, 5030, 5035, 5040, 5045 Tico Creek Common, City of Burlington Transportation Impact Study; Dillon Consulting; November 2021

Figure 19: Tico Creek Site Generated Traffic Volumes – Hotel Excluded



3.2.4.3 Appleby Mall 5111 New Street Residential Development

The subject lands, 5111 New Street, have an area of 6.7 hectares and are located at the northeast corner of Appleby Line and New Street. The property is the site of the former Appleby Mall and currently contains a variety of retail / commercial uses. The proposed development is to have residential towers built at the northeast corner of the established Appleby Mall site which is currently occupied by a parking lot. Some of the parking spaces will be retained, but the rest of the parking spaces along the frontage on Pinedale Avenue and Timber Lane will be replaced with residential buildings. When the application was first submitted in 2014, the proposed development was anticipated to include two multi-unit apartment buildings, one will be 12 storeys with 132 residential units and the other will be 17 storeys with 192 residential units. The application requested site specific exceptions to allow for the development. The statutory public meeting was postponed due to potential flooding and servicing implications in the area. After the issues were cleared by the Region, however, the City has not provided a response on the application. In November 2017, the applicants appealed the subject applications to the Ontario Municipal Board (now known as the Local Planning Appeals Tribunal) based upon non-decision of the City within the required time period set out by the Planning Act. On July 31, 2020, the applicants submitted a Settlement Offer to the City for consideration. In November 2022, Ontario Tribunal gave the permission for the development to proceed.

During this process, the application proposal has been revised. The revised concept plan from June 2020 includes three residential buildings (apartments or retirement homes) instead of two, but the heights of the buildings have been generally reduced to conform with the Official Plan. The new design proposes one 9-storey building containing 135 units and two 12-storey buildings containing 127 and 106 units.

The Transportation Impact Study available for this development was completed in 2014 based on the outdated site statistics. Table 6 has summarized the trip generation results in the 2014 TIS. A comparison of trip generation has been made by calculating the residential trip generation with unit counts in the new proposal using ITE rates that has been approved by the Tribunal. Table 7 summarizes the ITE rates and directional splits used and Table 8 summarizes the updated trip generation. The size of newly proposed and vacant retail spaces is assumed to be similar in 2014 and the 2020 concept plan. As shown in the results, the total trip generation has decreased from the 2014 results by 12% during the AM peak and 1% during the PM peak. Therefore, the site-generated travel demand forecast in the 2014 report provides similar estimates to those projected based on the revised site statistics, except for being slightly more on the conservative side during the AM peak. The assignment results in the 2014 report remains valid and has been added to the background traffic volumes without modifications for the purpose of this study.

Table 6: Appleby Mall 5111 New Street Trip Generation –2014 TIS

Land Use	GFA (1000 ft²) / Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
High-Rise Residential	334	24	102	126	80	49	129

Table 7: ITE Trip Generation Rates – 11th Edition

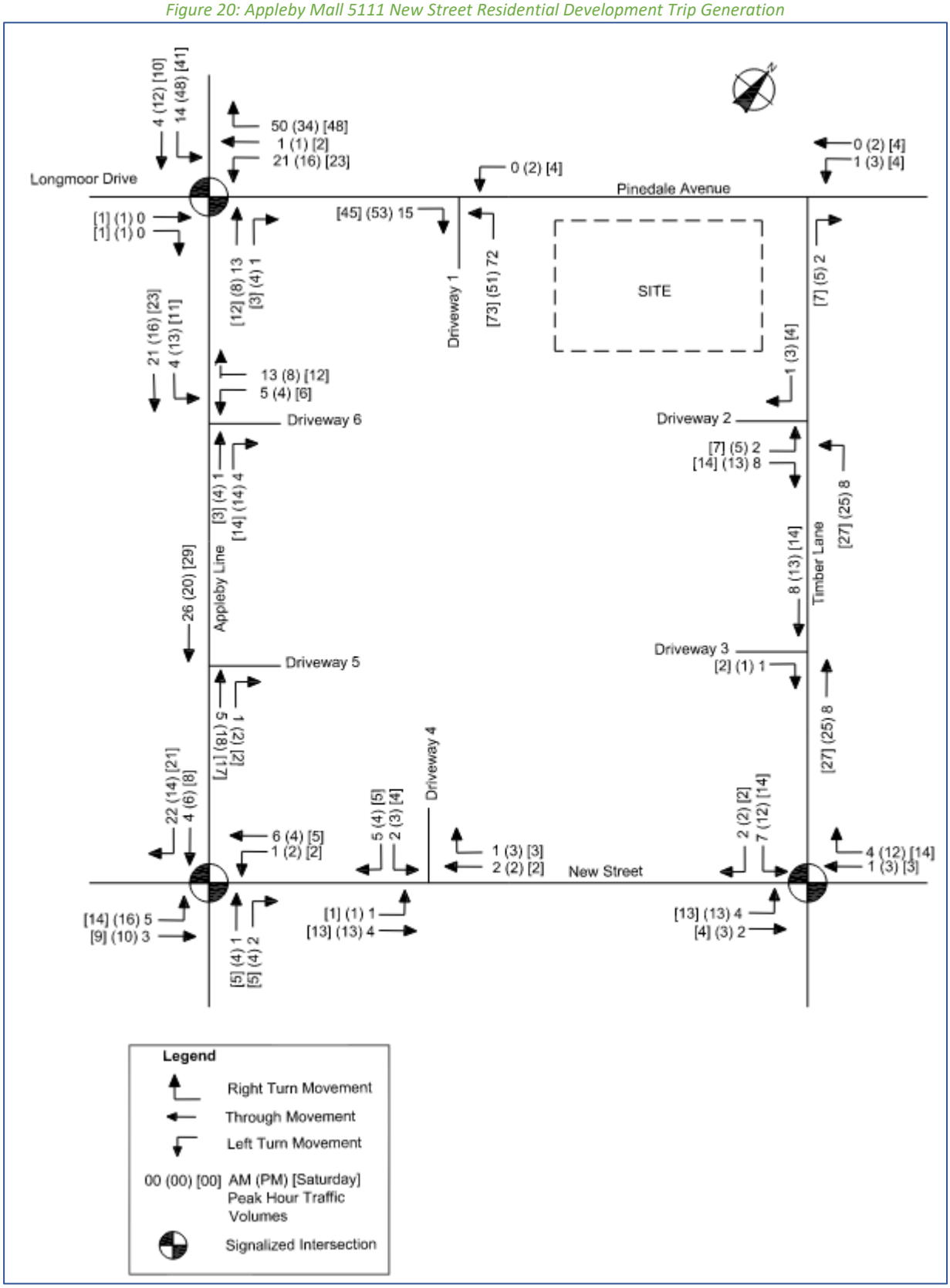
Land Use	Land Use Code	Units	Peak Hour	Method	Vehicle Trip Rate	Distribution	
						In	Out
Mid-Rise	221	135	AM	Fitted Curve Equation	0.36	23%	77%
			PM		0.39	61%	39%
High-Rise	222	233	AM	Weighted Average	0.27	26%	74%
			PM		0.32	62%	38%

Table 8: Appleby Mall 5111 New Street Trip Generation – Revised Concept

Land Use	GFA (1000 ft²) / Units	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Mid-Rise Residential	135	11	37	48	32	21	53
High-Rise Residential	233	16	47	63	46	29	75
Residential Subtotal		27	84	111	78	50	128
2014 TIS Subtotal		24	102	126	80	49	129
% difference		13%	-18%	-12%	-3%	2%	-1%

Figure 20 illustrates the Appleby Mall Residential Development site traffic volumes.

Figure 20: Appleby Mall 5111 New Street Residential Development Trip Generation



Source: First Capital Asset Management LP Appleby Village Transportation Study; R.J. Burnside; June 2014

3.2.4.4 Background Development Trips Summary

The total AM and PM peak hour trips generated by the background developments by the 2026 and 2031 horizons are summarized in Table 9 and Table 10, respectively.

Table 9: Background Developments Site Trips By 2026 Summary

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Oval Court	76	120	196	116	99	215
Tico Creek	20	18	38	51	14	65
5111 New Street Residential	24	102	126	80	49	129
2026 Total Trips	**120**	**240**	**360**	**247**	**162**	**409**

A total of 360 AM and 409 PM peak hour two-way vehicle trips will be generated by the three background developments included in this Study by the 2026 horizon.

Table 10: Background Developments Site Trips By 2031 Summary

Land Use	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Oval Court	270	400	670	411	360	771
Tico Creek	20	18	38	51	14	65
5111 New Street Residential	24	102	126	80	49	129
2031 Total Trips	**314**	**520**	**834**	**542**	**423**	**965**

With the completion of later phases of Oval Court, a total of 834 AM and 965 PM peak hour two-way vehicle trips will be generated by the three background developments combined by the 2031 horizon.

3.2.5 Background Growth

MTO, Halton Region, and City of Burlington staff have been consulted to determine the compound annual growth rate to apply to the road segments and intersections within the Study Area.

3.2.5.1 Halton Region Growth Rate

Through their review of the Terms of Reference, the Region has requested for a 1% growth rate per annum to be applied to the background traffic volumes on Appleby Line.

3.2.5.2 City of Burlington Growth Rate

Through their review of the Terms of Reference, the City staff has also informed CGH to incorporate a projected future growth rate of 1% for background traffic volumes within the Study Area, considering a 5-year horizon.

3.2.5.3 MTO Growth Rate

As both the Halton Region and the City of Burlington staff provided instructions on using a 1% annual growth rate for the Study Area road network. To be consistent with the rest of the Study Area, the same annual growth rate of 1% has been proposed for the Highway 403 eastbound and westbound on ramps and off ramps at the intersections they form with Appleby Line. This assumption has been approved by MTO staff and the email correspondences can be found in Appendix A.

3.2.6 Future Background Traffic Volumes

Combining the background development traffic, the background growth rate, and the existing traffic volumes, the Future Background traffic volumes were projected. Figure 21 illustrates the 2026 Future Background traffic volumes, and Figure 22 illustrates the 2031 Future Background traffic volumes.

Figure 21: 2026 Future Background Traffic Volumes

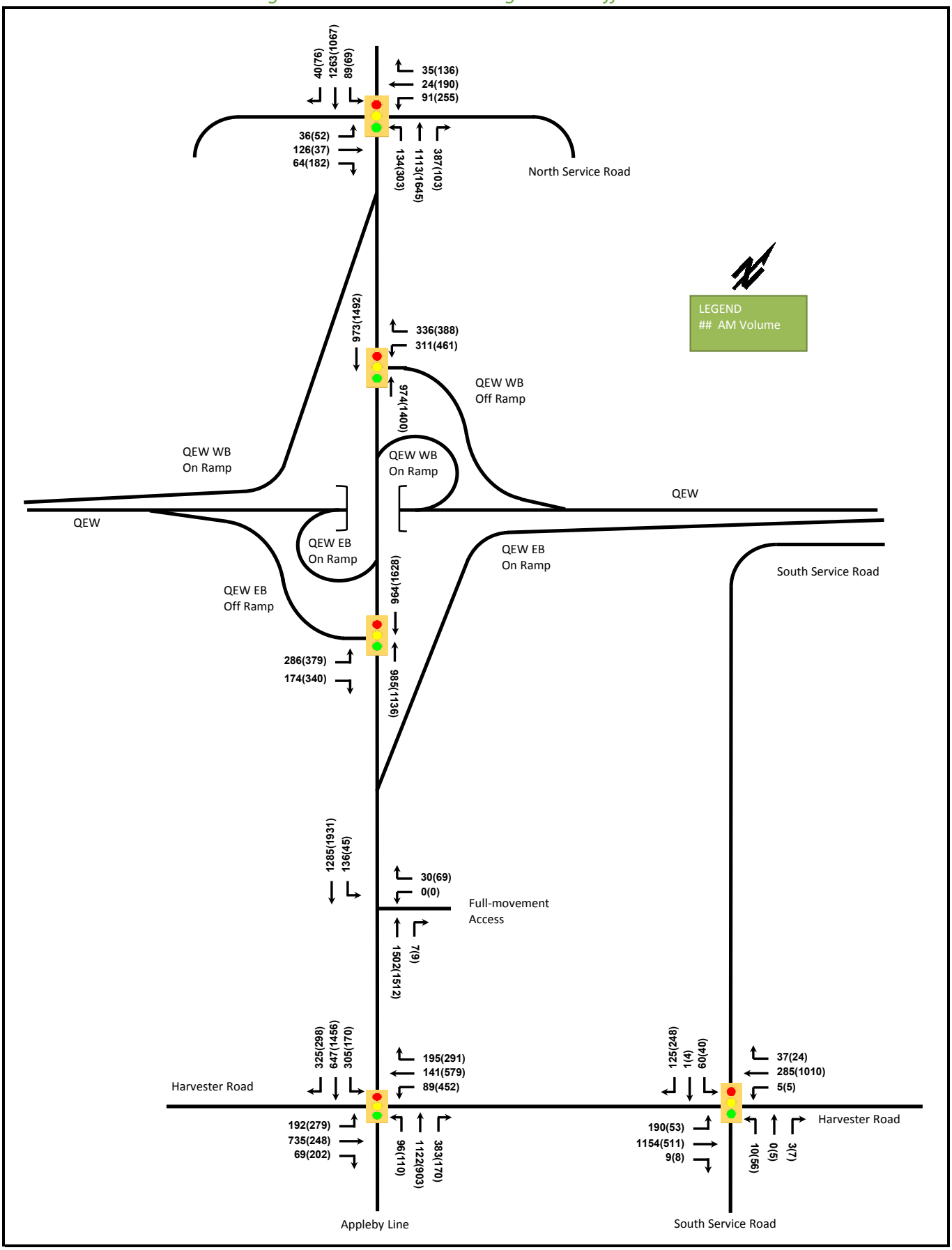
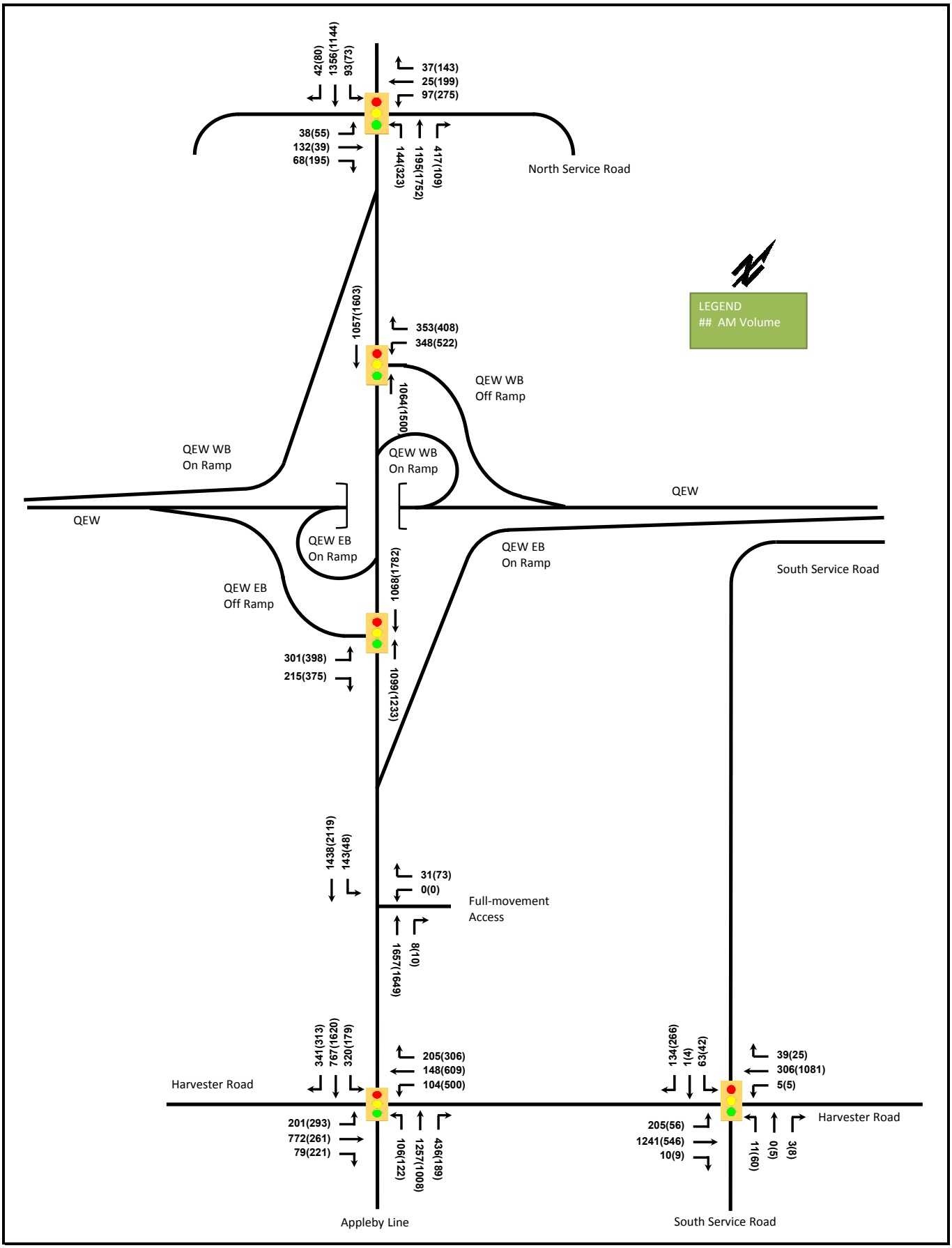


Figure 22: 2031 Future Background Traffic Volumes



3.3 Future Background Operational Analysis

3.3.1 2026 Future Background Traffic Conditions

The 2026 Future Background Conditions have been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. It is anticipated that the transportation network configurations in 2026 will remain consistent with the Existing Conditions. The signal timing optimization measures proposed for the Existing Conditions have been retained in the 2026 Future Background Conditions. Table 11 summarizes the operational analysis of 2026 Future Background Conditions. Synchro worksheets have been included in Appendix F.

Table 11: 2026 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & Harvester Road (Signalized)	EBL	F	0.94	86	#87	F	1.11	130	#139
	EBT/R	E	0.93	60	#147	D	0.51	50	67
	WBL	D	0.54	49	32	F	1.17	138	#188
	WBT/R	C	0.26	35	29	F	1.02	88	#183
	NBL	C	0.30	23	20	E	0.85	69	#54
	NBT	E	0.96	56	#197	D	0.68	38	146
	NBR	C	0.51	35	77	C	0.18	29	28
	SBL	F	0.99	87	#126	C	0.69	33	m54
	SBT	B	0.45	19	64	E	1.01	62	#287
	SBR	C	0.23	26	23	C	0.35	35	60
	Overall	**D**	**0.97**	**48**	**-**	**E**	**1.10**	**68**	**-**
	Mitigation Measure: Double Left Turn Lanes at EBL, WBL, and SBL Movements								
	EBL	E	0.85	80	#48	F	0.94	94	#69
	EBT/R	D	0.87	53	#143	D	0.48	44	61
	WBL	E	0.51	60	22	F	1.05	113	#106
	WBT/R	D	0.29	37	33	E	0.92	58	#157
	NBL	C	0.30	22	22	D	0.79	55	#47
	NBT	D	0.87	44	179	D	0.70	37	139
	NBR	C	0.49	32	76	C	0.13	27	18
	SBL	E	0.87	75	#68	E	0.62	62	37
	SBT	C	0.46	26	82	E	1.05	75	#278
	SBR	C	0.23	23	18	C	0.35	28	45
	Overall	**D**	**0.85**	**43**	**-**	**E**	**1.01**	**62**	**-**
Harvester Road & South Service Road (Signalized)	EBL/T/R	B	0.78	10	#108	A	0.33	6	33
	WBL/T/R	A	0.17	4	13	A	0.49	7	66
	NBL/T/R	C	0.02	25	1	C	0.35	33	23
	SBL/T	C	0.42	28	18	C	0.23	32	17
	SBR	C	0.09	25	13	D	0.66	40	51
	Overall	**B**	**0.72**	**11**	**-**	**B**	**0.52**	**12**	**-**
Appleby Line & QEW Eastbound Off-ramp (Signalized)	EBL	D	0.68	53	51	E	0.73	60	74
	EBR	D	0.16	46	16	E	0.75	62	70
	NBT	B	0.41	14	m106	A	0.47	5	m38
	SBT	A	0.40	4	47	A	0.68	8	122
	Overall	**B**	**0.45**	**17**	**-**	**B**	**0.70**	**18**	**-**

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & QEW Westbound Off-ramp (Signalized)	WBL	D	0.47	41	48	D	0.53	43	79
	WBR	E	0.85	63	96	E	0.92	74	#168
	NBT	B	0.46	17	132	B	0.69	18	231
	SBT	A	0.46	10	89	B	0.74	11	m80
	Overall	**C**	**0.56**	**23**	-	**C**	**0.79**	**24**	-
Appleby Line & Existing Access to 875 Appleby (Unsignalized)	WBL/R	B	0.05	10	1	B	0.12	12	3
	NBT/R	-	0.63	0	0	-	0.64	0	0
	SBL	C	0.29	15	10	B	0.12	15	3
	SBT	-	0.40	0	0	-	0.62	0	0
	Overall	**B**	-	**0.8**	-	**C**	-	**0.4**	-
Appleby Line & North Service Road (Signalized)	EBL	D	0.19	41	16	E	0.57	68	29
	EBT/R	D	0.69	52	59	E	0.58	65	49
	WBL	D	0.50	37	29	F	1.04	117	#105
	WBT/R	C	0.09	33	14	E	0.76	57	114
	NBL	B	0.58	20	31	E	0.77	59	m#127
	NBT/R	C	0.88	29	#250	B	0.90	18	#348
	SBL	C	0.53	21	23	C	0.54	31	20
	SBT/R	C	0.80	27	#213	D	0.79	38	183
	Overall	**C**	**0.82**	**29**	-	**D**	**0.96**	**39**	-
	Mitigation Measure: Double Left Turn Lanes at WBL and NBL Movements								
	EBL	D	0.14	42	16	E	0.53	64	29
	EBT/R	E	0.69	57	67	E	0.65	68	54
	WBL	E	0.73	78	#27	E	0.76	71	55
	WBT/R	D	0.12	44	18	E	0.77	58	113
	NBL	E	0.50	56	29	D	0.54	52	m#66
	NBT/R	C	0.86	29	#261	D	0.90	37	#353
	SBL	C	0.49	21	23	C	0.54	30	21
	SBT/R	C	0.75	26	197	D	0.76	35	183
	Overall	**C**	**0.79**	**32**	-	**D**	**0.88**	**43**	-
Notes:	m - volume for the 95th percentile queue is metered by an upstream signal which controls the arrival of vehicles at the downstream intersection, limiting the queue length								
	# - 95% percentile volume exceeds capacity								

With the addition of background traffic growth as well as the nearby background development traffic by the year 2026, the Study Area intersections are projected to experience heavier traffic flow and higher LOS and delays. Generally, the Study Area intersections are expected to operate in patterns similar to the 2023 Existing Conditions. Operational constraints will primarily be observed at the intersections of Appleby Line at Harvester Road and Appleby Line at North Service Road. The rest of the Study Area is projected to have good overall LOS and non-critical v/c ratios.

The Highway 403 off-ramp intersections on Appleby Line are projected to operate under good conditions during the AM and PM peak hours, with overall LOS being C or better. While the westbound right movement at the westbound off-ramp indicates v/c ratios of 0.85 and 0.92, it is important to note that the projected queue length can be accommodated by the ramp's length, which extends to approximately 500 meters.

The existing full-movement access to 875 Appleby Line, situated south of the Highway 403 interchange, maintains a good LOS with minimal delays across all movements during peak periods. The southbound left turn queue is less

than 10 metres and can be accommodated by the storage length. Southbound through and northbound shared through/right movements along Appleby Line in front of the existing access will operate with v/c ratios at 0.64 or lower, indicating ample residual capacity. Vehicles exiting Highway 403 heading southbound and those traveling northbound towards the on-ramps will be unaffected by the 875 Appleby Access.

No operational constraints are projected for the Harvester Road at South Service Road intersection. All v/c ratios and LOS values remain below the critical thresholds as defined by Halton Region's TIS Guidelines. The 108-meter queue at the eastbound movements can be accommodated by the Harvester Road segment between Appleby Line and South Service Road without spilling back to the Appleby Line and Harvester Road intersection.

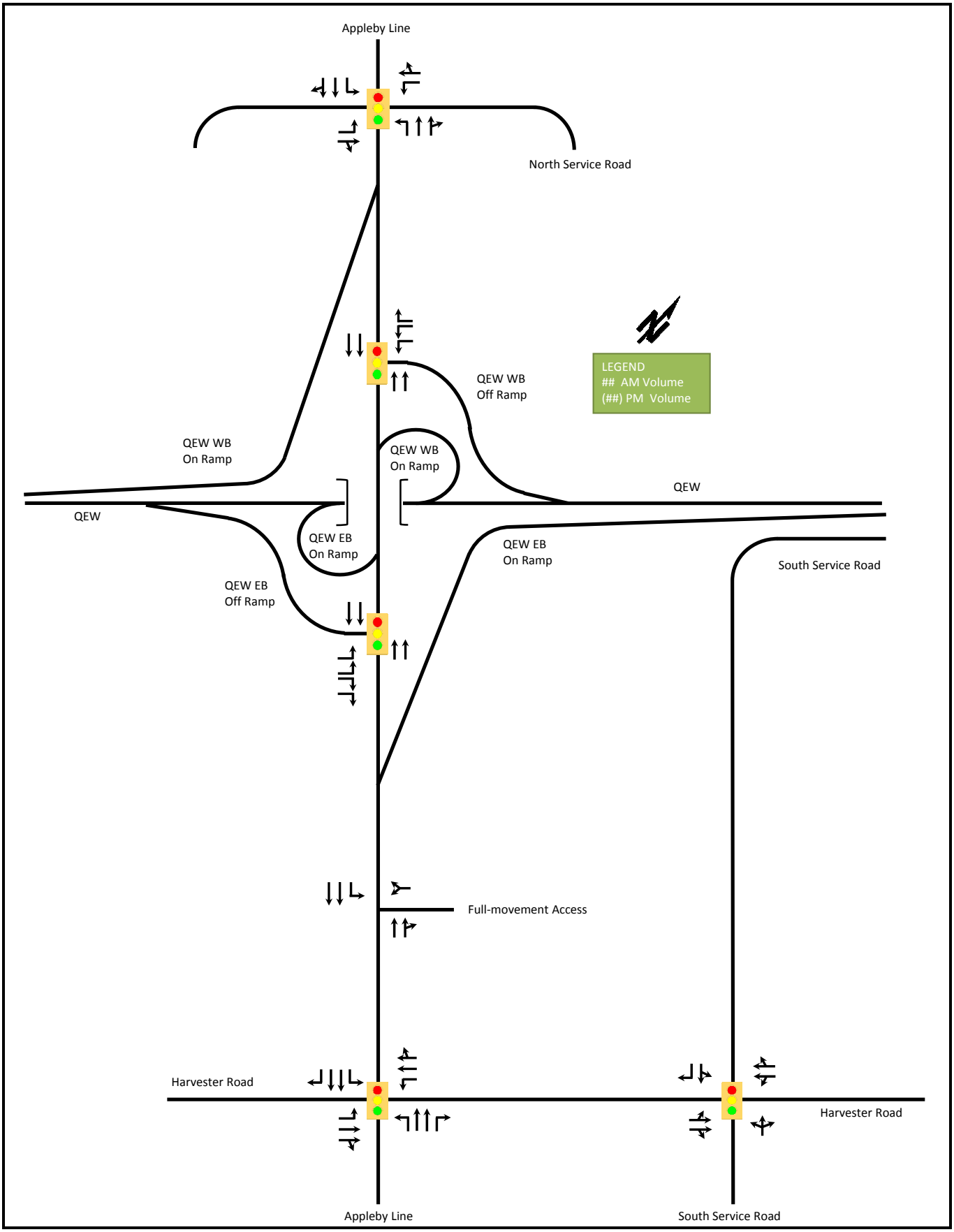
At the intersection of Appleby Line at Harvester Road, the eastbound shared through / right movement, northbound through, and southbound left movements during the AM peak hour and the eastbound left, westbound left, westbound through / right, and southbound through movements during the PM peak hour exceed critical conditions. Similar to the Existing Conditions, this is mainly attributed to the high north-south volumes along Appleby Line. Signal optimization was explored as a mitigation measure for these movements. Adjustments have been made to the green time allocation for both AM and PM conditions. While this results in an overall reduction in delay times and v/c ratios, some critical movements may still experience delays. Given the heavy traffic volumes on both Appleby Line and Harvester Road, particularly in competing north-south and east-west directions, high delays during the peak hours are expected for certain movements at this intersection. The 95th percentile queues exceed capacity at the eastbound left, westbound left, and southbound left movements. To mitigate the impact caused by the high left-turning volumes, protected double left-turn lanes have been added to the eastbound, westbound, and southbound approaches, and the cycle length and splits have been optimized. These adjustments have reduced v/c ratios and delays, with overall v/c ratios projected to decrease from 0.97 to 0.85 for the AM peak and from 1.10 to 1.01 for the PM peak.

At the intersection of Appleby Line at North Service Road, the westbound left movement, northbound through/right movement, and the intersection overall exceed Halton Region's critical thresholds. This operational constraint is primarily due to high left-turning volumes. Double left turn lanes have been proposed for the westbound left and northbound left movements, and cycle length and splits have been optimized. These improvements have resulted in reduced v/c ratios for most movements during both peak hours.

3.3.2 Future Background Intersection Design

The intersection configurations for the Future Background Conditions with the proposed double left turn lanes added are illustrated in Figure 23.

Figure 23: 2026 and 2031 Future Background Conditions Intersection Configuration



3.3.3 2031 Future Background Traffic Conditions

The 2031 Future Background horizon has been examined to determine the future traffic conditions without the addition of the proposed development. This will isolate the impact of the subject development on the traffic network. It is anticipated that the transportation network configurations in 2031 will remain consistent with the 2026 conditions. Table 12 summarizes the operational analysis of 2031 Future Background Conditions. Synchro worksheets are included as Appendix G.

Table 12: 2031 Future Background Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & Harvester Road (Signalized)	EBL	F	1.02	110	#96	F	1.14	143	#156
	EBT/R	E	0.99	71	#161	E	0.61	57	82
	WBL	E	0.68	58	#42.4	F	1.23	160	#238
	WBT/R	C	0.27	35	30	F	1.04	96	#206
	NBL	C	0.38	22	22	F	1.00	117	#70
	NBT	E	1.01	65	#226	D	0.78	45	181
	NBR	C	0.59	35	93	C	0.19	32	31
	SBL	F	1.18	166	#146	D	0.83	52	#72
	SBT	B	0.54	20	66	F	1.13	111	#366
	SBR	C	0.25	25	18	C	0.40	32	64
	Overall	**E**	**1.12**	**59**	**-**	**F**	**1.20**	**90**	**-**
	Mitigation Measure: Double Left Turn Lanes at EBL, WBL, and SBL Movements								
	EBL	F	0.95	100	#52	F	1.05	134	#85
	EBT/R	E	0.93	58	#153.5	E	0.62	58	84
	WBL	E	0.57	59	24	F	1.09	131	#132
	WBT/R	D	0.32	36	36	F	1.04	96	#206
	NBL	C	0.38	21	23	F	1.00	119	#70
	NBT	D	0.97	54	#217.6	D	0.70	38	169
	NBR	C	0.61	34	100	C	0.18	28	29
	SBL	F	1.02	110	#78	E	0.66	72	43
	SBT	C	0.58	24	84	E	1.03	72	#341.6
	SBR	C	0.25	32	23	C	0.37	28	56
	Overall	**D**	**0.92**	**50**	**-**	**E**	**1.06**	**74**	**-**
Harvester Road & South Service Road (Signalized)	EBL/T/R	B	0.84	13	#147	A	0.37	7	37
	WBL/T/R	A	0.18	4	15	A	0.53	8	73
	NBL/T/R	C	0.02	25	1	C	0.35	32	24
	SBL/T	C	0.43	28	18	C	0.22	31	17
	SBR	C	0.10	25	14	D	0.75	45	#61
	Overall	**B**	**0.78**	**13**	**-**	**B**	**0.58**	**14**	**-**
Appleby Line & QEW Eastbound Off-ramp (Signalized)	EBL	D	0.68	53	54	E	0.69	57	75
	EBR	D	0.36	47	28	E	0.78	62	78
	NBT	A	0.46	3	m34	A	0.53	9	118
	SBT	A	0.45	10	100	A	0.77	9	130
	Overall	**B**	**0.50**	**15**	**-**	**B**	**0.77**	**19**	**-**
Appleby Line & QEW Westbound Off-ramp (Signalized)	WBL	D	0.49	40	54	D	0.58	43	90
	WBR	E	0.88	65	#119	E	0.95	78	#185
	NBT	B	0.52	13	103	C	0.75	22	239
	SBT	B	0.52	15	m101	C	0.80	24	233
	Overall	**C**	**0.62**	**24**	**-**	**C**	**0.85**	**31**	**-**

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & Existing Access to 875 Appleby (Unsignalized)	WBL/R	B	0.05	11	1	B	0.13	12	3
	NBT/R	-	0.69	0	0	-	0.70	0	0
	SBL	C	0.37	19	14	C	0.14	17	4
	SBT	-	0.45	0	0	-	0.68	0	0
	Overall	**C**	**-**	**0.9**	**-**	**C**	**-**	**0.4**	**-**
Appleby Line & North Service Road (Signalized)	EBL	D	0.19	44	18	E	0.57	67	30
	EBT/R	E	0.73	58	67	E	0.69	72	57
	WBL	D	0.46	37	31	F	1.12	141	#118
	WBT/R	C	0.09	33	15	E	0.77	57	117
	NBL	C	0.66	34	m#49	E	0.89	58	m#161
	NBT/R	D	0.98	42	#300	D	0.99	54	#397
	SBL	C	0.52	26	25	C	0.50	33	21
	SBT/R	D	0.89	36	#241	D	0.85	41	204
	Overall	**D**	**0.88**	**40**	**-**	**E**	**1.06**	**57**	**-**
	Mitigation Measure: Double Left Turn Lanes at WBL and NBL Movements								
	EBL	D	0.15	45	17	E	0.51	61	29
	EBT/R	E	0.72	63	76	E	0.70	70	61
	WBL	F	0.78	90	#31	E	0.77	70	59
	WBT/R	D	0.12	47	19	D	0.75	55	114
	NBL	E	0.56	62	33	D	0.58	53	m#84
	NBT/R	C	0.90	34	#304	E	1.01	58	#407
	SBL	C	0.57	28	30	C	0.49	33	22
	SBT/R	C	0.79	28	221	D	0.84	41	204
	Overall	**D**	**0.84**	**36**	**-**	**D**	**0.94**	**54**	**-**
Notes:	m - volume for the 95th percentile queue is metered by an upstream signal which controls the arrival of vehicles at the downstream intersection, limiting the queue length								
	# - 95% percentile volume exceeds capacity								

With the addition of background traffic growth as well as the nearby background development traffic by 2031, the 2031 Future Background Conditions are expected to operate slightly worse than the 2026 Future Background Conditions. Generally, the Study Area intersections are projected to operate in a manner consistent with the patterns observed in the 2026 Future Background Conditions. Operational constraints will primarily be observed at the intersection of Appleby Line at Harvester Road and Appleby Line at North Service Road, while the rest of the Study Area is projected to have good overall LOS and non-critical v/c ratios.

At the Highway 403 off-ramp intersections with Appleby Line, traffic conditions are projected to be similar to those in the 2026 Future Background scenarios. The westbound right movement is the only one identified as critical by MTO's threshold, with a queue of 185 meters during the PM peak that can be accommodated by the storage length of the ramp.

The existing full-movement access to 875 Appleby Line, located south of the Highway 403 interchange, continues to operate with good LOS and minimal delays across all movements during both peak periods in the 2031 horizon. The 95th percentile southbound left turn queue is shorter than 15 metres, well within the available storage length. Southbound through and northbound shared through/right movements along Appleby Line in front of the existing access operate without any delays or queues, with v/c ratios at 0.69 or lower, indicating the presence of residual

capacity. Vehicles exiting Highway 403 heading southbound and those traveling northbound towards the on-ramps remain unaffected by the 875 Appleby Access.

No operational constraints have been projected for the Harvester Road at South Service Road intersection.

Without the proposed changes to the intersection, the eastbound shared through/right, northbound through, and southbound left movements during the AM peak hour, as well as the eastbound left, westbound left, and westbound through/right movements during the PM peak hour exceed critical conditions. Traffic volumes at this intersection are projected to exceed its capacity by 2031. Similar to the 2026 Future Background Conditions, protected double left turn lanes have been proposed for the eastbound, westbound, and southbound approaches to mitigate the impact caused by the high left-turning volumes. Cycle length and splits have been optimized accordingly. These measures have resulted in reduced v/c ratios and delays, although some movements remain critical. Overall, v/c ratios are projected to decrease from 1.12 to 0.92 for the AM peak and from 1.20 to 1.06 for the PM peak, approaching the target v/c ratio.

At the intersection of Appleby Line at North Service Road, critical movements identified are the northbound shared through/right movement during the AM peak hour and the westbound left movement and the northbound shared through/right movement during the PM peak hour, same as in the 2026 Future Background Conditions. Protected double left turn lanes are proposed for the westbound left and northbound left movements, and cycle length and splits have been optimized for the intersection. These improvements have led to favorable outcomes for most movements, and overall v/c ratios have decreased during both peak hours.

It is recommended that the Region monitor traffic operations at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections and adjust signal timing plans as the intersection configurations change. Anticipating the widening of Appleby Line beyond the 2031 horizon, it is expected to increase capacity throughout the Appleby Line corridor and may alleviate operational constraints experienced at the intersections along Appleby Line. For movements that may still experience operational constraints after the addition of double left turn lanes, the widening of Appleby Line could potentially provide further mitigation.

4 Forecasting

4.1 Development-Generated Travel Demand

4.1.1 Dymon Business Model and Site Context

Dymon offers a unique customer-centric storage solution unlike anything else in the marketplace. Unlike traditional self-storage operations, Dymon facilities are located along arterial corridors, in very prominent locations within close proximity to its residential and business customers. With its high level of security, total humidity, and climate control environment, and relentless focus on customer service, Dymon offers a reliable extension to people's homes and businesses. The primary access to Dymon's facilities is via an interior loading area (with secure access 24 hours a day) that protects customers from the weather while loading/unloading their possessions. By providing this interior area the reliance on surface parking is significantly reduced, as up to 75% of visitors to the site during any period use the interior loading bay, rather than the provided parking lot. In fact, any visit after the initial visit uses the interior loading area as this is the direct access to the storage lockers. Dymon sites include a reception and a retail area that is not used directly for self-storage. This space has several functions, including allowing space for new customers to come in and rent a storage locker or purchase storage supplies (boxes, tape, bubble wrap, etc.). In 2019, Dymon expanded the services available in this space to include home

storage solutions including closet organizers, under counter shelving, and storage bins. The subject development also will include a Work Refined co-working space which provides members with 24/7 secure access to fully equipped office facilities and dedicated high speed wi-fi, on flexible terms with no long-term commitments.

Due to the unique business model introduced above, the land use cases identified and surveyed by ITE to obtain trip generation rates are not representative of the land uses in the proposed development. The site trip generation of the proposed development will be projected using two different methods – ITE rates and proxy site data rates – which will be compared to determine the most appropriate site-generated trip volumes.

4.1.2 Trip Generation and Mode Shares

4.1.2.1 ITE Trip Generation

This proposed development is a mixed-use five-storey complex, containing the following land uses which are trip generators: 21,828 square metres (234,954 square feet) of self-storage space including 117.5 square metres (1,265 square feet) of conditioned storage, 5,195 square metres (55,921 square feet) of co-working space, and 1,159 square metres (12,475 square feet) of reception / retail space that support the self-storage customers. Therefore, three land uses are involved in the trip generation of this site: self-storage, office, and retail.

The ITE Trip Generation Manual 11th Edition has been reviewed to determine the appropriate trip generation rate equations for the proposed land uses. The rate equations were used to determine appropriate vehicle trip generation rates. The rates for the mini-warehouse land use case are used to estimate trips for the self-storage component. The rates for the general office building land use case are used to estimate trips for the co-working office component. The rates for the strip retail plaza land use case are used to estimate trips for the retail / reception component. The trip rates calculated have been obtained based on the average values for self-storage and retail. The fitted curve equations were evaluated, but were either not available, or poor representations of the data set, indicated by low R^2 values. Interpolations of the fitted curves have been used for office as the R^2 values indicate a good fit. Table 13 summarizes the vehicle trip rates for the proposed land uses. Appendix H includes a description of LUC 822, LUC 151 and LUC 710.

Table 13: ITE Trip Generation Vehicle Trip Rates

Land Use	Land Use Code	GFA (1000 ft²)	Peak Hour	Method	Vehicle Trip Rate	Distribution	
						In	Out
Strip Retail Plaza (<40k)	822	12.48	AM	Weighted Average	2.36	60%	40%
			PM		6.59	50%	50%
Office	710	55.22	AM	Fitted Curve Equation	1.82	88%	12%
			PM		1.84	17%	83%
Mini-Warehouse	151	231.15	AM	Weighted Average	0.09	59%	41%
			PM		0.15	47%	53%

Table 14 summarizes the projected trip generation for the proposed Dymon facility at 875 Appleby Line.

Table 14: Projected 875 Appleby Line Site Trip Generation – All Land Uses

Land Use	GFA (1000 ft²)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Retail	12.5	17	12	29	41	41	82
Office	55	89	12	101	17	85	102
Self-Storage	231	12	9	21	16	19	35
Total	**299**	**118**	**33**	**151**	**74**	**145**	**219**

Based on ITE trip generation rates, a total of 151 and 219 two-way trips are projected to be generated by the proposed development during the AM and PM peak hours, respectively. The majority of the trips are attributed to the office land use where 101 and 102 two-way trips are generated, respectively.

4.1.2.2 Proxy Site Trip Generation

To better understand the trip generation of the proposed development, a proxy site trip generation survey has been conducted at five established, comparable Dymon sites located in Ottawa and the GTA. These sites have been selected for their similarity to the proposed development in terms of size and key features (GFAs, multi-storey buildings, land uses, arterial road access, urban environment). The selected sites include the new Dymon retail functions and offer the home storage solutions discussed previously. The most recent survey site of 1460 The Queensway in Etobicoke also includes a co-working office area, which will be available at the proposed site at 5051 Harvester Road. These sites will operate in the same manner as the proposed site and are appropriate proxy sites for comparison. Several Ottawa sites have been selected for review to supplement the lack of data due to the limited number of Dymon sites that have been completed and/or opened in the GTA. Table 15 summarizes the site statistics for the surveyed and proposed sites.

Table 15: Site Statistics Comparison

Site	Reception / Retail GFA (m^2)	Self-Storage GFA (m^2)	Office GFA (m^2)	Total GFA (m^2)	Parking Stalls (SPA)
1554 Carling Avenue	2,714	18,204	-	21,685	59 Exterior 4 in Loading Area
323 Coventry Road	867	11,484	-	12,351	44 Exterior[1]
300 Greenbank Road	~700	8,495	-	9,195	9 Exterior 4 in Loading Area
1460 The Queensway	1,231	27,568[2]	2,192	30,991	266 Exterior 59 Interior
5 Nevets Road	563	12,448	-	13,012	41 Exterior
5051 Harvester Road	1,159	23,260	5,204	29,623	9 Exterior 169 Interior

Note 1: some of these parking stalls are restricted due to truck movements. This will be discussed further in the Parking section.
Note 2: These self-storage GFAs include a Dymon Wine component. The wine cellar at 1460 The Queensway is 854 square metres. It is considered as a specific type of self-storage service.

As shown in Table 15, the proposed development at 5051 Harvester Road contains the same reception/retail and self-storage components with all proxy sites and the same office component as the 1460 The Queensway site, therefore the trip generation for these components on site can be projected using proxy site data. Mode choice of the customers has been implicitly reflected in the proxy site survey data; therefore, no additional mode splits are applied to the trip generation results.

The retail store on site has a GFA much smaller than the rest of the land uses and will be related to the self-storage function, thus the trip generation was lumped with the self-storage during the surveys.

In the case of 1460 The Queensway, since the parking area is not divided or designated for a specific land use, there are not well-defined self-storage parking spaces or office parking spaces. Therefore, trip generation data specific for each use is not available from the data collection process. The division between the self-storage and office uses was done using the following methodology:

- The vehicles heading to the office were assumed to have taken the accesses closest to the location of the office: the southmost access on Vansco Road, and the access on Wickman Road. The vehicles using the other accesses were all assumed to be self-storage users.
- The percentage of inbound and outbound trips at an access for the office use are assumed to be related to the percentage of the parking spaces that are frequently used by the office users (information supplied by Dymon) out of all the parking spaces in the proximity of this access. Although the parking and trip generation are not directly related, considering that the average time length of parking of office users is much longer than that of self-storage users, this is a reasonable approximation as the number of parking spaces provided is related to the maximum demand of incoming vehicles.

Two counts have been collected at 1460 The Queensway specifically for the trip generation for the Work Refined office area to provide a larger data set to help determine the trip generation rates at the co-working office. The weekday AM, weekday PM, and Saturday midday peak hour trip generation for self-storage and office uses have been individually tabulated in Table 16 and Table 17, respectively. Appendix I includes the trip generation proxy counts and site plans for each surveyed site.

Table 16: Proxy Site Trip Generation – Self-storage and Retail

Site	GFA (m^2)	AM Peak Hour Rate (/1000 m^2 GFA)			PM Peak Hour Rate (/1000 m^2 GFA)			Sat Peak Hour (/1000 m^2 GFA)		
		In	Out	Total	In	Out	Total	In	Out	Total
1554 Carling	21,685	6	2	8	13	9	22	-	-	-
323 Coventry (May)	12,351	14	9	23	17	19	36	-	-	-
323 Coventry (June)	12,351	7	5	12	11	15	26	11	15	26
300 Greenbank	9,195	7	4	11	10	10	20	14	18	32
1460 The Queensway (February 2022)	28,799	26	18	44	13	23	36	20	20	40
1460 The Queensway (October 2022)	28,799	45	9	54	24	16	40	-	-	-
5 Nevets Road	13,012	5	3	8	9	8	17	18	13	31

Table 17: Proxy Site Trip Generation – Office

Site	GFA (m^2)	AM Peak Hour (/1000 m^2 GFA)			PM Peak Hour Rate (/1000 m^2 GFA)			Sat Peak Hour (/1000 m^2 GFA)		
		In	Out	Total	In	Out	Total	In	Out	Total
1460 The Queensway (February 2022)	2,192	16	2	18	1	5	6	4	2	6
1460 The Queensway (October 2022)	2,192	16	3	19	10	9	19	-	-	-

The selected sites have a wide range of gross floor areas. To accurately compare these sites to the proposed site, the trip generation rate has been determined for each survey in terms of vehicle trips generated per 1000 square metres. Table 18 and Table 19 summarize the trip generation rates for each site for self-storage and office, respectively.

Table 18: Proxy Site Trip Generation Rates – Self-storage and Retail

Site	GFA (m^2)	AM Peak Hour Rate (/1000 m^2 GFA)			PM Peak Hour Rate (/1000 m^2 GFA)			Sat Peak Hour (/1000 m^2 GFA)		
		In	Out	Total	In	Out	Total	In	Out	Total
1554 Carling	21,685	0.28	0.09	0.37	0.60	0.42	1.01	-	-	-
323 Coventry (May)	12,351	1.13	0.73	1.86	1.38	1.54	2.91	-	-	-
323 Coventry (June)	12,351	0.57	0.40	0.97	0.89	1.21	2.11	0.89	1.21	2.11
300 Greenbank	9,195	0.76	0.44	1.20	1.09	1.09	2.18	1.52	1.96	3.48
1460 The Queensway (February 2022)	28,799	0.90	0.63	1.53	0.45	0.80	1.25	0.69	0.69	1.39
1460 The Queensway (October 2022)	28,799	1.56	0.31	1.88	0.83	0.56	1.39	-	-	-
5 Nevets Road	13,012	0.38	0.23	0.61	0.69	0.61	1.31	1.38	1.00	2.38
Average Rate		0.80	0.40	1.20	0.85	0.89	1.74	1.12	1.22	2.34

Table 19: Proxy Site Trip Generation Rates – Office

Site	GFA (m^2)	AM Peak Hour Rate (/1000 m^2 GFA)			PM Peak Hour Rate (/1000 m^2 GFA)			Sat Peak Hour (/1000 m2 GFA)		
		In	Out	Total	In	Out	Total	In	Out	Total
1460 The Queensway (February 2022)	2,192	7.30	0.91	8.21	0.46	2.28	2.74	1.82	0.91	2.74
1460 The Queensway (October 2022)	2,192	7.30	1.37	8.67	4.56	4.11	8.67	-	-	-
Average Rate		**7.30**	**1.14**	**8.44**	**2.51**	**3.19**	**5.70**	**1.82**	**0.91**	**2.74**

Since the 1460 Queensway is a relatively recent establishment, the site is not expected to have been operating at full capacity during the time the traffic data was obtained. At the 1460 Queensway location as of the February 2022, 59.5% of the lockers were rented (1548 Units) while 40.5% were available or vacant (1055 Units) for the self-storage, and 64.5% of the co-working spaces were rented (129 workstations) while 35.5% (71 workstations) were available for the office. The same occupancy rates have been assumed for the October 2022 count dates as well, to be conservative. The office PM peak trip generation rates in the February count are much lower than those in the October count due to that the actual number of trips is as low as 1 inbound and 5 outbound as shown in Table 17 which caused the rates to be sensitive to small changes in the survey results. Considering the potential growth from more customers, the trip generation at maximum capacity, assuming that the increase in the number of trips generated will be linear to the number of rented units, is calculated for self-storage and office as shown in Table 20 and Table 21.

Table 20: Proxy Site Trip Generation Rates – Self-storage and Retail

Site	GFA (m^2)	AM Peak Hour Rate (/1000 m^2 gfa)			PM Peak Hour Rate (/1000 m^2 gfa)			Sat Peak Hour (/1000 m2 GFA)		
		In	Out	Total	In	Out	Total	In	Out	Total
1554 Carling	21,685	0.28	0.09	0.37	0.60	0.42	1.01	-	-	-
323 Coventry (May)	12,351	1.13	0.73	1.86	1.38	1.54	2.91	-	-	-
323 Coventry (June)	12,351	0.57	0.40	0.97	0.89	1.21	2.11	0.89	1.21	2.11
300 Greenbank	9,195	0.76	0.44	1.20	1.09	1.09	2.18	1.52	1.96	3.48
1460 The Queensway (February 2022)	28,799	1.52	1.05	2.57	0.76	1.34	2.10	1.17	1.17	2.34
1460 The Queensway (October 2022)	28,799	2.63	0.53	3.15	1.40	0.93	2.34	-	-	-
5 Nevets Road	13,012	0.38	0.23	0.61	0.69	0.61	1.31	1.38	1.00	2.38
Average Rate		1.04	0.50	1.53	0.97	1.02	1.99	1.24	1.33	2.58

Table 21: Proxy Site Trip Generation Rates – Office

Site	GFA (m^2)	AM Peak Hour Rate (/1000 m^2 GFA)			PM Peak Hour Rate (/1000 m^2 GFA)			Sat Peak Hour (/1000 m^2 GFA)		
		In	Out	Total	In	Out	Total	In	Out	Total
1460 The Queensway (February 2022)	2,192	11.32	1.41	12.73	0.71	3.54	4.24	2.83	1.41	4.24
1460 The Queensway (October 2022)	2,192	11.32	2.12	13.44	7.07	6.37	13.44	-	-	-
Average Rate		**11.32**	**1.77**	**13.08**	**3.89**	**4.95**	**8.84**	**2.83**	**1.41**	**4.24**

The trip generation rates above have been examined and these sites do not have a strong correlation between gross floor area and trip generation. Although there is only one survey site for Dymon Work Refined Office, the October 2022 trip generation is likely overestimated as occupancy rates have been applied to scale the trip generation, however, there is not enough data to conclude that the relationship between occupancy and trip generation is linear. Additionally, due to the low magnitude of trips in the survey a small change in the number of trips has a large impact on the trip generation rate. Therefore, the average trip generation rate has been applied to the proposed site to project the anticipated trip generation of the subject development on a typical day.

Table 22 summarizes the projected trip generation for the proposed Dymon development at 5051 Harvester Road. As discussed previously in Section 2.6.1, the weekday AM and PM peak periods are the critical periods for this site due to the Saturday midday peak period having a lower trip generation from the co-working office use. The GFA of each of these land uses will be rounded up to the nearest 100 square metres for the calculations of trip generation to be conservative. Therefore, trip generation will be calculated based on a GFA of 23,000 square metres of self-storage and retail space, and 5,200 square metres of office space.

Table 22: Projected 5051 Harvester Road Site Trip Generation by Proxy Site Data

Land Use	GFA (m^2)	AM Peak Hour			PM Peak Hour			Sat Peak Hour		
		In	Out	Total	In	Out	Total	In	Out	Total
Dymon Self-Storage & Reception/Retail	22,700	24	11	35	22	23	45	23	24	47
Office	5,200	59	9	68	20	26	46	15	7	22
Total		**83**	**20**	**103**	**42**	**49**	**91**	37	32	69

Table 23 summarizes the ITE trip generation results for vehicle trips for comparison.

Table 23: Projected 5051 Harvester Road Site Trip Generation by ITE Rates

Land Use	GFA (m^2)	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Dymon Self-Storage & Reception/Retail	22,700	29	21	50	57	60	117
Office	5,200	89	12	101	17	85	102
Total		**118**	**33**	**151**	**74**	**145**	**219**

The total ITE trip generation results are higher than the proxy site trip generation results during the weekday AM and PM peak hours. The difference is especially significant during the PM peak period for the co-working office use. The General Office Building Land Use in the ITE Manual represents a typical office building with regular working hours. It does not represent the 24/7 co-working space Dymon provides which serves different enterprises at the same time and allows the flexibility of arrival and departure times. Therefore, the inbound and outbound site trips are not projected to concentrate during the AM and PM peak periods and will scatter throughout the day.

The trips generated by the self-storage portion using proxy data are also lower than those calculated using ITE rates. A typical industrial warehouse has heavy trucks loading and unloading during certain periods of the day (i.e., early morning) while visits to self-storage sites predominantly use passenger vehicles and are more frequent and scattered throughout the day.

Therefore, the proxy site trip generation results are more representative of the specific land uses in this exercise. The proposed development will generate 103 AM and 91 PM net new two-way vehicle trips in both 2026 and 2031, including 35 AM and 45 PM net new two-way vehicle trips for the self-storage and retail components, and 68 AM and 46 PM net new two-way vehicle trips for the office component.

4.1.3 Truck Trips

The proposed development features a self-storage facility primarily designed for patrons who rely on personal vehicles for loading and unloading their belongings. It is anticipated that the majority of vehicles entering the site will be passenger vehicles, particularly during the AM and PM peak hours. The presence of trucks on the site is expected to be limited, consisting of occasional visits by patrons and infrequent occurrences of garbage trucks and delivery trucks. To substantiate these observations, truck trip counts have been collected at the same Dymon proxy sites. Table 24 summarizes the AM and PM peak hour truck trip generation at the proxy sites. Additionally, Table 25 summarizes the estimated AM and PM peak hour truck trip generation using ITE trip generation rates for LUC 151 mini-warehouse.

Table 24: Truck Trips – Proxy Site

Site	AM Peak Hour			PM Peak Hour			Sat Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
1554 Carling	1	2	3	0	0	0	-	-	-
323 Coventry (May Counts)	0	0	0	0	0	0	-	-	-
323 Coventry (June Counts)	0	0	0	1	3	4	1	2	3
300 Greenbank	2	2	4	2	2	4	0	1	1
1460 The Queensway (February 2022)	0	0	0	0	0	0	0	0	0
1460 The Queensway (October 2022)	1	1	2	1	0	1	-	-	-
5 Nevets Road	0	0	0	0	0	0	0	0	0

Table 25: Truck Trips – ITE Truck Trip Generation Rates

Land Use	Land Use Code	GFA (1000 ft²)	Peak Hour	Method	Vehicle Trip Rate	Distribution		Trips		
						In	Out	In	Out	Total
Mini-Warehouse	151	235	AM	Weighted Average	0.00	NA	NA	-	-	0
			PM		0.00	NA	NA	-	-	0
			Weekday		0.04	50%	50%	5	5	10

As depicted in the data presented above, the two-way truck trip generation during the AM and PM peak hours falls within the range of 0 to 4 trucks per hour. Additionally, ITE suggests that daily two-way truck volume would be approximately 10 trips, and they would all arrive and depart outside the AM and PM peak hours. Therefore, the projected impact of truck trips associated with the proposed development is expected to have a negligible effect on the neighboring road network. Given this assessment and the expected irrelevance of truck trip generation effects in the study area, further analysis of truck trips, as per the Ministry of Transportation's (MTO) *General Guidelines for the Preparation of Traffic Impact Studies*, is deemed unnecessary.

4.1.4 Trip Distribution

The proposed development primarily consists of self-storage and co-working office land uses; hence the targeted customers are primarily residents or businesses from nearby neighbourhoods. As a result, the trips generated will primarily be local. The trips generated by the proposed development were distributed to the boundary road network based on the locations of estimated residential, industrial, and commercial catchment areas. The potential catchment areas were determined based on the locations of existing self-storage facilities and co-working spaces in Burlington.

A review of existing self-storage facilities identifies several similar developments located north of Highway 403, which are expected to capture customers from the surrounding industrial and residential neighbourhoods north of Highway 403. The proposed development will primarily attract customers from the areas that are currently underserviced by the existing facilities, primarily due to greater distances. This includes the residential neighborhoods in the south and the industrial blocks within Burlington, with a smaller percentage coming from other directions.

A similar pattern is observed for co-working spaces in the surrounding areas, except that there are fewer established facilities of such kind. There are three existing co-working spaces in the surrounding areas in Burlington, but they are all located on the north side of Highway 403. These facilities are presumed to continue catering to customers in their immediate vicinity, encompassing nearby industrial and commercial sites, as well

as residential neighbourhoods situated between Highway 403 and Highway 407. The proposed Dymon Work Refined will fill the service gap for businesses and residents situated between Highway 403 and Lakeshore east of Walkers Line. As a result, the majority of office users are expected to originate from these areas, with a smaller proportion of total trips coming from other directions. Figure 24 and Figure 25 illustrate existing self-storage facilities and co-working spaces in Burlington, and the potential major catchment areas for the Dymon development proposed.

Figure 24: Existing Self-storage Facilities in Burlington

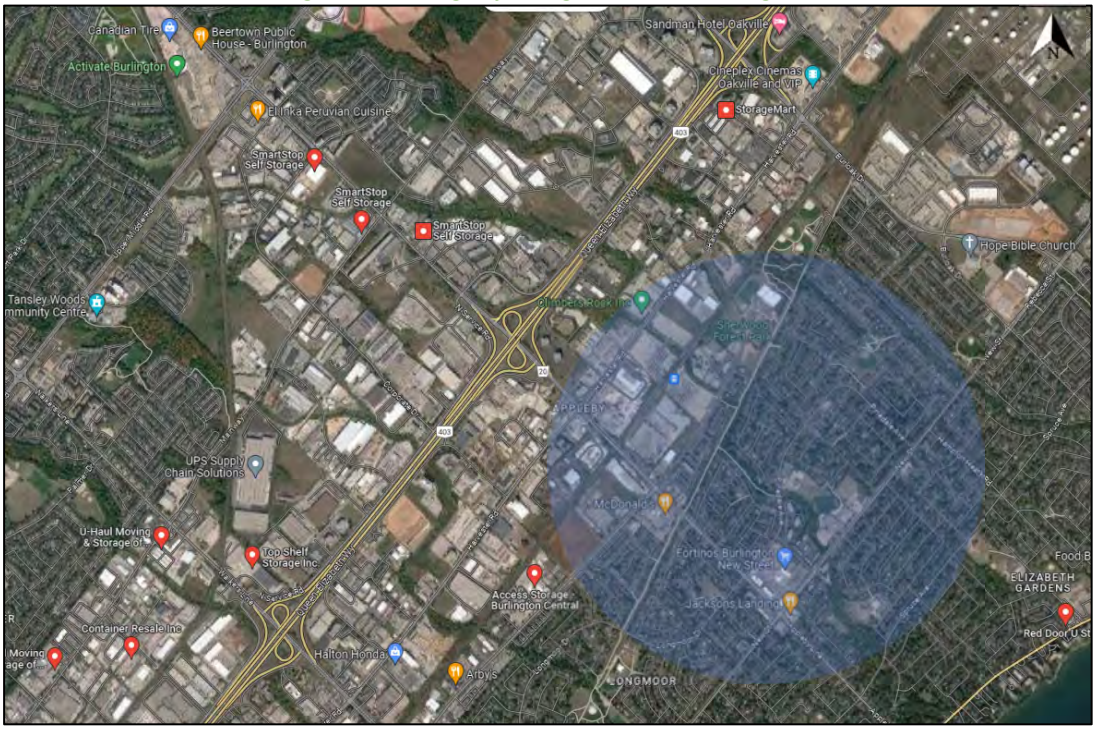
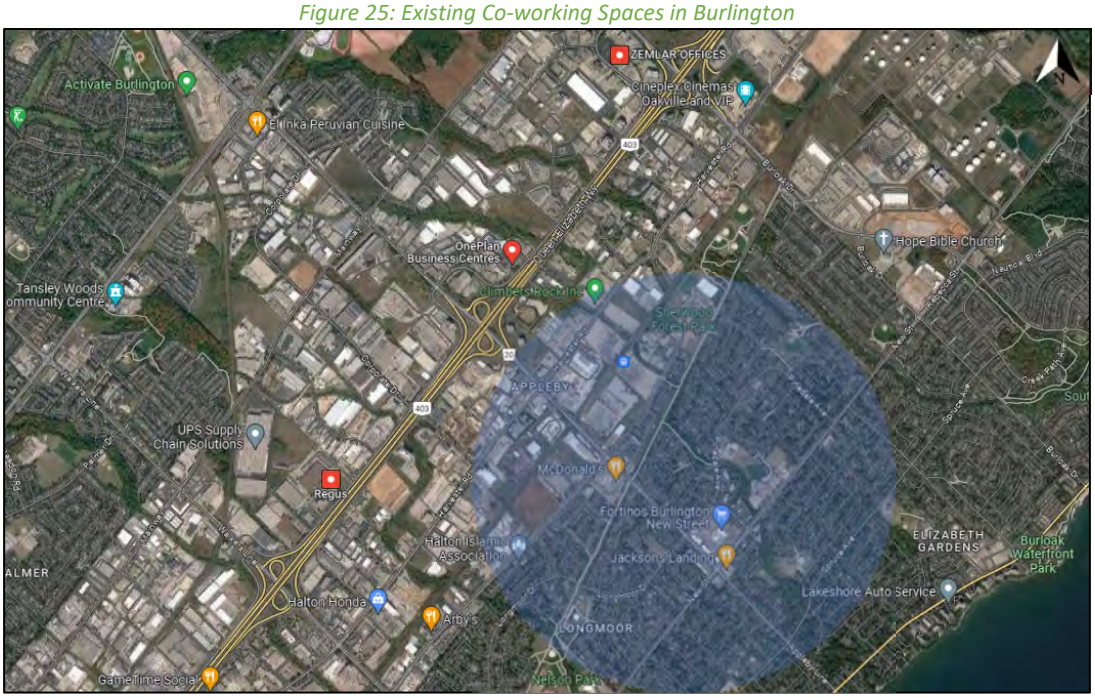


Figure 25: Existing Co-working Spaces in Burlington



To determine the travel patterns of the subject development, the 2016 Transportation Tomorrow Survey (TTS) has also been taken into consideration. Given the distinctive land uses of the proposed development, the analysis focused exclusively on local trips, which have origins or destinations within nearby zones in Burlington or Oakville, have been analyzed. TTS data for these zones can be found in Appendix J. The resulting 2016 trip distribution for the zones aggregated is illustrated in Table 26. The major catchment areas identified above are considered and the existing general 2015 TTS trip distribution percentages are adjusted for each direction to provide a better representation of the specific Dymon self-storage and co-working office development.

Table 26: 2016 TTS Trip Distribution

To/From	2016 TTS Percent of Trips	Future Trip Distribution
North	20%	10%
South	30%	40%
East	15%	20%
West	35%	30%
Total	100%	100%

Compared to the 2016 TTS trip distribution, the percentage of the trips arriving from the south and east will be higher as similar facilities are rare in those areas, with the Dymon facility becoming the nearest and most accessible destination for residents and businesses. Future developments and planned infrastructure improvements will also affect the auto trip distribution. These forthcoming projects will be located within the catchment areas of the proposed self-storage and co-working office. Although not captured in the 2016 TTS data, these developments are expected to contribute to site traffic in the 2026 and 2031 future horizons.

The planned MTSA around the Appleby GO station may provide a more convenient option for visitors to access the facility. This could attract non-local visitors, but since they will predominantly use transit modes, the impact on auto trip distribution for the corresponding directions is anticipated to be minimal.

To account for these factors, the TTS trip distribution has been adjusted to the percentages outlined in Table 26. The trips arriving from the south and east have been increased by 10% and 5%, respectively, while the trips arriving from the north and west have been reduced by 10% and 5%, respectively. This adjustment reflects the competitive landscape with similar or identical establishments located to the east and south, which makes it less likely for a steady increase in customers from these directions. The resulting trip distribution rates have been applied to the site trips generated by 5051 Harvester Road.

4.1.5 Trip Assignment

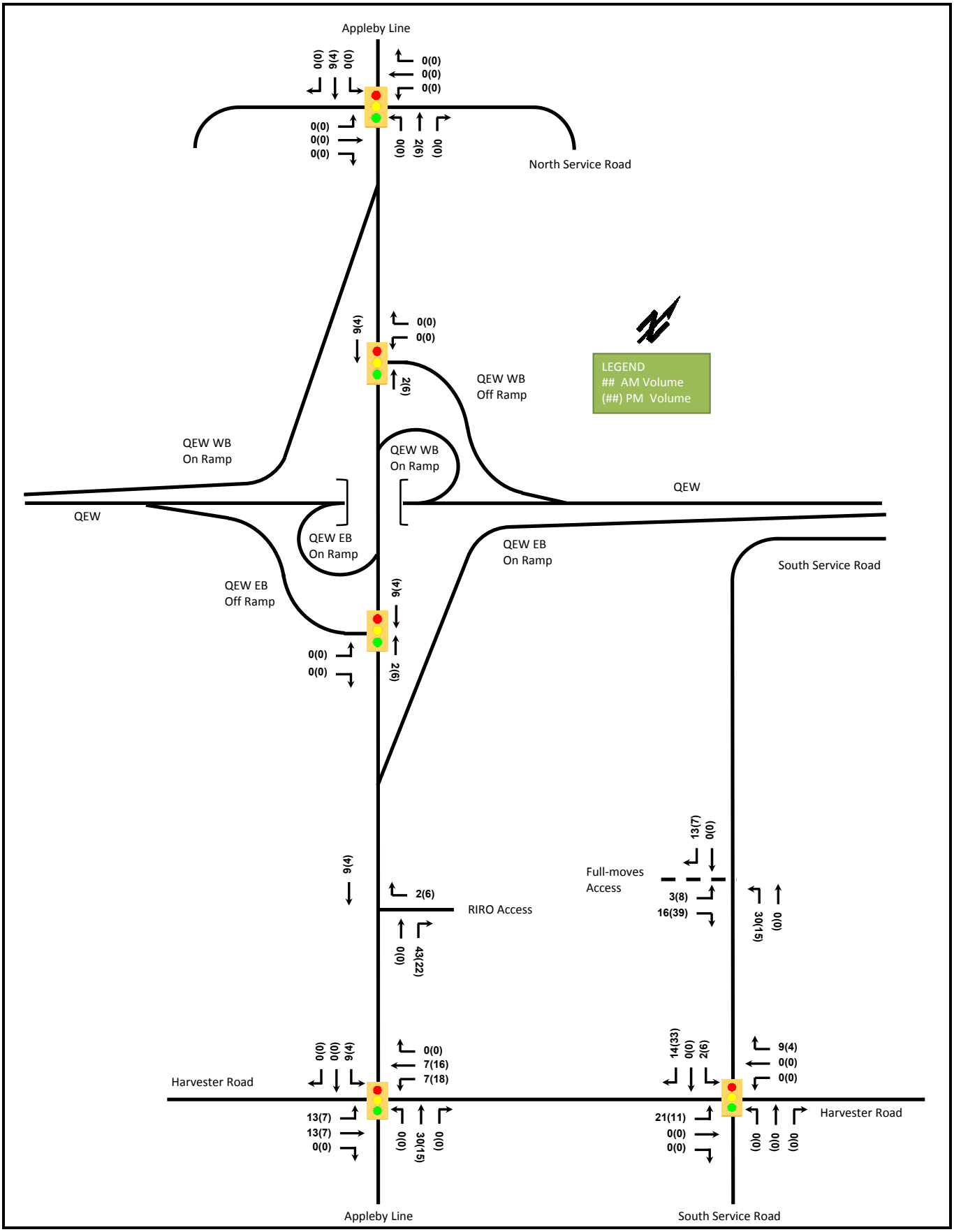
Using the distribution outlined above, turning movement splits, intersection and access turning restrictions, and access to major transportation infrastructure, the trips generated by the site have been assigned to the Study Area road network. The trip assignment exercise was guided by the principle of selecting the most direct route with the shortest travel distance.

The choice of site access to use depends on various factors, including the direction from which the vehicles are traveling, the type of vehicles, and the on-site services to be utilized. The access on Appleby Line is designated as right-in / right-out, thus vehicles travelling from the south along Appleby Line have the option to make a right turn for inbound movements, while those traveling from the north along Appleby Line will need to take a detour and use the full movement South Service Road access. U-turns are not expected from the site-generated trips.

Given the layout of the site, trucks intending to access the drive-through loading area, primarily serving self-storage customers, will be directed to enter the site using the Appleby Line access, which aligns with the drive-through entrance. These vehicles will be directed to routes that facilitate their approach to the site from the south along Appleby Line.

Notably, with no site access provided on Harvester Road, most trips originating from the west and travelling along Harvester Road will access the site by executing eastbound left turns onto Appleby Line. Conversely, most trips coming from the east on Harvester Road will access the site by making westbound right turns onto South Service Road to utilize the corresponding access. The reverse routes have been applied to the outbound trips. Figure 26 illustrates the 2026 and 2031 new site traffic generated volumes for all land uses combined.

Figure 26: Site Trip Generation



5 Future Total

5.1 875 Appleby Line Access Reassignment

In the Existing Conditions, the 875 Appleby Line Access allows full movements and a southbound left turning lane is provided on Appleby Line. The 875 Appleby Line Access is located 140 metres south of the Highway 403 eastbound on ramp. MTO has indicated that, due to the short distance between the Highway 403 interchange and the access.

The existing access will be restricted to right-in / right-out only. The southbound left turn lane will be repainted, and signage will be provided at the access to restrict left-turn movements. The future 875 Appleby Line Access will thus consist of one through lane and one shared through/right-turn lane in the northbound approach, two through lanes in the southbound approach, and one right turn lane on the westbound approach.

The access in its current configuration provides an entry and exit point for visitors to the gas station and the fast-food restaurants at 875 Appleby Line. The left-turn restrictions of the Future Total configuration will result in the re-direction of some of the inbound and outbound trips heading for these destinations. Vehicles that are making southbound left turns in the Existing Conditions will take a left turn at the Appleby Line at Harvester Road intersection and use the existing accesses on Harvester Road. Vehicles that are heading southbound and making westbound left turns will also use the existing accesses on Harvester Road and proceed to the south or the west at the Appleby Line at Harvester Road intersection. Figure 27 illustrates the 2026 Future Background traffic volumes after the reassignment, and Figure 28 illustrates the 2031 Future Background traffic volumes after the reassignment.

Figure 27: 2026 Future Background Reassigned Traffic Volumes

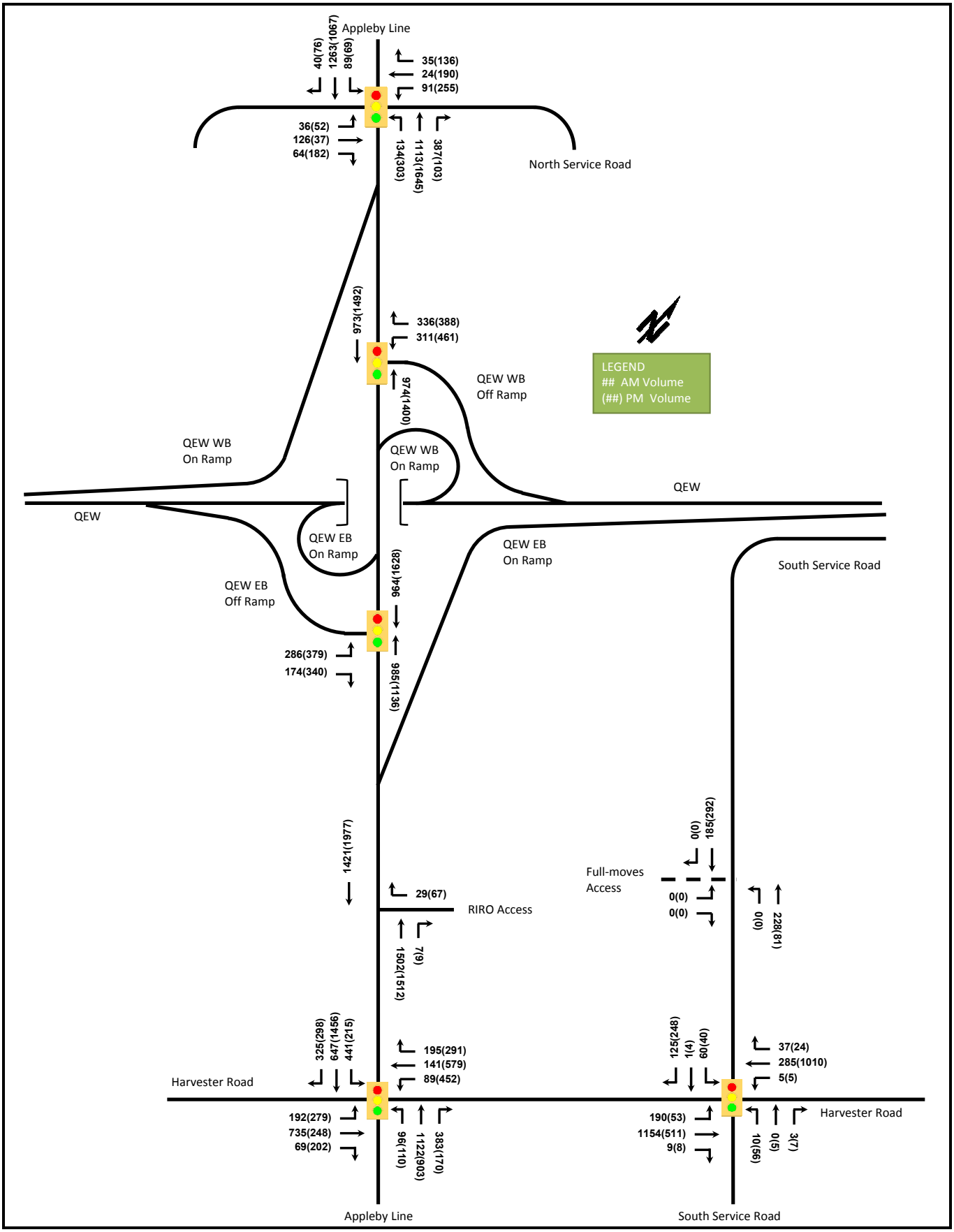
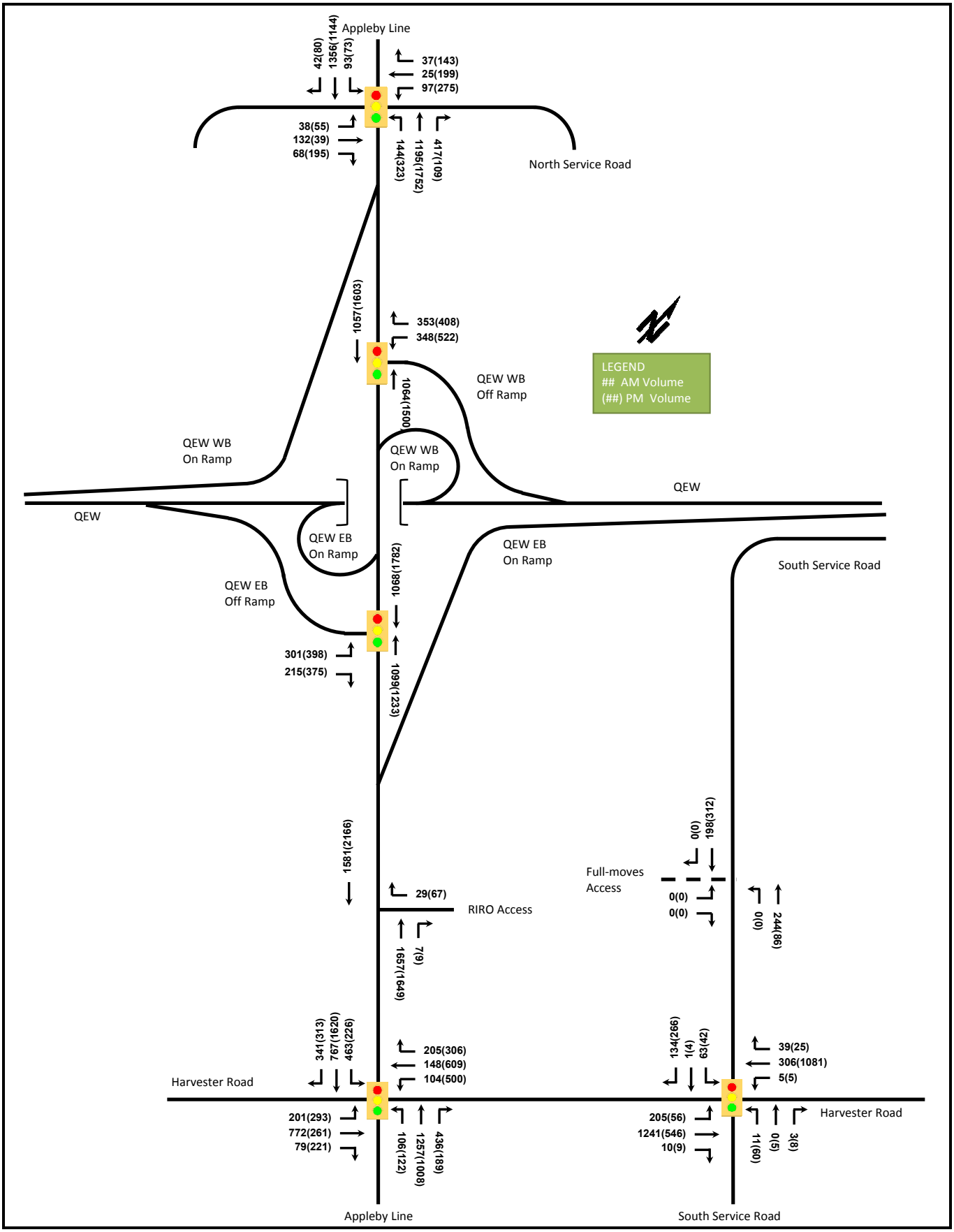


Figure 28: 2031 Future Background Reassigned Traffic Volumes

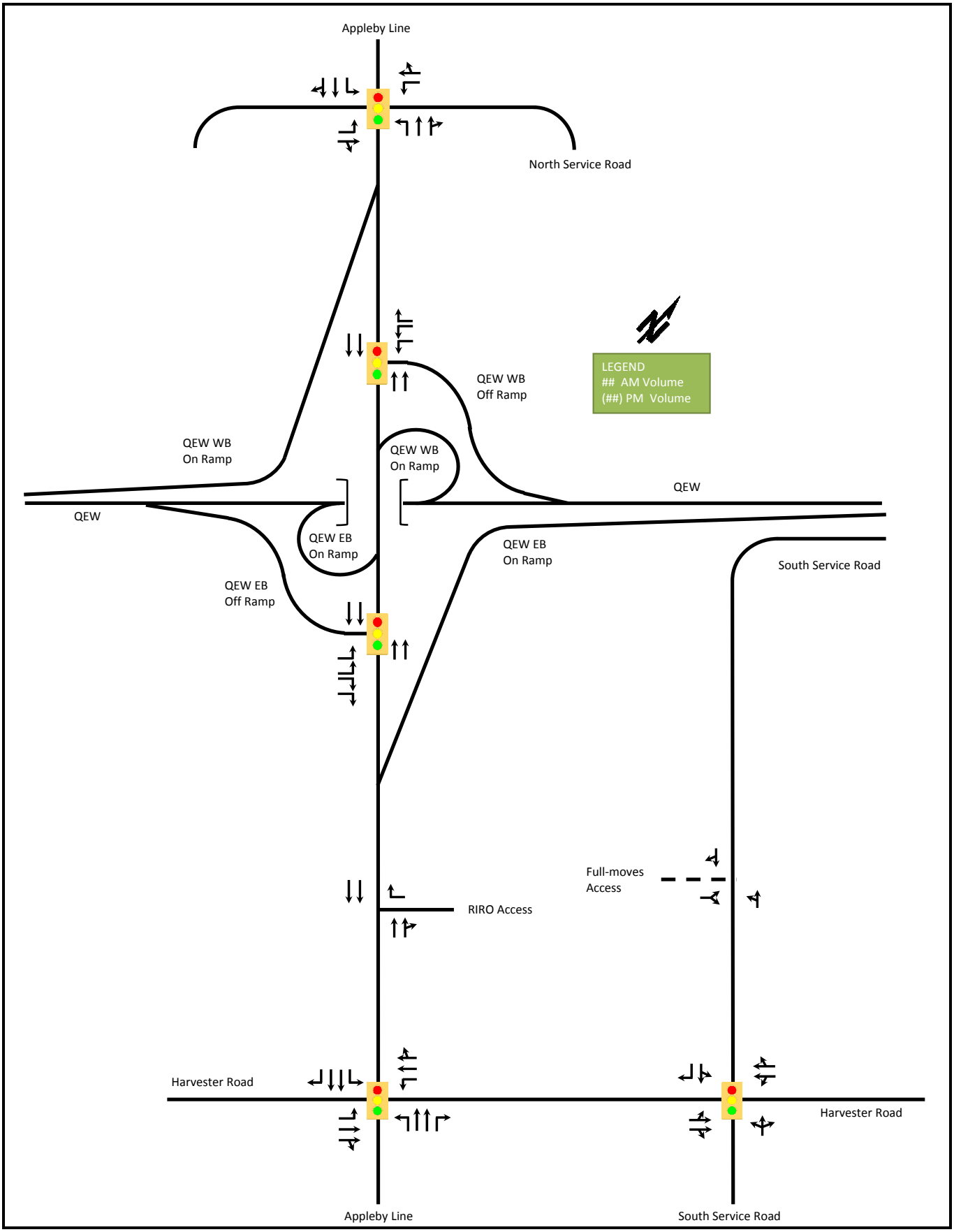


5.2 Future Total Intersection Design

The Study Area intersections in the Future Total horizons maintain the same geometry as considered in the Future Background analysis, with the exception of the 875 Appleby Line Access, as outlined in Section 5.1.

The newly proposed site access located along South Service Road, north of Harvester, will be aligned with the existing Burkert Access east of South Service Road. This access will accommodate both left turn and right turn inbound movements. The intersection formed by the access and South Service Road will feature one shared left-turn/right-turn lane at the eastbound approach, one shared left-turn/through lane at the northbound approach, and one shared right-turn/through lane at the southbound approach. It is assumed that dedicated turning lanes will not be constructed for the northbound left and southbound right movements. Figure 29 illustrates the 2026 and 2031 Future Total intersection configurations.

Figure 29: 2026 and 2031 Future Total Conditions Intersection Configuration



5.3 Future Total Traffic Volumes

The site generated traffic has been combined with the 2026 and 2031 Future Background traffic volumes to estimate the Future Total traffic volumes. Figure 30 illustrates the 2026 Future Total traffic volumes, and Figure 31 illustrates the 2031 Future Total traffic volumes.

Figure 30: 2026 Future Total Traffic Volumes

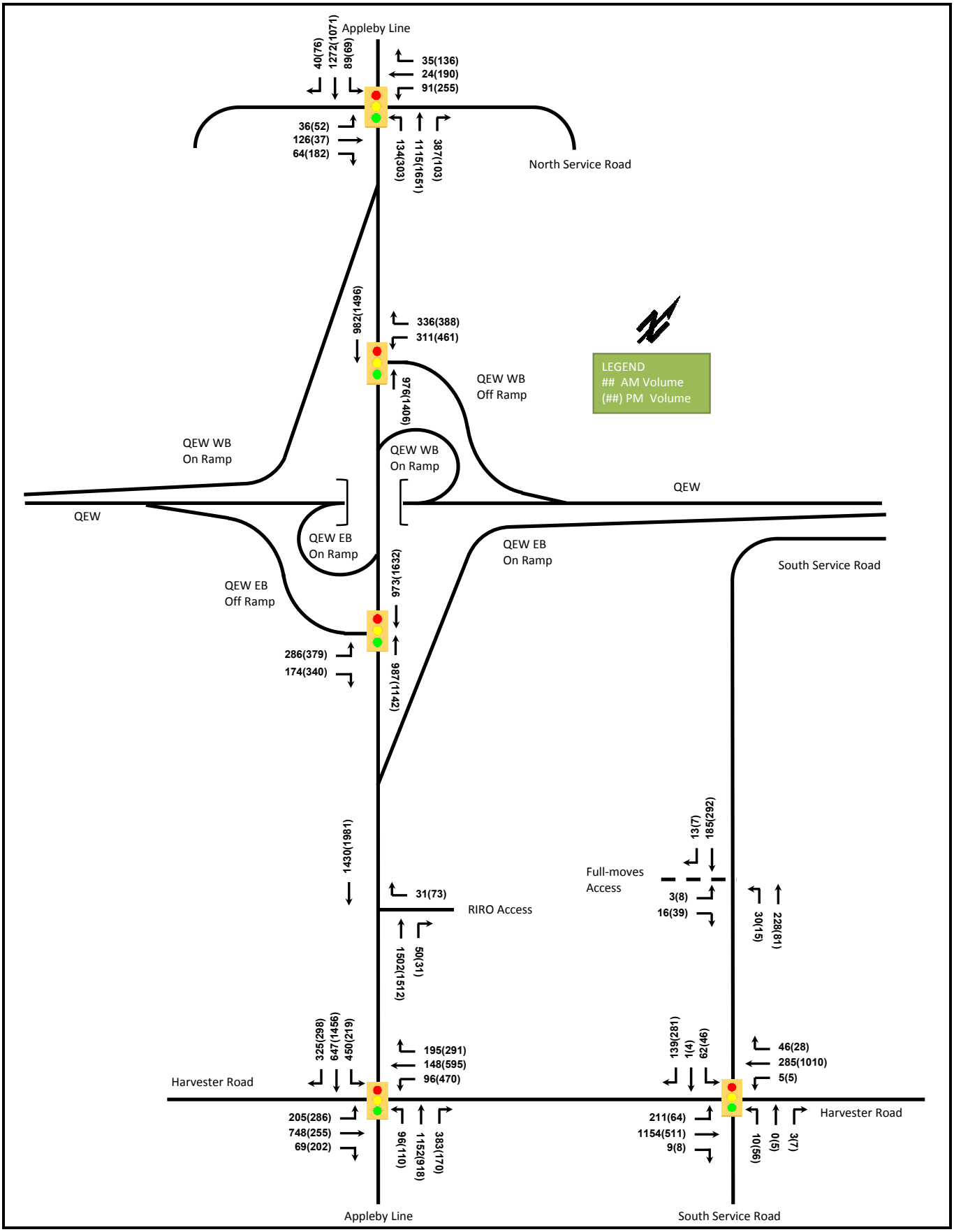
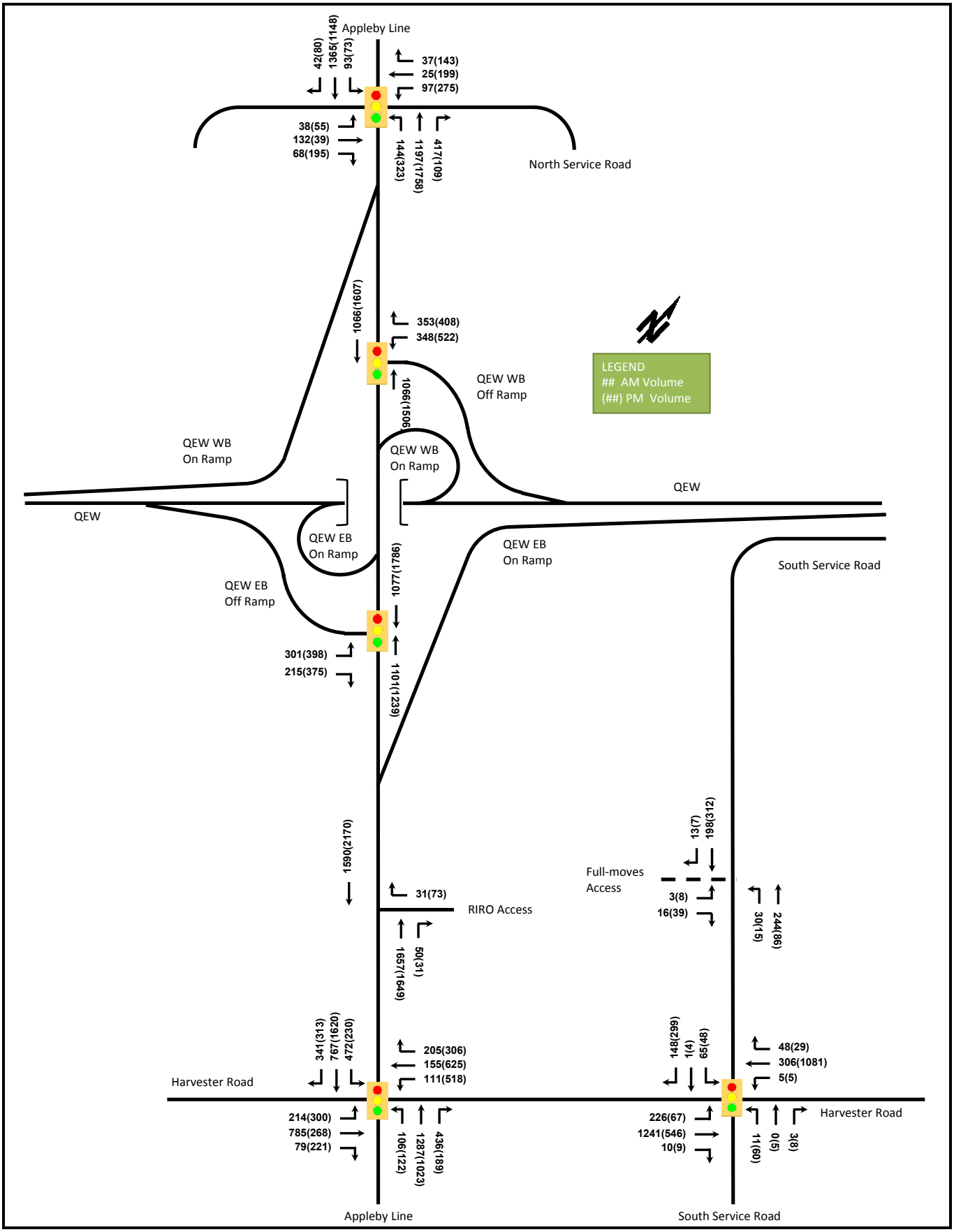


Figure 31: 2031 Future Total Traffic Volumes



5.4 Future Total Operational Analysis

5.4.1 2026 Future Total Traffic Conditions

The analysis parameters used to analyze the 2026 Future Background Conditions have been carried forward as part of the analysis of 2026 Future Total conditions. A default PHF of 0.92 was assumed for the intersection formed by the proposed South Service Road access and the right-in/right-out Appleby Line access. The intersections have been analyzed based on the identified intersection configuration in Section 5.2, with the proposed protected double left turn lanes added into the model. Table 27 summarizes the results of the 2026 Future Total conditions Synchro Analysis. Synchro worksheets have been included in Appendix K.

Table 27: 2026 Future Total Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & Harvester Road (Signalized)	EBL	F	0.96	105	#53	F	1.01	121	#83
	EBT/R	D	0.89	54	#143	E	0.61	57	79
	WBL	E	0.53	58	22	F	1.03	113	#123
	WBT/R	C	0.27	35	30	F	1.04	96	#202
	NBL	C	0.31	23	21	F	0.94	96	#63
	NBT	E	0.99	64	#207	D	0.70	41	162
	NBR	C	0.52	35	77	C	0.16	30	25
	SBL	F	1.01	98	#100	E	0.70	72	51
	SBT	C	0.47	20	65	E	1.02	71	#313
	SBR	C	0.23	27	23	C	0.34	29	56
	Overall	**D**	**0.93**	**53**	**-**	**E**	**1.04**	**72**	**-**
Harvester Road & South Service Road (Signalized)	EBL/T/R	B	0.80	11	#134	A	0.38	7	37
	WBL/T/R	A	0.17	4	14	A	0.55	9	72
	NBL/T/R	C	0.02	25	1	D	0.54	36	26
	SBL/T	C	0.43	28	18	C	0.24	31	19
	SBR	C	0.10	25	14	D	0.79	48	#74
	Overall	**B**	**0.74**	**12**	**-**	**B**	**0.60**	**15**	**-**
Appleby Line & QEW Eastbound Off-ramp (Signalized)	EBL	D	0.68	53	51	E	0.72	59	73
	EBR	D	0.17	46	16	E	0.76	63	70
	NBT	B	0.41	14	m108	A	0.49	8	102
	SBT	A	0.41	4	48	A	0.70	6	111
	Overall	**B**	**0.45**	**17**	**-**	**B**	**0.71**	**18**	**-**
Appleby Line & QEW Westbound Off-ramp (Signalized)	WBL	D	0.47	41	48	D	0.54	43	80
	WBR	E	0.85	63	96	E	0.93	75	#171
	NBT	B	0.46	17	134	C	0.72	21	222
	SBT	A	0.47	10	90	B	0.77	15	222
	Overall	**C**	**0.56**	**23**	**-**	**C**	**0.82**	**27**	**-**
Appleby Line & RIRO Access to 875 Appleby (Unsignalized)	WBR	B	0.05	10	1	B	0.13	12	3
	NBT/R	-	0.63	0	0	-	0.63	0	0
	SBT	-	0.45	0	0	-	0.62	0	0
	Overall	**A**	**-**	**0.1**	**-**	**B**	**-**	**0.2**	**-**

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & North Service Road (Signalized)	EBL	D	0.19	47	18	E	0.47	61	28
	EBT/R	E	0.72	60	67	E	0.66	69	55
	WBL	E	0.73	78	#27	E	0.79	73	#58
	WBT/R	D	0.09	38	16	E	0.78	58	112
	NBL	E	0.50	56	29	D	0.55	52	m#73
	NBT/R	C	0.85	28	#262	D	0.94	44	#370
	SBL	B	0.48	20	22	C	0.53	31	20
	SBT/R	C	0.75	25	199	D	0.80	38	188
	Overall	**C**	**0.79**	**31**	**-**	**D**	**0.91**	**47**	**-**
Proposed Full-moves Access at South Service Road (Unsignalized)	EBL/R	A	0.03	10	<1	B	0.07	11	2
	NBL/T	A	0.02	1	<1	A	0.01	1	<1
	SBT/R	-	0.13	0	0	-	0.19	0	0
	Overall	**A**	**-**	**1**	**-**	**A**	**-**	**1**	**-**
Notes:	m - volume for the 95th percentile queue is metered by an upstream signal which controls the arrival of vehicles at the downstream intersection, limiting the queue length								
	# - 95% percentile volume exceeds capacity								

The projected 2026 Future Total conditions at the Study Area intersections closely resemble those projected for the 2026 Future Background Conditions. In both scenarios, good overall LOS and non-critical v/c ratios are maintained at most of the intersections and individual movements. Exceptions are the operational constraints identified at the intersections of Appleby Line at Harvester Road and Appleby Line at North Service Road, but the increases in v/c ratios and delays are not significant compared to the 2026 Future Background Conditions.

At the Highway 403 off-ramp intersections with Appleby Line, all movements except for westbound right turns, continue to operate under favorable conditions during both the AM and PM peak hours, with overall LOS of C or better. As previously identified in the 2026 Future Background Conditions, the v/c ratio is projected to exceed the 0.75 MTO threshold for terminal ramps. Only experiencing a minor increase from 0.92 to 0.93 during the PM peak, the impact of the site trips will be negligible. The projected 95th percentile queue of 171 meters during the PM peak is also expected to be accommodated by the ramp and will not spill to the freeway section.

No operational constraints have been projected for the Harvester Road at South Service Road intersection. The eastbound queue of 134 meters during the AM peak can be accommodated by the road segment without spilling back to the adjacent Appleby Line at Harvester Road intersection.

The access to the 875 Appleby Access has been reconfigured as a right-in/right-out access, in contrast to the full-movement configuration used in the 2026 Future Background Conditions. This revised intersection is expected to operate with good LOS and minimal delay at all movements during both peak periods. The westbound right movement is anticipated to have delays of 12 seconds or less and queues of 3 meters at the 95th percentile volume, which can be accommodated by the access throat length. The southbound through and northbound shared through/right movements along Appleby Line are projected to maintain v/c ratios at 0.63 or lower, with no delays or queues, leaving residual capacity available for potential increases in future horizons. This analysis demonstrates that the traffic activities at the 875 Appleby Access will not significantly impact vehicles exiting the Highway 403 traveling southbound or those heading northbound for the on-ramps, addressing concerns raised by the MTO.

At the intersection of Appleby Line at North Service Road, the addition of protected double left turn lanes at the westbound left and northbound left movements will help reduce delays and queues at these movements and their opposing counterparts. Following these improvements, only the northbound through/right movement and the PM peak intersection overall are identified with v/c ratios exceeding the Halton Region threshold of 0.85 for signalized intersections. These v/c ratios are attributed to the projected 2026 Future Total volumes. Given that the delays remain within acceptable ranges, no additional mitigation strategies are proposed based on the analysis of the 2026 Future Total conditions.

Although the implementation of protected double left turn lanes, as well as optimized signal timing plans for the new configuration, has reduced the overall intersection v/c ratios to around 1.0 at the intersection of Appleby Line at Harvester Road, some movements continue to experience operational constraints, similar to the 2026 Future Background Conditions. This is particularly evident for movements such as the eastbound left, eastbound through/right, northbound through, and southbound left during the AM peak, and the eastbound left, westbound left, westbound through/right, and southbound through movements during the PM peak. The queues slightly exceed the storage lengths at the westbound left and northbound left movements during the PM peak and the southbound left movement during the AM peak. Despite the capacity increase provided by the double left turn lanes, the high north-south through volumes along Appleby Line are expected to continue causing congestion issues.

Considering that Appleby Line serves as a Regional arterial corridor with heavy anticipated traffic, the presence of congestion is expected. However, with the Region planning to widen Appleby Line beyond the 2031 horizon, thereby increasing capacity along the corridor, no additional mitigation strategies are proposed based on the 2026 Future Total conditions analysis. Movements that are projected to experience operational constraints even after the addition of double left turn lanes may benefit from further improvements resulting from the widening of Appleby Line. To adapt to changing intersection conditions, the Region should continuously monitor traffic operations at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections and make necessary adjustments to signal timing plans.

5.4.2 2031 Future Total Traffic Conditions

The analysis parameters used to analyze the 2031 Future Background Conditions have been carried forward as part of the analysis of 2031 Future Total conditions. The intersections have been analyzed based on the same configuration as used for 2026 Future Total conditions, which includes the double left turn lanes proposed as a result of attempting to mitigate the traffic conditions in the Future Background scenarios. Table 28 summarizes the results of the Synchro Analysis. Synchro worksheets have been included in Appendix L.

Table 28: 2031 Future Total Conditions Operational Analysis

Intersection	Mvmnt	AM Peak Hour				PM Peak Hour			
		LOS	V/C	Del (s)	Q (95th)	LOS	V/C	Del. (s)	Q (95th)
Appleby Line & Harvester Road (Signalized)	EBL	F	0.96	111	#62	F	1.22	197	#95
	EBT/R	F	1.02	87	#190	E	0.70	61	88
	WBL	E	0.72	80	#32	F	1.19	170	#144
	WBT/R	D	0.31	45	37	F	1.11	122	#222
	NBL	C	0.36	24	23	F	1.03	129	#71
	NBT	E	0.98	62	#256	D	0.73	40	175
	NBR	D	0.59	38	111	C	0.17	28	25
	SBL	F	1.00	101	#114	F	0.81	82	#59
	SBT	C	0.49	25	100	F	1.10	94	#360
	SBR	C	0.25	22	17	C	0.36	28	60
	Overall	**E**	**0.98**	**60**	-	**F**	**1.14**	**93**	-
Harvester Road & South Service Road (Signalized)	EBL/T/R	B	0.87	14	#153	A	0.43	8	41
	WBL/T/R	A	0.19	4	15	A	0.60	10	80
	NBL/T/R	C	0.02	25	1	D	0.53	36	28
	SBL/T	C	0.44	28	19	C	0.23	30	20
	SBR	C	0.11	25	14	D	0.85	55	#89
	Overall	**B**	**0.80**	**14**	-	**B**	**0.65**	**17**	-
Appleby Line & QEW Eastbound Off-ramp (Signalized)	EBL	D	0.68	53	54	E	0.68	55	75
	EBR	D	0.37	47	29	E	0.78	61	78
	NBT	A	0.47	6	74	A	0.55	10	125
	SBT	A	0.46	4	58	B	0.79	11	161
	Overall	**B**	**0.50**	**14**	-	**C**	**0.79**	**20**	-
Appleby Line & QEW Westbound Off-ramp (Signalized)	WBL	D	0.49	40	54	D	0.59	43	91
	WBR	E	0.88	65	#119	F	0.96	80	#188
	NBT	B	0.52	12	83	C	0.78	23	245
	SBT	B	0.52	12	101	B	0.84	14	92
	Overall	**C**	**0.62**	**22**	-	**C**	**0.88**	**28**	-
Appleby Line & RIRO Access to 875 Appleby (Unsignalized)	WBR	B	0.05	11	1	B	0.13	12	4
	NBT/R	-	0.69	0	0	-	0.69	0	0
	SBT	-	0.50	0	0	-	0.68	0	0
	Overall	**B**	-	**0**	-	**B**	-	**0**	-
Appleby Line & North Service Road (Signalized)	EBL	D	0.15	45	17	E	0.44	59	28
	EBT/R	E	0.72	63	76	E	0.72	71	62
	WBL	F	0.78	90	#31	E	0.84	77	#65
	WBT/R	D	0.12	47	19	E	0.77	56	115
	NBL	E	0.56	62	33	E	0.64	68	m#89
	NBT/R	C	0.90	34	#305	D	1.06	53	#419
	SBL	C	0.57	28	30	C	0.49	33	21
	SBT/R	C	0.79	28	224	D	0.85	41	206
	Overall	**D**	**0.84**	**36**	-	**D**	**0.98**	**53**	-
Proposed Full-moves Access at South Service Road (Unsignalized)	EBL/R	A	0.03	10	<1	B	0.08	11	2
	NBL/T	A	0.02	1	<1	A	0.01	1	<1
	SBT/R	-	0.13	0	0	-	0.20	0	0
	Overall	**A**	-	**1**	-	**A**	-	**1**	-
Notes:	m - volume for the 95th percentile queue is metered by an upstream signal which controls the arrival of vehicles at the downstream intersection, limiting the queue length								
	# - 95% percentile volume exceeds capacity								

The projected 2031 Future Total conditions along Appleby Line exhibit similar patterns to those projected for the 2031 Future Background Conditions, with most Study Area intersections meeting Halton Region's target LOS. Operational constraints are only projected at the intersections of Appleby Line at Harvester Road, Appleby Line at North Service Road, and the westbound right movement at the QEW Westbound Off-ramp on Appleby Line. The impact of the site traffic on the traffic conditions is expected to be minimal, as the v/c ratios, delays, and queues do not significantly increase after the addition of the projected site trips.

At the Highway 403 off-ramp intersections with Appleby Line, all movements continue to operate under favorable conditions during both the AM and PM peak hours, with overall LOS of C or better. The v/c ratio at the westbound right movement has remained at 0.88 during the AM peak and increased from 0.95 to 0.96 during the PM peak. The difference due to site trips is considered negligible. Although the v/c ratios are projected to exceed the critical threshold, the projected 95th percentile queue of 188 meters during the PM peak will be accommodated by the 500-meter-long ramp, with a significant distance remaining between the end of the maximum queues and the freeway section.

Similarly, no operational constraints have been projected for the Harvester Road at South Service Road intersection, with the exception of the shared eastbound movements. A 95th percentile queue of 153 metres has been projected for this movement during the AM peak, but the queue can be accommodated by the road segment without spilling back to the Appleby Line at Harvester Road intersection.

The access to the 875 Appleby Access has been modeled as a right-in/right-out access. The newly configured intersection is projected to operate with good LOS and minimum delay at all movements during both peak periods. The westbound right movement is anticipated to have delays of 12 seconds or less and queues of 4 meters at the 95th percentile, which can be accommodated by the throat length of the access. The southbound through and northbound shared through/right movements along Appleby Line are projected to maintain v/c ratios at 0.69 or lower, with no delays or queues, leaving residual capacity available for potential increases in future horizons. This analysis demonstrates that the traffic activities at the 875 Appleby Access will not significantly impact vehicles exiting the Highway 403 traveling southbound or those heading northbound for the on-ramps, addressing concerns raised by the MTO.

At the intersection of Appleby Line at Harvester Road, protected double left turn lanes have been incorporated for the eastbound, westbound, and southbound approaches to mitigate the impact caused by the high left-turning volumes. With optimized cycle length and splits, the resulting v/c ratios and delays decreased as a result of the mitigation strategy, although some movements still experience operational constraints as they have been projected in 2031 Future Background Conditions. The overall v/c ratios are projected to 0.98 for the AM peak, and 1.14 for the PM peak, above the critical threshold. The queues slightly exceed the storage lengths at the westbound left and northbound left movements during the PM peak and the southbound left movement during the AM peak. Given that Appleby Line is a Regional arterial functional as a north-south corridor, heavy traffic is anticipated. No additional mitigation strategies are proposed based on the 2031 Future Total conditions analysis.

At the intersection of Appleby Line at North Service Road, the proposed double left turn lanes at the westbound left and northbound left movements will help reduce delays and queues at these movements and their opposing movements. After the implementation, only the northbound through/right movement and the PM intersection overall are identified with v/c ratios exceeding the Halton Region threshold of 0.85. These v/c ratios are recognized as a result of the projected volumes and are anticipated to be addressed by the widening of Appleby Line. Given

that the delays remain within acceptable ranges, no additional mitigation strategies are proposed based on the 2031 Future Total conditions analysis.

As the widening of Appleby Line is projected to be completed by 2032, the 2031 Future Total conditions at these two intersections on Appleby Line may be improved, as higher capacity will be provided for the northbound and southbound through traffic along Appleby Line. Movements that are projected to still experience operational constraints after the addition of double left turn lanes may be further mitigated by the widening of Appleby Line. The Region should continuously monitor the traffic operations at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections and make necessary adjustments to signal timing plans in response to changing intersection configurations. Furthermore, given the planned intensification, the lanes and intersections at Appleby Line are expected to operate at capacity. Any additional auto trips resulting in a v/c ratio above one will likely be encouraged to transfer to alternative routes or modes.

6 Development Design

6.1 Site Circulation

A site circulation assessment was completed using AutoTURN 11.0 to develop turning templates for garbage trucks and loading trucks. A WB-20 and a heavy single unit truck (HSU) were used to simulate the movements of these vehicles as they navigate the site. Key areas of assessment include the existing and proposed accesses on Appleby Line and South Service Road, the external loading space, the interior drive-through parking/loading area, the garbage pick-up location, and the driveway turns.

WB-20s are directed to access the site through the Appleby Line entrance, and from there, they take the driveway located on the south side of the building. This driveway is primarily intended for vehicles that do not need to use the drive-through area. WB-20 trucks will then execute a left turn at the end of the driveway, proceed to the north side of the loading dock, and reverse into the loading docks located on the east side of the building. When exiting the site, WB-20s can drive out of the loading docks and exit via the access on South Service Road, which is directly aligned with the loading docks. Similar maneuvers can be performed with HSUs.

Trucks of sizes similar to standard HSUs or smaller, as well as passenger vehicles, can also make use of the interior drive-through for loading purposes. For heavy vehicles intending to access the interior drive-through loading area, they must enter through the existing right-in/right-out site access on Appleby Line, which aligns with the entrance doors of the drive-through area, for ease of maneuvering. HSUs are demonstrated to be capable of entering and exiting the interior drive-through using both doors.

Garbage containers will be provided at the northeast corner of the site. Garbage collection will be completed using front loading trucks. A Halton Region standard garbage truck has been used as the design vehicle in this assessment, demonstrating that the garbage collection area will be accessible via the Appleby Line access, the southern driveway, and the eastern driveway. Garbage trucks will exit the site via the South Service Road access.

Appendix M includes drawings illustrating the turning paths for the design vehicles and vehicle profile information. All turning paths are accommodated by the proposed curbs and driveways.

6.2 Development Access

6.2.1 Access Design

Access to the proposed development will be accommodated by a right-in / right-out (RIRO) access on Appleby Line which will replace the existing full-movement access at the same location, and a full-movement access on South Service Road.

At the RIRO access on Appleby Line, the northbound approach of the access intersection consists of one through lane and a shared through/right-turn lane, while the southbound approach consists of two through lanes. There are no medians anticipated between the opposite movements. The east approach consists of one westbound right turn lane.

For the full-movement access on South Service Road, the northbound approach of the access intersection comprises one shared left-turn/through/right-turn lane, the southbound approach has one shared left-turn/through/right-turn lane, and the eastbound approach consists of one shared left-turn/right-turn lane.

Using OTM Book 12 Justification 7, and the volume projections herein, the traffic control signal warrant has been assessed for the 2031 Future Total horizon and signals are not warranted for these intersections, as shown in Appendix N.

The warrant for left turn lanes on 2-lane roads has been evaluated for the northbound left movement at the full-movement access on South Service Road following MTO's *Geometric Design Standards for Ontario Highways*. An exclusive southbound left-turn lane is not warranted due to the low southbound left-turn volumes projected, as shown in Appendix O.

Regarding exclusive right-turn lanes, while there are no specific standards dictating their requirement, the projected right-turn volumes at both the Appleby Line access and the South Service Road access are considered too low (below 50) to necessitate exclusive right-turn lanes. This decision also takes into account the available right-of-way. Synchro analysis results have further demonstrated that exclusive right-turn lanes are not necessary from an operational perspective.

The width of the Appleby Line access is expected to remain at 13 meters. The proposed full-movement access will be 14 meters wide, allowing for two-way truck traffic, as demonstrated in the vehicle turning templates. Although both access widths exceed the recommended maximum two-way access width of 12 meters for industrial developments in an urban environment, in line with the *TAC Geometric Design Guide* cited by Halton Region's *Access Management Guidelines*, these dimensions are necessary to accommodate the design vehicles.

6.2.2 Access Spacing

The subject site is situated within an urban environment featuring a mix of commercial and industrial land uses. The right-in/right-out (RIRO) access on Appleby Line is located on a Regional road, and as such, it is evaluated in accordance with the Halton Region's *Access Management Guideline*.

The Guideline suggests a minimum spacing of 115 to 140 meters between right-in/out accesses in general. Specifically, for a 'C1' type regional road, the minimum spacing requirement for right-in/out accesses is set at 115 meters. However, the Guideline also acknowledges that there may be cases where such spacing is not feasible due to land use characteristics, or due to physical and economic considerations. In such instances, a reduced spacing of 30 to 60 meters may be considered.

The RIRO access in question is positioned 120 meters south of the Highway 403 eastbound on-ramp. Additionally, it is located 40 meters north of the exit for the Esso gas station and 75 meters north of the entrance to the Esso gas station. The Esso gas station's access points are regulated by medians and signage, with the exit being restricted to right-out only and the entrance being limited to right-in only. These arrangements are in place to facilitate on-site traffic flow for the gas station's operational needs and to prevent undesirable cut-through traffic accessing adjacent destinations. As such, retaining the existing access and transforming it to a RIRO access aligns with the Region's requirements and is considered suitable.

The full-movement access on South Service Road falls outside the jurisdiction of the Region. It is positioned 30 meters south of the access to 5044 South Service Road, 55 meters north of the Tim Hortons entrance, and 120 meters north of the Harvester Road at South Service Road intersection. The spacing for this full-movement access is deemed appropriate. Notably, the proposed access consolidates two accesses previously proposed during the pre-consultation process and aligns with an existing access. This alignment minimizes any additional impacts compared to the Existing Conditions.

6.2.3 Access Alignment

The proposed full-movement access on South Service Road is intended to align with the existing Burkert Access. The specific design of this access will be further refined during the site plan approval stage once updated survey drawings have been made available. This full-movement access is strategically aligned with the on-site loading docks, which facilitates easier truck access to the site.

Regarding the RIRO access on Appleby Line, it will remain in its current location. Details related to potential medians will be determined by the Region as part of the Appleby Line widening design. Currently, the existing concrete median extends only up to the Esso gas station exit. However, future enhancements will ensure compliance with turning restrictions. This may involve adjustments such as repainting the southbound left-turn lane pavement markings to remove the turning arrows and storage lane. Additionally, appropriate signage will be installed to enforce the prohibition of inbound and outbound left-turning movements.

6.2.4 Throat Lengths

Following the TAC Geometric Guide for Canadian Roads, for a light industrial development with a size between 10,000 and 45,000 square metres, the throat length at the site access on Appleby Line, an arterial, needs to be at least 30 metres, while the throat length at the site access on South Service Road, a connector, needs to be at least 15 metres. The clear throat distances are measured from the edge of asphalt to the first point of conflict at each access.

At the Appleby Line access, inbound vehicles will primarily be heading toward the drive-through loading area, which is equipped with two high-speed rollup doors. These doors open in 3 seconds and close in 5 seconds, allowing vehicles to enter quickly and efficiently. Two doors are provided to both increase the efficiency of entering vehicles and to provide redundancy in the rare event that one door is out of service. Since self-storage users represent a small portion (approximately 30%) of the total site traffic, and only around 50% of self-storage traffic uses the interior drive-through every time (survey data included in Section 7.3.1.2), there will be 11 to 12 vehicles using the interior drive-through per hour during the AM and PM peaks. This is equivalent to 6 vehicles per door per hour during the peak periods, averaging to 1 vehicle every 10 minutes. It will be unlikely that queuing at the rollup doors will exceed the throat length. Therefore, the first point of on-site vehicular conflict at the Appleby Line access is where the access driveway and the driveway serving the surface parking area intersect. The current and future throat length of this access will be approximately 28 meters. While this does not meet the TAC

standards, it is considered acceptable. There are only 6 surface parking spaces accessible through this driveway, which will result in infrequent traffic circulation at this location. Therefore, significant blockage due to vehicles leaving the parking spaces is unlikely. In addition, the restrictions on left turns in the future will reduce negative impacts compared to the existing full-movement access with the slightly deficient throat length. Synchro analysis for the 2031 Future Total conditions shows that the access will not create operational issues such as blocking traffic on the adjacent streets, with 95th percentile queues of the inbound movements being minimal (1 meter during the AM peak and 4 meters during the PM peak) and accommodated by the provided throat length.

For the South Service Road access, the throat length is identified as 10 meters. The first point of on-site vehicular conflict is in front of the access where vehicles access the loading dock, garbage collection area, and outbound traffic from the drive-through and southern driveway will potentially conflict with inbound traffic. Inbound vehicles at this access mostly head towards the 3 surface parking spaces or the underground parking ramp at the northeast corner of the building, making right turns upon entering the site. The WB-20s accessing the loading dock and garbage trucks accessing the garbage collection area will occur infrequently or outside of peak hours. Therefore, most inbound vehicles are not expected to encounter these movements. Synchro analysis indicates that the access will not create operational issues in the 2031 Future Total conditions. The queues for inbound movements will be minimal, measuring less than 1 meter during both peak hours and accommodated by the provided throat length.

6.2.5 Sightline Analysis

A sightline analysis has been undertaken for the access on Appleby Line and the access on South Service Road. The purpose is to determine whether any obstructions would limit visibility from the access points to approaching vehicles.

A preliminary review of the access location shows that the segment of Appleby Line north and south of the RIRO access exhibits no horizontal or vertical curvatures. This exercise focused on verifying that northbound traffic along Appleby Line does not impede site traffic, given that the proposed access configuration permits right-turn maneuvers only. The departure sight distance and stopping sight distance were reviewed for a 70 km/h design speed at the Appleby Line access as the posted speed limit on Appleby Line is 60 km/h.

A preliminary review of the access location indicates a slight curvature to the west in the segment of South Service Road starting at approximately 75 metres north of the proposed access. This road geometry has the potential to obstruct visibility from the access point to cars approaching from the north on South Service Road. Both left turn and right turn maneuvers have been examined for the full-movement access. The departure sight distance and stopping sight distance were assessed for a 60 km/h design speed at the South Service Road access as the posted speed limit on South Service Road is 50 km/h.

Table 29 summarizes the required sight distances for each maneuver at each access point. Appendix P includes a sightline drawing and reference tables. As part of this analysis, it has been assumed that the City will maintain a clear right-of-way.

Table 29: Sightline Calculations

Access	Maneuver	Design Speed (km/h)	Required Departure Sight Distance (m)	Required Stopping Sight Distance (m)
RI/RO Access	B2 - Right turn from stop	70	130	105
Full-moves Access	B2 - Right turn from stop	60	110	85
	B1 - Left turn from stop	60	130	85

As indicated above and depicted in the drawings in Appendix P, the accesses are designed to provide sight distances that meet or exceed the minimum requirements for both departure and stopping sight distances. Consequently, no impediments to the sightlines have been identified.

6.3 Parking and Loading

6.3.1 Zoning By-law Requirements

The parking provisions for the proposed development have been reviewed using the amended City of Burlington Zoning By-law 2020. Table 30 documents the required parking based on the Zoning By-law standards alongside the proposed parking provisions. The selected land uses from the Zoning By-law, which have descriptions that most closely align with the proposed development, are considered for this analysis.

Table 30: 5051 Harvester Road Vehicle Parking Requirements – Zoning By-law Approach

Type	GFA (m^2)	*Parking Rate*	Parking Spaces Required	Parking Spaces Provided	Difference
Storage Locker Facility	21,710	*0.5 spaces per 100.0 m^2 GFA*	109	166	-140
Office (Other)	5,195	*3.0 spaces per 100.0 m^2 GFA*	156		
Retail Store	1,159	*3.5 spaces per 100.0 m^2 GFA*	41		
		Total	**306**	**166**	**-140**

As indicated in the table, City of Burlington's Zoning By-law requires a total of 306 parking stalls to be provided. The proposed development, however, plans for 166 parking stalls, resulting in a deficit of 140 spaces.

The Zoning By-law also specifies that each parking space shall have a minimum width of 2.75 m and a minimum area of 16.5 m^2 and be readily accessible. All provided parking spaces satisfy this size requirement with a width of 2.75 m and a length of 6 m, as illustrated on the site plan.

6.3.2 Proxy Site Parking Demand

To support the proposed number of parking for the Dymon development, a parking survey has been undertaken at four Dymon proxy sites utilized in the Trip Generation exercise outlined in Section 4.1.2.2. The site statistics is detailed in Table 15.

Parking counts at 323 Coventry Road and 300 Greenbank Road were taken in June 2019. Parking counts at 5 Nevets Road and 1460 The Queensway were obtained on two different dates in March 2022, as these two sites came into operation more recently. Subsequent to the initial survey at 1460 The Queensway, additional counts were collected in October 2022 exclusively for the Work Refined office and in March 2023 for the entire site, covering four consecutive count dates. These surveys, conducted on the busiest days of the week, offer insights into parking demand increase as the proxy site approaches full occupancy. Appendix Q contains the proxy parking generation counts and calculation sheets for 323 Coventry Road and 300 Greenbank Road in Ottawa and 1460 The Queensway and 5 Nevets Road in the GTA. Table 31 lists the count dates on which the parking surveys have been conducted and the land use components of each of the Dymon proxy sites.

Table 31: Parking Count Dates

Location	Land Uses	Count Date
323 Coventry Road, Ottawa	Self-storage Retail	Saturday, June 8, 2019 Monday, June 10, 2019
300 Greenbank Road, Ottawa	Self-storage Retail	Saturday, June 8, 2019 Monday, June 10, 2019
1460 The Queensway, Toronto	Self-storage Retail Co-working Office Space	Saturday, February 12, 2022 Tuesday, February 15, 2022 Thursday, October 20, 2022 Wednesday, March 29, 2023 Thursday, March 30, 2023 Friday, March 31, 2023 Saturday, April 1, 2023
5 Nevets Road, Brampton	Self-storage Retail	Saturday, February 12, 2022 Tuesday, February 15, 2022

323 Coventry includes parking operations that will not be present on the proposed 5051 Harvester Road site. 323 Coventry currently has parking stalls reserved for long term parking. While these are reserved for this use it is possible for vehicles to park in these stalls throughout the day. To ensure that the daily, short-term, high turnover parking requirements are accurately captured the parking survey for this site was undertaken starting 30 minutes prior to the opening of the site and ending 30 minutes after the site closed for business. This was done for both the weekday and weekend survey periods. The minimum number of parking stalls occupied throughout the entirety of each survey period was noted. This was then subtracted from the maximum total parking demand. This represents the maximum short-term demand. Additionally, as noted on the approved site plan there are 11 parking stalls that are not in use to accommodate truck turning movements. Through the site survey it was determined that eight parking stalls are not in use in this area and are signed to prohibit parking. Table 32 below summarizes the total parking provisions for 323 Coventry Road.

Table 32: 323 Coventry Road Parking Provisions

Total Parking Stalls	Unsecured Parking Stalls	Secured Parking Stalls	Restricted to Accommodate Truck Movements
44	18	26	8

The 18 unsecured parking stalls noted above are potentially available for short-term parking (the secured parking is reserved for long-term parking). However, the survey found that four of the unsecured parking stalls were occupied at the start / end of the survey and are therefore not available for use as short-term parking stalls. The remaining 14 parking stalls were assumed to be available for short-term parking use.

The other proxy sites do not accommodate long term parking, as a result there was no need to account for the impact in the counts, and the peak periods were surveyed to capture a relevant data set.

Table 33 summarizes the parking supply and parking demand for the two sites as well as the calculated parking supply rate and parking demand rate. The exterior parking supply has been included. For 323 Coventry Road this supply has been calculated based on the number of parking stalls not in use for long-term parking.

As Dymon's business model makes use of an interior loading space which can accommodate more vehicles than the defined parking stalls, the interior parking supply has been tabulated based on the maximum demand for interior parking observed at each site.

Table 33: Self-Storage and Retail Parking Survey Summary

Site	GFA (m^2)	Parking Supply (Exterior)	Parking Supply (Interior)	Parking Supply (Total)	Parking Demand	Parking Supply Rate	Parking Demand Rate
323 Coventry	12,351	14	7	21	11	0.17/100m^2	0.09/100m^2
300 Greenbank	9,195	9	5	14	11	0.15/100m^2	0.12/100m^2
1460 The Queensway (February 2022)	28,799	173	59	232	49	0.81/100m^2	0.17/100m^2
1460 The Queensway (March - April 2023)	28,799	173	59	232	95	0.81/100m^2	0.33/100m^2
5 Nevets	13,012	34	7	41	13	0.32/100m^2	0.10/100m^2
Self-storage Average	-	-	-	-	-	0.41/100m^2	0.16/100m^2

Table 34 summarizes the parking supply and parking demand for the Work Refined component at 1460 The Queensway site. It is observed that the parking demand rate has been steadily increasing. While the occupancy rate at the office in March 2022 was around 65%, it is approaching full occupancy in 2023. Therefore, the March 2023 parking demand rate has been applied to calculate the office parking requirement for 5051 Harvester Road.

Table 34: Office Parking Survey Summary

Site	GFA (m^2)	Parking Supply (Exterior)	Parking Supply (Interior)	Parking Supply (Total)	Parking Demand	Parking Supply Rate	Parking Demand Rate
1460 The Queensway (February 2022)	2,192	40	0	0	25	1.82/100m^2	1.14/100m^2
Adjusted							1.77/100m^2
1460 The Queensway (October 2022)	2,192	40	0	0	29	1.82/100m^2	1.32/100m^2
1460 The Queensway (March – April 2023)	2,192	40	0	0	36	1.82/100m^2	1.64/100m^2

Similar to the trip generation it was found that an increase in parking demand is not strongly correlated to an increase in gross floor area. Based on the proposed site plan for 5051 Harvester Road, the gross floor area, and parking stall provisions, the parking rates required and provided for the proposed development have been calculated. Table 35 summarizes the 5051 Harvester Road parking provisions.

Table 35: 5051 Harvester Road Total Parking Requirements

Use	GFA (m^2)	Parking Spaces Provided	Parking Rates	Parking Rates Required	Parking Spaces Required
Self-Storage Warehouse, Reception & Retail	22,987	57	0.25/100m^2	0.16/100m^2	37
Office	5,195	109	2.10/100m^2	1.64/100m^2	86
Total		166			123

It has been calculated that parking is proposed to be provided at a rate of 0.25 per each 100 square metres of gross floor area for the self-storage and retail component and 2.10 per each 100 square metres of gross floor area for the office component. While these are less than the parking rate requested by the City of Burlington, the rates are higher than the peak surveyed parking demand rates at the comparable Dymon sites.

In addition to the above, self-storage patrons will utilize the interior loading space more efficiently than other areas of the site as they will park within the interior loading area to facilitate loading and unloading. On the surveyed sites more than 40% of parked vehicles of self-storage customers utilized the interior loading area for parking.

As a supplementary analysis, the number of vehicles entering the interior loading area, versus the rest was counted at 323 Coventry and 300 Greenbank. Table 36 summarizes the interior loading bay usage.

Table 36: Interior Loading Bay Usage

Site	Weekday		Saturday	
	Exterior%	Interior%	Exterior%	Interior%
323 Coventry	57%	43%	58%	42%
300 Greenbank	42%	58%	54%	46%

As shown above the interior loading area is of critical importance to the parking operations of the self-storage. The parking supply for the self-storage component is actually higher than the parking demand summarized in Table 35.

Therefore, based on the provided interior and exterior parking the site will provide adequate parking to support the proposed uses.

6.3.3 Barrier-free parking

The required accessible parking spaces has been calculated based on City of Burlington's Zoning By-law. The number of accessible parking spaces to be provided should follow the requirements outlined in Table 37.

As a total parking space requirement reduction is requested for the site, the accessible parking requirement will be calculated based on the 166 total parking spaces provided instead of the Zoning By-law total parking spaces requirement of 305.

Table 37: Zoning By-law Accessible Parking Requirements

Land Use	Required Parking	Range	Required Barrier-free Parking Spaces	Accessible Parking Spaces (Required)	Accessible Parking Spaces (Provided)
All	166	Over 90 spaces	3% of required parking	5	5

The total accessible parking space provision is 5, 2 at-grade next to the entrances on the west side of the building and 3 on the underground parking level. The provision will meet the Zoning By-law requirement. All designated accessible parking space will meet the minimum width and area requirements as mentioned in Section 6.3.1 and will be located adjacent to a delineated aisle with a width of 2 metres.

6.3.4 Bicycle Parking

The bicycle parking provisions for the proposed development have been reviewed using the City of Burlington Zoning By-law Section 2.26(10).

Table 38: Bicycle Parking Requirements

Type	GFA (s.m.)/ Units	*Parking Rate*	Parking Spaces Required	Parking Spaces Provided
Industrial	21,474	*2 spaces plus 0.25 space per 1,000 m^2 GFA*	8	12
Retail, Retail Centre Service Commercial Office, Institutional	5,195	*2 spaces plus 1 space per 1,000 m^2 GFA*	8	12
	1,159		4	
		Total	**20**	**24**

The bicycle parking provision exceeds the Zoning By-law requirements of 20 spaces. Each bicycle parking space shall be at least 60 cm x 1.8 m in size.

6.3.5 Loading

Section 2.25.3 of the City of Burlington Zoning By-law states that "at least one off-street loading space shall be provided in conjunction with every principal building" regardless of land uses, except for residential buildings less than 4 storeys high. Therefore, one loading space is required by the City of Burlington By-law for the proposed Dymon development.

Two typical exterior loading docks will be provided on site, enabling WB-20s to load and unload. In addition, there will be an interior drive-through / loading area with a GFA of 1,597 square metres that will provide loading service to mainly self-storage customers. The interior drive-through / loading area connected to the self-storage space is a special feature to Dymon developments, and it improves user experience by allowing quicker access to their storage lockers. The loading spaces within the interior drive-through will not be delineated which endows more freedom to the self-storage users, and sometimes more efficient use of spaces as vehicles.

To support the proposed number and sizes of the loading spaces for the proposed development, proxy site survey data has been used to determine the frequency of truck visits. Table 39 summarizes the surveyed heavy vehicle in and out trips during the heavy truck peak hour of comparable Dymon sites at 1554 Carling Avenue, 323 Coventry Road (two survey dates), 300 Greenbank Road, 1460 The Queensway (two survey dates), and 5 Nevets Road.

Table 39: Net Peak Hour Trucks

Site	AM Peak Hour			PM Peak Hour			Sat Peak Hour		
	In	Out	Net	In	Out	Net	In	Out	Net
1554 Carling	1	2	-1	0	0	0	-	-	-
323 Coventry (May Counts)	0	0	0	0	0	0	-	-	-
323 Coventry (June Counts)	0	0	0	1	3	-2	1	2	-1
300 Greenbank	2	2	0	2	2	0	0	1	-1
1460 The Queensway (February 2022)	0	0	0	0	0	0	0	0	0
1460 The Queensway (October 2022)	1	1	0	1	0	1	-	-	-
5 Nevets Road	0	0	0	0	0	0	0	0	0

As shown above, trucks entering the proxy Dymon sites vary between zero and one during the truck peak hour periods. The demand for loading docks is expected to be even lower, as the proxy site turning movement counts include moving trucks, as well as garbage trucks.

A self-storage site does not have the same loading requirements as a typical manufacturing or warehouse property. A typical warehouse will have a flow of goods into and out of the building necessitating multiple loading bays and significant traffic volumes. However, for a self-storage site this demand is much less as most of the patrons of the site will arrive using a passenger vehicle to retrieve items from or drop-off items in their storage locker and typically store items in the self-storage facility for a much longer period. The co-working office does not use heavy trucks for loading, either. The provision of 2 dedicated loading docks and a 1,597-square-metre interior loading area with unmarked loading spaces is anticipated to satisfy the expected demand based on heavy vehicle trip generation at comparable Dymon sites.

While City of Burlington's zoning by-law does not have specific requirements, the appropriate number of loading spaces have been provided for the proposed development, considering its business model.

7 Transportation Demand Management

Transportation Demand Management (TDM) encompasses a set of measures and procedures implemented to encourage the use of non-auto modes of travel. This is aimed at reducing the reliance on single-occupant vehicle trips. The proposed development adheres to the outlined set of measures where applicable by encouraging and facilitating the use of pedestrian, cycling, and transit facilities.

The proposed development includes a self-storage facility and a co-working office. Different TDM measures are applicable to different land uses. For the co-working office component, one of the most effective Transportation Demand Management (TDM) measures are access and usability of transit, cycling, and pedestrian facilities.

7.1 Transit Measures

The proposed development is well serviced by local and GO transit routes with high frequency. Transit stops are currently conveniently located within 150 meters of the site entrances, including the ones at the existing access to 875 Appleby Line, the Appleby Line at Harvester Road intersection, and the Harvester Road at South Service Road intersection. As a result, the entire development is approximately a 150-metre walking distance to transit facilities. The routes available at these stops connect to other transit routes along Appleby Line, Harvester Road, North Service Road, and the Appleby GO Station where train services are available. With the train services, the site is provided with direct access to long-range regional transit, enhancing mobility and transit experience. The combination of regional and local transit options will be able to satisfy diverse travel needs, potentially encouraging a shift towards increased transit usage and decreased auto usage.

7.2 Active Modes Measures

The site, already serviced by boulevard-separated sidewalks along Appleby Line, Harvester Road, and segments of South Service Road, is planned for enhanced cycling facilities in the future, including protected and buffered bike lanes and improved intersections as discussed in Section 3.2.1. Concrete sidewalks encircle the building, fostering a pedestrian-friendly environment. Anticipated improvements in active transportation facilities aim to encourage cycling and walking, particularly for users of the co-working space.

7.3 Parking Measures

With a clear focus on reducing auto dependence, the proposed development opts for a parking reduction, providing 166 parking spaces, 46% less than the City of Burlington Zoning By-law 2020 requirement of 305 parking spaces as demonstrated in Section 6.1. This reduction aligns with the demonstrated demand and supply data from established Dymon sites used as proxy sites. Considering the site's proximity to transit, the proposed number of

parking spaces will encourage transit usage and reduce auto dependence, particularly for the co-working space visitors who constitute the primary trip generators.

7.4 Mixed-Use and Increased Density

The proposed development is mixed-use, containing self-storage and co-working office spaces. Compared to sites with single land uses, the traffic patterns are inherently distributed across varied peak hours. Compared to single-storey self-storage facilities, Dymon's innovative self-storage model allows for increased density on-site, maximizing leasable and saleable space. This unique approach maintains a lower trip generation rate per unit area compared to ITE rates, contributing to a more efficient transportation flow.

7.5 Short Trips

The Dymon self-storage and co-working office model strategically positions facilities in close proximity to target markets. This means that although the low number of self-storage customer trips are mostly constrained to the auto mode because of the need to transport personal or business belongings, these trips will be made by local residents and business owners, producing minimal vehicle kilometers traveled. This is important to note, as short-distance trips should be treated differently in context of TDM when compared to longer trips, which result in more vehicle kilometers traveled, and oftentimes utilize already constrained inter-city roadways or highways, contributing to congestion, and impacting a larger number of road users. The proximity of Dymon self-storage facilities to the user's homes and businesses also allows for pass-by trips during the peak hours, which has an even lower impact on the overall transportation network efficiency.

8 Recommendations

The proposed development will be integrated into the existing road network. Operational analysis has confirmed that the site traffic's impact on traffic conditions at Study Area intersections is negligible. However, to address network deficiencies present in the 2023 baseline conditions or resulting from the addition of background traffic growth, certain mitigation measures have been recommended.

At the Appleby Line at Harvester Road intersection and the Appleby Line at North Service Road intersection, significant left-turn volumes have been observed, leading to high delays and queues. To mitigate these operational constraints, the implementation of double left turn lanes is proposed for the eastbound left, westbound left, and southbound left movements at the Appleby Line and Harvester Road intersection. Similar improvements are suggested for the westbound left and northbound left movements at the Appleby Line and North Service Road intersection.

Furthermore, the existing access to 875 Appleby Line is recommended to be transformed from a full-movement access to a right-in/right-out access. The existing southbound left turn lane will be repainted, and signage will be installed at the access to prohibit left turns. A full-movement access on South Service Road, aligning with the existing Burkert Access, is proposed to support the development. While no dedicated turn lanes are deemed necessary at this time, these measures will enhance the overall access and egress arrangements.

The proposed accesses and driveways on site are designed to an appropriate size to accommodate the WB-20s' movements. A variance on throat length reduction is justified at the full movement access on South Service Road.

Additionally, the Region's plan to widen Appleby Line from four lanes to six lanes, with construction anticipated to commence in 2029 and complete beyond the study horizons, will increase the road's capacity. This may alleviate the congestions identified at the Appleby Line intersections caused by high through volumes along the Appleby

Line corridor and cannot be fully mitigated by the introduction of double left turn lanes alone. It is recommended that the Region monitor traffic operations at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections and adjust signal timing plans as the intersection configurations change.

The Region's planned MTSA will promote transit usage within the Study Area's proximity. Commuters may opt for transit or carpooling opportunities to circumvent congestion, leading to improved traffic flow. With these proposed network improvements and transit enhancements, the Study Area road network can operate effectively within acceptable operational thresholds in the future.

9 Conclusions

This Transportation Impact Study has examined the trip generation, access requirements, and Study Area road network impact of the proposed 5051 Harvester Road development. The TIS has shown the following:

Introduction and Proposed Site:

- The proposed development analyzed herein will be a mixed-use development consisting of 21,710 square metres (233,689 square feet) of self-storage space, 5,195 square metres (55,921 square feet) of co-working space, and 1,159 square metres (12,475 square feet) of reception / retail space.
- A total of 166 vehicle parking spaces will be provided, including 5 barrier-free parking spaces.
- A total of 24 bicycle parking spaces will be provided on site, including 12 long-term and 12 short-term parking spaces.
- In addition, a 1,597 m^2 interior drive-through / loading area will be provided for the self-storage customers. The development will also include two exterior loading docks on the east side of the building.
- Garbage collections are located in the northern landscaped section near the northeast corner of the site.
- The development will be completed in a single phase and operational by 2026.
- Two vehicular access points will be provided for the proposed development, one right-in / right-out access on Appleby Line and one full-movement access on South Service Road.
- The application for the proposed site is for a Zoning By-Law Amendment.

Existing Conditions:

- Boulevard-separated sidewalks are provided on both sides of Appleby Line, Harvester Road, segments of South Service Road, and one side of North Service Road west of Appleby Line. There are no sidewalks provided on North Service Road east of Appleby Line. Pedestrian crosswalks and signal heads are provided on all sides at the signalized intersections and the Highway 403 off-ramp terminals.
- No cycling facilities are available within the Study Area.
- Existing Burlington Transit routes #11, #50, #80, and #81 and Oakville Transit route #14 service the vicinity of the Study Area, with the closest stops are located at the Appleby Line at Harvester Road or the Harvester Road at South Service Road intersections.
- Operational analysis for the existing conditions is based on 2023 turning movement counts at the Study Area intersections.
- Existing automobile operational analysis indicates good LOS and short delays at most intersections. Several movements are at capacity at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections. The Highway 403 westbound right movement at the off-ramp terminal experiences a v/c ratio above the critical threshold of 0.75, but the queue can be accommodated by the ramp without impacting Highway 403 traffic. Signal timing optimization was applied to the critical

intersections. Despite these efforts, certain v/c ratios and delays still surpass Halton Region's target thresholds, even after the reduction achieved through optimized timing.

Future Background Conditions:

- Both the full build-out horizon of 2026 and the full build-out plus 5 years horizon of 2031 were evaluated.
- The Halton Region and the City of Burlington both requested that a compound annual growth rate of 1% be used for regional and municipal roads, respectively. For consistency, the MTO on and off ramps were assumed to undergo the same compound annual growth rate of 1%.
- Trips generated by the background developments of Oval Court, Tico Creek, and Appleby Mall Residential Towers were incorporated into the 2026 and 2031 Future Background volumes.
- Per Halton Region's instructions, it was assumed that the Appleby Line widening project would not be completed by the 2031 horizon. Consequently, the road network in the 2026 and 2031 Future Background Conditions is expected to remain the same as the Existing Conditions.
- The analysis of the 2026 Future Background traffic volumes, including background corridor growth and nearby developments, revealed that traffic operations would mirror the patterns observed in the 2023 Existing Conditions. The Highway 403 off-ramps were projected to operate without constraints, as the queue projected at the westbound right movement can be safely accommodated by the ramp despite its v/c ratios continued to exceed the 0.75 critical threshold. The existing 875 Appleby Line access was anticipated to have minimal impact on traffic along Appleby Line in the future horizon. Several movements were projected to operate at capacity at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections.
- Traffic operations within the Study Area in the 2031 Future Background horizon are projected to exhibit similar patterns to the 2026 Future Background Conditions, with the same movements experiencing critical v/c ratios. Overall conditions are expected to slightly deteriorate with background annual growth compared to 2026.
- Double left turn lanes were proposed at the Appleby Line at Harvester Road and Appleby Line at North Service Road intersections to provide additional capacity to support the high left turn values.
- It is anticipated that Appleby Line widening will be completed shortly after the 2031 horizon, potentially contributing to improved traffic conditions at all Appleby Line intersections and supporting future growth in the Study Area by providing extra capacity along Appleby Line.

Site Trip Forecasting:

- Proxy Site Data was utilized to establish trip generation rates for each land use. These rates were applied to the self-storage, office, and retail components of the proposed development.
- The proposed development is forecast to generate 106 AM and 95 PM net new two-way vehicle trips in both 2026 and 2031, including 38 AM and 49 PM net new two-way vehicle trips for the self-storage and retail components, and 68 AM and 46 PM net new two-way vehicle trips for the office component.
- Existing self-storage facilities and co-working office spaces have been reviewed to identify the primary catchment areas for the proposed Dymon development, focusing on residents and businesses south of Highway 403 in Burlington. In conjunction with the 2016 TTS local trip distribution for Burlington, the site trip distribution is estimated to be 10% to the north, 40% to the south, 20% to the east, and 30% to the west.

Future Total Conditions:

- With the addition of site traffic volumes in the 2026 and 2031 Future Total Conditions, the Study Area intersections were projected to have v/c ratios, delays, and queues similar to those in the 2026 and 2031 Future Background Conditions. Consequently, the site-generated trips are anticipated to exert minimal impact on future road network traffic conditions.
- Both proposed accesses are expected to operate without constraints.
- The Highway 403 off ramps were projected to operate without constraints, except for the westbound right movement, which may surpass the v/c ratio target of 0.75. Nonetheless, the projected queue falls within the capacity of the ramp, ensuring no adverse effects on Highway 403 traffic conditions.
- Same as in the Future Background Conditions, double left turn lanes were proposed at the Appleby Line at Harvester Road intersection and the Appleby Line at North Service Road intersection to provide additional capacity to support the high left turn values.
- The Appleby Line widening project to be completed beyond the 2031 horizon may alleviate the operational constraints at the Appleby Line intersections within the Study Area that persist despite measures like double left turn lanes and signal optimization.
- Any additional auto trips resulting in a v/c ratio above one will be further incentivized to transfer to alternative routes or modes. As policy around transportation planning transformed in the recent decade, with key performance indicator shifting from vehicle to person trips per hour per kilometer, this trade-off is considered favourable.

Site Circulation:

- Turning templates for garbage trucks and loading trucks were developed using AutoTURN 11.0. WB-20s, HSUs, and Halton Region garbage truck were used as design vehicles.
- The site's accesses, driveways, and external loading bay are designed to accommodate WB-20 trailers and HSUs. The interior drive-through loading area is suitable for HSUs and smaller vehicles, with recommended access via the Appleby Line entry. Halton Region garbage trucks can access the garbage collection area. All turning paths to and from the site are accommodated by the proposed curbs and driveways.

Access Study:

- All intersections formed with the proposed accesses are assumed to operate as unsignalized intersections. Exclusive turn lanes are not warranted at these intersections.
- The Appleby Line access will remain at its current location but will be converted from a full-movement access to a right-in/right-out access.
- A full-movement access on South Service Road is proposed, aligned with the existing Burkert Access.
- Access spacings generally adhere to recommendations in Halton Region's *Access Management Guideline*.
- Access widths are designed to accommodate the truck traffic.
- Although measured clear throat lengths slightly fall below TAC requirements, the site layout minimizes the frequency of conflicting movements and are not anticipated to cause blockages. Synchro operational analysis results confirm that the provided throat lengths will sufficiently accommodate projected queues during peak periods for inbound movements.

Parking Study:

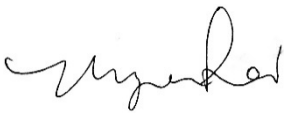
- Dymon proxy site surveys were utilized to determine the parking space requirements for the self-storage and office components, considering that the land uses covered in the zoning by-law do not perfectly represent Dymon's business model.
- The zoning by-law stipulates a more conservative total parking space requirement of 306, while an estimate based on peak parking demand rates from proxy sites requires 123 parking spaces. The proposed 166 parking spaces will satisfy the latter.
- Complying with the zoning regulations, 6 accessible parking spaces have been provided for all uses.
- The total number of bicycle parking spaces provided is 24, including 12 long-term spaces and 12 short-term spaces, which exceed the minimum requirement by 4 spaces.
- One loading space is required for all uses combined according to the zoning by-law. The general loading rate prescribed by the zoning by-law does not provide a good reference to calculate the loading requirements for Dymon's self-storage and co-working facilities. The provision of 2 external loading spaces and an interior drive-through loading area meets the zoning by-law requirement and has been supported by the proxy site truck traffic data.

Transportation Demand Management Plan:

- TDM measures are proposed to further encourage commuters to shift away from single occupant vehicle trips. The mixed-use nature of this development contributes to reducing peak hour auto trips. The most effective measures, particularly for the co-working office land use which is the dominant trip generator, are access and usability of transit facilities, access and usability of active modes, and parking reductions.

The proposed development will have a minor impact on the Study Area road network. Given its location, design, and recommended TDM measures, the proposed development will encourage a movement away from single-occupant vehicles and will therefore seamlessly integrate with the future vision for the surrounding area. It is recommended that, from a transportation perspective, the proposed development application proceeds.

Prepared By:



Zhengxuan Lai, E.I.T.
289-834-0646
May.Lai@CGHTransportation.com

Reviewed By:



August 28, 2024

Mark Crockford, P. Eng.
905-251-4070
Mark.Crockford@CGHTransportation.com

Appendix A

Scope Confirmation

Technical Memorandum

To:	Smeeta Adiga – City of Burlington Adam Huycke – Halton Region Usman Akhtar – MTO	Date:	2023-05-17
Cc:	Mark Crockford – CGH Transportation		
From:	Zhengxuan Lai, E.I.T.	Project Number:	2021-122

Re: 5051 Harvester Road – Terms of Reference

We have been asked to undertake a Transportation Impact Study (TIS) for Dymon Group located south of the Highway 403 interchange at Appleby Line. The proposed development includes a mix of Dymon Self-Storage and office land uses. The five-storey building will include approximately 246,088 square feet of self-storage, 90,958 square feet of office space, along with 11,713 square feet of retail/reception space. Access to the site will be via one right-in/right-out access on Appleby Line, one right-in/right-out access on South Service Road, and one right-out only exist on South Service Road. It is anticipated that vehicle parking provisions will not meet the Zoning By-law requirements and will be justified with proxy site data. The preliminary site plan is shown in Attachment 1.

We have prepared the following TIS scope of work for review based on the above assumptions. Please let us know if you have any comments or additions.

Transportation Impact Study Requirements (TIS):

The Region of Halton's Transportation Impact Guidelines and the City of Burlington's Traffic Impact Study Guidelines as well as previous traffic studies for developments within the City of Burlington will be used as reference documents. Additionally, as this site is within the MTO's Permit Control Area, MTO will be a review agency for this TIS, and the study will be prepared in accordance with the MTO Traffic Impact Study Guidelines.

Study Area:

- An overview of the transportation system existing conditions will be documented.
- A summary of existing transportation planning policies within the Study Area will be identified.
- An overview of the Study Area road network will be provided including the road classification and descriptions of:
    - Appleby Line
    - Harvester Road
    - South Service Road
    - Highway 403
- The following intersections will be included in the Transportation Impact Study:
    - Harvester Road at Appleby Line
    - South Service Road at Harvester Road
    - Eastbound Highway 403 Appleby Line Ramp Terminal
    - Westbound Highway 403 Appleby Line Ramp Terminal
    - One Site Access on Appleby Line
    - Two Site Accesses on South Service Road

Analysis Assumptions:

- Horizon years: 2023, 2026 (Buildout), and 2031 (+ 5 years).
- AM and PM peak hours as the trip generation of the office component is much higher than that of the self-storage component.

Existing Study Area Conditions:

- **Existing Turning Movement Count Summary Reports will be requested for the following intersections from Halton Region and the Town of Oakville staff, as applicable, and will be used to produce the existing conditions auto, cyclist, and pedestrian volumes within the Study Area:**
    - Harvester Road at Appleby Line
    - South Service Road at Harvester Road
    - Eastbound Highway 403 Appleby Line Ramp Terminal
    - Westbound Highway 403 Appleby Line Ramp Terminal
- **Signal Timing Plans will be requested for the same intersections from Halton Region and the Town of Oakville:**
    - Harvester Road at Appleby Line
    - South Service Road at Harvester Road
    - Eastbound Highway 403 Appleby Line Ramp Terminal
    - Westbound Highway 403 Appleby Line Ramp Terminal

Trip Generation:

- The trip generation rates will be determined by comparing the rates from the ITE Trip Generation Manual 11th Edition and the proxy site surveys at comparable Dymon locations in Ottawa and GTA.
    - LUC 710 General Office might not be applicable in this case as the office area is a shared workspace
    - LUC 151 Mini Storage rates and LUC 822 (Strip Retail Plaza <40k) rates will be compared with the proxy site data rates and the most appropriate one will be applied

Trip Distribution and Trip Assignment:

- Trip distribution and assignment of auto trips will be determined using TTS and surrounding area characteristics.

Background Traffic:

- **Projections from the Region's transportation demand forecasting models are requested from Halton Region**
    - on Appleby Line between Highway 403 and Harvester Road.
- **Historical counts are requested from the City of Burlington**
    - on Harvester Road between Appleby Line and South Service Road
    - on South Service Road north of Harvester Road
- A compound annual growth rate will be calculated and applied to auto, walking, cycling and transit 2023 existing volumes, as applicable, to establish the 2026 and 2031 future analysis horizon volumes.
- If the Region or City have a preferred growth rate, please provide that and it will be used in place of the above methodology.
- The following background developments will be considered in this study:
    - UrbanSolutions - 961 and 970 Zelco Dr. and 4425 South Service Rd. (TIS requested from the City if available)
    - 1215 Appleby Line Holdings Inc. - 5030-5045 Tico Creek Common
    - Fairview GO Limited - 5041 Fairview Street (TIS requested from the City if available)
    - Branthaven Development Corp. - 720, 735, 740 Oval Ct. & 5135 and 5155 Fairview St. (Currently under appeal, TIS requested from the City if available)
    - IBI Group - 4350 Harvester Rd. (TIS requested from the City if available)
    - Appleby Mall - 5111 New St.

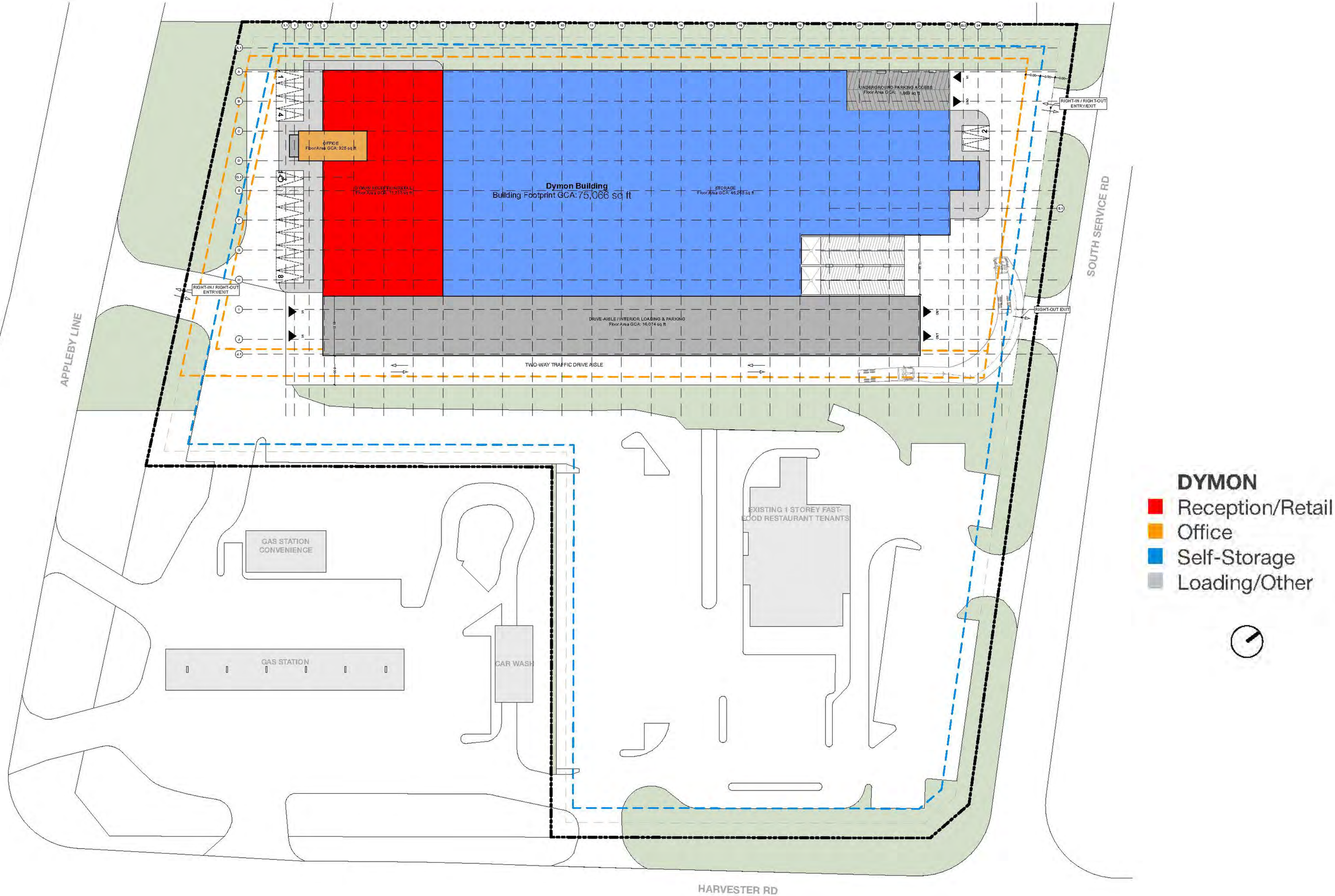
Traffic Analysis:

- Traffic analysis to be performed using Synchro 11 on Study Area network intersections to determine the LOS, delay, V / C ratio and the 95th percentile queues.
    - Critical movements will be defined using the TIS Guidelines.
    - Heavy Vehicle % and Peak Hour Factors will be taken from the collected TMC data. Where information is not available, a Heavy Vehicle % of 2%, and the Peak Hour Factor of an adjacent intersection will be applied.
    - Synchro default ideal saturation flow rate of 1900 vphpl to be used unless specific values are requested from the City of Burlington.
    - Other Synchro inputs will be based on site observations as well as Synchro default parameters.
- The site circulation will be reviewed.
- The site accesses will be examined.
- Parking and loading will be evaluated against the City of Burlington Zoning By-law. It is anticipated that the parking provision will be lower than the 408 parking spaces required by the Zoning By-law. The proposed parking rates will be justified by observed rates at proxy sites.

Recommendations:

- Any recommended offsite improvements or mitigation measures, which may include turn lane requirements, pedestrian / cycling / transit amenities, safety measures, etc.

PROPOSED SITE PLAN



May Lai

From: Adiga, Smeeta <Smeeta.Adiga@burlington.ca>
Sent: May 23, 2023 11:41 AM
To: May Lai
Cc: Mark Crockford; Lucas, Sandra; West, Alicia
Subject: RE: 5051 Harvester Road - Transportation Impact Study TOR

Hi May,

Thankyou for the Terms- of - Reference (TOR) with respect to 5051 Harvester Road, Burlington. Please ensure Region and MTO comments are considered.
The submi' ed TOR is acceptable, with the understanding that may require modifica*ons to address any concerns/comments raised by the Region or the MTO.

Here are the relevant City contact and informa*on for your reference:

a) For inquiry related to traffic signals, Please reach out to Jack Ready at Jack.Ready@burlington.ca
b) For inquiry related to turning movement counts, Please reach out to Florin Patrau at Florin.Patrau@burlington.ca
c) For inquiry related to transit, Please reach out to Tony Zhuang at Tony.zhuang@burlington.ca
d) Background development informa*on's that are to be included within the study are found in City website. h' ps://www.burlington.ca/Modules/News/en/Development
e) Please incorporate a projected future growth rate of 1% for background traffic within the study, considering a 5-year horizon.

Please refer to Halton's Traffic Impact Study Guidelines. h' ps://www.halton.ca/Repository/Transporta*on-Impact-Study-Guidelines
Finally, ensure that the approved Terms-of-Reference are included as appendices within the Transporta*on Impact Study (TIS).

Thankyou!

Smeeta Adiga
Transportation Planning Technologist
Transportation Services Department

P. 905 335 7600, ext 7691 | E. smeeta.adiga@burlington.ca
Address: 426 Brant Street P.O. Box 5013, Burlington, Ontario, L7R 3Z6

City of Burlington | www.burlington.ca

Our working hours may be different. You are not obligated to reply outside of your typical working hours.

City of Burlington | www.burlington.ca

From: May Lai <may.lai@cghtransportation.com>
Sent: Wednesday, May 17, 2023 10:45 AM
To: Adiga, Smeeta <Smeeta.Adiga@burlington.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>
Subject: 5051 Harvester Road - Transportation Impact Study TOR

CAUTION: This email originated from outside of the organiza*on. Do not click links or open a' achments unless you recognize the sender and know the content is safe.

Hi Smeeta,

CGH Transporta*on has been retained by Dymon Group of Companies to undertake a traffic impact study to support a mixed-use development at 5051 Harvester Road, Burlington. The proposed development will include a self-storage facility, a co-working office and a retail / recep*on. We have prepared the a' ached TOR to support our proposed traffic impact study. Please let us know if City staff have any comments or ques*ons.

Thanks and if City Staff would like to discuss any aspect of our TOR please do not hesitate to reach out.

Best regards,

May Lai, E.I.T.
CGH Transportation Inc.
P:289-834-0646
E:May.Lai@CGHTransportation.com

This message, including any attachments, is privileged and intended only for the addressee(s) named above. If you are not the intended recipient, you must not read, use or disseminate the information contained in this email/fax. If you have received this email/fax transmission in error, please notify the sender immediately by telephone, fax or email and permanently delete this email from your computer/shred this fax, including any attachments, without making a copy. Access to this email/fax by anyone else is unauthorized. Thank you.

From: Huycke, Adam <Adam.Huycke@halton.ca>
Sent: May 23, 2023 8:52 AM
To: May Lai
Cc: Mark Crockford; West, Alicia; 'sandra.lucas@burlington.ca'; Sca) olon, Walter; Krusto, Ma)
Subject: RE: 5051 Harvester Road - Transporta2on Impact Study TOR
Attachments: 2021-122 Dymon 875 Appleby Line Terms of Reference 2023-05-17.pdf

Good Morning May,

Thank you for your submission with respect to 5051 Harvester Road in Burlington. Please accept the following comments from the Region with respect to this submission. I have also copied City Staff on this email for their reference.

Adam

REGION OF HALTON
The terms of reference are generally acceptable.

Please ensure both City and MTO comments are also considered.

Please note the following comments and specific requests from Halton Region:

Access:

It is understood that access to the site will be proposed via:

- one right-in/right-out access on Appleby Line,
- one right-in/right-out access on South Service Road, and
- one right-out only on South Service Road.

Intersections:

It is understood that the following intersections will be included in the Transportation Impact Study:

- Harvester Road at Appleby Line (Signalized)
- South Service Road at Harvester Road (Signalized)
- Eastbound Highway 403 Appleby Line Ramp Terminal (Signalized)
- Westbound Highway 403 Appleby Line Ramp Terminal (Signalized)
- One Site Access on Appleby Line (Un-Signalized)
- Two Site Accesses on South Service Road (Un-Signalized)

Analysis Periods:

It is understood that the analysis assumptions will be:

- Horizon years: 2023, 2026 (Buildout), and 2031 (+ 5 years).
- AM and PM peak hours as the trip generation of the Office component is much higher than that of the Self-Storage component.

Please note, the MTO may request a 10-year horizon.

Timing of Capital Works:

Please be advised that although the planned Appleby Line (Regional Road 20) widening from 4 to 6 lanes (from Fairview Street to Taywood Drive) has a ***Start of Construction***

date of 2029 (in the Capital Budget Plan 2023-2032), the in-operation date could extend into 2032, and is subject to a Council-approved funding plan.

As such, please do not assume that 6-lanes on Appleby Line will be in-operation by the 2031 horizon, for the purposes of the TIS analysis.

Trip Generation:

It is understood that trip generation rates will be determined by comparing the rates from the ITE Trip Generation Manual 11th Edition and the proxy site surveys at comparable Dymon locations in Ottawa and GTA, and that:

- LUC 710 General Office might not be applicable in this case as the office area is a shared workspace
- LUC 151 Mini Storage rates and LUC 822 (Strip Retail Plaza <40k) rates will be compared with the proxy site data rates and the most appropriate one will be applied.

Please ensure that the full rationale for LUC selection and/or proxy site rates selection is documented within the TIS report.

Traffic Data:

- For all general inquiries regarding traffic data availability (Signal Timing Plans, TMC's) from Halton Region roads and intersections, please contact the Road Operations group at trafficdatarequests@halton.ca via direct email.

Transportation Demand Forecasting Model information:

- To obtain information from the Region's transportation demand forecasting model for Appleby Line between Highway 403 and Harvester road (if available) please contact the Infrastructure Network Analyst for Halton Region directly (Wen.Xie@halton.ca) to make a specific inquiry.

Background Growth Rate:

- Please apply a future growth rate of 1% per annum to background traffic for Appleby Line through to the 5 year horizon for the Study.

Background Developments:

- Information and suitability regarding Background Developments are to be confirmed by the City of Burlington.

TIS Report Requirements:

Please note, for the most up to date TIS Guidelines for Halton Region, these can now be found at the following updated web link:
https://www.halton.ca/Repository/Transportation-Impact-Study-Guidelines

The TIS report shall include:

- Site Plan and Map,
- Size & Number of Development Phases,
- Existing Conditions (Study Area Intersections, Road Network, Pedestrian Routes, Cycling Routes, Transit Services),
- Existing Traffic Conditions (Site Operating Characteristics, Data Collection/Traffic Counts, Analysis Periods (5 years Ahead),

- Future Background Conditions (Horizon Years, Horizon Year Volumes)
- Background Traffic Demand (with TMC's < 2 years old),
- Background Traffic Demand Forecast (with acceptable growth rates)
- Site Generated Traffic (Transit Modal Split, Trip Generation/Distribution/Assignment)
- Future Total Traffic Demand,
- Capacity Analysis (by Intersection, with LOS, Avg. Delay, V/C ratios),
- Traffic Impacts (Tables – Total Traffic with/without Mitigation)
- Access Considerations – Existing, Proposed, Geometrics (turn lanes, sight lines),
- Recommendations - Identify required/recommended road improvements either as a result of the development impacts, or general non-development improvements.
- TDM recommendations (Transit, Pedestrian & Cycling Facilities Analysis)
- Conclusions

Adam Huycke, MCIP, RPP, CPT
Senior Planner
Planning Services
Legislative & Planning Services
Halton Region
905-825-6000, ext. 7604 | 1-866-442-5866



This message, including any attachments, is intended only for the person(s) named above and may contain confidential and/or privileged information. Any use, distribution, copying or disclosure by anyone other than the intended recipient is strictly prohibited. If you are not the intended recipient, please notify us immediately by telephone or e-mail and permanently delete the original transmission from us, including any attachments, without making a copy.

From: May Lai <may.lai@cghtransportation.com>
Sent: Wednesday, May 17, 2023 10:48 AM
To: Huycke, Adam <Adam.Huycke@halton.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>
Subject: 5051 Harvester Road - Transportation Impact Study TOR

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe. If you are unsure or need assistance please contact the IT Service Desk.

Hi Adam,

CGH Transporta2on has been retained by Dymon Group of Companies to undertake a transporta2on impact study to support a mixed-use development at 5051 Harvester Road, Burlington. The proposed development will include a self-storage facility, a co-working office and a retail / recep2on. We have prepared the a) ached TOR to support our proposed transporta2on impact study. Please let us know if Region staff have any comments or ques2ons.

Thanks and if Region Staff would like to discuss any aspect of our TOR please do not hesitate to reach out.

Best regards,

May Lai, E.I.T.
CGH Transportation Inc.
P:289-834-0646
E:May.Lai@CGHTransportation.com

May Lai

From: Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>
Sent: July 24, 2023 9:46 AM
To: May Lai
Cc: Vallvé, Nina (MTO); Schmid, Kelly (MTO); Mark Crockford
Subject: RE: 5051 Harvester Road - Transportation Impact Study TOR

Hi May,

1% growth rate is acceptable.

Thanks,

Usman

From: May Lai <may.lai@cghtransportation.com>
Sent: July 18, 2023 3:53 PM
To: Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>
Subject: RE: 5051 Harvester Road - Transportation Impact Study TOR

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Usman,

Both the Halton Region and the City of Burlington staff have instructed us to use 1% annual growth rate for the Study Area road network. To be consistent with the rest of the Study Area, we would like to use the same annual growth rate of 1%.

Please let us know if MTO agrees with the proposed growth rate.

Best regards,

May Lai, E.I.T.
CGH Transportation Inc.
P:289-834-0646
E:May.Lai@CGHTransportation.com

From: Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>
Sent: Monday, July 17, 2023 3:31 PM
To: May Lai <may.lai@cghtransportation.com>
Subject: RE: 5051 Harvester Road - Transportation Impact Study TOR

Hi May,

Please suggest a growth rate to use and submit it for our review and comments.

From: May Lai <may.lai@cghtransportation.com>
Sent: July 17, 2023 3:29 PM
To: Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Routledge, Graham (MTO) <Graham.Routledge@ontario.ca>; Babary, Tariq (MTO) <Tariq.Babary@ontario.ca>
Subject: RE: 5051 Harvester Road - Transportation Impact Study TOR

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Usman,

As we are using the MTO TMC counts for opera?onal analysis, is there a target annual growth rate MTO would like us to use to forecast background trips for future horizons?

Best regards,

May Lai, E.I.T.
CGH Transportation Inc.
P:289-834-0646
E:May.Lai@CGHTransportation.com

From: Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>
Sent: Wednesday, June 21, 2023 11:42 AM
To: May Lai <may.lai@cghtransportation.com>
Cc: Mark Crockford <mark.crockford@cghtransportation.com>; Routledge, Graham (MTO) <Graham.Routledge@ontario.ca>; Babary, Tariq (MTO) <Tariq.Babary@ontario.ca>
Subject: RE: 5051 Harvester Road - Transportation Impact Study TOR

Hi May,

We have reviewed the TOR and have the following comments:

1. QEW/Appleby Line Interchange Signalized Ramp Terminals: Traffic Analysis are to be performed using MTO TMC counts.
    a. Include Appleby Line/North Service Road signalized intersection in traffic analysis.
    b. Depending upon Trip Assignment, additional interchange east QEW/Burloak Dr. and west QEW/Walkers Line to be included in the analysis.
2. Existing accesses at Appleby Line must be closed so no access to the proposed property should be from Appleby Line.
3. Existing Bike Lane/MUP Future Status to be clarified.

Further informa?on and the MTO TIS guidelines are available at: hI ps://www.ontario.ca/page/highway-corridor-management

From: May Lai <may.lai@cghtransportation.com>
Sent: May 17, 2023 11:01 AM
To: Akhtar, Usman (MTO) <Usman.Akhtar@ontario.ca>

Cc: Mark Crockford <mark.crockford@cghtransportation.com>
Subject: 5051 Harvester Road - Transportation Impact Study TOR

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Usman,

CGH Transporta?on has been retained by Dymon Group of Companies to undertake a transporta?on impact study to support a mixed-use development at 5051 Harvester Road, Burlington. The site is located south of the QEW interchange at Appleby Line and within MTO's Permit Control Area. The proposed development will include a self-storage facility, a co-working office and a retail / recep?on. We have prepared the aI ached TOR to support our proposed transporta?on impact study. Please let us know if MTO staff have any comments or ques?ons.

Thanks and if MTO Staff would like to discuss any aspect of our TOR please do not hesitate to reach out.

Best regards,

May Lai, E.I.T.
CGH Transportation Inc.
P:289-834-0646
E:May.Lai@CGHTransportation.com

Appendix B

Turning Movement Count Data

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #23-182 - CGH Transportation

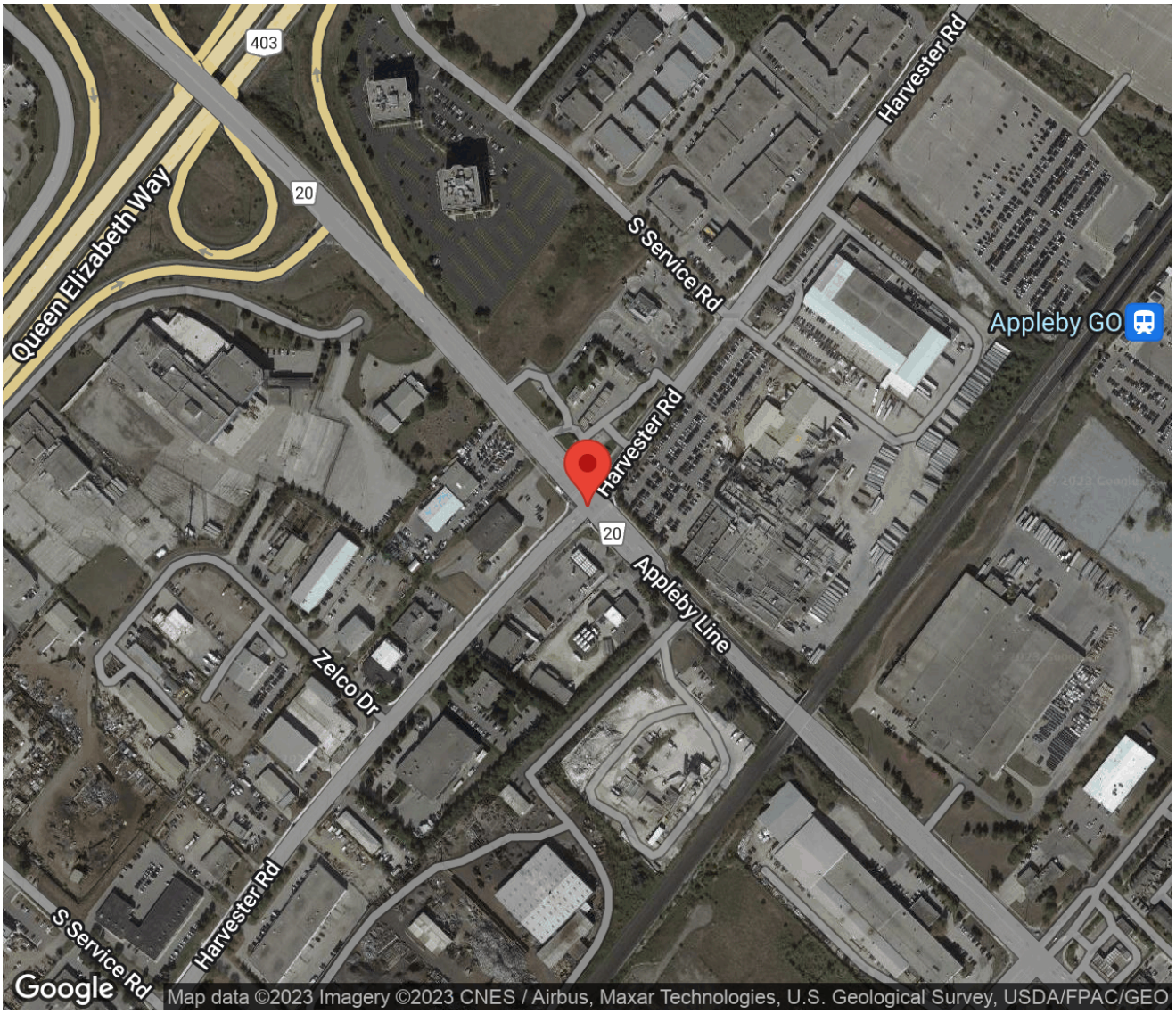
Intersection Count Report

Intersection:	Appleby Line & Harvester Rd
Municipality:	Burlington
Count Date:	Wednesday, Jun 14, 2023
Site Code:	2318200001
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Appleby Line & Harvester Rd
Site Code:	2318200001
Municipality:	Burlington
Count Date:	Jun 14, 2023



Peak Hour Diagram

Specified Period
From: 07:00:00
To: 09:00:00

One Hour Peak
From: 07:45:00
To: 08:45:00

Intersection: Appleby Line & Harvester Rd
Site Code: 2318200001
Count Date: Jun 14, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Approach

	Out	In	Total
Cars	1107	1300	2407
Trucks	80	78	158
Bicycles	0	2	2
	1187	**1380**	**2567**

Appleby Line

Bicycles	0	0	0	0
Trucks	24	39	17	0
Cars	290	539	278	0
Totals	**314**	**578**	**295**	**0**

East Approach

	Out	In	Total
Cars	365	1303	1668
Trucks	39	47	86
Bicycles	2	0	2
	406	**1350**	**1756**

Harvester Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	31	154	**185**
0	21	692	**713**
0	16	46	**62**

Peds: 10

Peds: 4

N
W
E
S

Peds: 5

Peds: 1

Harvester Rd

Totals	Cars	Trucks	Bicycles
0	0	0	0
188	159	27	2
137	131	6	0
81	75	6	0

West Approach

	Out	In	Total
Cars	892	501	1393
Trucks	68	37	105
Bicycles	0	0	0
	960	**538**	**1498**

Totals	**87**	**1007**	**342**	**0**
Cars	80	987	333	0
Trucks	7	20	9	0
Bicycles	0	0	0	0

Appleby Line

South Approach

	Out	In	Total
Cars	1400	660	2060
Trucks	36	61	97
Bicycles	0	0	0
	1436	**721**	**2157**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Appleby Line & Harvester Rd
Site Code: 2318200001
Count Date: Jun 14, 2023
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

Start Time	North Approach Appleby Line						South Approach Appleby Line						East Approach Harvester Rd						West Approach Harvester Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:45	85	146	73	0	1	304	21	286	98	0	0	405	22	28	42	0	0	92	50	183	12	0	0	245	1046
08:00	76	136	62	0	2	274	22	247	90	0	0	359	18	32	45	0	0	95	38	165	19	0	1	222	950
08:15	76	138	83	0	1	297	23	257	89	0	1	369	17	38	47	0	5	102	46	166	14	0	1	226	994
08:30	58	158	96	0	6	312	21	217	65	0	0	303	24	39	54	0	0	117	51	199	17	0	2	267	999
Grand Total	**295**	**578**	**314**	**0**	**10**	**1187**	**87**	**1007**	**342**	**0**	**1**	**1436**	**81**	**137**	**188**	**0**	**5**	**406**	**185**	**713**	**62**	**0**	**4**	**960**	**3989**
Approach %	24.9	48.7	26.5	0		-	6.1	70.1	23.8	0		-	20	33.7	46.3	0		-	19.3	74.3	6.5	0		-	
Totals %	7.4	14.5	7.9	0		29.8	2.2	25.2	8.6	0		36	2	3.4	4.7	0		10.2	4.6	17.9	1.6	0		24.1	
PHF	**0.87**	**0.91**	**0.82**	**0**		**0.95**	**0.95**	**0.88**	**0.87**	**0**		**0.89**	**0.84**	**0.88**	**0.87**	**0**		**0.87**	**0.91**	**0.9**	**0.82**	**0**		**0.9**	**0.95**
Cars	278	539	290	0		1107	80	987	333	0		1400	75	131	159	0		365	154	692	46	0		892	3764
% Cars	94.2	93.3	92.4	0		93.3	92	98	97.4	0		97.5	92.6	95.6	84.6	0		89.9	83.2	97.1	74.2	0		92.9	94.4
Trucks	17	39	24	0		80	7	20	9	0		36	6	6	27	0		39	31	21	16	0		68	223
% Trucks	5.8	6.7	7.6	0		6.7	8	2	2.6	0		2.5	7.4	4.4	14.4	0		9.6	16.8	2.9	25.8	0		7.1	5.6
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	2	0		2	0	0	0	0		0	2
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	1.1	0		0.5	0	0	0	0		0	0.1
Peds					10	-					1	-					5	-					4	-	20
% Peds					50	-					5	-					25	-					20	-	

Peak Hour Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Intersection: Appleby Line & Harvester Rd
Site Code: 2318200001
Count Date: Jun 14, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Approach

	Out	In	Total
Cars	1708	1327	3035
Trucks	79	35	114
Bicycles	1	0	1
	1788	**1362**	**3150**

Appleby Line

Bicycles	0	0	1	0
Trucks	48	23	8	0
Cars	240	1312	156	0
Totals	**288**	**1335**	**165**	**0**

East Approach

	Out	In	Total
Cars	1216	537	1753
Trucks	42	22	64
Bicycles	0	1	1
	1258	**560**	**1818**

Peds: 3

Harvester Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	10	258	**268**
0	8	233	**241**
0	4	182	**186**

Peds: 5



Peds: 7

Harvester Rd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	280	267	13	0
	562	543	19	0
	416	406	10	0

Peds: 6

West Approach

	Out	In	Total
Cars	673	877	1550
Trucks	22	73	95
Bicycles	0	0	0
	695	**950**	**1645**

Appleby Line

Totals	**100**	**814**	**154**	**0**
Cars	94	802	148	0
Trucks	6	12	6	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	1044	1900	2944
Trucks	24	37	61
Bicycles	0	0	0
	1068	**1937**	**3005**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Appleby Line & Harvester Rd
Site Code: 2318200001
Count Date: Jun 14, 2023
Period: 16:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Appleby Line						South Approach Appleby Line						East Approach Harvester Rd						West Approach Harvester Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:30	50	345	70	0	0	465	17	220	39	0	1	276	113	146	86	0	2	345	70	44	47	0	0	161	1247
16:45	37	344	82	0	0	463	31	163	35	0	1	229	100	139	69	0	3	308	65	72	40	0	0	177	1177
17:00	43	342	58	0	3	443	26	243	38	0	1	307	94	99	65	0	2	258	80	65	48	0	0	193	1201
17:15	35	304	78	0	0	417	26	188	42	0	3	256	109	178	60	0	0	347	53	60	51	0	5	164	1184
Grand Total	**165**	**1335**	**288**	**0**	**3**	**1788**	**100**	**814**	**154**	**0**	**6**	**1068**	**416**	**562**	**280**	**0**	**7**	**1258**	**268**	**241**	**186**	**0**	**5**	**695**	**4809**
Approach %	9.2	74.7	16.1	0		-	9.4	76.2	14.4	0		-	33.1	44.7	22.3	0		-	38.6	34.7	26.8	0		-	
Totals %	3.4	27.8	6	0		37.2	2.1	16.9	3.2	0		22.2	8.7	11.7	5.8	0		26.2	5.6	5	3.9	0		14.5	
PHF	**0.83**	**0.97**	**0.88**	**0**		**0.96**	**0.81**	**0.84**	**0.92**	**0**		**0.87**	**0.92**	**0.79**	**0.81**	**0**		**0.91**	**0.84**	**0.84**	**0.91**	**0**		**0.9**	**0.96**
Cars	156	1312	240	0		1708	94	802	148	0		1044	406	543	267	0		1216	258	233	182	0		673	4641
% Cars	94.5	98.3	83.3	0		95.5	94	98.5	96.1	0		97.8	97.6	96.6	95.4	0		96.7	96.3	96.7	97.8	0		96.8	96.5
Trucks	8	23	48	0		79	6	12	6	0		24	10	19	13	0		42	10	8	4	0		22	167
% Trucks	4.8	1.7	16.7	0		4.4	6	1.5	3.9	0		2.2	2.4	3.4	4.6	0		3.3	3.7	3.3	2.2	0		3.2	3.5
Bicycles	1	0	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
% Bicycles	0.6	0	0	0		0.1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					3	-					6	-					7	-					5	-	21
% Peds					14.3	-					28.6	-					33.3	-					23.8	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #23-182 - CGH Transportation

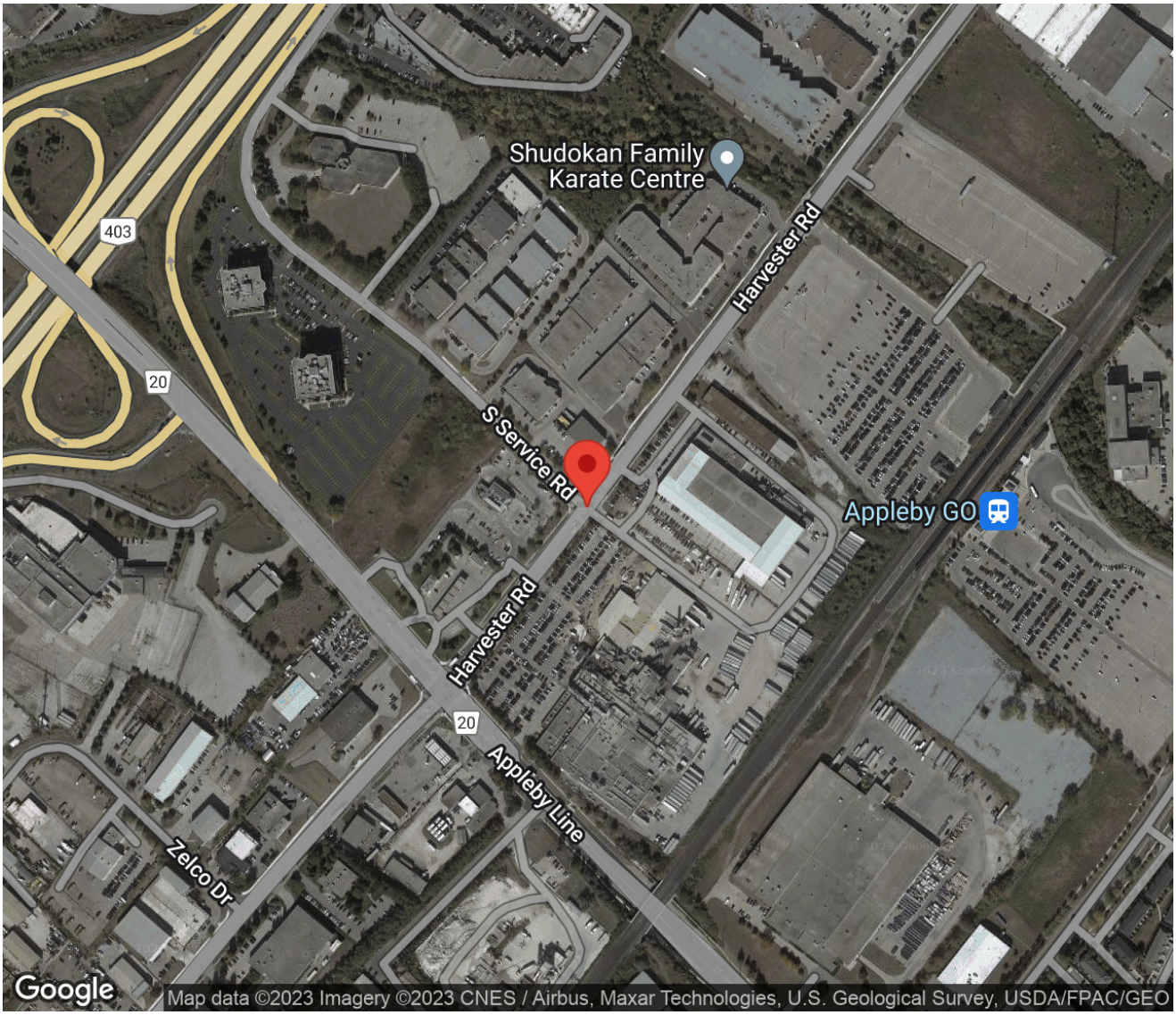
Intersection Count Report

Intersection:	Harvester Rd & South Service Rd
Municipality:	Burlington
Count Date:	Wednesday, Jun 14, 2023
Site Code:	2318200002
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Harvester Rd & South Service Rd
Site Code:	2318200002
Municipality:	Burlington
Count Date:	Jun 14, 2023



Peak Hour Diagram

Specified Period
From: 07:00:00
To: 09:00:00

One Hour Peak
From: 07:45:00
To: 08:45:00

Intersection: Harvester Rd & South Service Rd
Site Code: 2318200002
Count Date: Jun 14, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Harvester Rd runs E/W

North Approach

	Out	In	Total
Cars	174	215	389
Trucks	4	2	6
Bicycles	0	0	0
	178	**217**	**395**

South Service Rd

Bicycles	0	0	0	0
Trucks	4	0	0	0
Cars	115	1	58	0
Totals	**119**	**1**	**58**	**0**

East Approach

	Out	In	Total
Cars	285	1113	1398
Trucks	28	41	69
Bicycles	0	0	0
	313	**1154**	**1467**

Harvester Rd

Bicycles	Trucks	Cars	Totals	
0	0	0	**0**	
0	2	179	**181**	
0	38	1055	**1093**	
0	6	3	**9**	

Peds: 4

Peds: 10

N
W
E
S

Peds: 0

Peds: 4

Harvester Rd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	36	36	0	0
	272	247	25	0
	5	2	3	0

West Approach

	Out	In	Total
Cars	1237	363	1600
Trucks	46	38	84
Bicycles	0	0	0
	1283	**401**	**1684**

Totals	**10**	**0**	**3**	**0**
Cars	1	0	0	0
Trucks	9	0	3	0
Bicycles	0	0	0	0

South Service Rd

South Approach

	Out	In	Total
Cars	1	6	7
Trucks	12	9	21
Bicycles	0	0	0
	13	**15**	**28**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Harvester Rd & South Service Rd
Site Code:	2318200002
Count Date:	Jun 14, 2023
Period:	07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

Start Time	North Approach South Service Rd						South Approach South Service Rd						East Approach Harvester Rd						West Approach Harvester Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:45	19	0	29	0	1	48	3	0	1	0	1	4	2	63	3	0	0	68	48	318	3	0	2	369	489
08:00	15	1	35	0	2	51	2	0	1	0	1	3	1	61	8	0	0	70	36	256	4	0	2	296	420
08:15	12	0	28	0	0	40	3	0	0	0	2	3	2	75	10	0	0	87	52	273	1	0	4	326	456
08:30	12	0	27	0	1	39	2	0	1	0	0	3	0	73	15	0	0	88	45	246	1	0	2	292	422
Grand Total	**58**	**1**	**119**	**0**	**4**	**178**	**10**	**0**	**3**	**0**	**4**	**13**	**5**	**272**	**36**	**0**	**0**	**313**	**181**	**1093**	**9**	**0**	**10**	**1283**	**1787**
Approach %	32.6	0.6	66.9	0		-	76.9	0	23.1	0		-	1.6	86.9	11.5	0		-	14.1	85.2	0.7	0		-	
Totals %	3.2	0.1	6.7	0		10	0.6	0	0.2	0		0.7	0.3	15.2	2	0		17.5	10.1	61.2	0.5	0		71.8	
PHF	**0.76**	**0.25**	**0.85**	**0**		**0.87**	**0.83**	**0**	**0.75**	**0**		**0.81**	**0.63**	**0.91**	**0.6**	**0**		**0.89**	**0.87**	**0.86**	**0.56**	**0**		**0.87**	**0.91**
Cars	58	1	115	0		174	1	0	0	0		1	2	247	36	0		285	179	1055	3	0		1237	1697
% Cars	100	100	96.6	0		97.8	10	0	0	0		7.7	40	90.8	100	0		91.1	98.9	96.5	33.3	0		96.4	95
Trucks	0	0	4	0		4	9	0	3	0		12	3	25	0	0		28	2	38	6	0		46	90
% Trucks	0	0	3.4	0		2.2	90	0	100	0		92.3	60	9.2	0	0		8.9	1.1	3.5	66.7	0		3.6	5
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					4	-					4	-					0	-					10	-	18
% Peds					22.2	-					22.2	-					0	-					55.6	-	

Peak Hour Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:30:00
To: 17:30:00

Intersection: Harvester Rd & South Service Rd
Site Code: 2318200002
Count Date: Jun 14, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Harvester Rd runs E/W

North Approach

	Out	In	Total
Cars	279	77	356
Trucks	1	1	2
Bicycles	0	0	0
	280	**78**	**358**

South Service Rd

Bicycles	0	0	0	0
Trucks	1	0	0	0
Cars	236	4	39	0
Totals	**237**	**4**	**39**	**0**

East Approach

	Out	In	Total
Cars	946	513	1459
Trucks	42	19	61
Bicycles	0	1	1
	988	**533**	**1521**

Peds: 8

Harvester Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	50	**50**
1	17	469	**487**
0	4	4	**8**

Peds: 2



Peds: 9

Harvester Rd

Totals	Cars	Trucks	Bicycles
0	0	0	0
23	22	1	0
960	924	36	0
5	0	5	0

Peds: 9

West Approach

	Out	In	Total
Cars	523	1207	1730
Trucks	21	43	64
Bicycles	1	0	1
	545	**1250**	**1795**

South Service Rd

Totals	**53**	**5**	**7**	**0**
Cars	47	5	5	0
Trucks	6	0	2	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	57	8	65
Trucks	8	9	17
Bicycles	0	0	0
	65	**17**	**82**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection:	Harvester Rd & South Service Rd
Site Code:	2318200002
Count Date:	Jun 14, 2023
Period:	16:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach South Service Rd						South Approach South Service Rd						East Approach Harvester Rd						West Approach Harvester Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:30	11	1	68	0	2	80	20	1	0	0	1	21	0	265	1	0	2	266	18	112	0	0	0	130	497
16:45	8	0	61	0	2	69	4	1	0	0	3	5	5	222	9	0	5	236	11	112	1	0	0	124	434
17:00	11	2	60	0	0	73	9	1	5	0	3	15	0	220	9	0	1	229	11	143	5	0	1	159	476
17:15	9	1	48	0	4	58	20	2	2	0	2	24	0	253	4	0	1	257	10	120	2	0	1	132	471
Grand Total	**39**	**4**	**237**	**0**	**8**	**280**	**53**	**5**	**7**	**0**	**9**	**65**	**5**	**960**	**23**	**0**	**9**	**988**	**50**	**487**	**8**	**0**	**2**	**545**	**1878**
Approach %	13.9	1.4	84.6	0		-	81.5	7.7	10.8	0		-	0.5	97.2	2.3	0		-	9.2	89.4	1.5	0		-	
Totals %	2.1	0.2	12.6	0		14.9	2.8	0.3	0.4	0		3.5	0.3	51.1	1.2	0		52.6	2.7	25.9	0.4	0		29	
PHF	**0.89**	**0.5**	**0.87**	**0**		**0.88**	**0.66**	**0.63**	**0.35**	**0**		**0.68**	**0.25**	**0.91**	**0.64**	**0**		**0.93**	**0.69**	**0.85**	**0.4**	**0**		**0.86**	**0.94**
Cars	39	4	236	0		279	47	5	5	0		57	0	924	22	0		946	50	469	4	0		523	1805
% Cars	100	100	99.6	0		99.6	88.7	100	71.4	0		87.7	0	96.3	95.7	0		95.7	100	96.3	50	0		96	96.1
Trucks	0	0	1	0		1	6	0	2	0		8	5	36	1	0		42	0	17	4	0		21	72
% Trucks	0	0	0.4	0		0.4	11.3	0	28.6	0		12.3	100	3.8	4.3	0		4.3	0	3.5	50	0		3.9	3.8
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	1	0	0		1	1
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0.2	0	0		0.2	0.1
Peds					8	-					9	-					9	-					2	-	28
% Peds					28.6	-					32.1	-					32.1	-					7.1	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #23-182 - CGH Transportation

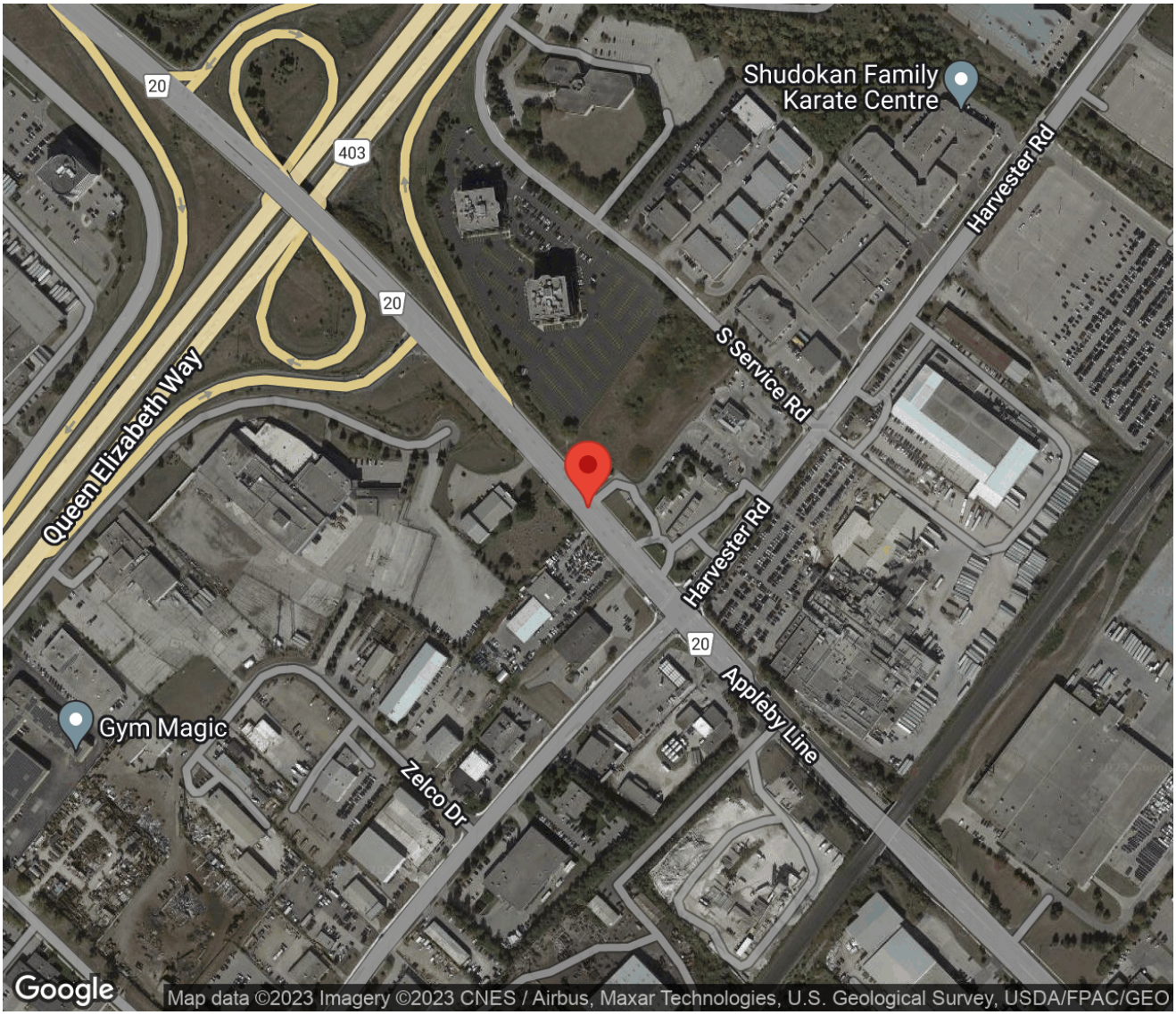
Intersection Count Report

Intersection:	Appleby Line & 875 Appleby Line
Municipality:	Burlington
Count Date:	Wednesday, Jun 14, 2023
Site Code:	2318200005
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Appleby Line & 875 Appleby Line
Site Code:	2318200005
Municipality:	Burlington
Count Date:	Jun 14, 2023



Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:45:00
To:	09:00:00	To:	08:45:00

Intersection: Appleby Line & 875 Appleby Line
Site Code: 2318200005
Count Date: Jun 14, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Appleby Line runs N/S

North Approach

	Out	In	Total
Cars	1249	1320	2569
Trucks	80	83	163
Bicycles	0	2	2
	1329	**1405**	**2734**

Appleby Line

Bicycles	0	0	0	0
Trucks	0	76	4	0
Cars	2	1119	127	1
Totals	**2**	**1195**	**131**	**1**

Peds: 0

East Approach

	Out	In	Total
Cars	27	134	161
Trucks	2	4	6
Bicycles	0	0	0
	29	**138**	**167**

875 Appleby Line

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	0	0	**0**
0	0	0	**0**
0	0	0	**0**

Peds: 3

N
W E
S

Peds: 3

875 Appleby Line

Totals	Cars	Trucks	Bicycles
0	0	0	0
29	27	2	0
0	0	0	0
0	0	0	0

Peds: 0

West Approach

	Out	In	Total
Cars	0	2	2
Trucks	0	0	0
Bicycles	0	0	0
	0	**2**	**2**

Appleby Line

Totals	**0**	**1375**	**7**	**0**
Cars	0	1292	7	0
Trucks	0	81	0	0
Bicycles	0	2	0	0

South Approach

	Out	In	Total
Cars	1299	1119	2418
Trucks	81	76	157
Bicycles	2	0	2
	1382	**1195**	**2577**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Appleby Line & 875 Appleby Line
Site Code: 2318200005
Count Date: Jun 14, 2023
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

Start Time	North Approach Appleby Line						South Approach Appleby Line						East Approach 875 Appleby Line						West Approach 875 Appleby Line						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:45	40	314	1	0	0	355	0	366	0	0	0	366	0	0	8	0	2	8	0	0	0	0	0	0	729
08:00	32	272	0	1	0	305	0	340	2	0	0	342	0	0	7	0	1	7	0	0	0	0	1	0	654
08:15	21	295	1	0	0	317	0	340	3	0	0	343	0	0	7	0	0	7	0	0	0	0	0	0	667
08:30	38	314	0	0	0	352	0	329	2	0	0	331	0	0	7	0	0	7	0	0	0	0	2	0	690
Grand Total	**131**	**1195**	**2**	**1**	**0**	**1329**	**0**	**1375**	**7**	**0**	**0**	**1382**	**0**	**0**	**29**	**0**	**3**	**29**	**0**	**0**	**0**	**0**	**3**	**0**	**2740**
Approach %	9.9	89.9	0.2	0.1		-	0	99.5	0.5	0		-	0	0	100	0		-	0	0	0	0		-	
Totals %	4.8	43.6	0.1	0		48.5	0	50.2	0.3	0		50.4	0	0	1.1	0		1.1	0	0	0	0		0	
PHF	**0.82**	**0.95**	**0.5**	**0.25**		**0.94**	**0**	**0.94**	**0.58**	**0**		**0.94**	**0**	**0**	**0.91**	**0**		**0.91**	**0**	**0**	**0**	**0**		**0**	**0.94**
Cars	127	1119	2	1		1249	0	1292	7	0		1299	0	0	27	0		27	0	0	0	0		0	2575
% Cars	96.9	93.6	100	100		94	0	94	100	0		94	0	0	93.1	0		93.1	0	0	0	0		0	94
Trucks	4	76	0	0		80	0	81	0	0		81	0	0	2	0		2	0	0	0	0		0	163
% Trucks	3.1	6.4	0	0		6	0	5.9	0	0		5.9	0	0	6.9	0		6.9	0	0	0	0		0	5.9
Bicycles	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	2
% Bicycles	0	0	0	0		0	0	0.1	0	0		0.1	0	0	0	0		0	0	0	0	0		0	0.1
Peds					0	-					0	-					3	-					3	-	6
% Peds					0	-					0	-					50	-					50	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:15:00
To:	18:00:00	To:	17:15:00

Intersection: Appleby Line & 875 Appleby Line
Site Code: 2318200005
Count Date: Jun 14, 2023

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Appleby Line runs N/S

North Approach

	Out	In	Total
Cars	1752	1428	3180
Trucks	90	41	131
Bicycles	0	0	0
	1842	**1469**	**3311**

Appleby Line

Bicycles	0	0	0	0
Trucks	0	89	1	0
Cars	3	1706	42	1
Totals	**3**	**1795**	**43**	**1**

Peds: 0

East Approach

	Out	In	Total
Cars	67	50	117
Trucks	0	2	2
Bicycles	0	0	0
	67	**52**	**119**

875 Appleby Line

Bicycles	Trucks	Cars	Totals	
0	0	0	**0**	
0	0	0	**0**	
0	0	0	**0**	
0	0	1	**1**	

Peds: 1



Peds: 6

875 Appleby Line

Totals	Cars	Trucks	Bicycles
0	0	0	0
67	67	0	0
0	0	0	0
0	0	0	0

Peds: 0

West Approach

	Out	In	Total
Cars	1	3	4
Trucks	0	0	0
Bicycles	0	0	0
	1	**3**	**4**

Appleby Line

Totals	**0**	**1401**	**9**	**0**
Cars	0	1360	8	0
Trucks	0	41	1	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	1368	1707	3075
Trucks	42	89	131
Bicycles	0	0	0
	1410	**1796**	**3206**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Appleby Line & 875 Appleby Line
Site Code: 2318200005
Count Date: Jun 14, 2023
Period: 16:00 - 18:00

Peak Hour Data (16:15 - 17:15)

Start Time	North Approach Appleby Line						South Approach Appleby Line						East Approach 875 Appleby Line						West Approach 875 Appleby Line						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:15	14	430	2	0	0	446	0	317	1	0	0	318	0	0	19	0	0	19	0	0	0	0	1	0	783
16:30	11	462	1	1	0	475	0	382	1	0	0	383	0	0	23	0	1	23	0	0	0	0	0	0	881
16:45	7	448	0	0	0	455	0	305	3	0	0	308	0	0	12	0	3	12	0	0	1	0	0	1	776
17:00	11	455	0	0	0	466	0	397	4	0	0	401	0	0	13	0	2	13	0	0	0	0	0	0	880
Grand Total	**43**	**1795**	**3**	**1**	**0**	**1842**	**0**	**1401**	**9**	**0**	**0**	**1410**	**0**	**0**	**67**	**0**	**6**	**67**	**0**	**0**	**1**	**0**	**1**	**1**	**3320**
Approach %	2.3	97.4	0.2	0.1		-	0	99.4	0.6	0		-	0	0	100	0		-	0	0	100	0		-	
Totals %	1.3	54.1	0.1	0		55.5	0	42.2	0.3	0		42.5	0	0	2	0		2	0	0	0	0		0	
PHF	**0.77**	**0.97**	**0.38**	**0.25**		**0.97**	**0**	**0.88**	**0.56**	**0**		**0.88**	**0**	**0**	**0.73**	**0**		**0.73**	**0**	**0**	**0.25**	**0**		**0.25**	**0.94**
Cars	42	1706	3	1		1752	0	1360	8	0		1368	0	0	67	0		67	0	0	1	0		1	3188
% Cars	97.7	95	100	100		95.1	0	97.1	88.9	0		97	0	0	100	0		100	0	0	100	0		100	96
Trucks	1	89	0	0		90	0	41	1	0		42	0	0	0	0		0	0	0	0	0		0	132
% Trucks	2.3	5	0	0		4.9	0	2.9	11.1	0		3	0	0	0	0		0	0	0	0	0		0	4
Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Bicycles	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					6	-					1	-	7
% Peds					0	-					0	-					85.7	-					14.3	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Project #23-182 - CGH Transportation

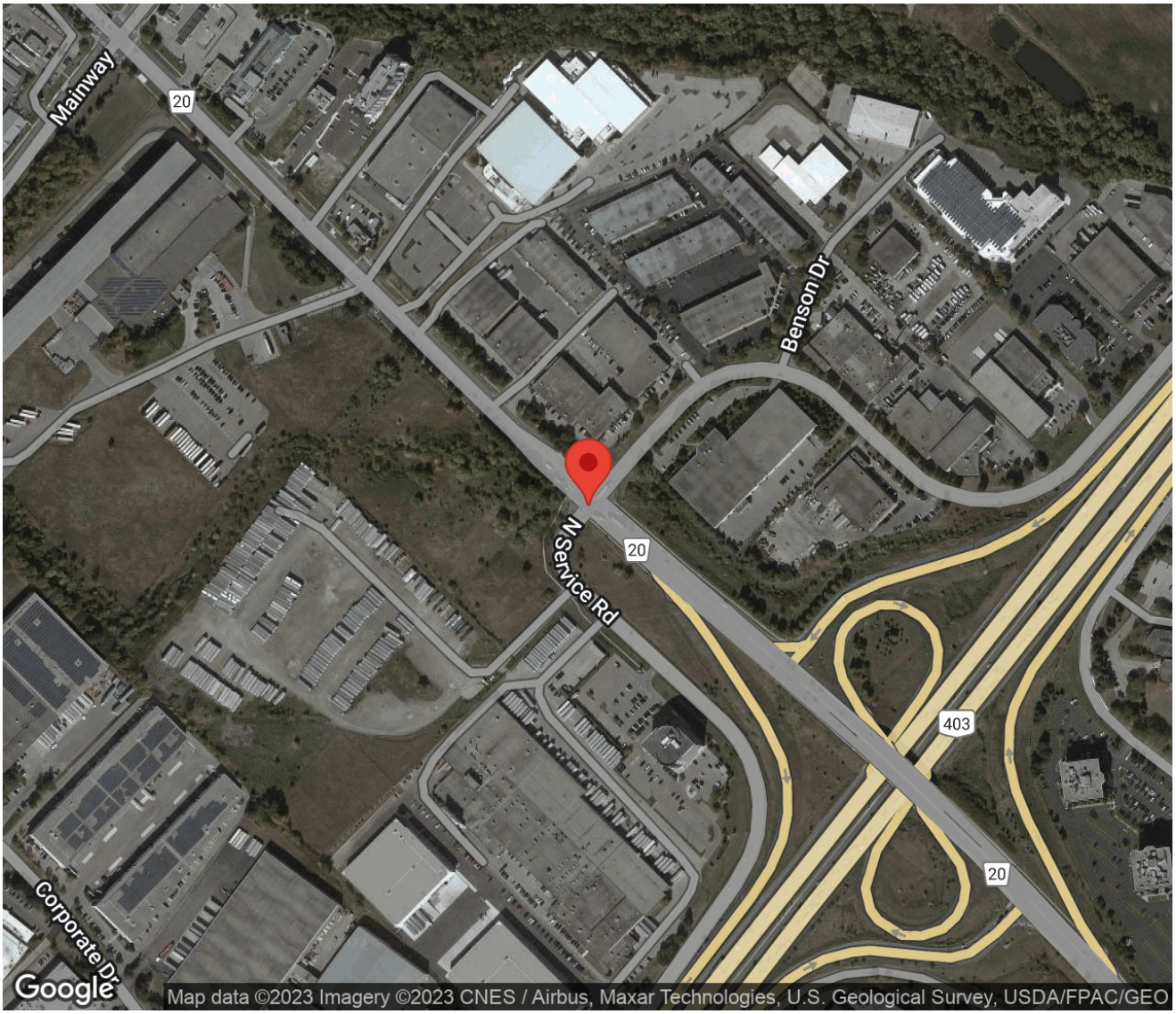
Intersection Count Report

Intersection:	Appleby Line & North Service Rd
Municipality:	Burlington
Count Date:	Wednesday, Jul 05, 2023
Site Code:	2318200006
Count Categories:	Cars, Trucks, Bicycles, Pedestrians
Count Period:	07:00-09:00, 16:00-18:00
Weather:	Clear
Comments:	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Traffic Count Map

Intersection:	Appleby Line & North Service Rd
Site Code:	2318200006
Municipality:	Burlington
Count Date:	Jul 05, 2023



Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Appleby Line & North Service Rd
Site Code: 2318200006
Count Date: Jul 05, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Approach

	Out	In	Total
Cars	1211	1025	2236
Trucks	75	62	137
Bicycles	1	0	1
	1287	**1087**	**2374**

Appleby Line

Bicycles	0	1	0	0
Trucks	0	73	2	0
Cars	39	1088	84	0
Totals	**39**	**1162**	**86**	**0**

East Approach

	Out	In	Total
Cars	125	545	670
Trucks	16	20	36
Bicycles	0	0	0
	141	**565**	**706**

North Service Rd

Bicycles	Trucks	Cars	Totals	
0	0	0	**0**	
0	0	35	**35**	
0	4	118	**122**	
0	10	49	**59**	

Peds: 1
Peds: 2
Peds: 3
Peds: 0



North Service Rd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	34	33	1	0
	23	20	3	0
	84	72	12	0

West Approach

	Out	In	Total
Cars	202	173	375
Trucks	14	13	27
Bicycles	0	0	0
	216	**186**	**402**

Totals	**124**	**1018**	**357**	**0**
Cars	114	957	343	0
Trucks	10	61	14	0
Bicycles	0	0	0	0

Appleby Line

South Approach

	Out	In	Total
Cars	1414	1209	2623
Trucks	85	95	180
Bicycles	0	1	1
	1499	**1305**	**2804**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Appleby Line & North Service Rd
Site Code: 2318200006
Count Date: Jul 05, 2023
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Appleby Line						South Approach Appleby Line						East Approach North Service Rd						West Approach North Service Rd						Total Vehicles
	↰	↑	↱	↩	Peds	Total	↰	↑	↱	↩	Peds	Total	↰	↑	↱	↩	Peds	Total	↰	↑	↱	↩	Peds	Total	
08:00	19	312	3	0	1	334	29	219	102	0	0	350	22	6	7	0	1	35	9	31	18	0	0	58	777
08:15	15	301	9	0	0	325	28	254	97	0	0	379	14	4	6	0	1	24	11	34	16	0	2	61	789
08:30	25	256	18	0	0	299	32	251	81	0	0	364	27	8	12	0	0	47	6	32	12	0	0	50	760
08:45	27	293	9	0	0	329	35	294	77	0	0	406	21	5	9	0	1	35	9	25	13	0	0	47	817
Grand Total	**86**	**1162**	**39**	**0**	**1**	**1287**	**124**	**1018**	**357**	**0**	**0**	**1499**	**84**	**23**	**34**	**0**	**3**	**141**	**35**	**122**	**59**	**0**	**2**	**216**	**3143**
Approach %	6.7	90.3	3	0		-	8.3	67.9	23.8	0		-	59.6	16.3	24.1	0		-	16.2	56.5	27.3	0		-	
Totals %	2.7	37	1.2	0		40.9	3.9	32.4	11.4	0		47.7	2.7	0.7	1.1	0		4.5	1.1	3.9	1.9	0		6.9	
PHF	**0.8**	**0.93**	**0.54**	**0**		**0.96**	**0.89**	**0.87**	**0.88**	**0**		**0.92**	**0.78**	**0.72**	**0.71**	**0**		**0.75**	**0.8**	**0.9**	**0.82**	**0**		**0.89**	**0.96**
Cars	84	1088	39	0		1211	114	957	343	0		1414	72	20	33	0		125	35	118	49	0		202	2952
% Cars	97.7	93.6	100	0		94.1	91.9	94	96.1	0		94.3	85.7	87	97.1	0		88.7	100	96.7	83.1	0		93.5	93.9
Trucks	2	73	0	0		75	10	61	14	0		85	12	3	1	0		16	0	4	10	0		14	190
% Trucks	2.3	6.3	0	0		5.8	8.1	6	3.9	0		5.7	14.3	13	2.9	0		11.3	0	3.3	16.9	0		6.5	6
Bicycles	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	1
% Bicycles	0	0.1	0	0		0.1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					1	-					0	-					3	-					2	-	6
% Peds					16.7	-					0	-					50	-					33.3	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:00:00
To:	18:00:00	To:	17:00:00

Intersection: Appleby Line & North Service Rd
Site Code: 2318200006
Count Date: Jul 05, 2023

Weather conditions: Clear

**** Signalized Intersection ****

Major Road: Appleby Line runs N/S

North Approach

	Out	In	Total
Cars	1062	1653	2715
Trucks	60	56	116
Bicycles	3	0	3
	1125	**1709**	**2834**

Appleby Line

Bicycles	0	3	0	0
Trucks	5	51	4	0
Cars	69	930	62	1
Totals	**74**	**984**	**66**	**1**

East Approach

	Out	In	Total
Cars	537	191	728
Trucks	14	8	22
Bicycles	0	0	0
	551	**199**	**750**

Peds: 0

North Service Rd

Bicycles	Trucks	Cars	Totals
0	0	0	**0**
0	6	43	**49**
0	1	35	**36**
0	16	153	**169**

Peds: 0



Peds: 3

North Service Rd

	Totals	Cars	Trucks	Bicycles
	0	0	0	0
	130	123	7	0
	184	180	4	0
	237	234	3	0

Peds: 0

West Approach

	Out	In	Total
Cars	231	524	755
Trucks	23	17	40
Bicycles	0	0	0
	254	**541**	**795**

Appleby Line

Totals	**283**	**1529**	**97**	**2**
Cars	275	1486	94	2
Trucks	8	43	3	0
Bicycles	0	0	0	0

South Approach

	Out	In	Total
Cars	1857	1319	3176
Trucks	54	70	124
Bicycles	0	3	3
	1911	**1392**	**3303**

Cars - Trucks - Bicycles

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Appleby Line & North Service Rd
Site Code: 2318200006
Count Date: Jul 05, 2023
Period: 16:00 - 18:00

Peak Hour Data (16:00 - 17:00)

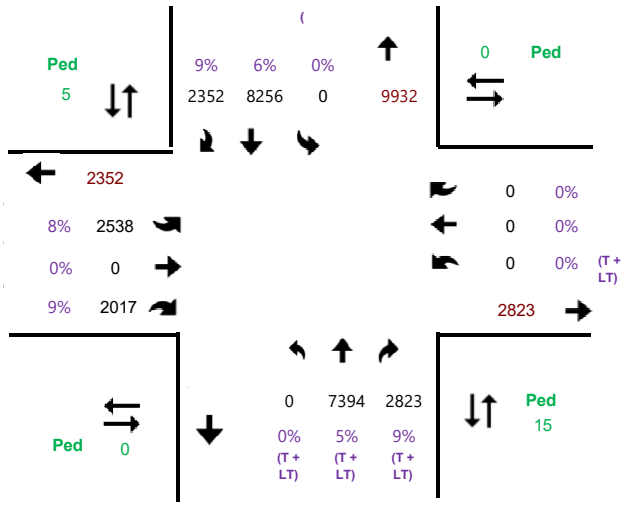
Start Time	North Approach Appleby Line						South Approach Appleby Line						East Approach North Service Rd						West Approach North Service Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	18	278	20	0	0	316	57	361	21	0	0	439	70	48	49	0	1	167	8	9	57	0	0	74	996
16:15	20	209	17	1	0	247	84	381	25	0	0	490	54	36	40	0	2	130	15	7	31	0	0	53	920
16:30	15	246	22	0	0	283	61	408	23	0	0	492	68	48	24	0	0	140	13	12	47	0	0	72	987
16:45	13	251	15	0	0	279	81	379	28	2	0	490	45	52	17	0	0	114	13	8	34	0	0	55	938
Grand Total	**66**	**984**	**74**	**1**	**0**	**1125**	**283**	**1529**	**97**	**2**	**0**	**1911**	**237**	**184**	**130**	**0**	**3**	**551**	**49**	**36**	**169**	**0**	**0**	**254**	**3841**
Approach %	5.9	87.5	6.6	0.1		-	14.8	80	5.1	0.1		-	43	33.4	23.6	0		-	19.3	14.2	66.5	0		-	
Totals %	1.7	25.6	1.9	0		29.3	7.4	39.8	2.5	0.1		49.8	6.2	4.8	3.4	0		14.3	1.3	0.9	4.4	0		6.6	
PHF	**0.83**	**0.88**	**0.84**	**0.25**		**0.89**	**0.84**	**0.94**	**0.87**	**0.25**		**0.97**	**0.85**	**0.88**	**0.66**	**0**		**0.82**	**0.82**	**0.75**	**0.74**	**0**		**0.86**	**0.96**
Cars	62	930	69	1		1062	275	1486	94	2		1857	234	180	123	0		537	43	35	153	0		231	3687
% Cars	93.9	94.5	93.2	100		94.4	97.2	97.2	96.9	100		97.2	98.7	97.8	94.6	0		97.5	87.8	97.2	90.5	0		90.9	96
Trucks	4	51	5	0		60	8	43	3	0		54	3	4	7	0		14	6	1	16	0		23	151
% Trucks	6.1	5.2	6.8	0		5.3	2.8	2.8	3.1	0		2.8	1.3	2.2	5.4	0		2.5	12.2	2.8	9.5	0		9.1	3.9
Bicycles	0	3	0	0		3	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	3
% Bicycles	0	0.3	0	0		0.3	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0.1
Peds					0	-					0	-					3	-					0	-	3
% Peds					0	-					0	-					100	-					0	-	

Ontario

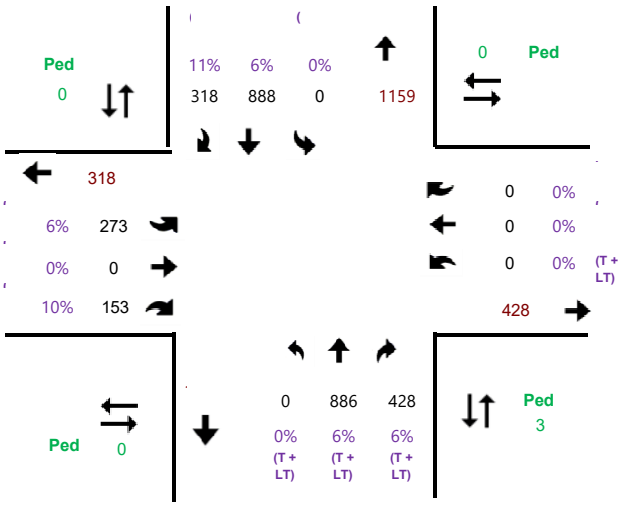
TES - Traffic Engineering System
Turning Movement Total Count and Peak Summary Report

Description: HWY 1 @ APPLEBY LINE - RAMP 51
Region CENTRAL
Hwy #: HWY 1
LHRS_Offset: 10126_0000_51T
Int. Type: T-Intersection
Count Date: Tuesday, 14 June, 2022

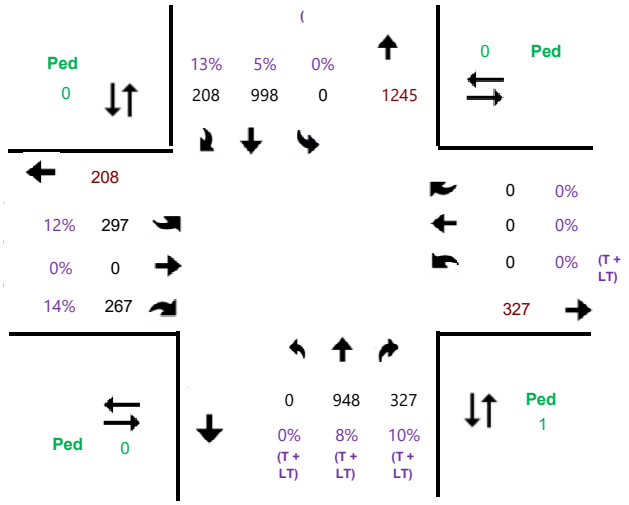
Full Study
Tue, 14 Jun, 2022 07:00 AM - 06:00 PM



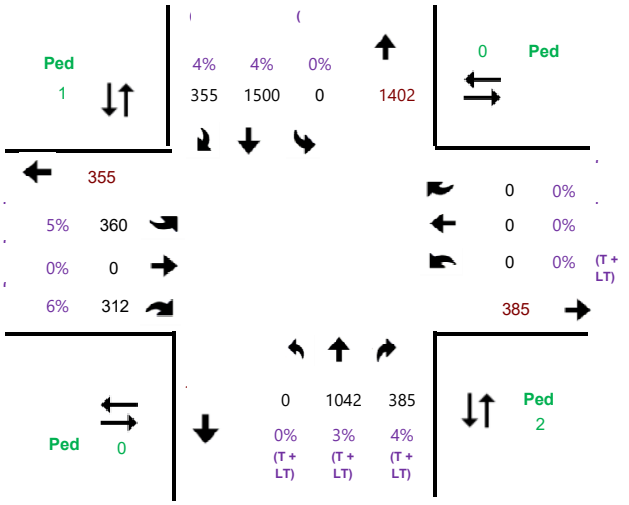
AM Period
Tue, 14 Jun, 2022 07:30 AM - 08:30 AM



MD Period
Tue, 14 Jun, 2022 11:45 AM - 12:45 PM



PM Period
Tue, 14 Jun, 2022 04:30 PM - 05:30 PM

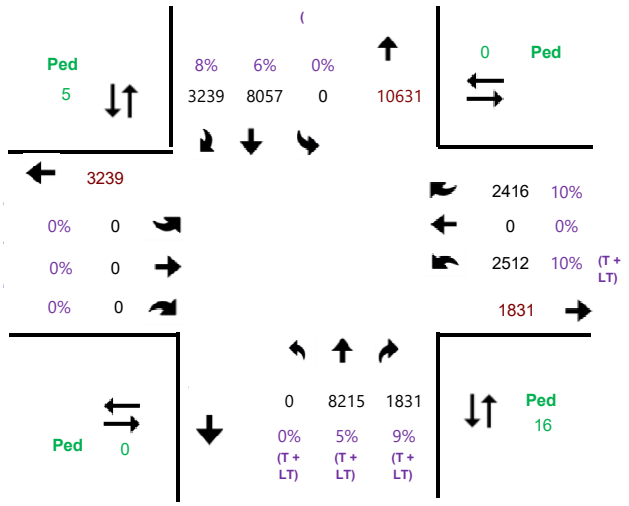


Ontario

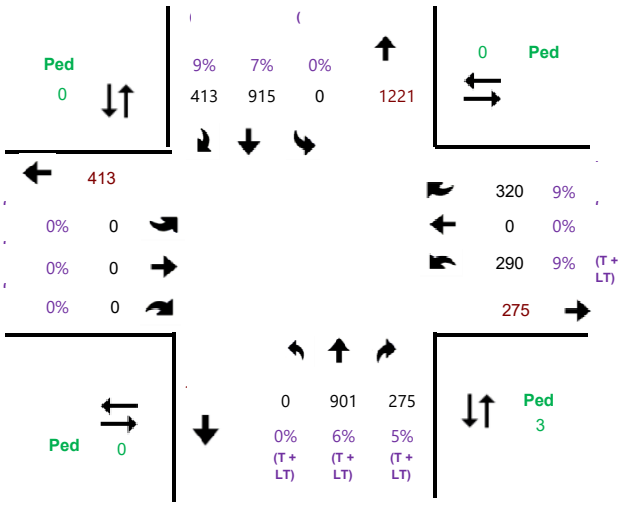
TES - Traffic Engineering System
Turning Movement Total Count and Peak Summary Report

Description: HWY 1 @ APPLEBY LINE - RAMP 61
Region CENTRAL
Hwy #: HWY 1
LHRS_Offset: 10126_0000_61T
Int. Type: T-Intersection
Count Date: Tuesday, 14 June, 2022

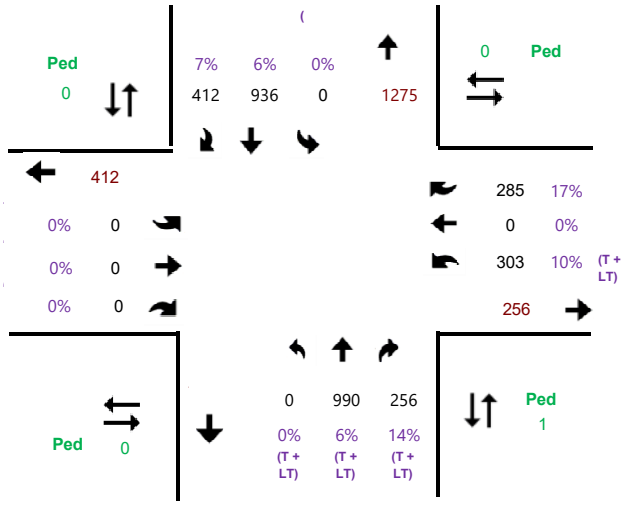
Full Study — Tue, 14 Jun, 2022 07:00 AM - 06:00 PM



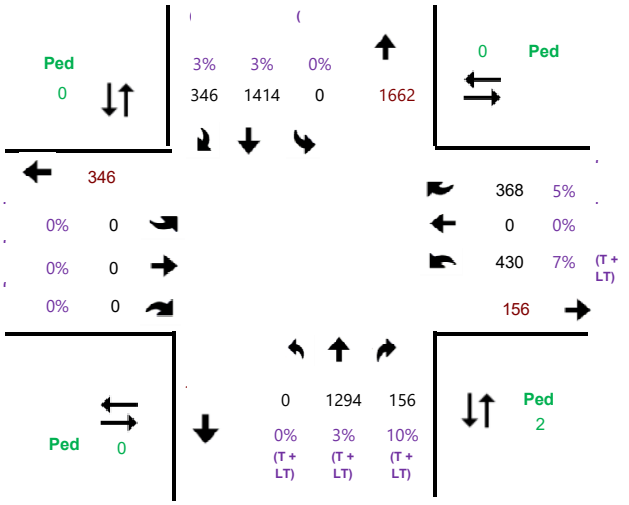
AM Period — Tue, 14 Jun, 2022 07:30 AM - 08:30 AM



MD Period — Tue, 14 Jun, 2022 12:00 PM - 01:00 PM



PM Period — Tue, 14 Jun, 2022 04:30 PM - 05:30 PM



Appendix C

Signal Timing Plans

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B		B							
Sequence 1																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 2																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 3																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 4																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	15	16	.	.	.	.	.	.	.	.
Sequence 5																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 6																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 7																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 8																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	7	8	12	11	15	16	.	.	.	.	.	.	.	.
Sequence 9																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 10																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 11																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 12																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	5	6	8	7	11	12	16	15	.	.	.	.	.	.	.	.
Sequence 13																
Ring 1	1	2	3	4	9	10	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 14																
Ring 1	2	1	3	4	10	9	13	14	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 15																
Ring 1	1	2	4	3	9	10	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.
Sequence 16																
Ring 1	2	1	4	3	10	9	14	13	.	.	.	.	.	.	.	.
Ring 2	6	5	8	7	12	11	16	15	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X	X	X	X	X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Description																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	FD34
Enable Automatic Backup to Datakey	No

Backup Prevent (MM) 1-1-3

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing	**1**		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases	**2**	X		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	X		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	X		.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	X		.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	

Simultaneous Gap (MM) 1-1-4

	Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	2	.		.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.		.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.		.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.		.	.	.	.	.	.	.	.	.	.	.
Phase	**6**	.	.	.	.	.		.	.	.	.	.	.	.	.	.	.
Must	**7**	.	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Gap	**8**	.	.	.	.	.	.	.		.	.	.	.	.	.	.	.
With	**9**	.	.	.	.	.	.	.	.		.	.	.	.	.	.	.
Phase	**10**	.	.	.	.	.	.	.	.	.		.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.		.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.		.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.		.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.		.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.		.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	
	Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				-	Auto	X		
2	2	V				-	Auto	X		X
3	3	V				-	Auto	X		
4	4	V				-	Auto	X		X
5	5	V				+	Auto	X		
6	6	V				+	Auto	X		X
7	7	V				+	Auto	X		
8	8	V				+	Auto	X		X
9	2	P				-	Auto			
10	4	P				-	Auto			
11	6	P				+	Auto			
12	8	P				+	Auto			
13	1	.				-	Auto	X		
14	2	.				+	Auto	X		X
15	3	.				-	Auto	X		
16	4	.				+	Auto	X		X

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Configuration Port 1 (SDLC)

Port 1 SDLC (MM) 1-4-1

BIU	1	2	3	4	5	6	7	8
Term & Facility	X	X						
Detector Rack	X							

Enable TS2/MMU Type Cabinet: No
Enable MMU Extended Status: Yes
Enable SDLC Stop Time: Yes
Enable 3 Critical RFE's Lockup: Yes

MMU Program (MM) 1-4-2

Channel Can Serve With Channel	
Channel 1	**Channel 2**
1	5
1	6
1	11
2	5
2	6
2	9
2	11
3	7
3	8
3	12
4	7
4	8
4	10
4	12
5	9
6	9
6	11
7	10
8	10
8	12
9	11
10	12

Color Check Enable (MM) 1-4-3

Enable Color Check: No

MMU/LS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Green																
Yellow																
Red																

Secondary Stations/Tests (MM) 1-4-4

ID	1	2	3	4	5	6	7	8	MMU
Term & Facility									

ID	1	2	3	4	5	6	7	8	Diag
Detector Rack									

Enable SDLC Diagnostic Test: No

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Configuration Communications 1 (SDLC)

Ethernet Port Configuration (MM) 1-5-1

Controller IP:	172.24.128.2
Subnet Mask:	255.255.0.0
Default Gateway IP:	172.24.254.254
Server IP:	192.168.210.120

NTCIP (MM) 1-5-5

NTCIP Backup Time (Sec):	0
NTCIP UDP Port:	501
Ethernet Priority:	1
Port 2 Priority (Port C50S for 2070):	4
Port 3A Priority (Port C21S for 2070):	2
Port 3B Priority (Port C22S for 2070):	3

Port Configuration (MM) 1-5-2 to 1-5-4

Port	2 (C50S)	3A (C21S)	3B (C22S)
Protocol	TERMINAL	NTCIP	ECPIP
Enable	No	No	No
Data Rate (BPS)	9600	19.2K	1200
Data, Parity, Stop	8 N 1	8 N 1	8 N 1
Address	0	0	0
Telemetry Response Delay	0.0	0.0	0.9
Duplex - Half or Full	Half	Full	Full
Flow Control	Yes	Yes	Yes
Group Address	0	0	0
Single Flag Enable	Yes	Yes	Yes
RTS to CTS Delay	n/a	n/a	14.0
RTS Turn Off Delay	n/a	n/a	2.0
Dropout Time	10	10	10
Early RTS	n/a	n/a	No
Telemetry Mode	n/a	n/a	FSK
ATCS Railroad	0	n/a	n/a
ATCS Railroad Line	0	n/a	n/a
ATCS Group	0	n/a	n/a
Wayside Device	0	n/a	n/a
ATC Device	0	n/a	n/a
Wayside Subnode	0	n/a	n/a
ATC Subnode	0	n/a	n/a

ECPIP (MM) 1-5-6

Controller Address:	0
Expanded System Detector Address:	0

System Detector Assignment

System Detector	Local Detector

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Configuration Logging / Display

Event Logging (MM) 1-6-1

Critical RFE's (MMU/TF)	Yes	3 Critical Errors Within 24 Hours	Yes
MMU Flash Faults	Yes	Local Flash Fault	Yes
Non-Critical RFE's (Det/Test)	Yes	Detector Errors	Yes
Coordination Errors	Yes	Controller Download	Yes
Preemption Events	Yes	TSP Events	Yes
Power On/Off	Yes	Low Battery	Yes
Access	Yes	Data Change	Yes
Online / Offline	Yes		

Alarm Event	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable Logging	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Display Options (MM) 1-7-2

Key Click Enable:	No
Backlight Enable:	Yes
LED Mode:	Auto
Display Mode:	Basic
Screen Format:	Basic
Trans Mode Pop-Up Disable:	No

Sign On (MM) 8-5

Sign On Message Line 1: City Of Burlington
Sign On Message Line 2: 8 Phase Econolite White

Software Modules (MM) 8-7

Application Version: 02.58.00
OS (Boot) Version: 01.14.03

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Logic Processor Page 1

Logic Statement Control (MM) 1-8-1

Logic #	Statement Control
1	E
2	E
3	E
4	E

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Logic Processor Page 2

Logic Statements (MM) 1-8-2

Logic #: 1

If:

	Assignment	#		State
IF	VEH GREEN ON PH	3	IS	On

Then:

Assignment	#	State
CTR CALL PHASE	4	On

Logic #: 2

If:

	Assignment	#		State
IF	VEH GREEN ON PH	7	IS	On

Then:

Assignment	#	State
CTR CALL PHASE	8	On

Logic #: 3

If:

	Assignment	#		State
IF	VEH GREEN ON PH	2	IS	On

Then:

Assignment	#	State
CTR OMIT PHASE	1	On

Logic #: 4

If:

	Assignment	#		State
IF	VEH GREEN ON PH	6	IS	On

Then:

Assignment	#	State
CTR OMIT PHASE	5	On

Logic #: 5

If:

	Assignment	#	State
IF	LP CIB CODE ON		169

Then:

Assignment	#	State
CTR SET TMGPLN A-C	2	On

Logic #: 6

If:

	Assignment	#	State
IF	LP CIB CODE ON		65

Then:

Assignment	#	State
LP DELAY FOR	5.5 Sec.	
LP SET LOGIC FLAG	1	On

Logic #: 7

If:

	Assignment	#		State
IF	LP LOGIC FLAG	1	IS	On
AND	VEH GREEN ON PH	2	IS	On

Then:

Assignment	#	State
DET SET VEH 1-16	4	On

Logic #: 8

If:

	Assignment	#		State
IF	LP LOGIC FLAG	1	IS	On
AND	CTR PH NEXT ON PHS	2	IS	On

Then:

Assignment	#	State
LP SET LOGIC FLAG	2	On

Logic #: 9

If:

	Assignment	#		State
IF	LP LOGIC FLAG	2	IS	On

Then:

Assignment	#	State
LP DELAY FOR	0.0 Sec.	
DET SET VEH 1-16	4	On
CTR SET FO RING	1	On
LP SET LOGIC FLAG	3	On

Logic #: 10

If:

	Assignment	#		State
IF	LP LOGIC FLAG	3	IS	On

Then:

Assignment	#	State
LP SET LOGIC FLAG	1	Off
LP SET LOGIC FLAG	2	Off
LP SET LOGIC FLAG	3	Off

Logic #: 11

If:

	Assignment	#	State
IF	LP CIB CODE ON		69

Then:

Assignment	#	State
LP DELAY FOR	5.5 Sec.	
LP SET LOGIC FLAG	4	On

Logic #: 12

If:

	Assignment	#		State
IF	LP LOGIC FLAG	4	IS	On
AND	VEH GREEN ON PH	6	IS	On

Then:

Assignment	#	State
DET SET VEH 1-16	4	On

Logic #: 13

If:

	Assignment	#	State

IF	LP LOGIC FLAG	4	IS	On
AND	CTR PH NEXT ON PHS	6	IS	On

Then:

Assignment	#	State
LP SET LOGIC FLAG	5	On

Logic #: 14

If:

	Assignment	#		State
IF	LP LOGIC FLAG	5	IS	On

Then:

Assignment	#	State
LP DELAY FOR	0.0 Sec.	
DET SET VEH 1-16	4	On
CTR SET FO RING	2	On
LP SET LOGIC FLAG	6	On

Logic #: 15

If:

	Assignment	#		State
IF	LP LOGIC FLAG	6	IS	On

Then:

Assignment	#	State
LP SET LOGIC FLAG	4	Off
LP SET LOGIC FLAG	5	Off
LP SET LOGIC FLAG	3	Off

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Controller Timing Plan (MM) 2-1

Plan 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Min Green	7	8	7	8	7	8	7	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	25	0	25	0	25	0	25	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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	0.0
Max1	15	40	15	30	15	40	15	30	35	35	35	35	35	35	35	35
Max2	15	40	15	30	15	40	15	30	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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	0.0
Yellow	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.7	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	2.6	1.0	2.6	1.0	2.6	1.0	2.6	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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	0.0

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Min Green	7	8	7	8	7	8	7	8	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	25	0	25	0	25	0	25	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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	0.0
Max1	13	40	12	20	13	40	10	20	35	35	35	35	35	35	35	35
Max2	13	40	12	20	13	40	10	20	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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	0.0
Yellow	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	3.0	1.0	3.0	1.0	3.0	1.0	3.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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	0.0

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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	0.0

Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	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	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	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	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	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	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	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	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	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	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	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	0.0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Controller Overlaps

Vehicle Overlaps (MM) 2-2

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	0	7	3.0	0.0	5
B02	5	0	7	3.0	0.0	5
C03	5	0	7	3.0	0.0	5
D04	5	0	7	3.0	0.0	5
E05	5	0	7	3.0	0.0	5
F06	5	0	7	3.0	0.0	5
G07	5	0	7	3.0	0.0	5
H08	5	0	7	3.0	0.0	5
I09	5	0	7	3.0	0.0	5
J10	5	0	7	3.0	0.0	5
K11	5	0	7	3.0	0.0	5
L12	5	0	7	3.0	0.0	5
M13	5	0	7	3.0	0.0	5
N14	5	0	7	3.0	0.0	5
O15	5	0	7	3.0	0.0	5
P16	5	0	7	3.0	0.0	5

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Controller Pedestrian Overlaps
Vehicle / Pedestrian Overlaps (MM) 2-3

Included	Pedestrian Overlaps

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Controller Start / Flash Data (MM) 2-5

Start Up

Phase	Phase Setting
1	.
2	Y
3	.
4	.
5	.
6	Y
7	.
8	.
9	.
10	.
11	.
12	.
13	.
14	.
15	.
16	.

Overlap
A
B
C
D

Flash Thru Mon: No
Flash Time: 0
All Red: 0
Power Start Seq: 1
MUTCD Enabled: No
Y->G: n/a

Automatic Flash

Entry
2
6

Exit
2
6

Overlap Exit
A
B
C
D

Flash Thru Mon: No
Exit Flash: W
Minimum Flash: 8
Mimimum Recall: No
Cycle Through Phase: No

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Controller Options

Controller Options (MM) 2-6-1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Flashing Grn Ph	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Guar Passage																
Non-Act I		X				X										
Non-Act II																
Dual Entry		X		X		X		X								
Cond Service																
Cond Reservice																
Ped Re-Service																
Rest In Walk		X				X										
Flashing Walk																
Ped Clr-Yel																
Ped Clr-Red																
IGRN + Veh Ext																

Ped Clear Protect: Off Unit Red Revert: 2.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: No Free Input Disables Pre-Timed: No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre-Timed																

Phase Recall Options (MM) 2-8

Plan # 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector							X	X	X	X	X	X	X	X	X	X
Vehicle Recall		X				X										
Ped Recall		X				X										
Max Recall				X												
Soft Recall																
No Rest																
AI Calc																

Plan # 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Lock Detector									X	X	X	X	X	X	X	X
Vehicle Recall		X				X										
Ped Recall		X				X										
Max Recall	X		X	X	X		X	X								
Soft Recall																
No Rest																
AI Calc																

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Coordination Options

Options (MM) 3-1

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Float
Offset Reference	Lead	Use Ped Time	No
Ped Recall	No	Ped Reservice	No
Local Zero Override	No	FO Added Ini Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Coordination Pattern Data
Coordinator Pattern Data (MM) 3-2

Coordinator Pattern # 1

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	120	Std (COS)	9	Offsets In	Seconds
Offset Value	87s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Splits (Split Pat 1)	24	50	11	35	15	59	18	28	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	110	Std (COS)	17	Offsets In	Seconds
Offset Value	65s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Splits (Split Pat 2)	12	44	14	40	12	44	12	42	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	110s	110s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	140	Std (COS)	25	Offsets In	Seconds
Offset Value	34s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Splits (Split Pat 3)	20	60	35	25	11	69	24	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	140s	140s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 4

Split Pattern	4	TS2 (Pat-Off)	1-1	Splits In	Seconds
Cycle	90	Std (COS)	33	Offsets In	Seconds
Offset Value	64s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Splits (Split Pat 4)	11	40	11	28	11	40	11	28	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 5

Split Pattern	5	TS2 (Pat-Off)	1-2	Splits In	Seconds
Cycle	90	Std (COS)	41	Offsets In	Seconds
Offset Value	64s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Splits (Split Pat 5)	11	53	11	15	11	53	11	15	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase	X								X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 11

Split Pattern	11	TS2 (Pat-Off)	3-2	Splits In	Seconds
Cycle	120	Std (COS)	137	Offsets In	Seconds
Offset Value	87s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Splits (Split Pat 11)	24	50	11	35	15	59	18	28	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	120s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 13

Split Pattern	13	TS2 (Pat-Off)	4-1	Splits In	Seconds
Cycle	140	Std (COS)	153	Offsets In	Seconds
Offset Value	34s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Splits (Split Pat 13)	20	60	35	25	11	69	24	36	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	140s	140s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Funciton Outputs																

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Split (seconds)	24	50	11	35	15	59	18	28	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Split (seconds)	12	44	14	40	12	44	12	42	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	110s	110s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Split (seconds)	20	60	35	25	11	69	24	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	140s	140s	0s	0s

Split Pattern # 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Split (seconds)	11	40	11	28	11	40	11	28	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	90s	90s	0s	0s

Split Pattern # 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Split (seconds)	11	53	11	15	11	53	11	15	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase	X								X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	90s	90s	0s	0s

Split Pattern # 11

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Split (seconds)	24	50	11	35	15	59	18	28	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	120s	120s	0s	0s

Split Pattern # 13

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	SBLT	NB	WBLT	EB	NBLT	SB	EBLT	WB								
Split (seconds)	20	60	35	25	11	69	24	36	0	0	0	0	0	0	0	0
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall		X				X										
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Ring	1	2	3	4
Split Sum	140s	140s	0s	0s

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Preempt Plan

Preempt Plan (MM) 4-1

Preempt Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing									X	X	X	X	X	X	X	X
Dwell Veh	.	.	X	.	.	.	.	X	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases				X				X								
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	8	5	4.0	1.0
	Min Grn	Ext Grn	Max Grn	Yellow	Red
Track Clear	0	0	0	4.0	1.0
	Min Dwell	Pmt Ext	Max Time	Yellow	Red
Dwell / Cycle-Exit	8	0.0	50	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing									X	X	X	X	X	X	X	X
Dwell Veh	.	.	.	X	.	.	X	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																

Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases				X				X								
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	8	5	4.0	1.0
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	8	0.0	50	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing									X	X	X	X	X	X	X	X
Dwell Veh	X	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	8	5	4.0	1.0
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	8	0.0	50	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Preempt Plan 6

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Trk Clr Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Trk Clr Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Enable Trailing									X	X	X	X	X	X	X	X
Dwell Veh	.	X	.	.	X	.	.	.	.	.	.	.	.	.	.	.
Dwell Ped																
Dwell Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Veh	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Cycling Ped																
Cycling Overlap	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Exit Phases		X				X										
Exit Calls																
Special Function																

Enable	Yes	Preempt Override	Yes	Interlock Enable	No
Det Lock	Yes	Delay	0	Inhibit	0
Override Flash	Yes	Duration	5	CLR > GRN	No
Term Ovlp Asap	No	PC Through Yel	No	Terminate Phase	No
Ped Dark	No	Track Clear Rsrv	No	Dwell Flash	Off
Linked Pmt	0	FL Exit Color	Grn	Exit Options	Off
Exit Timing Plan	0	Reservice	0	Fault Type	Hard

Ring	1	2	3	4
Free During Pmt	No	No	No	No

Timing	Walk	Ped Clr	Min Grn	Yellow	Red
Entrance	0	8	5	4.0	1.0
	Min Grn	**Ext Grn**	**Max Grn**	**Yellow**	**Red**
Track Clear	0	0	0	4.0	1.0
	Min Dwell	**Pmt Ext**	**Max Time**	**Yellow**	**Red**
Dwell / Cycle-Exit	8	0.0	50	4.0	1.0

Preemption Active Out	On	Preempt Act Dwell	No
Other - Priority Preempt	Off	Non-Priority Pmt	Off
Inhibit Extension Time	0.0	Ped Priority Return	Off
Veh Priority Return	Off	Queue Delay	Off
Conditional Delay	Off		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Veh Pri Return %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Preempt Preempt Filtering
Enable Preempt Filtering & TSP/SCP (MM) 4-2

Input	Solid	Pulsing
1	PREEMPTION 1	...BYPASSED...
2	PREEMPTION 2	...BYPASSED...
3	PREEMPTION 3	PREEMPTION 7
4	PREEMPTION 4	PREEMPTION 8
5	PREEMPTION 5	PREEMPTION 9
6	PREEMPTION 6	PREEMPTION 10
7	...BYPASSED...	...BYPASSED...
8	...BYPASSED...	...BYPASSED...
9	...BYPASSED...	...BYPASSED...
10	...BYPASSED...	...BYPASSED...

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Preempt TSP/SCP Plan and Split

TSP / SCP Plan (MM) 4-3

TSP/SCP Plan	Enable Option	Signal Type	Det Lock	Delay Time	Max Presence	PMT Enables Reservice	No Delay in TSP	Action SF Inhibit	Reservice Cycles	Bus Heading
1	No	Solid	No	0	0	No	False	0	0	NB
2	No	Solid	No	0	0	No	False	0	0	SB
3	No	Solid	No	0	0	No	False	0	0	EB
4	No	Solid	No	0	0	No	False	0	0	WB
5	No	Solid	No	0	0	No	False	0	0	.
6	No	Solid	No	0	0	No	False	0	0	.

Mode: TSP
Free Default Pattern: 120
Headway Allowance: 0

TSP/SCP Plan	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

TSP / SCP Split Pattern (MM) 4-4

TSP/SCP Split Pattern	Max Type	Phase															
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
4	Max Reduction	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255	255

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Time Base Clock/Calendar
Clock/Calendar Data (MM) 5-1

Manual Action Plan:	0
SYNC Reference Time:	00:00
SYNC Reference:	Reference Time
Day Light Savings:	No
Time Reset Input Set Time:	0:00:00
Standard Time From GMT:	0

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Time Base Action Plan
Action Plan (MM) 5-2

Action Plan - 1

Pattern	1	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 2

Pattern	2	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 3

Pattern	3	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 10

Pattern	Free	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 11

Pattern	11	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								

Aux Func (1-3)			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

Action Plan - 13

Pattern	13	Override Sys	No
Timing Plan	1	Sequence	0
Veh Detector Plan	0	Det Log	None
Flash	No	Red Rest	No
Veh Det Diag Plan	0	Ped Det Diag Plan	0
Dimming Enable	No	Pmt Veh Priority Ret	No
Pmt Ped Priority Ret	No	Pmt Queue Delay	No
Pmt Cond Delay	No		

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall		X				X										
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																

Spec Func (1-8)								
Aux Func (1-3)								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.					

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	1	06:00
2	2	09:00
3	3	15:00
4	4	19:00
5	5	22:00

Day Plan #2

Event	Action Plan	Start Time
1	4	06:00
2	2	10:00
3	4	18:00
4	5	22:00

Day Plan #3

Event	Action Plan	Start Time
1	2	06:00
2	4	10:00
3	2	18:00
4	5	22:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Time Base Exceptions
Exception Day Program (MM) 5-5

Excep Day	Float/Fixed	Mon/Mon	DOW/DOM	WOM/Year	Day Plan
1	FIXED	1	1	0	3
2	FLOAT	2	2	3	3
3	FIXED	4	19	0	3
4	FLOAT	5	2	3	3
5	FIXED	7	1	0	3
6	FLOAT	8	2	1	3
7	FLOAT	9	2	1	3
8	FLOAT	10	2	2	3
9	FIXED	12	25	0	3

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Detectors

Detectors - Pg 1

Veh Det Phase Assignment (MM) 6-1

Vehicle Detector Plan Number - 1

Veh Detector	Assigned Phase	Called Phase	Type
1	1		S
2	2		S
3	3	8	S
4	4		S
5	5		S
6	6		S
7	7	4	S
8	8		S
9	9		S
10	10		S
11	11		S
12	12		S
13	13		S
14	14		S
15	15		S
16	16		S

Vehicle Detector Plan Number - 2

Veh Detector	Assigned Phase	Called Phase	Type

Vehicle Detector Plan Number - 3

Veh Detector	Assigned Phase	Called Phase	Type

Vehicle Detector Plan Number - 4

Veh Detector	Assigned Phase	Called Phase	Type

Vehicle Detector Setup (MM) 6-2

Veh Detector	Type	TS2 Detector	Description
1	S-STANDARD	No	
2	S-STANDARD	No	
3	S-STANDARD	No	
4	S-STANDARD	No	
5	S-STANDARD	No	
6	S-STANDARD	No	
7	S-STANDARD	No	
8	S-STANDARD	No	
9	S-STANDARD	No	
10	S-STANDARD	No	
11	S-STANDARD	No	
12	S-STANDARD	No	
13	S-STANDARD	No	
14	S-STANDARD	No	
15	S-STANDARD	No	
16	S-STANDARD	No	
17	S-STANDARD	Yes	
18	S-STANDARD	Yes	
19	S-STANDARD	Yes	
20	S-STANDARD	Yes	
21	S-STANDARD	Yes	
22	S-STANDARD	Yes	

23	S-STANDARD	Yes	
24	S-STANDARD	Yes	
25	S-STANDARD	Yes	
26	S-STANDARD	Yes	
27	S-STANDARD	Yes	
28	S-STANDARD	Yes	
29	S-STANDARD	Yes	
30	S-STANDARD	Yes	
31	S-STANDARD	Yes	
32	S-STANDARD	Yes	
33	S-STANDARD	Yes	
34	S-STANDARD	Yes	
35	S-STANDARD	Yes	
36	S-STANDARD	Yes	
37	S-STANDARD	Yes	
38	S-STANDARD	Yes	
39	S-STANDARD	Yes	
40	S-STANDARD	Yes	
41	S-STANDARD	Yes	
42	S-STANDARD	Yes	
43	S-STANDARD	Yes	
44	S-STANDARD	Yes	
45	S-STANDARD	Yes	
46	S-STANDARD	Yes	
47	S-STANDARD	Yes	
48	S-STANDARD	Yes	
49	S-STANDARD	Yes	
50	S-STANDARD	Yes	
51	S-STANDARD	Yes	
52	S-STANDARD	Yes	
53	S-STANDARD	Yes	
54	S-STANDARD	Yes	
55	S-STANDARD	Yes	
56	S-STANDARD	Yes	
57	S-STANDARD	Yes	
58	S-STANDARD	Yes	
59	S-STANDARD	Yes	
60	S-STANDARD	Yes	
61	S-STANDARD	Yes	
62	S-STANDARD	Yes	
63	S-STANDARD	Yes	
64	S-STANDARD	Yes	

Vehicle Detector Plan Number - 1

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay
1	1	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
2	2	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
3	3	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
4	4	No	Yes	0.0	Passage	0.0	0	No	0	Red	No	No	No
5	5	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
6	6	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
7	7	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
8	8	No	Yes	0.0	Passage	0.0	0	No	0	Red	No	No	No
9	9	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
10	10	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
11	11	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
12	12	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
13	13	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
14	14	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
15	15	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
16	16	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

17	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
18	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
19	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
20	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
21	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
22	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
23	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
24	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
25	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
26	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
27	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
28	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
29	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
30	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
31	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
32	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
33	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
34	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
35	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
36	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
37	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
38	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
39	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
40	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
41	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
42	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
43	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
44	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
45	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
46	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
47	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
48	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
49	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
50	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
51	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
52	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
53	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
54	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
55	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
56	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
57	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
58	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
59	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
60	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
61	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
62	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
63	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No
64	0	No	Yes	0.0	Passage	0.0	0	No	0	None	No	No	No

Vehicle Detector Plan Number - 2

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay

Vehicle Detector Plan Number - 3

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay

Vehicle Detector Plan Number - 4

Veh Detector	Phase	ECPI Log	Call Option	Delay Time	Ext Option	Extend Time / Passage Time	Queue Lim. / Discon. Time	Use Added Initial	Cross Switch Ph	Lock In	NTCIP Vol.	NTCIP Occ.	Pmt Queue Delay

Ped Detector Phase Assignment (MM) 6-3

Mode: NTCIP

Called Phase	Detector
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11
12	12
13	13
14	14
15	15
16	16

City of Burlington

ECONOLITE

MOVING TRAFFIC FORWARD

Appleby Ln @ Harvester Rd - TS 280 - Econolite Type - ASC/3

Detectors

Detectors - Pg 2

Log - Speed Detector Setup (MM) 6-4

NTCIP Log Period: 60 ECPI Log Period: 0 Length Unit: Inches

Speed Detector	Local Detector	One/Two Detector	Vehicle Length	Trap length	Enable Log
1	0	1	0	0	No
2	0	1	0	0	No
3	0	1	0	0	No
4	0	1	0	0	No
5	0	1	0	0	No
6	0	1	0	0	No
7	0	1	0	0	No
8	0	1	0	0	No
9	0	1	0	0	No
10	0	1	0	0	No
11	0	1	0	0	No
12	0	1	0	0	No
13	0	1	0	0	No
14	0	1	0	0	No
15	0	1	0	0	No
16	0	1	0	0	No

Vehicle Detector Diagnostics (MM) 6-5

Veh Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Veh Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier	Failed Time	Failed Call Delay

Pedestrian Detector Diagnostics (MM) 6-6

Ped Diagnostic Plan Number - 1

Det	Counts	Act	Pres	Multiplier
4	0	0	10	1
8	0	0	10	1

Ped Diagnostic Plan Number - 2

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 3

Det	Counts	Act	Pres	Multiplier

Ped Diagnostic Plan Number - 4

Det	Counts	Act	Pres	Multiplier

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ QEW South Ramp	281	9	ACS/3	172.22.129.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		MA
1	2016	10	31	Reverted back to Rev1	

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	NB - Appleby Line	Ph6	SB - Appleby Line
Ph3		Ph7	
Ph4	EB - Off Ramp	Ph8	

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

Phase:	1	2	3	4	5	6	7	8
Phase in Use		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		8		8		8		
Walk		7				7		
Ped. Clearance		19				19		
Pedestrian Carry Over								
Vehicle Extension		3		3		3		
MAX 1		35		20		35		
MAX 2		35		20		35		
Yellow Change		4		4		4		
Red Clearance		2		2		2		
Phase Minimum:	1	33	1	7	1	33	1	1

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 Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)								
					1	2	3	4	5	6	7	8	
1	120	89	1	1		72		48		72			
2	110	73	1	2		70		40		70			
3	140	32	1	3		91		49		91			
10	0	0	1	10		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	06:00	1	1	
1	1	2	09:00	2	1	Schedule 1 = Day Plan 1
1	1	3	15:00	3	1	Schedule 2 = Day Plan 2
1	1	2	19:00	3	1	Schedule 3 = Day Plan 3
1	1	10	22:00	254	1	
2	2	2	06:00	2	1	Day Plan 1 (Weekday)
2	2	10	21:30	254	1	Day Plan 2 (Saturday)
3	3	2	06:00	2	1	Day Plan 3 (Sunday, Holidays)
3	3	10	21:30	254	1	
						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

Intersection Name:	TS ID:	Line No:	Model:	IP address:	Controller Make:
Appleby Ln @ QEW North ramp	282	9	ACS/3	172.22.130.2	Econolite

Type of Operation: 8 Phase Semi-Actuated

*-Start from Main Menu

No	Date			Description	Prepared by
	Y	M	D		EN
3	2016	10	31	Reverted back to Rev1	

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	SB - Appleby Ln	Ph6	NB - Appleby Ln
Ph3		Ph7	
Ph4		Ph8	WB - QEW Off Ramp

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

Phase:	1	2	3	4	5	6	7	8
Phase in Use		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		8				8		8
Walk		7				7		0
Ped. Clearance		19				19		0
Pedestrian Carry Over								
Vehicle Extension		3				3		3
MAX 1		35				35		30
MAX 2		35				35		30
Yellow Change		4				4		4
Red Clearance		2				2		2
Phase Minimum:	**1**	**33**	**1**	**1**	**1**	**33**	**1**	**7**

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 Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec)								
					1	2	3	4	5	6	7	8	
1	120	86	1	1		80				80		40	
2	110	2	1	2		70				70		40	
3	140	32	1	3		91				91		49	
10	0	0	1	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	06:00	1	1	
1	1	2	09:00	2	1	Schedule 1 = Day Plan 1
1	1	3	15:00	3	1	Schedule 2 = Day Plan 2
1	1	2	19:00	2	1	Schedule 3 = Day Plan 3
1	1	10	22:00	254	1	
2	2	2	6:00	2	1	Day Plan 1 (Weekday)
2	2	10	21:30	254	1	Day Plan 2 (Saturday)
3	3	2	06:00	2	1	Day Plan 3 (Sunday, Holidays)
3	3	10	21:30	254	1	
						Action Plan 10 = free (254)

Special Programming:

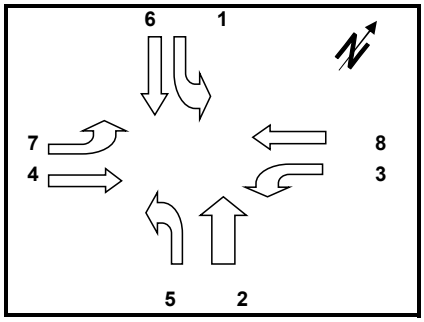
TIME BASE DATA - TIME OF YEAR EVENTS						* - 5 - 5
Events	Exception Day		MON/ MON	DOW/ DOW	WOM/ Year	Day Plan
New Year's Day	1	Fixed	1	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	4	6	1	3
Victoria Day	4	Float	5	2	3	3
Canada Day	5	Fixed	7	1	0	3
Civic Day	6	Float	8	2	1	3
Labour Day	7	Float	9	2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

CITY OF BURLINGTON
TRAFFIC SIGNAL CONTROL SYSTEM

INT: **Appleby Ln @ N. Service Road** INT: **283** EFFECTIVE DATE: / /

GROUP NO: **1015**

NEMA PHASE MOVEMENTS



CYCLE DEFINITION TABLE:

PHASE	VEH MIN	PED WLK	PED CLR	AMB	ALL RED	SP	MIN
1	7			3	1		12
2	8	7	19	4	3	C	34
3	7			3	1		12
4	8	7	22	4	3	E	39
5	7			3	1		12
6	8	7	19	4	3	C	34
7							0
8	8	7	22	4	3	E	39
					Min Cycle =		97

AM PEAK: 120 **sec Cycle**

PHASE MOVEMENTS

SPLIT 1		1	2	3	4	5	6	7	8	Offset
	in %	10	49	10	31	10	49	0	41	77%
	in sec	11	59	13	37	11	59	0	50	92

NOON PEAK: 110 **sec Cycle**

PHASE MOVEMENTS

SPLIT 2		1	2	3	4	5	6	7	8	Offset
	in %	11	44	10	35	11	44	0	45	8%
	in sec	11	49	11	39	11	49	0	50	9

PM PEAK: 140 **sec Cycle**

PHASE MOVEMENTS

SPLIT 3		1	2	3	4	5	6	7	8	Offset
	in %	9	50	14	27	10	49	0	41	30%
	in sec	12	70	20	38	13	69	0	58	42

OFF PEAK: 90 **sec Cycle**

PHASE MOVEMENTS

SPLIT 4		1	2	3	4	5	6	7	8	Offset
	in %	13	43	12	32	13	43	0	44	9%
	in sec	10	39	12	29	11	39	0	40	8

Weekend 110 **sec Cycle**

PHASE MOVEMENTS

SPLIT 5		1	2	3	4	5	6	7	8	Offset
	in %	11	44	10	35	11	49	0	45	8%
	in sec	11	49	11	39	11	49	0	50	9

Intersection Name:	TS ID:	Line NO:	IP address:
Harvester Rd @ SSR East of Appleby Line	289	7	172.22.196.2
Controller Make: Econolite	**Model:** ACS/3	**Firmware Rev. No:**	

Type of Operation 8 Phase Semi-Actuated

Revision

NO	Date Y	Date M	Date D	Description	Prepared by
1	2015	5	5	Implement timings in Centracs	MA

*- Start From Main Menu

PHASE DESCRIPTION

Ph1		Ph5	
Ph2	EB - Harvester Rd	PH6	WB - Harvester Rd
Ph3		Ph7	
Ph4	NB - Maple Leaf Foods	Ph8	SB - SSR East of Appleby Line

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
Exclusive PED :								

CONTROLLER TIMING DATA - VEHICLE TIMINGS (4 available) * - 2 - 1

Timing Plan: 1

Phase:	1	2	3	4	5	6	7	8
Minimum Green :		15		8		15		8
Conditional Service Min. Green :								
Walk :		20		8		20		8
Ped. Clearance :		14		8		14		8
Pedestrians Carry Over :								
Vehicle Extension :		3		3		3		3
MAX 1 :		40		15		40		15
MAX 2 :		40		15		40		15
Yellow Change :		4		4		4		4
Red Clearance :		2		3		2		3

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		
Soft Recall :								

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

Coordinator Pattern (CP)	Cycle Length	Offset (sec)	Timing Plan	Split Pattern	Phases (sec) 1	2	3	4	5	6	7	
1	70	0	1	1		46		24		46		24
3	90	0	1	3		64		26		64		26
10	0	0	1	10		0				0		0

Intersection Name:	TS ID:	Line NO:	IP address:
Harvester Rd @ SSR East of Appleby Line	289	7	172.22.196.2
Controller Make:	**Model:**	**Firmware Rev. No:**	
Econolite	ACS/3		

CP # 1, 2, 10	Phase:	1	2	3	4	5	6	7	8
Coord Phase	:		X				X		
Vehicle Recall	:								
Pedestrian Recall *(3-3, 5-2)	:		X				X		
Recall to MAX Time	:								
Phase Omit	:								
Special Function Outputs	:								

Coordinator Pattern #	Prefer.	Phase 1	2	3	4	5	6	7	8
	1								
	2								

X - select "." deselect

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	07:30	1	1
1	1	10	09:30	254	1
1	1	3	15:30	3	1
1	1	10	18:30	254	1
2	2	10	06:00	254	1
3	3	10	06:00	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)

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

Events	Exception Day		MON/ MON	DOW/ DOM	WOM/ Year	Day Plan
New Year's Day	1	Fixed	01	1	0	3
Family Day	2	Float	2	2	3	3
Good Friday	3	Float	04	6	1	3
Victoria Day	4	Float	05	2	3	3
Canada Day	5	Fixed	07	1	0	3
Civic Day	6	Float	08	2	1	3
Labour Day	7	Float	09	2	1	3
Thanksgiving	8	Float	10	2	2	3
Christmas Day	9	Fixed	12	25	0	3

Appendix D

Heavy Vehicle Percent Calculations

AM/PM Intersection

1 Harvester Road / Appleby Line

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
AM	7	20	9	6	6	27	17	39	24	31	21	16
PM	6	12	6	10	19	13	8	23	48	10	8	4
SAT												
	8%(6%)	2%(2%)	3%(4%)	7%(2%)	4%(3%)	14%(5%)	6%(5%)	7%(2%)	8%(17%)	17%(4%)	3%(3%)	26%(2%)

ts after output

ts after output

2 Harvester Road / South Service Road

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
AM	9	0	3	3	25	0	0	0	4	2	38	6
PM	6	0	2	5	36	1	0	0	1	0	17	4
SAT												
	90%(11%)	2%(2%)	100%(29%)	60%(100%)	9%(4%)	2%(4%)	2%(2%)	2%(2%)	3%(2%)	2%(2%)	3%(3%)	67%(50%)

3 EB Highway 403 Appleby Line Ramp Terminal

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
AM	0	67	16	0	0	0	0	60	28	17	0	22
PM	0	23	16	0	0	0	0	72	20	18	0	15
SAT												
	2%(2%)	8%(2%)	4%(4%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	7%(5%)	9%(6%)	6%(5%)	2%(2%)	14%(5%)

4 WB Highway 403 Appleby Line Ramp Terminal

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
AM	0	55	24	37	0	39	0	50	42	0	0	0
PM	0	38	4	39	0	27	0	52	7	0	0	0
SAT												
	2%(2%)	6%(3%)	9%(3%)	13%(9%)	2%(2%)	12%(7%)	2%(2%)	5%(4%)	10%(2%)	2%(2%)	2%(2%)	2%(2%)

5 Site Access / Appleby Line

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
AM	0	81	0	0	0	2	4	76	0	0	0	0
PM	0	41	1	0	0	0	1	89	0	0	0	0
SAT												
	2%(2%)	6%(3%)	2%(11%)	2%(2%)	2%(2%)	7%(2%)	3%(2%)	6%(5%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)

6 Site Access / South Service Road

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
AM												
PM												
SAT												
	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)	2%(2%)

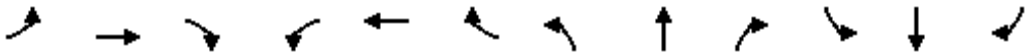
7 North Service Road / Appleby Line

	NBL	NBT	NBR	WBL	WBT	WBR	SBL	SBT	SBR	EBL	EBT	EBR
AM	10	61	14	12	3	1	2	73	0	0	4	10
PM	8	43	3	3	4	7	4	51	5	6	1	16
SAT												
	8%(3%)	6%(3%)	4%(3%)	14%(2%)	13%(2%)	3%(5%)	2%(6%)	6%(5%)	2%(7%)	2%(12%)	3%(3%)	17%(9%)

Appendix E

2023 Existing Conditions Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Future Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.988			0.913				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	3392	0	1687	2958	0	1671	3539	1568	1703	3367	1483
Flt Permitted	0.267			0.252			0.422			0.103		
Satd. Flow (perm)	431	3392	0	447	2958	0	741	3539	1541	185	3367	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			198				196			331
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			186.7			133.0	
Travel Time (s)		12.0			13.2			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	195	751	65	85	144	198	92	1060	360	311	608	331
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	816	0	85	342	0	92	1060	360	311	608	331
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	18.0	35.0		11.0	28.0		15.0	50.0	50.0	24.0	59.0	59.0
Total Split (%)	15.0%	29.2%		9.2%	23.3%		12.5%	41.7%	41.7%	20.0%	49.2%	49.2%
Maximum Green (s)	14.0	28.7		7.0	21.7		11.0	43.7	43.7	20.0	52.7	52.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	31.0	28.7		23.5	19.8		57.7	46.8	46.8	72.2	57.3	57.3
Actuated g/C Ratio	0.26	0.24		0.20	0.16		0.48	0.39	0.39	0.60	0.48	0.48
v/c Ratio	0.82	1.00		0.53	0.52		0.22	0.77	0.50	0.88	0.38	0.38
Control Delay	65.3	77.0		60.5	21.3		13.2	37.4	15.5	69.8	15.7	3.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	65.3	77.0		60.5	21.3		13.2	37.4	15.5	69.8	15.7	3.6
LOS	E	E		E	C		B	D	B	E	B	A
Approach Delay		74.7			29.1			30.7			26.0	
Approach LOS		E			C			C			C	
Queue Length 50th (m)	41.2	106.2		17.9	16.3		9.5	124.5	30.0	60.6	25.8	2.3
Queue Length 95th (m)	#70.8	#151.3		33.2	31.5		17.3	152.7	60.1	#107.3	49.1	20.2
Internal Link Dist (m)		175.5			196.4			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	241	816		159	697		456	1379	720	363	1608	870
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.81	1.00		0.53	0.49		0.20	0.77	0.50	0.86	0.38	0.38

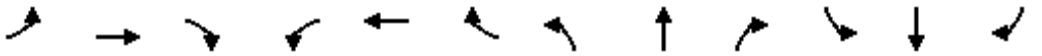
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 1.00	
Intersection Signal Delay: 39.7	Intersection LOS: D
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Appleby Line & Harvester Road

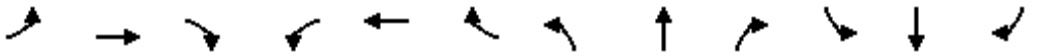




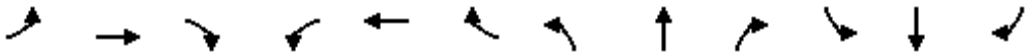
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Future Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1541	3392		1687	2958		1670	3539	1541	1703	3367	1459
Flt Permitted	0.27	1.00		0.25	1.00		0.42	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	432	3392		448	2958		742	3539	1541	184	3367	1459
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)	195	751	65	85	144	198	92	1060	360	311	608	331
RTOR Reduction (vph)	0	5	0	0	164	0	0	0	121	0	0	175
Lane Group Flow (vph)	195	811	0	85	178	0	92	1060	239	311	608	156
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	28.7	28.7		22.9	20.6		54.6	46.0	46.0	69.1	56.5	56.5
Effective Green, g (s)	28.7	28.7		22.9	20.6		54.6	46.0	46.0	69.1	56.5	56.5
Actuated g/C Ratio	0.24	0.24		0.19	0.17		0.46	0.38	0.38	0.58	0.47	0.47
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	229	811		143	507		404	1356	590	347	1585	686
v/s Ratio Prot	0.10	c0.24		c0.03	0.06		0.02	0.30		c0.14	0.18	
v/s Ratio Perm	0.11			0.09			0.09		0.16	c0.37		0.11
v/c Ratio	0.85	1.00		0.59	0.35		0.23	0.78	0.41	0.90	0.38	0.23
Uniform Delay, d1	40.2	45.6		48.7	43.8		18.9	32.6	27.0	32.2	20.5	18.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.66	0.72	1.07
Incremental Delay, d2	24.9	31.5		6.5	0.4		0.3	4.5	2.1	23.8	0.7	0.8
Delay (s)	65.1	77.2		55.1	44.2		19.1	37.1	29.1	77.3	15.4	20.9
Level of Service	E	E		E	D		B	D	C	E	B	C
Approach Delay (s)		74.8			46.4			34.1			32.3	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	44.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	1093	9	5	272	36	10	0	3	58	1	119
Future Volume (vph)	181	1093	9	5	272	36	10	0	3	58	1	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.98
Frt		0.999			0.983			0.971				0.850
Flt Protected		0.993			0.999			0.962			0.953	
Satd. Flow (prot)	0	3452	0	0	3232	0	0	924	0	0	1775	1568
Flt Permitted		0.818			0.936			0.729			0.720	
Satd. Flow (perm)	0	2843	0	0	3029	0	0	693	0	0	1341	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			34			47				131
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			433.8	
Travel Time (s)		13.2			11.5			8.0			31.2	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	199	1201	10	5	299	40	11	0	3	64	1	131
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1410	0	0	344	0	0	14	0	0	65	131
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

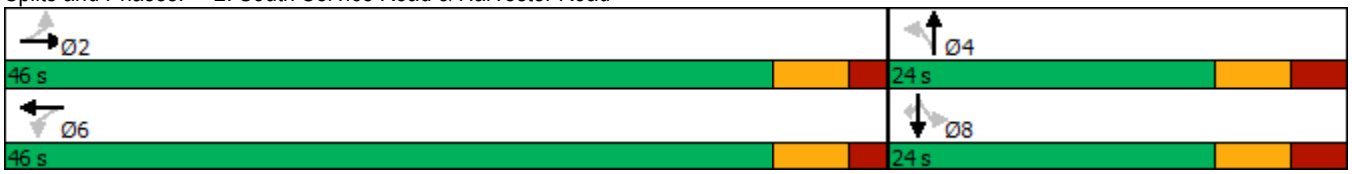


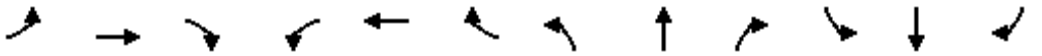
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	46.0	46.0		46.0	46.0		24.0	24.0		24.0	24.0	24.0
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	34.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		44.3			44.3			9.2			9.2	9.2
Actuated g/C Ratio		0.71			0.71			0.15			0.15	0.15
v/c Ratio		0.70			0.16			0.10			0.33	0.39
Control Delay		9.9			4.1			2.1			28.5	8.9
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		9.9			4.1			2.1			28.5	8.9
LOS		A			A			A			C	A
Approach Delay		9.9			4.1			2.1			15.4	
Approach LOS		A			A			A			B	
Queue Length 50th (m)		50.1			6.2			0.0			7.1	0.0
Queue Length 95th (m)		91.2			12.5			0.8			17.4	12.8
Internal Link Dist (m)		196.4			168.0			86.6			409.8	
Turn Bay Length (m)												
Base Capacity (vph)		2026			2167			224			366	513
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.70			0.16			0.06			0.18	0.26

Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.2			
Natural Cycle: 55			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 9.4		Intersection LOS: A	

Intersection Capacity Utilization 88.5% ICU Level of Service E
Analysis Period (min) 15

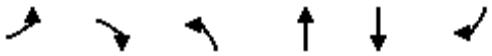
Splits and Phases: 2: South Service Road & Harvester Road



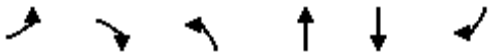


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	1093	9	5	272	36	10	0	3	58	1	119
Future Volume (vph)	181	1093	9	5	272	36	10	0	3	58	1	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			0.98			0.97			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.95	1.00
Satd. Flow (prot)		3450			3232			916			1775	1531
Flt Permitted		0.82			0.94			0.73			0.72	1.00
Satd. Flow (perm)		2841			3028			694			1340	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	199	1201	10	5	299	40	11	0	3	64	1	131
RTOR Reduction (vph)	0	1	0	0	11	0	0	12	0	0	0	116
Lane Group Flow (vph)	0	1409	0	0	333	0	0	2	0	0	65	15
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		43.1			43.1			7.5			7.5	7.5
Effective Green, g (s)		43.1			43.1			7.5			7.5	7.5
Actuated g/C Ratio		0.68			0.68			0.12			0.12	0.12
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1925			2051			81			158	180
v/s Ratio Prot												
v/s Ratio Perm		c0.50			0.11			0.00			c0.05	0.01
v/c Ratio		0.73			0.16			0.02			0.41	0.09
Uniform Delay, d1		6.6			3.7			24.8			26.0	25.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		2.5			0.2			0.1			1.7	0.2
Delay (s)		9.1			3.9			24.9			27.7	25.2
Level of Service		A			A			C			C	C
Approach Delay (s)		9.1			3.9			24.9			26.0	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	63.6	Sum of lost time (s)	13.0
Intersection Capacity Utilization	88.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



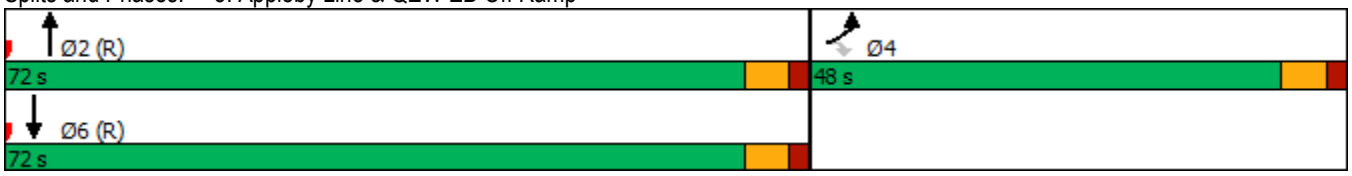
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	276	155	0	895	897	0
Future Volume (vph)	276	155	0	895	897	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		168				
Link Speed (k/h)	60			60	60	
Link Distance (m)	314.2			230.2	319.8	
Travel Time (s)	18.9			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	300	168	0	973	975	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	300	168	0	973	975	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

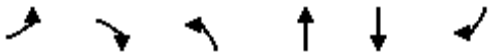


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	16.4	16.4		91.6	91.6	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
v/c Ratio	0.67	0.34		0.37	0.38	
Control Delay	56.4	8.4		3.7	9.1	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	56.4	8.4		3.7	9.1	
LOS	E	A		A	A	
Approach Delay	39.2			3.7	9.1	
Approach LOS	D			A	A	
Queue Length 50th (m)	36.9	0.0		27.2	78.8	
Queue Length 95th (m)	49.9	10.8		36.2	82.8	
Internal Link Dist (m)	290.2			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1156	1013		2600	2600	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.26	0.17		0.37	0.38	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.67	
Intersection Signal Delay: 12.8	Intersection LOS: B
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	276	155	0	895	897	0
Future Volume (vph)	276	155	0	895	897	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	300	168	0	973	975	0
RTOR Reduction (vph)	0	145	0	0	0	0
Lane Group Flow (vph)	300	23	0	973	975	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.4	16.4		91.6	91.6	
Effective Green, g (s)	16.4	16.4		91.6	91.6	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	451	353		2599	2599	
v/s Ratio Prot	c0.09			0.29	c0.29	
v/s Ratio Perm		0.01				
v/c Ratio	0.67	0.07		0.37	0.38	
Uniform Delay, d1	49.2	45.1		4.7	4.7	
Progression Factor	1.00	1.00		0.69	1.73	
Incremental Delay, d2	3.7	0.1		0.3	0.4	
Delay (s)	52.9	45.2		3.5	8.6	
Level of Service	D	D		A	A	
Approach Delay (s)	50.1			3.5	8.6	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	293	323	910	0	0	924
Future Volume (vph)	293	323	910	0	0	924
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		130				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	318	351	989	0	0	1004
Shared Lane Traffic (%)						
Lane Group Flow (vph)	318	351	989	0	0	1004
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	24.4	24.4	83.6			83.6
Actuated g/C Ratio	0.20	0.20	0.70			0.70
v/c Ratio	0.49	0.87	0.42			0.43
Control Delay	43.5	49.2	9.7			11.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	43.5	49.2	9.7			11.1
LOS	D	D	A			B
Approach Delay	46.5		9.7			11.1
Approach LOS	D		A			B
Queue Length 50th (m)	35.9	55.0	42.3			35.4
Queue Length 95th (m)	45.6	85.4	92.1			90.0
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	910	513	2372			2349
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.35	0.68	0.42			0.43

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	

Intersection Signal Delay: 19.5	Intersection LOS: B
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	293	323	910	0	0	924
Future Volume (vph)	293	323	910	0	0	924
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	318	351	989	0	0	1004
RTOR Reduction (vph)	0	104	0	0	0	0
Lane Group Flow (vph)	318	247	989	0	0	1004
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	24.4	24.4	83.6			83.6
Effective Green, g (s)	24.4	24.4	83.6			83.6
Actuated g/C Ratio	0.20	0.20	0.70			0.70
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	653	301	2372			2350
v/s Ratio Prot	0.10		0.29			c0.30
v/s Ratio Perm		c0.17				
v/c Ratio	0.49	0.82	0.42			0.43
Uniform Delay, d1	42.3	45.7	7.8			7.9
Progression Factor	1.00	1.00	1.04			1.20
Incremental Delay, d2	0.6	16.3	0.5			0.4
Delay (s)	42.8	62.1	8.6			9.8
Level of Service	D	E	A			A
Approach Delay (s)	52.9		8.6			9.8
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	29	1375	7	132	1195
Future Volume (vph)	0	29	1375	7	132	1195
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	65.0	
Storage Lanes	1	0		0	2	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1481	0	3427	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1481	0	3427	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	31	1463	7	140	1271
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	1470	0	140	1271
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

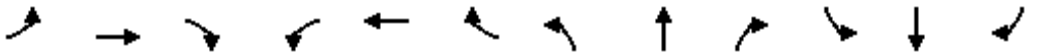
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		



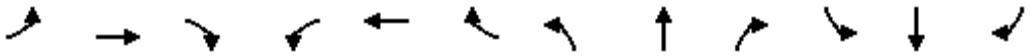
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	29	1375	7	132	1195
Future Volume (Veh/h)	0	29	1375	7	132	1195
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	31	1463	7	140	1271
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.77	0.73			0.73	
vC, conflicting volume	2385	738			1473	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1745	0			918	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	96			74	
cM capacity (veh/h)	40	772			541	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	31	975	495	140	636	636
Volume Left	0	0	0	140	0	0
Volume Right	31	0	7	0	0	0
cSH	772	1700	1700	541	1700	1700
Volume to Capacity	0.04	0.57	0.29	0.26	0.37	0.37
Queue Length 95th (m)	1.0	0.0	0.0	8.2	0.0	0.0
Control Delay (s)	9.9	0.0	0.0	14.0	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	9.9	0.0		1.4		
Approach LOS	A					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	122	59	84	23	34	124	1018	357	86	1162	39
Future Volume (vph)	35	122	59	84	23	34	124	1018	357	86	1162	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99			0.99			1.00	
Frt		0.951			0.911			0.961			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1680	0	1583	1604	0	1671	3266	0	1770	3383	0
Flt Permitted	0.719			0.364			0.123			0.090		
Satd. Flow (perm)	1338	1680	0	607	1604	0	216	3266	0	168	3383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			35			52			4	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.7			190.1			245.0			64.5	
Travel Time (s)		3.7			11.4			14.7			3.9	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	36	127	61	88	24	35	129	1060	372	90	1210	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	36	188	0	88	59	0	129	1432	0	90	1251	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		9.5	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	37.0	37.0		13.0	50.0		11.0	59.0		11.0	59.0	
Total Split (%)	30.8%	30.8%		10.8%	41.7%		9.2%	49.2%		9.2%	49.2%	
Maximum Green (s)	30.0	30.0		8.5	43.0		7.0	52.0		7.0	52.0	
Yellow Time (s)	4.0	4.0		3.5	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.5	17.5		32.7	30.2		76.6	63.5		73.0	61.7	
Actuated g/C Ratio	0.15	0.15		0.27	0.25		0.64	0.53		0.61	0.51	
v/c Ratio	0.19	0.72		0.38	0.14		0.50	0.82		0.42	0.72	
Control Delay	44.9	58.9		36.8	16.6		13.9	26.6		15.8	26.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	44.9	58.9		36.8	16.6		13.9	26.6		15.8	26.8	
LOS	D	E		D	B		B	C		B	C	
Approach Delay		56.7			28.7			25.6			26.1	
Approach LOS		E			C			C			C	
Queue Length 50th (m)	7.9	40.6		16.8	4.5		7.9	124.2		7.5	121.2	
Queue Length 95th (m)	17.2	62.4		28.6	14.4		m15.4	#227.4		17.0	175.4	
Internal Link Dist (m)		37.7			166.1			221.0			40.5	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	334	434		234	597		260	1752		213	1741	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.43		0.38	0.10		0.50	0.82		0.42	0.72	

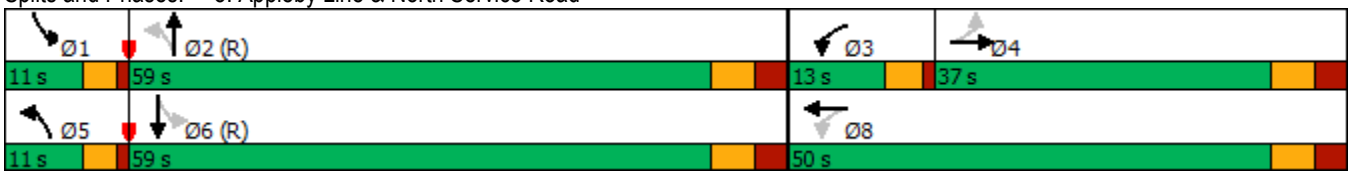
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 115	
Control Type: Actuated-Coordinated	

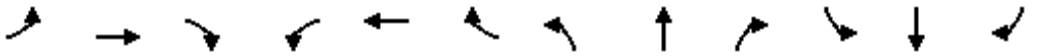
Maximum v/c Ratio: 0.82	
Intersection Signal Delay: 28.1	Intersection LOS: C
Intersection Capacity Utilization 80.2%	ICU Level of Service D
Analysis Period (min) 15	

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Appleby Line & North Service Road

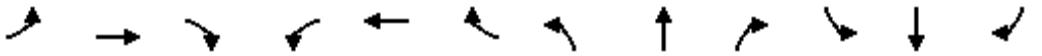




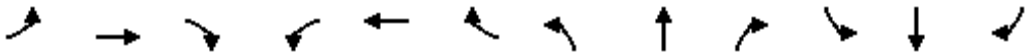
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	122	59	84	23	34	124	1018	357	86	1162	39
Future Volume (vph)	35	122	59	84	23	34	124	1018	357	86	1162	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1681		1583	1604		1671	3266		1770	3384	
Flt Permitted	0.72	1.00		0.36	1.00		0.12	1.00		0.09	1.00	
Satd. Flow (perm)	1337	1681		607	1604		217	3266		167	3384	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	36	127	61	88	24	35	129	1060	372	90	1210	41
RTOR Reduction (vph)	0	16	0	0	26	0	0	24	0	0	2	0
Lane Group Flow (vph)	36	172	0	88	33	0	129	1408	0	90	1249	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	17.5	17.5		30.2	30.2		73.6	63.5		70.0	61.7	
Effective Green, g (s)	17.5	17.5		30.2	30.2		73.6	63.5		70.0	61.7	
Actuated g/C Ratio	0.15	0.15		0.25	0.25		0.61	0.53		0.58	0.51	
Clearance Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	194	245		219	403		255	1728		208	1739	
v/s Ratio Prot		c0.10		c0.03	0.02		c0.04	c0.43		0.03	0.37	
v/s Ratio Perm	0.03			0.07			0.27			0.22		
v/c Ratio	0.19	0.70		0.40	0.08		0.51	0.81		0.43	0.72	
Uniform Delay, d1	45.0	48.8		36.0	34.3		14.7	23.4		16.7	22.5	
Progression Factor	1.00	1.00		1.00	1.00		0.85	0.92		1.00	1.00	
Incremental Delay, d2	0.5	8.7		1.2	0.1		1.5	4.0		1.4	2.6	
Delay (s)	45.5	57.5		37.2	34.4		14.0	25.6		18.1	25.0	
Level of Service	D	E		D	C		B	C		B	C	
Approach Delay (s)		55.6			36.1			24.7			24.6	
Approach LOS		E			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Future Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.98			0.98
Frt		0.988			0.913				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	3392	0	1687	2957	0	1671	3539	1568	1703	3367	1483
Flt Permitted	0.361			0.227			0.422			0.080		
Satd. Flow (perm)	582	3392	0	403	2957	0	741	3539	1540	143	3367	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			198				181			331
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			186.7			133.0	
Travel Time (s)		12.0			13.2			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	195	751	65	85	144	198	92	1060	360	311	608	331
Shared Lane Traffic (%)												
Lane Group Flow (vph)	195	816	0	85	342	0	92	1060	360	311	608	331
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



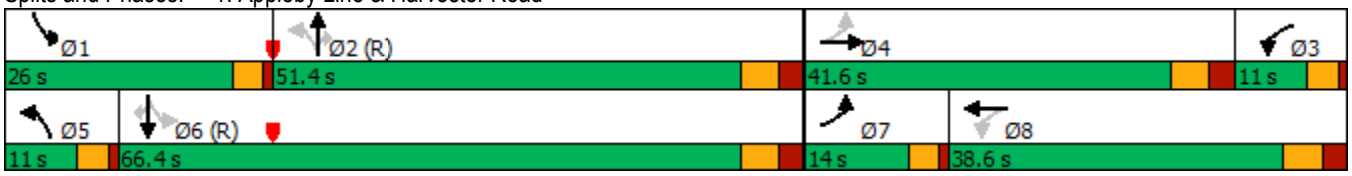
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	14.0	41.6		11.0	38.6		11.0	51.4	51.4	26.0	66.4	66.4
Total Split (%)	10.8%	32.0%		8.5%	29.7%		8.5%	39.5%	39.5%	20.0%	51.1%	51.1%
Maximum Green (s)	10.0	35.3		7.0	32.3		7.0	45.1	45.1	22.0	60.1	60.1
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	37.6	35.3		34.6	32.3		55.3	46.0	46.0	73.4	60.1	60.1
Actuated g/C Ratio	0.29	0.27		0.27	0.25		0.43	0.35	0.35	0.56	0.46	0.46
v/c Ratio	0.81	0.88		0.48	0.39		0.25	0.85	0.54	0.93	0.39	0.39
Control Delay	64.5	57.1		55.8	17.9		16.5	46.5	19.6	71.7	23.9	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.5	57.1		55.8	17.9		16.5	46.5	19.6	71.7	23.9	3.5
LOS	E	E		E	B		B	D	B	E	C	A
Approach Delay		58.5			25.5			38.3			30.4	
Approach LOS		E			C			D			C	
Queue Length 50th (m)	42.9	110.4		17.8	16.2		11.0	139.7	37.8	66.3	55.5	0.0
Queue Length 95th (m)	#80.7	#145.0		32.5	30.5		19.7	169.2	70.2	#121.9	70.7	16.6
Internal Link Dist (m)		175.5			196.4			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	242	926		176	883		365	1253	662	344	1556	852
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.88		0.48	0.39		0.25	0.85	0.54	0.90	0.39	0.39

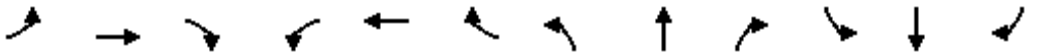
Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 39.5	Intersection LOS: D
Intersection Capacity Utilization 93.8%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Appleby Line & Harvester Road



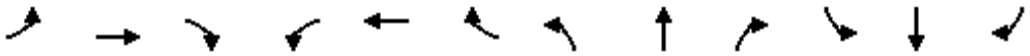


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Future Volume (vph)	185	713	62	81	137	188	87	1007	342	295	578	314
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1539	3392		1687	2958		1670	3539	1540	1703	3367	1459
Flt Permitted	0.36	1.00		0.23	1.00		0.42	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	586	3392		403	2958		741	3539	1540	143	3367	1459
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)	195	751	65	85	144	198	92	1060	360	311	608	331
RTOR Reduction (vph)	0	5	0	0	149	0	0	0	117	0	0	178
Lane Group Flow (vph)	195	811	0	85	193	0	92	1060	243	311	608	153
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	35.3	35.3		34.6	32.3		53.0	46.0	46.0	71.1	60.1	60.1
Effective Green, g (s)	35.3	35.3		34.6	32.3		53.0	46.0	46.0	71.1	60.1	60.1
Actuated g/C Ratio	0.27	0.27		0.27	0.25		0.41	0.35	0.35	0.55	0.46	0.46
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	232	921		176	734		352	1252	544	331	1556	674
v/s Ratio Prot	0.06	c0.24		c0.03	0.07		0.01	0.30		c0.15	0.18	
v/s Ratio Perm	0.16			0.10			0.09		0.16	c0.36		0.10
v/c Ratio	0.84	0.88		0.48	0.26		0.26	0.85	0.45	0.94	0.39	0.23
Uniform Delay, d1	42.4	45.3		49.1	39.3		24.1	38.7	32.2	40.2	22.9	21.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.0	11.8		2.1	0.2		0.4	7.2	2.6	33.6	0.7	0.8
Delay (s)	65.4	57.1		51.1	39.5		24.5	45.9	34.9	73.8	23.7	21.8
Level of Service	E	E		D	D		C	D	C	E	C	C
Approach Delay (s)		58.7			41.8			42.0			35.6	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	93.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Future Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		2	1		0
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.935			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3256	0	1770	3291	0	1703	3539	1553	1719	3532	1369
Flt Permitted	0.209			0.173			0.070			0.197		
Satd. Flow (perm)	382	3256	0	321	3291	0	125	3539	1520	356	3532	1343
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		115			56				150			210
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			186.7			133.0	
Travel Time (s)		12.0			13.2			11.2			8.0	
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	279	251	194	433	585	292	104	848	160	172	1391	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	279	445	0	433	877	0	104	848	160	172	1391	300
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	24.0	25.0		35.0	36.0		11.0	60.0	60.0	20.0	69.0	69.0
Total Split (%)	17.1%	17.9%		25.0%	25.7%		7.9%	42.9%	42.9%	14.3%	49.3%	49.3%
Maximum Green (s)	20.0	18.7		31.0	29.7		7.0	53.7	53.7	16.0	62.7	62.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	40.9	19.1		56.0	30.1		66.5	57.2	57.2	75.6	62.7	62.7
Actuated g/C Ratio	0.29	0.14		0.40	0.22		0.48	0.41	0.41	0.54	0.45	0.45
v/c Ratio	0.93	0.82		0.97	1.17		0.75	0.59	0.23	0.55	0.88	0.42
Control Delay	75.0	56.6		75.6	133.3		57.5	34.7	5.8	23.3	42.9	11.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.0	56.6		75.6	133.3		57.5	34.7	5.8	23.3	42.9	11.5
LOS	E	E		E	F		E	C	A	C	D	B
Approach Delay		63.7			114.3			32.7			36.1	
Approach LOS		E			F			C			D	
Queue Length 50th (m)	62.6	50.6		107.6	~154.3		14.3	100.3	1.7	26.6	187.7	20.9
Queue Length 95th (m)	#116.5	#76.6		#177.4	#198.0		#46.7	127.6	16.9	37.5	218.0	33.5
Internal Link Dist (m)		175.5			196.4			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	306	543		449	752		138	1444	709	349	1581	717
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.82		0.96	1.17		0.75	0.59	0.23	0.49	0.88	0.42

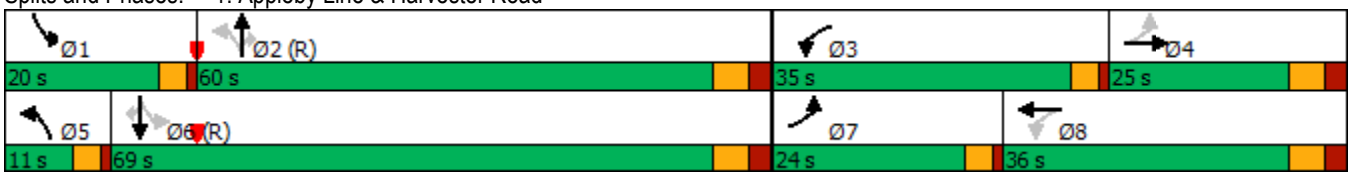
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 34 (24%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

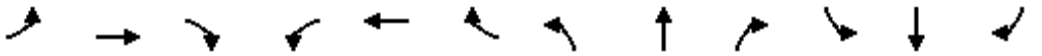
Maximum v/c Ratio: 1.17	
Intersection Signal Delay: 59.8	Intersection LOS: E
Intersection Capacity Utilization 109.6%	ICU Level of Service H
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road



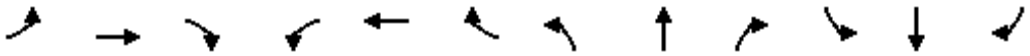


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Future Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1735	3255		1769	3291		1703	3539	1520	1719	3532	1343
Flt Permitted	0.21	1.00		0.17	1.00		0.07	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)	383	3255		322	3291		125	3539	1520	357	3532	1343
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	279	251	194	433	585	292	104	848	160	172	1391	300
RTOR Reduction (vph)	0	99	0	0	44	0	0	0	89	0	0	116
Lane Group Flow (vph)	279	346	0	433	833	0	104	848	71	172	1391	184
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	38.7	19.1		53.7	30.1		64.2	57.2	57.2	73.7	62.7	62.7
Effective Green, g (s)	38.7	19.1		53.7	30.1		64.2	57.2	57.2	73.7	62.7	62.7
Actuated g/C Ratio	0.28	0.14		0.38	0.22		0.46	0.41	0.41	0.53	0.45	0.45
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	295	444		439	707		136	1445	621	309	1581	601
v/s Ratio Prot	0.13	0.11		c0.22	c0.25		c0.04	0.24		0.05	c0.39	
v/s Ratio Perm	0.13			0.16			0.31		0.05	0.24		0.14
v/c Ratio	0.95	0.78		0.99	1.18		0.76	0.59	0.11	0.56	0.88	0.31
Uniform Delay, d1	44.6	58.4		41.5	54.9		29.7	32.2	25.7	20.6	35.2	24.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.08	1.03	1.30
Incremental Delay, d2	37.8	12.6		39.0	94.5		22.2	1.8	0.4	1.8	6.1	1.1
Delay (s)	82.4	71.1		80.5	149.5		51.9	34.0	26.1	24.0	42.5	33.1
Level of Service	F	E		F	F		D	C	C	C	D	C
Approach Delay (s)		75.4			126.7			34.5			39.3	
Approach LOS		E			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	66.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Future Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	75.0		0.0
Storage Lanes	0		0	0		0	0		0	0		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	0.98
Frt		0.998			0.997			0.986				0.850
Flt Protected		0.995						0.960			0.956	
Satd. Flow (prot)	0	3443	0	0	3429	0	0	1599	0	0	1781	1583
Flt Permitted		0.784			0.953			0.733			0.696	
Satd. Flow (perm)	0	2713	0	0	3268	0	0	1217	0	0	1280	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				131
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			433.8	
Travel Time (s)		13.2			11.5			8.0			31.2	
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	53	518	9	5	1021	24	56	5	7	41	4	252
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	580	0	0	1050	0	0	68	0	0	45	252
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

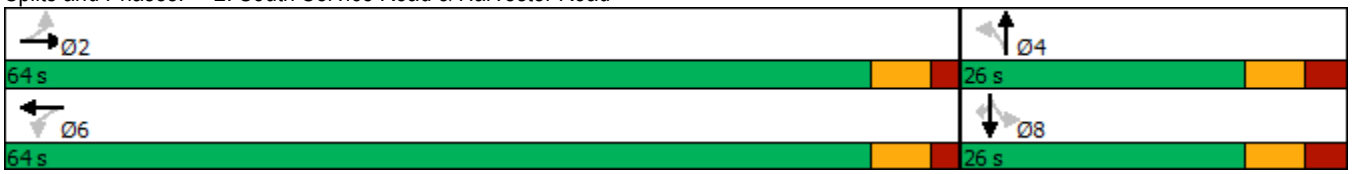


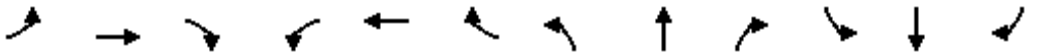
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.1			58.1			12.6			12.6	12.6
Actuated g/C Ratio		0.69			0.69			0.15			0.15	0.15
v/c Ratio		0.31			0.46			0.36			0.23	0.73
Control Delay		6.0			7.1			34.7			33.6	29.0
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		6.0			7.1			34.7			33.6	29.0
LOS		A			A			C			C	C
Approach Delay		6.0			7.1			34.7			29.7	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		16.5			34.7			9.5			6.7	19.0
Queue Length 95th (m)		31.3			61.0			21.6			16.4	44.1
Internal Link Dist (m)		196.4			168.0			86.6			409.8	
Turn Bay Length (m)												
Base Capacity (vph)		1883			2268			281			290	455
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.31			0.46			0.24			0.16	0.55

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.8	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.73	

Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: South Service Road & Harvester Road

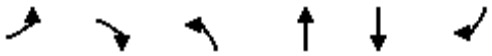




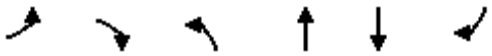
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Future Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00			0.99	1.00
Frt		1.00			1.00			0.99			1.00	0.85
Flt Protected		1.00			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3443			3427			1596			1761	1559
Flt Permitted		0.78			0.95			0.73			0.70	1.00
Satd. Flow (perm)		2713			3266			1217			1282	1559
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	518	9	5	1021	24	56	5	7	41	4	252
RTOR Reduction (vph)	0	1	0	0	2	0	0	5	0	0	0	111
Lane Group Flow (vph)	0	579	0	0	1048	0	0	63	0	0	45	141
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			12.6			12.6	12.6
Effective Green, g (s)		58.1			58.1			12.6			12.6	12.6
Actuated g/C Ratio		0.69			0.69			0.15			0.15	0.15
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1883			2267			183			192	234
v/s Ratio Prot												
v/s Ratio Perm		0.21			c0.32			0.05			0.04	c0.09
v/c Ratio		0.31			0.46			0.34			0.23	0.60
Uniform Delay, d1		5.0			5.8			31.8			31.3	33.2
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.4			0.7			1.1			0.6	4.3
Delay (s)		5.4			6.4			33.0			31.9	37.5
Level of Service		A			A			C			C	D
Approach Delay (s)		5.4			6.4			33.0			36.7	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	364	315	0	1052	1515	0
Future Volume (vph)	364	315	0	1052	1515	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	3505	3471	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	3505	3471	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		48				
Link Speed (k/h)	60			60	60	
Link Distance (m)	314.2			226.7	323.6	
Travel Time (s)	18.9			13.6	19.4	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Adj. Flow (vph)	396	342	0	1143	1647	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	342	0	1143	1647	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			7.2	7.2	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	22.4	22.4		105.6	105.6	
Actuated g/C Ratio	0.16	0.16		0.75	0.75	
v/c Ratio	0.74	0.73		0.43	0.63	
Control Delay	64.5	56.9		7.0	6.8	
Queue Delay	0.0	0.0		0.0	0.1	
Total Delay	64.5	56.9		7.0	6.9	
LOS	E	E		A	A	
Approach Delay	61.0			7.0	6.9	
Approach LOS	E			A	A	
Queue Length 50th (m)	57.5	47.2		52.9	77.5	
Queue Length 95th (m)	72.1	63.2		m75.8	102.1	
Internal Link Dist (m)	290.2			202.7	299.6	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1024	857		2643	2617	
Starvation Cap Reductn	0	0		0	120	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.39	0.40		0.43	0.66	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 18.2	Intersection LOS: B

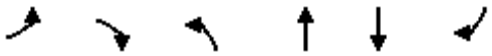
Intersection Capacity Utilization 69.2% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	364	315	0	1052	1515	0
Future Volume (vph)	364	315	0	1052	1515	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		3505	3471	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		3505	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	396	342	0	1143	1647	0
RTOR Reduction (vph)	0	40	0	0	0	0
Lane Group Flow (vph)	396	302	0	1143	1647	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	22.4	22.4		105.6	105.6	
Effective Green, g (s)	22.4	22.4		105.6	105.6	
Actuated g/C Ratio	0.16	0.16		0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	533	429		2643	2618	
v/s Ratio Prot	c0.12			0.33	c0.47	
v/s Ratio Perm		0.11				
v/c Ratio	0.74	0.70		0.43	0.63	
Uniform Delay, d1	56.1	55.7		6.3	8.0	
Progression Factor	1.00	1.00		0.98	0.68	
Incremental Delay, d2	5.6	5.2		0.4	0.9	
Delay (s)	61.6	60.8		6.5	6.3	
Level of Service	E	E		A	A	
Approach Delay (s)	61.2			6.5	6.3	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	434	372	1307	0	0	1428
Future Volume (vph)	434	372	1307	0	0	1428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1509	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1509	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		46				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		323.6			244.0
Travel Time (s)	22.2		19.4			14.6
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Adj. Flow (vph)	472	404	1421	0	0	1552
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	404	1421	0	0	1552
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	38.1	38.1	89.9			89.9
Actuated g/C Ratio	0.27	0.27	0.64			0.64
v/c Ratio	0.52	0.91	0.63			0.69
Control Delay	44.7	68.5	14.5			10.8
Queue Delay	0.0	0.1	0.1			0.0
Total Delay	44.7	68.5	14.7			10.8
LOS	D	E	B			B
Approach Delay	55.7		14.7			10.8
Approach LOS	E		B			B
Queue Length 50th (m)	58.6	100.3	139.5			68.4
Queue Length 95th (m)	74.3	#151.9	154.6			m79.1
Internal Link Dist (m)	346.8		299.6			220.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	1024	495	2250			2250
Starvation Cap Reductn	0	0	0			32
Spillback Cap Reductn	0	1	148			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.46	0.82	0.68			0.70

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 22.5	Intersection LOS: C

Intersection Capacity Utilization 69.2% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	434	372	1307	0	0	1428
Future Volume (vph)	434	372	1307	0	0	1428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3335	1509	3505			3505
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3335	1509	3505			3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	472	404	1421	0	0	1552
RTOR Reduction (vph)	0	33	0	0	0	0
Lane Group Flow (vph)	472	371	1421	0	0	1552
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	38.1	38.1	89.9			89.9
Effective Green, g (s)	38.1	38.1	89.9			89.9
Actuated g/C Ratio	0.27	0.27	0.64			0.64
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	907	410	2250			2250
v/s Ratio Prot	0.14		0.41			c0.44
v/s Ratio Perm		c0.25				
v/c Ratio	0.52	0.90	0.63			0.69
Uniform Delay, d1	43.2	49.2	15.1			16.1
Progression Factor	1.00	1.00	0.82			0.55
Incremental Delay, d2	0.5	22.7	1.3			1.3
Delay (s)	43.7	71.9	13.7			10.2
Level of Service	D	E	B			B
Approach Delay (s)	56.7		13.7			10.2
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	67	1401	9	44	1795
Future Volume (vph)	0	67	1401	9	44	1795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	65.0	
Storage Lanes	1	0		0	2	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	3493	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	3493	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			226.7
Travel Time (s)	2.5		8.0			13.6
Confl. Peds. (#/hr)				6	6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	11%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	73	1523	10	48	1951
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	1533	0	48	1951
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

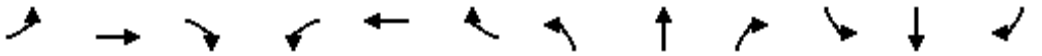
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.4%		ICU Level of Service B	
Analysis Period (min) 15			



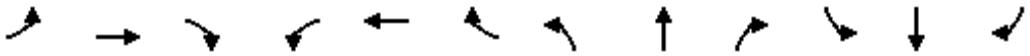
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	67	1401	9	44	1795
Future Volume (Veh/h)	0	67	1401	9	44	1795
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	73	1523	10	48	1951
Pedestrians	6					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			227
pX, platoon unblocked	0.85	0.81			0.81	
vC, conflicting volume	2606	772			1539	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1554	261			1204	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	88			90	
cM capacity (veh/h)	79	597			466	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	73	1015	518	48	976	976
Volume Left	0	0	0	48	0	0
Volume Right	73	0	10	0	0	0
cSH	597	1700	1700	466	1700	1700
Volume to Capacity	0.12	0.60	0.30	0.10	0.57	0.57
Queue Length 95th (m)	3.3	0.0	0.0	2.7	0.0	0.0
Control Delay (s)	11.9	0.0	0.0	13.6	0.0	0.0
Lane LOS	B			B		
Approach Delay (s)	11.9	0.0		0.3		
Approach LOS	B					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Future Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.877			0.938			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1544	0	1770	1726	0	1752	3473	0	1703	3392	0
Flt Permitted	0.563			0.229			0.126			0.073		
Satd. Flow (perm)	955	1544	0	427	1726	0	232	3473	0	131	3392	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		153			28			6			7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		48.0			103.7			244.0			79.1	
Travel Time (s)		2.9			6.2			14.6			4.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	51	38	176	247	192	135	297	1593	101	70	1025	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	214	0	247	327	0	297	1694	0	70	1102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	38.0	38.0		20.0	58.0		13.0	70.0		12.0	69.0	
Total Split (%)	27.1%	27.1%		14.3%	41.4%		9.3%	50.0%		8.6%	49.3%	
Maximum Green (s)	31.0	31.0		16.0	51.0		9.0	63.0		8.0	62.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	13.5	13.5		36.4	33.4		95.6	82.7		73.2	62.1	
Actuated g/C Ratio	0.10	0.10		0.26	0.24		0.68	0.59		0.52	0.44	
v/c Ratio	0.55	0.75		0.94	0.76		0.67	0.83		0.44	0.73	
Control Delay	81.2	34.8		87.2	56.4		40.0	19.3		22.8	35.4	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.2		0.0	0.0	
Total Delay	81.2	34.8		87.2	56.4		40.0	19.5		22.8	35.4	
LOS	F	C		F	E		D	B		C	D	
Approach Delay		43.7			69.6			22.6			34.6	
Approach LOS		D			E			C			C	
Queue Length 50th (m)	14.5	17.1		62.7	82.5		51.9	99.5		6.1	135.6	
Queue Length 95th (m)	28.1	44.0		#92.1	110.2		m#95.5	#305.4		16.5	163.8	
Internal Link Dist (m)		24.0			79.7			220.0			55.1	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	211	461		264	646		446	2053		166	1508	
Starvation Cap Reductn	0	0		0	0		0	49		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.46		0.94	0.51		0.67	0.85		0.42	0.73	

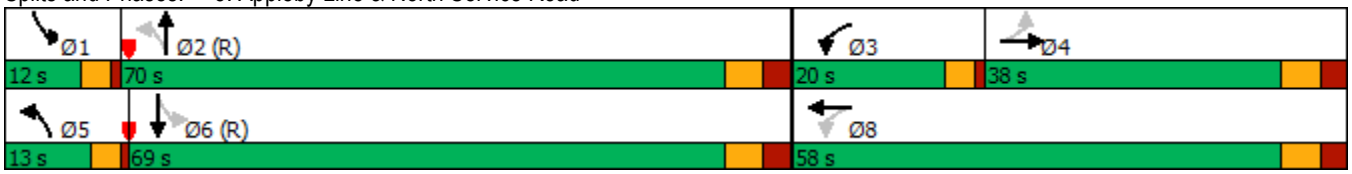
Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay: 34.3		Intersection LOS: C	
Intersection Capacity Utilization 96.3%		ICU Level of Service F	

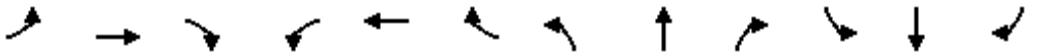
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Appleby Line & North Service Road



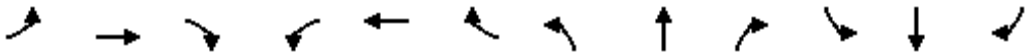


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Future Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1543		1770	1726		1752	3474		1703	3391	
Flt Permitted	0.56	1.00		0.23	1.00		0.13	1.00		0.07	1.00	
Satd. Flow (perm)	955	1543		426	1726		232	3474		131	3391	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	51	38	176	247	192	135	297	1593	101	70	1025	77
RTOR Reduction (vph)	0	138	0	0	21	0	0	2	0	0	4	0
Lane Group Flow (vph)	51	76	0	247	306	0	297	1692	0	70	1098	0
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	13.5	13.5		33.4	33.4		92.6	81.9		68.8	62.1	
Effective Green, g (s)	13.5	13.5		33.4	33.4		92.6	81.9		68.8	62.1	
Actuated g/C Ratio	0.10	0.10		0.24	0.24		0.66	0.59		0.49	0.44	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	92	148		254	411		441	2032		139	1504	
v/s Ratio Prot		0.05		c0.11	0.18		c0.13	c0.49		0.02	0.32	
v/s Ratio Perm	0.05			c0.12			0.32			0.22		
v/c Ratio	0.55	0.51		0.97	0.74		0.67	0.83		0.50	0.73	
Uniform Delay, d1	60.4	60.1		48.9	49.3		25.4	23.5		23.4	32.1	
Progression Factor	1.00	1.00		1.00	1.00		1.69	0.63		1.00	1.00	
Incremental Delay, d2	7.1	3.0		48.5	7.1		3.2	3.3		2.9	3.2	
Delay (s)	67.4	63.1		97.4	56.5		46.2	18.0		26.2	35.2	
Level of Service	E	E		F	E		D	B		C	D	
Approach Delay (s)		63.9			74.1			22.2			34.7	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	36.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Future Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		2	1		0
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.935			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3257	0	1770	3291	0	1703	3539	1553	1719	3532	1369
Flt Permitted	0.125			0.344			0.088			0.162		
Satd. Flow (perm)	228	3257	0	639	3291	0	158	3539	1521	293	3532	1344
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		140			64				128			205
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			195.9			133.0	
Travel Time (s)		12.0			13.2			11.8			8.0	
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	279	251	194	433	585	292	104	848	160	172	1391	300
Shared Lane Traffic (%)												
Lane Group Flow (vph)	279	445	0	433	877	0	104	848	160	172	1391	300
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	21.7	38.3		23.7	40.3		11.0	50.0	50.0	18.0	57.0	57.0
Total Split (%)	16.7%	29.5%		18.2%	31.0%		8.5%	38.5%	38.5%	13.8%	43.8%	43.8%
Maximum Green (s)	17.7	32.0		19.7	34.0		7.0	43.7	43.7	14.0	50.7	50.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	52.0	32.0		56.0	34.0		54.9	45.6	45.6	63.6	50.7	50.7
Actuated g/C Ratio	0.40	0.25		0.43	0.26		0.42	0.35	0.35	0.49	0.39	0.39
v/c Ratio	0.95	0.49		0.97	0.97		0.70	0.68	0.26	0.62	1.01	0.46
Control Delay	75.1	30.3		65.6	66.6		47.1	39.9	9.3	29.1	66.2	11.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.1	30.3		65.6	66.6		47.1	39.9	9.3	29.1	66.2	11.7
LOS	E	C		E	E		D	D	A	C	E	B
Approach Delay		47.6			66.3			36.1			54.0	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	57.9	36.8		84.2	116.0		14.8	103.2	5.8	25.5	~200.1	16.7
Queue Length 95th (m)	#114.3	54.1		#132.4	#160.2		#39.7	129.1	22.2	40.4	#251.8	42.7
Internal Link Dist (m)		175.5			196.4			171.9			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	296	907		446	908		149	1240	616	297	1377	649
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.49		0.97	0.97		0.70	0.68	0.26	0.58	1.01	0.46

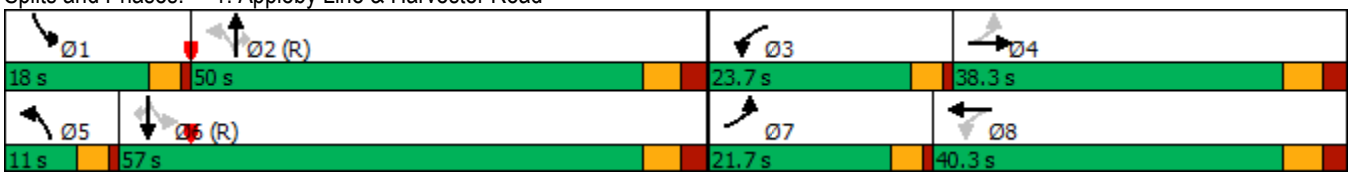
Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

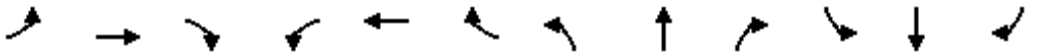
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 52.3	Intersection LOS: D
Intersection Capacity Utilization 109.6%	ICU Level of Service H
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road



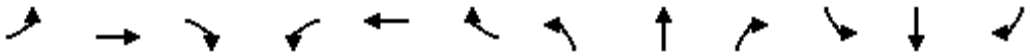


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Future Volume (vph)	268	241	186	416	562	280	100	814	154	165	1335	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1735	3256		1768	3291		1703	3539	1521	1719	3532	1344
Flt Permitted	0.12	1.00		0.34	1.00		0.09	1.00	1.00	0.16	1.00	1.00
Satd. Flow (perm)	228	3256		640	3291		157	3539	1521	293	3532	1344
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	279	251	194	433	585	292	104	848	160	172	1391	300
RTOR Reduction (vph)	0	106	0	0	47	0	0	0	83	0	0	125
Lane Group Flow (vph)	279	339	0	433	830	0	104	848	77	172	1391	175
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	49.7	32.0		53.7	34.0		52.6	45.6	45.6	61.7	50.7	50.7
Effective Green, g (s)	49.7	32.0		53.7	34.0		52.6	45.6	45.6	61.7	50.7	50.7
Actuated g/C Ratio	0.38	0.25		0.41	0.26		0.40	0.35	0.35	0.47	0.39	0.39
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	292	801		435	860		146	1241	533	271	1377	524
v/s Ratio Prot	0.13	0.10		c0.15	0.25		0.04	0.24		c0.06	c0.39	
v/s Ratio Perm	0.23			c0.26			0.25		0.05	0.24		0.13
v/c Ratio	0.96	0.42		1.00	0.96		0.71	0.68	0.14	0.63	1.01	0.33
Uniform Delay, d1	37.1	41.2		33.3	47.4		31.6	36.0	28.9	23.4	39.6	27.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	40.4	1.6		41.7	22.3		15.1	3.1	0.6	4.8	26.8	1.7
Delay (s)	77.4	42.9		75.0	69.7		46.7	39.1	29.4	28.2	66.4	29.5
Level of Service	E	D		E	E		D	D	C	C	E	C
Approach Delay (s)		56.2			71.5			38.4			57.0	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Future Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	0.98
Frt		0.998			0.997			0.986				0.850
Flt Protected		0.995						0.960			0.956	
Satd. Flow (prot)	0	3443	0	0	3429	0	0	1599	0	0	1781	1583
Flt Permitted		0.784			0.953			0.733			0.696	
Satd. Flow (perm)	0	2713	0	0	3268	0	0	1217	0	0	1280	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			6				131
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			201.1	
Travel Time (s)		13.2			11.5			8.0			14.5	
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	53	518	9	5	1021	24	56	5	7	41	4	252
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	580	0	0	1050	0	0	68	0	0	45	252
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

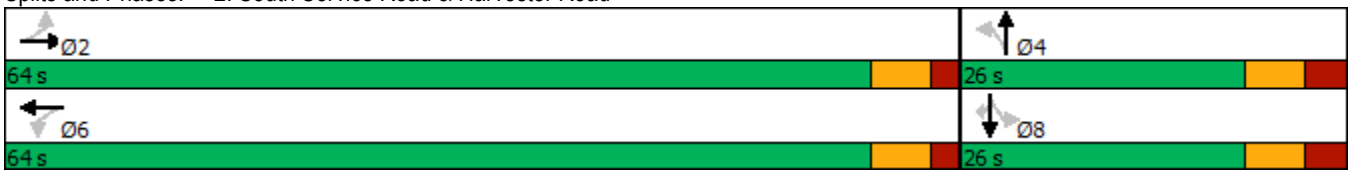


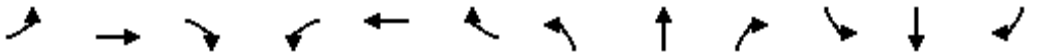
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.1			58.1			12.6			12.6	12.6
Actuated g/C Ratio		0.69			0.69			0.15			0.15	0.15
v/c Ratio		0.31			0.46			0.36			0.23	0.73
Control Delay		6.0			7.1			34.7			33.6	29.0
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		6.0			7.1			34.7			33.6	29.0
LOS		A			A			C			C	C
Approach Delay		6.0			7.1			34.7			29.7	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		16.5			34.7			9.5			6.7	19.0
Queue Length 95th (m)		31.3			61.0			21.6			16.4	44.1
Internal Link Dist (m)		196.4			168.0			86.6			177.1	
Turn Bay Length (m)												
Base Capacity (vph)		1883			2268			281			290	455
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.31			0.46			0.24			0.16	0.55

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 83.8	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.73	

Intersection Signal Delay: 11.1	Intersection LOS: B
Intersection Capacity Utilization 74.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: South Service Road & Harvester Road

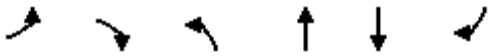




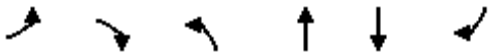
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Future Volume (vph)	50	487	8	5	960	23	53	5	7	39	4	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00			0.99	1.00
Frt		1.00			1.00			0.99			1.00	0.85
Flt Protected		1.00			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3443			3427			1596			1761	1559
Flt Permitted		0.78			0.95			0.73			0.70	1.00
Satd. Flow (perm)		2713			3266			1217			1282	1559
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	53	518	9	5	1021	24	56	5	7	41	4	252
RTOR Reduction (vph)	0	1	0	0	2	0	0	5	0	0	0	111
Lane Group Flow (vph)	0	579	0	0	1048	0	0	63	0	0	45	141
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			12.6			12.6	12.6
Effective Green, g (s)		58.1			58.1			12.6			12.6	12.6
Actuated g/C Ratio		0.69			0.69			0.15			0.15	0.15
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1883			2267			183			192	234
v/s Ratio Prot												
v/s Ratio Perm		0.21			c0.32			0.05			0.04	c0.09
v/c Ratio		0.31			0.46			0.34			0.23	0.60
Uniform Delay, d1		5.0			5.8			31.8			31.3	33.2
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.4			0.7			1.1			0.6	4.3
Delay (s)		5.4			6.4			33.0			31.9	37.5
Level of Service		A			A			C			C	D
Approach Delay (s)		5.4			6.4			33.0			36.7	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	364	315	0	1052	1515	359
Future Volume (vph)	364	315	0	1052	1515	359
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	0.95
Ped Bike Factor					1.00	
Frt		0.850			0.971	
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	3505	3368	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	3505	3368	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		48			37	
Link Speed (k/h)	60			60	60	
Link Distance (m)	310.3			229.0	321.0	
Travel Time (s)	18.6			13.7	19.3	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Adj. Flow (vph)	396	342	0	1143	1647	390
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	342	0	1143	2037	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



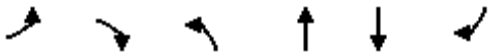
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	22.4	22.4		105.6	105.6	
Actuated g/C Ratio	0.16	0.16		0.75	0.75	
v/c Ratio	0.74	0.73		0.43	0.80	
Control Delay	64.5	56.9		7.3	9.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	64.5	56.9		7.3	9.5	
LOS	E	E		A	A	
Approach Delay	61.0			7.3	9.5	
Approach LOS	E			A	A	
Queue Length 50th (m)	57.5	47.2		55.8	34.5	
Queue Length 95th (m)	72.1	63.2		81.5	36.9	
Internal Link Dist (m)	286.3			205.0	297.0	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1024	857		2643	2548	
Starvation Cap Reductn	0	0		0	1	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.39	0.40		0.43	0.80	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.80	
Intersection Signal Delay: 18.5	Intersection LOS: B

Intersection Capacity Utilization 74.4% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	364	315	0	1052	1515	359
Future Volume (vph)	364	315	0	1052	1515	359
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	0.97	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		3505	3369	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		3505	3369	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	396	342	0	1143	1647	390
RTOR Reduction (vph)	0	40	0	0	9	0
Lane Group Flow (vph)	396	302	0	1143	2028	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	22.4	22.4		105.6	105.6	
Effective Green, g (s)	22.4	22.4		105.6	105.6	
Actuated g/C Ratio	0.16	0.16		0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	533	429		2643	2541	
v/s Ratio Prot	c0.12			0.33	c0.60	
v/s Ratio Perm		0.11				
v/c Ratio	0.74	0.70		0.43	0.80	
Uniform Delay, d1	56.1	55.7		6.3	10.6	
Progression Factor	1.00	1.00		1.00	0.64	
Incremental Delay, d2	5.6	5.2		0.5	2.1	
Delay (s)	61.6	60.8		6.8	8.9	
Level of Service	E	E		A	A	
Approach Delay (s)	61.2			6.8	8.9	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	434	372	1307	158	0	1428
Future Volume (vph)	434	372	1307	158	0	1428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor			1.00			
Frt		0.850	0.984			
Flt Protected	0.950					
Satd. Flow (prot)	3335	1509	3440	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1509	3440	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		46	17			
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		321.0			245.3
Travel Time (s)	22.2		19.3			14.7
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Adj. Flow (vph)	472	404	1421	172	0	1552
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	404	1593	0	0	1552
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	38.1	38.1	89.9			89.9
Actuated g/C Ratio	0.27	0.27	0.64			0.64
v/c Ratio	0.52	0.91	0.72			0.69
Control Delay	44.7	68.5	22.1			19.0
Queue Delay	0.0	0.0	0.0			1.0
Total Delay	44.7	68.5	22.1			20.0
LOS	D	E	C			C
Approach Delay	55.7		22.1			20.0
Approach LOS	E		C			C
Queue Length 50th (m)	58.6	100.3	198.8			152.9
Queue Length 95th (m)	74.3	#151.9	232.2			187.8
Internal Link Dist (m)	346.8		297.0			221.3
Turn Bay Length (m)	190.0					
Base Capacity (vph)	1024	495	2215			2250
Starvation Cap Reductn	0	0	21			413
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.46	0.82	0.73			0.84

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.91	
Intersection Signal Delay: 28.6	Intersection LOS: C

Intersection Capacity Utilization 74.3% ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	434	372	1307	158	0	1428
Future Volume (vph)	434	372	1307	158	0	1428
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	0.98			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3335	1509	3439			3505
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3335	1509	3439			3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	472	404	1421	172	0	1552
RTOR Reduction (vph)	0	33	6	0	0	0
Lane Group Flow (vph)	472	371	1587	0	0	1552
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	38.1	38.1	89.9			89.9
Effective Green, g (s)	38.1	38.1	89.9			89.9
Actuated g/C Ratio	0.27	0.27	0.64			0.64
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	907	410	2208			2250
v/s Ratio Prot	0.14		c0.46			0.44
v/s Ratio Perm		c0.25				
v/c Ratio	0.52	0.90	0.72			0.69
Uniform Delay, d1	43.2	49.2	16.6			16.1
Progression Factor	1.00	1.00	1.14			1.00
Incremental Delay, d2	0.5	22.7	1.9			1.8
Delay (s)	43.7	71.9	20.9			17.8
Level of Service	D	E	C			B
Approach Delay (s)	56.7		20.9			17.8
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	67	1401	9	44	1795
Future Volume (vph)	0	67	1401	9	44	1795
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	3493	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	3493	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			229.0
Travel Time (s)	2.5		8.0			13.7
Confl. Peds. (#/hr)				6	6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	11%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	73	1523	10	48	1951
Shared Lane Traffic (%)						
Lane Group Flow (vph)	73	0	1533	0	48	1951
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

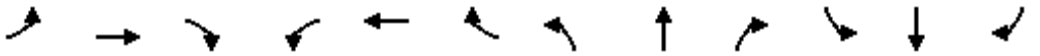
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.4%		ICU Level of Service B	
Analysis Period (min) 15			



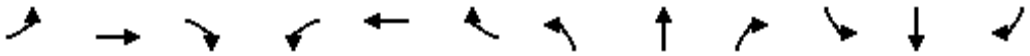
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	67	1401	9	44	1795
Future Volume (Veh/h)	0	67	1401	9	44	1795
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	73	1523	10	48	1951
Pedestrians	6					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			229
pX, platoon unblocked	0.74	0.80			0.80	
vC, conflicting volume	2606	772			1539	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1217	199			1163	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	89			90	
cM capacity (veh/h)	114	640			472	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	73	1015	518	48	976	976
Volume Left	0	0	0	48	0	0
Volume Right	73	0	10	0	0	0
cSH	640	1700	1700	472	1700	1700
Volume to Capacity	0.11	0.60	0.30	0.10	0.57	0.57
Queue Length 95th (m)	3.1	0.0	0.0	2.7	0.0	0.0
Control Delay (s)	11.3	0.0	0.0	13.5	0.0	0.0
Lane LOS	B			B		
Approach Delay (s)	11.3	0.0		0.3		
Approach LOS	B					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	60.4%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Future Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.877			0.938			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1544	0	1770	1726	0	1752	3473	0	1703	3392	0
Flt Permitted	0.563			0.238			0.096			0.079		
Satd. Flow (perm)	955	1544	0	443	1726	0	177	3473	0	142	3392	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		170			32			6			7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		77.3			111.9			245.3			79.1	
Travel Time (s)		4.6			6.7			14.7			4.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	51	38	176	247	192	135	297	1593	101	70	1025	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	214	0	247	327	0	297	1694	0	70	1102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	



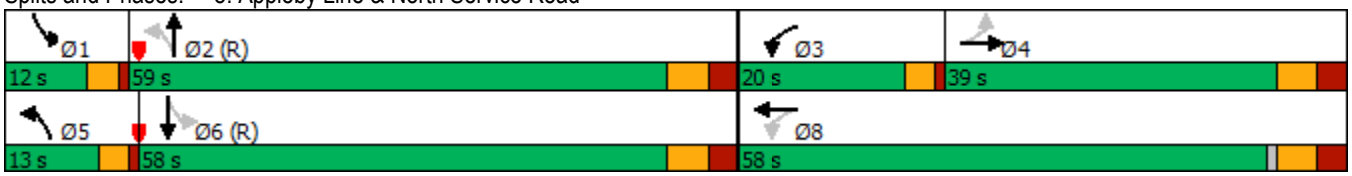
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	39.0	39.0		20.0	58.0		13.0	59.0		12.0	58.0	
Total Split (%)	30.0%	30.0%		15.4%	44.6%		10.0%	45.4%		9.2%	44.6%	
Maximum Green (s)	32.0	32.0		16.0	51.0		9.0	52.0		8.0	51.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	12.8	12.8		35.4	32.4		86.6	73.8		62.0	51.0	
Actuated g/C Ratio	0.10	0.10		0.27	0.25		0.67	0.57		0.48	0.39	
v/c Ratio	0.55	0.70		0.88	0.72		0.64	0.86		0.43	0.83	
Control Delay	75.9	26.6		70.8	49.1		32.4	30.8		23.4	41.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	75.9	26.6		70.8	49.1		32.4	30.8		23.4	41.7	
LOS	E	C		E	D		C	C		C	D	
Approach Delay		36.1			58.4			31.0			40.6	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	13.4	11.2		56.6	73.7		48.3	199.0		6.1	138.4	
Queue Length 95th (m)	26.7	37.1		#82.2	101.7		#96.5	#296.8		16.2	168.0	
Internal Link Dist (m)		53.3			87.9			221.3			55.1	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	235	508		284	709		463	1974		170	1334	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.22	0.42		0.87	0.46		0.64	0.86		0.41	0.83	

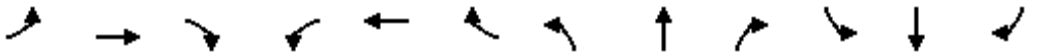
Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 42 (32%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 38.1		Intersection LOS: D	
Intersection Capacity Utilization 96.3%		ICU Level of Service F	

Analysis Period (min) 15

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

Splits and Phases: 8: Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Future Volume (vph)	49	36	169	237	184	130	285	1529	97	67	984	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1543		1770	1726		1752	3474		1703	3391	
Flt Permitted	0.56	1.00		0.24	1.00		0.10	1.00		0.08	1.00	
Satd. Flow (perm)	955	1543		444	1726		177	3474		141	3391	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	51	38	176	247	192	135	297	1593	101	70	1025	77
RTOR Reduction (vph)	0	153	0	0	24	0	0	3	0	0	4	0
Lane Group Flow (vph)	51	61	0	247	303	0	297	1691	0	70	1098	0
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	12.8	12.8		32.5	32.5		83.5	72.9		57.5	50.9	
Effective Green, g (s)	12.8	12.8		32.5	32.5		83.5	72.9		57.5	50.9	
Actuated g/C Ratio	0.10	0.10		0.25	0.25		0.64	0.56		0.44	0.39	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	151		271	431		460	1948		141	1327	
v/s Ratio Prot		0.04		c0.11	0.18		c0.14	c0.49		0.03	0.32	
v/s Ratio Perm	0.05			c0.12			0.27			0.19		
v/c Ratio	0.54	0.40		0.91	0.70		0.65	0.87		0.50	0.83	
Uniform Delay, d1	55.8	55.0		43.3	44.4		29.0	24.4		24.7	35.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.3	1.8		32.3	5.1		3.1	5.6		2.7	6.0	
Delay (s)	62.1	56.8		75.6	49.5		32.1	30.0		27.5	41.6	
Level of Service	E	E		E	D		C	C		C	D	
Approach Delay (s)		57.8			60.7			30.3			40.8	
Approach LOS		E			E			C			D	

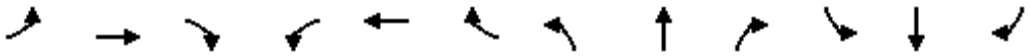
Intersection Summary			
HCM 2000 Control Delay	39.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	96.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Appendix F

2026 Future Background Conditions Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Future Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.98			0.98
Frt		0.987			0.913				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	3383	0	1687	2959	0	1671	3539	1568	1703	3367	1483
Flt Permitted	0.371			0.191			0.393			0.088		
Satd. Flow (perm)	599	3383	0	339	2959	0	690	3539	1541	158	3367	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			205				196			342
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			186.7			133.0	
Travel Time (s)		12.0			13.2			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	202	774	73	94	148	205	101	1181	403	321	681	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	847	0	94	353	0	101	1181	403	321	681	342
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



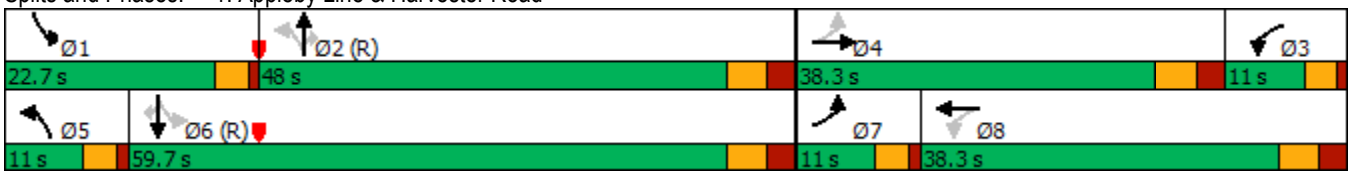
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.3		11.0	38.3		11.0	48.0	48.0	22.7	59.7	59.7
Total Split (%)	9.2%	31.9%		9.2%	31.9%		9.2%	40.0%	40.0%	18.9%	49.8%	49.8%
Maximum Green (s)	7.0	32.0		7.0	32.0		7.0	41.7	41.7	18.7	53.4	53.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	34.3	32.0		34.3	32.0		51.0	41.7	41.7	66.7	53.4	53.4
Actuated g/C Ratio	0.29	0.27		0.29	0.27		0.42	0.35	0.35	0.56	0.44	0.44
v/c Ratio	0.89	0.93		0.54	0.38		0.29	0.96	0.61	0.98	0.45	0.41
Control Delay	77.1	60.4		55.2	15.8		16.1	56.6	20.3	80.3	18.9	4.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	77.1	60.4		55.2	15.8		16.1	56.6	20.3	80.3	18.9	4.1
LOS	E	E		E	B		B	E	C	F	B	A
Approach Delay		63.6			24.0			45.5			29.8	
Approach LOS		E			C			D			C	
Queue Length 50th (m)	41.2	107.3		17.7	14.9		11.3	149.9	41.5	67.4	51.3	13.6
Queue Length 95th (m)	#86.9	#147.2		32.0	28.5		20.3	#197.3	76.5	#125.6	64.1	23.1
Internal Link Dist (m)		175.5			196.4			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	226	908		175	939		350	1229	663	328	1498	839
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.93		0.54	0.38		0.29	0.96	0.61	0.98	0.45	0.41

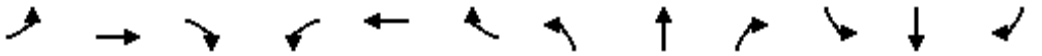
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 42.9	Intersection LOS: D
Intersection Capacity Utilization 97.6%	ICU Level of Service F
Analysis Period (min) 15	

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

Splits and Phases: 1: Appleby Line & Harvester Road

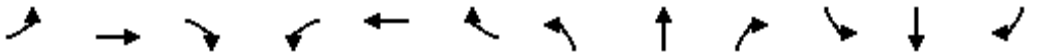




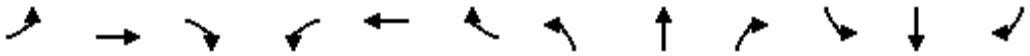
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Future Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1540	3384		1687	2958		1670	3539	1541	1703	3367	1459
Flt Permitted	0.37	1.00		0.19	1.00		0.39	1.00	1.00	0.09	1.00	1.00
Satd. Flow (perm)	602	3384		339	2958		690	3539	1541	157	3367	1459
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)	202	774	73	94	148	205	101	1181	403	321	681	342
RTOR Reduction (vph)	0	6	0	0	150	0	0	0	128	0	0	190
Lane Group Flow (vph)	202	841	0	94	203	0	101	1181	275	321	681	152
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	32.0	32.0		34.3	32.0		48.7	41.7	41.7	64.4	53.4	53.4
Effective Green, g (s)	32.0	32.0		34.3	32.0		48.7	41.7	41.7	64.4	53.4	53.4
Actuated g/C Ratio	0.27	0.27		0.29	0.27		0.41	0.35	0.35	0.54	0.44	0.44
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	215	902		175	788		337	1229	535	325	1498	649
v/s Ratio Prot	0.05	c0.25		c0.03	0.07		0.02	0.33		c0.15	0.20	
v/s Ratio Perm	c0.20			0.12			0.10		0.18	c0.38		0.10
v/c Ratio	0.94	0.93		0.54	0.26		0.30	0.96	0.51	0.99	0.45	0.23
Uniform Delay, d1	42.1	42.9		46.0	34.6		22.5	38.4	31.1	37.8	23.2	20.6
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.10	0.77	1.22
Incremental Delay, d2	44.1	17.5		3.2	0.2		0.5	17.9	3.5	45.3	1.0	0.8
Delay (s)	86.2	60.4		49.1	34.8		23.0	56.2	34.6	86.8	18.8	25.9
Level of Service	F	E		D	C		C	E	C	F	B	C
Approach Delay (s)		65.4			37.8			49.1			36.8	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	48.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Future Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.98
Frt		0.999			0.983			0.971				0.850
Flt Protected		0.993			0.999			0.962			0.953	
Satd. Flow (prot)	0	3453	0	0	3233	0	0	924	0	0	1775	1568
Flt Permitted		0.814			0.935			0.727			0.719	
Satd. Flow (perm)	0	2829	0	0	3026	0	0	691	0	0	1339	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			33			47				137
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			232.2	
Travel Time (s)		13.2			11.5			8.0			16.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	209	1268	10	5	313	41	11	0	3	66	1	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1487	0	0	359	0	0	14	0	0	67	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	46.0	46.0		46.0	46.0		24.0	24.0		24.0	24.0	24.0
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	34.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		44.3			44.3			9.2			9.2	9.2
Actuated g/C Ratio		0.71			0.71			0.15			0.15	0.15
v/c Ratio		0.74			0.17			0.10			0.34	0.40
Control Delay		11.3			4.2			2.1			28.7	8.9
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		11.3			4.2			2.1			28.7	8.9
LOS		B			A			A			C	A
Approach Delay		11.3			4.2			2.1			15.4	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		56.3			6.6			0.0			7.4	0.0
Queue Length 95th (m)		#108.4			13.3			0.8			17.7	13.0
Internal Link Dist (m)		196.4			168.0			86.6			208.2	
Turn Bay Length (m)												
Base Capacity (vph)		2014			2163			223			366	517
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.74			0.17			0.06			0.18	0.26

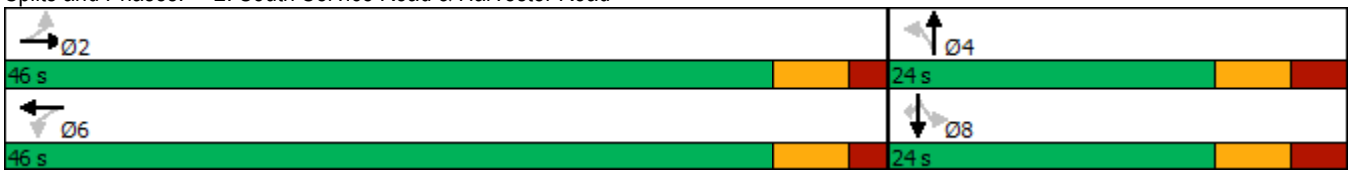
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 10.4		Intersection LOS: B	

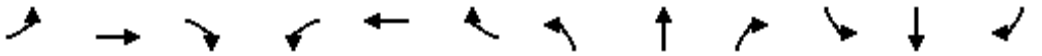
Intersection Capacity Utilization 90.4% ICU Level of Service E

Analysis Period (min) 15

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

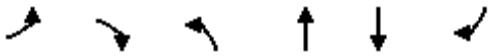
Splits and Phases: 2: South Service Road & Harvester Road



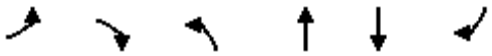


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Future Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			0.98			0.97			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.95	1.00
Satd. Flow (prot)		3452			3234			916			1775	1531
Flt Permitted		0.81			0.94			0.73			0.72	1.00
Satd. Flow (perm)		2830			3027			692			1340	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	209	1268	10	5	313	41	11	0	3	66	1	137
RTOR Reduction (vph)	0	1	0	0	11	0	0	12	0	0	0	121
Lane Group Flow (vph)	0	1486	0	0	348	0	0	2	0	0	67	16
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		43.1			43.1			7.6			7.6	7.6
Effective Green, g (s)		43.1			43.1			7.6			7.6	7.6
Actuated g/C Ratio		0.68			0.68			0.12			0.12	0.12
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1914			2048			82			159	182
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.12			0.00			c0.05	0.01
v/c Ratio		0.78			0.17			0.02			0.42	0.09
Uniform Delay, d1		7.0			3.8			24.8			26.0	25.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		3.2			0.2			0.1			1.8	0.2
Delay (s)		10.2			3.9			24.9			27.8	25.2
Level of Service		B			A			C			C	C
Approach Delay (s)		10.2			3.9			24.9			26.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	286	174	0	985	964	0
Future Volume (vph)	286	174	0	985	964	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		152				
Link Speed (k/h)	60			60	60	
Link Distance (m)	314.2			230.2	319.8	
Travel Time (s)	18.9			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	311	189	0	1071	1048	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	311	189	0	1071	1048	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

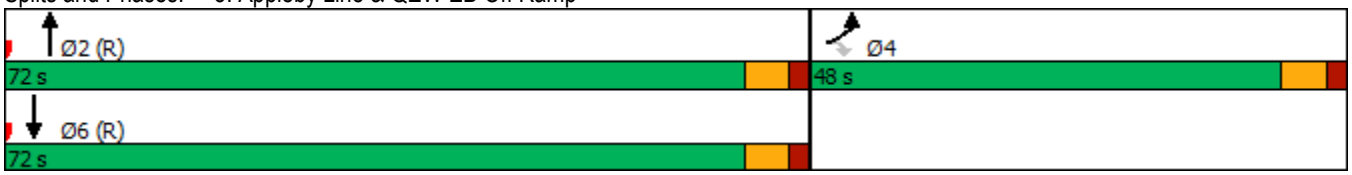


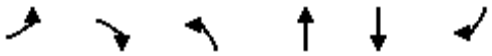
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	16.7	16.7		91.3	91.3	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
v/c Ratio	0.68	0.38		0.41	0.40	
Control Delay	56.3	13.7		14.5	4.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	56.3	13.7		14.5	4.2	
LOS	E	B		B	A	
Approach Delay	40.2			14.5	4.2	
Approach LOS	D			B	A	
Queue Length 50th (m)	38.2	4.6		88.2	22.5	
Queue Length 95th (m)	51.4	16.0		m106.2	46.7	
Internal Link Dist (m)	290.2			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1156	1003		2590	2590	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.27	0.19		0.41	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 15.3	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	286	174	0	985	964	0
Future Volume (vph)	286	174	0	985	964	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	311	189	0	1071	1048	0
RTOR Reduction (vph)	0	131	0	0	0	0
Lane Group Flow (vph)	311	58	0	1071	1048	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.7	16.7		91.3	91.3	
Effective Green, g (s)	16.7	16.7		91.3	91.3	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	459	359		2591	2591	
v/s Ratio Prot	c0.09			c0.31	0.31	
v/s Ratio Perm		0.02				
v/c Ratio	0.68	0.16		0.41	0.40	
Uniform Delay, d1	49.1	45.5		5.0	5.0	
Progression Factor	1.00	1.00		2.66	0.71	
Incremental Delay, d2	3.9	0.2		0.2	0.4	
Delay (s)	53.0	45.7		13.5	3.9	
Level of Service	D	D		B	A	
Approach Delay (s)	50.3			13.5	3.9	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	311	336	974	0	0	973
Future Volume (vph)	311	336	974	0	0	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		111				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	338	365	1059	0	0	1058
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	365	1059	0	0	1058
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	26.5	26.5	81.5			81.5
Actuated g/C Ratio	0.22	0.22	0.68			0.68
v/c Ratio	0.48	0.88	0.46			0.46
Control Delay	41.9	53.3	18.3			10.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	41.9	53.3	18.3			10.7
LOS	D	D	B			B
Approach Delay	47.8		18.3			10.7
Approach LOS	D		B			B
Queue Length 50th (m)	37.4	62.9	138.7			60.2
Queue Length 95th (m)	48.4	96.0	165.9			89.1
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	910	499	2312			2291
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.37	0.73	0.46			0.46

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	

Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	311	336	974	0	0	973
Future Volume (vph)	311	336	974	0	0	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	365	1059	0	0	1058
RTOR Reduction (vph)	0	86	0	0	0	0
Lane Group Flow (vph)	338	279	1059	0	0	1058
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	26.5	26.5	81.5			81.5
Effective Green, g (s)	26.5	26.5	81.5			81.5
Actuated g/C Ratio	0.22	0.22	0.68			0.68
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	709	327	2313			2291
v/s Ratio Prot	0.11		0.31			c0.31
v/s Ratio Perm		c0.19				
v/c Ratio	0.48	0.85	0.46			0.46
Uniform Delay, d1	40.7	44.9	9.0			9.0
Progression Factor	1.00	1.00	1.77			1.00
Incremental Delay, d2	0.5	18.8	0.6			0.7
Delay (s)	41.2	63.6	16.5			9.7
Level of Service	D	E	B			A
Approach Delay (s)	52.9		16.5			9.7
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	30	1502	7	136	1285
Future Volume (vph)	0	30	1502	7	136	1285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1481	0	3427	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1481	0	3427	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	32	1598	7	145	1367
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	1605	0	145	1367
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

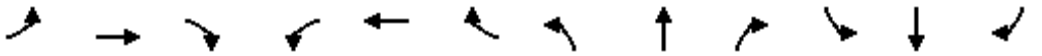
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			



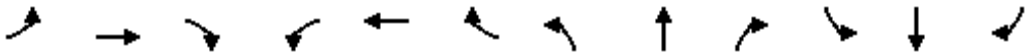
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	30	1502	7	136	1285
Future Volume (Veh/h)	0	30	1502	7	136	1285
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	32	1598	7	145	1367
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.72	0.67			0.67	
vC, conflicting volume	2578	806			1608	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1829	0			921	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	95			71	
cM capacity (veh/h)	31	705			492	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	32	1065	540	145	684	684
Volume Left	0	0	0	145	0	0
Volume Right	32	0	7	0	0	0
cSH	705	1700	1700	492	1700	1700
Volume to Capacity	0.05	0.63	0.32	0.29	0.40	0.40
Queue Length 95th (m)	1.1	0.0	0.0	9.7	0.0	0.0
Control Delay (s)	10.3	0.0	0.0	15.3	0.0	0.0
Lane LOS	B			C		
Approach Delay (s)	10.3	0.0		1.5		
Approach LOS	B					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Future Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99			0.99			1.00	
Frt		0.949			0.911			0.961			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1674	0	1583	1604	0	1671	3267	0	1770	3383	0
Flt Permitted	0.717			0.367			0.089			0.072		
Satd. Flow (perm)	1334	1674	0	612	1604	0	157	3267	0	134	3383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		24			36			51			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.7			190.1			245.0			64.5	
Travel Time (s)		3.7			11.4			14.7			3.9	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	38	131	67	95	25	36	140	1159	403	93	1316	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	198	0	95	61	0	140	1562	0	93	1358	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



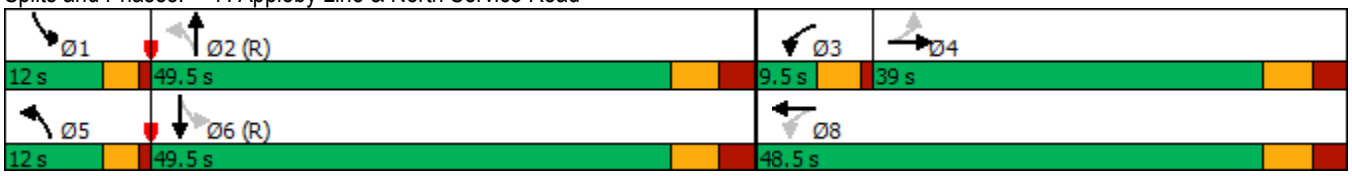
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		9.5	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	39.0	39.0		9.5	48.5		12.0	49.5		12.0	49.5	
Total Split (%)	35.5%	35.5%		8.6%	44.1%		10.9%	45.0%		10.9%	45.0%	
Maximum Green (s)	32.0	32.0		5.0	41.5		8.0	42.5		8.0	42.5	
Yellow Time (s)	4.0	4.0		3.5	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	16.9	16.9		28.9	26.4		71.5	59.6		66.4	55.3	
Actuated g/C Ratio	0.15	0.15		0.26	0.24		0.65	0.54		0.60	0.50	
v/c Ratio	0.19	0.71		0.46	0.15		0.58	0.87		0.46	0.80	
Control Delay	40.2	52.3		38.3	16.0		22.6	29.9		20.8	28.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	40.2	52.3		38.3	16.0		22.6	29.9		20.8	28.8	
LOS	D	D		D	B		C	C		C	C	
Approach Delay		50.3			29.6			29.3			28.3	
Approach LOS		D			C			C			C	
Queue Length 50th (m)	7.6	37.8		16.9	4.4		10.7	155.2		6.9	127.4	
Queue Length 95th (m)	16.4	58.7		28.5	14.1		31.3	#249.5		22.5	#213.3	
Internal Link Dist (m)		37.7			166.1			221.0			40.5	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	388	504		205	627		245	1794		210	1702	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.10	0.39		0.46	0.10		0.57	0.87		0.44	0.80	

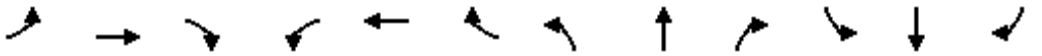
Intersection Summary	
Area Type:	Other
Cycle Length: 110	
Actuated Cycle Length: 110	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 30.3	Intersection LOS: C
Intersection Capacity Utilization 83.8%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 7: Appleby Line & North Service Road

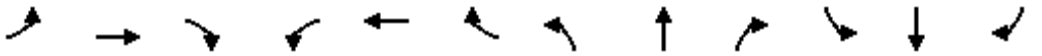




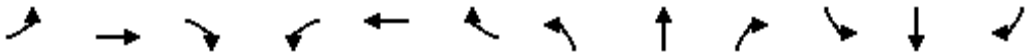
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Future Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1674		1583	1605		1671	3268		1770	3384	
Flt Permitted	0.72	1.00		0.37	1.00		0.09	1.00		0.07	1.00	
Satd. Flow (perm)	1335	1674		611	1605		157	3268		135	3384	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	131	67	95	25	36	140	1159	403	93	1316	42
RTOR Reduction (vph)	0	20	0	0	27	0	0	24	0	0	1	0
Lane Group Flow (vph)	38	178	0	95	34	0	140	1538	0	93	1357	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	16.9	16.9		26.4	26.4		69.2	58.9		62.0	55.3	
Effective Green, g (s)	16.9	16.9		26.4	26.4		69.2	58.9		62.0	55.3	
Actuated g/C Ratio	0.15	0.15		0.24	0.24		0.63	0.54		0.56	0.50	
Clearance Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	205	257		190	385		240	1749		175	1701	
v/s Ratio Prot		c0.11		c0.02	0.02		c0.05	c0.47		0.03	0.40	
v/s Ratio Perm	0.03			0.10			0.31			0.27		
v/c Ratio	0.19	0.69		0.50	0.09		0.58	0.88		0.53	0.80	
Uniform Delay, d1	40.6	44.1		34.7	32.4		16.3	22.4		17.7	22.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	7.8		2.1	0.1		3.6	6.7		3.1	4.0	
Delay (s)	41.0	51.9		36.7	32.5		19.9	29.1		20.8	26.7	
Level of Service	D	D		D	C		B	C		C	C	
Approach Delay (s)		50.1			35.1			28.4			26.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Future Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		1	2		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.987			0.913				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2993	3383	0	3273	2958	0	1671	3539	1568	3303	3367	1483
Flt Permitted	0.950			0.950			0.358			0.950		
Satd. Flow (perm)	2957	3383	0	3271	2958	0	629	3539	1540	3297	3367	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			177				189			342
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			186.7			133.0	
Travel Time (s)		12.0			13.2			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	202	774	73	94	148	205	101	1181	403	321	681	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	202	847	0	94	353	0	101	1181	403	321	681	342
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



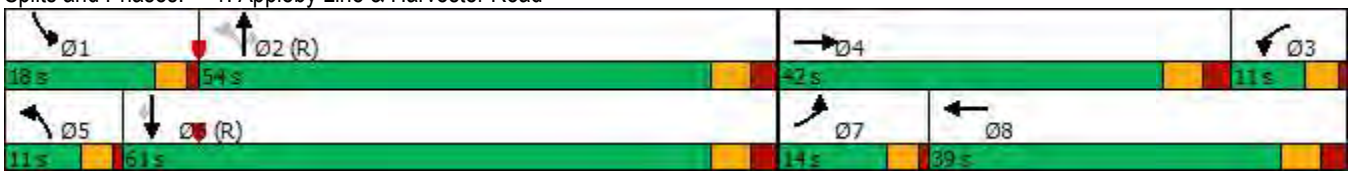
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	14.0	42.0		11.0	39.0		11.0	54.0	54.0	18.0	61.0	61.0
Total Split (%)	11.2%	33.6%		8.8%	31.2%		8.8%	43.2%	43.2%	14.4%	48.8%	48.8%
Maximum Green (s)	10.0	35.7		7.0	32.7		7.0	47.7	47.7	14.0	54.7	54.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	10.0	35.7		7.0	32.7		57.1	47.8	47.8	13.9	54.7	54.7
Actuated g/C Ratio	0.08	0.29		0.06	0.26		0.46	0.38	0.38	0.11	0.44	0.44
v/c Ratio	0.85	0.87		0.51	0.39		0.29	0.87	0.57	0.87	0.46	0.41
Control Delay	86.0	53.1		67.7	19.7		16.8	44.3	19.1	78.7	26.1	3.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.0	53.1		67.7	19.7		16.8	44.3	19.1	78.7	26.1	3.8
LOS	F	D		E	B		B	D	B	E	C	A
Approach Delay		59.5			29.8			36.7			33.0	
Approach LOS		E			C			D			C	
Queue Length 50th (m)	27.0	109.0		12.4	18.8		12.2	147.8	42.5	42.7	64.2	0.0
Queue Length 95th (m)	#48.3	#143.1		21.8	33.3		21.6	179.0	76.1	#68.2	81.5	17.5
Internal Link Dist (m)		175.5			196.4			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	239	971		183	904		345	1352	705	369	1473	830
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.87		0.51	0.39		0.29	0.87	0.57	0.87	0.46	0.41

Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 100	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 40.2	Intersection LOS: D
Intersection Capacity Utilization 89.4%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 1: Appleby Line & Harvester Road

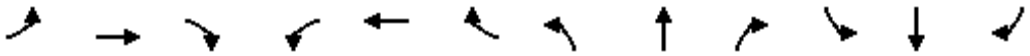


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Future Volume (vph)	192	735	69	89	141	195	96	1122	383	305	647	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2993	3384		3273	2957		1670	3539	1540	3303	3367	1459
Flt Permitted	0.95	1.00		0.95	1.00		0.36	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2993	3384		3273	2957		629	3539	1540	3303	3367	1459
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)	202	774	73	94	148	205	101	1181	403	321	681	342
RTOR Reduction (vph)	0	6	0	0	131	0	0	0	117	0	0	192
Lane Group Flow (vph)	202	841	0	94	222	0	101	1181	286	321	681	150
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	10.0	35.7		7.0	32.7		54.8	47.8	47.8	13.9	54.7	54.7
Effective Green, g (s)	10.0	35.7		7.0	32.7		54.8	47.8	47.8	13.9	54.7	54.7
Actuated g/C Ratio	0.08	0.29		0.06	0.26		0.44	0.38	0.38	0.11	0.44	0.44
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	239	966		183	773		334	1353	588	367	1473	638
v/s Ratio Prot	0.07	c0.25		c0.03	0.08		0.02	c0.33		c0.10	0.20	
v/s Ratio Perm							0.12		0.19			0.10
v/c Ratio	0.85	0.87		0.51	0.29		0.30	0.87	0.49	0.87	0.46	0.23
Uniform Delay, d1	56.7	42.5		57.3	36.8		21.1	35.8	29.3	54.7	24.8	22.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	23.0	10.6		2.4	0.2		0.5	8.0	2.9	20.0	1.0	0.9
Delay (s)	79.7	53.1		59.8	37.1		21.6	43.8	32.2	74.7	25.8	22.9
Level of Service	E	D		E	D		C	D	C	E	C	C
Approach Delay (s)		58.2			41.8			39.7			36.8	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	89.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Future Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.98
Frt		0.999			0.983			0.971				0.850
Flt Protected		0.993			0.999			0.962			0.953	
Satd. Flow (prot)	0	3453	0	0	3233	0	0	924	0	0	1775	1568
Flt Permitted		0.814			0.935			0.727			0.719	
Satd. Flow (perm)	0	2829	0	0	3026	0	0	691	0	0	1339	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			33			47				137
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			232.2	
Travel Time (s)		13.2			11.5			8.0			16.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	209	1268	10	5	313	41	11	0	3	66	1	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1487	0	0	359	0	0	14	0	0	67	137
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	46.0	46.0		46.0	46.0		24.0	24.0		24.0	24.0	24.0
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	34.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		44.3			44.3			9.2			9.2	9.2
Actuated g/C Ratio		0.71			0.71			0.15			0.15	0.15
v/c Ratio		0.74			0.17			0.10			0.34	0.40
Control Delay		11.3			4.2			2.1			28.7	8.9
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		11.3			4.2			2.1			28.7	8.9
LOS		B			A			A			C	A
Approach Delay		11.3			4.2			2.1			15.4	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		56.3			6.6			0.0			7.4	0.0
Queue Length 95th (m)		#108.4			13.3			0.8			17.7	13.0
Internal Link Dist (m)		196.4			168.0			86.6			208.2	
Turn Bay Length (m)												
Base Capacity (vph)		2014			2163			223			366	517
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.74			0.17			0.06			0.18	0.26

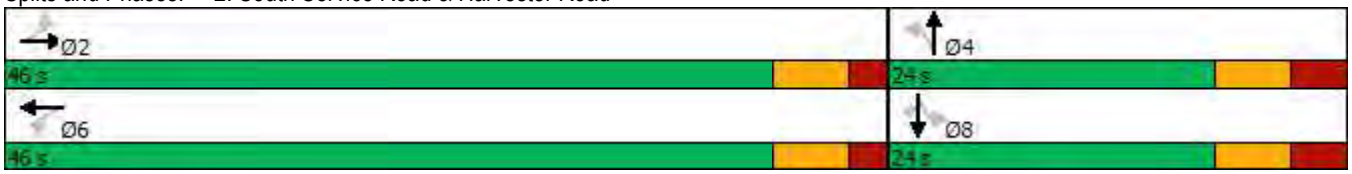
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.2			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 10.4		Intersection LOS: B	

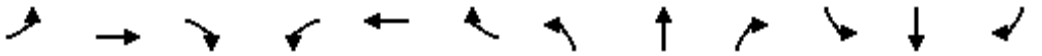
Intersection Capacity Utilization 90.4% ICU Level of Service E

Analysis Period (min) 15

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

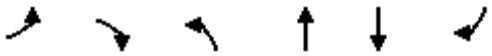
Splits and Phases: 2: South Service Road & Harvester Road



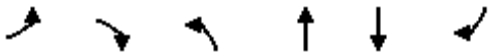


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Future Volume (vph)	190	1154	9	5	285	37	10	0	3	60	1	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			0.98			0.97			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.95	1.00
Satd. Flow (prot)		3452			3234			916			1775	1531
Flt Permitted		0.81			0.94			0.73			0.72	1.00
Satd. Flow (perm)		2830			3027			692			1340	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	209	1268	10	5	313	41	11	0	3	66	1	137
RTOR Reduction (vph)	0	1	0	0	11	0	0	12	0	0	0	121
Lane Group Flow (vph)	0	1486	0	0	348	0	0	2	0	0	67	16
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		43.1			43.1			7.6			7.6	7.6
Effective Green, g (s)		43.1			43.1			7.6			7.6	7.6
Actuated g/C Ratio		0.68			0.68			0.12			0.12	0.12
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1914			2048			82			159	182
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.12			0.00			c0.05	0.01
v/c Ratio		0.78			0.17			0.02			0.42	0.09
Uniform Delay, d1		7.0			3.8			24.8			26.0	25.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		3.2			0.2			0.1			1.8	0.2
Delay (s)		10.2			3.9			24.9			27.8	25.2
Level of Service		B			A			C			C	C
Approach Delay (s)		10.2			3.9			24.9			26.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	63.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	90.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	286	174	0	985	964	0
Future Volume (vph)	286	174	0	985	964	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		152				
Link Speed (k/h)	60			60	60	
Link Distance (m)	314.2			230.2	319.8	
Travel Time (s)	18.9			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	311	189	0	1071	1048	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	311	189	0	1071	1048	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

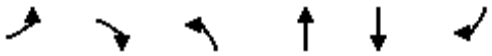


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	16.7	16.7		91.3	91.3	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
v/c Ratio	0.68	0.38		0.41	0.40	
Control Delay	56.3	13.7		5.9	4.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	56.3	13.7		5.9	4.2	
LOS	E	B		A	A	
Approach Delay	40.2			5.9	4.2	
Approach LOS	D			A	A	
Queue Length 50th (m)	38.2	4.6		41.5	22.5	
Queue Length 95th (m)	51.4	16.0		61.4	46.7	
Internal Link Dist (m)	290.2			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1156	1003		2590	2590	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.27	0.19		0.41	0.40	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 11.8	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	286	174	0	985	964	0
Future Volume (vph)	286	174	0	985	964	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	311	189	0	1071	1048	0
RTOR Reduction (vph)	0	131	0	0	0	0
Lane Group Flow (vph)	311	58	0	1071	1048	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.7	16.7		91.3	91.3	
Effective Green, g (s)	16.7	16.7		91.3	91.3	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	459	359		2591	2591	
v/s Ratio Prot	c0.09			c0.31	0.31	
v/s Ratio Perm		0.02				
v/c Ratio	0.68	0.16		0.41	0.40	
Uniform Delay, d1	49.1	45.5		5.0	5.0	
Progression Factor	1.00	1.00		1.00	0.71	
Incremental Delay, d2	3.9	0.2		0.5	0.4	
Delay (s)	53.0	45.7		5.5	3.9	
Level of Service	D	D		A	A	
Approach Delay (s)	50.3			5.5	3.9	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	311	336	974	0	0	973
Future Volume (vph)	311	336	974	0	0	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		111				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	338	365	1059	0	0	1058
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	365	1059	0	0	1058
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

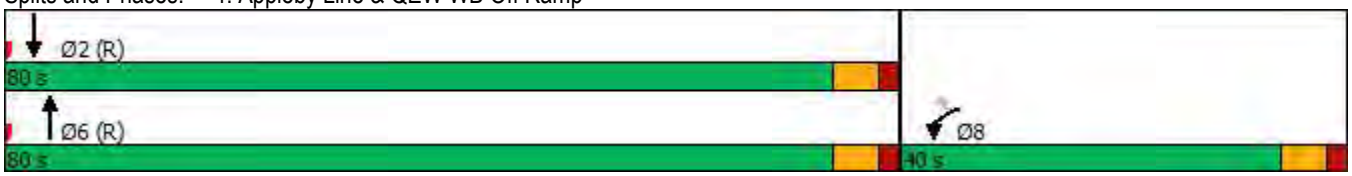


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	26.5	26.5	81.5			81.5
Actuated g/C Ratio	0.22	0.22	0.68			0.68
v/c Ratio	0.48	0.88	0.46			0.46
Control Delay	41.9	53.3	10.8			10.7
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	41.9	53.3	10.8			10.7
LOS	D	D	B			B
Approach Delay	47.8		10.8			10.7
Approach LOS	D		B			B
Queue Length 50th (m)	37.4	62.9	78.1			60.2
Queue Length 95th (m)	48.4	96.0	114.1			89.1
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	910	499	2312			2291
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.37	0.73	0.46			0.46

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	

Intersection Signal Delay: 20.0	Intersection LOS: B
Intersection Capacity Utilization 57.7%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	311	336	974	0	0	973
Future Volume (vph)	311	336	974	0	0	973
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	365	1059	0	0	1058
RTOR Reduction (vph)	0	86	0	0	0	0
Lane Group Flow (vph)	338	279	1059	0	0	1058
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	26.5	26.5	81.5			81.5
Effective Green, g (s)	26.5	26.5	81.5			81.5
Actuated g/C Ratio	0.22	0.22	0.68			0.68
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	709	327	2313			2291
v/s Ratio Prot	0.11		0.31			c0.31
v/s Ratio Perm		c0.19				
v/c Ratio	0.48	0.85	0.46			0.46
Uniform Delay, d1	40.7	44.9	9.0			9.0
Progression Factor	1.00	1.00	1.02			1.00
Incremental Delay, d2	0.5	18.8	0.6			0.7
Delay (s)	41.2	63.6	9.7			9.7
Level of Service	D	E	A			A
Approach Delay (s)	52.9		9.7			9.7
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	20.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	30	1502	7	136	1285
Future Volume (vph)	0	30	1502	7	136	1285
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1481	0	3427	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1481	0	3427	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	32	1598	7	145	1367
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	0	1605	0	145	1367
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

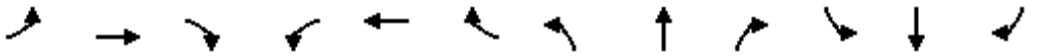
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 62.6%		ICU Level of Service B	
Analysis Period (min) 15			



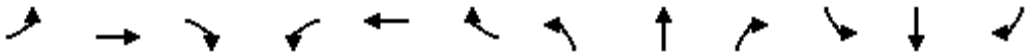
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	30	1502	7	136	1285
Future Volume (Veh/h)	0	30	1502	7	136	1285
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	32	1598	7	145	1367
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.73	0.69			0.69	
vC, conflicting volume	2578	806			1608	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1855	0			971	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	96			70	
cM capacity (veh/h)	30	723			483	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	32	1065	540	145	684	684
Volume Left	0	0	0	145	0	0
Volume Right	32	0	7	0	0	0
cSH	723	1700	1700	483	1700	1700
Volume to Capacity	0.04	0.63	0.32	0.30	0.40	0.40
Queue Length 95th (m)	1.1	0.0	0.0	10.0	0.0	0.0
Control Delay (s)	10.2	0.0	0.0	15.6	0.0	0.0
Lane LOS	B			C		
Approach Delay (s)	10.2	0.0		1.5		
Approach LOS	B					

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Future Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	0.99			1.00	
Frt		0.949			0.911			0.961			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1674	0	3072	1604	0	3242	3266	0	1770	3384	0
Flt Permitted	0.717			0.950			0.950			0.070		
Satd. Flow (perm)	1334	1674	0	3072	1604	0	3240	3266	0	130	3384	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			36			51			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.7			190.1			245.0			64.5	
Travel Time (s)		3.7			11.4			14.7			3.9	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	38	131	67	95	25	36	140	1159	403	93	1316	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	198	0	95	61	0	140	1562	0	93	1358	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	9.5	39.0		9.5	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	9.6	39.0		9.8	39.2		12.0	64.2		12.0	64.2	
Total Split (%)	7.7%	31.2%		7.8%	31.4%		9.6%	51.4%		9.6%	51.4%	
Maximum Green (s)	5.1	32.0		5.3	32.2		8.0	57.2		8.0	57.2	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	26.4	18.8		5.3	20.9		10.8	69.8		79.2	67.6	
Actuated g/C Ratio	0.21	0.15		0.04	0.17		0.09	0.56		0.63	0.54	
v/c Ratio	0.13	0.74		0.73	0.20		0.50	0.85		0.48	0.74	
Control Delay	34.8	61.2		89.5	23.2		60.4	29.0		21.1	26.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.9		0.0	0.0	
Total Delay	34.8	61.2		89.5	23.2		60.4	29.9		21.1	26.5	
LOS	C	E		F	C		E	C		C	C	
Approach Delay		57.0			63.5			32.4			26.2	
Approach LOS		E			E			C			C	
Queue Length 50th (m)	7.6	44.7		12.7	5.7		18.1	162.7		7.3	136.0	
Queue Length 95th (m)	15.6	67.2		#27.1	17.6		28.5	#261.0		22.6	197.0	
Internal Link Dist (m)		37.7			166.1			221.0			40.5	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	299	443		130	439		281	1847		201	1832	
Starvation Cap Reductn	0	0		0	0		0	102		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.45		0.73	0.14		0.50	0.90		0.46	0.74	

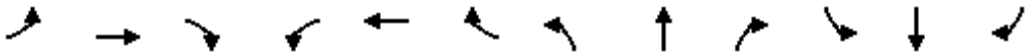
Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 32.9	Intersection LOS: C
Intersection Capacity Utilization 82.5%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 7: Appleby Line & North Service Road



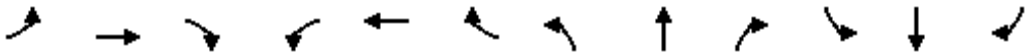


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Future Volume (vph)	36	126	64	91	24	35	134	1113	387	89	1263	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1674		3072	1604		3242	3267		1770	3385	
Flt Permitted	0.72	1.00		0.95	1.00		0.95	1.00		0.07	1.00	
Satd. Flow (perm)	1335	1674		3072	1604		3242	3267		131	3385	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	131	67	95	25	36	140	1159	403	93	1316	42
RTOR Reduction (vph)	0	17	0	0	30	0	0	23	0	0	1	0
Lane Group Flow (vph)	38	181	0	95	31	0	140	1539	0	93	1357	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	23.8	19.7		5.3	20.9		10.8	68.9		75.3	66.7	
Effective Green, g (s)	23.8	19.7		5.3	20.9		10.8	68.9		75.3	66.7	
Actuated g/C Ratio	0.19	0.16		0.04	0.17		0.09	0.55		0.60	0.53	
Clearance Time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	268	263		130	268		280	1800		191	1806	
v/s Ratio Prot	0.00	c0.11		c0.03	0.02		c0.04	c0.47		0.03	0.40	
v/s Ratio Perm	0.02									0.26		
v/c Ratio	0.14	0.69		0.73	0.12		0.50	0.86		0.49	0.75	
Uniform Delay, d1	41.9	49.8		59.1	44.2		54.5	23.8		18.7	22.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	7.3		18.9	0.2		1.4	5.4		2.0	2.9	
Delay (s)	42.1	57.1		78.1	44.4		55.9	29.3		20.7	25.6	
Level of Service	D	E		E	D		E	C		C	C	
Approach Delay (s)		54.7			64.9			31.5			25.3	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Future Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		2	1		0
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.933			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3249	0	1770	3291	0	1703	3539	1553	1719	3532	1369
Flt Permitted	0.125			0.284			0.073			0.147		
Satd. Flow (perm)	228	3249	0	527	3291	0	131	3539	1520	266	3532	1343
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		117			60				119			191
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			195.9			133.0	
Travel Time (s)		12.0			13.2			11.8			8.0	
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	291	258	210	471	603	303	115	941	177	177	1517	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	291	468	0	471	906	0	115	941	177	177	1517	310
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	21.0	38.3		25.0	42.3		11.0	59.7	59.7	17.0	65.7	65.7
Total Split (%)	15.0%	27.4%		17.9%	30.2%		7.9%	42.6%	42.6%	12.1%	46.9%	46.9%
Maximum Green (s)	17.0	32.0		21.0	36.0		7.0	53.4	53.4	13.0	59.4	59.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	51.3	32.0		59.3	36.0		63.8	54.5	54.5	72.3	59.4	59.4
Actuated g/C Ratio	0.37	0.23		0.42	0.26		0.46	0.39	0.39	0.52	0.42	0.42
v/c Ratio	1.09	0.56		1.15	1.02		0.83	0.68	0.27	0.68	1.01	0.46
Control Delay	119.7	38.3		123.9	82.2		69.9	38.9	11.4	31.2	61.5	14.6
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.7	38.3		123.9	82.2		69.9	38.9	11.4	31.2	61.5	14.6
LOS	F	D		F	F		E	D	B	C	E	B
Approach Delay		69.5			96.5			37.9			51.5	
Approach LOS		E			F			D			D	
Queue Length 50th (m)	~78.2	48.0		~116.1	~139.3		17.4	120.8	10.8	25.7	~209.8	27.1
Queue Length 95th (m)	#138.9	66.7		#187.8	#182.9		#54.0	145.9	28.4	m53.9	#286.8	60.3
Internal Link Dist (m)		175.5			196.4			171.9			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	266	832		409	890		138	1376	664	273	1498	679
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.09	0.56		1.15	1.02		0.83	0.68	0.27	0.65	1.01	0.46

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 1.15	
Intersection Signal Delay: 62.5	Intersection LOS: E
Intersection Capacity Utilization 115.2%	ICU Level of Service H
Analysis Period (min) 15	

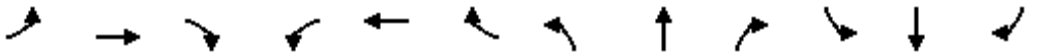
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Appleby Line & Harvester Road



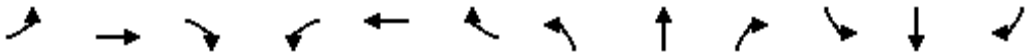


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Future Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1735	3248		1768	3290		1703	3539	1520	1719	3532	1343
Flt Permitted	0.12	1.00		0.28	1.00		0.07	1.00	1.00	0.15	1.00	1.00
Satd. Flow (perm)	228	3248		529	3290		132	3539	1520	266	3532	1343
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	291	258	210	471	603	303	115	941	177	177	1517	310
RTOR Reduction (vph)	0	90	0	0	45	0	0	0	73	0	0	110
Lane Group Flow (vph)	291	378	0	471	861	0	115	941	104	177	1517	200
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	49.0	32.0		57.0	36.0		61.5	54.5	54.5	70.4	59.4	59.4
Effective Green, g (s)	49.0	32.0		57.0	36.0		61.5	54.5	54.5	70.4	59.4	59.4
Actuated g/C Ratio	0.35	0.23		0.41	0.26		0.44	0.39	0.39	0.50	0.42	0.42
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	262	742		401	846		136	1377	591	257	1498	569
v/s Ratio Prot	0.13	0.12		c0.18	0.26		c0.04	0.27		c0.06	c0.43	
v/s Ratio Perm	0.25			c0.30			0.33		0.07	0.29		0.15
v/c Ratio	1.11	0.51		1.17	1.02		0.85	0.68	0.18	0.69	1.01	0.35
Uniform Delay, d1	41.2	47.1		35.6	52.0		33.3	35.6	28.0	24.1	40.3	27.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.14	0.95	1.23
Incremental Delay, d2	88.6	2.5		101.8	35.6		35.6	2.8	0.7	5.8	23.5	1.3
Delay (s)	129.7	49.6		137.5	87.6		69.0	38.3	28.7	33.2	61.7	34.9
Level of Service	F	D		F	F		E	D	C	C	E	C
Approach Delay (s)		80.3			104.7			39.8			55.1	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	67.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	115.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Future Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	0.98
Frt		0.998			0.996			0.987				0.850
Flt Protected		0.995						0.960			0.956	
Satd. Flow (prot)	0	3445	0	0	3427	0	0	1601	0	0	1781	1583
Flt Permitted		0.770			0.953			0.729			0.693	
Satd. Flow (perm)	0	2665	0	0	3266	0	0	1213	0	0	1275	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			5				117
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			201.1	
Travel Time (s)		13.2			11.5			8.0			14.5	
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	56	544	9	5	1074	26	60	5	7	43	4	264
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	609	0	0	1105	0	0	72	0	0	47	264
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

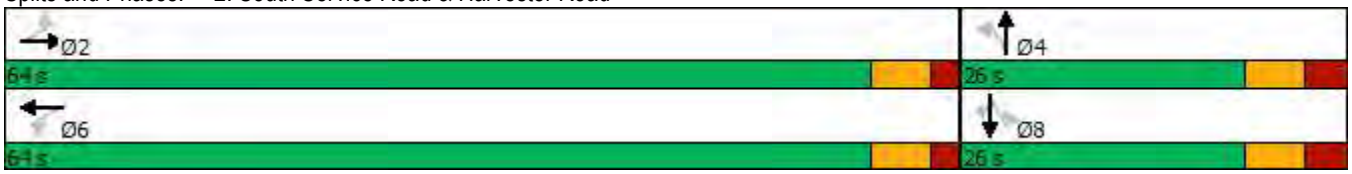


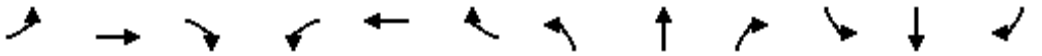
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.1			58.1			13.6			13.6	13.6
Actuated g/C Ratio		0.69			0.69			0.16			0.16	0.16
v/c Ratio		0.33			0.49			0.36			0.23	0.76
Control Delay		6.5			7.7			34.7			33.2	33.1
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		6.5			7.7			34.7			33.2	33.1
LOS		A			A			C			C	C
Approach Delay		6.5			7.7			34.7			33.1	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		19.1			40.3			10.2			7.1	23.7
Queue Length 95th (m)		33.3			66.0			22.7			16.7	50.5
Internal Link Dist (m)		196.4			168.0			86.6			177.1	
Turn Bay Length (m)												
Base Capacity (vph)		1829			2242			276			286	441
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.33			0.49			0.26			0.16	0.60

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 84.7	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.76	

Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 77.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: South Service Road & Harvester Road

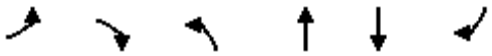




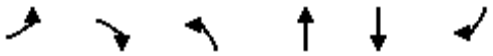
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Future Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00			0.99	1.00
Frt		1.00			1.00			0.99			1.00	0.85
Flt Protected		1.00			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3445			3427			1597			1760	1559
Flt Permitted		0.77			0.95			0.73			0.69	1.00
Satd. Flow (perm)		2665			3267			1213			1275	1559
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	56	544	9	5	1074	26	60	5	7	43	4	264
RTOR Reduction (vph)	0	1	0	0	2	0	0	4	0	0	0	98
Lane Group Flow (vph)	0	608	0	0	1103	0	0	68	0	0	47	166
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			13.6			13.6	13.6
Effective Green, g (s)		58.1			58.1			13.6			13.6	13.6
Actuated g/C Ratio		0.69			0.69			0.16			0.16	0.16
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1828			2241			194			204	250
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.34			0.06			0.04	c0.11
v/c Ratio		0.33			0.49			0.35			0.23	0.66
Uniform Delay, d1		5.4			6.3			31.6			31.0	33.4
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.5			0.8			1.1			0.6	6.5
Delay (s)		5.9			7.1			32.7			31.6	39.9
Level of Service		A			A			C			C	D
Approach Delay (s)		5.9			7.1			32.7			38.6	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	340	0	1136	1628	0
Future Volume (vph)	379	340	0	1136	1628	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	3505	3471	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	3505	3471	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		36				
Link Speed (k/h)	60			60	60	
Link Distance (m)	310.3			229.0	321.0	
Travel Time (s)	18.6			13.7	19.3	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Adj. Flow (vph)	412	370	0	1235	1770	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	412	370	0	1235	1770	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	23.6	23.6		104.4	104.4	
Actuated g/C Ratio	0.17	0.17		0.75	0.75	
v/c Ratio	0.73	0.77		0.47	0.68	
Control Delay	62.8	60.5		5.1	8.4	
Queue Delay	0.0	0.0		0.0	0.1	
Total Delay	62.8	60.5		5.1	8.5	
LOS	E	E		A	A	
Approach Delay	61.7			5.1	8.5	
Approach LOS	E			A	A	
Queue Length 50th (m)	59.6	53.9		31.2	85.6	
Queue Length 95th (m)	73.5	69.7		m37.6	122.0	
Internal Link Dist (m)	286.3			205.0	297.0	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1024	848		2612	2587	
Starvation Cap Reductn	0	0		0	101	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.40	0.44		0.47	0.71	

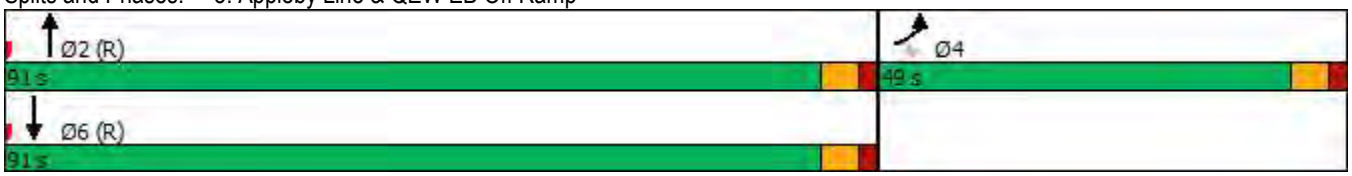
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 18.4	Intersection LOS: B

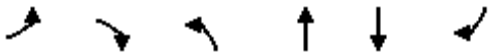
Intersection Capacity Utilization 72.7% ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	340	0	1136	1628	0
Future Volume (vph)	379	340	0	1136	1628	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		3505	3471	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		3505	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	370	0	1235	1770	0
RTOR Reduction (vph)	0	30	0	0	0	0
Lane Group Flow (vph)	412	340	0	1235	1770	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	23.6	23.6		104.4	104.4	
Effective Green, g (s)	23.6	23.6		104.4	104.4	
Actuated g/C Ratio	0.17	0.17		0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	562	452		2613	2588	
v/s Ratio Prot	0.12			0.35	c0.51	
v/s Ratio Perm		c0.13				
v/c Ratio	0.73	0.75		0.47	0.68	
Uniform Delay, d1	55.2	55.4		7.0	9.2	
Progression Factor	1.00	1.00		0.62	0.72	
Incremental Delay, d2	4.9	6.9		0.4	1.1	
Delay (s)	60.1	62.4		4.7	7.7	
Level of Service	E	E		A	A	
Approach Delay (s)	61.2			4.7	7.7	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	461	388	1400	0	0	1492
Future Volume (vph)	461	388	1400	0	0	1492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1509	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1509	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		36				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		321.0			245.3
Travel Time (s)	22.2		19.3			14.7
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Adj. Flow (vph)	501	422	1522	0	0	1622
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	422	1522	0	0	1622
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

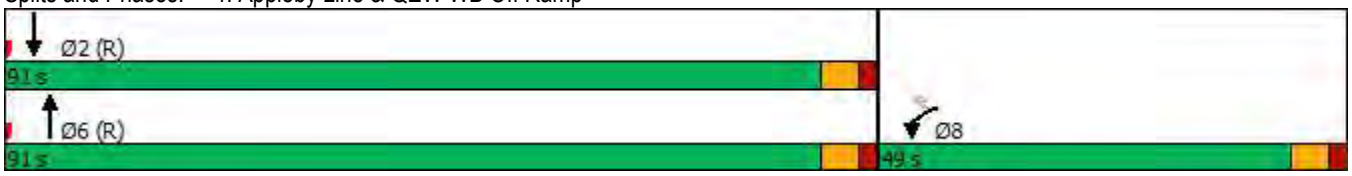


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	39.9	39.9	88.1			88.1
Actuated g/C Ratio	0.28	0.28	0.63			0.63
v/c Ratio	0.53	0.93	0.69			0.74
Control Delay	43.9	71.5	18.9			11.2
Queue Delay	0.0	0.1	0.2			0.1
Total Delay	43.9	71.6	19.1			11.2
LOS	D	E	B			B
Approach Delay	56.5		19.1			11.2
Approach LOS	E		B			B
Queue Length 50th (m)	61.4	107.7	205.3			70.6
Queue Length 95th (m)	79.3	#167.9	230.2			m79.6
Internal Link Dist (m)	346.8		297.0			221.3
Turn Bay Length (m)	190.0					
Base Capacity (vph)	1024	488	2206			2206
Starvation Cap Reductn	0	0	0			38
Spillback Cap Reductn	0	1	154			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.49	0.87	0.74			0.75

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 24.5	Intersection LOS: C

Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	461	388	1400	0	0	1492
Future Volume (vph)	461	388	1400	0	0	1492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3335	1509	3505			3505
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3335	1509	3505			3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	501	422	1522	0	0	1622
RTOR Reduction (vph)	0	26	0	0	0	0
Lane Group Flow (vph)	501	396	1522	0	0	1622
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	39.9	39.9	88.1			88.1
Effective Green, g (s)	39.9	39.9	88.1			88.1
Actuated g/C Ratio	0.28	0.28	0.63			0.63
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	950	430	2205			2205
v/s Ratio Prot	0.15		0.43			c0.46
v/s Ratio Perm		c0.26				
v/c Ratio	0.53	0.92	0.69			0.74
Uniform Delay, d1	42.1	48.5	17.0			17.9
Progression Factor	1.00	1.00	0.97			0.52
Incremental Delay, d2	0.5	25.1	1.6			1.4
Delay (s)	42.6	73.6	18.1			10.7
Level of Service	D	E	B			B
Approach Delay (s)	56.8		18.1			10.7
Approach LOS	E		B			B

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	69	1512	9	45	1931
Future Volume (vph)	0	69	1512	9	45	1931
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	3493	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	3493	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			229.0
Travel Time (s)	2.5		8.0			13.7
Confl. Peds. (#/hr)				6	6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	11%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	75	1643	10	49	2099
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	1653	0	49	2099
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

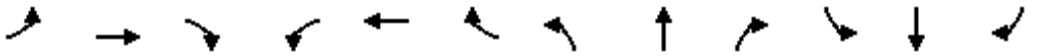
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			



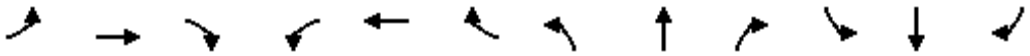
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	69	1512	9	45	1931
Future Volume (Veh/h)	0	69	1512	9	45	1931
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	75	1643	10	49	2099
Pedestrians	6					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			229
pX, platoon unblocked	0.82	0.78			0.78	
vC, conflicting volume	2802	832			1659	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1537	213			1276	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	88			88	
cM capacity (veh/h)	77	613			418	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	75	1095	558	49	1050	1050
Volume Left	0	0	0	49	0	0
Volume Right	75	0	10	0	0	0
cSH	613	1700	1700	418	1700	1700
Volume to Capacity	0.12	0.64	0.33	0.12	0.62	0.62
Queue Length 95th (m)	3.3	0.0	0.0	3.2	0.0	0.0
Control Delay (s)	11.7	0.0	0.0	14.8	0.0	0.0
Lane LOS	B			B		
Approach Delay (s)	11.7	0.0		0.3		
Approach LOS	B					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Future Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.876			0.937			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1541	0	1770	1724	0	1752	3473	0	1703	3393	0
Flt Permitted	0.556			0.222			0.098			0.065		
Satd. Flow (perm)	943	1541	0	414	1724	0	181	3473	0	117	3393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		156			29			6			7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		75.9			111.9			245.3			79.1	
Travel Time (s)		4.6			6.7			14.7			4.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	54	39	190	266	198	142	316	1714	107	72	1111	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	229	0	266	340	0	316	1821	0	72	1190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	38.0	38.0		20.0	58.0		13.0	70.0		12.0	69.0	
Total Split (%)	27.1%	27.1%		14.3%	41.4%		9.3%	50.0%		8.6%	49.3%	
Maximum Green (s)	31.0	31.0		16.0	51.0		9.0	63.0		8.0	62.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	14.0	14.0		37.0	34.0		95.0	81.9		73.2	62.0	
Actuated g/C Ratio	0.10	0.10		0.26	0.24		0.68	0.58		0.52	0.44	
v/c Ratio	0.57	0.78		1.01	0.77		0.76	0.90		0.47	0.79	
Control Delay	81.7	38.1		102.5	56.8		52.6	19.5		27.0	38.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.6		0.0	0.0	
Total Delay	81.7	38.1		102.5	56.8		52.6	20.1		27.0	38.0	
LOS	F	D		F	E		D	C		C	D	
Approach Delay		46.4			76.9			24.9			37.3	
Approach LOS		D			E			C			D	
Queue Length 50th (m)	15.3	20.6		~69.1	86.2		66.7	98.5		6.4	153.3	
Queue Length 95th (m)	29.1	48.8		#104.9	114.0		m#126.5	#348.3		19.8	183.3	
Internal Link Dist (m)		51.9			87.9			221.3			55.1	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	208	462		264	646		414	2034		160	1506	
Starvation Cap Reductn	0	0		0	0		0	44		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.26	0.50		1.01	0.53		0.76	0.92		0.45	0.79	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 42 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 37.3		Intersection LOS: D	
Intersection Capacity Utilization 100.4%		ICU Level of Service G	

Analysis Period (min) 15

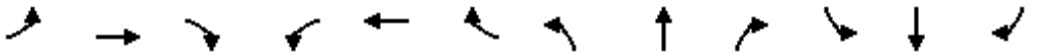
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Appleby Line & North Service Road



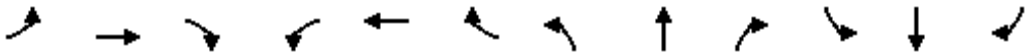


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Future Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1541		1770	1725		1752	3474		1703	3393	
Flt Permitted	0.56	1.00		0.22	1.00		0.10	1.00		0.06	1.00	
Satd. Flow (perm)	944	1541		414	1725		181	3474		116	3393	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	54	39	190	266	198	142	316	1714	107	72	1111	79
RTOR Reduction (vph)	0	140	0	0	22	0	0	3	0	0	4	0
Lane Group Flow (vph)	54	89	0	266	318	0	316	1818	0	72	1186	0
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	14.0	14.0		34.0	34.0		92.0	81.2		68.8	62.0	
Effective Green, g (s)	14.0	14.0		34.0	34.0		92.0	81.2		68.8	62.0	
Actuated g/C Ratio	0.10	0.10		0.24	0.24		0.66	0.58		0.49	0.44	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	94	154		255	418		410	2014		134	1502	
v/s Ratio Prot		0.06		c0.12	0.18		c0.14	c0.52		0.03	0.35	
v/s Ratio Perm	0.06			c0.13			0.36			0.24		
v/c Ratio	0.57	0.58		1.04	0.76		0.77	0.90		0.54	0.79	
Uniform Delay, d1	60.2	60.2		49.0	49.2		34.3	25.9		26.4	33.4	
Progression Factor	1.00	1.00		1.00	1.00		1.54	0.48		1.00	1.00	
Incremental Delay, d2	8.2	5.1		68.1	8.0		6.6	5.5		4.1	4.3	
Delay (s)	68.4	65.3		117.0	57.2		59.5	18.0		30.5	37.7	
Level of Service	E	E		F	E		E	B		C	D	
Approach Delay (s)		65.9			83.5			24.1			37.3	
Approach LOS		E			F			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Future Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		2	2		0
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99				0.98	1.00		0.98
Frt		0.933			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	3250	0	3433	3291	0	1703	3539	1553	3335	3532	1369
Flt Permitted	0.950			0.950			0.081			0.950		
Satd. Flow (perm)	3361	3250	0	3411	3291	0	145	3539	1521	3322	3532	1344
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		116			67				162			201
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			195.9			133.0	
Travel Time (s)		12.0			13.2			11.8			8.0	
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	291	258	210	471	603	303	115	941	177	177	1517	310
Shared Lane Traffic (%)												
Lane Group Flow (vph)	291	468	0	471	906	0	115	941	177	177	1517	310
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	16.0	38.3		21.0	43.3		11.0	54.7	54.7	16.0	59.7	59.7
Total Split (%)	12.3%	29.5%		16.2%	33.3%		8.5%	42.1%	42.1%	12.3%	45.9%	45.9%
Maximum Green (s)	12.0	32.0		17.0	37.0		7.0	48.4	48.4	12.0	53.4	53.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	12.0	32.0		17.0	37.0		58.6	49.3	49.3	11.1	53.4	53.4
Actuated g/C Ratio	0.09	0.25		0.13	0.28		0.45	0.38	0.38	0.09	0.41	0.41
v/c Ratio	0.94	0.53		1.05	0.92		0.77	0.70	0.26	0.62	1.05	0.46
Control Delay	96.1	33.9		110.3	56.9		56.0	37.8	6.2	67.3	74.2	11.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.1	33.9		110.3	56.9		56.0	37.8	6.2	67.3	74.2	11.8
LOS	F	C		F	E		E	D	A	E	E	B
Approach Delay		57.7			75.2			35.0			63.9	
Approach LOS		E			E			C			E	
Queue Length 50th (m)	40.8	43.2		~71.1	117.2		15.7	113.4	2.6	24.0	~233.4	18.7
Queue Length 95th (m)	#69.1	61.3		#106.4	#157.4		#47.3	138.6	18.2	36.6	#278.2	45.1
Internal Link Dist (m)		175.5			196.4			171.9			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	310	887		448	984		149	1341	676	307	1450	670
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.53		1.05	0.92		0.77	0.70	0.26	0.58	1.05	0.46

Intersection Summary	
Area Type:	Other
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	

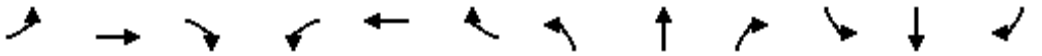
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 59.3	Intersection LOS: E
Intersection Capacity Utilization 103.1%	ICU Level of Service G
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road



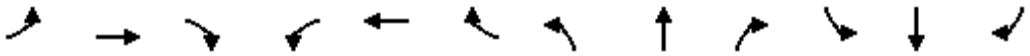


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Future Volume (vph)	279	248	202	452	579	291	110	903	170	170	1456	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3249		3433	3290		1703	3539	1521	3335	3532	1344
Flt Permitted	0.95	1.00		0.95	1.00		0.08	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3249		3433	3290		145	3539	1521	3335	3532	1344
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	291	258	210	471	603	303	115	941	177	177	1517	310
RTOR Reduction (vph)	0	87	0	0	48	0	0	0	101	0	0	118
Lane Group Flow (vph)	291	381	0	471	858	0	115	941	76	177	1517	192
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	12.0	32.0		17.0	37.0		56.3	49.3	49.3	11.1	53.4	53.4
Effective Green, g (s)	12.0	32.0		17.0	37.0		56.3	49.3	49.3	11.1	53.4	53.4
Actuated g/C Ratio	0.09	0.25		0.13	0.28		0.43	0.38	0.38	0.09	0.41	0.41
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	310	799		448	936		146	1342	576	284	1450	552
v/s Ratio Prot	0.09	0.12		c0.14	c0.26		c0.04	0.27		0.05	c0.43	
v/s Ratio Perm							0.30		0.05			0.14
v/c Ratio	0.94	0.48		1.05	0.92		0.79	0.70	0.13	0.62	1.05	0.35
Uniform Delay, d1	58.6	41.8		56.5	45.0		30.8	34.1	26.4	57.4	38.3	26.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	34.9	2.0		56.7	13.4		23.9	3.1	0.5	4.2	36.7	1.7
Delay (s)	93.5	43.9		113.2	58.4		54.7	37.2	26.9	61.6	75.0	28.0
Level of Service	F	D		F	E		D	D	C	E	E	C
Approach Delay (s)		62.9			77.1			37.3			66.6	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	62.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Future Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	0.98
Frt		0.998			0.996			0.987				0.850
Flt Protected		0.995						0.960			0.956	
Satd. Flow (prot)	0	3445	0	0	3427	0	0	1601	0	0	1781	1583
Flt Permitted		0.770			0.953			0.729			0.693	
Satd. Flow (perm)	0	2665	0	0	3266	0	0	1213	0	0	1275	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			5				117
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			201.1	
Travel Time (s)		13.2			11.5			8.0			14.5	
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	56	544	9	5	1074	26	60	5	7	43	4	264
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	609	0	0	1105	0	0	72	0	0	47	264
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	

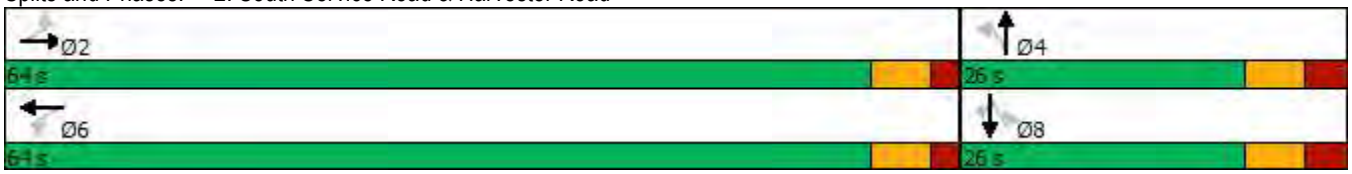


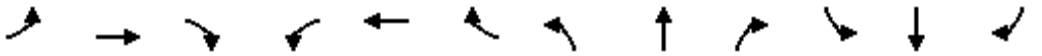
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.1			58.1			13.6			13.6	13.6
Actuated g/C Ratio		0.69			0.69			0.16			0.16	0.16
v/c Ratio		0.33			0.49			0.36			0.23	0.76
Control Delay		6.5			7.7			34.7			33.2	33.1
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		6.5			7.7			34.7			33.2	33.1
LOS		A			A			C			C	C
Approach Delay		6.5			7.7			34.7			33.1	
Approach LOS		A			A			C			C	
Queue Length 50th (m)		19.1			40.3			10.2			7.1	23.7
Queue Length 95th (m)		33.3			66.0			22.7			16.7	50.5
Internal Link Dist (m)		196.4			168.0			86.6			177.1	
Turn Bay Length (m)												
Base Capacity (vph)		1829			2242			276			286	441
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.33			0.49			0.26			0.16	0.60

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 84.7	
Natural Cycle: 55	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.76	

Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 77.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 2: South Service Road & Harvester Road

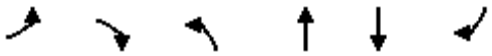




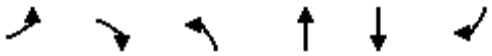
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Future Volume (vph)	53	511	8	5	1010	24	56	5	7	40	4	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00			0.99	1.00
Frt		1.00			1.00			0.99			1.00	0.85
Flt Protected		1.00			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3445			3427			1597			1760	1559
Flt Permitted		0.77			0.95			0.73			0.69	1.00
Satd. Flow (perm)		2665			3267			1213			1275	1559
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	56	544	9	5	1074	26	60	5	7	43	4	264
RTOR Reduction (vph)	0	1	0	0	2	0	0	4	0	0	0	98
Lane Group Flow (vph)	0	608	0	0	1103	0	0	68	0	0	47	166
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			13.6			13.6	13.6
Effective Green, g (s)		58.1			58.1			13.6			13.6	13.6
Actuated g/C Ratio		0.69			0.69			0.16			0.16	0.16
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1828			2241			194			204	250
v/s Ratio Prot												
v/s Ratio Perm		0.23			c0.34			0.06			0.04	c0.11
v/c Ratio		0.33			0.49			0.35			0.23	0.66
Uniform Delay, d1		5.4			6.3			31.6			31.0	33.4
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.5			0.8			1.1			0.6	6.5
Delay (s)		5.9			7.1			32.7			31.6	39.9
Level of Service		A			A			C			C	D
Approach Delay (s)		5.9			7.1			32.7			38.6	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	12.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	84.7	Sum of lost time (s)	13.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	340	0	1136	1628	0
Future Volume (vph)	379	340	0	1136	1628	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	3505	3471	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	3505	3471	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		36				
Link Speed (k/h)	60			60	60	
Link Distance (m)	310.3			229.0	321.0	
Travel Time (s)	18.6			13.7	19.3	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Adj. Flow (vph)	412	370	0	1235	1770	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	412	370	0	1235	1770	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

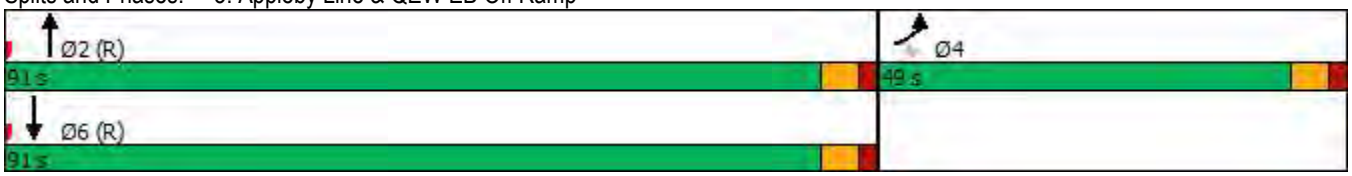


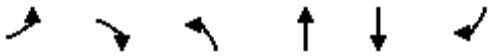
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	23.6	23.6		104.4	104.4	
Actuated g/C Ratio	0.17	0.17		0.75	0.75	
v/c Ratio	0.73	0.77		0.47	0.68	
Control Delay	62.8	60.5		8.2	5.6	
Queue Delay	0.0	0.0		0.0	0.1	
Total Delay	62.8	60.5		8.2	5.6	
LOS	E	E		A	A	
Approach Delay	61.7			8.2	5.6	
Approach LOS	E			A	A	
Queue Length 50th (m)	59.6	53.9		65.2	72.0	
Queue Length 95th (m)	73.5	69.7		97.0	100.4	
Internal Link Dist (m)	286.3			205.0	297.0	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1024	848		2612	2587	
Starvation Cap Reductn	0	0		0	101	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.40	0.44		0.47	0.71	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 18.0	Intersection LOS: B

Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	340	0	1136	1628	0
Future Volume (vph)	379	340	0	1136	1628	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		3505	3471	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		3505	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	370	0	1235	1770	0
RTOR Reduction (vph)	0	30	0	0	0	0
Lane Group Flow (vph)	412	340	0	1235	1770	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	23.6	23.6		104.4	104.4	
Effective Green, g (s)	23.6	23.6		104.4	104.4	
Actuated g/C Ratio	0.17	0.17		0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	562	452		2613	2588	
v/s Ratio Prot	0.12			0.35	c0.51	
v/s Ratio Perm		c0.13				
v/c Ratio	0.73	0.75		0.47	0.68	
Uniform Delay, d1	55.2	55.4		7.0	9.2	
Progression Factor	1.00	1.00		1.00	0.44	
Incremental Delay, d2	4.9	6.9		0.6	1.1	
Delay (s)	60.1	62.4		7.6	5.1	
Level of Service	E	E		A	A	
Approach Delay (s)	61.2			7.6	5.1	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	461	388	1400	0	0	1492
Future Volume (vph)	461	388	1400	0	0	1492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1509	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1509	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		36				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		321.0			245.3
Travel Time (s)	22.2		19.3			14.7
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Adj. Flow (vph)	501	422	1522	0	0	1622
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	422	1522	0	0	1622
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

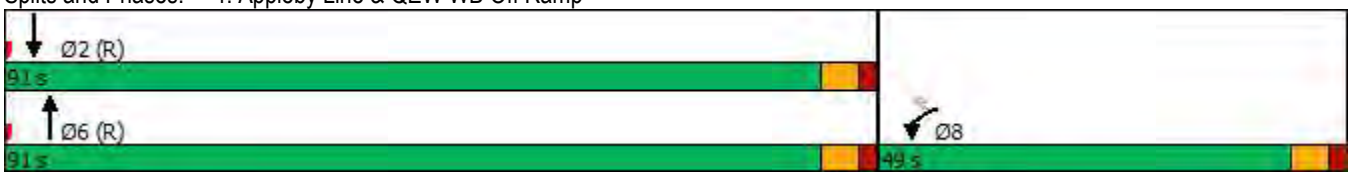


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	39.9	39.9	88.1			88.1
Actuated g/C Ratio	0.28	0.28	0.63			0.63
v/c Ratio	0.53	0.93	0.69			0.74
Control Delay	43.9	71.5	21.1			15.0
Queue Delay	0.0	53.3	0.0			1.2
Total Delay	43.9	124.8	21.1			16.1
LOS	D	F	C			B
Approach Delay	80.9		21.1			16.1
Approach LOS	F		C			B
Queue Length 50th (m)	61.4	107.7	189.5			197.6
Queue Length 95th (m)	79.3	#167.9	216.6			219.8
Internal Link Dist (m)	346.8		297.0			221.3
Turn Bay Length (m)	190.0					
Base Capacity (vph)	1024	488	2206			2206
Starvation Cap Reductn	0	0	0			337
Spillback Cap Reductn	0	183	31			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.49	1.38	0.70			0.87

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 32.7	Intersection LOS: C

Intersection Capacity Utilization 72.7% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	461	388	1400	0	0	1492
Future Volume (vph)	461	388	1400	0	0	1492
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3335	1509	3505			3505
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3335	1509	3505			3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	501	422	1522	0	0	1622
RTOR Reduction (vph)	0	26	0	0	0	0
Lane Group Flow (vph)	501	396	1522	0	0	1622
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	39.9	39.9	88.1			88.1
Effective Green, g (s)	39.9	39.9	88.1			88.1
Actuated g/C Ratio	0.28	0.28	0.63			0.63
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	950	430	2205			2205
v/s Ratio Prot	0.15		0.43			c0.46
v/s Ratio Perm		c0.26				
v/c Ratio	0.53	0.92	0.69			0.74
Uniform Delay, d1	42.1	48.5	17.0			17.9
Progression Factor	1.00	1.00	1.09			0.71
Incremental Delay, d2	0.5	25.1	1.6			1.6
Delay (s)	42.6	73.6	20.1			14.3
Level of Service	D	E	C			B
Approach Delay (s)	56.8		20.1			14.3
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	69	1512	9	45	1931
Future Volume (vph)	0	69	1512	9	45	1931
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	3493	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	3493	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			229.0
Travel Time (s)	2.5		8.0			13.7
Confl. Peds. (#/hr)				6	6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	11%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	75	1643	10	49	2099
Shared Lane Traffic (%)						
Lane Group Flow (vph)	75	0	1653	0	49	2099
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

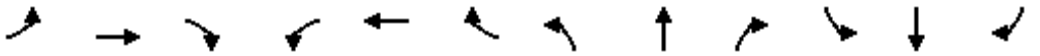
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			



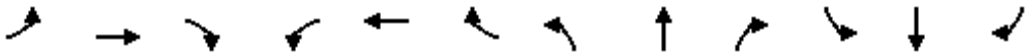
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	69	1512	9	45	1931
Future Volume (Veh/h)	0	69	1512	9	45	1931
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	75	1643	10	49	2099
Pedestrians	6					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			229
pX, platoon unblocked	0.82	0.77			0.77	
vC, conflicting volume	2802	832			1659	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1520	199			1267	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	88			88	
cM capacity (veh/h)	79	623			419	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	75	1095	558	49	1050	1050
Volume Left	0	0	0	49	0	0
Volume Right	75	0	10	0	0	0
cSH	623	1700	1700	419	1700	1700
Volume to Capacity	0.12	0.64	0.33	0.12	0.62	0.62
Queue Length 95th (m)	3.3	0.0	0.0	3.2	0.0	0.0
Control Delay (s)	11.6	0.0	0.0	14.7	0.0	0.0
Lane LOS	B			B		
Approach Delay (s)	11.6	0.0		0.3		
Approach LOS	B					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	64.3%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Future Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Frt		0.876			0.937			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1541	0	3433	1724	0	3400	3473	0	1703	3393	0
Flt Permitted	0.556			0.950			0.950			0.062		
Satd. Flow (perm)	943	1541	0	3433	1724	0	3400	3473	0	111	3393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		136			29			6			7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		76.3			111.9			245.3			79.1	
Travel Time (s)		4.6			6.7			14.7			4.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	54	39	190	266	198	142	316	1714	107	72	1111	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	229	0	266	340	0	316	1821	0	72	1190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	39.0	39.0		19.0	58.0		13.0	70.0		12.0	69.0	
Total Split (%)	27.9%	27.9%		13.6%	41.4%		9.3%	50.0%		8.6%	49.3%	
Maximum Green (s)	32.0	32.0		15.0	51.0		9.0	63.0		8.0	62.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	15.2	15.2		14.3	33.5		24.3	82.5		75.4	64.2	
Actuated g/C Ratio	0.11	0.11		0.10	0.24		0.17	0.59		0.54	0.46	
v/c Ratio	0.53	0.80		0.76	0.78		0.53	0.89		0.47	0.76	
Control Delay	75.2	43.6		75.8	57.8		55.2	37.6		27.7	35.6	
Queue Delay	0.0	0.0		1.9	0.0		0.0	3.6		0.0	0.1	
Total Delay	75.2	43.6		77.7	57.8		55.2	41.2		27.7	35.8	
LOS	E	D		E	E		E	D		C	D	
Approach Delay		49.6			66.5			43.3			35.3	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	15.2	26.9		39.2	86.1		46.9	234.6		6.5	146.1	
Queue Length 95th (m)	28.5	54.3		55.1	112.5		m#65.8	#353.2		20.7	183.3	
Internal Link Dist (m)		52.3			87.9			221.3			55.1	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	215	457		367	646		591	2048		159	1558	
Starvation Cap Reductn	0	0		0	0		0	159		0	0	
Spillback Cap Reductn	0	4		30	0		0	0		0	34	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.51		0.79	0.53		0.53	0.96		0.45	0.78	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 44.6		Intersection LOS: D	
Intersection Capacity Utilization 100.4%		ICU Level of Service G	

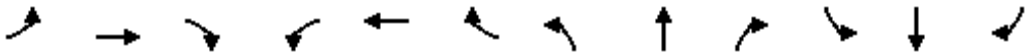
Analysis Period (min) 15

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Appleby Line & North Service Road





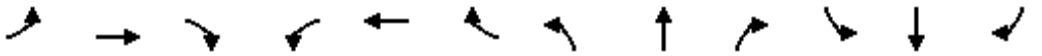
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Future Volume (vph)	52	37	182	255	190	136	303	1645	103	69	1067	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1541		3433	1725		3400	3474		1703	3393	
Flt Permitted	0.56	1.00		0.95	1.00		0.95	1.00		0.06	1.00	
Satd. Flow (perm)	944	1541		3433	1725		3400	3474		112	3393	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	54	39	190	266	198	142	316	1714	107	72	1111	79
RTOR Reduction (vph)	0	121	0	0	22	0	0	2	0	0	4	0
Lane Group Flow (vph)	54	108	0	266	318	0	316	1819	0	72	1186	0
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	15.2	15.2		14.3	33.5		24.3	81.7		71.0	64.2	
Effective Green, g (s)	15.2	15.2		14.3	33.5		24.3	81.7		71.0	64.2	
Actuated g/C Ratio	0.11	0.11		0.10	0.24		0.17	0.58		0.51	0.46	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	102	167		350	412		590	2027		134	1555	
v/s Ratio Prot		0.07		0.08	c0.18		c0.09	c0.52		0.03	0.35	
v/s Ratio Perm	0.06									0.25		
v/c Ratio	0.53	0.65		0.76	0.77		0.54	0.90		0.54	0.76	
Uniform Delay, d1	59.0	59.8		61.2	49.7		52.7	25.5		25.8	31.6	
Progression Factor	1.00	1.00		1.00	1.00		0.97	1.24		1.00	1.00	
Incremental Delay, d2	4.9	8.3		9.4	8.7		0.7	5.2		4.1	3.6	
Delay (s)	63.9	68.1		70.5	58.4		51.7	36.9		29.9	35.2	
Level of Service	E	E		E	E		D	D		C	D	
Approach Delay (s)		67.3			63.7			39.1			34.9	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	43.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	100.4%	ICU Level of Service	G
Analysis Period (min)	15		

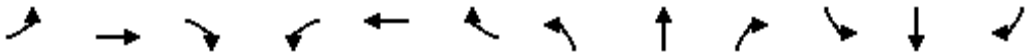
c Critical Lane Group

Appendix G

2031 Future Background Conditions Synchro Worksheets



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Future Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		1	1		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.98			0.98
Frt		0.986			0.913				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1543	3375	0	1687	2959	0	1671	3539	1568	1703	3367	1483
Flt Permitted	0.351			0.156			0.306			0.083		
Satd. Flow (perm)	567	3375	0	277	2959	0	538	3539	1541	149	3367	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			216				196			359
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			186.7			133.0	
Travel Time (s)		12.0			13.2			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	212	813	83	109	156	216	112	1323	459	337	807	359
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	896	0	109	372	0	112	1323	459	337	807	359
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	11.0	38.3		11.0	38.3		11.0	50.7	50.7	20.0	59.7	59.7
Total Split (%)	9.2%	31.9%		9.2%	31.9%		9.2%	42.3%	42.3%	16.7%	49.8%	49.8%
Maximum Green (s)	7.0	32.0		7.0	32.0		7.0	44.4	44.4	16.0	53.4	53.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	34.3	32.0		34.3	32.0		53.7	44.4	44.4	66.7	53.4	53.4
Actuated g/C Ratio	0.29	0.27		0.29	0.27		0.45	0.37	0.37	0.56	0.44	0.44
v/c Ratio	0.97	0.99		0.68	0.39		0.37	1.01	0.66	1.16	0.54	0.42
Control Delay	93.5	71.0		67.5	15.9		17.2	65.4	22.7	145.4	20.0	4.0
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.5	71.0		67.5	15.9		17.2	65.4	22.7	145.4	20.0	4.0
LOS	F	E		E	B		B	E	C	F	C	A
Approach Delay		75.3			27.6			52.2			44.3	
Approach LOS		E			C			D			D	
Queue Length 50th (m)	43.6	115.7		20.7	15.7		12.6	~175.0	54.2	~84.7	48.4	4.6
Queue Length 95th (m)	#96.4	#161.4		#42.4	29.8		22.0	#225.6	93.4	#145.6	65.7	17.6
Internal Link Dist (m)		175.5			196.4			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	219	906		161	947		306	1309	693	290	1498	848
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.97	0.99		0.68	0.39		0.37	1.01	0.66	1.16	0.54	0.42

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 87 (73%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

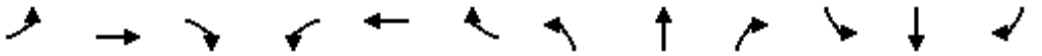
Maximum v/c Ratio: 1.16	
Intersection Signal Delay: 52.6	Intersection LOS: D
Intersection Capacity Utilization 102.1%	ICU Level of Service G
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road

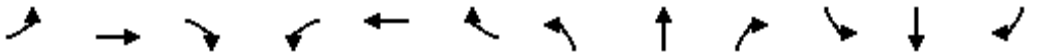




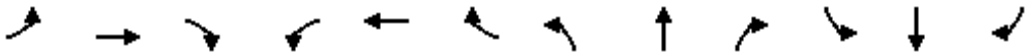
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Future Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1540	3375		1687	2958		1671	3539	1541	1703	3367	1459
Flt Permitted	0.35	1.00		0.16	1.00		0.31	1.00	1.00	0.08	1.00	1.00
Satd. Flow (perm)	570	3375		276	2958		538	3539	1541	148	3367	1459
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)	212	813	83	109	156	216	112	1323	459	337	807	359
RTOR Reduction (vph)	0	7	0	0	158	0	0	0	123	0	0	199
Lane Group Flow (vph)	212	889	0	109	214	0	112	1323	336	337	807	160
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	32.0	32.0		34.3	32.0		51.4	44.4	44.4	64.4	53.4	53.4
Effective Green, g (s)	32.0	32.0		34.3	32.0		51.4	44.4	44.4	64.4	53.4	53.4
Actuated g/C Ratio	0.27	0.27		0.29	0.27		0.43	0.37	0.37	0.54	0.44	0.44
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	208	900		161	788		296	1309	570	286	1498	649
v/s Ratio Prot	0.06	c0.26		c0.04	0.07		0.02	0.37		c0.16	0.24	
v/s Ratio Perm	c0.21			0.15			0.14		0.22	c0.47		0.11
v/c Ratio	1.02	0.99		0.68	0.27		0.38	1.01	0.59	1.18	0.54	0.25
Uniform Delay, d1	43.0	43.8		47.5	34.8		21.2	37.8	30.4	38.3	24.3	20.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.48	0.76	1.15
Incremental Delay, d2	67.5	27.3		10.7	0.2		0.8	27.5	4.4	109.4	1.3	0.9
Delay (s)	110.4	71.1		58.3	35.0		22.0	65.3	34.9	166.0	19.8	24.8
Level of Service	F	E		E	C		C	E	C	F	B	C
Approach Delay (s)		78.6			40.2			55.4			53.8	
Approach LOS		E			D			E			D	

Intersection Summary			
HCM 2000 Control Delay	58.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	102.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Future Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.98
Frt		0.999			0.983			0.973				0.850
Flt Protected		0.993			0.999			0.962			0.953	
Satd. Flow (prot)	0	3452	0	0	3234	0	0	926	0	0	1775	1568
Flt Permitted		0.807			0.934			0.722			0.719	
Satd. Flow (perm)	0	2805	0	0	3024	0	0	689	0	0	1339	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			32			47				147
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			232.2	
Travel Time (s)		13.2			11.5			8.0			16.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	225	1364	11	5	336	43	12	0	3	69	1	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1600	0	0	384	0	0	15	0	0	70	147
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	46.0	46.0		46.0	46.0		24.0	24.0		24.0	24.0	24.0
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	34.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		44.3			44.3			9.3			9.3	9.3
Actuated g/C Ratio		0.71			0.71			0.15			0.15	0.15
v/c Ratio		0.80			0.18			0.11			0.35	0.42
Control Delay		13.8			4.3			2.6			28.9	8.8
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		13.8			4.3			2.6			28.9	8.8
LOS		B			A			A			C	A
Approach Delay		13.8			4.3			2.6			15.3	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		67.5			7.2			0.0			7.7	0.0
Queue Length 95th (m)		#147.1			14.5			1.0			18.3	13.5
Internal Link Dist (m)		196.4			168.0			86.6			208.2	
Turn Bay Length (m)												
Base Capacity (vph)		1994			2158			222			365	524
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.80			0.18			0.07			0.19	0.28

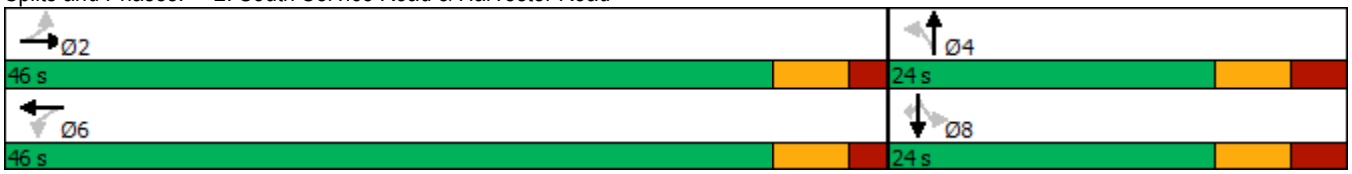
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 12.2		Intersection LOS: B	

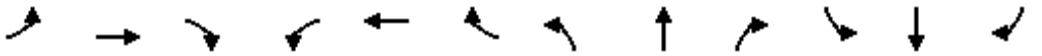
Intersection Capacity Utilization 93.3% ICU Level of Service F

Analysis Period (min) 15

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

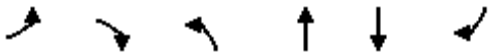
Splits and Phases: 2: South Service Road & Harvester Road



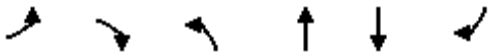


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Future Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			0.98			0.97			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.95	1.00
Satd. Flow (prot)		3451			3236			918			1775	1531
Flt Permitted		0.81			0.93			0.72			0.72	1.00
Satd. Flow (perm)		2806			3025			689			1338	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	225	1364	11	5	336	43	12	0	3	69	1	147
RTOR Reduction (vph)	0	1	0	0	10	0	0	13	0	0	0	129
Lane Group Flow (vph)	0	1599	0	0	374	0	0	2	0	0	70	18
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		43.1			43.1			7.7			7.7	7.7
Effective Green, g (s)		43.1			43.1			7.7			7.7	7.7
Actuated g/C Ratio		0.68			0.68			0.12			0.12	0.12
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1895			2043			83			161	184
v/s Ratio Prot												
v/s Ratio Perm		c0.57			0.12			0.00			c0.05	0.01
v/c Ratio		0.84			0.18			0.02			0.43	0.10
Uniform Delay, d1		7.8			3.8			24.7			26.0	25.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		4.8			0.2			0.1			1.9	0.2
Delay (s)		12.6			4.0			24.8			27.9	25.2
Level of Service		B			A			C			C	C
Approach Delay (s)		12.6			4.0			24.8			26.1	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	301	215	0	1099	1068	0
Future Volume (vph)	301	215	0	1099	1068	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		115				
Link Speed (k/h)	60			60	60	
Link Distance (m)	314.2			230.2	319.8	
Travel Time (s)	18.9			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	327	234	0	1195	1161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	327	234	0	1195	1161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

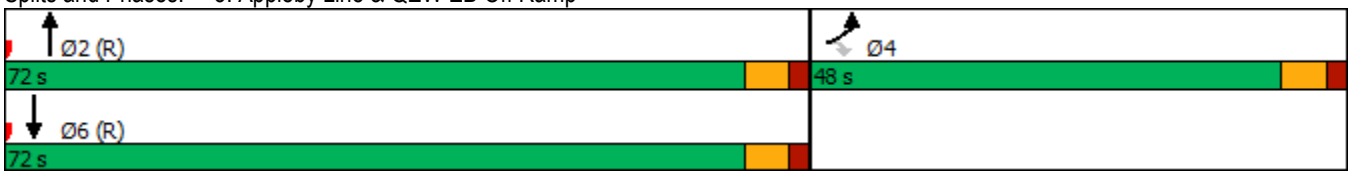


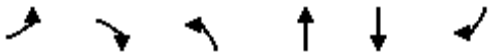
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	17.4	17.4		90.6	90.6	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
v/c Ratio	0.69	0.50		0.46	0.45	
Control Delay	56.0	26.7		3.5	10.5	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	56.0	26.7		3.5	10.5	
LOS	E	C		A	B	
Approach Delay	43.8			3.5	10.5	
Approach LOS	D			A	B	
Queue Length 50th (m)	40.2	15.2		28.1	86.2	
Queue Length 95th (m)	53.5	28.2		m34.0	99.7	
Internal Link Dist (m)	290.2			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1156	979		2572	2572	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.28	0.24		0.46	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 14.0		Intersection LOS: B	
Intersection Capacity Utilization 61.3%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	301	215	0	1099	1068	0
Future Volume (vph)	301	215	0	1099	1068	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	234	0	1195	1161	0
RTOR Reduction (vph)	0	98	0	0	0	0
Lane Group Flow (vph)	327	136	0	1195	1161	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	17.4	17.4		90.6	90.6	
Effective Green, g (s)	17.4	17.4		90.6	90.6	
Actuated g/C Ratio	0.14	0.14		0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	478	374		2571	2571	
v/s Ratio Prot	c0.10			c0.35	0.34	
v/s Ratio Perm		0.05				
v/c Ratio	0.68	0.36		0.46	0.45	
Uniform Delay, d1	48.7	46.3		5.5	5.5	
Progression Factor	1.00	1.00		0.54	1.71	
Incremental Delay, d2	4.0	0.6		0.3	0.5	
Delay (s)	52.7	46.9		3.3	9.8	
Level of Service	D	D		A	A	
Approach Delay (s)	50.3			3.3	9.8	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	348	353	1064	0	0	1057
Future Volume (vph)	348	353	1064	0	0	1057
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		89				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	378	384	1157	0	0	1149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	384	1157	0	0	1149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	29.1	29.1	78.9			78.9
Actuated g/C Ratio	0.24	0.24	0.66			0.66
v/c Ratio	0.49	0.90	0.52			0.52
Control Delay	40.5	58.1	14.4			16.1
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	40.5	58.1	14.4			16.1
LOS	D	E	B			B
Approach Delay	49.3		14.4			16.1
Approach LOS	D		B			B
Queue Length 50th (m)	40.6	71.7	88.5			73.3
Queue Length 95th (m)	53.9	#118.9	102.8			m101.1
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	910	483	2240			2218
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.42	0.80	0.52			0.52

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	

Intersection Signal Delay: 23.7	Intersection LOS: C
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	348	353	1064	0	0	1057
Future Volume (vph)	348	353	1064	0	0	1057
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	384	1157	0	0	1149
RTOR Reduction (vph)	0	67	0	0	0	0
Lane Group Flow (vph)	378	317	1157	0	0	1149
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	29.1	29.1	78.9			78.9
Effective Green, g (s)	29.1	29.1	78.9			78.9
Actuated g/C Ratio	0.24	0.24	0.66			0.66
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	779	359	2239			2218
v/s Ratio Prot	0.12		0.34			c0.34
v/s Ratio Perm		c0.21				
v/c Ratio	0.49	0.88	0.52			0.52
Uniform Delay, d1	39.0	43.8	10.7			10.7
Progression Factor	1.00	1.00	1.18			1.36
Incremental Delay, d2	0.5	21.5	0.8			0.4
Delay (s)	39.5	65.3	13.3			15.0
Level of Service	D	E	B			B
Approach Delay (s)	52.5		13.3			15.0
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	31	1657	8	143	1438
Future Volume (vph)	0	31	1657	8	143	1438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1481	0	3427	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1481	0	3427	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	33	1763	9	152	1530
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	1772	0	152	1530
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

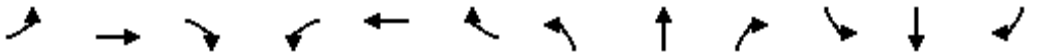
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			



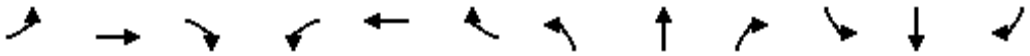
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	31	1657	8	143	1438
Future Volume (Veh/h)	0	31	1657	8	143	1438
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	33	1763	9	152	1530
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.69	0.64			0.64	
vC, conflicting volume	2840	889			1775	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2013	0			1073	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	95			63	
cM capacity (veh/h)	20	669			409	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	33	1175	597	152	765	765
Volume Left	0	0	0	152	0	0
Volume Right	33	0	9	0	0	0
cSH	669	1700	1700	409	1700	1700
Volume to Capacity	0.05	0.69	0.35	0.37	0.45	0.45
Queue Length 95th (m)	1.2	0.0	0.0	13.5	0.0	0.0
Control Delay (s)	10.7	0.0	0.0	18.9	0.0	0.0
Lane LOS	B			C		
Approach Delay (s)	10.7	0.0		1.7		
Approach LOS	B					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Future Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99			0.99			1.00	
Frt		0.949			0.910			0.961			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1673	0	1583	1603	0	1671	3266	0	1770	3383	0
Flt Permitted	0.715			0.338			0.065			0.069		
Satd. Flow (perm)	1330	1673	0	563	1603	0	114	3266	0	129	3383	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		21			39			51			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.7			190.1			245.0			64.5	
Travel Time (s)		3.7			11.4			14.7			3.9	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	40	138	71	101	26	39	150	1245	434	97	1413	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	209	0	101	65	0	150	1679	0	97	1457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



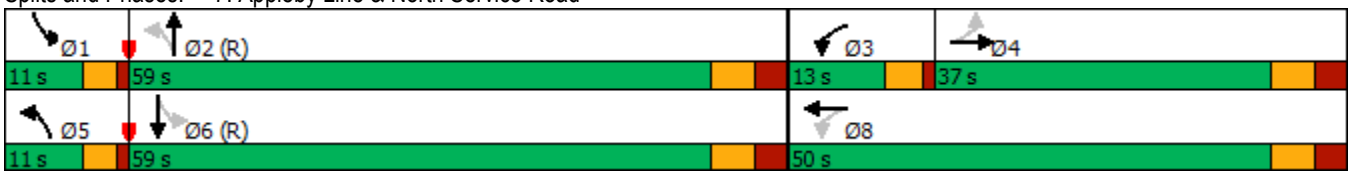
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		9.5	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	37.0	37.0		13.0	50.0		11.0	59.0		11.0	59.0	
Total Split (%)	30.8%	30.8%		10.8%	41.7%		9.2%	49.2%		9.2%	49.2%	
Maximum Green (s)	30.0	30.0		8.5	43.0		7.0	52.0		7.0	52.0	
Yellow Time (s)	4.0	4.0		3.5	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	18.9	18.9		34.2	31.7		76.4	61.9		69.5	58.1	
Actuated g/C Ratio	0.16	0.16		0.28	0.26		0.64	0.52		0.58	0.48	
v/c Ratio	0.19	0.74		0.44	0.14		0.65	0.98		0.51	0.89	
Control Delay	43.6	58.6		37.3	15.6		34.4	43.2		25.4	37.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	43.6	58.6		37.3	15.6		34.4	43.2		25.4	37.3	
LOS	D	E		D	B		C	D		C	D	
Approach Delay		56.2			28.8			42.5			36.5	
Approach LOS		E			C			D			D	
Queue Length 50th (m)	8.7	45.1		19.1	4.8		14.6	183.1		8.5	170.2	
Queue Length 95th (m)	18.2	67.4		31.2	15.0		m#48.6	#300.4		24.9	#241.3	
Internal Link Dist (m)		37.7			166.1			221.0			40.5	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	332	434		232	599		231	1708		189	1638	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.12	0.48		0.44	0.11		0.65	0.98		0.51	0.89	

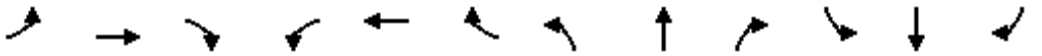
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.98	
Intersection Signal Delay: 40.4	Intersection LOS: D
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Appleby Line & North Service Road

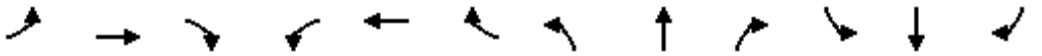




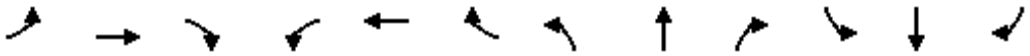
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Future Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1673		1583	1603		1671	3267		1770	3385	
Flt Permitted	0.71	1.00		0.34	1.00		0.06	1.00		0.07	1.00	
Satd. Flow (perm)	1330	1673		564	1603		114	3267		128	3385	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	40	138	71	101	26	39	150	1245	434	97	1412	44
RTOR Reduction (vph)	0	18	0	0	29	0	0	25	0	0	2	0
Lane Group Flow (vph)	40	191	0	101	36	0	150	1654	0	97	1455	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	18.9	18.9		31.7	31.7		74.1	61.9		66.5	58.1	
Effective Green, g (s)	18.9	18.9		31.7	31.7		74.1	61.9		66.5	58.1	
Actuated g/C Ratio	0.16	0.16		0.26	0.26		0.62	0.52		0.55	0.48	
Clearance Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	209	263		219	423		228	1685		185	1638	
v/s Ratio Prot		c0.11		c0.03	0.02		c0.07	c0.51		0.04	0.43	
v/s Ratio Perm	0.03			0.09			0.34			0.25		
v/c Ratio	0.19	0.73		0.46	0.09		0.66	0.98		0.52	0.89	
Uniform Delay, d1	43.9	48.1		35.2	33.2		28.3	28.5		22.9	28.0	
Progression Factor	1.00	1.00		1.00	1.00		0.97	0.90		1.00	1.00	
Incremental Delay, d2	0.4	9.6		1.5	0.1		5.9	16.7		2.7	7.6	
Delay (s)	44.4	57.7		36.8	33.3		33.3	42.4		25.5	35.6	
Level of Service	D	E		D	C		C	D		C	D	
Approach Delay (s)		55.6			35.4			41.6			35.0	
Approach LOS		E			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Future Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		1	2		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.986			0.913				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2993	3375	0	3273	2959	0	1671	3539	1568	3303	3367	1483
Flt Permitted	0.950			0.950			0.258			0.950		
Satd. Flow (perm)	2959	3375	0	3271	2959	0	453	3539	1541	3299	3367	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		9			163				160			359
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			186.7			133.0	
Travel Time (s)		12.0			13.2			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	212	813	83	109	156	216	112	1323	459	337	807	359
Shared Lane Traffic (%)												
Lane Group Flow (vph)	212	896	0	109	372	0	112	1323	459	337	807	359
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	13.0	40.3		11.0	38.3		13.0	52.7	52.7	16.0	55.7	55.7
Total Split (%)	10.8%	33.6%		9.2%	31.9%		10.8%	43.9%	43.9%	13.3%	46.4%	46.4%
Maximum Green (s)	9.0	34.0		7.0	32.0		9.0	46.4	46.4	12.0	49.4	49.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	9.0	34.0		7.0	32.0		57.2	46.4	46.4	12.0	49.9	49.9
Actuated g/C Ratio	0.08	0.28		0.06	0.27		0.48	0.39	0.39	0.10	0.42	0.42
v/c Ratio	0.95	0.93		0.57	0.41		0.37	0.97	0.66	1.02	0.58	0.44
Control Delay	103.2	58.3		67.4	21.3		17.7	54.1	24.5	108.4	24.2	4.9
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	103.2	58.3		67.4	21.3		17.7	54.1	24.5	108.4	24.2	4.9
LOS	F	E		E	C		B	D	C	F	C	A
Approach Delay		66.9			31.7			44.7			38.5	
Approach LOS		E			C			D			D	
Queue Length 50th (m)	27.4	112.9		13.8	21.6		13.2	167.0	61.0	~46.4	69.3	13.0
Queue Length 95th (m)	#52.3	#153.5		23.7	36.3		23.0	#217.6	100.2	#78.0	83.9	22.8
Internal Link Dist (m)		175.5			196.4			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	224	962		190	908		309	1368	693	330	1401	816
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.93		0.57	0.41		0.36	0.97	0.66	1.02	0.58	0.44

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 110	
Control Type: Actuated-Coordinated	

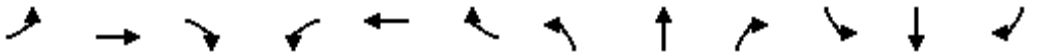
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 46.5	Intersection LOS: D
Intersection Capacity Utilization 93.5%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road



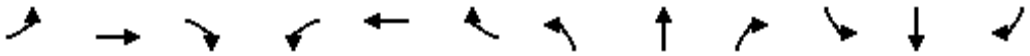


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Future Volume (vph)	201	772	79	104	148	205	106	1257	436	320	767	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2993	3375		3273	2958		1671	3539	1541	3303	3367	1459
Flt Permitted	0.95	1.00		0.95	1.00		0.26	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2993	3375		3273	2958		454	3539	1541	3303	3367	1459
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)	212	813	83	109	156	216	112	1323	459	337	807	359
RTOR Reduction (vph)	0	6	0	0	120	0	0	0	98	0	0	210
Lane Group Flow (vph)	212	890	0	109	252	0	112	1323	361	337	807	149
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	9.0	34.0		7.0	32.0		54.9	46.4	46.4	12.0	49.9	49.9
Effective Green, g (s)	9.0	34.0		7.0	32.0		54.9	46.4	46.4	12.0	49.9	49.9
Actuated g/C Ratio	0.08	0.28		0.06	0.27		0.46	0.39	0.39	0.10	0.42	0.42
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	956		190	788		293	1368	595	330	1400	606
v/s Ratio Prot	0.07	c0.26		c0.03	0.09		0.03	c0.37		c0.10	c0.24	
v/s Ratio Perm							0.15		0.23			0.10
v/c Ratio	0.95	0.93		0.57	0.32		0.38	0.97	0.61	1.02	0.58	0.25
Uniform Delay, d1	55.3	41.8		55.0	35.3		19.6	36.1	29.5	54.0	26.9	22.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.03	0.83	1.35
Incremental Delay, d2	44.9	16.5		4.1	0.2		0.8	17.6	4.5	53.9	1.7	0.9
Delay (s)	100.1	58.4		59.2	35.5		20.5	53.7	34.0	109.5	23.9	31.6
Level of Service	F	E		E	D		C	D	C	F	C	C
Approach Delay (s)		66.3			40.9			47.0			44.9	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	50.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Future Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.98
Frt		0.999			0.983			0.973				0.850
Flt Protected		0.993			0.999			0.962			0.953	
Satd. Flow (prot)	0	3452	0	0	3234	0	0	926	0	0	1775	1568
Flt Permitted		0.807			0.934			0.722			0.719	
Satd. Flow (perm)	0	2805	0	0	3024	0	0	689	0	0	1339	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			32			47				147
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			232.2	
Travel Time (s)		13.2			11.5			8.0			16.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	225	1364	11	5	336	43	12	0	3	69	1	147
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1600	0	0	384	0	0	15	0	0	70	147
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	46.0	46.0		46.0	46.0		24.0	24.0		24.0	24.0	24.0
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	34.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		44.3			44.3			9.3			9.3	9.3
Actuated g/C Ratio		0.71			0.71			0.15			0.15	0.15
v/c Ratio		0.80			0.18			0.11			0.35	0.42
Control Delay		13.8			4.3			2.6			28.9	8.8
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		13.8			4.3			2.6			28.9	8.8
LOS		B			A			A			C	A
Approach Delay		13.8			4.3			2.6			15.3	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		67.5			7.2			0.0			7.7	0.0
Queue Length 95th (m)		#147.1			14.5			1.0			18.3	13.5
Internal Link Dist (m)		196.4			168.0			86.6			208.2	
Turn Bay Length (m)												
Base Capacity (vph)		1994			2158			222			365	524
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.80			0.18			0.07			0.19	0.28

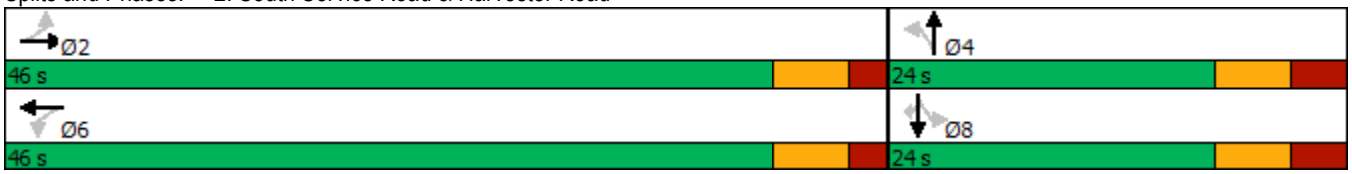
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.80			
Intersection Signal Delay: 12.2		Intersection LOS: B	

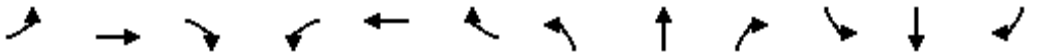
Intersection Capacity Utilization 93.3% ICU Level of Service F

Analysis Period (min) 15

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

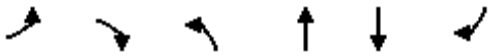
Splits and Phases: 2: South Service Road & Harvester Road



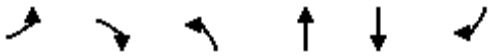


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Future Volume (vph)	205	1241	10	5	306	39	11	0	3	63	1	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			0.98			0.97			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.95	1.00
Satd. Flow (prot)		3451			3236			918			1775	1531
Flt Permitted		0.81			0.93			0.72			0.72	1.00
Satd. Flow (perm)		2806			3025			689			1338	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	225	1364	11	5	336	43	12	0	3	69	1	147
RTOR Reduction (vph)	0	1	0	0	10	0	0	13	0	0	0	129
Lane Group Flow (vph)	0	1599	0	0	374	0	0	2	0	0	70	18
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		43.1			43.1			7.7			7.7	7.7
Effective Green, g (s)		43.1			43.1			7.7			7.7	7.7
Actuated g/C Ratio		0.68			0.68			0.12			0.12	0.12
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1895			2043			83			161	184
v/s Ratio Prot												
v/s Ratio Perm		c0.57			0.12			0.00			c0.05	0.01
v/c Ratio		0.84			0.18			0.02			0.43	0.10
Uniform Delay, d1		7.8			3.8			24.7			26.0	25.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		4.8			0.2			0.1			1.9	0.2
Delay (s)		12.6			4.0			24.8			27.9	25.2
Level of Service		B			A			C			C	C
Approach Delay (s)		12.6			4.0			24.8			26.1	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	301	215	0	1099	1068	0
Future Volume (vph)	301	215	0	1099	1068	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		115				
Link Speed (k/h)	60			60	60	
Link Distance (m)	314.2			230.2	319.8	
Travel Time (s)	18.9			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	327	234	0	1195	1161	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	327	234	0	1195	1161	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

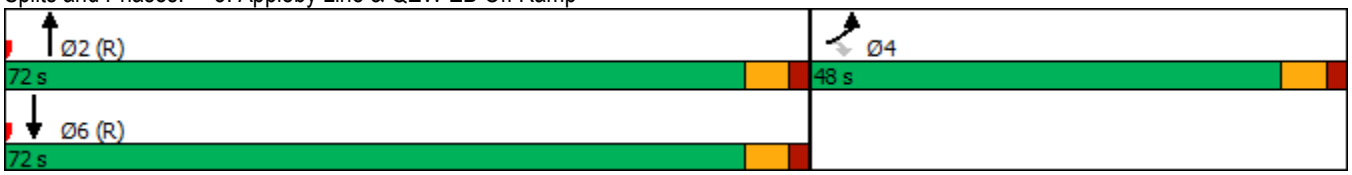


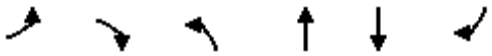
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	17.4	17.4		90.6	90.6	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
v/c Ratio	0.69	0.50		0.46	0.45	
Control Delay	56.0	26.7		16.0	4.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	56.0	26.7		16.0	4.6	
LOS	E	C		B	A	
Approach Delay	43.8			16.0	4.6	
Approach LOS	D			B	A	
Queue Length 50th (m)	40.2	15.2		112.4	24.7	
Queue Length 95th (m)	53.5	28.2		m126.4	57.6	
Internal Link Dist (m)	290.2			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1156	979		2572	2572	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.28	0.24		0.46	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.69			
Intersection Signal Delay: 16.8		Intersection LOS: B	
Intersection Capacity Utilization 61.3%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	301	215	0	1099	1068	0
Future Volume (vph)	301	215	0	1099	1068	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	234	0	1195	1161	0
RTOR Reduction (vph)	0	98	0	0	0	0
Lane Group Flow (vph)	327	136	0	1195	1161	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	17.4	17.4		90.6	90.6	
Effective Green, g (s)	17.4	17.4		90.6	90.6	
Actuated g/C Ratio	0.14	0.14		0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	478	374		2571	2571	
v/s Ratio Prot	c0.10			c0.35	0.34	
v/s Ratio Perm		0.05				
v/c Ratio	0.68	0.36		0.46	0.45	
Uniform Delay, d1	48.7	46.3		5.5	5.5	
Progression Factor	1.00	1.00		2.64	0.70	
Incremental Delay, d2	4.0	0.6		0.3	0.5	
Delay (s)	52.7	46.9		15.0	4.3	
Level of Service	D	D		B	A	
Approach Delay (s)	50.3			15.0	4.3	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	17.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	348	353	1064	0	0	1057
Future Volume (vph)	348	353	1064	0	0	1057
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		89				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	378	384	1157	0	0	1149
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	384	1157	0	0	1149
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	29.1	29.1	78.9			78.9
Actuated g/C Ratio	0.24	0.24	0.66			0.66
v/c Ratio	0.49	0.90	0.52			0.52
Control Delay	40.5	58.1	19.7			12.4
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	40.5	58.1	19.7			12.4
LOS	D	E	B			B
Approach Delay	49.3		19.7			12.4
Approach LOS	D		B			B
Queue Length 50th (m)	40.6	71.7	157.1			75.8
Queue Length 95th (m)	53.9	#118.9	170.2			100.2
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	910	483	2240			2218
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.42	0.80	0.52			0.52

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	

Intersection Signal Delay: 24.3	Intersection LOS: C
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	348	353	1064	0	0	1057
Future Volume (vph)	348	353	1064	0	0	1057
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	384	1157	0	0	1149
RTOR Reduction (vph)	0	67	0	0	0	0
Lane Group Flow (vph)	378	317	1157	0	0	1149
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	29.1	29.1	78.9			78.9
Effective Green, g (s)	29.1	29.1	78.9			78.9
Actuated g/C Ratio	0.24	0.24	0.66			0.66
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	779	359	2239			2218
v/s Ratio Prot	0.12		0.34			c0.34
v/s Ratio Perm		c0.21				
v/c Ratio	0.49	0.88	0.52			0.52
Uniform Delay, d1	39.0	43.8	10.7			10.7
Progression Factor	1.00	1.00	1.64			1.00
Incremental Delay, d2	0.5	21.5	0.8			0.9
Delay (s)	39.5	65.3	18.2			11.5
Level of Service	D	E	B			B
Approach Delay (s)	52.5		18.2			11.5
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	24.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	31	1657	8	143	1438
Future Volume (vph)	0	31	1657	8	143	1438
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1481	0	3427	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1481	0	3427	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	33	1763	9	152	1530
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	0	1772	0	152	1530
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

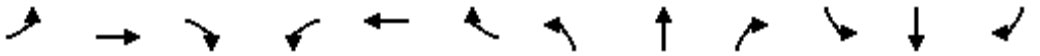
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 67.3%		ICU Level of Service C	
Analysis Period (min) 15			



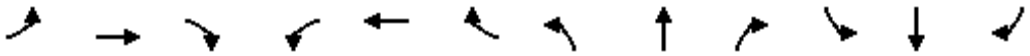
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	31	1657	8	143	1438
Future Volume (Veh/h)	0	31	1657	8	143	1438
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	33	1763	9	152	1530
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.69	0.63			0.63	
vC, conflicting volume	2840	889			1775	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2004	0			1053	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	95			63	
cM capacity (veh/h)	20	663			412	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	33	1175	597	152	765	765
Volume Left	0	0	0	152	0	0
Volume Right	33	0	9	0	0	0
cSH	663	1700	1700	412	1700	1700
Volume to Capacity	0.05	0.69	0.35	0.37	0.45	0.45
Queue Length 95th (m)	1.3	0.0	0.0	13.3	0.0	0.0
Control Delay (s)	10.7	0.0	0.0	18.7	0.0	0.0
Lane LOS	B			C		
Approach Delay (s)	10.7	0.0		1.7		
Approach LOS	B					

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Future Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	0.99			1.00	
Frt		0.949			0.910			0.961			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1673	0	3072	1603	0	3242	3265	0	1770	3384	0
Flt Permitted	0.715			0.950			0.950			0.054		
Satd. Flow (perm)	1330	1673	0	3072	1603	0	3240	3265	0	101	3384	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			39			51			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.7			190.1			245.0			64.5	
Travel Time (s)		3.7			11.4			14.7			3.9	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	40	138	71	101	26	39	150	1245	434	97	1413	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	209	0	101	65	0	150	1679	0	97	1457	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	9.5	39.0		9.5	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	9.6	39.0		10.2	39.6		12.0	73.8		12.0	73.8	
Total Split (%)	7.1%	28.9%		7.6%	29.3%		8.9%	54.7%		8.9%	54.7%	
Maximum Green (s)	5.1	32.0		5.7	32.6		8.0	66.8		8.0	66.8	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	28.4	20.8		5.7	23.4		11.2	77.1		86.6	74.7	
Actuated g/C Ratio	0.21	0.15		0.04	0.17		0.08	0.57		0.64	0.55	
v/c Ratio	0.14	0.77		0.78	0.21		0.56	0.89		0.56	0.78	
Control Delay	37.7	67.4		100.4	23.5		67.6	32.7		32.5	28.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	5.2		0.0	0.0	
Total Delay	37.7	67.4		100.4	23.5		67.6	37.9		32.5	28.5	
LOS	D	E		F	C		E	D		C	C	
Approach Delay		62.6			70.3			40.3			28.8	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	8.7	52.2		14.7	6.3		21.0	201.1		9.1	164.6	
Queue Length 95th (m)	17.4	76.1		#30.6	18.9		33.1	#304.3		29.6	221.2	
Internal Link Dist (m)		37.7			166.1			221.0			40.5	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	296	410		129	416		269	1887		178	1874	
Starvation Cap Reductn	0	0		0	0		0	165		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.51		0.78	0.16		0.56	0.98		0.54	0.78	

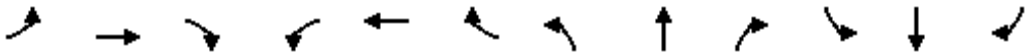
Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 38.4	Intersection LOS: D
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 7: Appleby Line & North Service Road



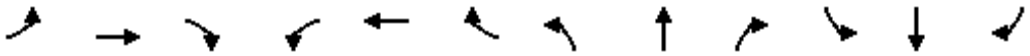


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Future Volume (vph)	38	132	68	97	25	37	144	1195	417	93	1356	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1673		3072	1603		3242	3266		1770	3386	
Flt Permitted	0.71	1.00		0.95	1.00		0.95	1.00		0.05	1.00	
Satd. Flow (perm)	1330	1673		3072	1603		3242	3266		101	3386	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	40	138	71	101	26	39	150	1245	434	97	1412	44
RTOR Reduction (vph)	0	15	0	0	32	0	0	22	0	0	1	0
Lane Group Flow (vph)	40	194	0	101	33	0	150	1657	0	97	1456	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	25.9	21.8		5.7	23.4		11.2	76.2		82.6	73.8	
Effective Green, g (s)	25.9	21.8		5.7	23.4		11.2	76.2		82.6	73.8	
Actuated g/C Ratio	0.19	0.16		0.04	0.17		0.08	0.56		0.61	0.55	
Clearance Time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	268	270		129	277		268	1843		170	1851	
v/s Ratio Prot	0.00	c0.12		c0.03	0.02		c0.05	c0.51		0.04	0.43	
v/s Ratio Perm	0.02									0.31		
v/c Ratio	0.15	0.72		0.78	0.12		0.56	0.90		0.57	0.79	
Uniform Delay, d1	45.1	53.7		64.0	47.1		59.5	26.0		23.4	24.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	8.8		25.9	0.2		2.5	7.5		4.6	3.5	
Delay (s)	45.4	62.5		90.0	47.3		62.1	33.5		28.0	27.8	
Level of Service	D	E		F	D		E	C		C	C	
Approach Delay (s)		59.7			73.3			35.8			27.8	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Future Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	1		0	1		0	1		2	1		0
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Ped Bike Factor	1.00	0.99		1.00	0.99				0.98			0.98
Frt		0.931			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	3241	0	1770	3290	0	1703	3539	1553	1719	3532	1369
Flt Permitted	0.125			0.234			0.070			0.099		
Satd. Flow (perm)	228	3241	0	435	3290	0	125	3539	1519	179	3532	1343
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		104			57				140			168
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			195.9			133.0	
Travel Time (s)		12.0			13.2			11.8			8.0	
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	305	272	230	521	634	319	127	1050	197	186	1688	326
Shared Lane Traffic (%)												
Lane Group Flow (vph)	305	502	0	521	953	0	127	1050	197	186	1688	326
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	23.0	38.3		31.0	46.3		11.0	62.7	62.7	18.0	69.7	69.7
Total Split (%)	15.3%	25.5%		20.7%	30.9%		7.3%	41.8%	41.8%	12.0%	46.5%	46.5%
Maximum Green (s)	19.0	32.0		27.0	40.0		7.0	56.4	56.4	14.0	63.4	63.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	53.3	32.0		65.3	40.0		66.4	57.1	57.1	76.7	63.4	63.4
Actuated g/C Ratio	0.36	0.21		0.44	0.27		0.44	0.38	0.38	0.51	0.42	0.42
v/c Ratio	1.12	0.65		1.21	1.04		0.99	0.78	0.30	0.82	1.13	0.49
Control Delay	131.5	46.7		146.7	89.2		109.3	46.0	11.3	54.1	108.0	17.2
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.5	46.7		146.7	89.2		109.3	46.0	11.3	54.1	108.0	17.2
LOS	F	D		F	F		F	D	B	D	F	B
Approach Delay		78.8			109.5			46.8			90.0	
Approach LOS		E			F			D			F	
Queue Length 50th (m)	~92.6	60.8		~162.5	~161.4		24.2	152.9	11.5	32.3	~321.6	34.4
Queue Length 95th (m)	#155.8	81.6		#237.5	#206.0		#69.8	181.4	30.9	#71.6	#365.7	64.1
Internal Link Dist (m)		175.5			196.4			171.9			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	272	773		429	919		128	1347	665	235	1492	664
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.12	0.65		1.21	1.04		0.99	0.78	0.30	0.79	1.13	0.49

Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

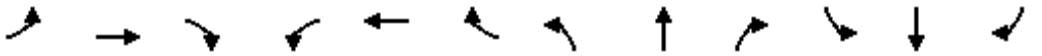
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 83.2	Intersection LOS: F
Intersection Capacity Utilization 123.1%	ICU Level of Service H
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road

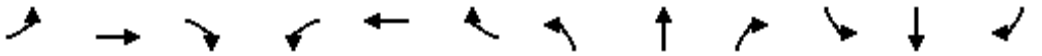




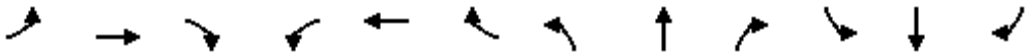
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Future Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	1.00	0.95		1.00	0.95		1.00	0.95	1.00	1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1735	3242		1769	3290		1703	3539	1519	1719	3532	1343
Flt Permitted	0.12	1.00		0.23	1.00		0.07	1.00	1.00	0.10	1.00	1.00
Satd. Flow (perm)	228	3242		435	3290		126	3539	1519	180	3532	1343
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	305	272	230	521	634	319	127	1050	197	186	1688	326
RTOR Reduction (vph)	0	82	0	0	42	0	0	0	87	0	0	97
Lane Group Flow (vph)	305	420	0	521	911	0	127	1050	110	186	1688	229
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Actuated Green, G (s)	51.0	32.0		63.0	40.0		64.1	57.1	57.1	74.4	63.4	63.4
Effective Green, g (s)	51.0	32.0		63.0	40.0		64.1	57.1	57.1	74.4	63.4	63.4
Actuated g/C Ratio	0.34	0.21		0.42	0.27		0.43	0.38	0.38	0.50	0.42	0.42
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	268	691		422	877		127	1347	578	225	1492	567
v/s Ratio Prot	0.14	0.13		c0.22	0.28		0.05	0.30		c0.07	c0.48	
v/s Ratio Perm	0.24			c0.30			0.38		0.07	0.34		0.17
v/c Ratio	1.14	0.61		1.23	1.04		1.00	0.78	0.19	0.83	1.13	0.40
Uniform Delay, d1	45.4	53.3		35.4	55.0		37.1	40.9	31.0	30.6	43.3	30.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	97.4	4.0		124.6	41.0		79.9	4.5	0.7	21.3	68.1	2.1
Delay (s)	142.8	57.3		160.0	96.0		117.0	45.4	31.8	52.0	111.4	32.3
Level of Service	F	E		F	F		F	D	C	D	F	C
Approach Delay (s)		89.6			118.6			50.1			94.7	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	89.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	123.1%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Future Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	0.98
Frt		0.998			0.997			0.984				0.850
Flt Protected		0.995						0.961			0.956	
Satd. Flow (prot)	0	3444	0	0	3431	0	0	1592	0	0	1781	1583
Flt Permitted		0.751			0.953			0.731			0.688	
Satd. Flow (perm)	0	2599	0	0	3270	0	0	1208	0	0	1266	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			7				99
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			201.1	
Travel Time (s)		13.2			11.5			8.0			14.5	
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	60	581	10	5	1150	27	64	5	9	45	4	283
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	651	0	0	1182	0	0	78	0	0	49	283
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



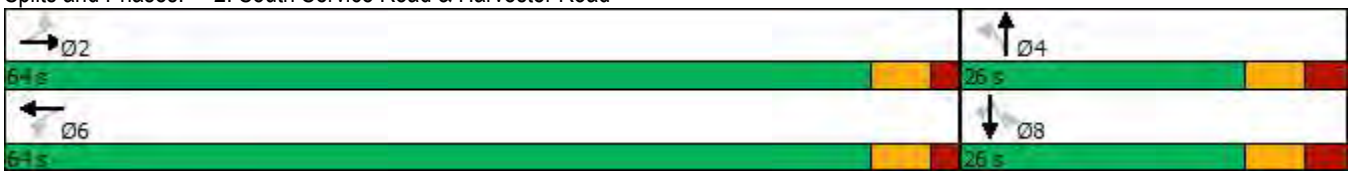
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.1			58.1			14.8			14.8	14.8
Actuated g/C Ratio		0.68			0.68			0.17			0.17	0.17
v/c Ratio		0.37			0.53			0.36			0.22	0.81
Control Delay		7.3			8.7			33.5			32.6	40.0
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		7.3			8.7			33.5			32.6	40.0
LOS		A			A			C			C	D
Approach Delay		7.3			8.7			33.5			38.9	
Approach LOS		A			A			C			D	
Queue Length 50th (m)		23.5			50.2			10.9			7.4	30.9
Queue Length 95th (m)		36.5			72.8			24.1			17.4	#61.0
Internal Link Dist (m)		196.4			168.0			86.6			177.1	
Turn Bay Length (m)												
Base Capacity (vph)		1757			2212			272			280	422
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.37			0.53			0.29			0.17	0.67

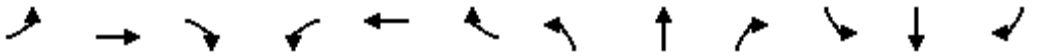
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 86	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.81	

Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: South Service Road & Harvester Road

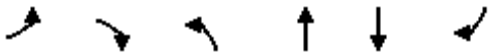




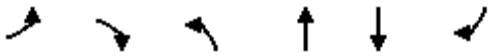
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Future Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00			0.99	1.00
Frt		1.00			1.00			0.98			1.00	0.85
Flt Protected		1.00			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3444			3429			1588			1760	1559
Flt Permitted		0.75			0.95			0.73			0.69	1.00
Satd. Flow (perm)		2596			3268			1208			1266	1559
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	60	581	10	5	1150	27	64	5	9	45	4	283
RTOR Reduction (vph)	0	1	0	0	2	0	0	6	0	0	0	82
Lane Group Flow (vph)	0	650	0	0	1180	0	0	72	0	0	49	201
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			14.8			14.8	14.8
Effective Green, g (s)		58.1			58.1			14.8			14.8	14.8
Actuated g/C Ratio		0.68			0.68			0.17			0.17	0.17
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1755			2210			208			218	268
v/s Ratio Prot												
v/s Ratio Perm		0.25			c0.36			0.06			0.04	c0.13
v/c Ratio		0.37			0.53			0.35			0.22	0.75
Uniform Delay, d1		6.0			7.0			31.3			30.6	33.8
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.6			0.9			1.0			0.5	11.2
Delay (s)		6.6			8.0			32.3			31.1	45.0
Level of Service		A			A			C			C	D
Approach Delay (s)		6.6			8.0			32.3			42.9	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	398	375	0	1233	1782	0
Future Volume (vph)	398	375	0	1233	1782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	3505	3471	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	3505	3471	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		24				
Link Speed (k/h)	60			60	60	
Link Distance (m)	310.3			229.0	321.0	
Travel Time (s)	18.6			13.7	19.3	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Adj. Flow (vph)	433	408	0	1340	1937	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	408	0	1340	1937	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

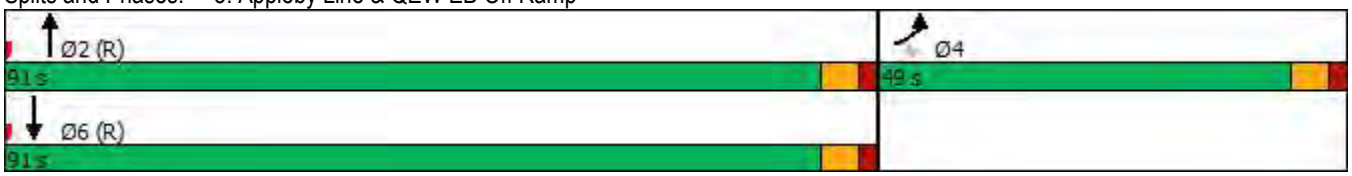


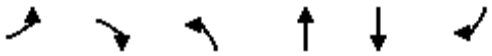
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	26.2	26.2		101.8	101.8	
Actuated g/C Ratio	0.19	0.19		0.73	0.73	
v/c Ratio	0.69	0.78		0.53	0.77	
Control Delay	58.7	61.4		9.9	8.9	
Queue Delay	0.0	0.0		0.0	0.1	
Total Delay	58.7	61.4		9.9	9.0	
LOS	E	E		A	A	
Approach Delay	60.0			9.9	9.0	
Approach LOS	E			A	A	
Queue Length 50th (m)	61.2	61.1		82.8	97.3	
Queue Length 95th (m)	75.2	77.5		118.3	130.4	
Internal Link Dist (m)	286.3			205.0	297.0	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1024	840		2548	2523	
Starvation Cap Reductn	0	0		0	85	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.42	0.49		0.53	0.79	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 19.7	Intersection LOS: B

Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	398	375	0	1233	1782	0
Future Volume (vph)	398	375	0	1233	1782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		3505	3471	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		3505	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	408	0	1340	1937	0
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	433	388	0	1340	1937	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	26.2	26.2		101.8	101.8	
Effective Green, g (s)	26.2	26.2		101.8	101.8	
Actuated g/C Ratio	0.19	0.19		0.73	0.73	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	624	501		2548	2523	
v/s Ratio Prot	0.13			0.38	c0.56	
v/s Ratio Perm		c0.14				
v/c Ratio	0.69	0.78		0.53	0.77	
Uniform Delay, d1	53.2	54.1		8.4	11.8	
Progression Factor	1.00	1.00		1.00	0.56	
Incremental Delay, d2	3.3	7.4		0.8	1.5	
Delay (s)	56.5	61.5		9.2	8.2	
Level of Service	E	E		A	A	
Approach Delay (s)	58.9			9.2	8.2	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	18.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	522	408	1500	0	0	1603
Future Volume (vph)	522	408	1500	0	0	1603
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1509	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1509	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		28				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		321.0			245.3
Travel Time (s)	22.2		19.3			14.7
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Adj. Flow (vph)	567	443	1630	0	0	1742
Shared Lane Traffic (%)						
Lane Group Flow (vph)	567	443	1630	0	0	1742
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0

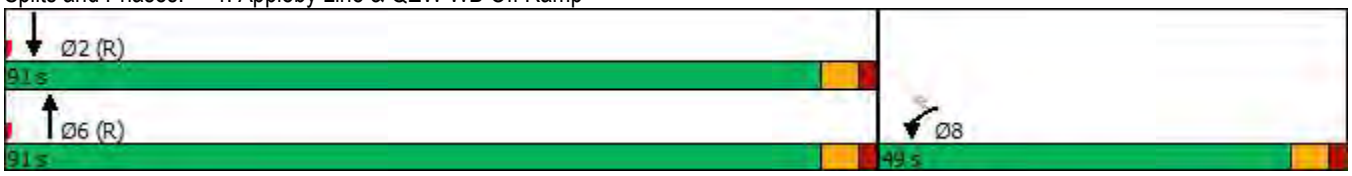


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	41.4	41.4	86.6			86.6
Actuated g/C Ratio	0.30	0.30	0.62			0.62
v/c Ratio	0.57	0.95	0.75			0.80
Control Delay	44.2	76.2	22.5			16.8
Queue Delay	0.0	55.9	0.1			8.4
Total Delay	44.2	132.1	22.6			25.2
LOS	D	F	C			C
Approach Delay	82.7		22.6			25.2
Approach LOS	F		C			C
Queue Length 50th (m)	71.2	118.4	209.5			218.7
Queue Length 95th (m)	90.4	#185.4	238.6			m241.0
Internal Link Dist (m)	346.8		297.0			221.3
Turn Bay Length (m)	190.0					
Base Capacity (vph)	1024	482	2167			2167
Starvation Cap Reductn	0	0	19			405
Spillback Cap Reductn	0	288	44			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	2.28	0.77			0.99

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 37.5	Intersection LOS: D

Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	522	408	1500	0	0	1603
Future Volume (vph)	522	408	1500	0	0	1603
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3335	1509	3505			3505
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3335	1509	3505			3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	567	443	1630	0	0	1742
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	567	423	1630	0	0	1742
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	41.4	41.4	86.6			86.6
Effective Green, g (s)	41.4	41.4	86.6			86.6
Actuated g/C Ratio	0.30	0.30	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	986	446	2168			2168
v/s Ratio Prot	0.17		0.47			c0.50
v/s Ratio Perm		c0.28				
v/c Ratio	0.58	0.95	0.75			0.80
Uniform Delay, d1	41.8	48.3	19.0			20.2
Progression Factor	1.00	1.00	1.03			0.71
Incremental Delay, d2	0.8	29.6	2.2			1.8
Delay (s)	42.7	77.9	21.7			16.2
Level of Service	D	E	C			B
Approach Delay (s)	58.1		21.7			16.2
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	73	1649	10	48	2119
Future Volume (vph)	0	73	1649	10	48	2119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	3493	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	3493	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			229.0
Travel Time (s)	2.5		8.0			13.7
Confl. Peds. (#/hr)				6	6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	11%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	79	1792	11	52	2303
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	1803	0	52	2303
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		3.6			3.6
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

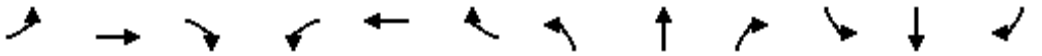
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			



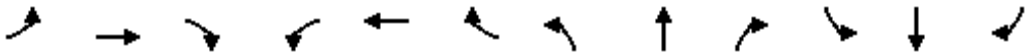
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	73	1649	10	48	2119
Future Volume (Veh/h)	0	73	1649	10	48	2119
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	79	1792	11	52	2303
Pedestrians	6					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			229
pX, platoon unblocked	0.74	0.74			0.74	
vC, conflicting volume	3059	908			1809	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1470	159			1383	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	87			86	
cM capacity (veh/h)	74	629			360	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	79	1195	608	52	1152	1152
Volume Left	0	0	0	52	0	0
Volume Right	79	0	11	0	0	0
cSH	629	1700	1700	360	1700	1700
Volume to Capacity	0.13	0.70	0.36	0.14	0.68	0.68
Queue Length 95th (m)	3.4	0.0	0.0	4.0	0.0	0.0
Control Delay (s)	11.5	0.0	0.0	16.7	0.0	0.0
Lane LOS	B			C		
Approach Delay (s)	11.5	0.0		0.4		
Approach LOS	B					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Future Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.875			0.937			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1539	0	1770	1724	0	1752	3473	0	1703	3393	0
Flt Permitted	0.548			0.209			0.075			0.065		
Satd. Flow (perm)	930	1539	0	389	1724	0	138	3473	0	117	3393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		145			29			6			7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		57.3			111.9			245.3			79.1	
Travel Time (s)		3.4			6.7			14.7			4.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	57	41	203	286	207	149	336	1825	114	76	1192	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	244	0	286	356	0	336	1939	0	76	1275	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		3.6			3.6			3.6			3.6	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	38.0	38.0		20.0	58.0		13.0	70.0		12.0	69.0	
Total Split (%)	27.1%	27.1%		14.3%	41.4%		9.3%	50.0%		8.6%	49.3%	
Maximum Green (s)	31.0	31.0		16.0	51.0		9.0	63.0		8.0	62.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	15.1	15.1		38.1	35.1		93.9	78.4		73.4	62.0	
Actuated g/C Ratio	0.11	0.11		0.27	0.25		0.67	0.56		0.52	0.44	
v/c Ratio	0.57	0.83		1.09	0.78		0.89	1.00		0.49	0.85	
Control Delay	79.0	46.5		122.4	56.9		55.2	53.2		27.9	41.1	
Queue Delay	0.0	0.1		5.6	0.0		0.0	28.9		0.0	0.9	
Total Delay	79.0	46.5		128.0	56.9		55.2	82.1		27.9	42.0	
LOS	E	D		F	E		E	F		C	D	
Approach Delay		52.7			88.6			78.1			41.2	
Approach LOS		D			F			E			D	
Queue Length 50th (m)	16.2	29.1		~75.9	91.1		80.2	257.7		6.9	171.1	
Queue Length 95th (m)	29.8	57.4		#117.5	117.4		m#161.0	#396.8		21.2	203.6	
Internal Link Dist (m)		33.3			87.9			221.3			55.1	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	205	453		263	646		379	1948		162	1506	
Starvation Cap Reductn	0	0		0	0		0	150		0	0	
Spillback Cap Reductn	0	6		20	0		0	0		0	68	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.28	0.55		1.18	0.55		0.89	1.08		0.47	0.89	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.09			
Intersection Signal Delay: 67.0		Intersection LOS: E	
Intersection Capacity Utilization 105.4%		ICU Level of Service G	

Analysis Period (min) 15

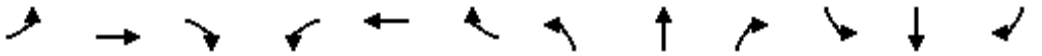
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Appleby Line & North Service Road



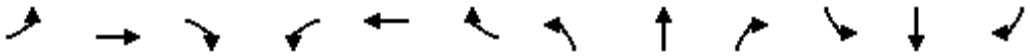


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Future Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1540		1770	1725		1752	3474		1703	3394	
Flt Permitted	0.55	1.00		0.21	1.00		0.07	1.00		0.06	1.00	
Satd. Flow (perm)	930	1540		390	1725		138	3474		116	3394	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	57	41	203	286	207	149	336	1825	114	76	1192	83
RTOR Reduction (vph)	0	129	0	0	22	0	0	3	0	0	4	0
Lane Group Flow (vph)	57	115	0	286	334	0	336	1936	0	76	1271	0
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	15.1	15.1		35.1	35.1		90.9	78.5		70.4	62.0	
Effective Green, g (s)	15.1	15.1		35.1	35.1		90.9	78.5		70.4	62.0	
Actuated g/C Ratio	0.11	0.11		0.25	0.25		0.65	0.56		0.50	0.44	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	100	166		255	432		376	1947		153	1503	
v/s Ratio Prot		0.07		c0.13	0.19		c0.16	c0.56		0.03	0.37	
v/s Ratio Perm	0.06			c0.15			0.42			0.22		
v/c Ratio	0.57	0.69		1.12	0.77		0.89	0.99		0.50	0.85	
Uniform Delay, d1	59.4	60.2		48.1	48.8		42.2	30.5		30.4	34.7	
Progression Factor	1.00	1.00		1.00	1.00		0.97	1.26		1.00	1.00	
Incremental Delay, d2	7.3	11.7		93.0	8.4		16.7	15.6		2.5	6.0	
Delay (s)	66.6	71.9		141.1	57.2		57.8	54.1		32.9	40.8	
Level of Service	E	E		F	E		E	D		C	D	
Approach Delay (s)		70.9			94.6			54.6			40.3	
Approach LOS		E			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	105.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Future Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		2	2		0
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	1.00	0.99		0.99	0.99				0.98	1.00		0.98
Frt		0.931			0.950				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3367	3241	0	3433	3290	0	1703	3539	1553	3335	3532	1369
Flt Permitted	0.950			0.950			0.063			0.950		
Satd. Flow (perm)	3361	3241	0	3409	3290	0	113	3539	1519	3322	3532	1343
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		92			57				140			180
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			220.4			195.9			133.0	
Travel Time (s)		12.0			13.2			11.8			8.0	
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	305	272	230	521	634	319	127	1050	197	186	1688	326
Shared Lane Traffic (%)												
Lane Group Flow (vph)	305	502	0	521	953	0	127	1050	197	186	1688	326
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	17.0	38.3		25.0	46.3		11.0	68.7	68.7	18.0	75.7	75.7
Total Split (%)	11.3%	25.5%		16.7%	30.9%		7.3%	45.8%	45.8%	12.0%	50.5%	50.5%
Maximum Green (s)	13.0	32.0		21.0	40.0		7.0	62.4	62.4	14.0	69.4	69.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	13.0	32.0		21.0	40.0		73.0	63.7	63.7	12.7	69.4	69.4
Actuated g/C Ratio	0.09	0.21		0.14	0.27		0.49	0.42	0.42	0.08	0.46	0.46
v/c Ratio	1.05	0.66		1.09	1.04		0.98	0.70	0.27	0.66	1.03	0.45
Control Delay	129.8	48.4		124.7	89.2		108.4	38.7	9.8	77.8	70.6	13.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	129.8	48.4		124.7	89.2		108.4	38.7	9.8	77.8	70.6	13.7
LOS	F	D		F	F		F	D	A	E	E	B
Approach Delay		79.2			101.8			41.0			62.8	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~53.2	62.7		~93.9	~161.4		24.2	142.0	10.7	29.4	~297.5	28.8
Queue Length 95th (m)	#85.3	83.7		#132.0	#206.0		#70.0	169.0	28.6	43.0	#341.6	55.9
Internal Link Dist (m)		175.5			196.4			171.9			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	291	763		480	919		129	1502	725	311	1634	718
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.05	0.66		1.09	1.04		0.98	0.70	0.27	0.60	1.03	0.45

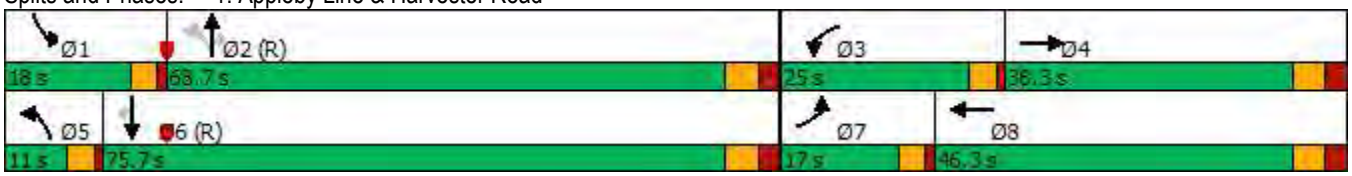
Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

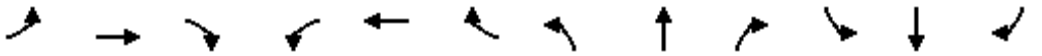
Maximum v/c Ratio: 1.09	
Intersection Signal Delay: 69.7	Intersection LOS: E
Intersection Capacity Utilization 109.6%	ICU Level of Service H
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road



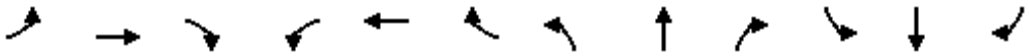


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Future Volume (vph)	293	261	221	500	609	306	122	1008	189	179	1620	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3367	3242		3433	3290		1703	3539	1519	3335	3532	1343
Flt Permitted	0.95	1.00		0.95	1.00		0.06	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3367	3242		3433	3290		113	3539	1519	3335	3532	1343
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	305	272	230	521	634	319	127	1050	197	186	1688	326
RTOR Reduction (vph)	0	72	0	0	42	0	0	0	81	0	0	97
Lane Group Flow (vph)	305	430	0	521	911	0	127	1050	116	186	1688	229
Confl. Peds. (#/hr)	3		6	6		3	5		7	7		5
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	3%	2%	2%	3%	5%	6%	2%	4%	5%	2%	17%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	13.0	32.0		21.0	40.0		70.7	63.7	63.7	12.7	69.4	69.4
Effective Green, g (s)	13.0	32.0		21.0	40.0		70.7	63.7	63.7	12.7	69.4	69.4
Actuated g/C Ratio	0.09	0.21		0.14	0.27		0.47	0.42	0.42	0.08	0.46	0.46
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	291	691		480	877		127	1502	645	282	1634	621
v/s Ratio Prot	0.09	0.13		c0.15	c0.28		c0.05	0.30		0.06	c0.48	
v/s Ratio Perm							0.42		0.08			0.17
v/c Ratio	1.05	0.62		1.09	1.04		1.00	0.70	0.18	0.66	1.03	0.37
Uniform Delay, d1	68.5	53.5		64.5	55.0		39.6	35.3	26.9	66.6	40.3	26.1
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	65.9	4.2		66.1	41.0		79.9	2.7	0.6	5.5	31.3	1.7
Delay (s)	134.4	57.7		130.6	96.0		119.4	38.0	27.5	72.0	71.6	27.8
Level of Service	F	E		F	F		F	D	C	E	E	C
Approach Delay (s)		86.7			108.2			44.0			65.1	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	74.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.06		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Future Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99			0.99	0.98
Frt		0.998			0.997			0.984				0.850
Flt Protected		0.995						0.961			0.956	
Satd. Flow (prot)	0	3444	0	0	3431	0	0	1592	0	0	1781	1583
Flt Permitted		0.751			0.953			0.731			0.688	
Satd. Flow (perm)	0	2599	0	0	3270	0	0	1208	0	0	1266	1559
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			7				99
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		220.4			192.0			110.6			201.1	
Travel Time (s)		13.2			11.5			8.0			14.5	
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	60	581	10	5	1150	27	64	5	9	45	4	283
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	651	0	0	1182	0	0	78	0	0	49	283
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



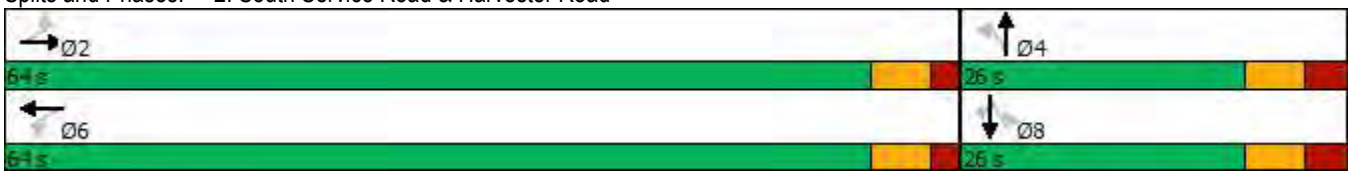
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.1			58.1			14.8			14.8	14.8
Actuated g/C Ratio		0.68			0.68			0.17			0.17	0.17
v/c Ratio		0.37			0.53			0.36			0.22	0.81
Control Delay		7.3			8.7			33.5			32.6	40.0
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		7.3			8.7			33.5			32.6	40.0
LOS		A			A			C			C	D
Approach Delay		7.3			8.7			33.5			38.9	
Approach LOS		A			A			C			D	
Queue Length 50th (m)		23.5			50.2			10.9			7.4	30.9
Queue Length 95th (m)		36.5			72.8			24.1			17.4	#61.0
Internal Link Dist (m)		196.4			168.0			86.6			177.1	
Turn Bay Length (m)												
Base Capacity (vph)		1757			2212			272			280	422
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.37			0.53			0.29			0.17	0.67

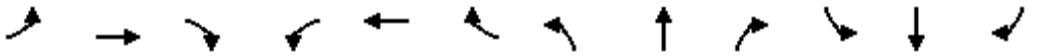
Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 86	
Natural Cycle: 60	
Control Type: Semi Act-Uncoord	
Maximum v/c Ratio: 0.81	

Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 81.2%	ICU Level of Service D
Analysis Period (min) 15	

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

Splits and Phases: 2: South Service Road & Harvester Road

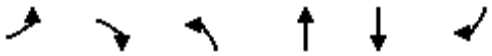




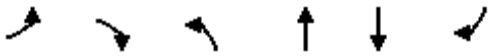
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Future Volume (vph)	56	546	9	5	1081	25	60	5	8	42	4	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			1.00			0.99	1.00
Frt		1.00			1.00			0.98			1.00	0.85
Flt Protected		1.00			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3444			3429			1588			1760	1559
Flt Permitted		0.75			0.95			0.73			0.69	1.00
Satd. Flow (perm)		2596			3268			1208			1266	1559
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	60	581	10	5	1150	27	64	5	9	45	4	283
RTOR Reduction (vph)	0	1	0	0	2	0	0	6	0	0	0	82
Lane Group Flow (vph)	0	650	0	0	1180	0	0	72	0	0	49	201
Confl. Peds. (#/hr)	8		9	9		8	2		9	9		2
Confl. Bikes (#/hr)			1									
Heavy Vehicles (%)	2%	3%	50%	100%	4%	4%	11%	2%	29%	2%	2%	2%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			14.8			14.8	14.8
Effective Green, g (s)		58.1			58.1			14.8			14.8	14.8
Actuated g/C Ratio		0.68			0.68			0.17			0.17	0.17
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1755			2210			208			218	268
v/s Ratio Prot												
v/s Ratio Perm		0.25			c0.36			0.06			0.04	c0.13
v/c Ratio		0.37			0.53			0.35			0.22	0.75
Uniform Delay, d1		6.0			7.0			31.3			30.6	33.8
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.6			0.9			1.0			0.5	11.2
Delay (s)		6.6			8.0			32.3			31.1	45.0
Level of Service		A			A			C			C	D
Approach Delay (s)		6.6			8.0			32.3			42.9	
Approach LOS		A			A			C			D	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	85.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	398	375	0	1233	1782	0
Future Volume (vph)	398	375	0	1233	1782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	2682	0	3505	3471	0
Flt Permitted	0.950					
Satd. Flow (perm)	3335	2682	0	3505	3471	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		24				
Link Speed (k/h)	60			60	60	
Link Distance (m)	310.3			229.0	321.0	
Travel Time (s)	18.6			13.7	19.3	
Confl. Peds. (#/hr)			1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Adj. Flow (vph)	433	408	0	1340	1937	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	408	0	1340	1937	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	

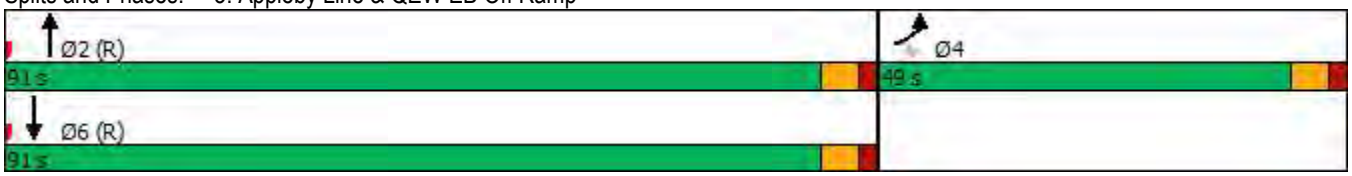


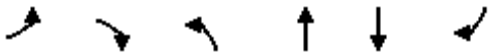
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	26.2	26.2		101.8	101.8	
Actuated g/C Ratio	0.19	0.19		0.73	0.73	
v/c Ratio	0.69	0.78		0.53	0.77	
Control Delay	58.7	61.4		9.9	8.3	
Queue Delay	0.0	0.0		0.0	0.1	
Total Delay	58.7	61.4		9.9	8.5	
LOS	E	E		A	A	
Approach Delay	60.0			9.9	8.5	
Approach LOS	E			A	A	
Queue Length 50th (m)	61.2	61.1		82.8	86.6	
Queue Length 95th (m)	75.2	77.5		118.3	130.3	
Internal Link Dist (m)	286.3			205.0	297.0	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1024	840		2548	2523	
Starvation Cap Reductn	0	0		0	85	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.42	0.49		0.53	0.79	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 19.5	Intersection LOS: B

Intersection Capacity Utilization 76.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	398	375	0	1233	1782	0
Future Volume (vph)	398	375	0	1233	1782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3335	2682		3505	3471	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3335	2682		3505	3471	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	408	0	1340	1937	0
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	433	388	0	1340	1937	0
Confl. Peds. (#/hr)			1			1
Heavy Vehicles (%)	5%	6%	2%	3%	4%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	26.2	26.2		101.8	101.8	
Effective Green, g (s)	26.2	26.2		101.8	101.8	
Actuated g/C Ratio	0.19	0.19		0.73	0.73	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	624	501		2548	2523	
v/s Ratio Prot	0.13			0.38	c0.56	
v/s Ratio Perm		c0.14				
v/c Ratio	0.69	0.78		0.53	0.77	
Uniform Delay, d1	53.2	54.1		8.4	11.8	
Progression Factor	1.00	1.00		1.00	0.52	
Incremental Delay, d2	3.3	7.4		0.8	1.5	
Delay (s)	56.5	61.5		9.2	7.7	
Level of Service	E	E		A	A	
Approach Delay (s)	58.9			9.2	7.7	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	522	408	1500	0	0	1603
Future Volume (vph)	522	408	1500	0	0	1603
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3335	1509	3505	0	0	3505
Flt Permitted	0.950					
Satd. Flow (perm)	3335	1509	3505	0	0	3505
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		28				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		321.0			245.3
Travel Time (s)	22.2		19.3			14.7
Confl. Peds. (#/hr)				5	5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Adj. Flow (vph)	567	443	1630	0	0	1742
Shared Lane Traffic (%)						
Lane Group Flow (vph)	567	443	1630	0	0	1742
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	41.4	41.4	86.6			86.6
Actuated g/C Ratio	0.30	0.30	0.62			0.62
v/c Ratio	0.57	0.95	0.75			0.80
Control Delay	44.2	76.2	22.5			16.4
Queue Delay	0.0	57.7	0.1			3.2
Total Delay	44.2	133.9	22.7			19.6
LOS	D	F	C			B
Approach Delay	83.5		22.7			19.6
Approach LOS	F		C			B
Queue Length 50th (m)	71.2	118.4	209.5			215.4
Queue Length 95th (m)	90.4	#185.4	238.6			242.9
Internal Link Dist (m)	346.8		297.0			221.3
Turn Bay Length (m)	190.0					
Base Capacity (vph)	1024	482	2167			2167
Starvation Cap Reductn	0	0	19			321
Spillback Cap Reductn	0	308	64			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.55	2.55	0.78			0.94

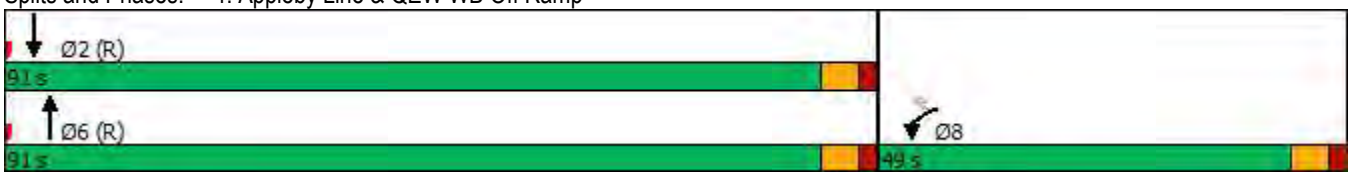
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 35.5	Intersection LOS: D

Intersection Capacity Utilization 76.7% ICU Level of Service D

Analysis Period (min) 15

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

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	522	408	1500	0	0	1603
Future Volume (vph)	522	408	1500	0	0	1603
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3335	1509	3505			3505
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3335	1509	3505			3505
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	567	443	1630	0	0	1742
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	567	423	1630	0	0	1742
Confl. Peds. (#/hr)				5	5	
Heavy Vehicles (%)	5%	7%	3%	2%	2%	3%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	41.4	41.4	86.6			86.6
Effective Green, g (s)	41.4	41.4	86.6			86.6
Actuated g/C Ratio	0.30	0.30	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	986	446	2168			2168
v/s Ratio Prot	0.17		0.47			c0.50
v/s Ratio Perm		c0.28				
v/c Ratio	0.58	0.95	0.75			0.80
Uniform Delay, d1	41.8	48.3	19.0			20.2
Progression Factor	1.00	1.00	1.03			0.68
Incremental Delay, d2	0.8	29.6	2.2			2.1
Delay (s)	42.7	77.9	21.7			15.8
Level of Service	D	E	C			B
Approach Delay (s)	58.1		21.7			15.8
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	73	1649	10	48	2119
Future Volume (vph)	0	73	1649	10	48	2119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	45.0	
Storage Lanes	1	0		0	1	
Taper Length (m)	7.5				15.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt	0.865		0.999			
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	3493	0	1770	3438
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	3493	0	1770	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			229.0
Travel Time (s)	2.5		8.0			13.7
Confl. Peds. (#/hr)				6	6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	11%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	79	1792	11	52	2303
Shared Lane Traffic (%)						
Lane Group Flow (vph)	79	0	1803	0	52	2303
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	3.6		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

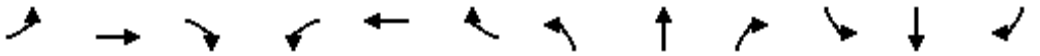
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			



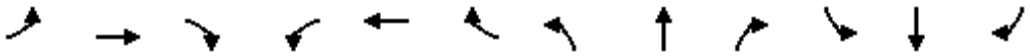
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	73	1649	10	48	2119
Future Volume (Veh/h)	0	73	1649	10	48	2119
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	79	1792	11	52	2303
Pedestrians	6					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	1					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			229
pX, platoon unblocked	0.73	0.76			0.76	
vC, conflicting volume	3059	908			1809	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1566	229			1423	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	86			85	
cM capacity (veh/h)	63	581			356	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	79	1195	608	52	1152	1152
Volume Left	0	0	0	52	0	0
Volume Right	79	0	11	0	0	0
cSH	581	1700	1700	356	1700	1700
Volume to Capacity	0.14	0.70	0.36	0.15	0.68	0.68
Queue Length 95th (m)	3.7	0.0	0.0	4.0	0.0	0.0
Control Delay (s)	12.2	0.0	0.0	16.8	0.0	0.0
Lane LOS	B			C		
Approach Delay (s)	12.2	0.0		0.4		
Approach LOS	B					

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Future Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Frt		0.875			0.937			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1612	1539	0	3433	1724	0	3400	3473	0	1703	3393	0
Flt Permitted	0.548			0.950			0.950			0.064		
Satd. Flow (perm)	930	1539	0	3433	1724	0	3400	3473	0	115	3393	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		129			29			6			7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		66.9			111.9			245.3			79.1	
Travel Time (s)		4.0			6.7			14.7			4.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	57	41	203	286	207	149	336	1825	114	76	1192	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	244	0	286	356	0	336	1939	0	76	1275	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	38.0	38.0		20.0	58.0		13.0	70.0		12.0	69.0	
Total Split (%)	27.1%	27.1%		14.3%	41.4%		9.3%	50.0%		8.6%	49.3%	
Maximum Green (s)	31.0	31.0		16.0	51.0		9.0	63.0		8.0	62.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.0	17.0		15.1	36.1		23.8	77.4		73.6	62.1	
Actuated g/C Ratio	0.12	0.12		0.11	0.26		0.17	0.55		0.53	0.44	
v/c Ratio	0.51	0.82		0.77	0.76		0.58	1.01		0.49	0.84	
Control Delay	70.8	48.0		75.3	54.3		56.1	56.9		27.7	40.9	
Queue Delay	0.0	0.1		3.3	0.0		0.0	25.0		0.0	0.6	
Total Delay	70.8	48.1		78.6	54.3		56.1	81.9		27.7	41.5	
LOS	E	D		E	D		E	F		C	D	
Approach Delay		52.4			65.1			78.1			40.8	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	15.8	33.6		42.1	88.6		50.7	~261.1		7.4	171.1	
Queue Length 95th (m)	29.1	61.3		58.5	114.3		m#84.4	#406.6		21.5	203.6	
Internal Link Dist (m)		42.9			87.9			221.3			55.1	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	205	441		392	646		577	1923		161	1509	
Starvation Cap Reductn	0	0		0	0		0	122		0	0	
Spillback Cap Reductn	0	6		47	0		0	0		0	54	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.28	0.56		0.83	0.55		0.58	1.08		0.47	0.88	

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 140			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green			
Natural Cycle: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay: 63.5		Intersection LOS: E	
Intersection Capacity Utilization 104.4%		ICU Level of Service G	

Analysis Period (min) 15

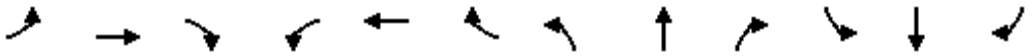
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Future Volume (vph)	55	39	195	275	199	143	323	1752	109	73	1144	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1612	1540		3433	1725		3400	3474		1703	3394	
Flt Permitted	0.55	1.00		0.95	1.00		0.95	1.00		0.06	1.00	
Satd. Flow (perm)	930	1540		3433	1725		3400	3474		115	3394	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	57	41	203	286	207	149	336	1825	114	76	1192	83
RTOR Reduction (vph)	0	113	0	0	22	0	0	3	0	0	4	0
Lane Group Flow (vph)	57	131	0	286	334	0	336	1936	0	76	1271	0
Heavy Vehicles (%)	12%	3%	9%	2%	2%	5%	3%	3%	3%	6%	5%	7%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	17.0	17.0		15.1	36.1		23.8	77.4		70.6	62.1	
Effective Green, g (s)	17.0	17.0		15.1	36.1		23.8	77.4		70.6	62.1	
Actuated g/C Ratio	0.12	0.12		0.11	0.26		0.17	0.55		0.50	0.44	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	112	187		370	444		578	1920		154	1505	
v/s Ratio Prot		0.08		0.08	c0.19		c0.10	c0.56		0.03	0.37	
v/s Ratio Perm	0.06									0.22		
v/c Ratio	0.51	0.70		0.77	0.75		0.58	1.01		0.49	0.84	
Uniform Delay, d1	57.6	59.0		60.8	47.8		53.5	31.3		30.6	34.7	
Progression Factor	1.00	1.00		1.00	1.00		0.96	1.26		1.00	1.00	
Incremental Delay, d2	3.6	10.8		9.7	7.1		1.0	19.0		2.5	6.0	
Delay (s)	61.2	69.9		70.4	54.9		52.6	58.3		33.1	40.6	
Level of Service	E	E		E	D		D	E		C	D	
Approach Delay (s)		68.2			61.8			57.5			40.2	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	53.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	104.4%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Appendix H

ITE Land Use Description

Land Use: 151
Mini-Warehouse

Description

A mini-warehouse is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as “self-storage” facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, Massachusetts, Minnesota, Nevada, New Jersey, Texas, and Utah.

Source Numbers

212, 403, 551, 568, 642, 708, 724, 850, 868, 876, 1024, 1035

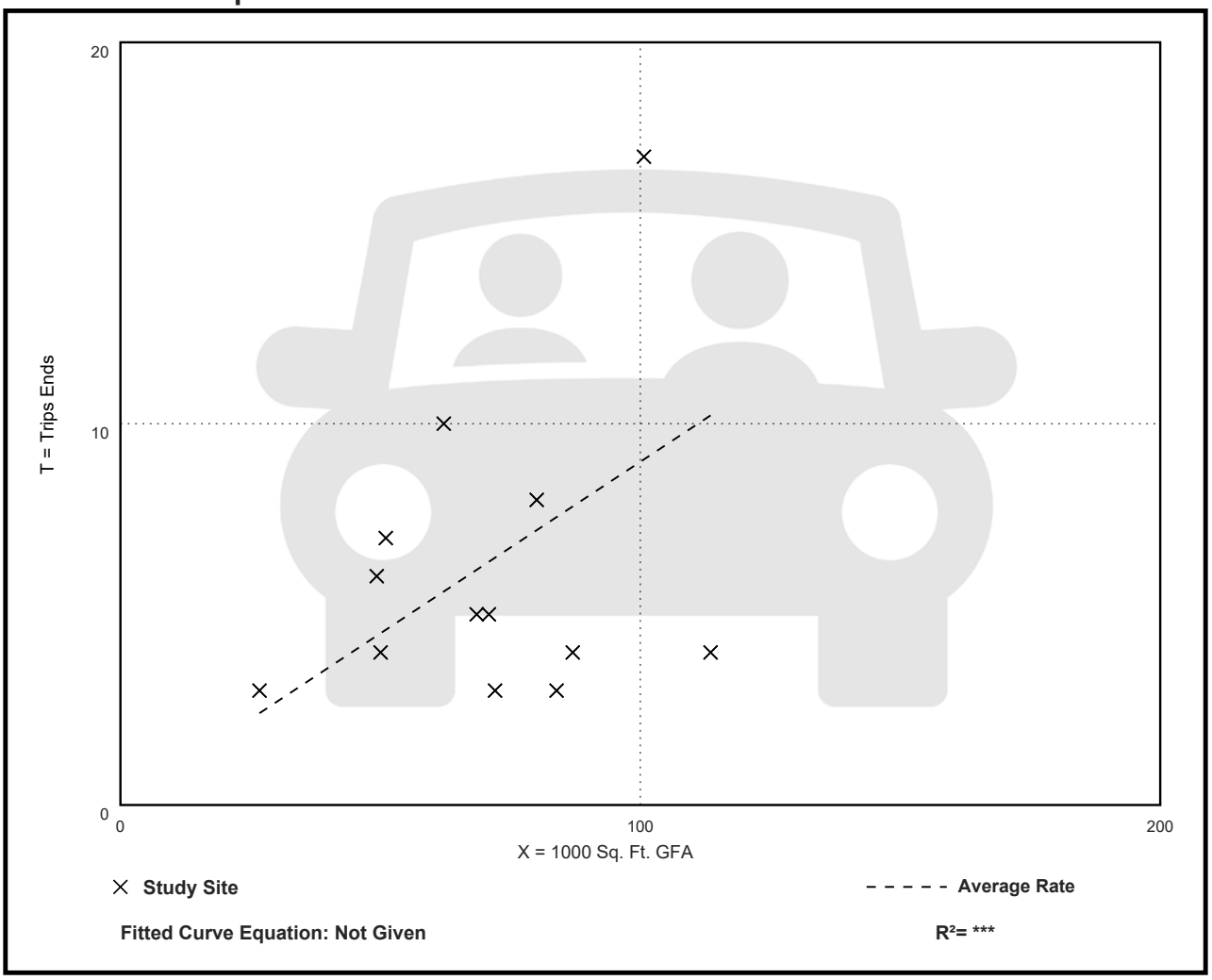
Mini-Warehouse
(151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 13
Avg. 1000 Sq. Ft. GFA: 70
Directional Distribution: 59% entering, 41% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.09	0.04 - 0.17	0.05

Data Plot and Equation



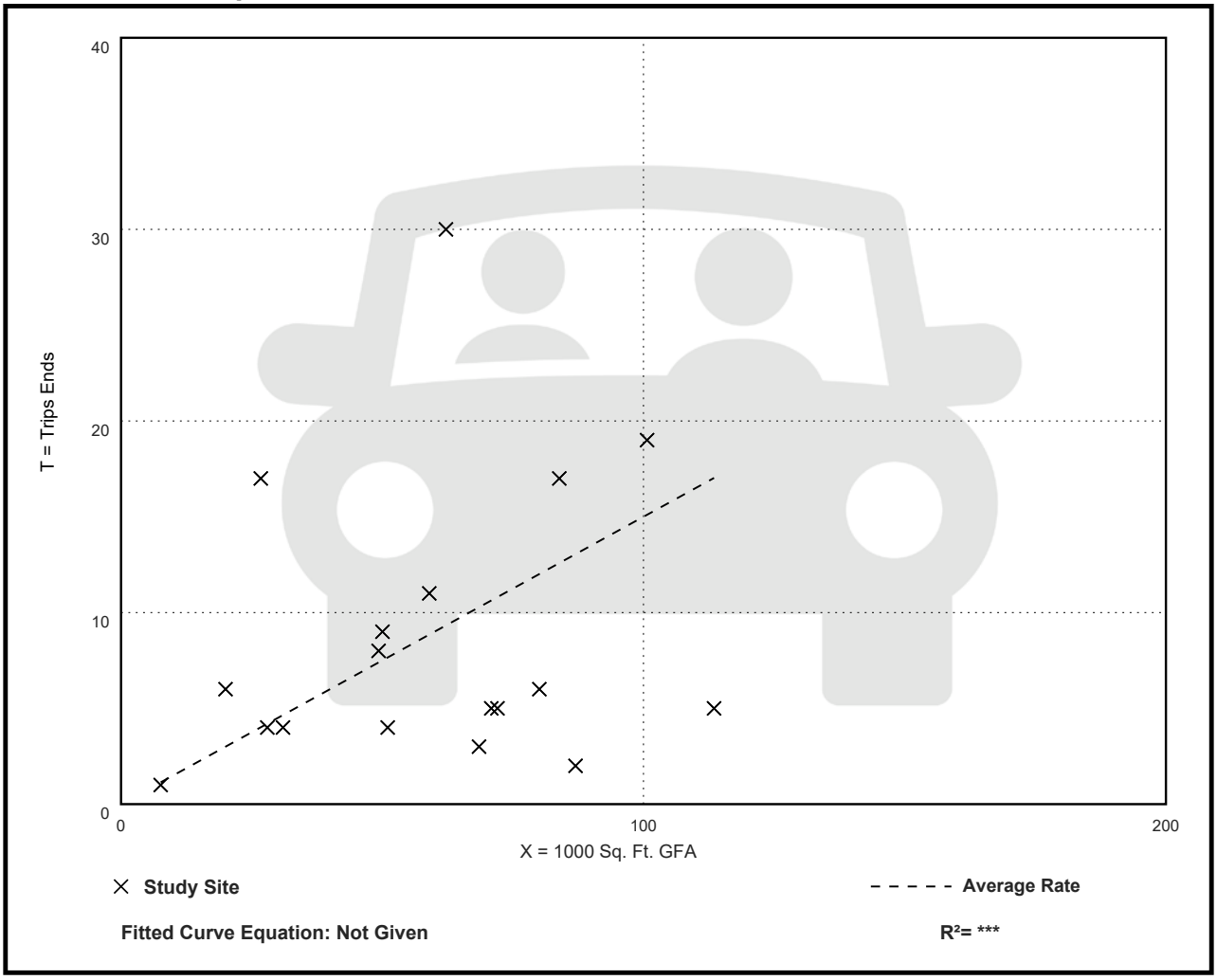
Mini-Warehouse
(151)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 18
Avg. 1000 Sq. Ft. GFA: 59
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.15	0.02 - 0.64	0.14

Data Plot and Equation



Land Use: 710
General Office Building

Description

A general office building is a location where affairs of businesses, commercial or industrial organizations, or professional persons or firms are conducted. An office building houses multiple tenants that can include, as examples, professional services, insurance companies, investment brokers, a banking institution, a restaurant, or other service retailers. A general office building with a gross floor area of 10,000 square feet or less is classified as a small office building (Land Use 712). Corporate headquarters building (Land Use 714), single tenant office building (Land Use 715), medical-dental office building (Land Use 720), office park (Land Use 750), research and development center (Land Use 760), and business park (Land Use 770) are additional related uses.

Additional Data

If two or more general office buildings are in close physical proximity (within a close walk) and function as a unit (perhaps with a shared parking facility and common or complementary tenants), the total gross floor area or employment of the paired office buildings can be used for calculating the site trip generation. If the individual buildings are isolated or not functionally related to one another, trip generation should be calculated for each building separately.

For study sites with reported gross floor area and employees, an average employee density of 3.3 employees per 1,000 square feet GFA (or roughly 300 square feet per employee) has been consistent through the 1980s, 1990s, and 2000s. No sites counted in the 2010s reported both GFA and employees.

The average building occupancy varies considerably within the studies for which occupancy data were provided. The reported occupied gross floor area was 88 percent for general urban/suburban sites and 96 percent for the center city core and dense multi-use urban sites.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The average numbers of person trips per vehicle trip at the eight center city core sites at which both person trip and vehicle trip data were collected are as follows:

- 2.8 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 2.9 during Weekday, AM Peak Hour of Generator
- 2.9 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 3.0 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 18 dense multi-use urban sites at which both person trip and vehicle trip data were collected are as follows:

- 1.5 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.5 during Weekday, AM Peak Hour of Generator
- 1.5 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.5 during Weekday, PM Peak Hour of Generator

The average numbers of person trips per vehicle trip at the 23 general urban/suburban sites at which both person trip and vehicle trip data were collected are as follows:

- 1.3 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.3 during Weekday, AM Peak Hour of Generator
- 1.3 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.4 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in Alberta (CAN), California, Colorado, Connecticut, Georgia, Illinois, Indiana, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Missouri, Montana, New Hampshire, New Jersey, New York, Ontario (CAN)Pennsylvania, Texas, Utah, Virginia, and Washington.

Source Numbers

161, 175, 183, 184, 185, 207, 212, 217, 247, 253, 257, 260, 262, 273, 279, 297, 298, 300, 301, 302, 303, 304, 321, 322, 323, 324, 327, 404, 407, 408, 419, 423, 562, 734, 850, 859, 862, 867, 869, 883, 884, 890, 891, 904, 940, 944, 946, 964, 965, 972, 1009, 1030, 1058, 1061

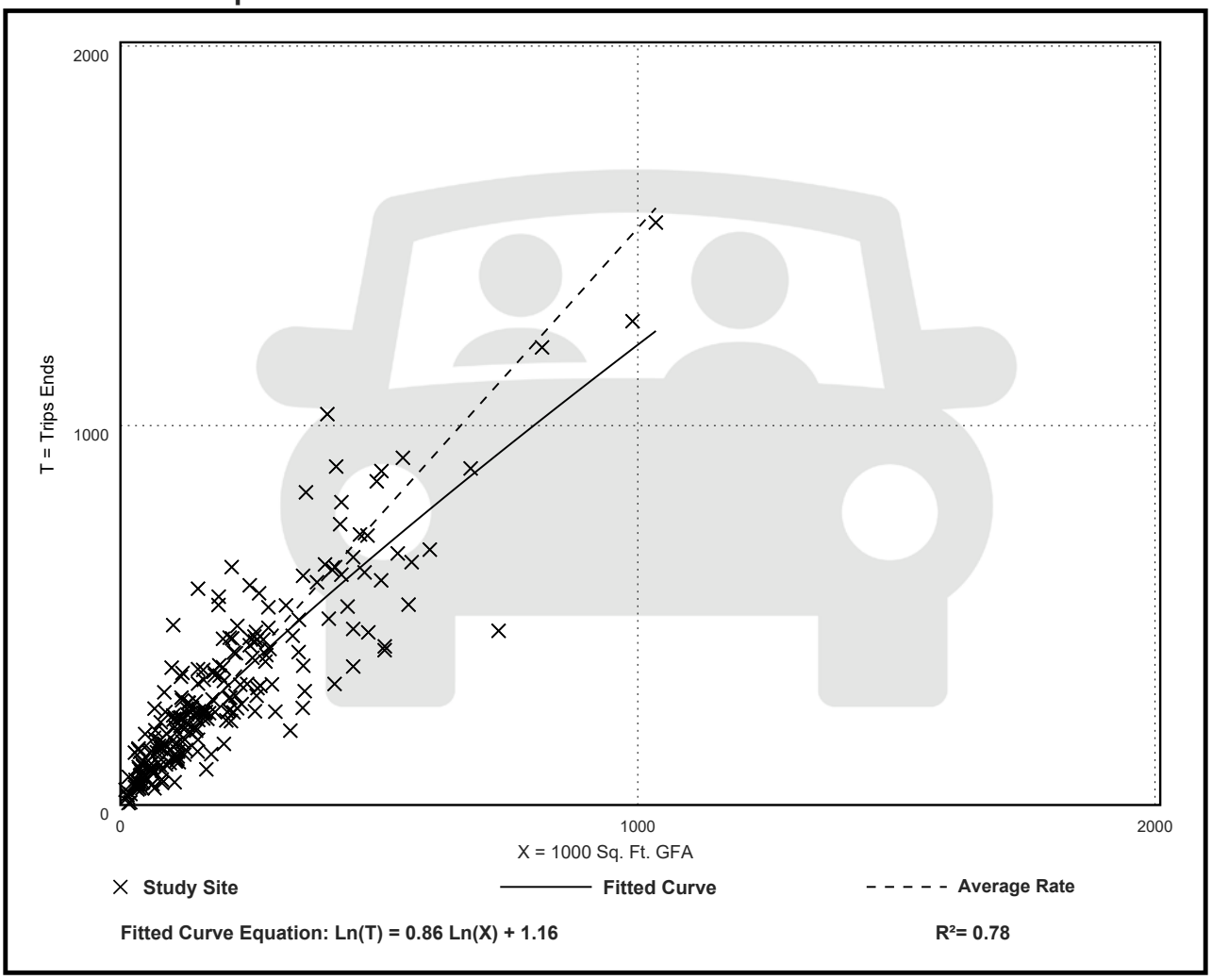
General Office Building
(710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 221
Avg. 1000 Sq. Ft. GFA: 201
Directional Distribution: 88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.52	0.32 - 4.93	0.58

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.86 Ln(X) + 1.16

R^2= 0.78

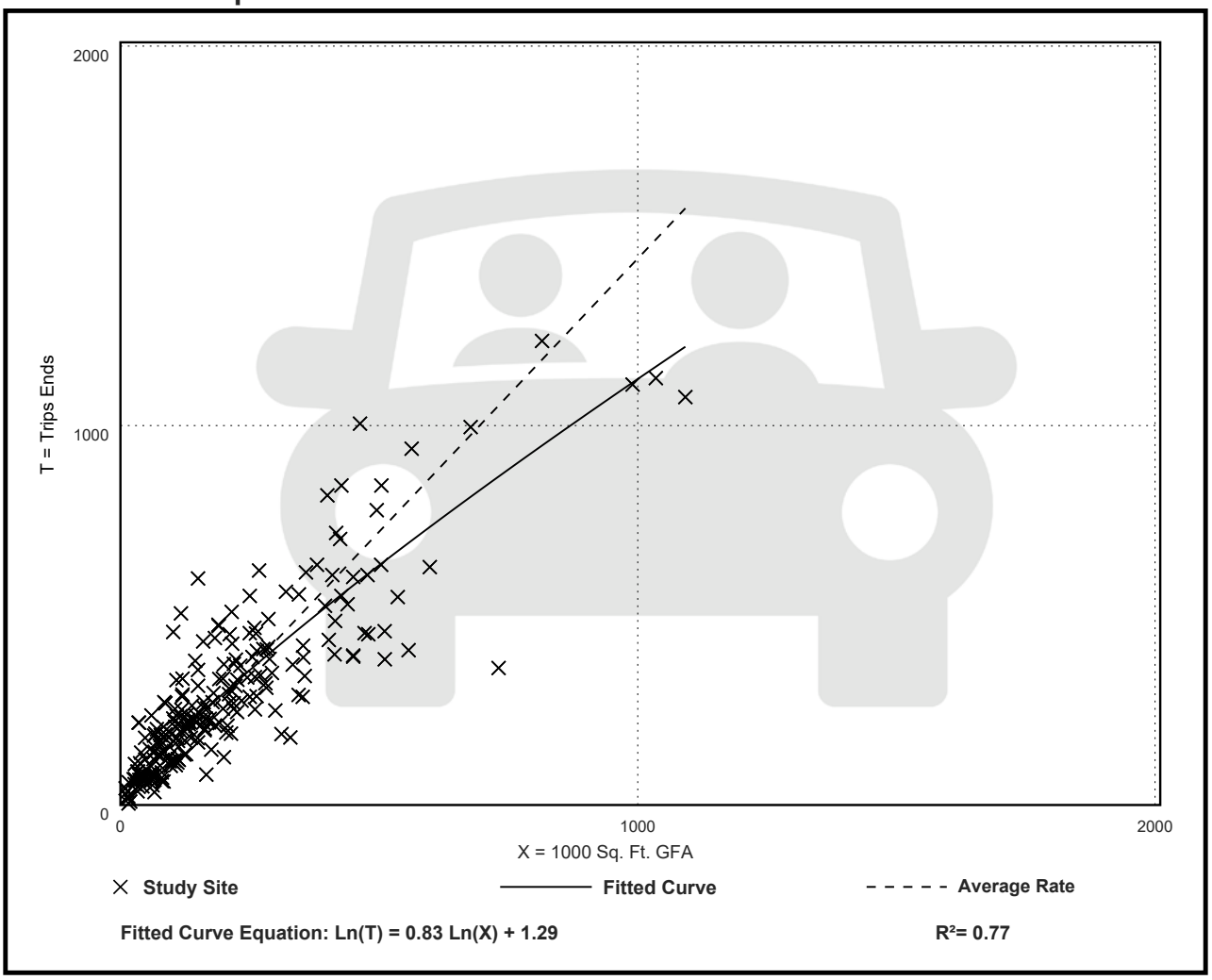
General Office Building
(710)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 232
Avg. 1000 Sq. Ft. GFA: 199
Directional Distribution: 17% entering, 83% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.44	0.26 - 6.20	0.60

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.83 Ln(X) + 1.29

R^2= 0.77

Land Use: 822
Strip Retail Plaza (<40k)

Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (https://www.ite.org/technical-resources/topics/trip-and-parking-generation/).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

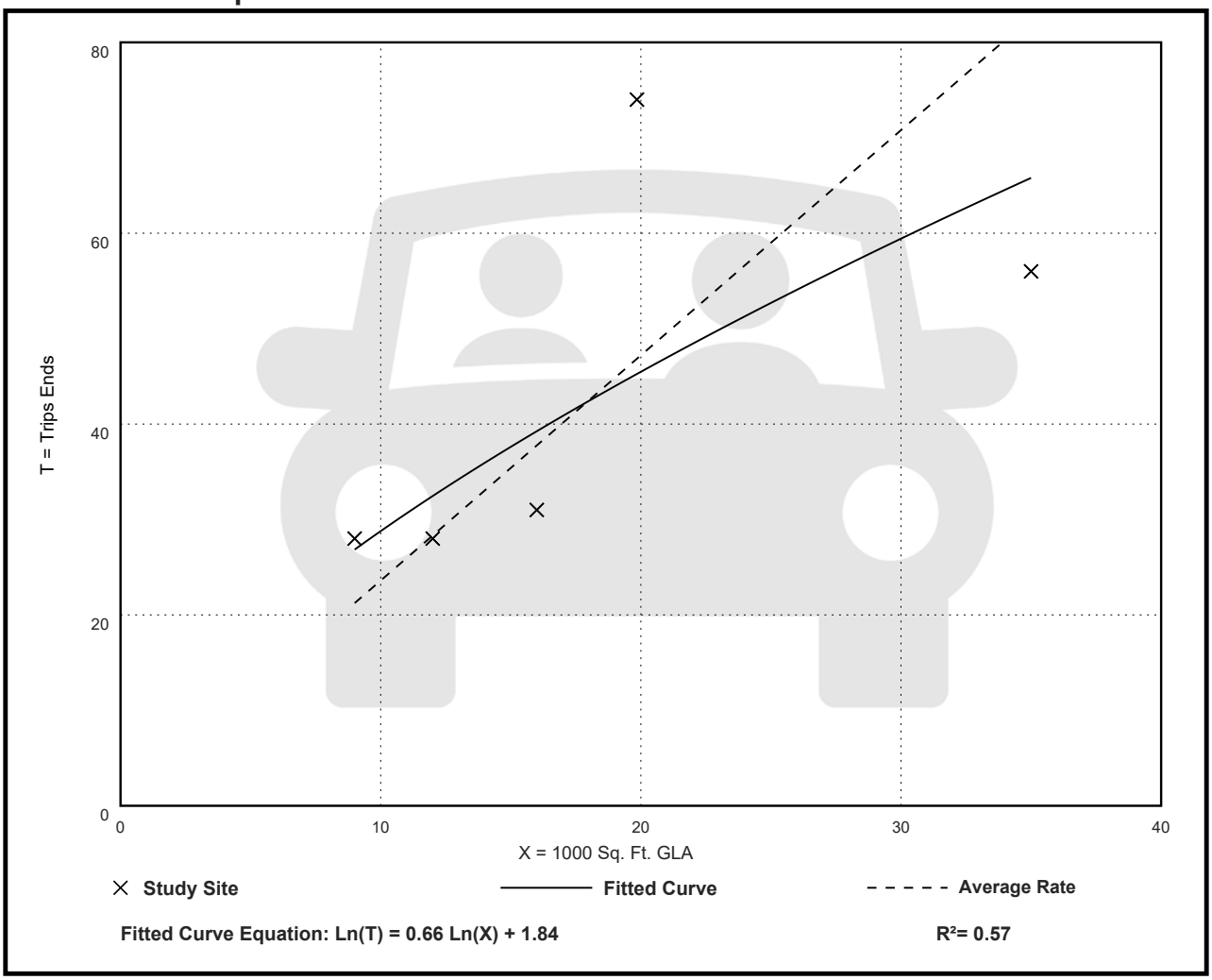
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
Number of Studies: 5
Avg. 1000 Sq. Ft. GLA: 18
Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.66 Ln(X) + 1.84

R^2= 0.57

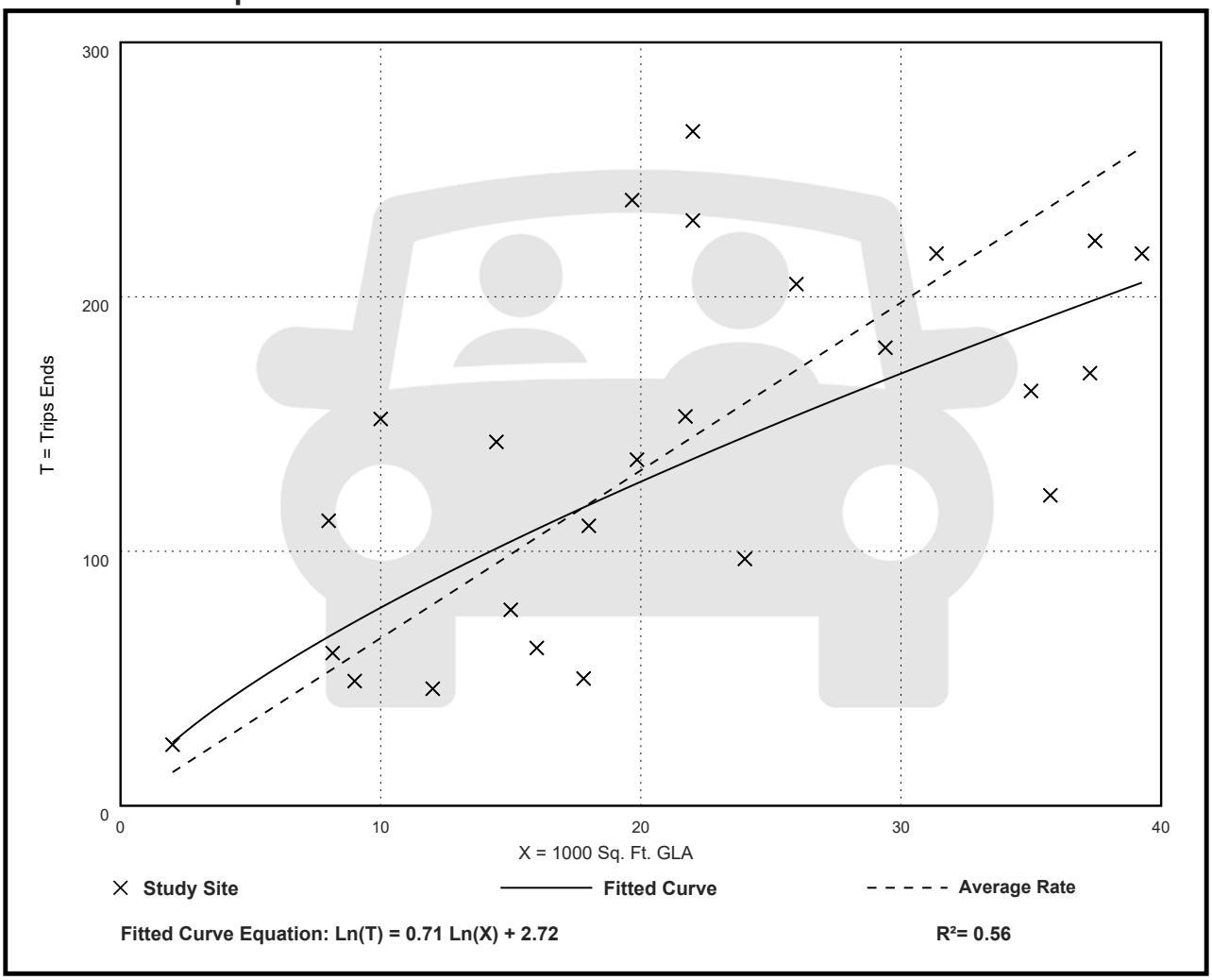
Strip Retail Plaza (<40k)
(822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
Number of Studies: 25
Avg. 1000 Sq. Ft. GLA: 21
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation

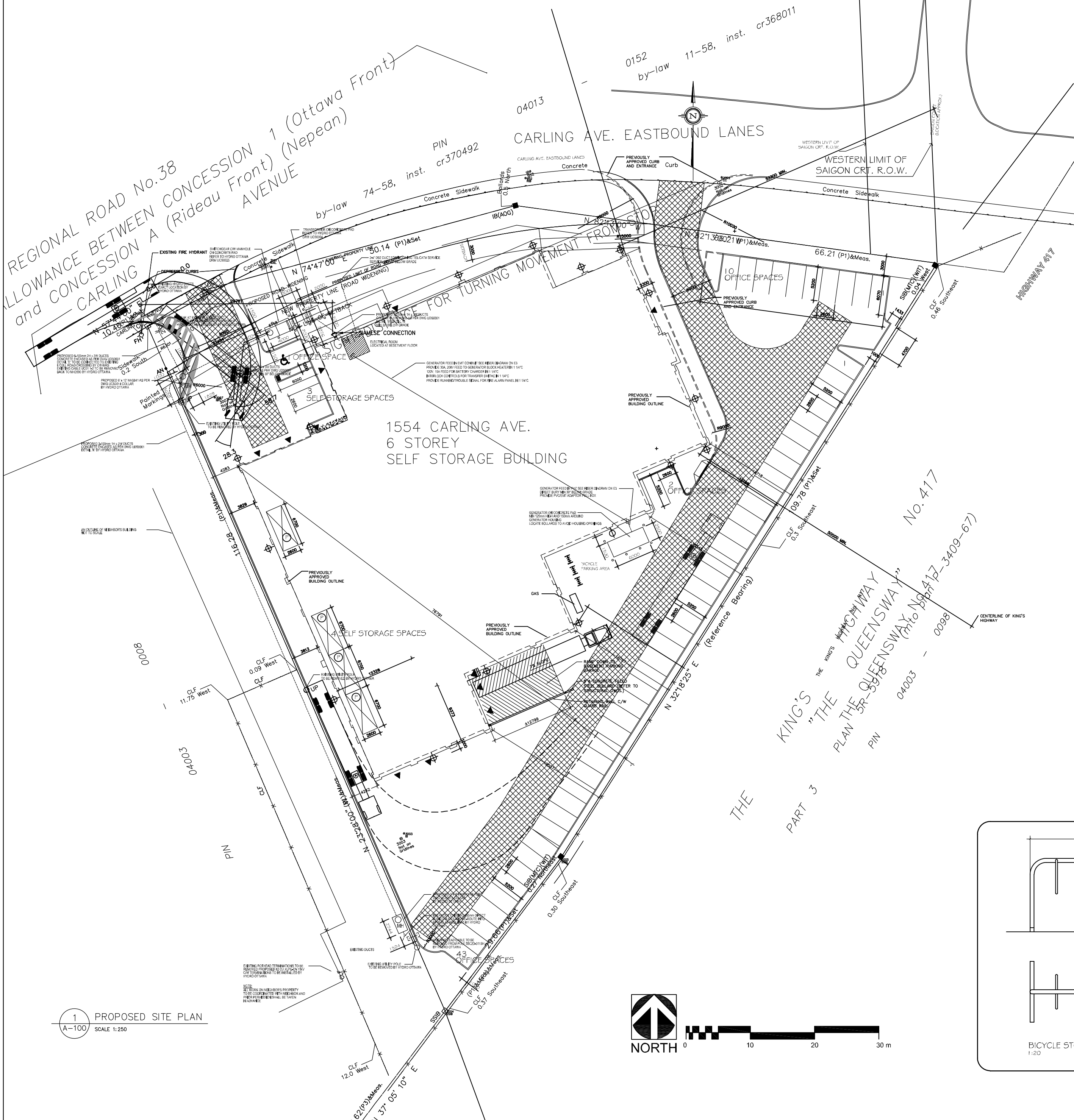


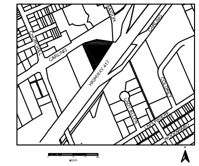
Fitted Curve Equation: Ln(T) = 0.71 Ln(X) + 2.72

R^2= 0.56

Appendix I

Proxy Site Trip Generation Data





LEGEND

- NEW BUIDLING
- INDICATES BUIDLING ENTRANCE
- 150 mm CONCRETE CURB
- CONCRETE SIDEWALK
- DEPRESSED CURB
- FIRE LANE
- LS EXISTING LIGHT STANDARD
- WALL-MOUNTED LIGHT FIXTURE
- FH FIRE HYDRANT
- SIAMESE FIRE CONNECTION
- B CONCRETE FILLED STEEL BOLLARD
- DYMON PEDESTAL

=== SEPT 29, 2008 REVISED SITE PLAN

USE	BUILDING AREA	PARKING RATE (TABLE 110)	PARKING REQUIRED	PARKING PROVIDED
SELF-STORAGE/ WAREHOUSE AREA (m^2)	18204.2 m^2	8 SPACES	8 SPACES	8 SPACES*
DRIVE-THRU AREA (m^2)	766.6 m^2	N/A	N/A	N/A
OFFICE AREA (m^2)	2,714.1 m^2	2 SPACES/100m^2	55 SPACES	55 SPACES
TOTAL BUILDING AREA, INCLUDING BELOW GRADE (m^2)	21,684.9 m^2	N/A	N/A	N/A
*4 SPACES LOCATED WITHIN DRIVE-THRU AREA. (P)				

ZONE:	CE3 [1002] F(2.5) Sch. 68
PERMITTED USES (AMONG OTHERS):	WAREHOUSE OFFICE
MIN. LOT AREA:	7,500 m^2 (81,8008 s.f.)
MIN. LOT WIDTH:	NO MINIMUM
MIN. FRONT YARD SETBACK:	NO MINIMUM
MIN. REAR YARD SETBACK:	7.5 m (24.6 ft.)
MIN. SIDE YARD SETBACK:	NO MINIMUM
MAX. BUILDING HEIGHT:	30 m
ACCESS DRIVE MIN. WIDTH:	6.7 m (21.98 ft.)
PARKING SPACE MIN. WIDTH:	2.6 m (8.53 ft.)
MIN. LENGTH:	5.2 m (17.06 ft.)
PARKING AISLE: MIN. WIDTH:	6.7 m (21.98 ft.)
PARKING LOCATION:	NONE IN REQUIRED FRONT YARD SETBACK
PARKING REQUIREMENT:	
SELF-STORAGE FACILITY:	8 SPACES
OFFICE (MAX. PERMITTED):	2 SPACES / 100 m^2 G.F.A. = 54 SPACES
TOTAL PARKING:	62

AREA:
BUILDING AREA: 35,429.41 sq.ft. (3,291.5 sq.m)
DRIVE THROUGH AREA: 8304.0 sq.ft. (771.5 sq.m)
GROSS AREA: 197,786.85 sq.ft. (18,375.0 sq.m.)

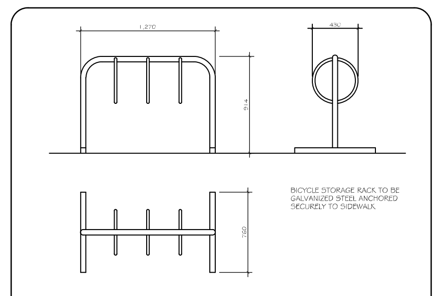
PREVIOUS GROSS BUILDING AREA: 200,101.1 sq.ft. (18,590 sq.m)

LEGAL DESCRIPTION

TOPOGRAPHICAL PLAN OF
PART OF LOT LETTER 'I'
CONCESSION A (Rideau Front)
Geographic Township of Nepean
NOW CITY OF OTTAWA

TOPOGRAPHICAL INFORMATION FROM SURVEY BY:
ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
FEBRUARY 10, 2006

SITE AREA: 84,625 SQ.FT. (7,862 SQ.M)



BICYCLE STORAGE RACK DETAIL
1:20

GENERAL NOTES

1. DO NOT SCALE DRAWINGS. FIGURED DIMENSIONS ONLY TO BE USED.

2. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CHECK AND VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES TO THE ARCHITECT.

3. ALL WORK DESCRIBED UNDER THIS CONTRACT TO COMPLY WITH ONTARIO BUILDING CODE, 2006 AND/OR NATIONAL BUILDING CODE, 2005 AND OTHER CODES AND BY-LAWS IN EFFECT.

4. THIS DRAWING IS AN INSTRUMENT OF SERVICE AND IS PROTECTED BY COPYRIGHT. COPYRIGHT FOR THE ARCHITECT'S INSTRUMENT OF SERVICE BELONGS TO THE ARCHITECT. COPIES, INCLUDING ELECTRONIC COPIES, MAY ONLY BE USED OF THE PURPOSE INTENDED AND FOR A ONE-TIME USE, ON THE SAME SITE, AND FOR THE SAME PROJECT AND MAY NOT BE OFFERED FOR SALE OR TRANSFER WITHOUT THE EXPRESS WRITTEN CONSENT OF THE ARCHITECT.

ISSUE RECORD

ISSUE	REV	DESCRIPTION	DATE
01	00	FOR COORDINATION	25/MAR/'08
02	01	FOR PERMIT	04/JUL/'08
03	02	FOR SITE PLAN	28/AUG/'08
04	03	FOR PERMIT – REVISED	12/SEP/'08
05	04	FOR REVISED SITE PLAN	29/SEP/'08
06	05	FOR FOUNDATION PERMIT	12/NOV/'08
07	06	FOR COORDINATION	22/JUL/'11
08	07	FOR COORDINATION	03/AUG/'11
09	08	FOR REVIEW	21/SEP/'11
10	09	FOR COORDINATION	28/SEP/'11
11	10	FOR COORDINATION	04/OCT/'11
12	11	FOR CLIENT REVIEW	21/OCT/'11
13	12	FOR COORDINATION	07/DEC/'11
14	13	ISSUED FOR REVISED BUILDING PERMIT	21/DEC/'11
15	14	ISSUED FOR REVIEW	11/JAN/'12
16	15	FOR COORDINATION	23/JAN/'12
17	16	FOR COORDINATION	10/FEB/'12

No	DATE	REVISION
07	23/JAN/12'	ISSUED FOR REVISED BUILDING PERMIT
06	21/DEC/11'	ISSUED FOR REVISED BUILDING PERMIT
05	28/SEP/11'	GENERAL REVISIONS
04	21/SEP/11'	GENERAL REVISIONS
03	29/SEP/08'	CITY COMMENTS
02	12/SEP/08'	CITY COMMENTS
01	28/AUG/'08	ENTRANCE SHIFTED
00	MAR/'08	ORIGINAL DOCUMENT

PROJECT NORTH

CLIENT
DYMON CAPITAL CORPORATION
TEL: 613-247-0888
FAX: 613-247-7730

CONSULTANTS
CLELAND JARDINE ENGINEERING
STRUCTURAL ENGINEERS
TEL: 613-591-1533
FAX: 613-591-1703
GOODKEY WEEDMARK & ASSOCIATES
MECHANICAL/ELECTRICAL ENGINEERS
TEL: 613-727-5112
FAX: 613-727-5115
SITE PLANNING BY
FOTENN PLANNING & URBAN DESIGN

Farrow Architects Inc.
TEL: 613-725-2294
FAX: 613-724-6632

PROJECT TITLE
DYMON SELF STORAGE
CARLING AVENUE

DRAWING TITLE
PROPOSED SITE PLAN

DATE	DRAWN	JOB No	DRAWING No
MAR. 2008	MB/EC	1975	A–100
SCALE: AS SHOWN	CHECKED: ER		

ARCHITECTURAL

ACCURATE TRUSTED TRAFFIC DATA

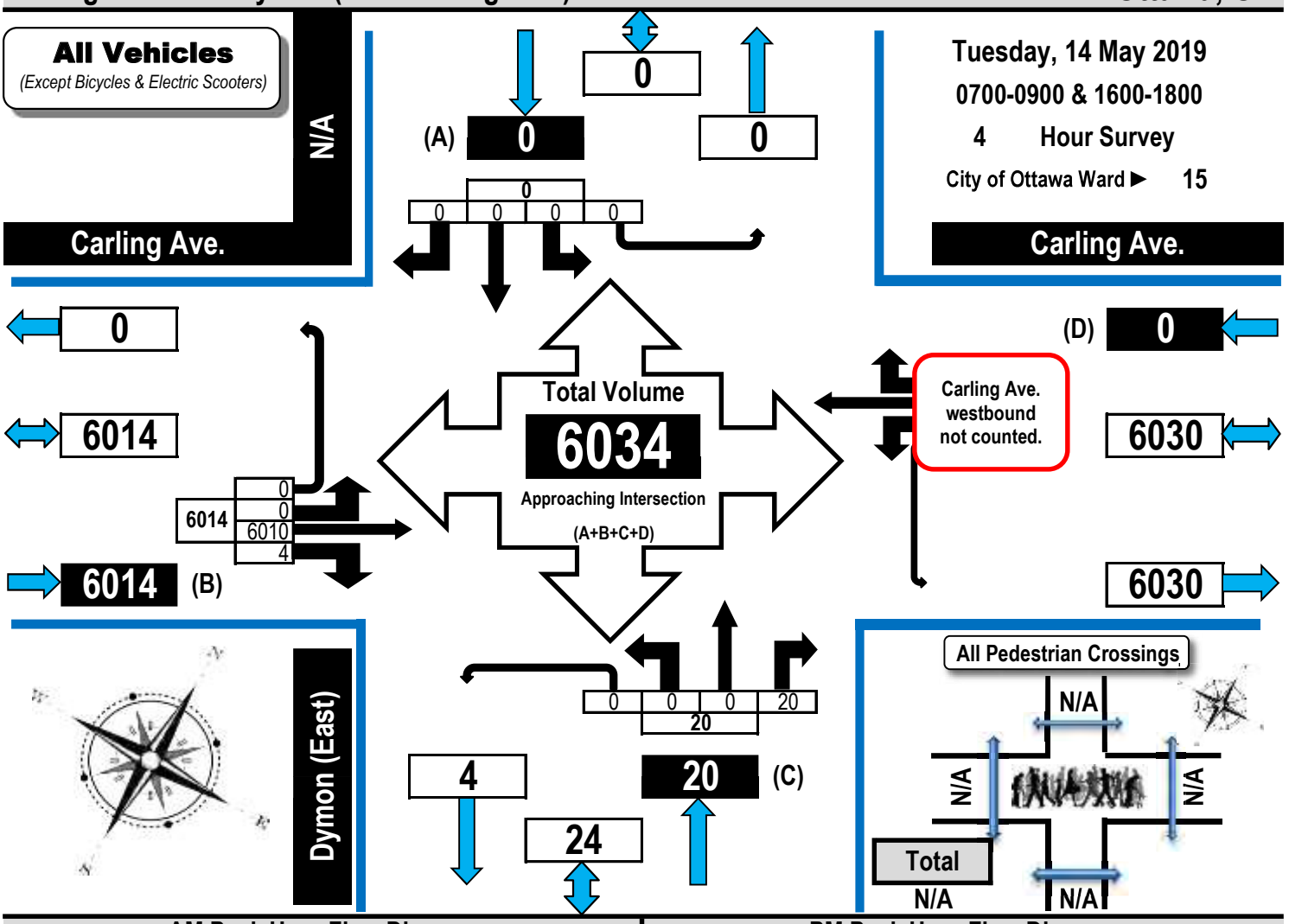
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

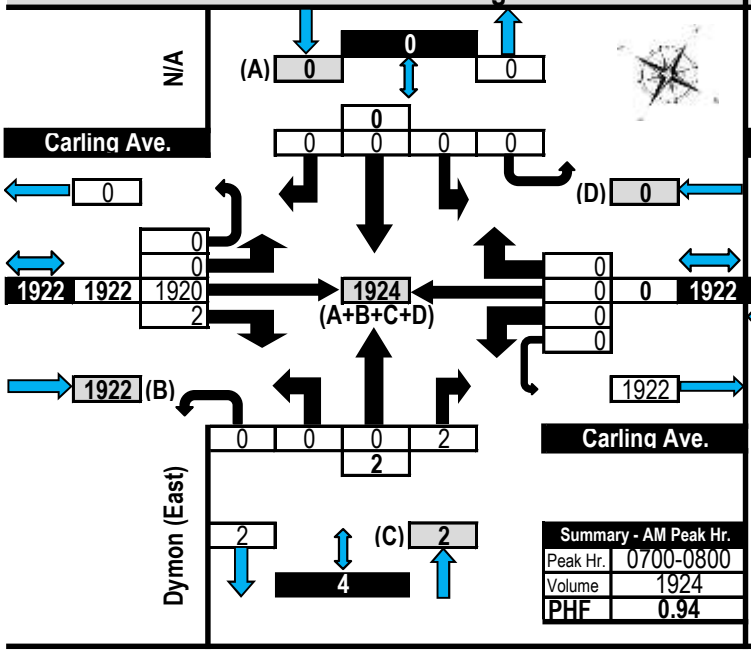
Carling Avenue & Dymon (1554 Carling Ave.) EAST Access — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, 14 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 15

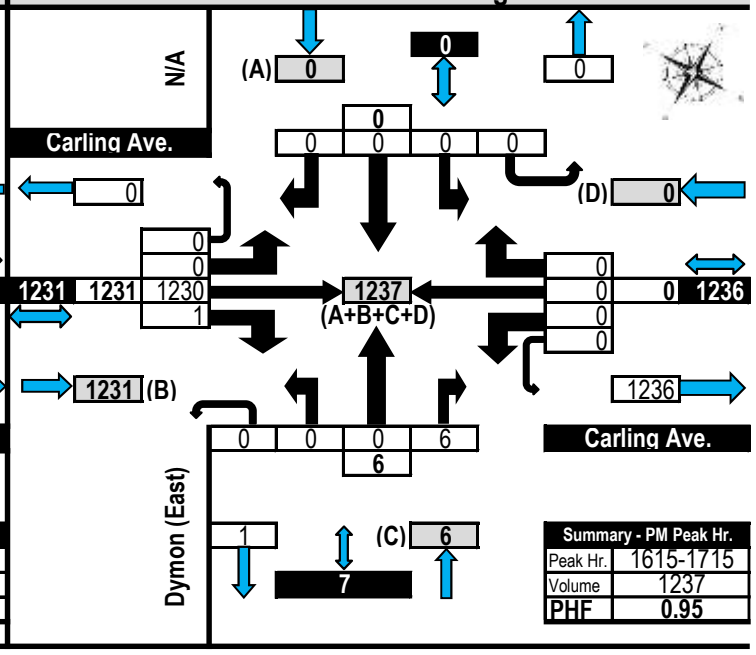


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0700-0800
Volume	1924
PHF	0.94

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1615-1715
Volume	1237
PHF	0.95

ACCURATE TRUSTED TRAFFIC DATA

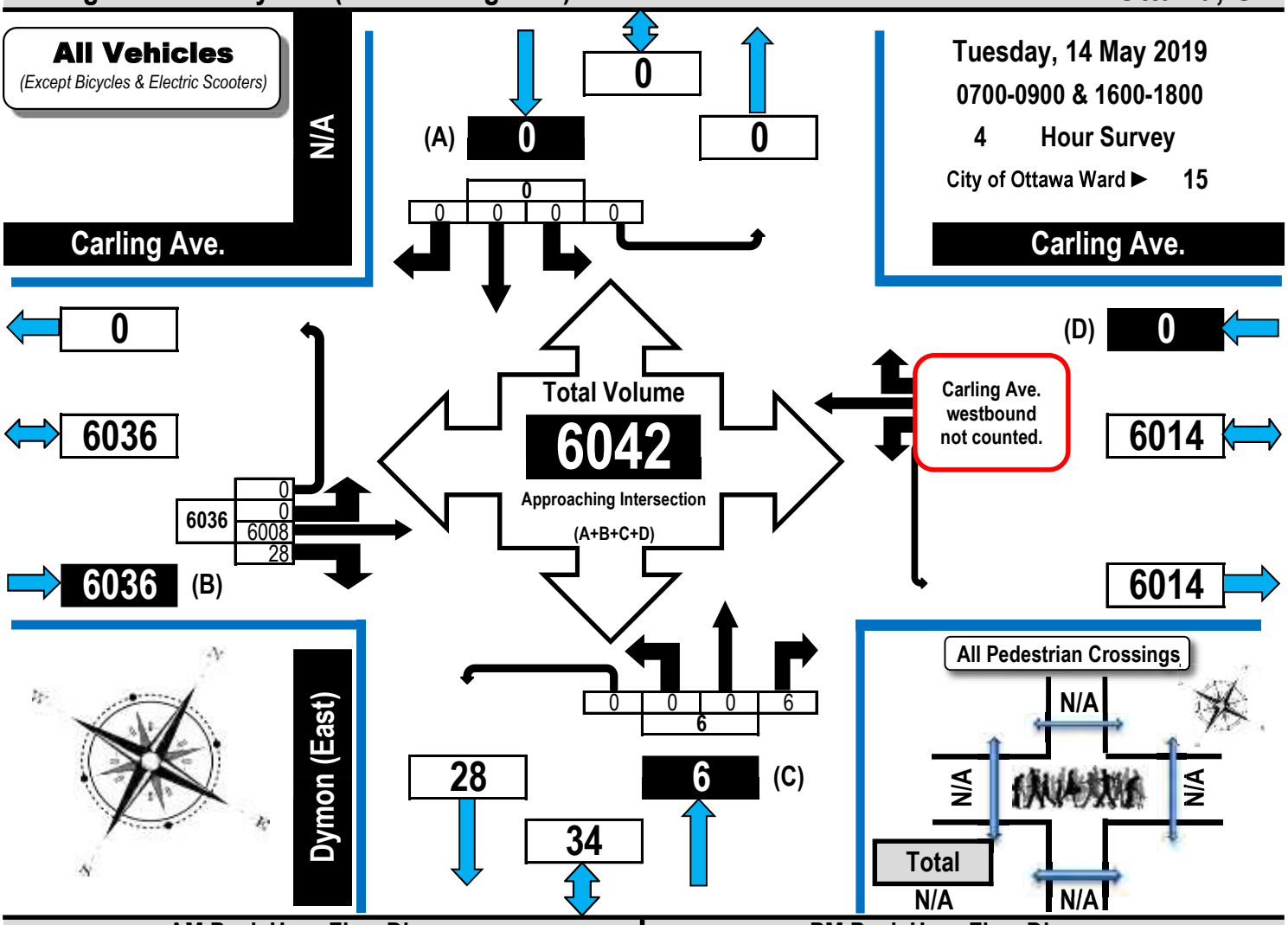
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

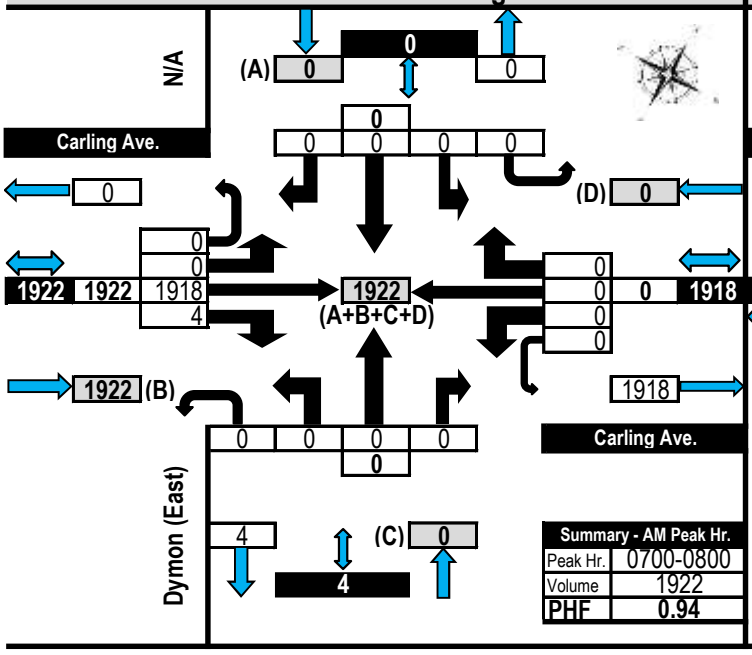
Carling Avenue & Dymon (1554 Carling Ave.) WEST Access — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Tuesday, 14 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 15

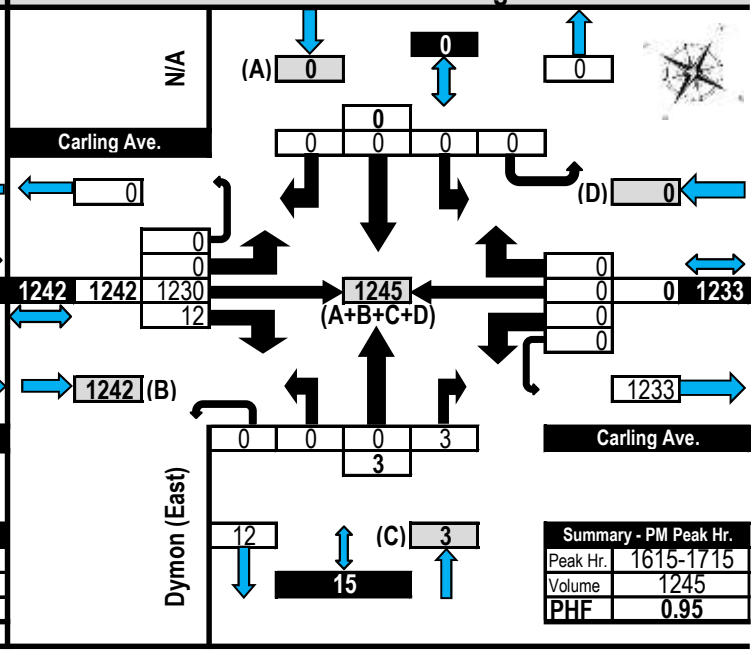


AM Peak Hour Flow Diagram

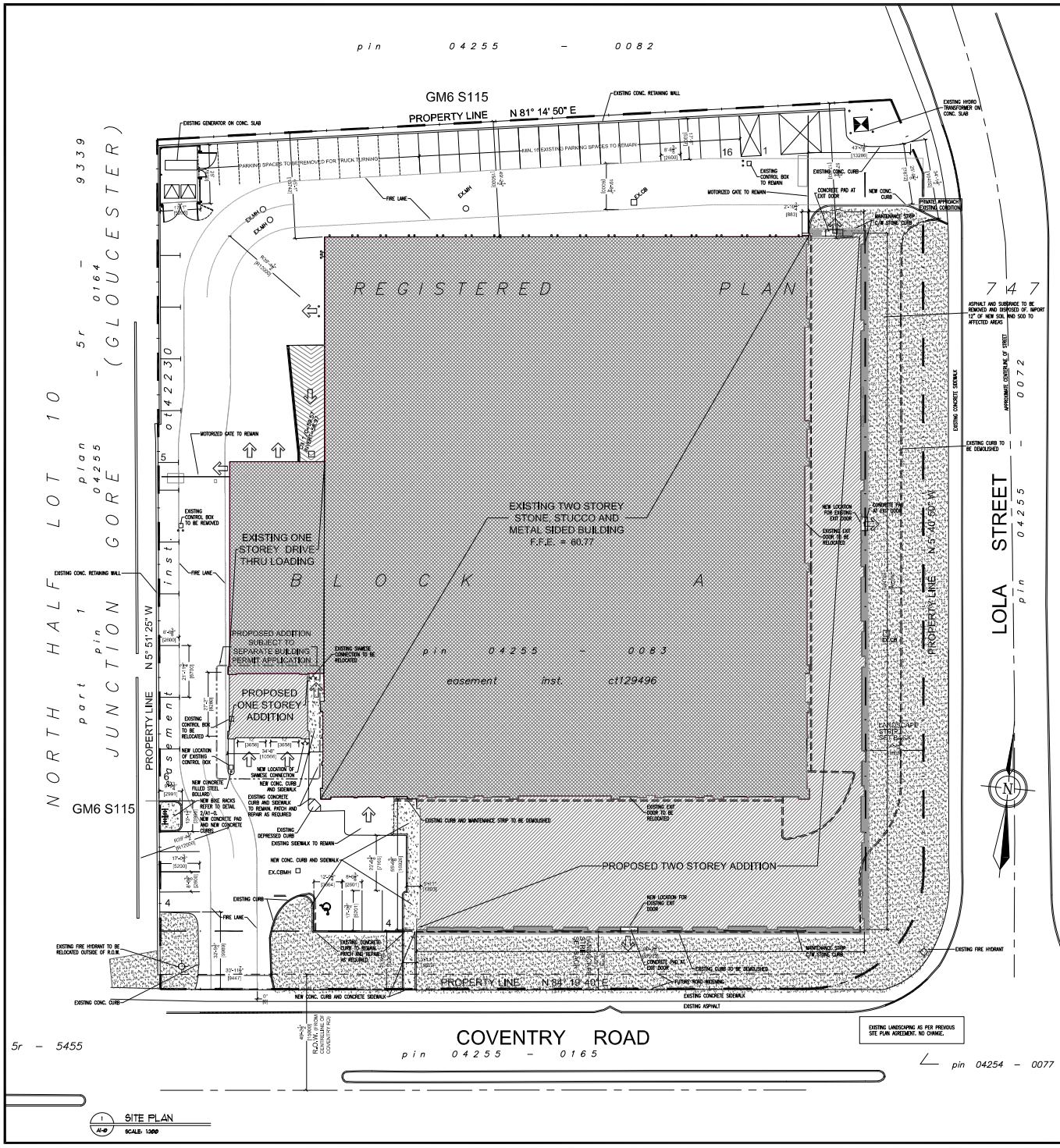


Summary - AM Peak Hr.	
Peak Hr.	0700-0800
Volume	1922
PHF	0.94

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1615-1715
Volume	1245
PHF	0.95



1 SITE PLAN
A1-0 SCALE: 1:200

LEGAL DESCRIPTION OF PROPERTY:

PART OF BLOCK A
REGISTERED PLAN 747
CITY OF OTTAWA

SITE STATISTICS

LOT AREA: 119181.57 SQ.FT. (11072.34 SQ.M.)
EXISTING LOT COVERAGE: 43.9%
PROPOSED LOT COVERAGE: 58.1% (INCLUDING GARAGE ADDITION SUBJECT TO SEPARATE BUILDING PERMIT APPLICATION)

EXISTING BUILDING HEIGHT: 22'-4" (6.81m) TOP OF STEEL
29'-0" (8.84m) TOP OF HIGHEST PARAPET
PROPOSED BUILDING HEIGHT TO MATCH EXISTING

7.5m LANDSCAPED STRIP ALONG COVENTRY ROAD AND LOLA STREET
36 PARKING SPACES PROVIDED

BOUNDARY INFORMATION FROM SURVEY BY: ANNIS, O'SULLIVAN, VOLLEBEKK LTD. JUNE 24, 2008.

BUILDING AREA

EXISTING GROUND FLOOR: 52326.5 SQ.FT. (4861.3 SQ.M.)
EXISTING SECOND FLOOR: 48708.1 SQ.FT. (4525.1 SQ.M.)
TOTAL EXISTING GROSS FLOOR AREA: 101034.6 SQ.FT. (9386.4 SQ.M.)

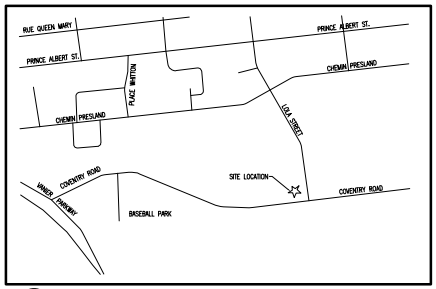
PROPOSED GROUND FLOOR: 16005.9 SQ.FT. (1487.0 SQ.M.)
PROPOSED SECOND FLOOR: 15902.2 SQ.FT. (1477.4 SQ.M.)
TOTAL PROPOSED GROSS FLOOR AREA: 31908.1 SQ.FT. (2964.4 SQ.M.)

TOTAL GROUND FLOOR AREA: 68332.4 SQ.FT. (6348.3 SQ.M)
TOTAL SECOND FLOOR AREA: 64410.3 SQ.FT. (6002.8 SQ.M)
TOTAL GROSS FLOOR AREA: 132942.7 SQ.FT. (12350.8 SQ.M.)

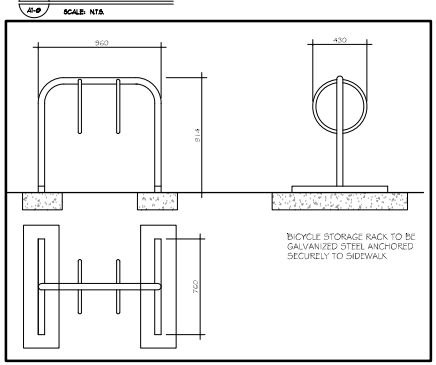
GROSS FLOOR AREA OF PROPOSED GARAGE ADDITION (SUBJECT TO SEPARATE BUILDING PERMIT APPLICATION): 909.8 SQ.FT. (84.5 SQ.M.)
TOTAL GROSS FLOOR AREA (INCLUDING GFA OF GARAGE ADDITION): 133852.5 SQ.FT. (12435.3 SQ.M.)

GROSS LEASABLE AREA

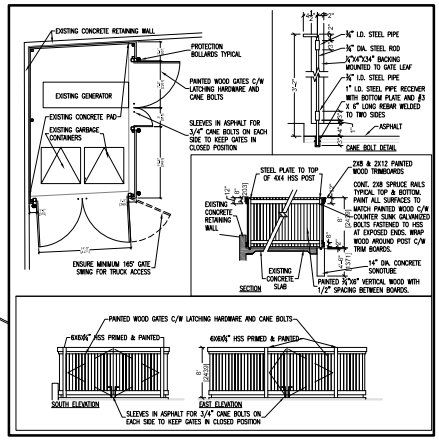
PROPOSED GROUND FLOOR: 15852.6 SQ.FT. (1472.76 SQ.M.)
PROPOSED SECOND FLOOR: 15852.6 SQ.FT. (1472.76 SQ.M.)
TOTAL PROPOSED GROSS LEASABLE AREA: 31705.2 (2945.5 SQ.M.)



2 SITE KEY PLAN
A1-0 SCALE: N.T.S.



2 BICYCLE STORAGE RACK DETAIL
A1-0 SCALE: N.T.S.



4 GARBAGE ENCLOSURE DETAIL
A1-0 SCALE: N.T.S.

1. Contractor must verify all job dimensions, all drawings, details, specifications and report any discrepancies to owners before proceeding with work.
2. All drawings and specifications are instruments of service and the property of the architects which must be returned at the completion of the work, and may not be reproduced without their written permission.

ref	description	date
6	Revised Site Plan	24 Oct. 2012
5	Revised Site Plan Walkway & Bicycle	2 August 2012
4	Revised For Site Plan & Siamese	31 July 2012
3	Revised For Building Permit Application	16 July 2012
2	For Building Permit Application	12 Dec 2011
1	For Internal Review	29 July 2011

revisions

RE-ISSUE FOR SITE PLAN CONTROL

STRUCTURAL ENGINEER
Cleland Jardine Engineering Ltd.
Ryan Minden
200-580 Terry Fox Drive, Kanata ON K2L 4B9
tel: (613) 591-1533 fax: (613) 591-1703
e-mail: mail@clelandjardine.com

MECHANICAL/ELECTRICAL
Goodkey Weedmark Consulting Engineers
Tim Beilhouse / Andre Bogdanovic
1688 Woodward Dr, Ottawa ON K2C 0P9
tel: (613) 727-5111 fax: (613) 727-5115
web: www.gwe.com e-mail: info@gwe.com

CIVIL ENGINEER
David Schaeffer Engineering Ltd.
Van Wingaarden
120 Iber Road, Suite 203, Ottawa ON K2S 1E9
tel: (613) 836-0856 fax: (613) 836-7183
e-mail: dse@DSEL.ca

PLANNING & LANDSCAPE DESIGN
FoTenn
Miguel Tremblay
223 McLeod Street, Ottawa ON K2P 0Z8
tel: (613) 730-5709 fax: (613) 730-1136
web: www.FoTenn.com e-mail: tremblay@FoTenn.com

owner:

DYMON SELF STORAGE

architect
nicholas cargianis architect inc.
31 Perrault Street, Cluse, ON K1N 3W9
t. 613 562 4860
f. 613 562 2289
e. info@nicarch.ca
www.nicarch.ca

project & location

RENOVATION & ADDITION TO:
DYMON SELF-STORAGE
323 COVENTRY ROAD, OTTAWA

title of drawing

SITE PLAN
& WIDENING ROAD

scale	drawing
AS NOTED	A1-0
date: 2012/08/02	
drawn by: KL CT	

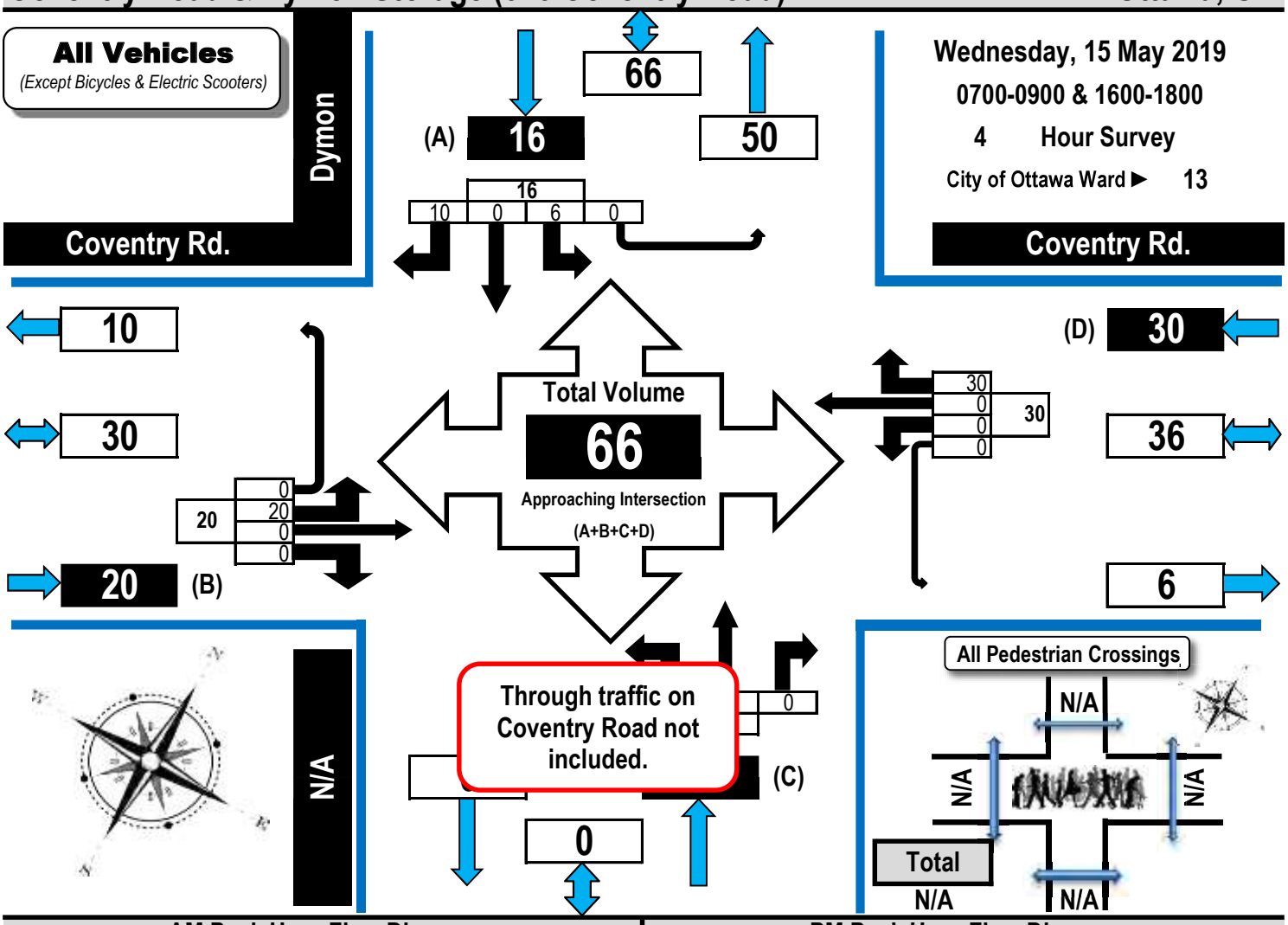
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

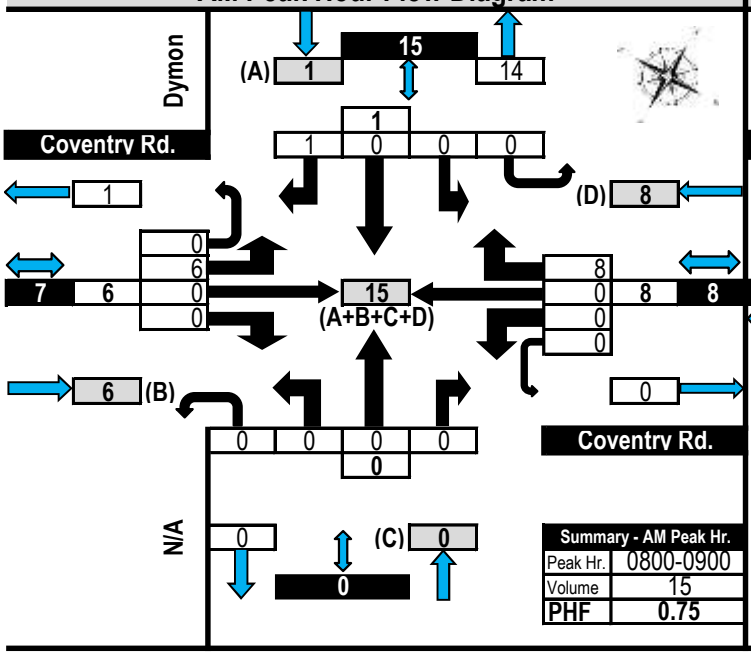
Coventry Road & Dymon Storage (343 Coventry Road) — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Wednesday, 15 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 13

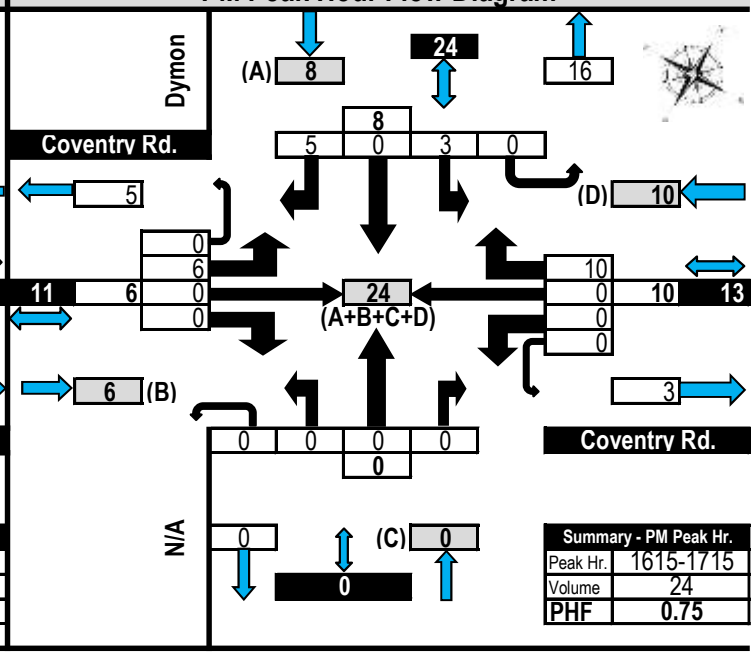


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	15
PHF	0.75

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1615-1715
Volume	24
PHF	0.75

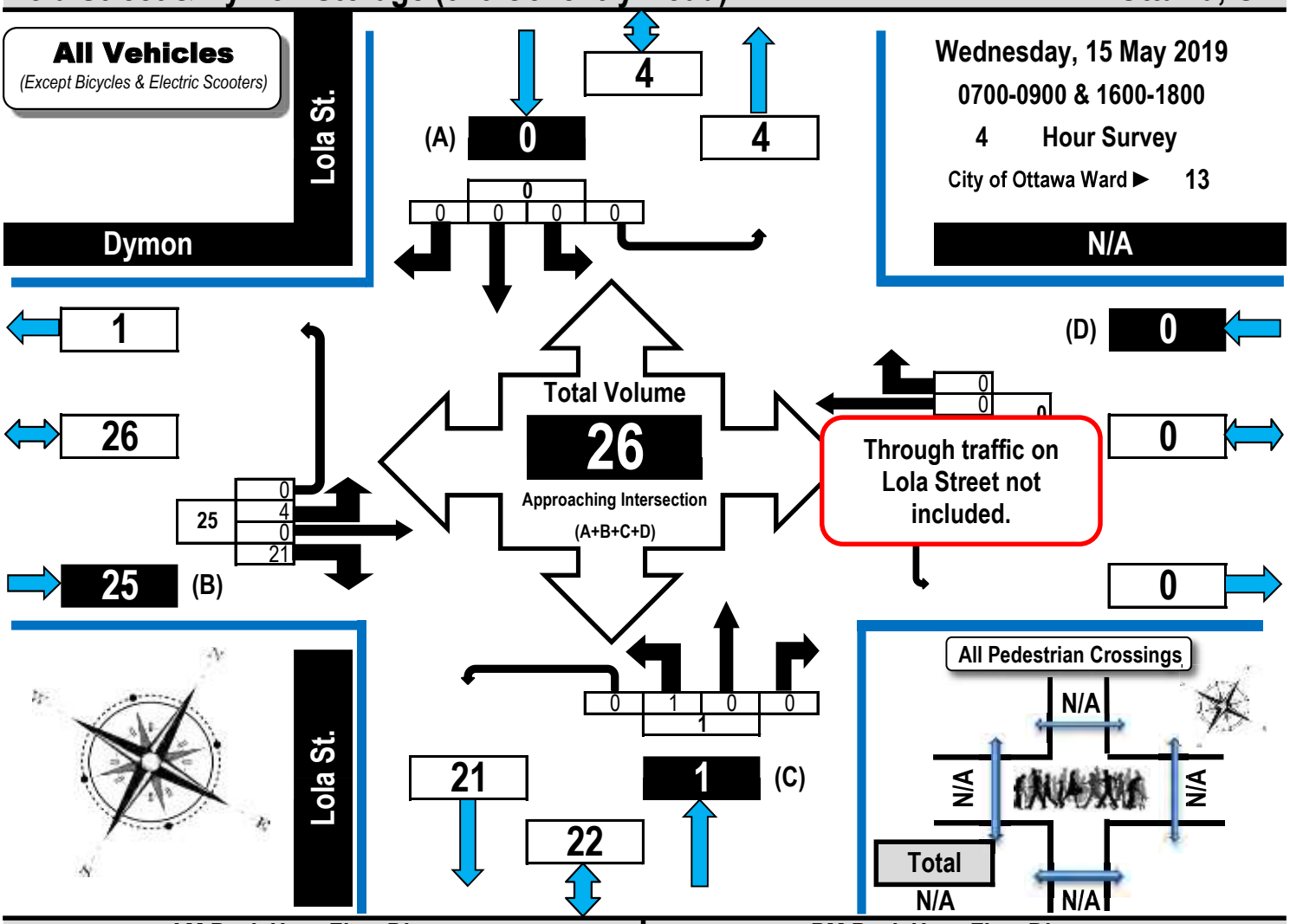
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

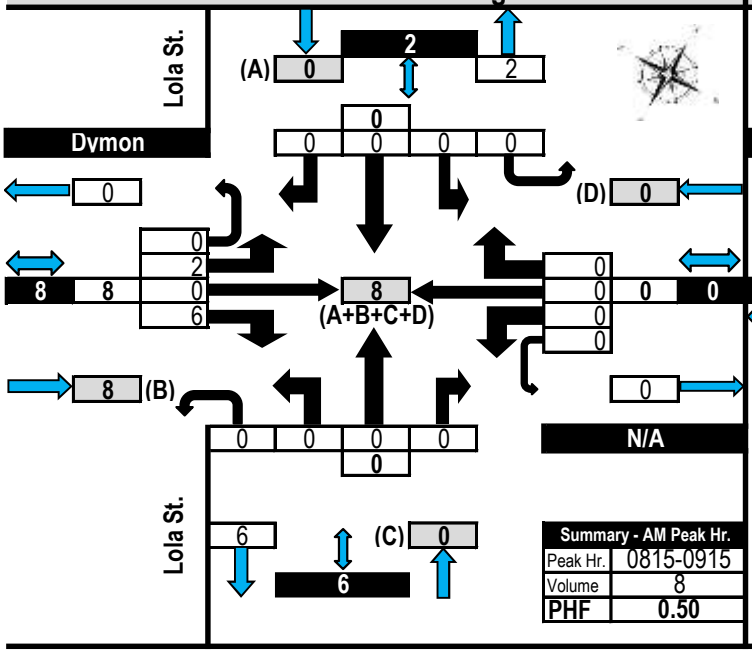
Lola Street & Dymon Storage (343 Coventry Road) — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Wednesday, 15 May 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 13

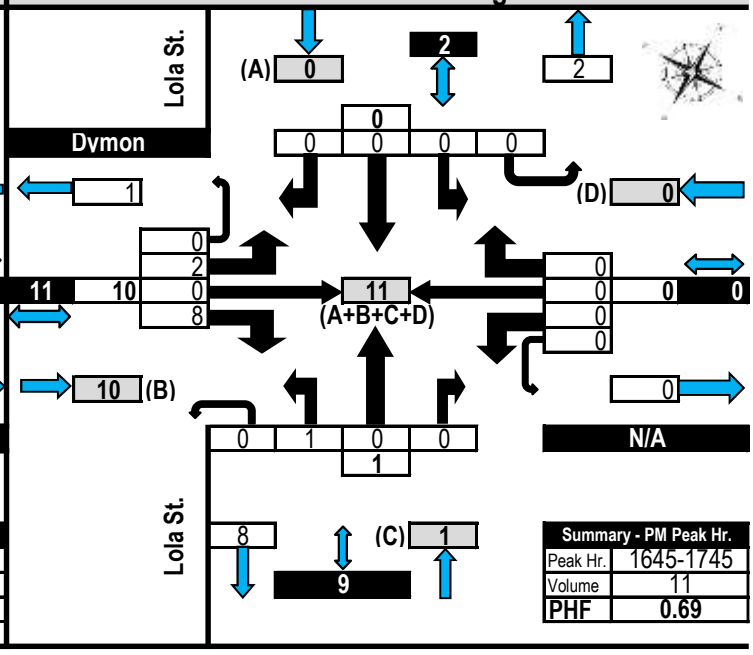


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0815-0915
Volume	8
PHF	0.50

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1645-1745
Volume	11
PHF	0.69

ACCURATE TRUSTED TRAFFIC DATA

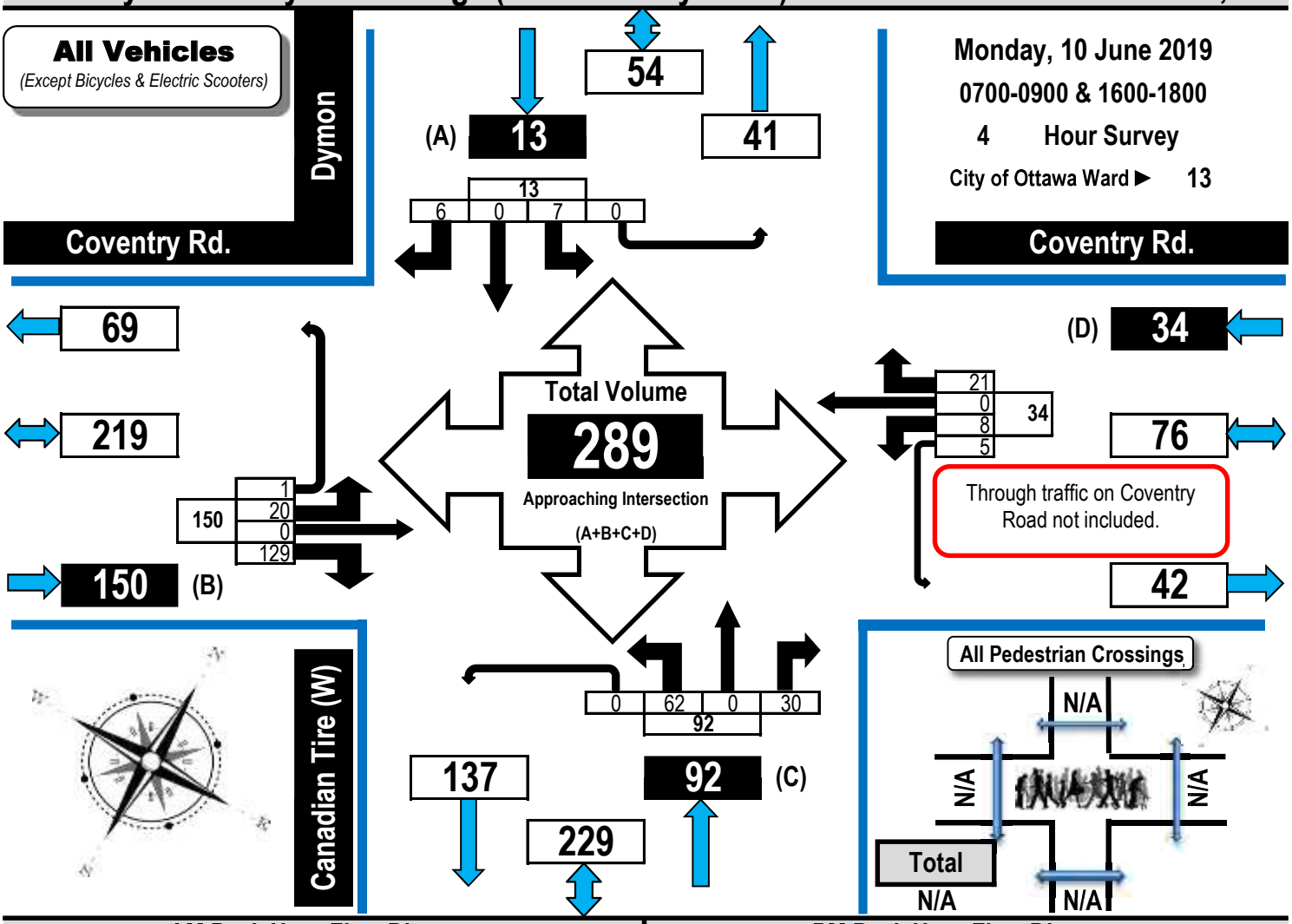
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

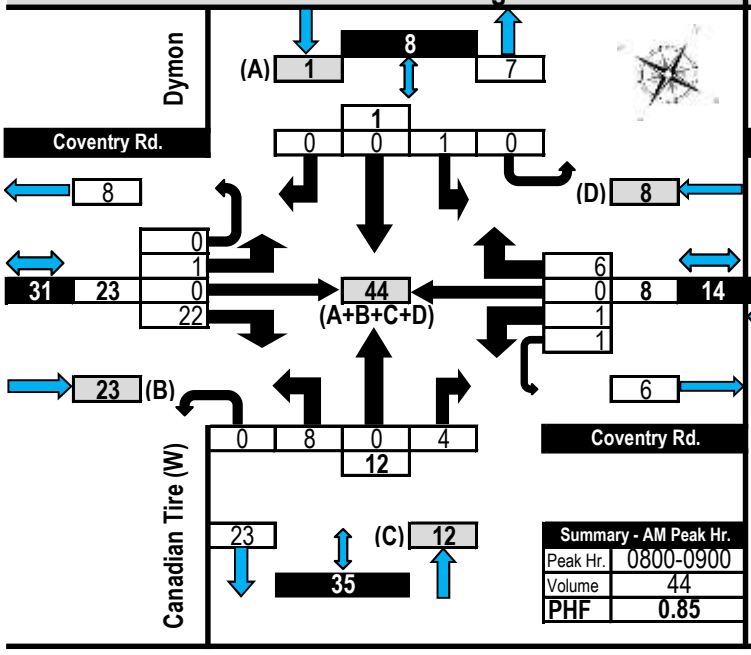
Coventry Road & Dymon Storage (343 Coventry Road) — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Monday, 10 June 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 13

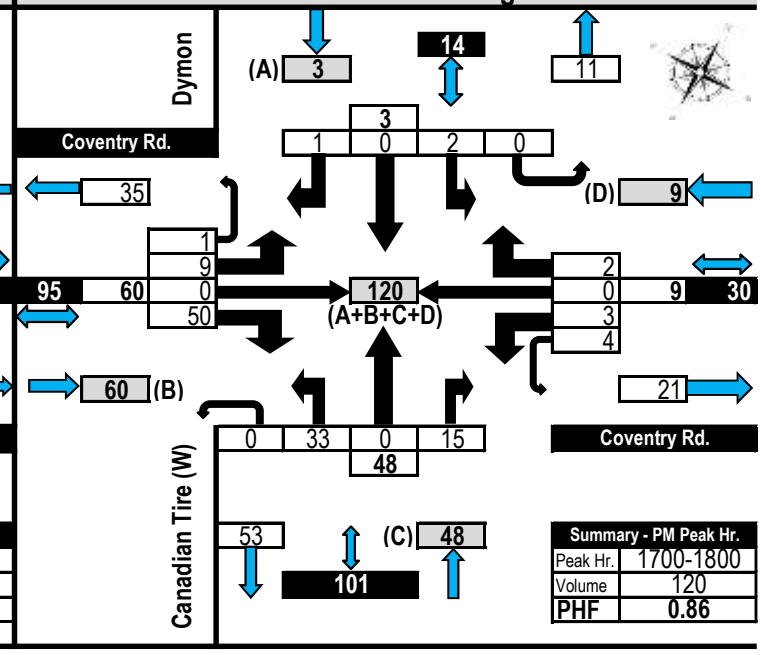


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	44
PHF	0.85

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1700-1800
Volume	120
PHF	0.86

ACCURATE TRUSTED TRAFFIC DATA

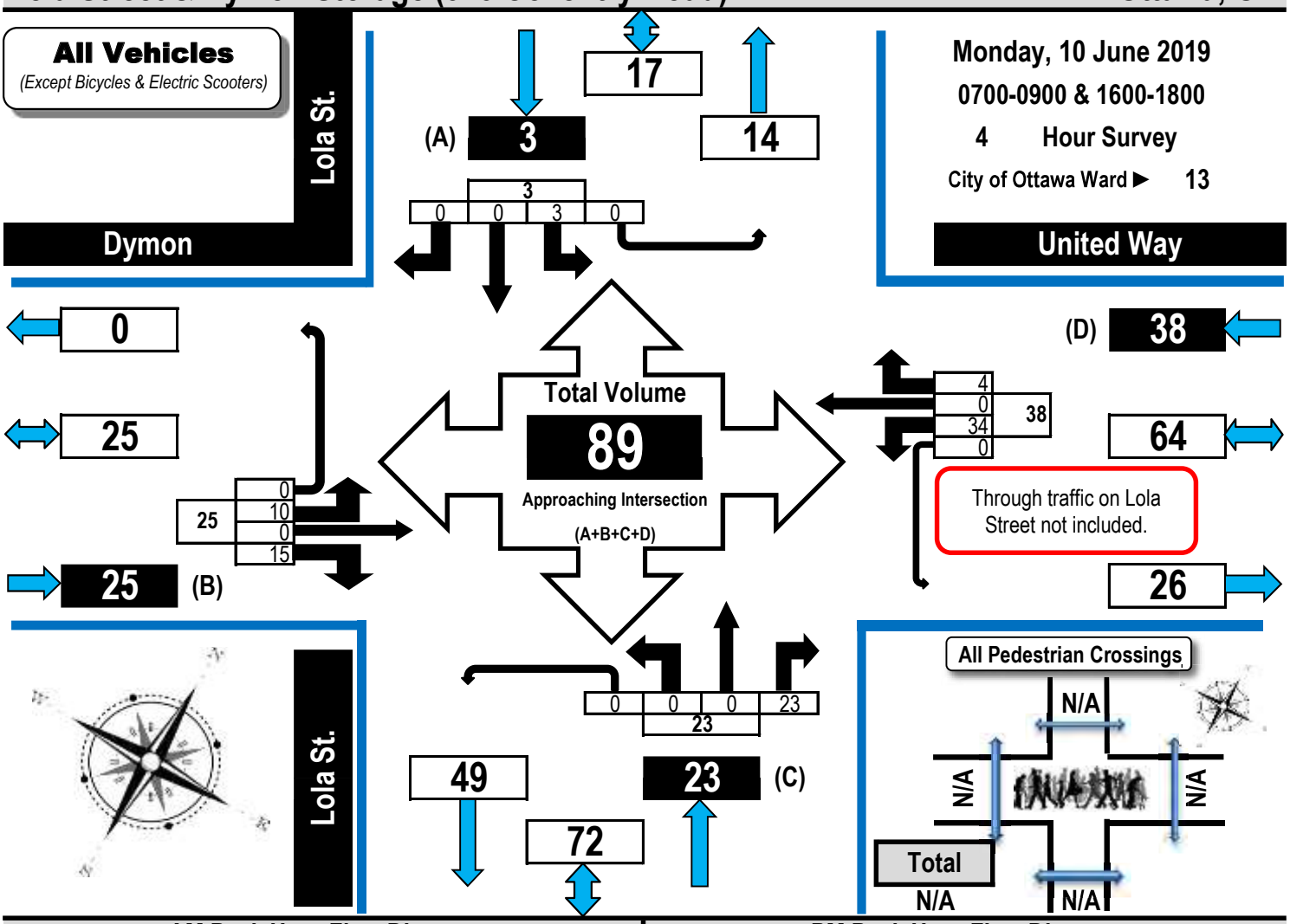
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

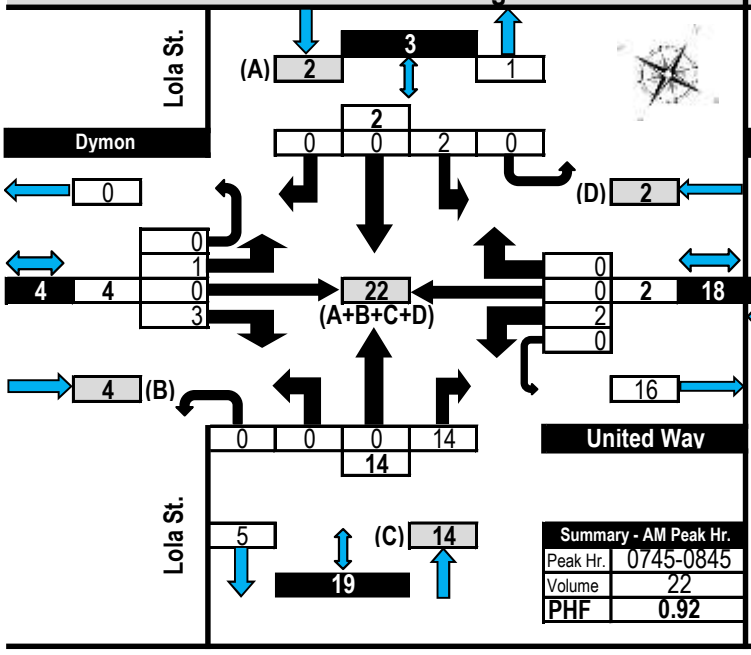
Lola Street & Dymon Storage (343 Coventry Road) — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Monday, 10 June 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 13

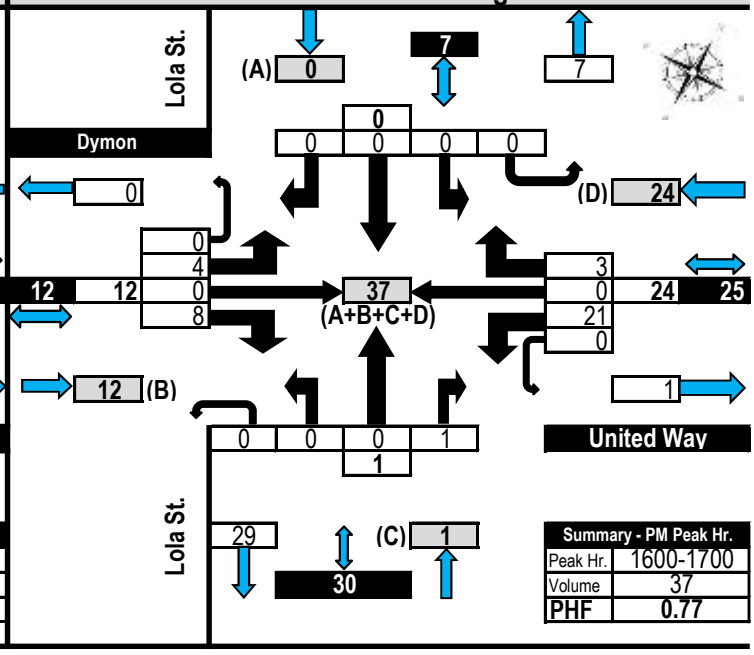


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0745-0845
Volume	22
PHF	0.92

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	37
PHF	0.77

ACCURATE TRUSTED TRAFFIC DATA

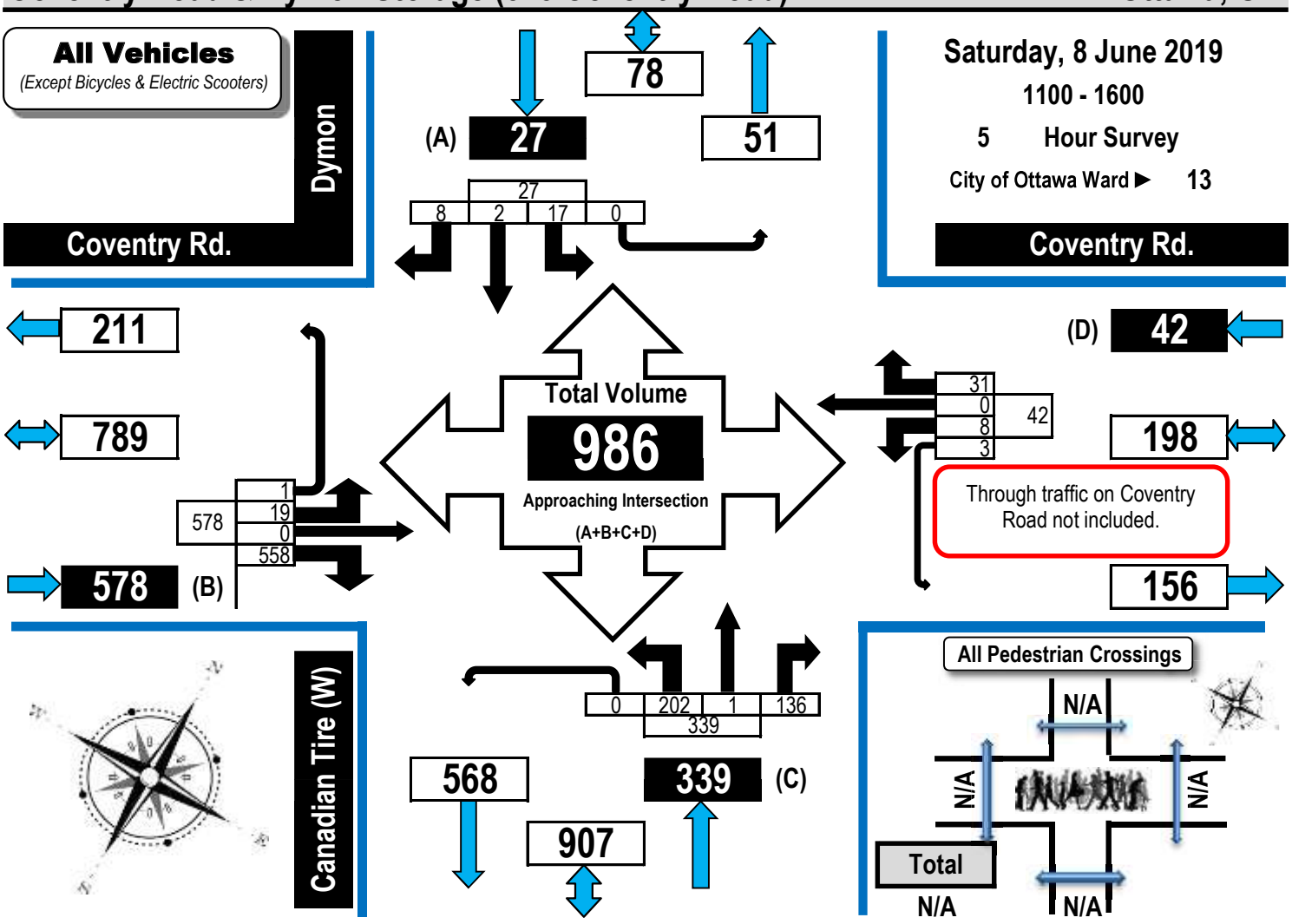
Turning Movement Count
Summary, OFF and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

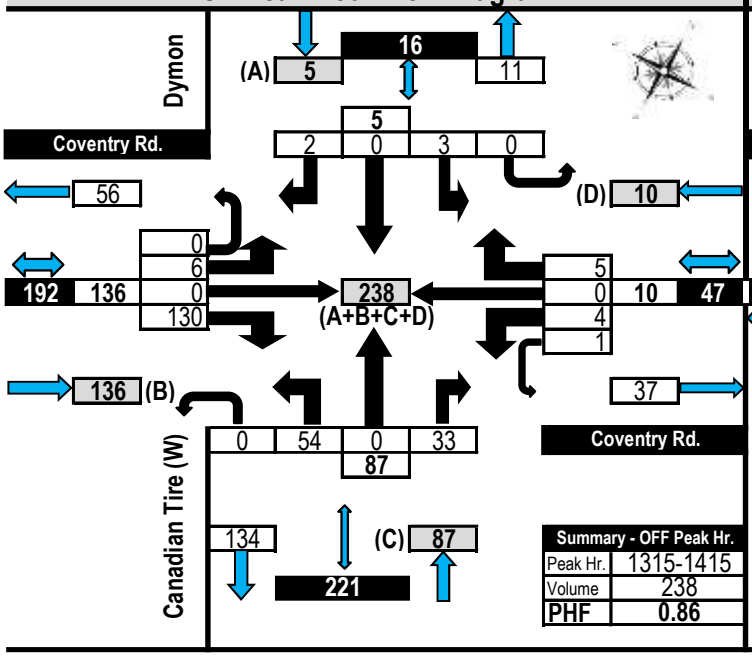
Coventry Road & Dymon Storage (343 Coventry Road) — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Saturday, 8 June 2019
1100 - 1600
5 Hour Survey
City of Ottawa Ward ▶ 13

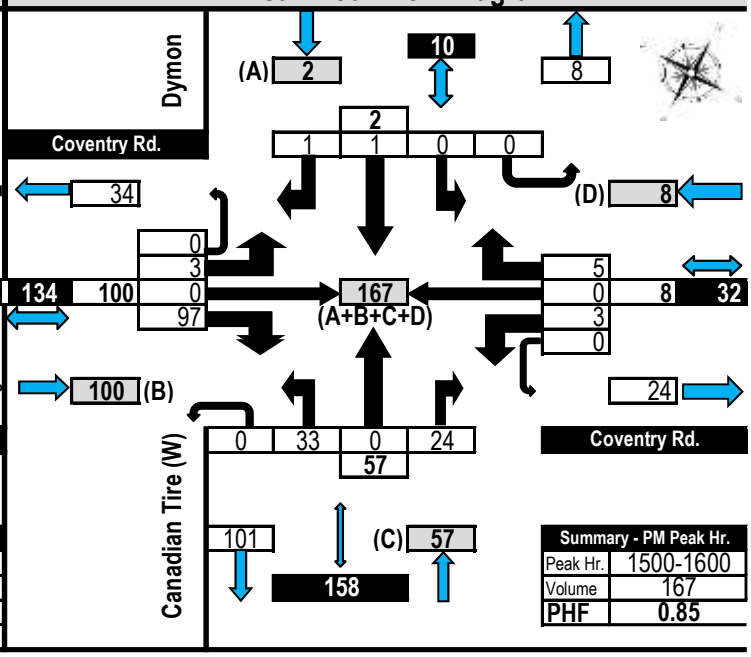


Off Peak Hour Flow Diagram



Summary - OFF Peak Hr.	
Peak Hr.	1315-1415
Volume	238
PHF	0.86

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1500-1600
Volume	167
PHF	0.85

ACCURATE TRUSTED TRAFFIC DATA

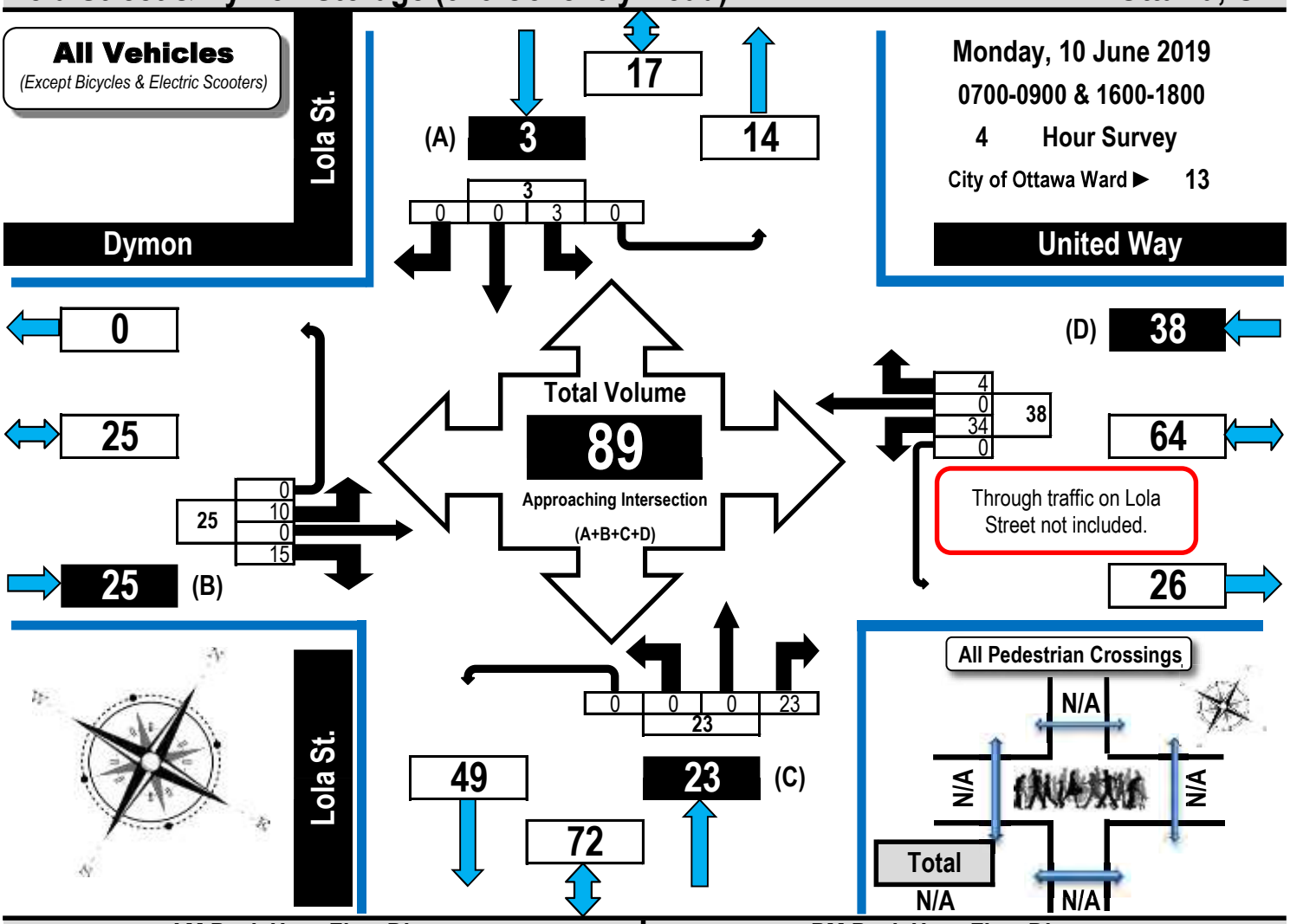
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

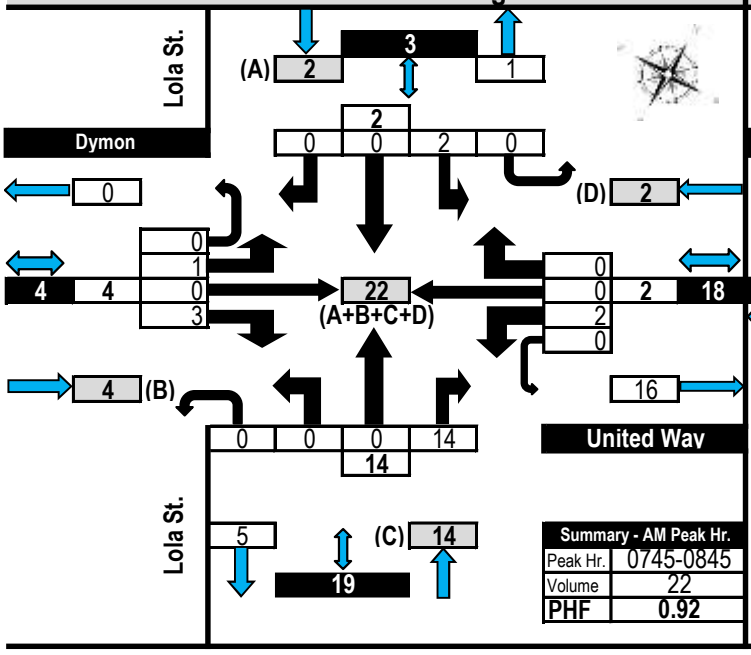
Lola Street & Dymon Storage (343 Coventry Road) — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Monday, 10 June 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 13

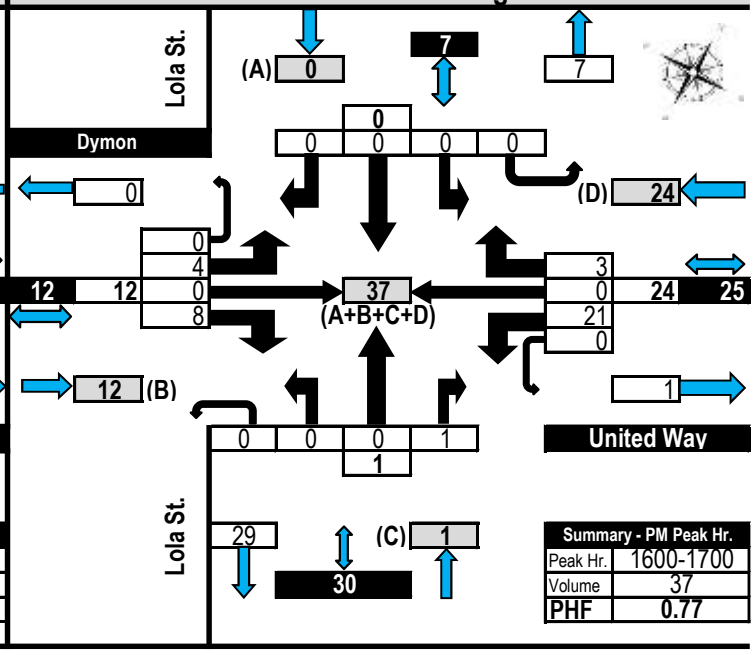


AM Peak Hour Flow Diagram

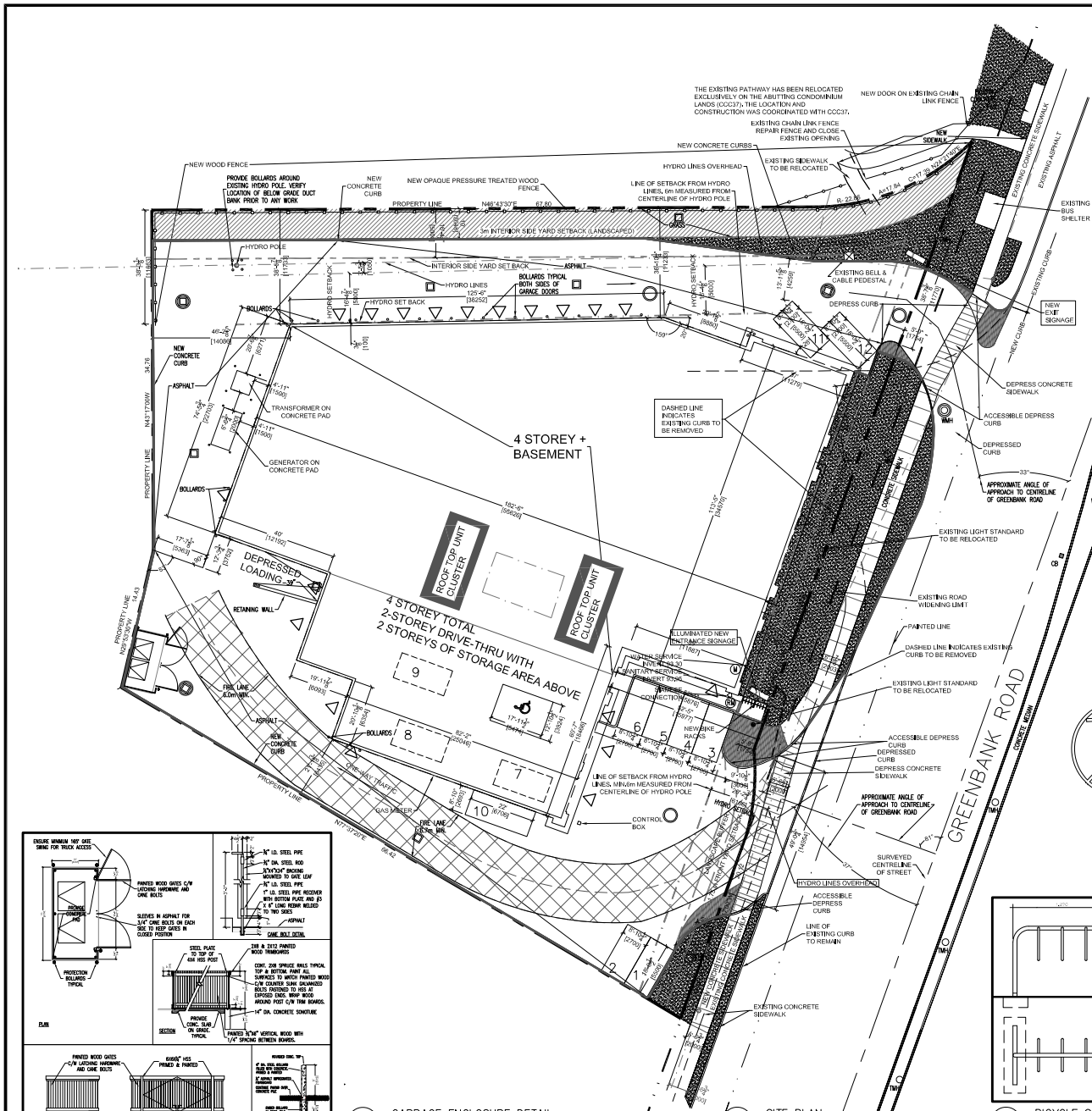


Summary - AM Peak Hr.	
Peak Hr.	0745-0845
Volume	22
PHF	0.92

PM Peak Hour Flow Diagram

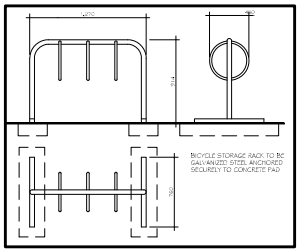


Summary - PM Peak Hr.	
Peak Hr.	1600-1700
Volume	37
PHF	0.77



1 SITE PLAN
A0-1 SCALE: 1:200

5 GARBAGE ENCLOSURE DETAIL
A0-1 SCALE: NTS



3 BICYCLE STORAGE RACK DETAIL
A0-1 SCALE: NTS

LEGAL DESCRIPTION OF PROPERTY:

PART OF BLOCKS "C" & "H3"
REGISTERED PLAN 627624
AND PART OF THE ROAD ALLOWANCE BETWEEN LOTS 30 & 31 (AS CLOSED)
CONCESSION 3 (RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF NEPEAN
NOW CITY OF OTTAWA

SITE STATISTICS

LOT AREA 4,738.5m²
LOT WIDTH 94.1m (308'-10")
PARKING REQUIRED :9 SPACES
4 PARKING SPACES + 5 IN DRIVE-THRU PROVIDED

ZONING INFORMATION

ZONE GM15[1672]H(17.5)

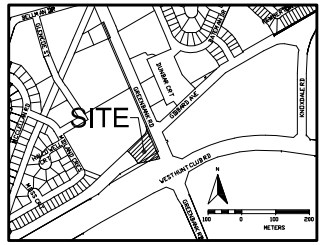
	REQUIRED	PROVIDED
MIN. FRONT YARD	1.75 m	3.78
CORNER YARD SETBACK	3.0 m	3.0m
MIN. INTERIOR SIDE YARD SETBACK:		
ABUTTING A RESIDENTIAL ZONE	5.0 m	11.0m
OTHER CASES	NO MIN.	—
MIN. REAR YARD SETBACK:		
ABUTTING A RESIDENTIAL ZONE	7.5 m	N/A.
OTHER CASES	NO MIN.	6.15m
MAX. BUILDING HEIGHT	17.5 m	17.3m (56'-7½") T.O. HIGH PARAPET 15.0m (49'-2") T.O. STEEL
MAX. FLOOR SPACE INDEX:	2.15	2.146
MIN. WIDTH OF LANDSCAPED AREA:		
ABUTTING A STREET	3.0 m	3.0m
ABUTTING A RESIDENTIAL ZONE	3.0 m	3.0m (10'-0")
OTHER CASES	NO MIN.	

BOUNDARY INFORMATION FROM SURVEY BY: FAIRHALL, MOFFATT & WOODLAND LIMITED, ONTARIO LAND SURVEYORS. 26 NOVEMBER 2009.

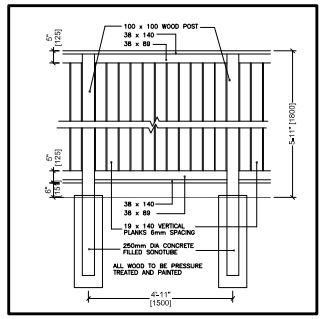
BUILDING AREA (FOOTPRINT)
2,211.7 m² (23,806.97 SQF)

GROSS FLOOR AREA AS PER CITY OF OTTAWA DEFINITION)

BASEMENT	1 633.2 m²	(17,580 sqf)
GROUND	1 257 m²	(13,531 sqf)+ OFFICE 415m² (4,466.7 sqf) TOTAL 1 672 m²(17,997.7 SQF)
SECOND	1 731.6 m²	(18,638.7 sqf)
THIRD	2 079 m²	(22,379 sqf)
FOURTH	2 079 m²	(22,379 sqf)
TOTAL GFA	9 194.8 m²	(98,972.8 sqf)



2 SITE KEY PLAN
A0-1 SCALE: NTS



4 WOOD FENCE DETAIL
A0-1 SCALE: NTS

1. Contractor must verify all job dimensions, all drawings, details, specifications and report any discrepancies to owners before proceeding with work.
2. All drawings and specifications are instruments of service and the property of the architects which must be returned at the completion of the work, and may not be reproduced without their written permission.

ref	description	date
25	FOR TENDER	2015 07 03
24	BUILDING PERMIT	2015 05 12
23	ELEVATIONS	2015 03 25
22	FOR COORDINATION	2015 03 20
21	NEW LAYOUT	2015 03 06
20	CHANGED AREAS	2014 04 17
19	CHANGED AREAS	2014 01 15
18	RESSUED FOR BUILDING PERMIT	2013 05 02
17	FINAL SITE PLAN CONTROL	2013 03 14
16	FOR FINAL COORDINATION	2013 02 20
15	BUILDING PERMIT	2013 01 16
14	RESSUE FOR SITE PLAN CONTROL	2013 01 07
13	PLANS FOR JANUS LAYOUT	2012 11 28
12	PLANS FOR COORDINATION	2012 11 27
11	COORDINATION FTP	2012 10 02
10	SENT TO CLIENT	2012 09 12
9	UPDATE ELEV. TOP PARAPET	2012 08 24
8	UPDATE ELEV. + FLOOR PLANS	2012 07 26
7	UPDATE ELEVATIONS	2012 07 25
6	UPDATE GROUND FLOOR	2012 07 16
5	SEND TO LAYOUT	2012 07 09
4	EXTENDED LOADING DOCK	2012 07 06
3	SENT FOR APPROVAL	2012 06 27
2	SENT TO CLIENT	2012 06 11
1	SITE PLAN CONTROL	2012 02 13

revisions

2015 08 06
- SHOWING EXTERIOR DOORS ON NORTH ELEVATION

ISSUED FOR REVIEW

STRUCTURAL ENGINEER
Cleland Jardine Engineering Ltd.
Ryan Munden
200-580 Terry Fox Drive, Kanata ON K2L 4B9
tel: (613) 591-1533 fax: (613) 591-1703
e-mail: mail@clelandjardine.com

MECHANICAL/ELECTRICAL
Goodkey Weedmark Consulting Engineers
Tim Belokourov, Andre Bogdanowicz
1688 Woodward Dr, Ottawa ON K2C 0P9
tel: (613) 727-5111 fax: (613) 727-5115
web: www.gwal.com e-mail: info@gwal.com

CIVIL ENGINEER
David Schaeffer Engineering Ltd.
Matt Mingate
120 Iber Road, Suite 203, Ottawa ON K2S 1E9
tel: (613) 836-0856 fax: (613) 836-7183
e-mail: ottawa@DSEL.ca

PLANNING & URBAN DESIGN
FoTenn
Miguel Tremblay
223 McLeod Street, Ottawa ON K2P 0Z8
tel: (613) 730-5709 fax: (613) 730-1136
web: www.FoTenn.com e-mail: tremblay@FoTenn.com

owner:
Dymon Capital Corporation
2-1830 Walkley Road
Ottawa ON K1H 8K3
tel: 613-247-0888 fax: 613-247-7730

architect
nicholas caregianis architect inc.
137 Pemle Street, Ottawa, ON K1S 2E9
p: 613 567 5680
f: 613 567 8689
e: info@ncarchitect.ca
www.ncarchitect.ca

project & location
DYMON SELF-STORAGE
300 GREENBANK ROAD
OTTAWA, ONT.

title of drawing
SITE PLAN

scale	drawing
AS NOTED	A0-1
date: 2015/07/29	
drawn by: KS CT	

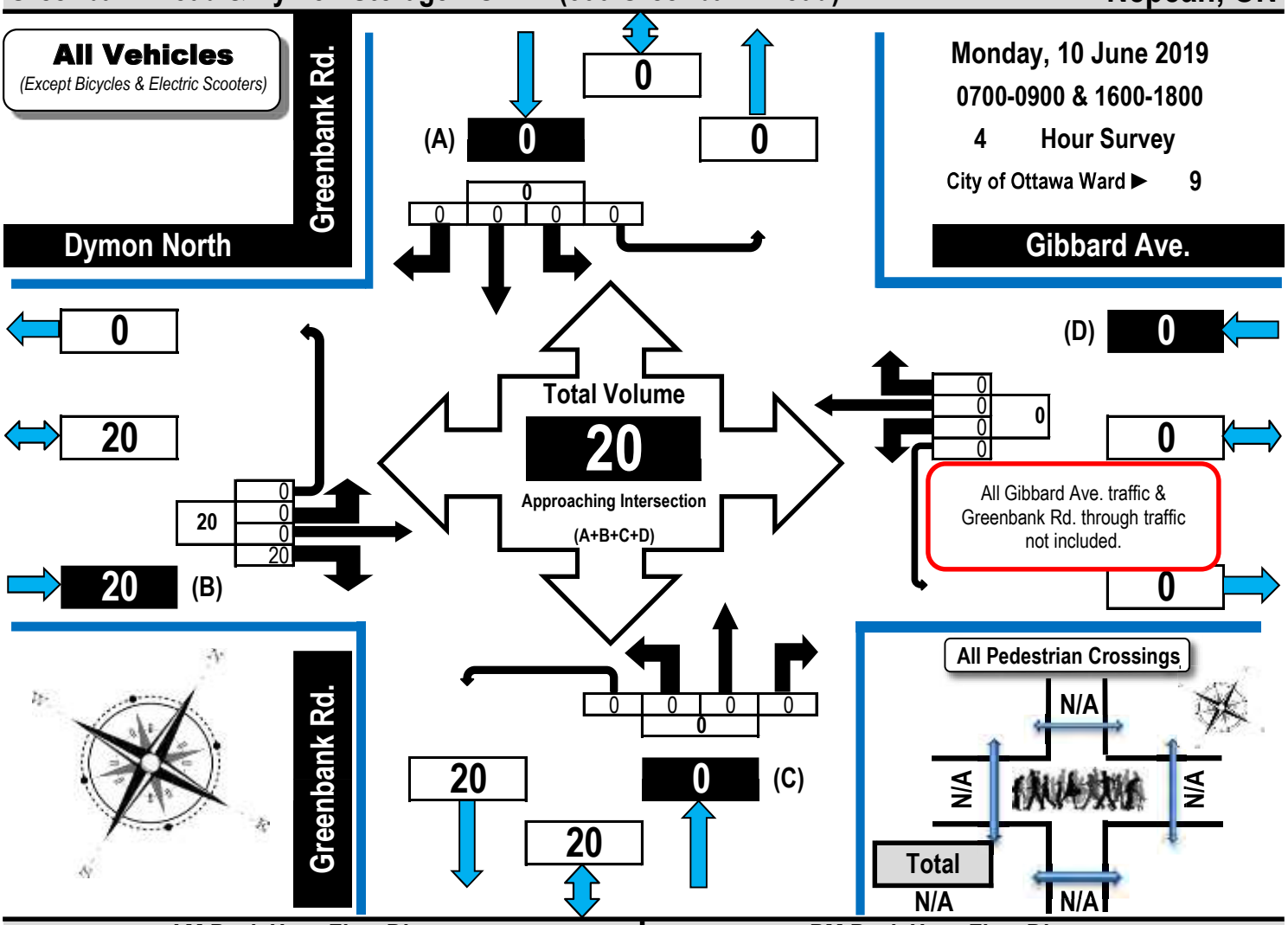
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

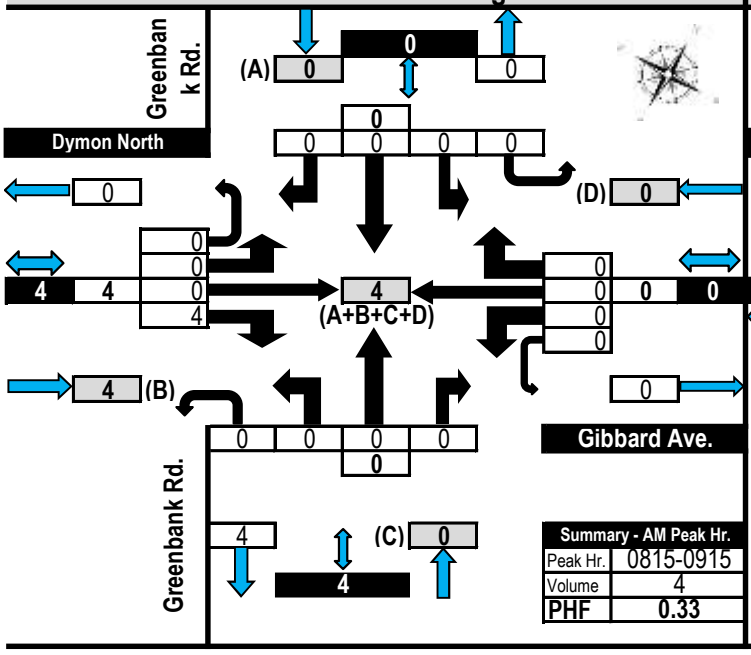
Greenbank Road & Dymon Storage NORTH (300 Greenbank Road) — **Nepean, ON**

All Vehicles
(Except Bicycles & Electric Scooters)

Monday, 10 June 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 9

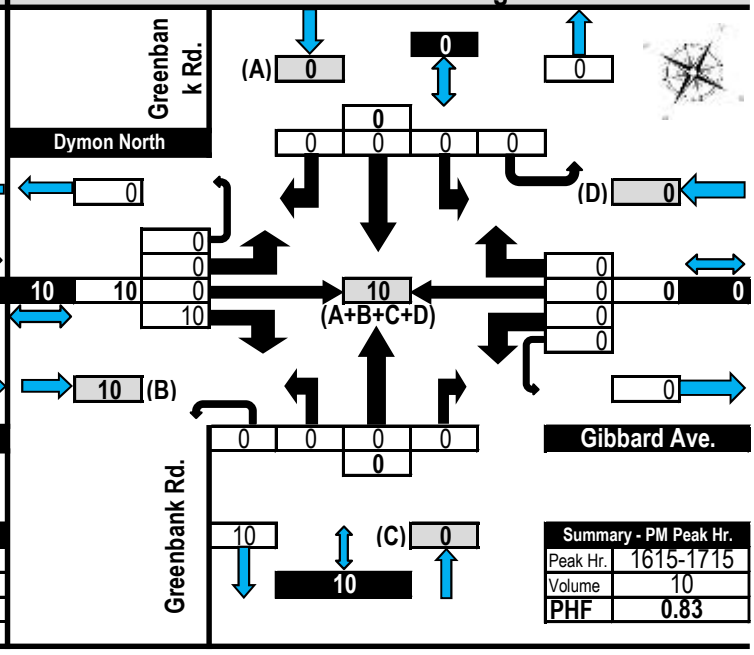


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0815-0915
Volume	4
PHF	0.33

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1615-1715
Volume	10
PHF	0.83

ACCURATE TRUSTED TRAFFIC DATA

Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

Greenbank Road & Dymon Storage SOUTH (300 Greenbank Road) — Nepean, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Monday, 10 June 2019
0700-0900 & 1600-1800
4 Hour Survey
City of Ottawa Ward ▶ 9

Greenbank Rd.

Dymon South

N/A

(A) 24 | 24 | 0

(B) 0 | 24 | 24

(C) 0 | 0 | 0

(D) 0 | 0 | 0

Total Volume
24
Approaching Intersection
(A+B+C+D)

Greenbank Rd. through traffic not included.

All Pedestrian Crossings

	N/A	
N/A		N/A
Total N/A		N/A

AM Peak Hour Flow Diagram

(A) 7 | 7 | 0
(B) 0 | 7 | 7
(C) 0 | 0 | 0
(D) 0 | 0 | 0
(A+B+C+D) 7

N/A

Summary - AM Peak Hr.	
Peak Hr.	0715-0815
Volume	7
PHF	0.58

PM Peak Hour Flow Diagram

(A) 10 | 10 | 0
(B) 0 | 10 | 10
(C) 0 | 0 | 0
(D) 0 | 0 | 0
(A+B+C+D) 10

N/A

Summary - PM Peak Hr.	
Peak Hr.	1645-1745
Volume	10
PHF	0.50

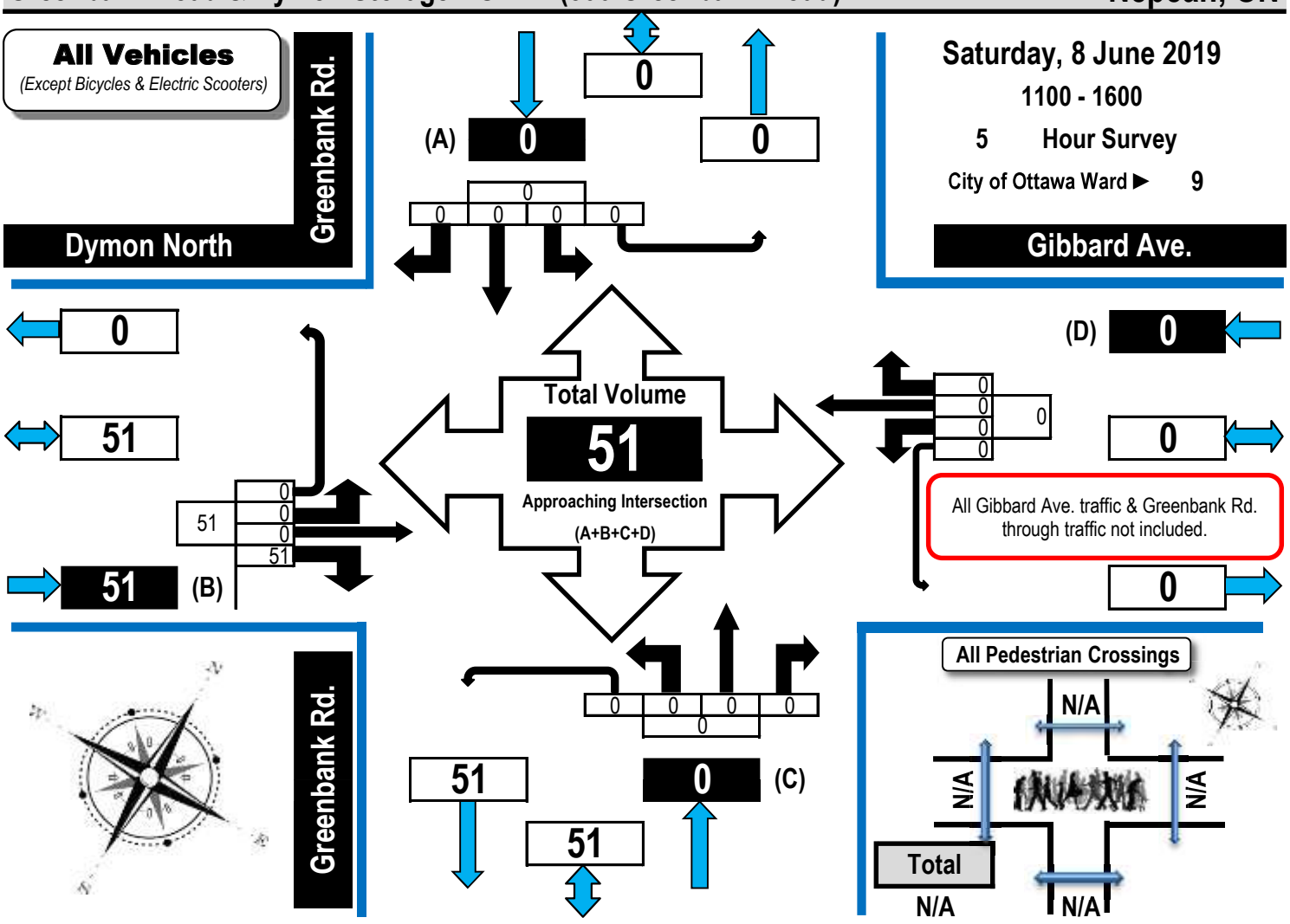
Turning Movement Count
Summary, OFF and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

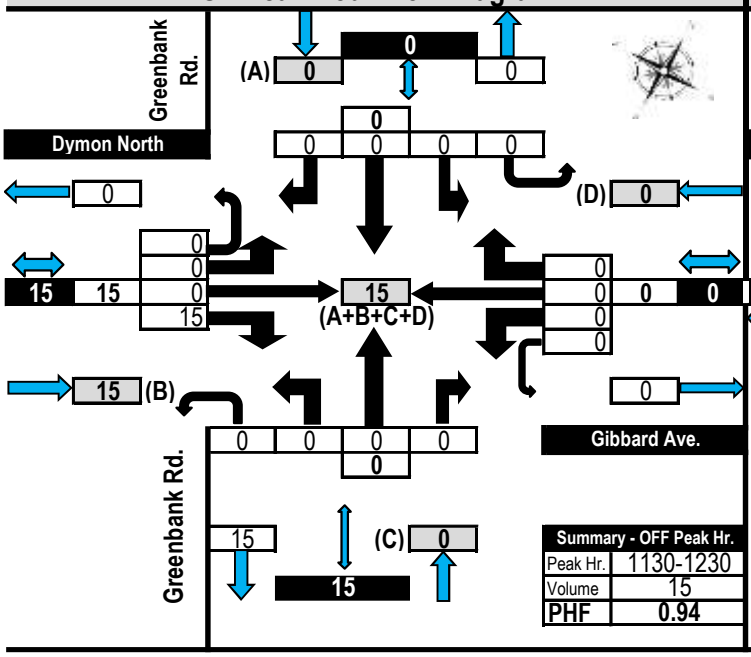
Greenbank Road & Dymon Storage NORTH (300 Greenbank Road) — Nepean, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Saturday, 8 June 2019
1100 - 1600
5 Hour Survey
City of Ottawa Ward ▶ 9

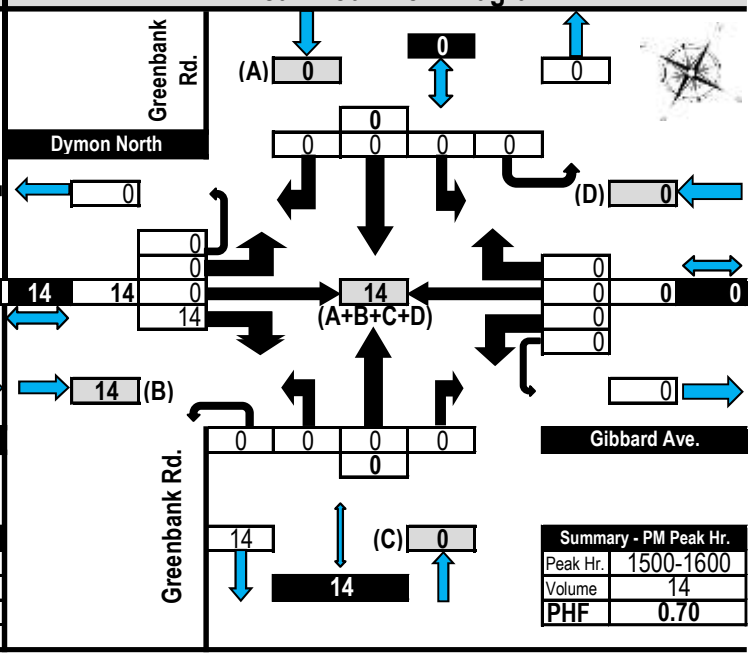


Off Peak Hour Flow Diagram



Summary - OFF Peak Hr.	
Peak Hr.	1130-1230
Volume	15
PHF	0.94

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1500-1600
Volume	14
PHF	0.70

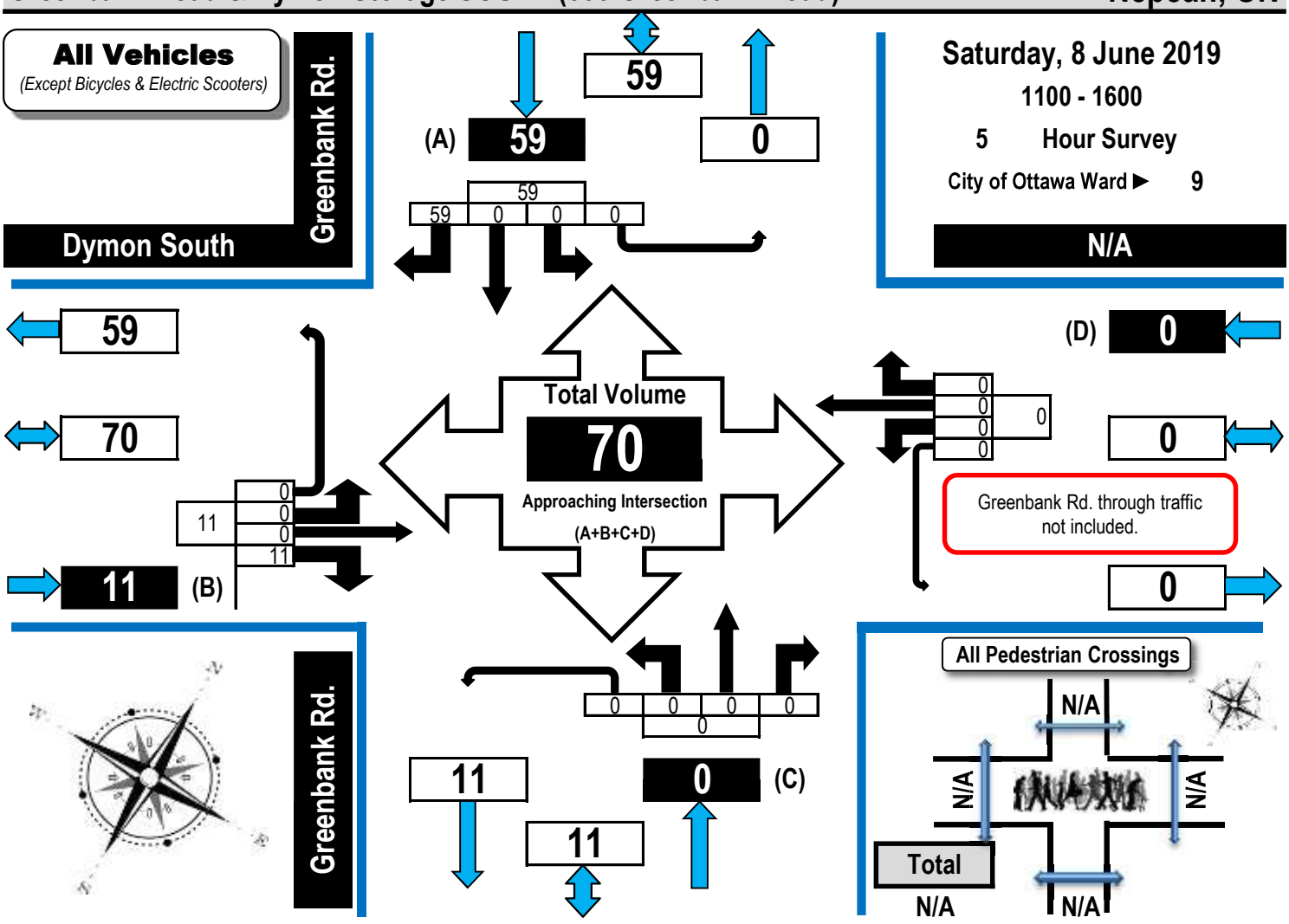
Turning Movement Count
Summary, OFF and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

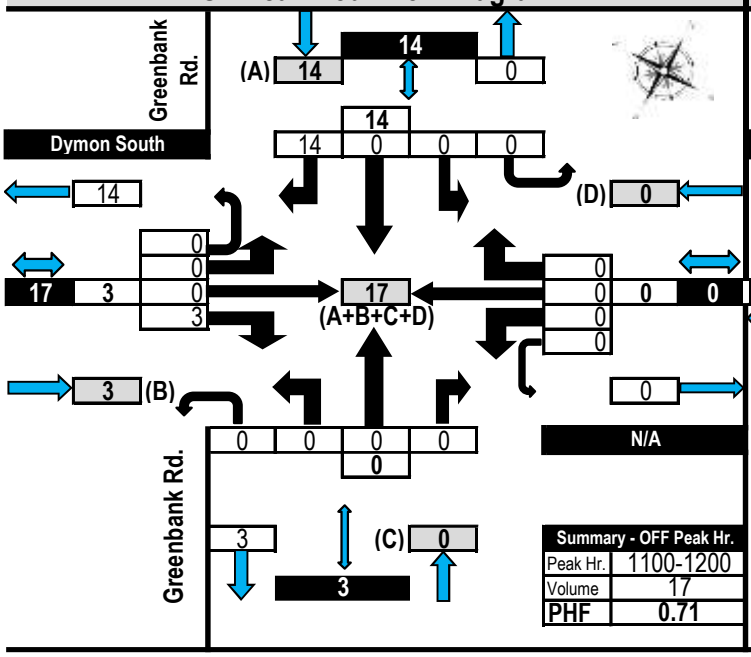
Greenbank Road & Dymon Storage SOUTH (300 Greenbank Road) — Nepean, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Saturday, 8 June 2019
1100 - 1600
5 Hour Survey
City of Ottawa Ward ▶ 9

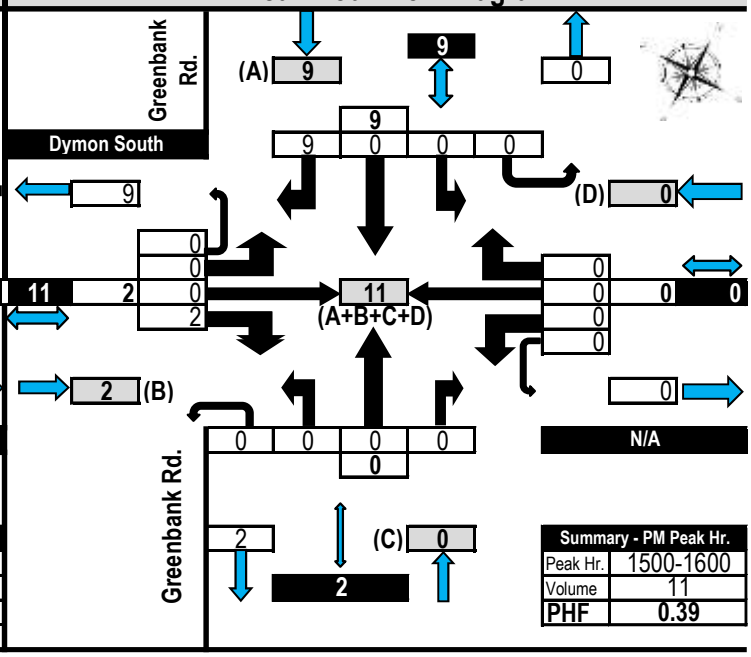


Off Peak Hour Flow Diagram



Summary - OFF Peak Hr.	
Peak Hr.	1100-1200
Volume	17
PHF	0.71

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1500-1600
Volume	11
PHF	0.39



NOTE:

GENERAL CONTRACTOR IS RESPONSIBLE TO USE OWNER'S LAND SURVEYOR & GEOTECH ENGINEER TO LOCATE BUILDING AND TO CONFIRM SOILS AND COMPACTION.

LEGAL DESCRIPTION OF PROPERTY:

BLOCK 4
PLAN 43M-879
CITY OF BRAMPTON

BOUNDARY INFORMATION FROM SURVEY BY: LLOYD & PURCELL LTD., ONTARIO LAND SURVEYORS, 2015.

STATISTIC	ZONING	PROPOSED
LOT AREA	2,000 m² / 21527sf	7,972 m² / 85,809 sf
LOT COVERAGE	NO MAX.	45 %
MAX. % ACCESSORY RETAIL	15% OF TOTAL GFA	4.6%
MIN. LOADING SPACE REQUIREMENT	5 spaces	16 spaces
COMMERCIAL SELF STORAGE WAREHOUSE	109	-
RETAIL ESTABLISHMENT	41	-
TOTAL	150	41

FRONT YARD LANDSCAPE AREA		21.5%
FRONT YARD LANDSCAPE BUFFER		0 m
EXTERIOR SIDE YARD LANDSCAPE AREA	238.14m²	44.86%

Ground Floor Dymon Warehouse Retail	564 m² (6,070 sf²)
Ground Floor Dymon	696 m² (7,502 sf²)
Second Floor Dymon	3,508 m² (37,759 sf²)
Third Floor Dymon	3,544 m² (38,147 sf²)
Fourth Floor Dymon	3,544 m² (38,147 sf²)
PROPOSED Self-Storage Ground Floor	1,156 m² (12,443 sf²)
TOTAL SELF STORAGE	12,448 m² (133,998 sf²)
TOTAL GFA WITH 4 STOREYS	13,012 m² (140,068 sf²)

LEGEND

- PROPERTY LINE
- LANDS TO BE DEDICATED TO REGION OF PEEL
- BUILDING ENTRY/EXIT
- NEW CONCRETE PAVING
- NEW PRECAST CONCRETE PERMEABLE PAVING
- LANDSCAPED AREA – SEE LANDSCAPE.
- NEW CURB
- NEW MOUNTABLE CURB
- HYD EXISTING FIRE HYDRANT
- CB EXISTING CATCH BASIN
- MH EXISTING MANHOLE
- LS EXISTING LIGHT STANDARD
- SIAMESE CONNECTION
- NEW CATCH BASIN
- NEW MANHOLE (STORM)
- NEW MANHOLE (SANITARY)
- ORNAMENTAL FENCE
- NLS (NEW LIGHT STANDARD) SEE ELECTRICAL

1. Contractor must verify all job dimensions, all drawings, details, specifications and report any discrepancies to owners before proceeding with work.
2. All drawings and specifications are instruments of service and the property of the architects which must be returned at the completion of the work, and may not be reproduced without their written permission.

ref	description	date
19	ISSUED FOR DISCUSSION	2020/06/24
18	ISSUED FOR PERMIT	2018/09/21
17	REVISED TO PERMIT	2017/11/08
16	REVISED FOR REGION OF PEEL	2017/09/08
15	FOR FINAL SITE PLAN APPLICATION	2017/08/31
14	ISSUED FOR TENDER	2017/08/17
13	REVISED FOR REGION OF PEEL	2017/08/16
12	REVISED FOR APPROVAL	2017/07/19
11	REVISED FOR APPROVAL	2017/07/14
10	REVISED FOR APPROVAL	2017/07/10
9	ISSUED FOR APPROVAL	2017/06/28
8	FOR PERMIT APPLICATION	2017/05/10
7	FOR FINAL SITE PLAN APPLICATION	2017/04/12
6	~~FOR PERMIT APPLICATION~~	~~2017/03/03~~
5	REVISED FOR SUBMISSION	2017/02/1
4	FOR CLIENT REVIEW	2017/01/23
3	REVISED FOR SUBMISSION	2017/01/06
2	FOR MINOR VARIENCE SUBMISSION	2016/11/08
1	FOR SITE PLAN APPLICATION REV01	2016/08/16

revisions

DESIGN ARCHITECT
TACT Architecture Inc.
660R College St (Rear Lane) Toronto ON M6G 1B8
tel: (416 516 1949)
email: info@tactdesign.ca

STRUCTURAL ENGINEER
Cleland Jardine Engineering Ltd.
200-580 Terry Fox Drive, Kanata ON K2L 4B9
tel: (613) 591-1533 fax: (613) 591-1703
e-mail: mail@clelandjardine.com

MECHANICAL/ELECTRICAL
Tristar Engineering Ltd.
118-30 West Beaver Creek Rd., Richmond Hill, ON L4B 3K1
tel: (905) 882 1662 fax: (905) 882 0736

CIVIL ENGINEER
Cole Engineering Ltd
70 Valleywood Drive, Markham ON L3R 4T5
tel: (416) 987-6161 or (905) 940-6161 fax: (905) 940-2064
www. coleengineering.ca

PLANNING & URBAN DESIGN
Fotenn
223 McLeod Street, Ottawa ON K2P 0Z8
tel: (613) 730-5709 fax: (613) 730-1136
www.fotenn.com

owner:
Dymon Capital Corporation
2-1830 Walkley Road
Ottawa ON K1H 8K3
tel: 613-247-0888 fax: 613-247-7730

architect
nicholas caragianis architect inc.
137 Parrilla Street,
Ottawa, ON K1S 3K9
t: 613 937 6801
f: 613 937 8289
e: info@ncarchitect.ca
www.ncarchitect.ca

TRUE NORTH

PROJECT NORTH

project & location

DYMON SELF-STORAGE
5 NEVETS ROAD
BRAMPTON, ONT.

CITY FILE NUMBER: SP16-013.000

title of drawing

SITE PLAN

scale	drawing
1:250	A1-1
date: JAN 2016	
drawn by: KL SS DL	

ID-DYM-16O-BRAMT-AIRPORT&NEVETS

Peak Hour Diagram

Specified Period
From: 07:00:00
To: 09:00:00

One Hour Peak
From: 07:30:00
To: 08:30:00

Intersection: Nevets Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600019
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Nevets Rd runs E/W

North Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Commerical Entrance

Trucks	0	0	0	0
Cars	0	0	0	0
Totals	**0**	**0**	**0**	**0**

East Approach

	Out	In	Total
Cars	1	0	1
Trucks	0	0	0
	1	**0**	**1**

Nevets Rd

Trucks	Cars	Totals	
0	0	**0**	
0	0	**0**	
0	0	**0**	
0	2	**2**	

Peds: 0



Peds: 0

Peds: 1

Nevets Rd

Totals	Cars	Trucks
0	0	0
0	0	0
0	0	0
1	1	0

West Approach

	Out	In	Total
Cars	2	2	4
Trucks	0	0	0
	2	**2**	**4**

Totals	**2**	**0**	**0**	**0**
Cars	2	0	0	0
Trucks	0	0	0	0

5 Nevets Rd (Dymon Self-Storage)

South Approach

	Out	In	Total
Cars	2	3	5
Trucks	0	0	0
	2	**3**	**5**

Cars - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Nevets Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600019
Count Date: Feb 15, 2022
Period: 07:00 - 09:00

Peak Hour Data (07:30 - 08:30)

Start Time	North Approach Commerical Entrance						South Approach 5 Nevets Rd (Dymon Self-Storage)						East Approach Nevets Rd						West Approach Nevets Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:30	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
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:00	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	0	1	3
08:15	0	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**1**	**2**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**2**	**5**
Approach %	0	0	0	0		-	100	0	0	0		-	100	0	0	0		-	0	0	100	0		-	
Totals %	0	0	0	0		0	40	0	0	0		40	20	0	0	0		20	0	0	40	0		40	
PHF	**0**	**0**	**0**	**0**		**0**	**0.5**	**0**	**0**	**0**		**0.5**	**0.25**	**0**	**0**	**0**		**0.25**	**0**	**0**	**0.5**	**0**		**0.5**	**0.42**
Cars	0	0	0	0		0	2	0	0	0		2	1	0	0	0		1	0	0	2	0		2	5
% Cars	0	0	0	0		0	100	0	0	0		100	100	0	0	0		100	0	0	100	0		100	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					1	-					0	-					0	-	1
% Peds					0	-					100	-					0	-					0	-	

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:00:00
To:	18:00:00	To:	17:00:00

Intersection: Nevets Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600019
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection **** **Major Road:** Nevets Rd runs E/W

North Approach

	Out	In	Total
	0	0	0
	0	0	0
	0	**0**	**0**

Commerical Entrance

	0	0	0	0
	0	0	0	0
Totals	**0**	**0**	**0**	**0**

East Approach

	Out	In	Total
	1	4	5
	0	0	0
	1	**4**	**5**

Nevets Rd

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	5	**5**

Peds: 0



Peds: 0

Peds: 0

Nevets Rd

Totals		
0	0	0
0	0	0
0	0	0
1	1	0

West Approach

	Out	In	Total
	5	4	9
	0	0	0
	5	**4**	**9**

Totals	**4**	**0**	**4**	**0**
	4	0	4	0
	0	0	0	0

5 Nevets Rd (Dymon Self-Storage)

South Approach

	Out	In	Total
	8	6	14
	0	0	0
	8	**6**	**14**

- Cars

- Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Nevets Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600019
Count Date: Feb 15, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Commerical Entrance						South Approach 5 Nevets Rd (Dymon Self-Storage)						East Approach Nevets Rd						West Approach Nevets Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	1	0	0	3	0	0	3	6
16:15	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
16:30	0	0	0	0	0	0	1	0	2	0	0	3	0	0	0	0	0	0	0	0	2	0	0	2	5
16:45	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**0**	**4**	**0**	**0**	**8**	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**5**	**0**	**0**	**5**	**14**
Approach %	0	0	0	0		-	50	0	50	0		-	100	0	0	0		-	0	0	100	0		-	
Totals %	0	0	0	0		0	28.6	0	28.6	0		57.1	7.1	0	0	0		7.1	0	0	35.7	0		35.7	
PHF	**0**	**0**	**0**	**0**		**0**	**0.5**	**0**	**0.5**	**0**		**0.67**	**0.25**	**0**	**0**	**0**		**0.25**	**0**	**0**	**0.42**	**0**		**0.42**	**0.58**
Cars	0	0	0	0		0	4	0	4	0		8	1	0	0	0		1	0	0	5	0		5	14
% Cars	0	0	0	0		0	100	0	100	0		100	100	0	0	0		100	0	0	100	0		100	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Airport Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600020
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Airport Rd runs N/S

North Approach

	Out	In	Total
Cars	0	1	1
Trucks	0	0	0
	0	**1**	**1**

Airport Rd

Trucks	0	0	0
Cars	0	0	0
Totals	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	1	2	3
Trucks	0	0	0
	1	**2**	**3**

5 Nevets Rd (Dymon Self-Storage)

	Totals	Cars	Trucks
	0	0	0
	1	1	0
	0	0	0

South Approach

	Out	In	Total
Cars	2	0	2
Trucks	0	0	0
	2	**0**	**2**

Totals	**0**	**2**	**0**
Cars	0	2	0
Trucks	0	0	0

Airport Rd

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Airport Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600020
Count Date: Feb 15, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Airport Rd						South Approach Airport Rd						East Approach 5 Nevets Rd (Dymon Self-Storage)						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
08:15	0	0		0	0	0		0	1	0	0	1	0		0	0	0	0					0		1
08:30	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
08:45	0	0		0	0	0		0	1	0	0	1	0		1	0	0	1					0		2
Grand Total	**0**	**0**		**0**	**0**	**0**		**0**	**2**	**0**	**0**	**2**	**0**		**1**	**0**	**0**	**1**					**0**	**0**	**3**
Approach %	0	0		0		-		0	100	0		-	0		100	0		-						-	
Totals %	0	0		0		0		0	66.7	0		66.7	0		33.3	0		33.3						0	
PHF	**0**	**0**		**0**		**0**		**0**	**0.5**	**0**		**0.5**	**0**		**0.25**	**0**		**0.25**						**0**	**0.38**
Cars	0	0		0		0		0	2	0		2	0		1	0		1						0	3
% Cars	0	0		0		0		0	100	0		100	0		100	0		100						0	100
Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:00:00
To:	18:00:00	To:	17:00:00

Intersection: Airport Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600020
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Airport Rd runs N/S

North Approach

	Out	In	Total
	0	0	0
	0	0	0
	0	**0**	**0**

Airport Rd

	0	0	0
	0	0	0
Totals	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
	0	3	3
	0	0	0
	0	**3**	**3**

5 Nevets Rd (Dymon Self-Storage)

Totals		
0	0	0
0	0	0
0	0	0

Airport Rd

Totals			
	0	**3**	**0**
	0	3	0
	0	0	0

South Approach

	Out	In	Total
	3	0	3
	0	0	0
	3	**0**	**3**

- Cars

- Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Airport Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600020
Count Date: Feb 15, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Airport Rd						South Approach Airport Rd						East Approach 5 Nevets Rd (Dymon Self-Storage)						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	0	0		0	0	0		0	2	0	0	2	0		0	0	0	0					0		2
16:15	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
16:30	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
16:45	0	0		0	0	0		0	1	0	0	1	0		0	0	0	0					0		1
Grand Total	**0**	**0**		**0**	**0**	**0**		**0**	**3**	**0**	**0**	**3**	**0**		**0**	**0**	**0**	**0**					**0**	**0**	**3**
Approach %	0	0		0		-		0	100	0		-	0		0	0		-						-	
Totals %	0	0		0		0		0	100	0		100	0		0	0		0						0	
PHF	**0**	**0**		**0**		**0**		**0**	**0.38**	**0**		**0.38**	**0**		**0**	**0**		**0**						**0**	**0.38**
Cars	0	0		0		0		0	3	0		3	0		0	0		0						0	3
% Cars	0	0		0		0		0	100	0		100	0		0	0		0						0	100
Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 12:15:00
To: 13:15:00

Intersection: Nevets Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600021
Count Date: Feb 12, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Nevets Rd runs E/W

North Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Commerical Entrance

Trucks	0	0	0	0
Cars	0	0	0	0
Totals	**0**	**0**	**0**	**0**

East Approach

	Out	In	Total
Cars	4	2	6
Trucks	0	0	0
	4	**2**	**6**

Nevets Rd

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	10	**10**

Peds: 0



Peds: 0

Peds: 0

Nevets Rd

	Totals		
	0	0	0
	0	0	0
	0	0	0
	4	4	0

West Approach

	Out	In	Total
Cars	10	9	19
Trucks	0	0	0
	10	**9**	**19**

Totals	**9**	**0**	**2**	**0**
Cars	9	0	2	0
Trucks	0	0	0	0

South Approach

	Out	In	Total
Cars	11	14	25
Trucks	0	0	0
	11	**14**	**25**

5 Nevets Rd (Dymon Self-Storage)

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Nevets Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600021
Count Date: Feb 12, 2022
Period: 11:00 - 14:00

Peak Hour Data (12:15 - 13:15)

Start Time	North Approach Commerical Entrance						South Approach 5 Nevets Rd (Dymon Self-Storage)						East Approach Nevets Rd						West Approach Nevets Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
12:15	0	0	0	0	0	0	1	0	2	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	4
12:30	0	0	0	0	0	0	1	0	0	0	0	1	2	0	0	0	0	2	0	0	3	0	0	3	6
12:45	0	0	0	0	0	0	4	0	0	0	0	4	2	0	0	0	0	2	0	0	5	0	0	5	11
13:00	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	1	4
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**2**	**0**	**0**	**11**	**4**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**10**	**0**	**0**	**10**	**25**
Approach %	0	0	0	0		-	81.8	0	18.2	0		-	100	0	0	0		-	0	0	100	0		-	
Totals %	0	0	0	0		0	36	0	8	0		44	16	0	0	0		16	0	0	40	0		40	
PHF	**0**	**0**	**0**	**0**		**0**	**0.56**	**0**	**0.25**	**0**		**0.69**	**0.5**	**0**	**0**	**0**		**0.5**	**0**	**0**	**0.5**	**0**		**0.5**	**0.57**
Cars	0	0	0	0		0	9	0	2	0		11	4	0	0	0		4	0	0	10	0		10	25
% Cars	0	0	0	0		0	100	0	100	0		100	100	0	0	0		100	0	0	100	0		100	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Specified Period
From: 11:00:00
To: 14:00:00

One Hour Peak
From: 11:45:00
To: 12:45:00

Intersection: Airport Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600022
Count Date: Feb 12, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Airport Rd runs N/S

North Approach

	Out	In	Total
Cars	0	2	2
Trucks	0	0	0
	0	**2**	**2**

Airport Rd

Trucks	0	0	0
Cars	0	0	0
Totals	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	2	4	6
Trucks	0	0	0
	2	**4**	**6**

5 Nevets Rd (Dymon Self-Storage)

	Totals	Cars	Trucks
	0	0	0
	2	2	0
	0	0	0

South Approach

	Out	In	Total
Cars	4	0	4
Trucks	0	0	0
	4	**0**	**4**

Airport Rd

Totals	**0**	**4**	**0**
Cars	0	4	0
Trucks	0	0	0

Cars - Cars

Trucks - Trucks

Comments

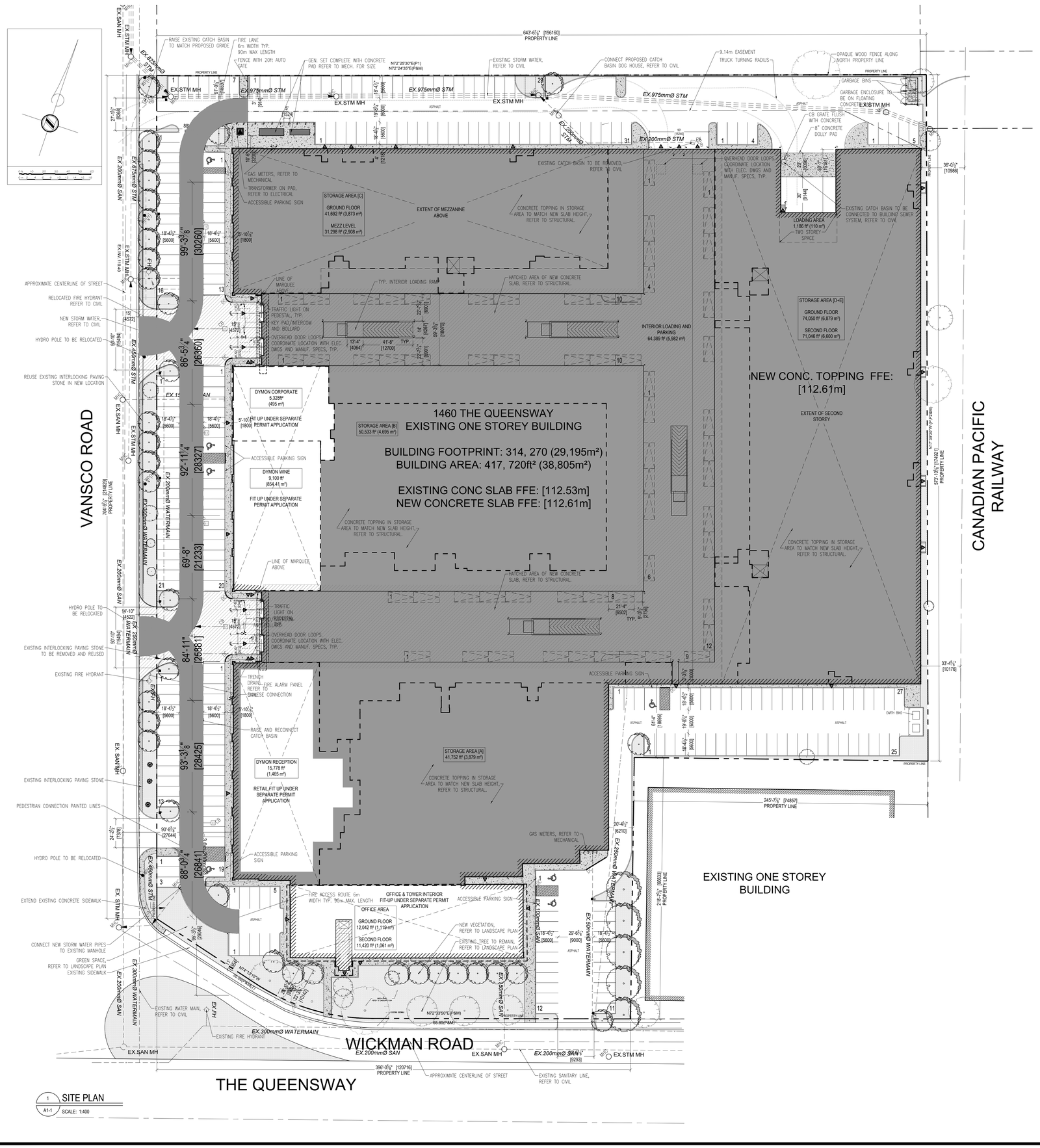
Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Airport Rd & 5 Nevets Rd (Dymon Self-Storage)
Site Code: 2204600022
Count Date: Feb 12, 2022
Period: 11:00 - 14:00

Peak Hour Data (11:45 - 12:45)

Start Time	North Approach Airport Rd						South Approach Airport Rd						East Approach 5 Nevets Rd (Dymon Self-Storage)						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:45	0	0		0	0	0		0	1	0	0	1	0		0	0	0	0					0		1
12:00	0	0		0	0	0		0	1	0	0	1	0		1	0	0	1					0		2
12:15	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
12:30	0	0		0	0	0		0	2	0	0	2	0		1	0	0	1					0		3
Grand Total	**0**	**0**		**0**	**0**	**0**		**0**	**4**	**0**	**0**	**4**	**0**		**2**	**0**	**0**	**2**					**0**	**0**	**6**
Approach %	0	0		0		-		0	100	0		-	0		100	0		-						-	
Totals %	0	0		0		0		0	66.7	0		66.7	0		33.3	0		33.3						0	
PHF	**0**	**0**		**0**		**0**		**0**	**0.5**	**0**		**0.5**	**0**		**0.5**	**0**		**0.5**						**0**	**0.5**
Cars	0	0		0		0		0	4	0		4	0		2	0		2						0	6
% Cars	0	0		0		0		0	100	0		100	0		100	0		100						0	100
Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	



1 SITE PLAN
A1-1 SCALE: 1:400

STATISTICS

LEGAL DESCRIPTION OF PROPERTY:

THE 41,719m² PROPERTY KNOWN MUNICIPALLY AS 1460 THE QUEENSWAY IS LOCATED AT THE NORTHEAST CORNER OF VANSCO ROAD AND THE QUEENSWAY IN THE CITY OF TORONTO (ETOBICOKE).

BOUNDARY INFORMATION FROM SURVEY BY: DAVID B. SEARLES SURVEYING LTD.

BUILDING FOOTPRINT (INCLUDING INTERIOR LOADING):	29,210 m² (314,411 ft²)
TOTAL SELF STORAGE	27,568 m² (371,860 ft²)
TOTAL RECEPTION	1,231 m² (13,212 ft²)
TOTAL OFFICE	2,192 m² (24,749 ft²)
TOTAL GFA	30,991 m² (397,956 ft²)

PARKING STATISTICS

REQUIRED		PROPOSED
CURRENT E1.0 ZONING	FORMER CITY OF ETOBICOKE BY-LAW	
206 SPACES	359 SPACES	266 EXT. SPACES 59 INT. SPACES 325 TOTAL
FOR A COMPLETE LIST OF THE PERFORMANCE STANDARDS FOR BOTH ZONING CATEGORIES PLEASE REFER TO THE TABLE IN APPENDIX A OF THE ASSOCIATED PLANNING RATIONALE REPORT.		

LEGEND

- PROPOSED BUILDING LOCATION
- EXISTING NEIGHBORING BUILDINGS
- LANDSCAPED AREA
- CONCRETE/ SIDEWALK
- BARRIER FREE PARKING CLEARANCE
- INTERLOCKING PAVING STONE (EXISTING TO REMAIN OR REUSE)
- CURB
- DEPRESSED CURB
- NEW TREE/ VEGETATION (REFER TO LANDSCAPE PLAN FOR TYPE, SIZE AND LOCATION)
- EXISTING TREE (VEGETATION IS FOR REFERENCE ONLY, REFER TO LANDSCAPE PLAN)
- BARRIER FREE PARKING
- INTERIOR PARKING
- CATCH BASIN
- SIAMESE CONNECTION
- ENTRANCE/ EXIT LOCATION
- TRANSFORMER
- FENCE & GATE
- MAN HOLE COVER
- WOOD POLE (HYDRO)
- FIRE HYDRANT
- NLS (NEW LIGHT STANDARD, REFER TO ELECTRICAL)
- NEW BOLLARD

BOUNDARY INFORMATION FROM SURVEY BY: DAVID B. SEARLES SURVEYING LTD. ONTARIO LAND SURVEYORS. 04 MAY 2016

1. Contractor must verify all job dimensions, all drawings, details, specifications and report any discrepancies to owners before proceeding with work.
2. All drawings and specifications are instruments of service and the property of the architects which must be returned at the completion of the work, and may not be reproduced without their written permission.

PAGE SIZE: ARCH E1 (30"x42")

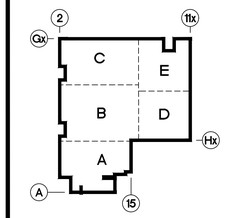
ref	description	date
16	ISSUED FOR PERMIT	2020 09 02
15	RE-ISSUED FOR CONSTRUCTION (FC5)	2018 12 03
14	ISSUED FOR ZONING	2018 04 27
13	FOR COORDINATION	2018 04 26
12	REVISED FOR PERMIT	2018 03 07
11	RE-ISSUED FOR COORDINATION (IFC4)	2018 02 02
10	FOR COORDINATION	2017 01 16
9	FOR COORDINATION	2017 12 12
8	FOR COORDINATION	2017 10 11
7	FOR COORDINATION	2017 09 22
6	FOR COORDINATION	2017 08 23
5	FOR COORDINATION	2017 08 16
4	FOR COORDINATION	2017 08 08
3	FOR COORDINATION	2017 06 29
2	BLDG. STRUCT. & SHELL PERMIT	2017 06 20
1	FOR COORDINATION	2017 06 15

revisions

ONTARIO ASSOCIATION OF ARCHITECTS — M. Cuerrier — LICENCE 3353

2020 09 02
ISSUED FOR PERMIT

key plan:



DESIGN ARCHITECT — TACT Architecture Inc.
660R College St (Rear Lane) Toronto ON M6G 1B8
tel: (416 516 1949)
email: info@tactdesign.ca

STRUCTURAL ENGINEER — Cleland Jardine Engineering Ltd.
200-580 Terry Fox Drive, Kanata ON K2L 4B9
tel: (613) 591-1533 fax: (613) 591-1703
e-mail: mail@clelandjardine.com

MECHANICAL/ELECTRICAL — Tristar Engineering Ltd.
8901 Woodbine Ave. Suite 116, Markham, ON L3R 9Y4
tel: (905) 604 3801
e-mail:

CIVIL ENGINEER — Cole Engineering Ltd
70 Valleywood Drive, Markham ON L3R 4T5
tel: (416) 987-6161 or (905) 940-6161 fax: (905) 940-2064
www. coleengineering.ca

PLANNING & URBAN DESIGN — Fotenn
223 McLeod Street, Ottawa ON K2P 0Z8
tel: (613) 730-5709 fax: (613) 730-1136
www.fotenn.com

owner:
Dymon Capital Corporation
2-1830 Walkley Road
Ottawa ON K1H 8K3
tel: 613-247-0888 fax: 613-247-7730

architect
nicholas caragianis architect Inc.
137 Parrilla Street, Ottawa, ON K1S 3K9
t: 613 937 6801
f: 613 937 8999
e: info@ncarchitect.ca
www.ncarchitect.ca

TRUE NORTH — PROJECT NORTH

project & location
DYMON CAPITAL CORP
1460 THE QUEENSWAY
TORONTO, ONTARIO

title of drawing
SITE PLAN

scale	drawing
AS NOTED	A1-1
date: DEC 2016	
drawn by: KL, DL	

2015.0035.01 DYM-ON-ETOBIQUEEN1460

Peak Hour Diagram

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:45:00
To:	09:00:00	To:	08:45:00

Intersection: Wickman Rd & Dymon Self-Storage
Site Code: 2204600023
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Wickman Rd runs E/W

North Approach

	Out	In	Total
Cars	1	10	11
Trucks	0	0	0
	1	**10**	**11**

Dymon Self-Storage

Trucks	0	0	0
Cars	0	1	0
Totals	**0**	**1**	**0**

East Approach

	Out	In	Total
Cars	121	64	185
Trucks	0	1	1
	121	**65**	**186**

Wickman Rd

Trucks	Cars	Totals	
0	0	**0**	
0	7	**7**	
1	63	**64**	

Peds: 0

Peds: 0



Peds: 0

Peds: 0

Wickman Rd

Totals	Cars	Trucks
0	0	0
3	3	0
118	118	0

West Approach

	Out	In	Total
Cars	70	118	188
Trucks	1	0	1
	71	**118**	**189**

- Cars

- Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Wickman Rd & Dymon Self-Storage
Site Code: 2204600023
Count Date: Feb 15, 2022
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

Start Time	North Approach Dymon Self-Storage						South Approach						East Approach Wickman Rd						West Approach Wickman Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:45	0		0	0	0	0					0			25	0	0	0	25	3	17		0	0	20	45
08:00	0		0	0	0	0					0			18	0	0	0	18	0	12		0	0	12	30
08:15	1		0	0	0	1					0			35	1	0	0	36	1	18		0	0	19	56
08:30	0		0	0	0	0					0			40	2	0	0	42	3	17		0	0	20	62
Grand Total	**1**		**0**	**0**	**0**	**1**					**0**	**0**		**118**	**3**	**0**	**0**	**121**	**7**	**64**		**0**	**0**	**71**	**193**
Approach %	100		0	0		-						-		97.5	2.5	0		-	9.9	90.1		0		-	
Totals %	0.5		0	0		0.5						0		61.1	1.6	0		62.7	3.6	33.2		0		36.8	
PHF	**0.25**		**0**	**0**		**0.25**						**0**		**0.74**	**0.38**	**0**		**0.72**	**0.58**	**0.89**		**0**		**0.89**	**0.78**
Cars	1		0	0		1						0		118	3	0		121	7	63		0		70	192
% Cars	100		0	0		100						0		100	100	0		100	100	98.4		0		98.6	99.5
Trucks	0		0	0		0						0		0	0	0		0	0	1		0		1	1
% Trucks	0		0	0		0						0		0	0	0		0	0	1.6		0		1.4	0.5
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:15:00
To:	18:00:00	To:	17:15:00

Intersection: Wickman Rd & Dymon Self-Storage
Site Code: 2204600023
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Wickman Rd runs E/W

North Approach

	Out	In	Total
Cars	5	0	5
Trucks	0	0	0
	5	**0**	**5**

Dymon Self-Storage

Trucks	0	0	0
Cars	3	2	0
Totals	**3**	**2**	**0**

East Approach

	Out	In	Total
Cars	145	126	271
Trucks	0	0	0
	145	**126**	**271**

Wickman Rd

		Totals
0	0	**0**
0	0	**0**
0	124	**124**

Peds: 4
Peds: 0
Peds: 0
Peds: 0

Wickman Rd

Totals		
0	0	0
0	0	0
145	145	0

West Approach

	Out	In	Total
Cars	124	148	272
Trucks	0	0	0
	124	**148**	**272**

- Cars
- Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Wickman Rd & Dymon Self-Storage
Site Code: 2204600023
Count Date: Feb 15, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:15 - 17:15)

Start Time	North Approach Dymon Self-Storage						South Approach						East Approach Wickman Rd						West Approach Wickman Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:15	0		0	0	0	0					0			42	0	0	0	42	0	30		0	0	30	72
16:30	2		1	0	0	3					0			38	0	0	0	38	0	35		0	0	35	76
16:45	0		0	0	4	0					0			33	0	0	0	33	0	25		0	0	25	58
17:00	0		2	0	0	2					0			32	0	0	0	32	0	34		0	0	34	68
Grand Total	**2**		**3**	**0**	**4**	**5**					**0**	**0**		**145**	**0**	**0**	**0**	**145**	**0**	**124**		**0**	**0**	**124**	**274**
Approach %	40		60	0		-						-		100	0	0		-	0	100		0		-	
Totals %	0.7		1.1	0		1.8						0		52.9	0	0		52.9	0	45.3		0		45.3	
PHF	**0.25**		**0.38**	**0**		**0.42**						**0**		**0.86**	**0**	**0**		**0.86**	**0**	**0.89**		**0**		**0.89**	**0.9**
Cars	2		3	0		5						0		145	0	0		145	0	124		0		124	274
% Cars	100		100	0		100						0		100	0	0		100	0	100		0		100	100
Trucks	0		0	0		0						0		0	0	0		0	0	0		0		0	0
% Trucks	0		0	0		0						0		0	0	0		0	0	0		0		0	0
Peds					4	-					0	-					0	-					0	-	4
% Peds					100	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Vansco Rd & Dymon Self-Storage (south driveway)
Site Code: 2204600024
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	1	1	2
Trucks	0	0	0
	1	**1**	**2**

Vansco Rd

Trucks	0	0	0
Cars	0	1	0
Totals	**0**	**1**	**0**

Peds: 0

Peds: 0

Peds: 0

Totals	**0**	**10**	**0**
Cars	0	10	0
Trucks	0	0	0

Vansco Rd

East Approach

	Out	In	Total
Cars	1	11	12
Trucks	0	0	0
	1	**11**	**12**

Dymon Self-Storage (south driveway)

	Totals	Cars	Trucks
	0	0	0
	1	1	0
	0	0	0

South Approach

	Out	In	Total
Cars	10	0	10
Trucks	0	0	0
	10	**0**	**10**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (south driveway)
Site Code: 2204600024
Count Date: Feb 15, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (south driveway)						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	0	0		0	0	0		0	4	0	0	4	0		0	0	0	0					0		4
08:15	0	0		0	0	0		0	4	0	0	4	0		1	0	0	1					0		5
08:30	1	0		0	0	1		0	1	0	0	1	0		0	0	0	0					0		2
08:45	0	0		0	0	0		0	1	0	0	1	0		0	0	0	0					0		1
Grand Total	**1**	**0**		**0**	**0**	**1**		**0**	**10**	**0**	**0**	**10**	**0**		**1**	**0**	**0**	**1**					**0**	**0**	**12**
Approach %	100	0		0		-		0	100	0		-	0		100	0		-						-	
Totals %	8.3	0		0		8.3		0	83.3	0		83.3	0		8.3	0		8.3						0	
PHF	**0.25**	**0**		**0**		**0.25**		**0**	**0.63**	**0**		**0.63**	**0**		**0.25**	**0**		**0.25**						**0**	**0.6**
Cars	1	0		0		1		0	10	0		10	0		1	0		1						0	12
% Cars	100	0		0		100		0	100	0		100	0		100	0		100						0	100
Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:45:00
To: 17:45:00

Intersection: Vansco Rd & Dymon Self-Storage (south driveway)
Site Code: 2204600024
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Vansco Rd

Trucks	0	0	0
Cars	0	0	0
Totals	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	0	2	2
Trucks	0	0	0
	0	**2**	**2**

Dymon Self-Storage (south driveway)

	Totals	Cars	Trucks
	0	0	0
	0	0	0
	0	0	0

South Approach

	Out	In	Total
Cars	2	0	2
Trucks	0	0	0
	2	**0**	**2**

Totals	**0**	**2**	**0**
Cars	0	2	0
Trucks	0	0	0

Vansco Rd

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (south driveway)
Site Code: 2204600024
Count Date: Feb 15, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:45 - 17:45)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (south driveway)						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:45	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
17:00	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
17:15	0	0		0	0	0		0	0	0	0	0	0		0	0	0	0					0		0
17:30	0	0		0	0	0		0	2	0	0	2	0		0	0	0	0					0		2
Grand Total	**0**	**0**		**0**	**0**	**0**		**0**	**2**	**0**	**0**	**2**	**0**		**0**	**0**	**0**	**0**					**0**	**0**	**2**
Approach %	0	0		0		-		0	100	0		-	0		0	0		-						-	
Totals %	0	0		0		0		0	100	0		100	0		0	0		0						0	
PHF	**0**	**0**		**0**		**0**		**0**	**0.25**	**0**		**0.25**	**0**		**0**	**0**		**0**						**0**	**0.25**
Cars	0	0		0		0		0	2	0		2	0		0	0		0						0	2
% Cars	0	0		0		0		0	100	0		100	0		0	0		0						0	100
Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	07:45:00
To:	09:00:00	To:	08:45:00

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 1)
Site Code: 2204600025
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
	4	1	5
	0	0	0
	4	**1**	**5**

Vansco Rd

	0	0	0	0
	0	0	4	0
Totals	**0**	**0**	**4**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
	3	13	16
	0	0	0
	3	**13**	**16**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Dymon Self-Storage (middle driveway 1)

Totals		
0	0	0
1	1	0
0	0	0
2	2	0

West Approach

	Out	In	Total
	0	0	0
	0	0	0
	0	**0**	**0**

Vansco Rd

Totals	**0**	**0**	**9**	**0**
	0	0	9	0
	0	0	0	0

South Approach

	Out	In	Total
	9	2	11
	0	0	0
	9	**2**	**11**

- Cars

- Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 1)
Site Code: 2204600025
Count Date: Feb 15, 2022
Period: 07:00 - 09:00

Peak Hour Data (07:45 - 08:45)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (middle driveway 1)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
07:45	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
08:00	1	0	0	0	0	1	0	0	2	0	0	2	1	0	1	0	0	2	0	0	0	0	0	0	5
08:15	2	0	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5
08:30	1	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	3
Grand Total	**4**	**0**	**0**	**0**	**0**	**4**	**0**	**0**	**9**	**0**	**0**	**9**	**2**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**16**
Approach %	100	0	0	0		-	0	0	100	0		-	66.7	0	33.3	0		-	0	0	0	0		-	
Totals %	25	0	0	0		25	0	0	56.3	0		56.3	12.5	0	6.3	0		18.8	0	0	0	0		0	
PHF	**0.5**	**0**	**0**	**0**		**0.5**	**0**	**0**	**0.75**	**0**		**0.75**	**0.5**	**0**	**0.25**	**0**		**0.38**	**0**	**0**	**0**	**0**		**0**	**0.8**
Cars	4	0	0	0		4	0	0	9	0		9	2	0	1	0		3	0	0	0	0		0	16
% Cars	100	0	0	0		100	0	0	100	0		100	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:00:00
To:	18:00:00	To:	17:00:00

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 1)
Site Code: 2204600025
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	5	1	6
Trucks	0	0	0
	5	**1**	**6**

Vansco Rd

Trucks	0	0	0	0
Cars	0	0	5	0
Totals	**0**	**0**	**5**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	3	11	14
Trucks	0	0	0
	3	**11**	**14**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Dymon Self-Storage (middle driveway 1)

Totals		
0	0	0
1	1	0
0	0	0
2	2	0

West Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Totals	**0**	**0**	**6**	**0**
Cars	0	0	6	0
Trucks	0	0	0	0

Vansco Rd

South Approach

	Out	In	Total
Cars	6	2	8
Trucks	0	0	0
	6	**2**	**8**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 1)
Site Code: 2204600025
Count Date: Feb 15, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (middle driveway 1)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	1	0	0	0	0	1	0	0	2	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	4
16:15	1	0	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
16:30	1	0	0	0	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
16:45	2	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	4
Grand Total	**5**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**6**	**0**	**0**	**6**	**2**	**0**	**1**	**0**	**0**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**14**
Approach %	100	0	0	0		-	0	0	100	0		-	66.7	0	33.3	0		-	0	0	0	0		-	
Totals %	35.7	0	0	0		35.7	0	0	42.9	0		42.9	14.3	0	7.1	0		21.4	0	0	0	0		0	
PHF	**0.63**	**0**	**0**	**0**		**0.63**	**0**	**0**	**0.75**	**0**		**0.75**	**0.25**	**0**	**0.25**	**0**		**0.38**	**0**	**0**	**0**	**0**		**0**	**0.88**
Cars	5	0	0	0		5	0	0	6	0		6	2	0	1	0		3	0	0	0	0		0	14
% Cars	100	0	0	0		100	0	0	100	0		100	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Specified Period
From: 07:00:00
To: 09:00:00

One Hour Peak
From: 08:00:00
To: 09:00:00

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 2)
Site Code: 2204600026
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	0	1	1
Trucks	0	0	0
	0	**1**	**1**

Vansco Rd

Trucks	0	0	0	0
Cars	0	0	0	0
Totals	**0**	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	2	6	8
Trucks	0	0	0
	2	**6**	**8**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Dymon Self-Storage (middle driveway 2)

Totals		
0	0	0
1	1	0
0	0	0
1	1	0

West Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Vansco Rd

Totals	**0**	**0**	**6**	**0**
Cars	0	0	6	0
Trucks	0	0	0	0

South Approach

	Out	In	Total
Cars	6	1	7
Trucks	0	0	0
	6	**1**	**7**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 2)
Site Code: 2204600026
Count Date: Feb 15, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (middle driveway 2)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	2
08:15	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
08:30	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
08:45	0	0	0	0	0	0	0	0	3	0	0	3	0	0	1	0	0	1	0	0	0	0	0	0	4
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**0**	**6**	**1**	**0**	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**8**
Approach %	0	0	0	0		-	0	0	100	0		-	50	0	50	0		-	0	0	0	0		-	
Totals %	0	0	0	0		0	0	0	75	0		75	12.5	0	12.5	0		25	0	0	0	0		0	
PHF	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0.5**	**0**		**0.5**	**0.25**	**0**	**0.25**	**0**		**0.5**	**0**	**0**	**0**	**0**		**0**	**0.5**
Cars	0	0	0	0		0	0	0	6	0		6	1	0	1	0		2	0	0	0	0		0	8
% Cars	0	0	0	0		0	0	0	100	0		100	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Peak Hour Diagram

Specified Period
From: 16:00:00
To: 18:00:00

One Hour Peak
From: 16:00:00
To: 17:00:00

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 2)
Site Code: 2204600026
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	0	1	1
Trucks	0	0	0
	0	**1**	**1**

Vansco Rd

Trucks	0	0	0	0
Cars	0	0	0	0
Totals	**0**	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	4	1	5
Trucks	0	0	0
	4	**1**	**5**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Dymon Self-Storage (middle driveway 2)

Totals		
0	0	0
1	1	0
0	0	0
3	3	0

West Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Vansco Rd

Totals	**0**	**0**	**1**	**0**
Cars	0	0	1	0
Trucks	0	0	0	0

South Approach

	Out	In	Total
Cars	1	3	4
Trucks	0	0	0
	1	**3**	**4**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 2)
Site Code: 2204600026
Count Date: Feb 15, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:00 - 17:00)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (middle driveway 2)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:00	0	0	0	0	0	0	0	0	1	0	0	1	3	0	1	0	0	4	0	0	0	0	0	0	5
16:15	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
16:30	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
16:45	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
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**3**	**0**	**1**	**0**	**0**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
Approach %	0	0	0	0		-	0	0	100	0		-	75	0	25	0		-	0	0	0	0		-	
Totals %	0	0	0	0		0	0	0	20	0		20	60	0	20	0		80	0	0	0	0		0	
PHF	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0.25**	**0**		**0.25**	**0.25**	**0**	**0.25**	**0**		**0.25**	**0**	**0**	**0**	**0**		**0**	**0.25**
Cars	0	0	0	0		0	0	0	1	0		1	3	0	1	0		4	0	0	0	0		0	5
% Cars	0	0	0	0		0	0	0	100	0		100	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	07:00:00	From:	08:00:00
To:	09:00:00	To:	09:00:00

Intersection: Vansco Rd & Dymon Self-Storage (north driveway)
Site Code: 2204600027
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	2	3	5
Trucks	0	0	0
	2	**3**	**5**

Vansco Rd

Trucks	0	0	0	0
Cars	0	0	2	0
Totals	**0**	**0**	**2**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	12	2	14
Trucks	0	0	0
	12	**2**	**14**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Dymon Self-Storage (north driveway)

Totals		
0	0	0
3	3	0
0	0	0
9	9	0

West Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Totals	**0**	**0**	**0**	**0**
Cars	0	0	0	0
Trucks	0	0	0	0

Vansco Rd

South Approach

	Out	In	Total
Cars	0	9	9
Trucks	0	0	0
	0	**9**	**9**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (north driveway)
Site Code: 2204600027
Count Date: Feb 15, 2022
Period: 07:00 - 09:00

Peak Hour Data (08:00 - 09:00)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (north driveway)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
08:00	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2
08:15	1	0	0	0	0	1	0	0	0	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	4
08:30	0	0	0	0	0	0	0	0	0	0	0	0	3	0	2	0	0	5	0	0	0	0	0	0	5
08:45	1	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	3
Grand Total	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**9**	**0**	**3**	**0**	**0**	**12**	**0**	**0**	**0**	**0**	**0**	**0**	**14**
Approach %	100	0	0	0		-	0	0	0	0		-	75	0	25	0		-	0	0	0	0		-	
Totals %	14.3	0	0	0		14.3	0	0	0	0		0	64.3	0	21.4	0		85.7	0	0	0	0		0	
PHF	**0.5**	**0**	**0**	**0**		**0.5**	**0**	**0**	**0**	**0**		**0**	**0.75**	**0**	**0.38**	**0**		**0.6**	**0**	**0**	**0**	**0**		**0**	**0.7**
Cars	2	0	0	0		2	0	0	0	0		0	9	0	3	0		12	0	0	0	0		0	14
% Cars	100	0	0	0		100	0	0	0	0		0	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	16:00:00	From:	16:30:00
To:	18:00:00	To:	17:30:00

Intersection: Vansco Rd & Dymon Self-Storage (north driveway)
Site Code: 2204600027
Count Date: Feb 15, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	0	3	3
Trucks	0	0	0
	0	**3**	**3**

Vansco Rd

Trucks	0	0	0	0
Cars	0	0	0	0
Totals	**0**	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	16	0	16
Trucks	0	0	0
	16	**0**	**16**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Dymon Self-Storage (north driveway)

Totals		
0	0	0
3	3	0
0	0	0
13	13	0

West Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Totals	0	0	0	0
Cars	0	0	0	0
Trucks	0	0	0	0

Vansco Rd

South Approach

	Out	In	Total
Cars	0	13	13
Trucks	0	0	0
	0	**13**	**13**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (north driveway)
Site Code: 2204600027
Count Date: Feb 15, 2022
Period: 16:00 - 18:00

Peak Hour Data (16:30 - 17:30)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (north driveway)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
16:30	0	0	0	0	0	0	0	0	0	0	0	0	4	0	1	0	0	5	0	0	0	0	0	0	5
16:45	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	4	0	0	0	0	0	0	4
17:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	4
17:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0	0	3	0	0	0	0	0	0	3
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**3**	**0**	**0**	**16**	**0**	**0**	**0**	**0**	**0**	**0**	**16**
Approach %	0	0	0	0		-	0	0	0	0		-	81.3	0	18.8	0		-	0	0	0	0		-	
Totals %	0	0	0	0		0	0	0	0	0		0	81.3	0	18.8	0		100	0	0	0	0		0	
PHF	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**		**0**	**0.81**	**0**	**0.75**	**0**		**0.8**	**0**	**0**	**0**	**0**		**0**	**0.8**
Cars	0	0	0	0		0	0	0	0	0		0	13	0	3	0		16	0	0	0	0		0	16
% Cars	0	0	0	0		0	0	0	0	0		0	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:00:00	From:	12:00:00
To:	14:00:00	To:	13:00:00

Intersection: Wickman Rd & Dymon Self-Storage
Site Code: 2204600028
Count Date: Feb 12, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Wickman Rd runs E/W

North Approach

	Out	In	Total
	1	1	2
	0	0	0
	1	**1**	**2**

Dymon Self-Storage

	0	0	0
	1	0	0
Totals	**1**	**0**	**0**

East Approach

	Out	In	Total
	129	78	207
	0	0	0
	129	**78**	**207**

Wickman Rd

		Totals	
0	0	**0**	
0	1	**1**	
0	78	**78**	

Peds: 0

Peds: 0



Peds: 0

Peds: 0

Wickman Rd

	Totals		
	0	0	0
	0	0	0
	129	129	0

West Approach

	Out	In	Total
	79	130	209
	0	0	0
	79	**130**	**209**

- Cars

- Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Wickman Rd & Dymon Self-Storage
Site Code: 2204600028
Count Date: Feb 12, 2022
Period: 11:00 - 14:00

Peak Hour Data (12:00 - 13:00)

Start Time	North Approach Dymon Self-Storage						South Approach						East Approach Wickman Rd						West Approach Wickman Rd						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
12:00	0		0	0	0	0					0			43	0	0	0	43	1	19		0	0	20	63
12:15	0		0	0	0	0					0			38	0	0	0	38	0	25		0	0	25	63
12:30	0		0	0	0	0					0			22	0	0	0	22	0	21		0	0	21	43
12:45	0		1	0	0	1					0			26	0	0	0	26	0	13		0	0	13	40
Grand Total	**0**		**1**	**0**	**0**	**1**					**0**	**0**		**129**	**0**	**0**	**0**	**129**	**1**	**78**		**0**	**0**	**79**	**209**
Approach %	0		100	0		-						-		100	0	0		-	1.3	98.7		0		-	
Totals %	0		0.5	0		0.5						0		61.7	0	0		61.7	0.5	37.3		0		37.8	
PHF	**0**		**0.25**	**0**		**0.25**						**0**		**0.75**	**0**	**0**		**0.75**	**0.25**	**0.78**		**0**		**0.79**	**0.83**
Cars	0		1	0		1						0		129	0	0		129	1	78		0		79	209
% Cars	0		100	0		100						0		100	0	0		100	100	100		0		100	100
Trucks	0		0	0		0						0		0	0	0		0	0	0		0		0	0
% Trucks	0		0	0		0						0		0	0	0		0	0	0		0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:00:00	From:	12:15:00
To:	14:00:00	To:	13:15:00

Intersection: Vansco Rd & Dymon Self-Storage (south driveway)
Site Code: 2204600029
Count Date: Feb 12, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	0	1	1
Trucks	0	0	0
	0	**1**	**1**

Vansco Rd

Trucks	0	0	0
Cars	0	0	0
Totals	**0**	**0**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	2	7	9
Trucks	0	0	0
	2	**7**	**9**

Dymon Self-Storage (south driveway)

	Totals	Cars	Trucks
	0	0	0
	1	1	0
	1	1	0

South Approach

	Out	In	Total
Cars	7	1	8
Trucks	0	0	0
	7	**1**	**8**

Totals	**0**	**7**	**0**
Cars	0	7	0
Trucks	0	0	0

Vansco Rd

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (south driveway)
Site Code: 2204600029
Count Date: Feb 12, 2022
Period: 11:00 - 14:00

Peak Hour Data (12:15 - 13:15)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (south driveway)						West Approach						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
12:15	0	0		0	0	0		0	1	0	0	1	0		0	0	0	0					0		1
12:30	0	0		0	0	0		0	1	0	0	1	0		0	0	0	0					0		1
12:45	0	0		0	0	0		0	1	0	0	1	0		0	0	0	0					0		1
13:00	0	0		0	0	0		0	4	0	0	4	1		1	0	0	2					0		6
Grand Total	**0**	**0**		**0**	**0**	**0**		**0**	**7**	**0**	**0**	**7**	**1**		**1**	**0**	**0**	**2**					**0**	**0**	**9**
Approach %	0	0		0		-		0	100	0		-	50		50	0		-						-	
Totals %	0	0		0		0		0	77.8	0		77.8	11.1		11.1	0		22.2						0	
PHF	**0**	**0**		**0**		**0**		**0**	**0.44**	**0**		**0.44**	**0.25**		**0.25**	**0**		**0.25**						**0**	**0.38**
Cars	0	0		0		0		0	7	0		7	1		1	0		2						0	9
% Cars	0	0		0		0		0	100	0		100	100		100	0		100						0	100
Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
% Trucks	0	0		0		0		0	0	0		0	0		0	0		0						0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:00:00	From:	12:00:00
To:	14:00:00	To:	13:00:00

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 1)
Site Code: 2204600030
Count Date: Feb 12, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	5	2	7
Trucks	0	0	0
	5	**2**	**7**

Vansco Rd

Trucks	0	0	0	0
Cars	0	0	5	0
Totals	**0**	**0**	**5**	**0**

Peds: 0

Peds: 0

Peds: 0

East Approach

	Out	In	Total
Cars	8	13	21
Trucks	0	0	0
	8	**13**	**21**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Dymon Self-Storage (middle driveway 1)

Totals		
0	0	0
2	2	0
0	0	0
6	6	0

West Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Totals	**0**	**0**	**8**	**0**
Cars	0	0	8	0
Trucks	0	0	0	0

Vansco Rd

South Approach

	Out	In	Total
Cars	8	6	14
Trucks	0	0	0
	8	**6**	**14**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 1)
Site Code: 2204600030
Count Date: Feb 12, 2022
Period: 11:00 - 14:00

Peak Hour Data (12:00 - 13:00)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (middle driveway 1)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
12:00	1	0	0	0	0	1	0	0	2	0	0	2	3	0	0	0	0	3	0	0	0	0	0	0	6
12:15	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
12:30	3	0	0	0	0	3	0	0	3	0	0	3	2	0	1	0	0	3	0	0	0	0	0	0	9
12:45	1	0	0	0	0	1	0	0	2	0	0	2	1	0	1	0	0	2	0	0	0	0	0	0	5
Grand Total	**5**	**0**	**0**	**0**	**0**	**5**	**0**	**0**	**8**	**0**	**0**	**8**	**6**	**0**	**2**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**21**
Approach %	100	0	0	0		-	0	0	100	0		-	75	0	25	0		-	0	0	0	0		-	
Totals %	23.8	0	0	0		23.8	0	0	38.1	0		38.1	28.6	0	9.5	0		38.1	0	0	0	0		0	
PHF	**0.42**	**0**	**0**	**0**		**0.42**	**0**	**0**	**0.67**	**0**		**0.67**	**0.5**	**0**	**0.5**	**0**		**0.67**	**0**	**0**	**0**	**0**		**0**	**0.58**
Cars	5	0	0	0		5	0	0	8	0		8	6	0	2	0		8	0	0	0	0		0	21
% Cars	100	0	0	0		100	0	0	100	0		100	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:00:00	From:	11:15:00
To:	14:00:00	To:	12:15:00

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 2)
Site Code: 2204600031
Count Date: Feb 12, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
Cars	2	0	2
Trucks	0	0	0
	2	**0**	**2**

Vansco Rd

Trucks	0	0	0	0
Cars	0	0	2	0
Totals	**0**	**0**	**2**	**0**

Peds: 0

East Approach

	Out	In	Total
Cars	0	4	4
Trucks	0	0	0
	0	**4**	**4**

Commerical Entrance

Trucks	Cars	Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Peds: 0

N
W E
S

Peds: 0

Dymon Self-Storage (middle driveway 2)

Totals	Cars	Trucks
0	0	0
0	0	0
0	0	0
0	0	0

Peds: 1

West Approach

	Out	In	Total
Cars	0	0	0
Trucks	0	0	0
	0	**0**	**0**

Totals	**0**	**0**	**2**	**0**
Cars	0	0	2	0
Trucks	0	0	0	0

Vansco Rd

South Approach

	Out	In	Total
Cars	2	0	2
Trucks	0	0	0
	2	**0**	**2**

Cars - Cars

Trucks - Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (middle driveway 2)
Site Code: 2204600031
Count Date: Feb 12, 2022
Period: 11:00 - 14:00

Peak Hour Data (11:15 - 12:15)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (middle driveway 2)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
11:15	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:30	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
11:45	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
12:00	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	**2**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
Approach %	100	0	0	0		-	0	0	100	0		-	0	0	0	0		-	0	0	0	0		-	
Totals %	50	0	0	0		50	0	0	50	0		50	0	0	0	0		0	0	0	0	0		0	
PHF	**0.5**	**0**	**0**	**0**		**0.5**	**0**	**0**	**0.5**	**0**		**0.5**	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**		**0**	**0.5**
Cars	2	0	0	0		2	0	0	2	0		2	0	0	0	0		0	0	0	0	0		0	4
% Cars	100	0	0	0		100	0	0	100	0		100	0	0	0	0		0	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					1	-					0	-					0	-	1
% Peds					0	-					100	-					0	-					0	-	

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Diagram

Specified Period		One Hour Peak	
From:	11:00:00	From:	13:00:00
To:	14:00:00	To:	14:00:00

Intersection: Vansco Rd & Dymon Self-Storage (north driveway)
Site Code: 2204600032
Count Date: Feb 12, 2022

Weather conditions: Clear

**** Unsignalized Intersection ****

Major Road: Vansco Rd runs N/S

North Approach

	Out	In	Total
	0	3	3
	0	0	0
	0	**3**	**3**

Vansco Rd

	0	0	0	0
	0	0	0	0
Totals	**0**	**0**	**0**	**0**

East Approach

	Out	In	Total
	11	0	11
	0	0	0
	11	**0**	**11**

Commerical Entrance

		Totals
0	0	**0**
0	0	**0**
0	0	**0**
0	0	**0**

Peds: 0

Peds: 0

N
W E
S

Peds: 0

Peds: 0

Dymon Self-Storage (north driveway)

Totals		
0	0	0
3	3	0
0	0	0
8	8	0

West Approach

	Out	In	Total
	0	0	0
	0	0	0
	0	**0**	**0**

Vansco Rd

Totals	**0**	**0**	**0**	**0**
	0	0	0	0
	0	0	0	0

South Approach

	Out	In	Total
	0	8	8
	0	0	0
	0	**8**	**8**

- Cars

- Trucks

Comments

Ontario Traffic Inc.
Traffic Monitoring • Services & Products

Peak Hour Summary

Intersection: Vansco Rd & Dymon Self-Storage (north driveway)
Site Code: 2204600032
Count Date: Feb 12, 2022
Period: 11:00 - 14:00

Peak Hour Data (13:00 - 14:00)

Start Time	North Approach Vansco Rd						South Approach Vansco Rd						East Approach Dymon Self-Storage (north driveway)						West Approach Commerical Entrance						Total Vehicles
					Peds	Total					Peds	Total					Peds	Total					Peds	Total	
13:00	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	4
13:15	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	2
13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
13:45	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0	0	4	0	0	0	0	0	0	4
Grand Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**0**	**3**	**0**	**0**	**11**	**0**	**0**	**0**	**0**	**0**	**0**	**11**
Approach %	0	0	0	0		-	0	0	0	0		-	72.7	0	27.3	0		-	0	0	0	0		-	
Totals %	0	0	0	0		0	0	0	0	0		0	72.7	0	27.3	0		100	0	0	0	0		0	
PHF	**0**	**0**	**0**	**0**		**0**	**0**	**0**	**0**	**0**		**0**	**0.67**	**0**	**0.75**	**0**		**0.69**	**0**	**0**	**0**	**0**		**0**	**0.69**
Cars	0	0	0	0		0	0	0	0	0		0	8	0	3	0		11	0	0	0	0		0	11
% Cars	0	0	0	0		0	0	0	0	0		0	100	0	100	0		100	0	0	0	0		0	100
Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
% Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0
Peds					0	-					0	-					0	-					0	-	0
% Peds					0	-					0	-					0	-					0	-	

Location: 1460 The Queensway

Site ID:

Date: Thursday, October 20, 2022

TIME			Vansco Access #1		Vansco Access #2		Vansco Access #3		Vansco Access #4		Wickman Access	
			All vehicles combined		All vehicles combined		All vehicles combined		All vehicles combined		All vehicles combined	
			In	Out	In	Out	In	Out	In	Out	In	Out
08:30	to	08:45	6	1	1	0	2	0	0	1	2	0
08:45	to	09:00	6	1	8	1	4	1	1	1	0	0
09:00	to	09:15	7	1	5	0	4	0	2	2	2	1
09:15	to	09:30	3	1	5	0	1	0	1	1	1	0
09:30	to	09:45	5	1	2	1	0	1	0	2	1	0
09:45	to	10:00	1	0	5	1	1	1	1	5	2	0
10:00	to	10:15	3	2	4	1	4	0	4	1	0	0
10:15	to	10:30	5	1	5	0	2	5	0	1	0	0
10:30	to	10:45	2	3	3	1	2	0	1	2	1	0
10:45	to	11:00	3	2	3	0	3	0	5	6	1	0
11:00	to	11:15	4	2	4	0	1	1	0	2	2	0
11:15	to	11:30	3	2	4	1	4	0	1	2	1	1
TOTAL												
15:00	to	15:15	3	0	1	0	0	0	3	4	1	0
15:15	to	15:30	4	4	2	2	2	0	1	2	1	3
15:30	to	15:45	5	3	5	1	0	0	0	0	0	1
15:45	to	16:00	2	3	3	0	0	1	0	1	1	0
16:00	to	16:15	2	2	1	2	1	0	0	1	1	1
16:15	to	16:30	3	1	3	2	1	1	1	1	0	3
16:30	to	16:45	3	3	1	3	3	1	0	3	0	2
16:45	to	17:00	3	3	1	0	0	0	0	1	1	1
TOTAL												

Appendix J

2016 TTS Data Burlington

2006 Zone	From		To		Cardinal Direction	City/Town
4001	76	153		20	East	Oakville
4003	77	27			North/East	Oakville
4004	78	27			North/East	Oakville
4005	79	12			North/East	Oakville
4006	80	57			North/East	Oakville
4007	81	10			North/East	Oakville
4010	82	21			North/East	Oakville
4011	83	52			North/East	Oakville
4018	84	27			North/East	Oakville
4023	85	16			North/East	Oakville
4026	86	33			North/East	Oakville
4029	87			13	North/East	Oakville
4032	88	15			North	Oakville
4033	89	25			North	Oakville
4035	90	6			North	Oakville
4036	91	21			North	Oakville
4037	92	71			North	Oakville
4039	93	25			North	Oakville
4040	94	29			North	Oakville
4041	95	149			North	Oakville
4042	96	49			North	Oakville
4045	97	132			North	Oakville
4051	98	6			South/West	Burlington
4052	99	22			South/West	Burlington
4055	100	188			South/West	Burlington
4057	101	209			South/West	Burlington
4058	102	40			South/West	Burlington
4059	103	351			South/West	Burlington
4060	104	163			South	Burlington
4061	105	20			South	Burlington
4062	106	81			South/West	Burlington
4063	107	23			South/West	Burlington
4064	108	143			South	Burlington
4065	109	74			South	Burlington
4066	110	45			South	Burlington
4067	111	54			South	Burlington
4069	112	17			Internal	Burlington
4070	113	42			South	Burlington
4071	114	183			South	Burlington
4072	115	64			South	Burlington
4074	116	103			South/East	Burlington
4075	117	206			South/East	Burlington
4076	118	256			East	Burlington
4077	119	46		20	Internal	Burlington
4078	120	149			Internal	Burlington
4079	121	315			North	Burlington
4080	122	231		26	North/West	Burlington
4081	123			47	Internal	Burlington
4083	124	280			West	Burlington
4084	125	496			West	Burlington
4085	126	74			South/West	Burlington
4086	127	42			South/West	Burlington
4087	128	29		27	South/West	Burlington
4088	129	118			South/West	Burlington
4089	130	254		18	South/West	Burlington
4091	131	45			South/West	Burlington
4093	132	12			West	Burlington
4094	133	14			West	Burlington
4098	134	29			West	Burlington
4183	148	25			North	Oakville
4186	149	23			North	Oakville
4189	150	180			North/West	Burlington
4190	151	128			West	Burlington

								Use
North	885	15%	0	0%	North	1321	22%	20%
South	788	14%	0	0%	South	1776	30%	30%
East	409	7%	20	12%	East	801	14%	15%
West	959	17%	0	0%	West	2011	34%	35%
North/East	282	5%	13	8%				
South/East	309	5%	0	0%				
North/West	411	7%	26	15%				
South/West	1482	26%	45	26%				
Internal	212	4%	67	39%				
Outside GTHA	0	0%	0	0%				
Total	5737		171		Total	5908	100%	100%

2006 Zone	From	To	Cardinal Direction	City/Town
4001	67	159	East	Oakville
4002	68	67	North/East	Oakville
4003	69	24	North/East	Oakville
4004	70	27	North/East	Oakville
4005	71	49	North/East	Oakville
4007	72	10	North/East	Oakville
4018	73	20	North/East	Oakville
4023	74	16	North/East	Oakville
4026	75	33	North/East	Oakville
4032	76	15	North	Oakville
4035	77	28	North	Oakville
4036	78	39	North	Oakville
4038	79	10	North	Oakville
4039	80	11	North	Oakville
4040	81	62	North	Oakville
4041	82	40	North	Oakville
4042	83	49	North	Oakville
4045	84	155	North	Oakville
4055	85	96	South/West	Burlington
4057	86	128	South/West	Burlington
4058	87	51	South/West	Burlington
4059	88	449	South/West	Burlington
4060	89	137	South	Burlington
4061	90	27	South	Burlington
4062	91	33	South/West	Burlington
4063	92	97	South/West	Burlington
4064	93	116	South	Burlington
4065	94	74	South	Burlington
4067	95	33	South	Burlington
4068	96	29	South	Burlington
4069	97	97	Internal	Burlington
4070	98	19	South	Burlington
4071	99	61	South	Burlington
4072	100	89	South	Burlington
4073	101	20	South	Burlington
4074	102	115	South/East	Burlington
4075	103	203	South/East	Burlington
4076	104	282	East	Burlington
4077	105	83	Internal	Burlington
4078	106	70	Internal	Burlington
4079	107	319	North	Burlington
4080	108	11 220	North/West	Burlington
4082	109	39	South/West	Burlington
4083	110	77	West	Burlington
4084	111	348	West	Burlington
4085	112	119	South/West	Burlington
4086	113	92	South/West	Burlington
4087	114	143	South/West	Burlington
4088	115	131	South/West	Burlington
4089	116	280	South/West	Burlington
4091	117	54	South/West	Burlington
4093	118	12	West	Burlington
4094	119	40	West	Burlington
4098	120	7	West	Burlington
4183	132	25	North	Oakville
4186	133	73	North	Oakville
4189	134	319	North/West	Burlington
4190	135	81	West	Burlington

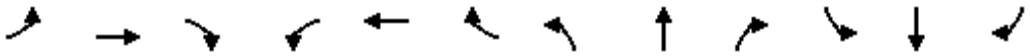
									Use
North	0	0%	826	15%	North	1287	23%		25%
South	0	0%	605	11%	South	1683	31%		30%
East	0	0%	441	8%	East	786	14%		15%
West	0	0%	565	10%	West	1759	32%		30%
North/East	0	0%	246	4%					
South/East	0	0%	318	0					
North/West	11	100%	539	0					
South/West	0	0%	1712	0					
Internal	0	0%	250	0					
Outside GTHA	0	0%	0	0					
Total	11		5502		Total	5513	100%		100%

Aggregated AM and PM Peaks			Use
North	2607	23%	20%
South	3458	30%	30%
East	1586	14%	15%
West	3769	33%	35%
Total	11421	100%	100%

Appendix K

2026 Future Total Conditions Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	748	69	96	148	195	96	1152	383	450	647	325
Future Volume (vph)	205	748	69	96	148	195	96	1152	383	450	647	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		1	2		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.99		1.00		0.98	1.00		0.98
Frt		0.987			0.915				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2993	3384	0	3273	2969	0	1671	3539	1568	3303	3367	1483
Flt Permitted	0.950			0.950			0.386			0.950		
Satd. Flow (perm)	2959	3384	0	3271	2969	0	678	3539	1541	3298	3367	1459
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		8			205				196			342
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		201.0			222.0			185.0			133.0	
Travel Time (s)		12.1			13.3			11.1			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	216	787	73	101	156	205	101	1213	403	474	681	342
Shared Lane Traffic (%)												
Lane Group Flow (vph)	216	860	0	101	361	0	101	1213	403	474	681	342
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	13.0	40.3		11.0	38.3		11.0	47.7	47.7	21.0	57.7	57.7
Total Split (%)	10.8%	33.6%		9.2%	31.9%		9.2%	39.8%	39.8%	17.5%	48.1%	48.1%
Maximum Green (s)	9.0	34.0		7.0	32.0		7.0	41.4	41.4	17.0	51.4	51.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	9.0	34.0		7.0	32.0		50.7	41.4	41.4	17.0	51.4	51.4
Actuated g/C Ratio	0.08	0.28		0.06	0.27		0.42	0.34	0.34	0.14	0.43	0.43
v/c Ratio	0.96	0.89		0.53	0.38		0.29	0.99	0.61	1.01	0.47	0.42
Control Delay	107.2	53.6		65.5	16.3		16.9	63.9	20.5	97.6	20.2	4.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	107.2	53.6		65.5	16.3		16.9	63.9	20.5	97.6	20.2	4.3
LOS	F	D		E	B		B	E	C	F	C	A
Approach Delay		64.3			27.0			50.9			41.1	
Approach LOS		E			C			D			D	
Queue Length 50th (m)	27.9	106.8		12.7	15.7		11.8	156.6	41.7	~65.2	52.0	13.5
Queue Length 95th (m)	#53.4	#143.2		22.4	29.6		21.1	#207.2	76.9	#100.3	64.8	23.0
Internal Link Dist (m)		177.0			198.0			161.0			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	224	964		190	942		344	1220	660	467	1442	820
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.96	0.89		0.53	0.38		0.29	0.99	0.61	1.01	0.47	0.42

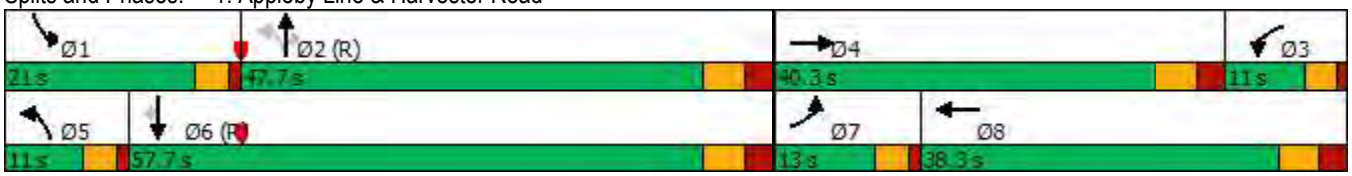
Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	

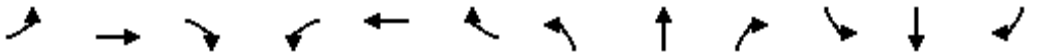
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 48.5	Intersection LOS: D
Intersection Capacity Utilization 94.3%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road

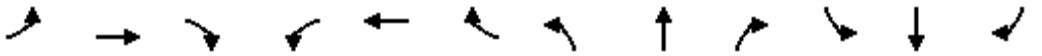




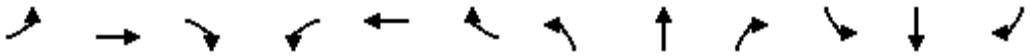
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	748	69	96	148	195	96	1152	383	450	647	325
Future Volume (vph)	205	748	69	96	148	195	96	1152	383	450	647	325
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2993	3385		3273	2969		1670	3539	1541	3303	3367	1459
Flt Permitted	0.95	1.00		0.95	1.00		0.39	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2993	3385		3273	2969		678	3539	1541	3303	3367	1459
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)	216	787	73	101	156	205	101	1213	403	474	681	342
RTOR Reduction (vph)	0	6	0	0	150	0	0	0	128	0	0	196
Lane Group Flow (vph)	216	854	0	101	211	0	101	1213	275	474	681	146
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	9.0	34.0		7.0	32.0		48.4	41.4	41.4	17.0	51.4	51.4
Effective Green, g (s)	9.0	34.0		7.0	32.0		48.4	41.4	41.4	17.0	51.4	51.4
Actuated g/C Ratio	0.08	0.28		0.06	0.27		0.40	0.34	0.34	0.14	0.43	0.43
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	224	959		190	791		331	1220	531	467	1442	624
v/s Ratio Prot	0.07	c0.25		c0.03	0.07		0.02	c0.34		c0.14	0.20	
v/s Ratio Perm							0.11		0.18			0.10
v/c Ratio	0.96	0.89		0.53	0.27		0.31	0.99	0.52	1.01	0.47	0.23
Uniform Delay, d1	55.3	41.2		54.9	34.7		22.7	39.2	31.3	51.5	24.6	21.8
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.04	0.77	1.22
Incremental Delay, d2	49.7	12.3		2.8	0.2		0.5	24.4	3.6	44.8	1.1	0.9
Delay (s)	105.0	53.5		57.7	34.9		23.3	63.6	34.9	98.3	20.0	27.4
Level of Service	F	D		E	C		C	E	C	F	C	C
Approach Delay (s)		63.8			39.9			54.5			46.5	
Approach LOS		E			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	52.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	1154	9	5	285	46	10	0	3	62	1	139
Future Volume (vph)	211	1154	9	5	285	46	10	0	3	62	1	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			15.0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.98
Frt		0.999			0.979			0.971				0.850
Flt Protected		0.992			0.999			0.962			0.953	
Satd. Flow (prot)	0	3450	0	0	3224	0	0	924	0	0	1775	1568
Flt Permitted		0.802			0.935			0.726			0.719	
Satd. Flow (perm)	0	2788	0	0	3017	0	0	691	0	0	1339	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			43			47				153
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		222.0			192.0			110.6			135.1	
Travel Time (s)		13.3			11.5			8.0			9.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	232	1268	10	5	313	51	11	0	3	68	1	153
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1510	0	0	369	0	0	14	0	0	69	153
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	46.0	46.0		46.0	46.0		24.0	24.0		24.0	24.0	24.0
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	34.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		44.3			44.3			9.3			9.3	9.3
Actuated g/C Ratio		0.71			0.71			0.15			0.15	0.15
v/c Ratio		0.76			0.17			0.10			0.35	0.43
Control Delay		12.2			4.1			2.1			28.8	8.9
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		12.2			4.1			2.1			28.8	8.9
LOS		B			A			A			C	A
Approach Delay		12.2			4.1			2.1			15.1	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		59.7			6.6			0.0			7.6	0.0
Queue Length 95th (m)		#133.7			13.5			0.8			18.2	13.7
Internal Link Dist (m)		198.0			168.0			86.6			111.1	
Turn Bay Length (m)												
Base Capacity (vph)		1983			2158			222			365	528
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.76			0.17			0.06			0.19	0.29

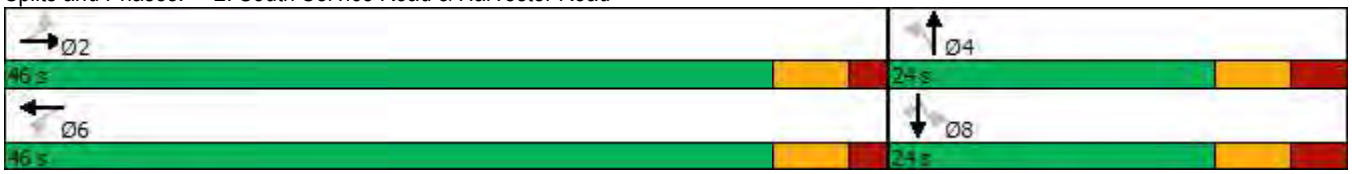
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.76			
Intersection Signal Delay: 11.0		Intersection LOS: B	

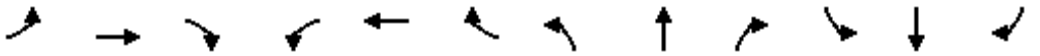
Intersection Capacity Utilization 91.0% ICU Level of Service F

Analysis Period (min) 15

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

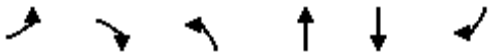
Splits and Phases: 2: South Service Road & Harvester Road



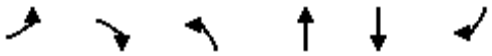


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	211	1154	9	5	285	46	10	0	3	62	1	139
Future Volume (vph)	211	1154	9	5	285	46	10	0	3	62	1	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			0.98			0.97			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.95	1.00
Satd. Flow (prot)		3450			3226			916			1775	1531
Flt Permitted		0.80			0.94			0.73			0.72	1.00
Satd. Flow (perm)		2789			3019			691			1340	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	232	1268	10	5	313	51	11	0	3	68	1	153
RTOR Reduction (vph)	0	1	0	0	14	0	0	12	0	0	0	135
Lane Group Flow (vph)	0	1509	0	0	355	0	0	2	0	0	69	18
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		43.1			43.1			7.7			7.7	7.7
Effective Green, g (s)		43.1			43.1			7.7			7.7	7.7
Actuated g/C Ratio		0.68			0.68			0.12			0.12	0.12
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1884			2039			83			161	184
v/s Ratio Prot												
v/s Ratio Perm		c0.54			0.12			0.00			c0.05	0.01
v/c Ratio		0.80			0.17			0.02			0.43	0.10
Uniform Delay, d1		7.3			3.8			24.7			26.0	25.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		3.7			0.2			0.1			1.8	0.2
Delay (s)		11.0			4.0			24.8			27.8	25.2
Level of Service		B			A			C			C	C
Approach Delay (s)		11.0			4.0			24.8			26.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	63.8	Sum of lost time (s)	13.0
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	286	174	0	987	973	0
Future Volume (vph)	286	174	0	987	973	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		149				
Link Speed (k/h)	60			60	60	
Link Distance (m)	122.6			230.2	319.8	
Travel Time (s)	7.4			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	311	189	0	1073	1058	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	311	189	0	1073	1058	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	



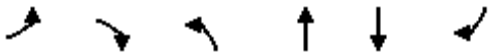
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	16.7	16.7		91.3	91.3	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
v/c Ratio	0.68	0.39		0.41	0.41	
Control Delay	56.3	14.2		15.3	4.2	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	56.3	14.2		15.3	4.2	
LOS	E	B		B	A	
Approach Delay	40.4			15.3	4.2	
Approach LOS	D			B	A	
Queue Length 50th (m)	38.2	5.0		98.9	22.7	
Queue Length 95th (m)	51.4	16.4		m108.0	47.5	
Internal Link Dist (m)	98.6			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1156	1001		2590	2590	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.27	0.19		0.41	0.41	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 15.6	Intersection LOS: B
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	286	174	0	987	973	0
Future Volume (vph)	286	174	0	987	973	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	311	189	0	1073	1058	0
RTOR Reduction (vph)	0	128	0	0	0	0
Lane Group Flow (vph)	311	61	0	1073	1058	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	16.7	16.7		91.3	91.3	
Effective Green, g (s)	16.7	16.7		91.3	91.3	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	459	359		2591	2591	
v/s Ratio Prot	c0.09			c0.32	0.31	
v/s Ratio Perm		0.02				
v/c Ratio	0.68	0.17		0.41	0.41	
Uniform Delay, d1	49.1	45.5		5.0	5.0	
Progression Factor	1.00	1.00		2.80	0.71	
Incremental Delay, d2	3.9	0.2		0.2	0.4	
Delay (s)	53.0	45.8		14.2	4.0	
Level of Service	D	D		B	A	
Approach Delay (s)	50.3			14.2	4.0	
Approach LOS	D			B	A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	311	336	976	0	0	982
Future Volume (vph)	311	336	976	0	0	982
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		111				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	338	365	1061	0	0	1067
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	365	1061	0	0	1067
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						

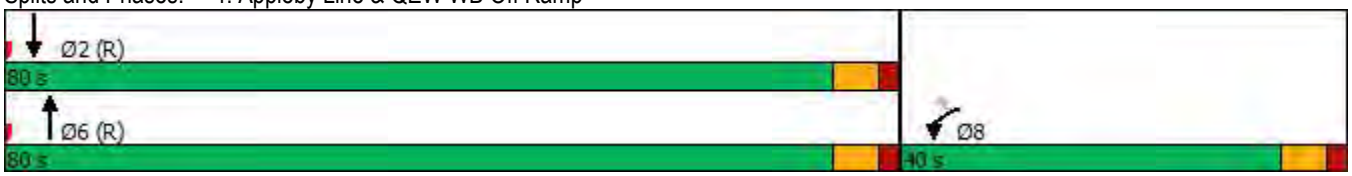


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	26.6	26.6	81.4			81.4
Actuated g/C Ratio	0.22	0.22	0.68			0.68
v/c Ratio	0.48	0.88	0.46			0.47
Control Delay	41.8	53.1	18.3			10.8
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	41.8	53.1	18.3			10.8
LOS	D	D	B			B
Approach Delay	47.7		18.3			10.8
Approach LOS	D		B			B
Queue Length 50th (m)	37.4	62.8	141.2			61.2
Queue Length 95th (m)	48.4	96.0	166.7			90.0
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	910	499	2311			2289
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.37	0.73	0.46			0.47

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	

Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 57.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





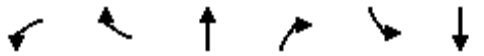
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	311	336	976	0	0	982
Future Volume (vph)	311	336	976	0	0	982
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	338	365	1061	0	0	1067
RTOR Reduction (vph)	0	86	0	0	0	0
Lane Group Flow (vph)	338	279	1061	0	0	1067
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	26.6	26.6	81.4			81.4
Effective Green, g (s)	26.6	26.6	81.4			81.4
Actuated g/C Ratio	0.22	0.22	0.68			0.68
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	712	328	2310			2288
v/s Ratio Prot	0.11		0.31			c0.32
v/s Ratio Perm		c0.19				
v/c Ratio	0.47	0.85	0.46			0.47
Uniform Delay, d1	40.6	44.8	9.0			9.1
Progression Factor	1.00	1.00	1.76			1.00
Incremental Delay, d2	0.5	18.2	0.6			0.7
Delay (s)	41.1	62.9	16.5			9.8
Level of Service	D	E	B			A
Approach Delay (s)	52.5		16.5			9.8
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	22.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	31	1502	50	0	1430
Future Volume (vph)	0	31	1502	50	0	1430
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	65.0	
Storage Lanes	0	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.995			
Flt Protected						
Satd. Flow (prot)	0	1481	3409	0	0	3438
Flt Permitted						
Satd. Flow (perm)	0	1481	3409	0	0	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	33	1598	53	0	1521
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	33	1651	0	0	1521
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

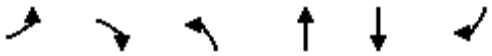
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.1%		ICU Level of Service A	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	31	1502	50	0	1430
Future Volume (Veh/h)	0	31	1502	50	0	1430
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	33	1598	53	0	1521
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.72	0.66			0.66	
vC, conflicting volume	2388	828			1654	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1475	0			969	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	76	698			467	

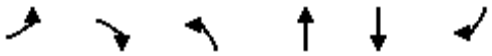
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	33	1065	586	760	760
Volume Left	0	0	0	0	0
Volume Right	33	0	53	0	0
cSH	698	1700	1700	1700	1700
Volume to Capacity	0.05	0.63	0.34	0.45	0.45
Queue Length 95th (m)	1.2	0.0	0.0	0.0	0.0
Control Delay (s)	10.4	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.4	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	16	30	228	185	13
Future Volume (vph)	3	16	30	228	185	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.991	
Flt Protected	0.993			0.994		
Satd. Flow (prot)	1637	0	0	1852	1846	0
Flt Permitted	0.993			0.994		
Satd. Flow (perm)	1637	0	0	1852	1846	0
Link Speed (k/h)	60			50	50	
Link Distance (m)	39.7			135.1	107.9	
Travel Time (s)	2.4			9.7	7.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	17	33	248	201	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	281	215	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

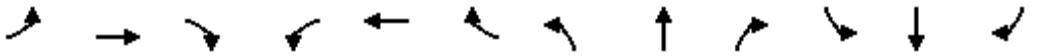
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.5%		ICU Level of Service A	
Analysis Period (min) 15			



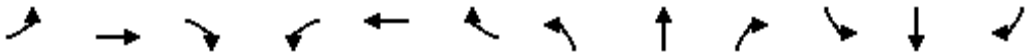
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	16	30	228	185	13
Future Volume (Veh/h)	3	16	30	228	185	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	17	33	248	201	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				135		
pX, platoon unblocked						
vC, conflicting volume	522	208	215			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	522	208	215			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	502	832	1355			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	20	281	215
Volume Left	3	33	0
Volume Right	17	0	14
cSH	758	1355	1700
Volume to Capacity	0.03	0.02	0.13
Queue Length 95th (m)	0.7	0.6	0.0
Control Delay (s)	9.9	1.1	0.0
Lane LOS	A	A	
Approach Delay (s)	9.9	1.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	37.5%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	126	64	91	24	35	134	1115	387	89	1272	40
Future Volume (vph)	36	126	64	91	24	35	134	1115	387	89	1272	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	0.99			1.00	
Frt		0.949			0.911			0.961			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1674	0	3072	1604	0	3242	3266	0	1770	3384	0
Flt Permitted	0.717			0.950			0.950			0.073		
Satd. Flow (perm)	1334	1674	0	3072	1604	0	3240	3266	0	136	3384	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			36			51			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.9			122.8			245.0			64.5	
Travel Time (s)		3.7			7.4			14.7			3.9	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	38	131	67	95	25	36	140	1161	403	93	1325	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	198	0	95	61	0	140	1564	0	93	1367	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		5.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		9.5	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	39.0	39.0		9.8	48.8		12.0	64.2		12.0	64.2	
Total Split (%)	31.2%	31.2%		7.8%	39.0%		9.6%	51.4%		9.6%	51.4%	
Maximum Green (s)	32.0	32.0		5.3	41.8		8.0	57.2		8.0	57.2	
Yellow Time (s)	4.0	4.0		3.5	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	18.8	18.8		5.3	28.6		10.8	69.8		79.2	67.6	
Actuated g/C Ratio	0.15	0.15		0.04	0.23		0.09	0.56		0.63	0.54	
v/c Ratio	0.19	0.74		0.73	0.15		0.50	0.85		0.47	0.75	
Control Delay	46.2	61.2		89.5	18.5		60.4	29.0		19.8	26.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	1.0		0.0	0.0	
Total Delay	46.2	61.2		89.5	18.5		60.4	30.0		19.8	26.7	
LOS	D	E		F	B		E	C		B	C	
Approach Delay		58.8			61.7			32.5			26.3	
Approach LOS		E			E			C			C	
Queue Length 50th (m)	8.7	44.7		12.7	5.1		18.1	163.1		7.3	137.6	
Queue Length 95th (m)	18.3	67.2		#27.1	15.8		28.5	#261.5		21.8	199.1	
Internal Link Dist (m)		37.9			98.8			221.0			40.5	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	341	443		130	560		281	1847		205	1832	
Starvation Cap Reductn	0	0		0	0		0	102		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.11	0.45		0.73	0.11		0.50	0.90		0.45	0.75	

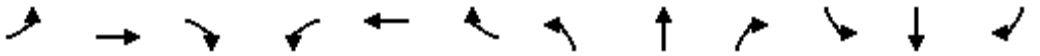
Intersection Summary	
Area Type:	Other
Cycle Length: 125	
Actuated Cycle Length: 125	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 33.0	Intersection LOS: C
Intersection Capacity Utilization 83.8%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 7: Appleby Line & North Service Road



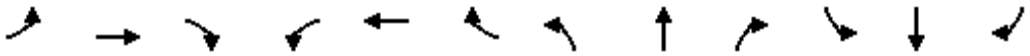


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	126	64	91	24	35	134	1115	387	89	1272	40
Future Volume (vph)	36	126	64	91	24	35	134	1115	387	89	1272	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1674		3072	1604		3242	3267		1770	3386	
Flt Permitted	0.72	1.00		0.95	1.00		0.95	1.00		0.07	1.00	
Satd. Flow (perm)	1334	1674		3072	1604		3242	3267		136	3386	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	131	67	95	25	36	140	1161	403	93	1325	42
RTOR Reduction (vph)	0	17	0	0	28	0	0	23	0	0	1	0
Lane Group Flow (vph)	38	181	0	95	33	0	140	1541	0	93	1366	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	18.8	18.8		5.3	28.6		10.8	69.8		76.2	67.6	
Effective Green, g (s)	18.8	18.8		5.3	28.6		10.8	69.8		76.2	67.6	
Actuated g/C Ratio	0.15	0.15		0.04	0.23		0.09	0.56		0.61	0.54	
Clearance Time (s)	7.0	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	200	251		130	366		280	1824		195	1831	
v/s Ratio Prot		c0.11		c0.03	0.02		c0.04	c0.47		0.03	0.40	
v/s Ratio Perm	0.03									0.26		
v/c Ratio	0.19	0.72		0.73	0.09		0.50	0.85		0.48	0.75	
Uniform Delay, d1	46.4	50.6		59.1	38.0		54.5	23.1		18.1	22.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	9.8		18.9	0.1		1.4	5.0		1.8	2.8	
Delay (s)	46.9	60.4		78.1	38.1		55.9	28.1		19.9	24.9	
Level of Service	D	E		E	D		E	C		B	C	
Approach Delay (s)		58.2			62.4			30.4			24.6	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	286	255	202	470	595	291	110	918	170	219	1456	298
Future Volume (vph)	286	255	202	470	595	291	110	918	170	219	1456	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		1	2		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.934			0.951				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2993	2955	0	3273	3171	0	1671	3539	1568	3303	3367	1483
Flt Permitted	0.950			0.950			0.068			0.950		
Satd. Flow (perm)	2974	2955	0	3269	3171	0	120	3539	1538	3293	3367	1457
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		96			54				140			164
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.2			222.0			186.7			133.0	
Travel Time (s)		12.0			13.3			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	301	268	213	495	626	306	116	966	179	231	1533	314
Shared Lane Traffic (%)												
Lane Group Flow (vph)	301	481	0	495	932	0	116	966	179	231	1533	314
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	19.0	40.0		26.0	47.0		11.0	63.0	63.0	21.0	73.0	73.0
Total Split (%)	12.7%	26.7%		17.3%	31.3%		7.3%	42.0%	42.0%	14.0%	48.7%	48.7%
Maximum Green (s)	15.0	33.7		22.0	40.7		7.0	56.7	56.7	17.0	66.7	66.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	15.0	33.7		22.0	40.7		68.0	58.7	58.7	15.0	66.7	66.7
Actuated g/C Ratio	0.10	0.22		0.15	0.27		0.45	0.39	0.39	0.10	0.44	0.44
v/c Ratio	1.01	0.65		1.03	1.04		0.92	0.70	0.26	0.70	1.02	0.43
Control Delay	119.5	46.6		110.4	89.3		92.4	41.9	9.2	76.7	70.3	14.8
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	119.5	46.6		110.4	89.3		92.4	41.9	9.2	76.7	70.3	14.8
LOS	F	D		F	F		F	D	A	E	E	B
Approach Delay		74.6			96.6			41.9			62.6	
Approach LOS		E			F			D			E	
Queue Length 50th (m)	~49.7	58.5		~85.3	~157.9		20.4	133.7	7.7	36.4	~268.0	30.1
Queue Length 95th (m)	#82.7	79.2		#122.7	#202.2		#62.9	161.6	25.3	51.1	#312.7	56.1
Internal Link Dist (m)		175.2			198.0			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	299	738		480	899		126	1383	686	374	1497	738
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.01	0.65		1.03	1.04		0.92	0.70	0.26	0.62	1.02	0.43

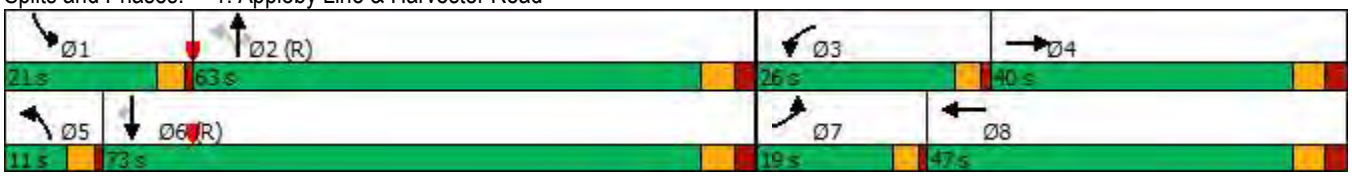
Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

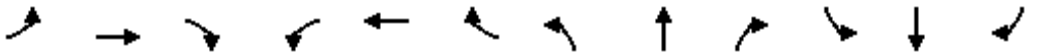
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 68.4	Intersection LOS: E
Intersection Capacity Utilization 103.6%	ICU Level of Service G
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road

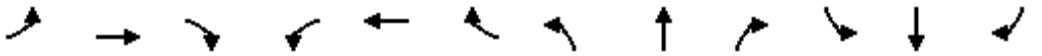




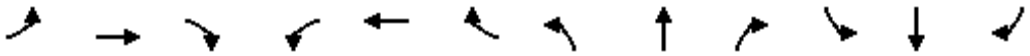
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	286	255	202	470	595	291	110	918	170	219	1456	298
Future Volume (vph)	286	255	202	470	595	291	110	918	170	219	1456	298
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2993	2954		3273	3170		1671	3539	1538	3303	3367	1457
Flt Permitted	0.95	1.00		0.95	1.00		0.07	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2993	2954		3273	3170		120	3539	1538	3303	3367	1457
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)	301	268	213	495	626	306	116	966	179	231	1533	314
RTOR Reduction (vph)	0	74	0	0	39	0	0	0	85	0	0	91
Lane Group Flow (vph)	301	407	0	495	893	0	116	966	94	231	1533	223
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	15.0	33.7		22.0	40.7		65.7	58.7	58.7	15.0	66.7	66.7
Effective Green, g (s)	15.0	33.7		22.0	40.7		65.7	58.7	58.7	15.0	66.7	66.7
Actuated g/C Ratio	0.10	0.22		0.15	0.27		0.44	0.39	0.39	0.10	0.44	0.44
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	299	663		480	860		124	1384	601	330	1497	647
v/s Ratio Prot	0.10	0.14		c0.15	c0.28		c0.04	0.27		0.07	c0.46	
v/s Ratio Perm							0.36		0.06			0.15
v/c Ratio	1.01	0.61		1.03	1.04		0.94	0.70	0.16	0.70	1.02	0.34
Uniform Delay, d1	67.5	52.3		64.0	54.6		35.9	38.2	29.6	65.3	41.6	27.3
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	53.7	4.2		49.3	41.0		60.6	2.9	0.6	6.4	29.6	1.5
Delay (s)	121.2	56.5		113.3	95.6		96.4	41.2	30.1	71.7	71.2	28.8
Level of Service	F	E		F	F		F	D	C	E	E	C
Approach Delay (s)		81.4			101.8			44.7			64.9	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	72.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	103.6%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	511	8	5	1010	28	56	5	7	46	4	281
Future Volume (vph)	64	511	8	5	1010	28	56	5	7	46	4	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			15.0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.97
Frt		0.998			0.996			0.986				0.850
Flt Protected		0.995						0.960			0.956	
Satd. Flow (prot)	0	3439	0	0	3282	0	0	971	0	0	1781	1568
Flt Permitted		0.722			0.953			0.725			0.688	
Satd. Flow (perm)	0	2495	0	0	3128	0	0	724	0	0	1282	1523
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			6				110
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		222.0			192.0			110.6			135.1	
Travel Time (s)		13.3			11.5			8.0			9.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	70	562	9	5	1110	31	62	5	8	51	4	309
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	641	0	0	1146	0	0	75	0	0	55	309
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.1			58.1			15.8			15.8	15.8
Actuated g/C Ratio		0.67			0.67			0.18			0.18	0.18
v/c Ratio		0.38			0.55			0.55			0.24	0.84
Control Delay		7.7			9.2			45.7			32.5	42.9
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		7.7			9.2			45.7			32.5	42.9
LOS		A			A			D			C	D
Approach Delay		7.7			9.2			45.7			41.3	
Approach LOS		A			A			D			D	
Queue Length 50th (m)		25.4			53.2			11.0			8.3	34.3
Queue Length 95th (m)		36.5			71.7			25.9			19.0	#74.3
Internal Link Dist (m)		198.0			168.0			86.6			111.1	
Turn Bay Length (m)												
Base Capacity (vph)		1667			2091			163			280	419
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.38			0.55			0.46			0.20	0.74

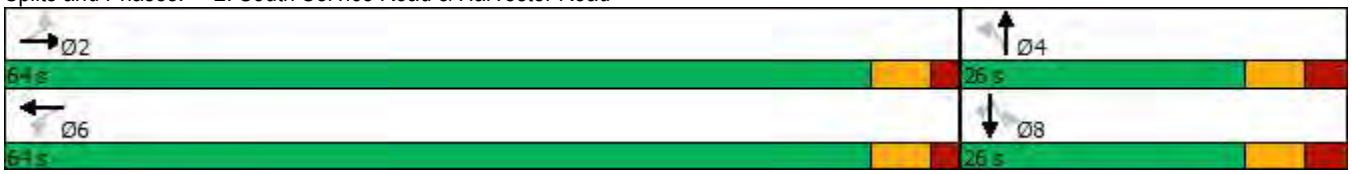
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 87			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 15.3		Intersection LOS: B	

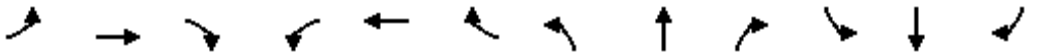
Intersection Capacity Utilization 83.6% ICU Level of Service E

Analysis Period (min) 15

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

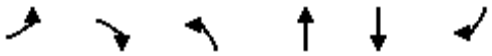
Splits and Phases: 2: South Service Road & Harvester Road



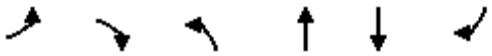


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	511	8	5	1010	28	56	5	7	46	4	281
Future Volume (vph)	64	511	8	5	1010	28	56	5	7	46	4	281
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.97
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			1.00			0.99			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3437			3281			959			1780	1524
Flt Permitted		0.72			0.95			0.73			0.69	1.00
Satd. Flow (perm)		2496			3127			724			1281	1524
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	70	562	9	5	1110	31	62	5	8	51	4	309
RTOR Reduction (vph)	0	1	0	0	2	0	0	5	0	0	0	90
Lane Group Flow (vph)	0	640	0	0	1144	0	0	70	0	0	55	219
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			15.8			15.8	15.8
Effective Green, g (s)		58.1			58.1			15.8			15.8	15.8
Actuated g/C Ratio		0.67			0.67			0.18			0.18	0.18
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1668			2090			131			232	277
v/s Ratio Prot												
v/s Ratio Perm		0.26			c0.37			0.10			0.04	c0.14
v/c Ratio		0.38			0.55			0.54			0.24	0.79
Uniform Delay, d1		6.4			7.5			32.2			30.4	34.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.7			1.0			4.2			0.5	14.2
Delay (s)		7.1			8.6			36.4			30.9	48.2
Level of Service		A			A			D			C	D
Approach Delay (s)		7.1			8.6			36.4			45.6	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	83.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



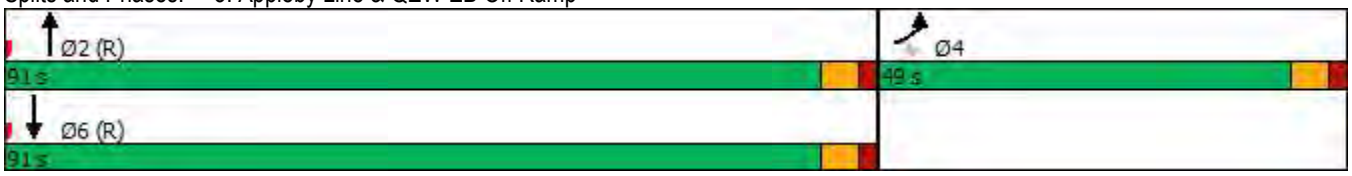
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	340	0	1142	1632	0
Future Volume (vph)	379	340	0	1142	1632	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		36				
Link Speed (k/h)	60			60	60	
Link Distance (m)	122.6			230.2	319.8	
Travel Time (s)	7.4			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	412	370	0	1241	1774	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	412	370	0	1241	1774	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

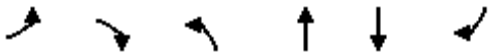


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	24.2	24.2		103.8	103.8	
Actuated g/C Ratio	0.17	0.17		0.74	0.74	
v/c Ratio	0.72	0.78		0.49	0.70	
Control Delay	61.7	60.9		8.7	6.3	
Queue Delay	0.0	0.0		0.0	0.1	
Total Delay	61.7	60.9		8.7	6.4	
LOS	E	E		A	A	
Approach Delay	61.3			8.7	6.4	
Approach LOS	E			A	A	
Queue Length 50th (m)	59.3	53.8		68.3	72.6	
Queue Length 95th (m)	72.9	69.6		102.1	110.8	
Internal Link Dist (m)	98.6			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1014	818		2524	2524	
Starvation Cap Reductn	0	0		0	109	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.41	0.45		0.49	0.73	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 18.5	Intersection LOS: B
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	379	340	0	1142	1632	0
Future Volume (vph)	379	340	0	1142	1632	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	412	370	0	1241	1774	0
RTOR Reduction (vph)	0	30	0	0	0	0
Lane Group Flow (vph)	412	340	0	1241	1774	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	24.2	24.2		103.8	103.8	
Effective Green, g (s)	24.2	24.2		103.8	103.8	
Actuated g/C Ratio	0.17	0.17		0.74	0.74	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	570	446		2525	2525	
v/s Ratio Prot	0.12			0.36	c0.52	
v/s Ratio Perm		c0.13				
v/c Ratio	0.72	0.76		0.49	0.70	
Uniform Delay, d1	54.7	55.2		7.4	9.8	
Progression Factor	1.00	1.00		1.00	0.48	
Incremental Delay, d2	4.5	7.6		0.7	1.2	
Delay (s)	59.2	62.7		8.1	5.8	
Level of Service	E	E		A	A	
Approach Delay (s)	60.9			8.1	5.8	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	461	388	1406	0	0	1496
Future Volume (vph)	461	388	1406	0	0	1496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		36				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	501	422	1528	0	0	1626
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	422	1528	0	0	1626
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						



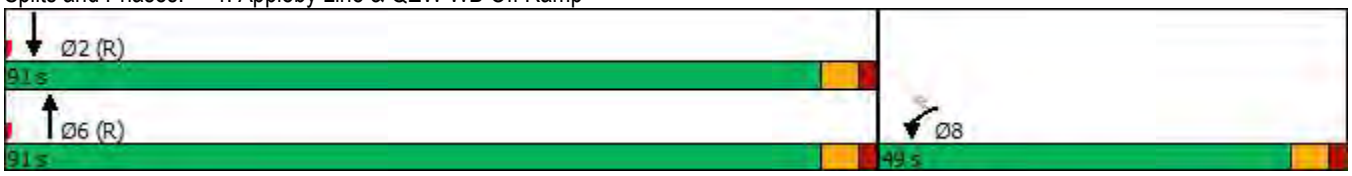
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	40.3	40.3	87.7			87.7
Actuated g/C Ratio	0.29	0.29	0.63			0.63
v/c Ratio	0.54	0.93	0.72			0.77
Control Delay	44.1	72.8	21.9			16.0
Queue Delay	0.0	55.1	0.1			2.1
Total Delay	44.1	127.8	22.0			18.1
LOS	D	F	C			B
Approach Delay	82.4		22.0			18.1
Approach LOS	F		C			B
Queue Length 50th (m)	61.9	108.5	193.2			202.2
Queue Length 95th (m)	79.9	#170.5	221.3			222.0
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	986	480	2133			2113
Starvation Cap Reductn	0	0	0			334
Spillback Cap Reductn	0	232	50			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.51	1.70	0.73			0.91

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	

Intersection Signal Delay: 34.1	Intersection LOS: C
Intersection Capacity Utilization 72.9%	ICU Level of Service C
Analysis Period (min) 15	

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

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





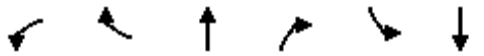
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	461	388	1406	0	0	1496
Future Volume (vph)	461	388	1406	0	0	1496
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	501	422	1528	0	0	1626
RTOR Reduction (vph)	0	26	0	0	0	0
Lane Group Flow (vph)	501	396	1528	0	0	1626
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	40.3	40.3	87.7			87.7
Effective Green, g (s)	40.3	40.3	87.7			87.7
Actuated g/C Ratio	0.29	0.29	0.63			0.63
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	924	426	2133			2113
v/s Ratio Prot	0.16		0.45			c0.48
v/s Ratio Perm		c0.27				
v/c Ratio	0.54	0.93	0.72			0.77
Uniform Delay, d1	42.1	48.5	17.7			18.9
Progression Factor	1.00	1.00	1.08			0.71
Incremental Delay, d2	0.7	27.0	1.9			1.8
Delay (s)	42.7	75.4	20.9			15.3
Level of Service	D	E	C			B
Approach Delay (s)	57.7		20.9			15.3
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	27.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	72.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	73	1512	31	0	1981
Future Volume (vph)	0	73	1512	31	0	1981
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	65.0	
Storage Lanes	0	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.997			
Flt Protected						
Satd. Flow (prot)	0	1481	3418	0	0	3438
Flt Permitted						
Satd. Flow (perm)	0	1481	3418	0	0	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	78	1609	33	0	2107
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	78	1642	0	0	2107
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

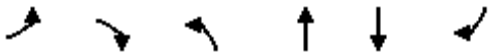
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 58.1%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	73	1512	31	0	1981
Future Volume (Veh/h)	0	73	1512	31	0	1981
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	78	1609	33	0	2107
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.81	0.77			0.77	
vC, conflicting volume	2682	824			1645	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1325	175			1241	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	87			100	
cM capacity (veh/h)	109	623			428	

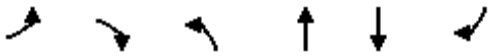
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	1073	569	1054	1054
Volume Left	0	0	0	0	0
Volume Right	78	0	33	0	0
cSH	623	1700	1700	1700	1700
Volume to Capacity	0.13	0.63	0.33	0.62	0.62
Queue Length 95th (m)	3.4	0.0	0.0	0.0	0.0
Control Delay (s)	11.6	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.6	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	39	15	81	292	7
Future Volume (vph)	8	39	15	81	292	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.889				0.997	
Flt Protected	0.991			0.992		
Satd. Flow (prot)	1641	0	0	1848	1857	0
Flt Permitted	0.991			0.992		
Satd. Flow (perm)	1641	0	0	1848	1857	0
Link Speed (k/h)	60			50	50	
Link Distance (m)	48.4			135.1	105.4	
Travel Time (s)	2.9			9.7	7.6	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	42	16	88	317	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	0	104	325	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

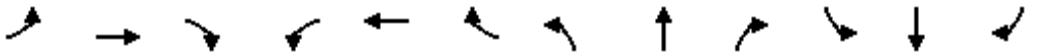
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.0%		ICU Level of Service A	
Analysis Period (min) 15			



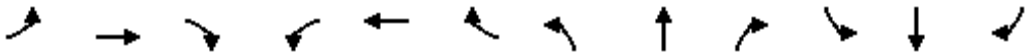
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	39	15	81	292	7
Future Volume (Veh/h)	8	39	15	81	292	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	42	16	88	317	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				135		
pX, platoon unblocked						
vC, conflicting volume	441	321	325			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	441	321	325			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	94	99			
cM capacity (veh/h)	566	720	1235			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	51	104	325
Volume Left	9	16	0
Volume Right	42	0	8
cSH	687	1235	1700
Volume to Capacity	0.07	0.01	0.19
Queue Length 95th (m)	1.9	0.3	0.0
Control Delay (s)	10.7	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	10.7	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	37	182	255	190	136	303	1651	103	69	1071	76
Future Volume (vph)	52	37	182	255	190	136	303	1651	103	69	1071	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	1.00			1.00	
Frt		0.876			0.937			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1452	0	3072	1627	0	3242	3373	0	1770	3370	0
Flt Permitted	0.556			0.950			0.950			0.065		
Satd. Flow (perm)	1035	1452	0	3072	1627	0	3239	3373	0	121	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		136			29			6			7	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.9			122.8			245.0			141.8	
Travel Time (s)		3.7			7.4			14.7			8.5	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	54	39	190	266	198	142	316	1720	107	72	1116	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	54	229	0	266	340	0	316	1827	0	72	1195	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



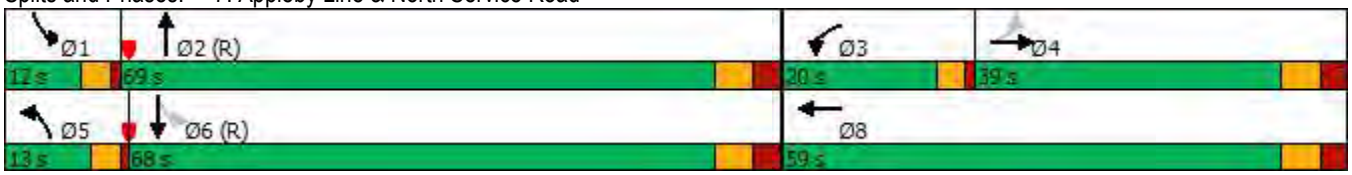
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	39.0	39.0		20.0	59.0		13.0	69.0		12.0	68.0	
Total Split (%)	27.9%	27.9%		14.3%	42.1%		9.3%	49.3%		8.6%	48.6%	
Maximum Green (s)	32.0	32.0		16.0	52.0		9.0	62.0		8.0	61.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	15.8	15.8		15.3	35.1		24.9	81.0		73.1	62.0	
Actuated g/C Ratio	0.11	0.11		0.11	0.25		0.18	0.58		0.52	0.44	
v/c Ratio	0.46	0.81		0.79	0.79		0.55	0.94		0.46	0.80	
Control Delay	68.4	44.6		78.2	57.6		55.3	43.1		25.0	38.5	
Queue Delay	0.0	0.1		9.4	0.0		0.0	8.4		0.0	0.2	
Total Delay	68.4	44.7		87.6	57.6		55.3	51.4		25.0	38.7	
LOS	E	D		F	E		E	D		C	D	
Approach Delay		49.2			70.8			52.0			38.0	
Approach LOS		D			E			D			D	
Queue Length 50th (m)	15.1	27.0		39.3	85.9		47.1	243.7		6.7	153.4	
Queue Length 95th (m)	27.9	54.6		#58.1	112.1		m#72.9	#370.5		19.5	187.7	
Internal Link Dist (m)		37.9			98.8			221.0			117.8	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	236	436		351	622		576	1953		165	1496	
Starvation Cap Reductn	0	0		0	0		0	129		0	0	
Spillback Cap Reductn	0	5		59	0		0	0		0	35	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.23	0.53		0.91	0.55		0.55	1.00		0.44	0.82	

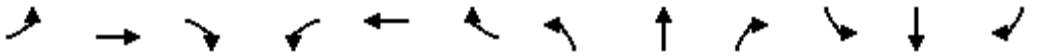
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.94	
Intersection Signal Delay: 50.3	Intersection LOS: D
Intersection Capacity Utilization 100.8%	ICU Level of Service G
Analysis Period (min) 15	

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Appleby Line & North Service Road





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	37	182	255	190	136	303	1651	103	69	1071	76
Future Volume (vph)	52	37	182	255	190	136	303	1651	103	69	1071	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1451		3072	1627		3242	3374		1770	3370	
Flt Permitted	0.56	1.00		0.95	1.00		0.95	1.00		0.06	1.00	
Satd. Flow (perm)	1035	1451		3072	1627		3242	3374		120	3370	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	54	39	190	266	198	142	316	1720	107	72	1116	79
RTOR Reduction (vph)	0	121	0	0	22	0	0	3	0	0	4	0
Lane Group Flow (vph)	54	108	0	266	318	0	316	1824	0	72	1191	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	15.8	15.8		15.3	35.1		24.9	80.2		68.7	62.0	
Effective Green, g (s)	15.8	15.8		15.3	35.1		24.9	80.2		68.7	62.0	
Actuated g/C Ratio	0.11	0.11		0.11	0.25		0.18	0.57		0.49	0.44	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	116	163		335	407		576	1932		137	1492	
v/s Ratio Prot		0.07		0.09	c0.20		c0.10	c0.54		0.03	0.35	
v/s Ratio Perm	0.05									0.23		
v/c Ratio	0.47	0.66		0.79	0.78		0.55	0.94		0.53	0.80	
Uniform Delay, d1	58.1	59.6		60.8	48.9		52.4	27.8		27.1	33.6	
Progression Factor	1.00	1.00		1.00	1.00		0.97	1.27		1.00	1.00	
Incremental Delay, d2	2.9	9.8		12.2	9.4		0.8	8.5		3.6	4.5	
Delay (s)	61.1	69.3		73.0	58.3		51.6	43.9		30.7	38.2	
Level of Service	E	E		E	E		D	D		C	D	
Approach Delay (s)		67.8			64.8			45.0			37.7	
Approach LOS		E			E			D			D	

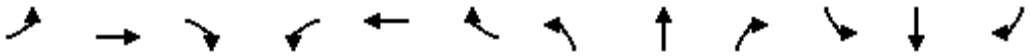
Intersection Summary			
HCM 2000 Control Delay	47.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Appendix L

2031 Future Total Conditions Synchro Worksheets

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	785	79	111	155	205	106	1287	436	472	767	341
Future Volume (vph)	214	785	79	111	155	205	106	1287	436	472	767	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		1	2		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	1.00		1.00	0.98		1.00		0.98	1.00		0.98
Frt		0.986			0.915				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2993	3376	0	3273	2965	0	1671	3539	1568	3303	3367	1483
Flt Permitted	0.950			0.950			0.336			0.950		
Satd. Flow (perm)	2954	3376	0	3271	2965	0	590	3539	1539	3298	3367	1458
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		7			216				168			359
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		199.5			222.0			186.7			133.0	
Travel Time (s)		12.0			13.3			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	225	826	83	117	163	216	112	1355	459	497	807	359
Shared Lane Traffic (%)												
Lane Group Flow (vph)	225	909	0	117	379	0	112	1355	459	497	807	359
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	15.0	43.0		11.0	39.0		11.0	61.0	61.0	25.0	75.0	75.0
Total Split (%)	10.7%	30.7%		7.9%	27.9%		7.9%	43.6%	43.6%	17.9%	53.6%	53.6%
Maximum Green (s)	11.0	36.7		7.0	32.7		7.0	54.7	54.7	21.0	68.7	68.7
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lead	Lead		Lag	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	11.0	36.7		7.0	32.7		64.0	54.7	54.7	21.0	68.7	68.7
Actuated g/C Ratio	0.08	0.26		0.05	0.23		0.46	0.39	0.39	0.15	0.49	0.49
v/c Ratio	0.96	1.02		0.72	0.44		0.35	0.98	0.65	1.00	0.49	0.40
Control Delay	112.1	85.7		89.2	20.8		17.5	62.0	26.4	100.1	25.1	3.3
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	112.1	85.7		89.2	20.8		17.5	62.0	26.4	100.1	25.1	3.3
LOS	F	F		F	C		B	E	C	F	C	A
Approach Delay		90.9			36.9			50.9			42.8	
Approach LOS		F			D			D			D	
Queue Length 50th (m)	34.2	~146.8		17.6	20.4		13.9	203.7	69.9	~76.0	81.0	0.0
Queue Length 95th (m)	#61.5	#190.4		#32.4	36.5		23.4	#256.0	110.6	#114.4	99.6	16.6
Internal Link Dist (m)		175.5			198.0			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	235	890		163	858		323	1382	703	495	1652	898
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.96	1.02		0.72	0.44		0.35	0.98	0.65	1.00	0.49	0.40

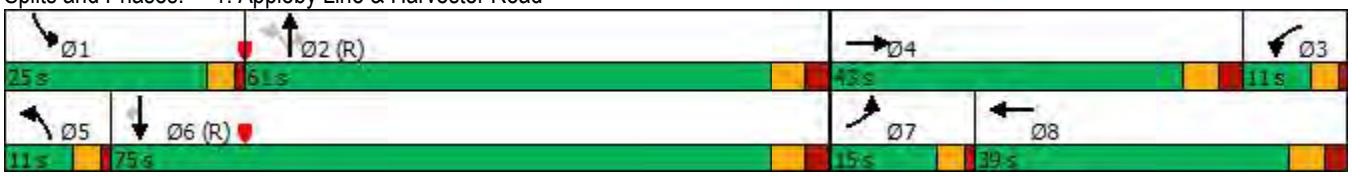
Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	

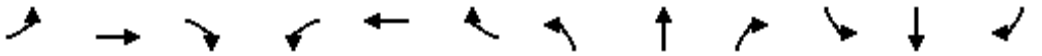
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 55.7	Intersection LOS: E
Intersection Capacity Utilization 98.7%	ICU Level of Service F
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road

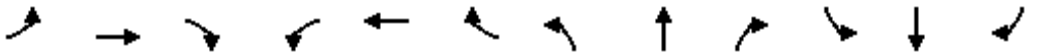




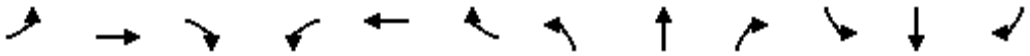
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	214	785	79	111	155	205	106	1287	436	472	767	341
Future Volume (vph)	214	785	79	111	155	205	106	1287	436	472	767	341
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.98		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	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	0.91		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2993	3377		3273	2964		1670	3539	1539	3303	3367	1458
Flt Permitted	0.95	1.00		0.95	1.00		0.34	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2993	3377		3273	2964		591	3539	1539	3303	3367	1458
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)	225	826	83	117	163	216	112	1355	459	497	807	359
RTOR Reduction (vph)	0	5	0	0	166	0	0	0	102	0	0	183
Lane Group Flow (vph)	225	904	0	117	213	0	112	1355	357	497	807	176
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	11.0	36.7		7.0	32.7		61.7	54.7	54.7	21.0	68.7	68.7
Effective Green, g (s)	11.0	36.7		7.0	32.7		61.7	54.7	54.7	21.0	68.7	68.7
Actuated g/C Ratio	0.08	0.26		0.05	0.23		0.44	0.39	0.39	0.15	0.49	0.49
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	235	885		163	692		314	1382	601	495	1652	715
v/s Ratio Prot	0.08	c0.27		c0.04	0.07		0.02	c0.38		c0.15	0.24	
v/s Ratio Perm							0.14		0.23			0.12
v/c Ratio	0.96	1.02		0.72	0.31		0.36	0.98	0.59	1.00	0.49	0.25
Uniform Delay, d1	64.3	51.6		65.5	44.3		23.5	42.1	33.8	59.5	23.9	20.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	46.4	35.7		14.0	0.3		0.7	20.0	4.3	41.5	1.0	0.8
Delay (s)	110.6	87.4		79.5	44.6		24.2	62.1	38.1	101.0	24.9	21.5
Level of Service	F	F		E	D		C	E	D	F	C	C
Approach Delay (s)		92.0			52.8			54.2			46.9	
Approach LOS		F			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	59.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	98.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	1241	10	5	306	48	11	0	3	65	1	148
Future Volume (vph)	226	1241	10	5	306	48	11	0	3	65	1	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			15.0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.98
Frt		0.999			0.980			0.973				0.850
Flt Protected		0.992			0.999			0.962			0.953	
Satd. Flow (prot)	0	3449	0	0	3228	0	0	926	0	0	1775	1568
Flt Permitted		0.796			0.934			0.720			0.718	
Satd. Flow (perm)	0	2767	0	0	3018	0	0	687	0	0	1337	1529
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			41			47				163
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		222.0			192.0			110.6			135.1	
Travel Time (s)		13.3			11.5			8.0			9.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	248	1364	11	5	336	53	12	0	3	71	1	163
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1623	0	0	394	0	0	15	0	0	72	163
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	46.0	46.0		46.0	46.0		24.0	24.0		24.0	24.0	24.0
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	34.3%
Maximum Green (s)	40.0	40.0		40.0	40.0		17.0	17.0		17.0	17.0	17.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		44.3			44.3			9.4			9.4	9.4
Actuated g/C Ratio		0.71			0.71			0.15			0.15	0.15
v/c Ratio		0.83			0.18			0.10			0.36	0.44
Control Delay		15.0			4.3			2.6			29.0	8.8
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		15.0			4.3			2.6			29.0	8.8
LOS		B			A			A			C	A
Approach Delay		15.0			4.3			2.6			15.0	
Approach LOS		B			A			A			B	
Queue Length 50th (m)		71.6			7.3			0.0			8.0	0.0
Queue Length 95th (m)		#153.2			14.6			1.0			18.7	14.1
Internal Link Dist (m)		198.0			168.0			86.6			111.1	
Turn Bay Length (m)												
Base Capacity (vph)		1965			2154			221			364	535
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.83			0.18			0.07			0.20	0.30

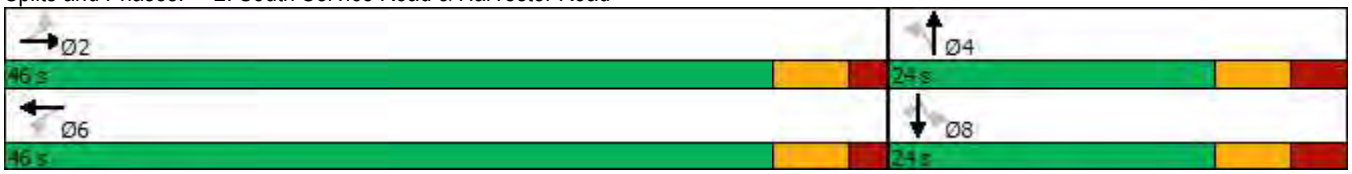
Intersection Summary			
Area Type:	Other		
Cycle Length: 70			
Actuated Cycle Length: 62.4			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.83			
Intersection Signal Delay: 13.1		Intersection LOS: B	

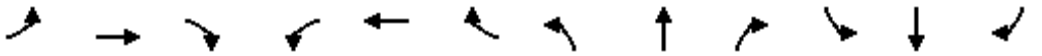
Intersection Capacity Utilization 93.9% ICU Level of Service F

Analysis Period (min) 15

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

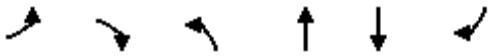
Splits and Phases: 2: South Service Road & Harvester Road



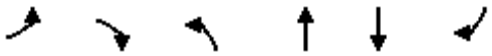


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	1241	10	5	306	48	11	0	3	65	1	148
Future Volume (vph)	226	1241	10	5	306	48	11	0	3	65	1	148
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.98
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			0.98			0.97			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.95	1.00
Satd. Flow (prot)		3450			3228			918			1775	1531
Flt Permitted		0.80			0.93			0.72			0.72	1.00
Satd. Flow (perm)		2766			3018			688			1338	1531
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	248	1364	11	5	336	53	12	0	3	71	1	163
RTOR Reduction (vph)	0	1	0	0	13	0	0	13	0	0	0	143
Lane Group Flow (vph)	0	1622	0	0	381	0	0	2	0	0	72	20
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		43.1			43.1			7.8			7.8	7.8
Effective Green, g (s)		43.1			43.1			7.8			7.8	7.8
Actuated g/C Ratio		0.67			0.67			0.12			0.12	0.12
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1865			2035			83			163	186
v/s Ratio Prot												
v/s Ratio Perm		c0.59			0.13			0.00			c0.05	0.01
v/c Ratio		0.87			0.19			0.02			0.44	0.11
Uniform Delay, d1		8.2			3.9			24.7			26.0	25.0
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		5.9			0.2			0.1			1.9	0.3
Delay (s)		14.1			4.1			24.8			27.9	25.2
Level of Service		B			A			C			C	C
Approach Delay (s)		14.1			4.1			24.8			26.0	
Approach LOS		B			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	63.9	Sum of lost time (s)	13.0
Intersection Capacity Utilization	93.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	301	215	0	1101	1077	0
Future Volume (vph)	301	215	0	1101	1077	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		112				
Link Speed (k/h)	60			60	60	
Link Distance (m)	122.6			230.2	319.8	
Travel Time (s)	7.4			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	327	234	0	1197	1171	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	327	234	0	1197	1171	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

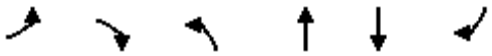


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	48.0	48.0		72.0	72.0	
Total Split (%)	40.0%	40.0%		60.0%	60.0%	
Maximum Green (s)	42.0	42.0		66.0	66.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	17.4	17.4		90.6	90.6	
Actuated g/C Ratio	0.14	0.14		0.76	0.76	
v/c Ratio	0.69	0.50		0.47	0.46	
Control Delay	56.0	27.4		6.6	4.6	
Queue Delay	0.0	0.0		0.0	0.0	
Total Delay	56.0	27.4		6.6	4.6	
LOS	E	C		A	A	
Approach Delay	44.1			6.6	4.6	
Approach LOS	D			A	A	
Queue Length 50th (m)	40.2	15.6		50.3	25.0	
Queue Length 95th (m)	53.5	28.7		74.4	58.4	
Internal Link Dist (m)	98.6			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1156	977		2572	2572	
Starvation Cap Reductn	0	0		0	0	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.28	0.24		0.47	0.46	

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 89 (74%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 13.0	Intersection LOS: B
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	301	215	0	1101	1077	0
Future Volume (vph)	301	215	0	1101	1077	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	327	234	0	1197	1171	0
RTOR Reduction (vph)	0	96	0	0	0	0
Lane Group Flow (vph)	327	138	0	1197	1171	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	17.4	17.4		90.6	90.6	
Effective Green, g (s)	17.4	17.4		90.6	90.6	
Actuated g/C Ratio	0.14	0.14		0.75	0.75	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	478	374		2571	2571	
v/s Ratio Prot	c0.10			c0.35	0.34	
v/s Ratio Perm		0.05				
v/c Ratio	0.68	0.37		0.47	0.46	
Uniform Delay, d1	48.7	46.3		5.6	5.5	
Progression Factor	1.00	1.00		1.00	0.70	
Incremental Delay, d2	4.0	0.6		0.6	0.5	
Delay (s)	52.7	47.0		6.2	4.3	
Level of Service	D	D		A	A	
Approach Delay (s)	50.3			6.2	4.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	348	353	1066	0	0	1066
Future Volume (vph)	348	353	1066	0	0	1066
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		89				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	378	384	1159	0	0	1159
Shared Lane Traffic (%)						
Lane Group Flow (vph)	378	384	1159	0	0	1159
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						



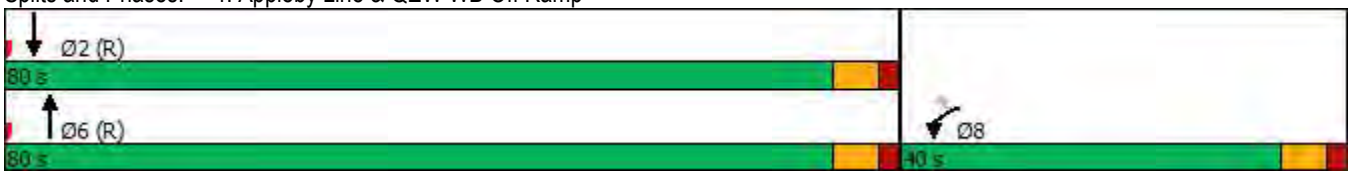
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	40.0	40.0	80.0			80.0
Total Split (%)	33.3%	33.3%	66.7%			66.7%
Maximum Green (s)	34.0	34.0	74.0			74.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	29.1	29.1	78.9			78.9
Actuated g/C Ratio	0.24	0.24	0.66			0.66
v/c Ratio	0.48	0.90	0.52			0.52
Control Delay	40.4	57.8	12.3			12.5
Queue Delay	0.0	0.0	0.0			0.0
Total Delay	40.4	57.8	12.3			12.5
LOS	D	E	B			B
Approach Delay	49.2		12.3			12.5
Approach LOS	D		B			B
Queue Length 50th (m)	40.6	71.6	101.8			77.0
Queue Length 95th (m)	53.9	#118.9	118.8			101.4
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	910	483	2238			2217
Starvation Cap Reductn	0	0	0			0
Spillback Cap Reductn	0	0	0			0
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.42	0.80	0.52			0.52

Intersection Summary	
Area Type:	Other
Cycle Length: 120	
Actuated Cycle Length: 120	
Offset: 86 (72%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.90	

Intersection Signal Delay: 21.5	Intersection LOS: C
Intersection Capacity Utilization 61.3%	ICU Level of Service B
Analysis Period (min) 15	

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

Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





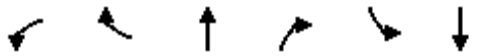
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	348	353	1066	0	0	1066
Future Volume (vph)	348	353	1066	0	0	1066
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	378	384	1159	0	0	1159
RTOR Reduction (vph)	0	67	0	0	0	0
Lane Group Flow (vph)	378	317	1159	0	0	1159
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	29.1	29.1	78.9			78.9
Effective Green, g (s)	29.1	29.1	78.9			78.9
Actuated g/C Ratio	0.24	0.24	0.66			0.66
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	779	359	2239			2218
v/s Ratio Prot	0.12		0.34			c0.34
v/s Ratio Perm		c0.21				
v/c Ratio	0.49	0.88	0.52			0.52
Uniform Delay, d1	39.0	43.8	10.7			10.7
Progression Factor	1.00	1.00	1.00			1.00
Incremental Delay, d2	0.5	21.5	0.8			0.9
Delay (s)	39.5	65.3	11.4			11.6
Level of Service	D	E	B			B
Approach Delay (s)	52.5		11.4			11.6
Approach LOS	D		B			B

Intersection Summary			
HCM 2000 Control Delay	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	31	1657	50	0	1590
Future Volume (vph)	0	31	1657	50	0	1590
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	65.0	
Storage Lanes	0	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.996			
Flt Protected						
Satd. Flow (prot)	0	1481	3413	0	0	3438
Flt Permitted						
Satd. Flow (perm)	0	1481	3413	0	0	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	33	1763	53	0	1691
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	33	1816	0	0	1691
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

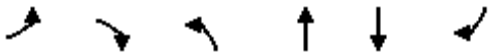
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 57.4%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	31	1657	50	0	1590
Future Volume (Veh/h)	0	31	1657	50	0	1590
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	33	1763	53	0	1691
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.69	0.62			0.62	
vC, conflicting volume	2638	911			1819	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1615	0			1098	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	95			100	
cM capacity (veh/h)	59	654			391	

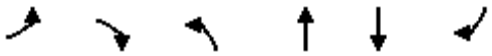
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	33	1175	641	846	846
Volume Left	0	0	0	0	0
Volume Right	33	0	53	0	0
cSH	654	1700	1700	1700	1700
Volume to Capacity	0.05	0.69	0.38	0.50	0.50
Queue Length 95th (m)	1.3	0.0	0.0	0.0	0.0
Control Delay (s)	10.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	10.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	3	16	30	244	198	13
Future Volume (vph)	3	16	30	244	198	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885				0.992	
Flt Protected	0.993			0.994		
Satd. Flow (prot)	1637	0	0	1852	1848	0
Flt Permitted	0.993			0.994		
Satd. Flow (perm)	1637	0	0	1852	1848	0
Link Speed (k/h)	60			50	50	
Link Distance (m)	33.9			135.1	55.9	
Travel Time (s)	2.0			9.7	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	3	17	33	265	215	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	298	229	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

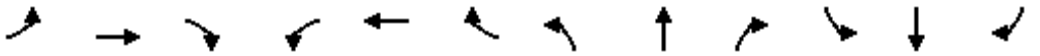
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.0%		ICU Level of Service A	
Analysis Period (min) 15			



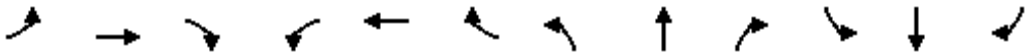
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	16	30	244	198	13
Future Volume (Veh/h)	3	16	30	244	198	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	17	33	265	215	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				135		
pX, platoon unblocked						
vC, conflicting volume	553	222	229			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	553	222	229			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	482	818	1339			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	20	298	229
Volume Left	3	33	0
Volume Right	17	0	14
cSH	740	1339	1700
Volume to Capacity	0.03	0.02	0.13
Queue Length 95th (m)	0.7	0.6	0.0
Control Delay (s)	10.0	1.1	0.0
Lane LOS	A	A	
Approach Delay (s)	10.0	1.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	132	68	97	25	37	144	1197	417	93	1365	42
Future Volume (vph)	38	132	68	97	25	37	144	1197	417	93	1365	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	0.99			1.00	
Frt		0.949			0.910			0.961			0.995	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1673	0	3072	1603	0	3242	3265	0	1770	3384	0
Flt Permitted	0.715			0.950			0.950			0.054		
Satd. Flow (perm)	1330	1673	0	3072	1603	0	3240	3265	0	101	3384	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		18			39			51			3	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.9			122.8			245.0			64.5	
Travel Time (s)		3.7			7.4			14.7			3.9	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	40	138	71	101	26	39	150	1247	434	97	1422	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	209	0	101	65	0	150	1681	0	97	1466	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



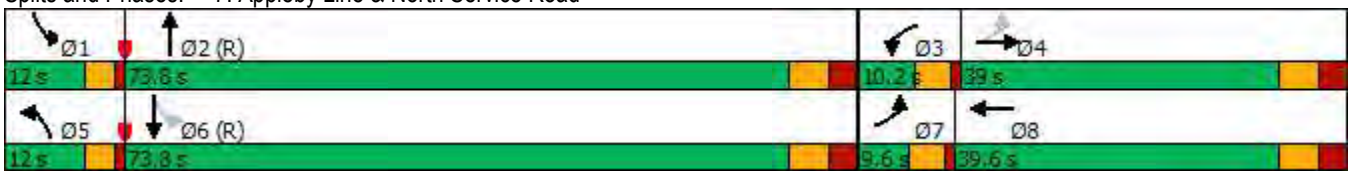
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	8.0		5.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	9.5	39.0		9.5	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	9.6	39.0		10.2	39.6		12.0	73.8		12.0	73.8	
Total Split (%)	7.1%	28.9%		7.6%	29.3%		8.9%	54.7%		8.9%	54.7%	
Maximum Green (s)	5.1	32.0		5.7	32.6		8.0	66.8		8.0	66.8	
Yellow Time (s)	3.5	4.0		3.5	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	1.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	28.4	20.8		5.7	23.4		11.2	77.1		86.6	74.7	
Actuated g/C Ratio	0.21	0.15		0.04	0.17		0.08	0.57		0.64	0.55	
v/c Ratio	0.14	0.77		0.78	0.21		0.56	0.89		0.56	0.78	
Control Delay	37.7	67.4		100.4	23.5		67.6	32.8		32.5	28.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	5.3		0.0	0.0	
Total Delay	37.7	67.4		100.4	23.5		67.6	38.1		32.5	28.7	
LOS	D	E		F	C		E	D		C	C	
Approach Delay		62.6			70.3			40.5			28.9	
Approach LOS		E			E			D			C	
Queue Length 50th (m)	8.7	52.2		14.7	6.3		21.0	201.3		9.1	166.3	
Queue Length 95th (m)	17.4	76.1		#30.6	18.9		33.1	#304.9		29.6	223.6	
Internal Link Dist (m)		37.9			98.8			221.0			40.5	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	296	410		129	416		269	1887		178	1874	
Starvation Cap Reductn	0	0		0	0		0	165		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.51		0.78	0.16		0.56	0.98		0.54	0.78	

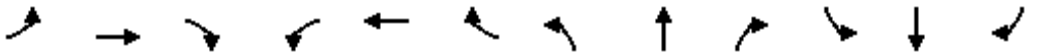
Intersection Summary	
Area Type:	Other
Cycle Length: 135	
Actuated Cycle Length: 135	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	

Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 38.5	Intersection LOS: D
Intersection Capacity Utilization 86.3%	ICU Level of Service E
Analysis Period (min) 15	

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

Splits and Phases: 7: Appleby Line & North Service Road



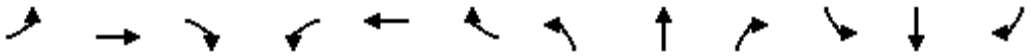


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	132	68	97	25	37	144	1197	417	93	1365	42
Future Volume (vph)	38	132	68	97	25	37	144	1197	417	93	1365	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	0.99		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.91		1.00	0.96		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1673		3072	1603		3242	3266		1770	3386	
Flt Permitted	0.71	1.00		0.95	1.00		0.95	1.00		0.05	1.00	
Satd. Flow (perm)	1330	1673		3072	1603		3242	3266		101	3386	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	40	138	71	101	26	39	150	1247	434	97	1422	44
RTOR Reduction (vph)	0	15	0	0	32	0	0	22	0	0	1	0
Lane Group Flow (vph)	40	194	0	101	33	0	150	1659	0	97	1465	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	pm+pt	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	25.9	21.8		5.7	23.4		11.2	76.2		82.6	73.8	
Effective Green, g (s)	25.9	21.8		5.7	23.4		11.2	76.2		82.6	73.8	
Actuated g/C Ratio	0.19	0.16		0.04	0.17		0.08	0.56		0.61	0.55	
Clearance Time (s)	4.5	7.0		4.5	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	268	270		129	277		268	1843		170	1851	
v/s Ratio Prot	0.00	c0.12		c0.03	0.02		c0.05	c0.51		0.04	0.43	
v/s Ratio Perm	0.02									0.31		
v/c Ratio	0.15	0.72		0.78	0.12		0.56	0.90		0.57	0.79	
Uniform Delay, d1	45.1	53.7		64.0	47.1		59.5	26.0		23.4	24.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	8.8		25.9	0.2		2.5	7.5		4.6	3.6	
Delay (s)	45.4	62.5		90.0	47.3		62.1	33.6		28.0	28.0	
Level of Service	D	E		F	D		E	C		C	C	
Approach Delay (s)		59.7			73.3			35.9			28.0	
Approach LOS		E			E			D			C	

Intersection Summary			
HCM 2000 Control Delay	35.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	268	221	518	625	306	122	1023	189	230	1620	313
Future Volume (vph)	300	268	221	518	625	306	122	1023	189	230	1620	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	100.0		0.0	115.0		0.0	45.0		40.0	60.0		70.0
Storage Lanes	2		0	2		0	1		1	2		1
Taper Length (m)	55.0			55.0			20.0			50.0		
Lane Util. Factor	0.97	0.95	0.95	0.97	0.95	0.95	1.00	0.95	1.00	0.97	0.95	1.00
Ped Bike Factor	0.99	0.99		1.00	0.99				0.98	1.00		0.98
Frt		0.932			0.951				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	2993	2943	0	3273	3171	0	1671	3539	1568	3303	3367	1483
Flt Permitted	0.950			0.950			0.064			0.950		
Satd. Flow (perm)	2975	2943	0	3269	3171	0	113	3539	1538	3295	3367	1457
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		93			54				157			160
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		202.7			222.0			186.7			133.0	
Travel Time (s)		12.2			13.3			11.2			8.0	
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
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
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	316	282	233	545	658	322	128	1077	199	242	1705	329
Shared Lane Traffic (%)												
Lane Group Flow (vph)	316	515	0	545	980	0	128	1077	199	242	1705	329
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.01
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0	2.0	2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6	2.0	2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	8.0		7.0	8.0		7.0	8.0	8.0	7.0	8.0	8.0
Minimum Split (s)	11.0	38.3		11.0	38.3		11.0	38.3	38.3	11.0	38.3	38.3
Total Split (s)	17.0	38.3		25.0	46.3		11.0	68.7	68.7	18.0	75.7	75.7
Total Split (%)	11.3%	25.5%		16.7%	30.9%		7.3%	45.8%	45.8%	12.0%	50.5%	50.5%
Maximum Green (s)	13.0	32.0		21.0	40.0		7.0	62.4	62.4	14.0	69.4	69.4
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	1.0	2.6		1.0	2.6		1.0	2.6	2.6	1.0	2.6	2.6
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lead/Lag	Lag	Lead		Lag	Lead		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max		None	None		None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		25.0			25.0			25.0	25.0		25.0	25.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	13.0	32.0		21.0	40.0		72.1	62.8	62.8	13.6	69.4	69.4
Actuated g/C Ratio	0.09	0.21		0.14	0.27		0.48	0.42	0.42	0.09	0.46	0.46
v/c Ratio	1.22	0.73		1.19	1.11		1.02	0.73	0.27	0.81	1.10	0.43
Control Delay	183.2	51.8		158.8	111.2		116.2	40.1	8.0	87.0	91.6	15.1
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	183.2	51.8		158.8	111.2		116.2	40.1	8.0	87.0	91.6	15.1
LOS	F	D		F	F		F	D	A	F	F	B
Approach Delay		101.8			128.2			42.5			80.1	
Approach LOS		F			F			D			F	
Queue Length 50th (m)	~62.3	66.2		~105.7	~177.1		~25.1	147.8	7.8	38.8	~316.4	33.5
Queue Length 95th (m)	#94.7	88.2		#144.1	#221.7		#71.1	174.8	25.3	#58.8	#360.4	59.9
Internal Link Dist (m)		178.7			198.0			162.7			109.0	
Turn Bay Length (m)	100.0			115.0			45.0		40.0	60.0		70.0
Base Capacity (vph)	259	701		458	885		126	1480	734	308	1557	760
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.73		1.19	1.11		1.02	0.73	0.27	0.79	1.10	0.43

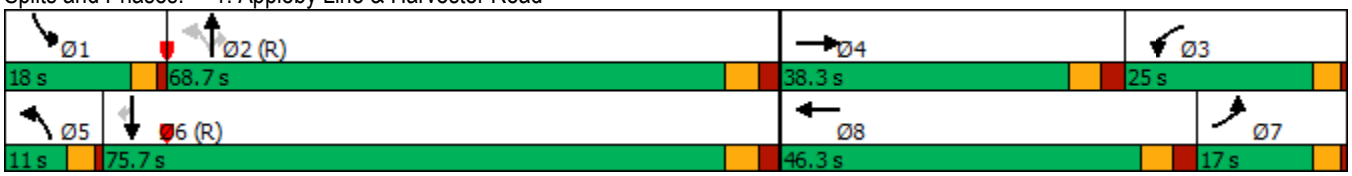
Intersection Summary	
Area Type:	Other
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

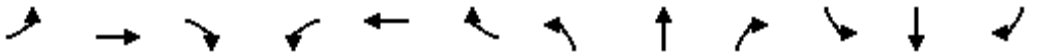
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 86.5	Intersection LOS: F
Intersection Capacity Utilization 110.2%	ICU Level of Service H
Analysis Period (min) 15	

~ 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.

Splits and Phases: 1: Appleby Line & Harvester Road

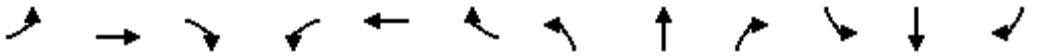




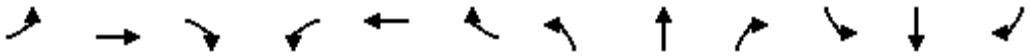
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	268	221	518	625	306	122	1023	189	230	1620	313
Future Volume (vph)	300	268	221	518	625	306	122	1023	189	230	1620	313
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Lane Util. Factor	0.97	0.95		0.97	0.95		1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.93		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	2993	2943		3273	3170		1671	3539	1538	3303	3367	1457
Flt Permitted	0.95	1.00		0.95	1.00		0.06	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	2993	2943		3273	3170		112	3539	1538	3303	3367	1457
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)	316	282	233	545	658	322	128	1077	199	242	1705	329
RTOR Reduction (vph)	0	73	0	0	40	0	0	0	91	0	0	86
Lane Group Flow (vph)	316	442	0	545	940	0	128	1077	108	242	1705	243
Confl. Peds. (#/hr)	10		1	1		10	4		5	5		4
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	17%	3%	26%	7%	4%	14%	8%	2%	3%	6%	7%	8%
Bus Blockages (#/hr)	0	1	2	0	0	0	0	0	0	0	1	2
Turn Type	Prot	NA		Prot	NA		pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases							2		2			6
Actuated Green, G (s)	13.0	32.0		21.0	40.0		69.8	62.8	62.8	13.6	69.4	69.4
Effective Green, g (s)	13.0	32.0		21.0	40.0		69.8	62.8	62.8	13.6	69.4	69.4
Actuated g/C Ratio	0.09	0.21		0.14	0.27		0.47	0.42	0.42	0.09	0.46	0.46
Clearance Time (s)	4.0	6.3		4.0	6.3		4.0	6.3	6.3	4.0	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	259	627		458	845		124	1481	643	299	1557	674
v/s Ratio Prot	0.11	0.15		c0.17	c0.30		c0.05	0.30		0.07	c0.51	
v/s Ratio Perm							0.43		0.07			0.17
v/c Ratio	1.22	0.70		1.19	1.11		1.03	0.73	0.17	0.81	1.10	0.36
Uniform Delay, d1	68.5	54.6		64.5	55.0		39.1	36.4	27.3	66.9	40.3	26.0
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	128.7	6.5		105.4	66.8		89.7	3.2	0.6	14.8	53.4	1.5
Delay (s)	197.2	61.2		169.9	121.8		128.7	39.6	27.8	81.7	93.7	27.5
Level of Service	F	E		F	F		F	D	C	F	F	C
Approach Delay (s)		112.9			139.0			46.1			82.9	
Approach LOS		F			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	92.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	110.2%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	546	9	5	1081	29	60	5	8	48	4	299
Future Volume (vph)	67	546	9	5	1081	29	60	5	8	48	4	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0		0.0	0.0		0.0	0.0		0.0	40.0		0.0
Storage Lanes	0		0	0		0	0		0	1		1
Taper Length (m)	7.5			7.5			7.5			15.0		
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			0.99				0.97
Frt		0.998			0.996			0.985				0.850
Flt Protected		0.995						0.960			0.956	
Satd. Flow (prot)	0	3438	0	0	3283	0	0	968	0	0	1781	1568
Flt Permitted		0.695			0.953			0.724			0.684	
Satd. Flow (perm)	0	2401	0	0	3128	0	0	721	0	0	1274	1523
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			6				93
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		222.0			192.0			110.6			135.1	
Travel Time (s)		13.3			11.5			8.0			9.7	
Confl. Peds. (#/hr)	4		4	4		4	10					10
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Adj. Flow (vph)	74	600	10	5	1188	32	66	5	9	53	4	329
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	684	0	0	1225	0	0	80	0	0	57	329
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			0.0			0.0	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.01	1.00	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	2.0
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	2.0
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Detector Phase	2	2		6	6		4	4		8	8	8
Switch Phase												
Minimum Initial (s)	15.0	15.0		15.0	15.0		8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	40.0	40.0		40.0	40.0		15.0	15.0		15.0	15.0	15.0
Total Split (s)	64.0	64.0		64.0	64.0		26.0	26.0		26.0	26.0	26.0
Total Split (%)	71.1%	71.1%		71.1%	71.1%		28.9%	28.9%		28.9%	28.9%	28.9%
Maximum Green (s)	58.0	58.0		58.0	58.0		19.0	19.0		19.0	19.0	19.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	3.0
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	0.0
Total Lost Time (s)		6.0			6.0			7.0			7.0	7.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	Max	Max		Max	Max		None	None		None	None	None
Walk Time (s)	20.0	20.0		20.0	20.0		8.0	8.0		8.0	8.0	8.0
Flash Dont Walk (s)	14.0	14.0		14.0	14.0		8.0	8.0		8.0	8.0	8.0
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	0
Act Effct Green (s)		58.0			58.0			17.3			17.3	17.3
Actuated g/C Ratio		0.66			0.66			0.20			0.20	0.20
v/c Ratio		0.43			0.60			0.55			0.23	0.88
Control Delay		8.6			10.3			44.9			32.2	50.8
Queue Delay		0.0			0.0			0.0			0.0	0.0
Total Delay		8.6			10.3			44.9			32.2	50.8
LOS		A			B			D			C	D
Approach Delay		8.6			10.3			44.9			48.1	
Approach LOS		A			B			D			D	
Queue Length 50th (m)		28.9			60.8			11.9			8.6	42.0
Queue Length 95th (m)		40.5			79.7			27.6			19.5	#88.7
Internal Link Dist (m)		198.0			168.0			86.6			111.1	
Turn Bay Length (m)												
Base Capacity (vph)		1578			2057			159			274	400
Starvation Cap Reductn		0			0			0			0	0
Spillback Cap Reductn		0			0			0			0	0
Storage Cap Reductn		0			0			0			0	0
Reduced v/c Ratio		0.43			0.60			0.50			0.21	0.82

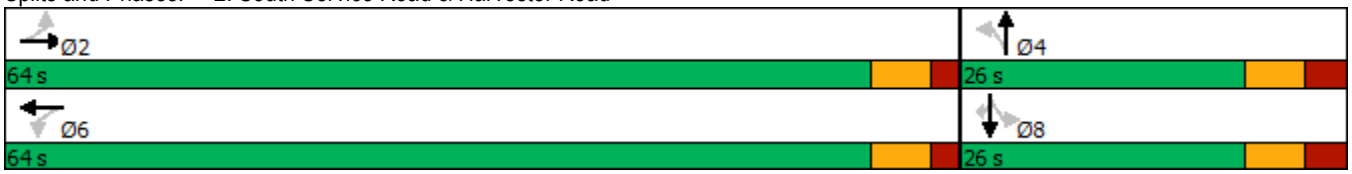
Intersection Summary			
Area Type:	Other		
Cycle Length: 90			
Actuated Cycle Length: 88.3			
Natural Cycle: 60			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 17.1		Intersection LOS: B	

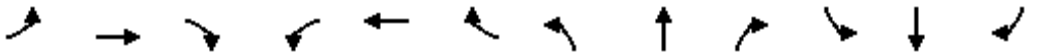
Intersection Capacity Utilization 85.9% ICU Level of Service E

Analysis Period (min) 15

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

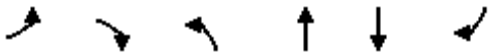
Splits and Phases: 2: South Service Road & Harvester Road



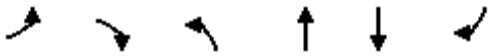


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	67	546	9	5	1081	29	60	5	8	48	4	299
Future Volume (vph)	67	546	9	5	1081	29	60	5	8	48	4	299
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			7.0			7.0	7.0
Lane Util. Factor		0.95			0.95			1.00			1.00	1.00
Frpb, ped/bikes		1.00			1.00			1.00			1.00	0.97
Flpb, ped/bikes		1.00			1.00			0.99			1.00	1.00
Frt		1.00			1.00			0.98			1.00	0.85
Flt Protected		0.99			1.00			0.96			0.96	1.00
Satd. Flow (prot)		3435			3282			956			1780	1524
Flt Permitted		0.70			0.95			0.72			0.68	1.00
Satd. Flow (perm)		2401			3128			721			1273	1524
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	74	600	10	5	1188	32	66	5	9	53	4	329
RTOR Reduction (vph)	0	1	0	0	2	0	0	5	0	0	0	75
Lane Group Flow (vph)	0	683	0	0	1223	0	0	75	0	0	57	254
Confl. Peds. (#/hr)	4		4	4		4	10					10
Heavy Vehicles (%)	2%	3%	67%	60%	9%	2%	90%	2%	100%	2%	2%	3%
Bus Blockages (#/hr)	0	2	6	0	2	6	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		8
Actuated Green, G (s)		58.1			58.1			17.3			17.3	17.3
Effective Green, g (s)		58.1			58.1			17.3			17.3	17.3
Actuated g/C Ratio		0.66			0.66			0.20			0.20	0.20
Clearance Time (s)		6.0			6.0			7.0			7.0	7.0
Vehicle Extension (s)		3.0			3.0			3.0			3.0	3.0
Lane Grp Cap (vph)		1578			2055			141			249	298
v/s Ratio Prot												
v/s Ratio Perm		0.28			c0.39			0.10			0.04	c0.17
v/c Ratio		0.43			0.60			0.53			0.23	0.85
Uniform Delay, d1		7.3			8.5			31.9			29.9	34.3
Progression Factor		1.00			1.00			1.00			1.00	1.00
Incremental Delay, d2		0.9			1.3			3.8			0.5	20.4
Delay (s)		8.1			9.8			35.8			30.4	54.7
Level of Service		A			A			D			C	D
Approach Delay (s)		8.1			9.8			35.8			51.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	13.0
Intersection Capacity Utilization	85.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	398	375	0	1239	1786	0
Future Volume (vph)	398	375	0	1239	1786	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	165.0	45.0	0.0			0.0
Storage Lanes	1	1	0			0
Taper Length (m)	65.0		7.5			
Lane Util. Factor	0.97	0.88	1.00	0.95	0.95	1.00
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3303	2584	0	3406	3406	0
Flt Permitted	0.950					
Satd. Flow (perm)	3303	2584	0	3406	3406	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		24				
Link Speed (k/h)	60			60	60	
Link Distance (m)	122.6			230.2	319.8	
Travel Time (s)	7.4			13.8	19.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Adj. Flow (vph)	433	408	0	1347	1941	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	433	408	0	1347	1941	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	7.2			0.0	0.0	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Number of Detectors	1	1		2	2	
Detector Template	Left	Right		Thru	Thru	
Leading Detector (m)	2.0	2.0		10.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	2.0		0.6	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	
Detector 2 Position(m)				9.4	9.4	
Detector 2 Size(m)				0.6	0.6	
Detector 2 Type				Cl+Ex	Cl+Ex	
Detector 2 Channel						
Detector 2 Extend (s)				0.0	0.0	
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	

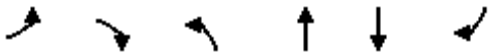


Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Permitted Phases		4				
Detector Phase	4	4		2	6	
Switch Phase						
Minimum Initial (s)	8.0	8.0		8.0	8.0	
Minimum Split (s)	20.0	20.0		35.0	35.0	
Total Split (s)	49.0	49.0		91.0	91.0	
Total Split (%)	35.0%	35.0%		65.0%	65.0%	
Maximum Green (s)	43.0	43.0		85.0	85.0	
Yellow Time (s)	4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	
Total Lost Time (s)	6.0	6.0		6.0	6.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Recall Mode	None	None		C-Max	C-Max	
Walk Time (s)				7.0	7.0	
Flash Dont Walk (s)				19.0	19.0	
Pedestrian Calls (#/hr)				0	0	
Act Effct Green (s)	27.0	27.0		101.0	101.0	
Actuated g/C Ratio	0.19	0.19		0.72	0.72	
v/c Ratio	0.68	0.79		0.55	0.79	
Control Delay	57.6	61.5		10.7	12.0	
Queue Delay	0.0	0.0		0.0	0.2	
Total Delay	57.6	61.5		10.7	12.2	
LOS	E	E		B	B	
Approach Delay	59.5			10.7	12.2	
Approach LOS	E			B	B	
Queue Length 50th (m)	60.8	61.1		87.0	112.0	
Queue Length 95th (m)	74.6	77.5		124.8	161.2	
Internal Link Dist (m)	98.6			206.2	295.8	
Turn Bay Length (m)	165.0	45.0				
Base Capacity (vph)	1014	810		2457	2457	
Starvation Cap Reductn	0	0		0	92	
Spillback Cap Reductn	0	0		0	0	
Storage Cap Reductn	0	0		0	0	
Reduced v/c Ratio	0.43	0.50		0.55	0.82	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 65	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.79	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Appleby Line & QEW EB Off Ramp





Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	398	375	0	1239	1786	0
Future Volume (vph)	398	375	0	1239	1786	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0	
Lane Util. Factor	0.97	0.88		0.95	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	3303	2584		3406	3406	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	3303	2584		3406	3406	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	433	408	0	1347	1941	0
RTOR Reduction (vph)	0	19	0	0	0	0
Lane Group Flow (vph)	433	389	0	1347	1941	0
Heavy Vehicles (%)	6%	10%	2%	6%	6%	2%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4				
Actuated Green, G (s)	27.0	27.0		101.0	101.0	
Effective Green, g (s)	27.0	27.0		101.0	101.0	
Actuated g/C Ratio	0.19	0.19		0.72	0.72	
Clearance Time (s)	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	637	498		2457	2457	
v/s Ratio Prot	0.13			0.40	c0.57	
v/s Ratio Perm		c0.15				
v/c Ratio	0.68	0.78		0.55	0.79	
Uniform Delay, d1	52.5	53.7		9.0	12.6	
Progression Factor	1.00	1.00		1.00	0.74	
Incremental Delay, d2	2.9	7.8		0.9	1.6	
Delay (s)	55.4	61.4		9.9	10.9	
Level of Service	E	E		A	B	
Approach Delay (s)	58.3			9.9	10.9	
Approach LOS	E			A	B	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	522	408	1506	0	0	1607
Future Volume (vph)	522	408	1506	0	0	1607
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	190.0	0.0		0.0	0.0	
Storage Lanes	1	1		0	0	
Taper Length (m)	65.0				7.5	
Lane Util. Factor	0.97	1.00	0.95	1.00	1.00	0.95
Ped Bike Factor						
Frt		0.850				
Flt Protected	0.950					
Satd. Flow (prot)	3213	1482	3406	0	0	3374
Flt Permitted	0.950					
Satd. Flow (perm)	3213	1482	3406	0	0	3374
Right Turn on Red		Yes		Yes		
Satd. Flow (RTOR)		28				
Link Speed (k/h)	60		60			60
Link Distance (m)	370.8		319.8			245.0
Travel Time (s)	22.2		19.2			14.7
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Adj. Flow (vph)	567	443	1637	0	0	1747
Shared Lane Traffic (%)						
Lane Group Flow (vph)	567	443	1637	0	0	1747
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	7.2		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Number of Detectors	1	1	2			2
Detector Template	Left	Right	Thru			Thru
Leading Detector (m)	2.0	2.0	10.0			10.0
Trailing Detector (m)	0.0	0.0	0.0			0.0
Detector 1 Position(m)	0.0	0.0	0.0			0.0
Detector 1 Size(m)	2.0	2.0	0.6			0.6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex			Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0			0.0
Detector 1 Queue (s)	0.0	0.0	0.0			0.0
Detector 1 Delay (s)	0.0	0.0	0.0			0.0
Detector 2 Position(m)			9.4			9.4
Detector 2 Size(m)			0.6			0.6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Detector Phase	8	8	6			2
Switch Phase						
Minimum Initial (s)	8.0	8.0	8.0			8.0
Minimum Split (s)	14.0	14.0	32.0			32.0
Total Split (s)	49.0	49.0	91.0			91.0
Total Split (%)	35.0%	35.0%	65.0%			65.0%
Maximum Green (s)	43.0	43.0	85.0			85.0
Yellow Time (s)	4.0	4.0	4.0			4.0
All-Red Time (s)	2.0	2.0	2.0			2.0
Lost Time Adjust (s)	0.0	0.0	0.0			0.0
Total Lost Time (s)	6.0	6.0	6.0			6.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Recall Mode	None	None	C-Max			C-Max
Walk Time (s)			7.0			7.0
Flash Dont Walk (s)			19.0			19.0
Pedestrian Calls (#/hr)			0			0
Act Effct Green (s)	41.8	41.8	86.2			86.2
Actuated g/C Ratio	0.30	0.30	0.62			0.62
v/c Ratio	0.59	0.96	0.78			0.84
Control Delay	44.6	78.1	23.4			14.4
Queue Delay	0.0	0.5	3.4			0.1
Total Delay	44.6	78.6	26.9			14.5
LOS	D	E	C			B
Approach Delay	59.5		26.9			14.5
Approach LOS	E		C			B
Queue Length 50th (m)	71.7	119.2	214.3			79.1
Queue Length 95th (m)	91.4	#188.0	244.7			91.8
Internal Link Dist (m)	346.8		295.8			221.0
Turn Bay Length (m)	190.0					
Base Capacity (vph)	986	474	2097			2078
Starvation Cap Reductn	0	0	18			16
Spillback Cap Reductn	0	2	360			14
Storage Cap Reductn	0	0	0			0
Reduced v/c Ratio	0.58	0.94	0.94			0.85

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 32 (23%), Referenced to phase 2:SBT and 6:NBT, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	

Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 76.9%	ICU Level of Service D
Analysis Period (min) 15	

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

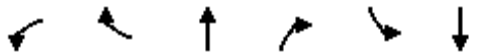
Splits and Phases: 4: Appleby Line & QEW WB Off Ramp





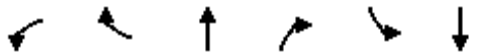
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	522	408	1506	0	0	1607
Future Volume (vph)	522	408	1506	0	0	1607
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0			6.0
Lane Util. Factor	0.97	1.00	0.95			0.95
Frpb, ped/bikes	1.00	1.00	1.00			1.00
Flpb, ped/bikes	1.00	1.00	1.00			1.00
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3213	1482	3406			3374
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3213	1482	3406			3374
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	567	443	1637	0	0	1747
RTOR Reduction (vph)	0	20	0	0	0	0
Lane Group Flow (vph)	567	423	1637	0	0	1747
Confl. Peds. (#/hr)				2	2	
Confl. Bikes (#/hr)				2		
Heavy Vehicles (%)	9%	9%	6%	2%	2%	7%
Turn Type	Prot	Perm	NA			NA
Protected Phases	8		6			2
Permitted Phases		8				
Actuated Green, G (s)	41.8	41.8	86.2			86.2
Effective Green, g (s)	41.8	41.8	86.2			86.2
Actuated g/C Ratio	0.30	0.30	0.62			0.62
Clearance Time (s)	6.0	6.0	6.0			6.0
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	959	442	2097			2077
v/s Ratio Prot	0.18		0.48			c0.52
v/s Ratio Perm		c0.29				
v/c Ratio	0.59	0.96	0.78			0.84
Uniform Delay, d1	41.8	48.2	19.9			21.4
Progression Factor	1.00	1.00	1.01			0.53
Incremental Delay, d2	1.0	31.8	2.6			2.6
Delay (s)	42.8	80.0	22.7			13.9
Level of Service	D	F	C			B
Approach Delay (s)	59.1		22.7			13.9
Approach LOS	E		C			B

Intersection Summary			
HCM 2000 Control Delay	27.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	73	1649	31	0	2170
Future Volume (vph)	0	73	1649	31	0	2170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (m)	0.0	0.0		0.0	65.0	
Storage Lanes	0	1		0	0	
Taper Length (m)	7.5				0.0	
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	0.95
Ped Bike Factor						
Frt		0.865	0.997			
Flt Protected						
Satd. Flow (prot)	0	1481	3418	0	0	3438
Flt Permitted						
Satd. Flow (perm)	0	1481	3418	0	0	3438
Link Speed (k/h)	60		60			60
Link Distance (m)	41.6		133.0			230.2
Travel Time (s)	2.5		8.0			13.8
Confl. Peds. (#/hr)				3	3	
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	12%	11%	5%	10%	2%	5%
Bus Blockages (#/hr)	0	0	1	2	0	0
Adj. Flow (vph)	0	78	1754	33	0	2309
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	78	1787	0	0	2309
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(m)	0.0		7.2			7.2
Link Offset(m)	0.0		0.0			0.0
Crosswalk Width(m)	4.8		4.8			4.8
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15		15	25	
Sign Control	Stop		Free			Free

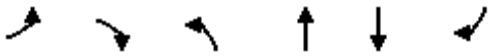
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 63.3%		ICU Level of Service B	
Analysis Period (min) 15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	73	1649	31	0	2170
Future Volume (Veh/h)	0	73	1649	31	0	2170
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	78	1754	33	0	2309
Pedestrians	3					
Lane Width (m)	3.6					
Walking Speed (m/s)	1.2					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)			133			230
pX, platoon unblocked	0.71	0.74			0.74	
vC, conflicting volume	2928	896			1790	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1261	170			1372	
tC, single (s)	7.0	7.1			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	100	87			100	
cM capacity (veh/h)	105	606			368	

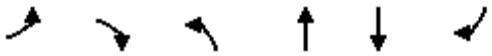
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	78	1169	618	1154	1154
Volume Left	0	0	0	0	0
Volume Right	78	0	33	0	0
cSH	606	1700	1700	1700	1700
Volume to Capacity	0.13	0.69	0.36	0.68	0.68
Queue Length 95th (m)	3.5	0.0	0.0	0.0	0.0
Control Delay (s)	11.8	0.0	0.0	0.0	0.0
Lane LOS	B				
Approach Delay (s)	11.8	0.0		0.0	
Approach LOS	B				

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	8	39	15	86	312	7
Future Volume (vph)	8	39	15	86	312	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.889				0.997	
Flt Protected	0.991			0.993		
Satd. Flow (prot)	1641	0	0	1850	1857	0
Flt Permitted	0.991			0.993		
Satd. Flow (perm)	1641	0	0	1850	1857	0
Link Speed (k/h)	60			50	50	
Link Distance (m)	33.9			135.1	55.9	
Travel Time (s)	2.0			9.7	4.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	42	16	93	339	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	51	0	0	109	347	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(m)	3.6			3.6	3.6	
Link Offset(m)	0.0			0.0	0.0	
Crosswalk Width(m)	4.8			4.8	4.8	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25	15	25			15
Sign Control	Stop			Free	Free	

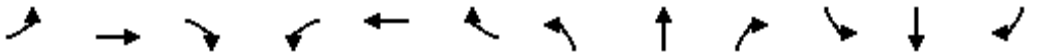
Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.3%		ICU Level of Service A	
Analysis Period (min) 15			



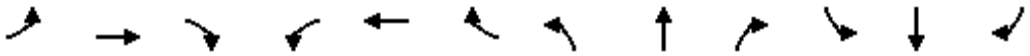
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	8	39	15	86	312	7
Future Volume (Veh/h)	8	39	15	86	312	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	42	16	93	339	8
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				135		
pX, platoon unblocked						
vC, conflicting volume	468	343	347			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	468	343	347			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	94	99			
cM capacity (veh/h)	546	700	1212			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	51	109	347
Volume Left	9	16	0
Volume Right	42	0	8
cSH	667	1212	1700
Volume to Capacity	0.08	0.01	0.20
Queue Length 95th (m)	2.0	0.3	0.0
Control Delay (s)	10.8	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	10.8	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	27.3%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	39	195	275	199	143	323	1758	109	73	1148	80
Future Volume (vph)	55	39	195	275	199	143	323	1758	109	73	1148	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (m)	30.0		0.0	0.0		0.0	45.0		0.0	45.0		0.0
Storage Lanes	1		0	2		0	2		0	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Lane Util. Factor	1.00	1.00	1.00	0.97	1.00	1.00	0.97	0.95	0.95	1.00	0.95	0.95
Ped Bike Factor	1.00				0.99		1.00	1.00			1.00	
Frt		0.875			0.937			0.991			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1450	0	3072	1627	0	3242	3373	0	1770	3370	0
Flt Permitted	0.548			0.950			0.950			0.065		
Satd. Flow (perm)	1020	1450	0	3072	1627	0	3239	3373	0	121	3370	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		128			29			6			6	
Link Speed (k/h)		60			60			60			60	
Link Distance (m)		61.9			122.8			245.0			108.4	
Travel Time (s)		3.7			7.4			14.7			6.5	
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Adj. Flow (vph)	57	41	203	286	207	149	336	1831	114	76	1196	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	244	0	286	356	0	336	1945	0	76	1279	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(m)		7.2			7.2			7.2			7.2	
Link Offset(m)		0.0			0.0			0.0			0.0	
Crosswalk Width(m)		4.8			4.8			4.8			4.8	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (k/h)	25		15	25		15	25		15	25		15
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (m)	2.0	10.0		2.0	10.0		2.0	10.0		2.0	10.0	
Trailing Detector (m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Position(m)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Size(m)	2.0	0.6		2.0	0.6		2.0	0.6		2.0	0.6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(m)		9.4			9.4			9.4			9.4	
Detector 2 Size(m)		0.6			0.6			0.6			0.6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Detector Phase	4	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	8.0	8.0		7.0	8.0		7.0	8.0		7.0	8.0	
Minimum Split (s)	39.0	39.0		12.0	39.0		12.0	34.0		12.0	34.0	
Total Split (s)	38.0	38.0		20.0	58.0		13.0	70.0		12.0	69.0	
Total Split (%)	27.1%	27.1%		14.3%	41.4%		9.3%	50.0%		8.6%	49.3%	
Maximum Green (s)	31.0	31.0		16.0	51.0		9.0	63.0		8.0	62.0	
Yellow Time (s)	4.0	4.0		3.0	4.0		3.0	4.0		3.0	4.0	
All-Red Time (s)	3.0	3.0		1.0	3.0		1.0	3.0		1.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	C-Max		None	C-Max	
Walk Time (s)	7.0	7.0			7.0			7.0			7.0	
Flash Dont Walk (s)	22.0	22.0			22.0			19.0			19.0	
Pedestrian Calls (#/hr)	0	0			0			0			0	
Act Effct Green (s)	17.8	17.8		15.6	37.4		22.6	76.4		73.2	62.0	
Actuated g/C Ratio	0.13	0.13		0.11	0.27		0.16	0.55		0.52	0.44	
v/c Ratio	0.44	0.82		0.84	0.78		0.64	1.05		0.47	0.86	
Control Delay	64.4	49.2		82.1	55.1		69.4	55.0		25.7	41.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	6.8		0.0	0.0	
Total Delay	64.4	49.2		82.1	55.1		69.4	61.8		25.7	41.8	
LOS	E	D		F	E		E	E		C	D	
Approach Delay		52.1			67.1			62.9			40.9	
Approach LOS		D			E			E			D	
Queue Length 50th (m)	15.6	34.0		42.6	89.2		49.9	~319.1		7.5	172.7	
Queue Length 95th (m)	28.4	61.8		#65.0	114.8		m#89.1	#418.7		20.8	205.5	
Internal Link Dist (m)		37.9			98.8			221.0			84.4	
Turn Bay Length (m)	30.0						45.0			45.0		
Base Capacity (vph)	225	420		351	611		524	1844		166	1495	
Starvation Cap Reductn	0	0		0	0		0	29		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.58		0.81	0.58		0.64	1.07		0.46	0.86	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 42 (30%), Referenced to phase 2:NBT and 6:SBTL, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	

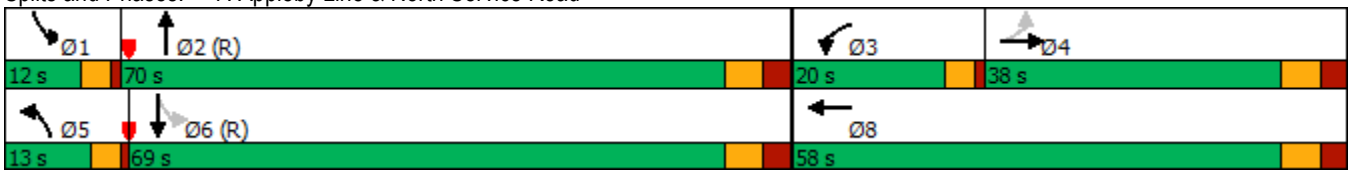
Maximum v/c Ratio: 1.05	
Intersection Signal Delay: 56.3	Intersection LOS: E
Intersection Capacity Utilization 104.8%	ICU Level of Service G
Analysis Period (min) 15	

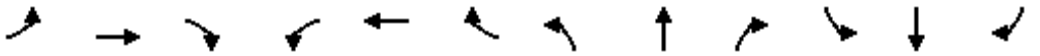
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Appleby Line & North Service Road





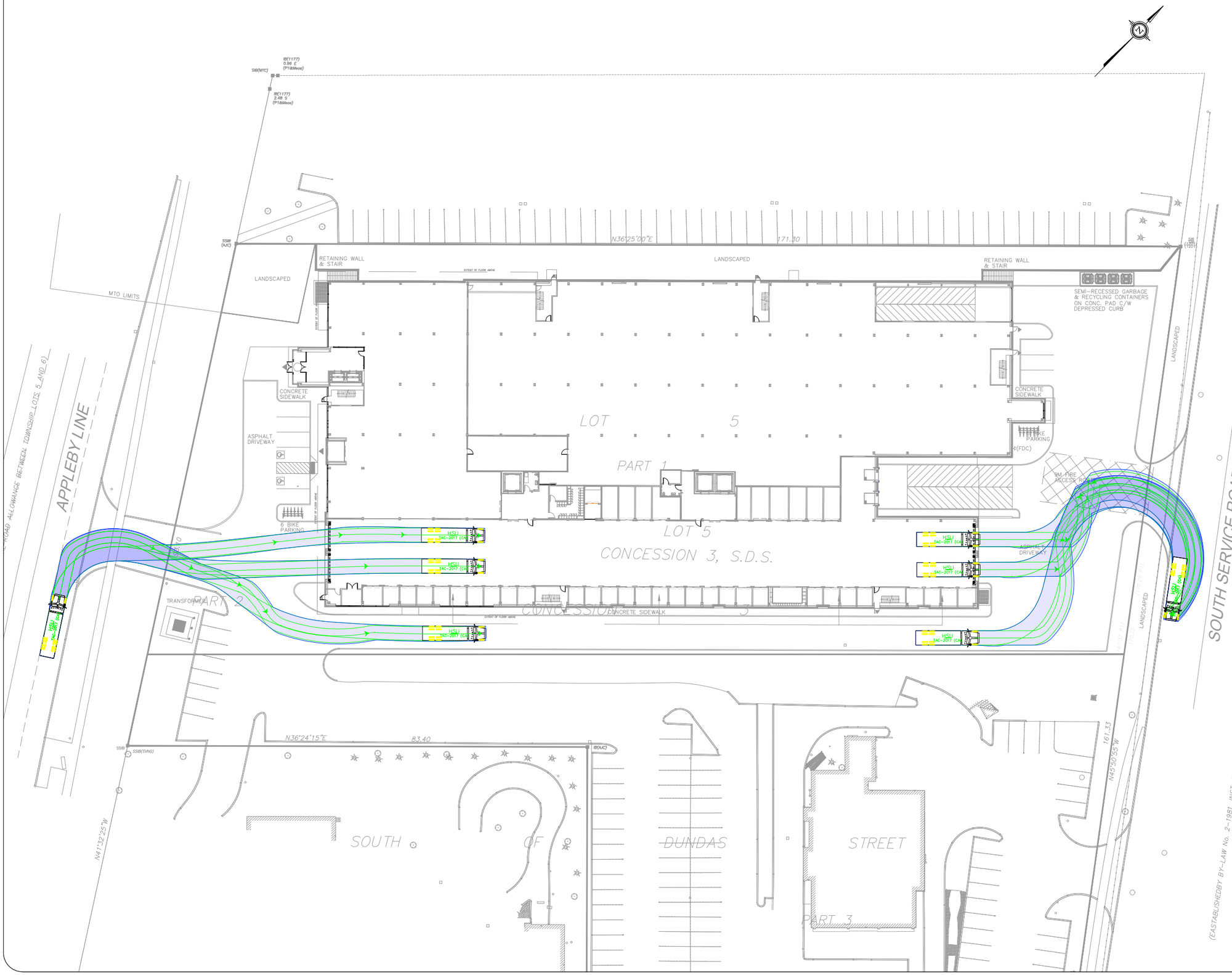
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	39	195	275	199	143	323	1758	109	73	1148	80
Future Volume (vph)	55	39	195	275	199	143	323	1758	109	73	1148	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Lane Util. Factor	1.00	1.00		0.97	1.00		0.97	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.88		1.00	0.94		1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1768	1450		3072	1627		3242	3374		1770	3371	
Flt Permitted	0.55	1.00		0.95	1.00		0.95	1.00		0.06	1.00	
Satd. Flow (perm)	1020	1450		3072	1627		3242	3374		120	3371	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	57	41	203	286	207	149	336	1831	114	76	1196	83
RTOR Reduction (vph)	0	112	0	0	21	0	0	3	0	0	3	0
Lane Group Flow (vph)	57	132	0	286	335	0	336	1942	0	76	1276	0
Confl. Peds. (#/hr)	1					1	2		3	3		2
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	3%	17%	14%	13%	3%	8%	6%	4%	2%	6%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	1	2
Turn Type	Perm	NA		Prot	NA		Prot	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4									6		
Actuated Green, G (s)	17.8	17.8		15.6	37.4		22.6	76.4		70.2	62.0	
Effective Green, g (s)	17.8	17.8		15.6	37.4		22.6	76.4		70.2	62.0	
Actuated g/C Ratio	0.13	0.13		0.11	0.27		0.16	0.55		0.50	0.44	
Clearance Time (s)	7.0	7.0		4.0	7.0		4.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	129	184		342	434		523	1841		156	1492	
v/s Ratio Prot		0.09		0.09	c0.21		c0.10	c0.58		0.03	0.38	
v/s Ratio Perm	0.06									0.21		
v/c Ratio	0.44	0.72		0.84	0.77		0.64	1.06		0.49	0.85	
Uniform Delay, d1	56.5	58.7		60.9	47.4		54.9	31.8		30.7	35.0	
Progression Factor	1.00	1.00		1.00	1.00		1.20	0.59		1.00	1.00	
Incremental Delay, d2	2.4	12.6		16.1	8.3		1.8	33.7		2.4	6.5	
Delay (s)	58.9	71.3		77.0	55.6		67.4	52.4		33.1	41.4	
Level of Service	E	E		E	E		E	D		C	D	
Approach Delay (s)		69.0			65.1			54.7			41.0	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	22.0
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

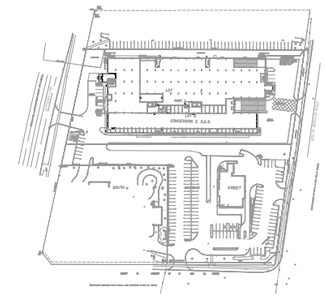
Appendix M

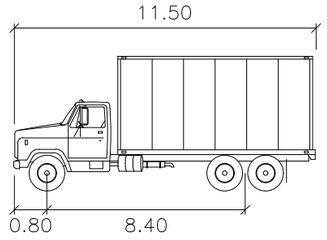
Vehicle Turning Diagrams



Notes:

Key Map:





HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

REV:	DESCRIPTION:	BY:	DATE:
06	Updated Site Plan	AN	2024-03-26

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Dymon Group of Companies

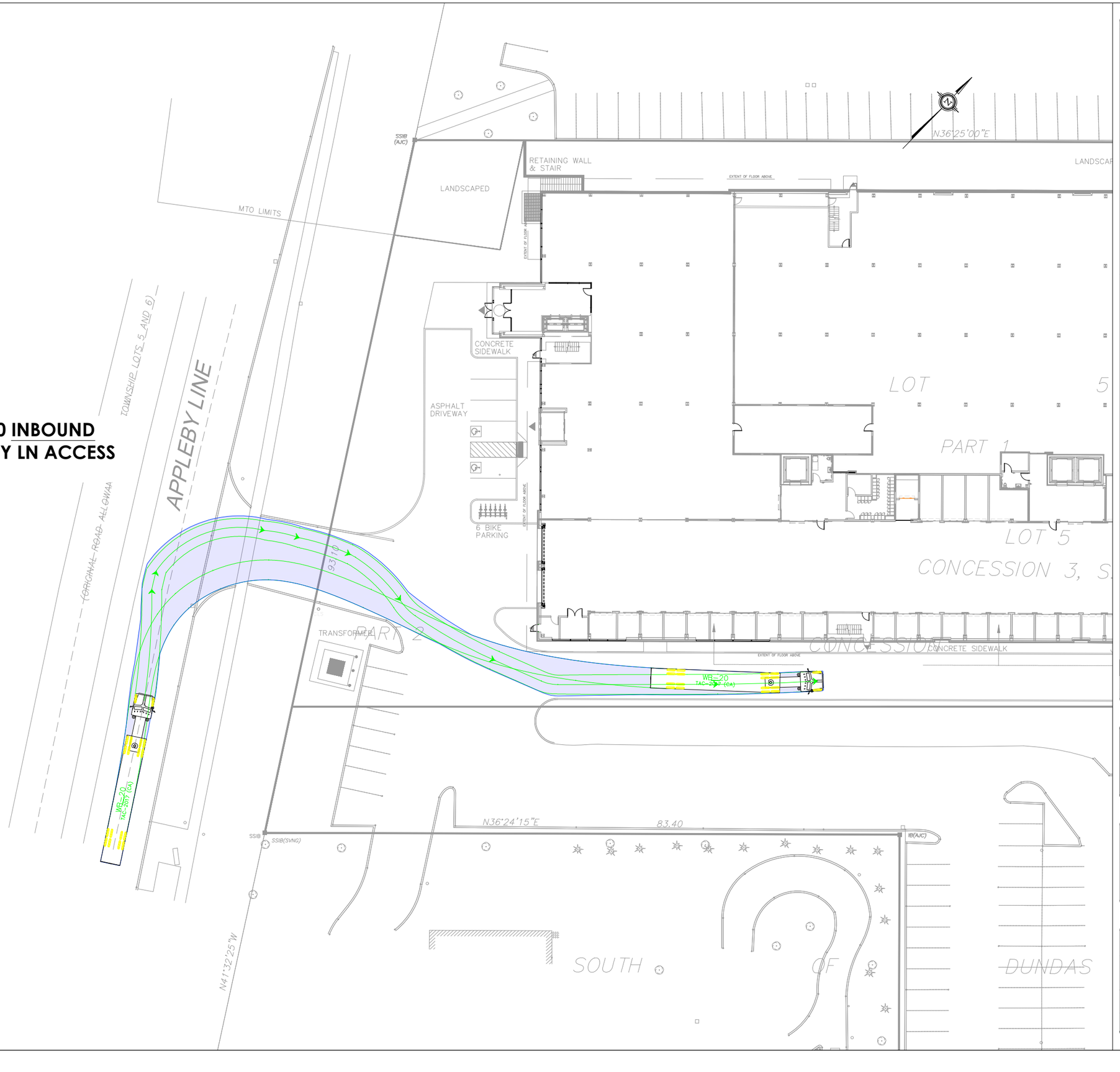
ARCHITECT:

SITE: 875 Appleby Line

TITLE: Turning Movement Analysis
HSU Turning Movements

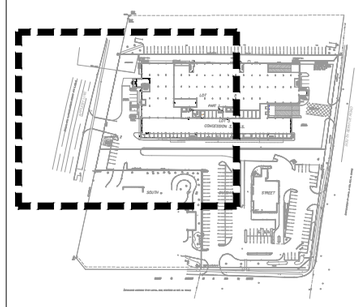
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
2024-03-26	2024-03-26	AN	MC
PROJECT NO:	DRAWING NO:		REVISION:
2021-122	001		06

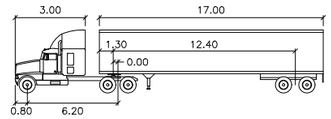
WB20 INBOUND
APPLEBY LN ACCESS



Notes:

Key Map:





WB–20

meters

Tractor Width	: 2.60	Lock to Lock Time	: 6.0
Trailer Width	: 2.60	Steering Angle	: 28.2
Tractor Track	: 2.60	Articulating Angle	: 70.0
Trailer Track	: 2.60		

REV:	DESCRIPTION:	BY:	DATE:
06	Updated Site Plan	AN	2024-03-26

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Dymon Group of Companies

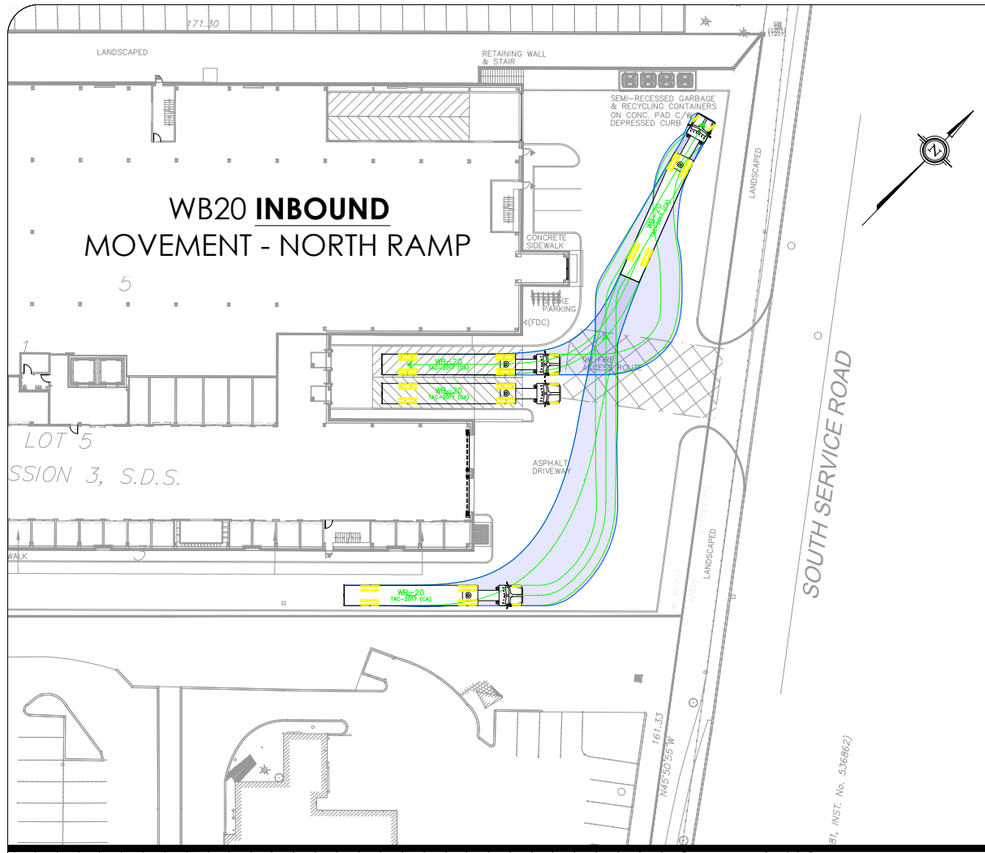
ARCHITECT:

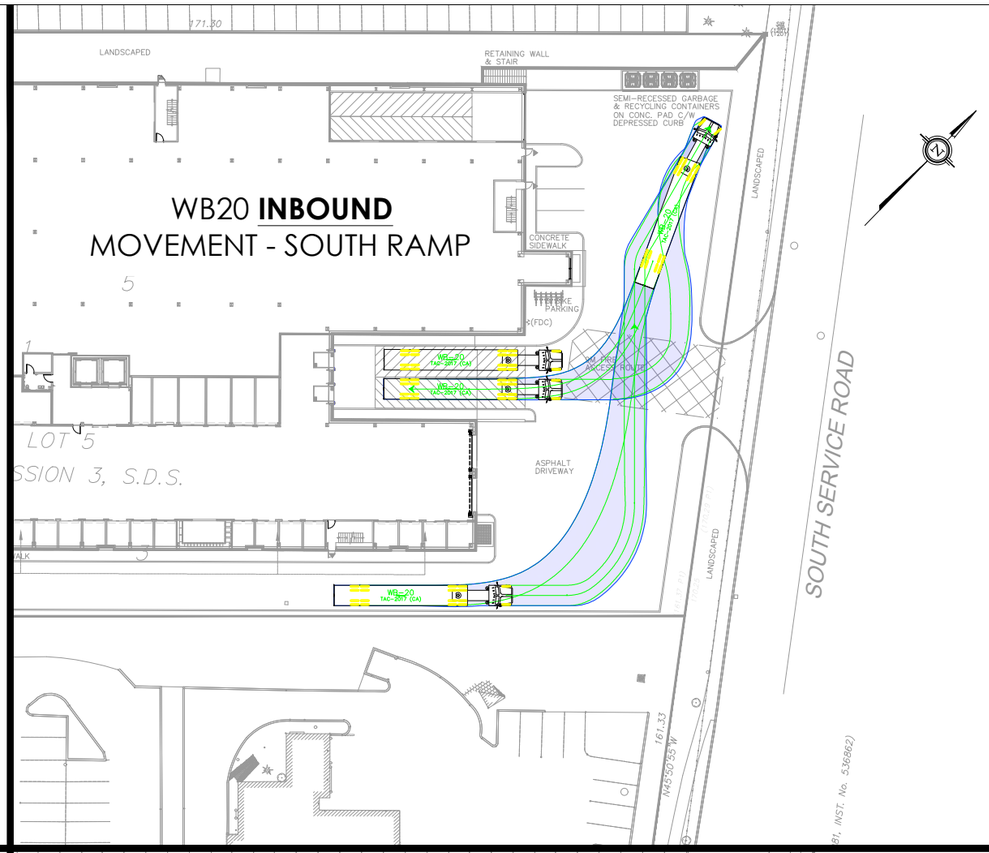
SITE: 875 Appleby Line

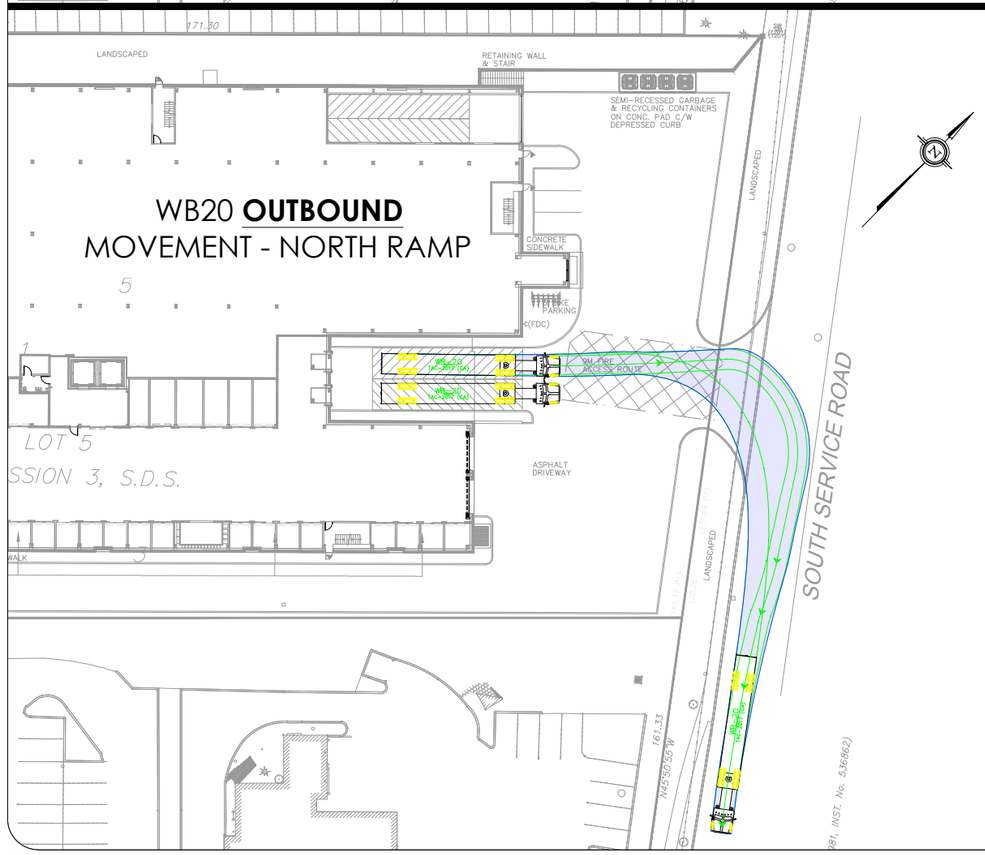
TITLE: Turning Movement Analysis
WB-20 Turning Movements

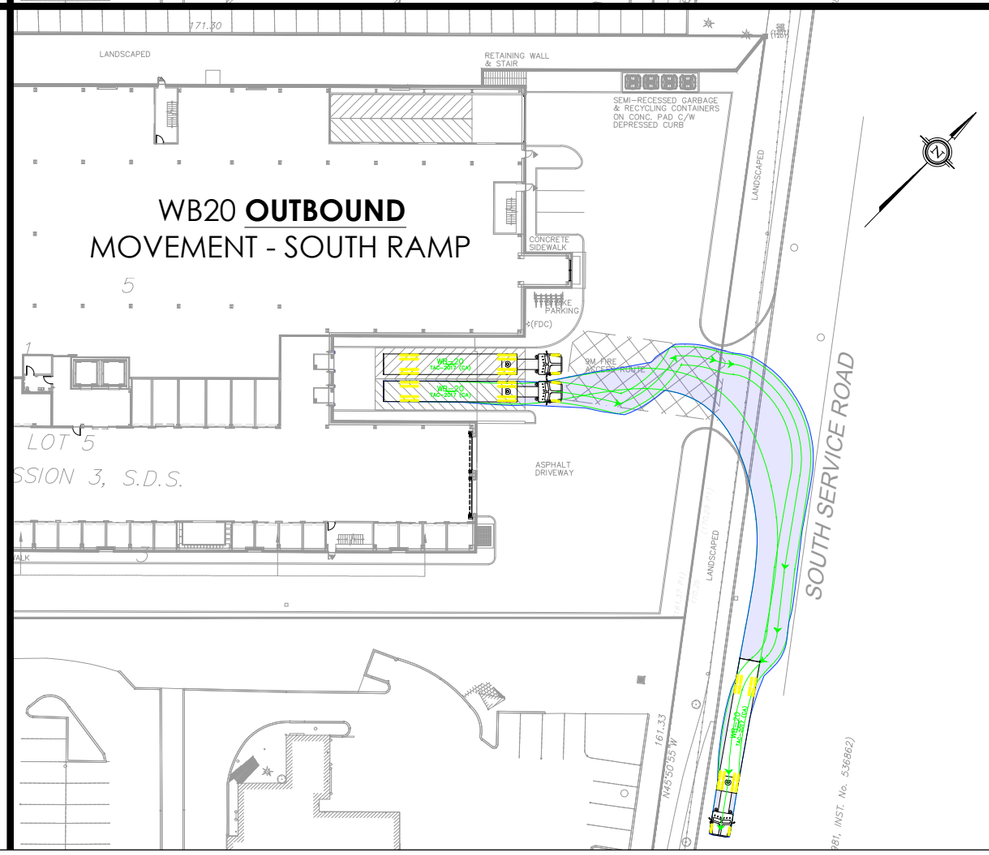
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-03-26	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2021-122	002	06



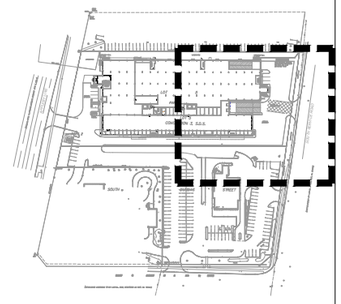


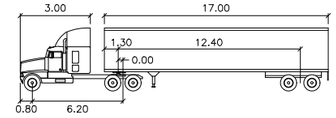




Notes:

Key Map:





WB-20

meters

Tractor Width	: 2.60	Lock to Lock Time	: 6.0
Trailer Width	: 2.60	Steering Angle	: 28.2
Tractor Track	: 2.60	Articulating Angle	: 70.0
Trailer Track	: 2.60		

REV:	DESCRIPTION:	BY:	DATE:
06	Updated Site Plan	AN	2024-03-26

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

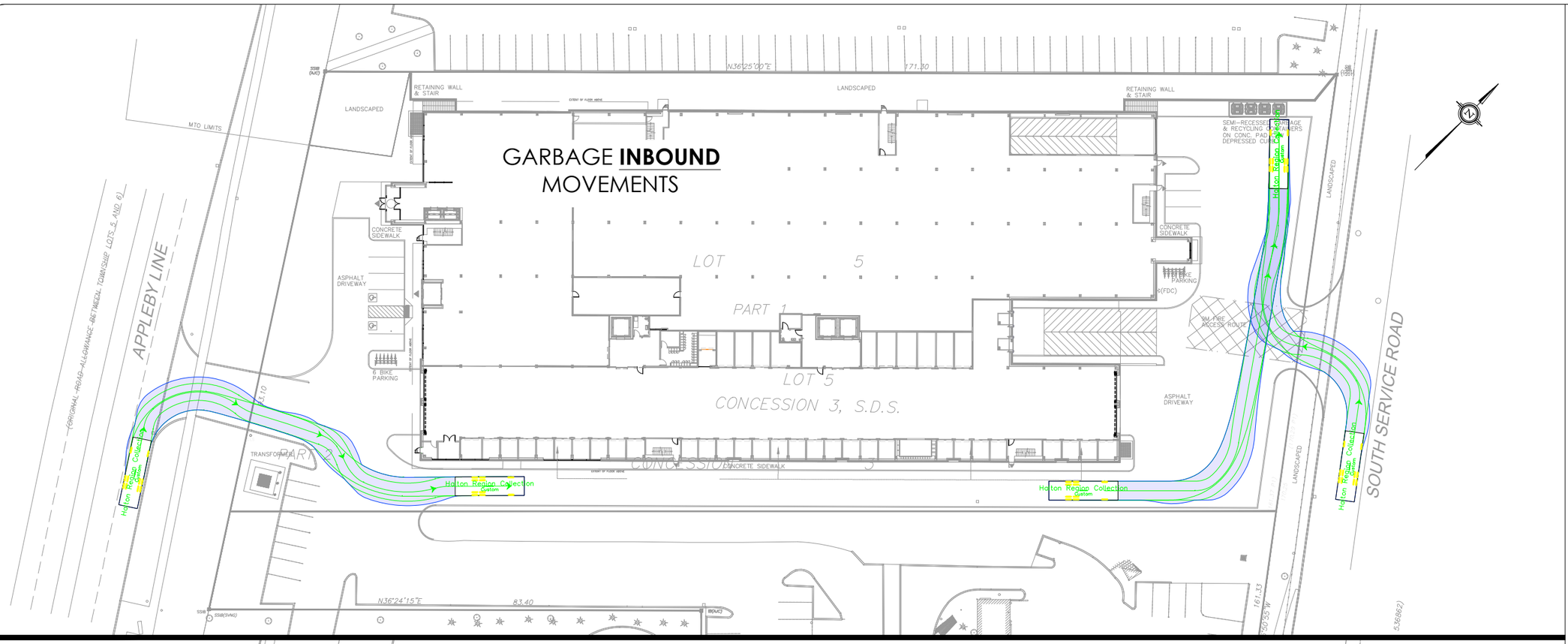
CLIENT: Dymon Group of Companies

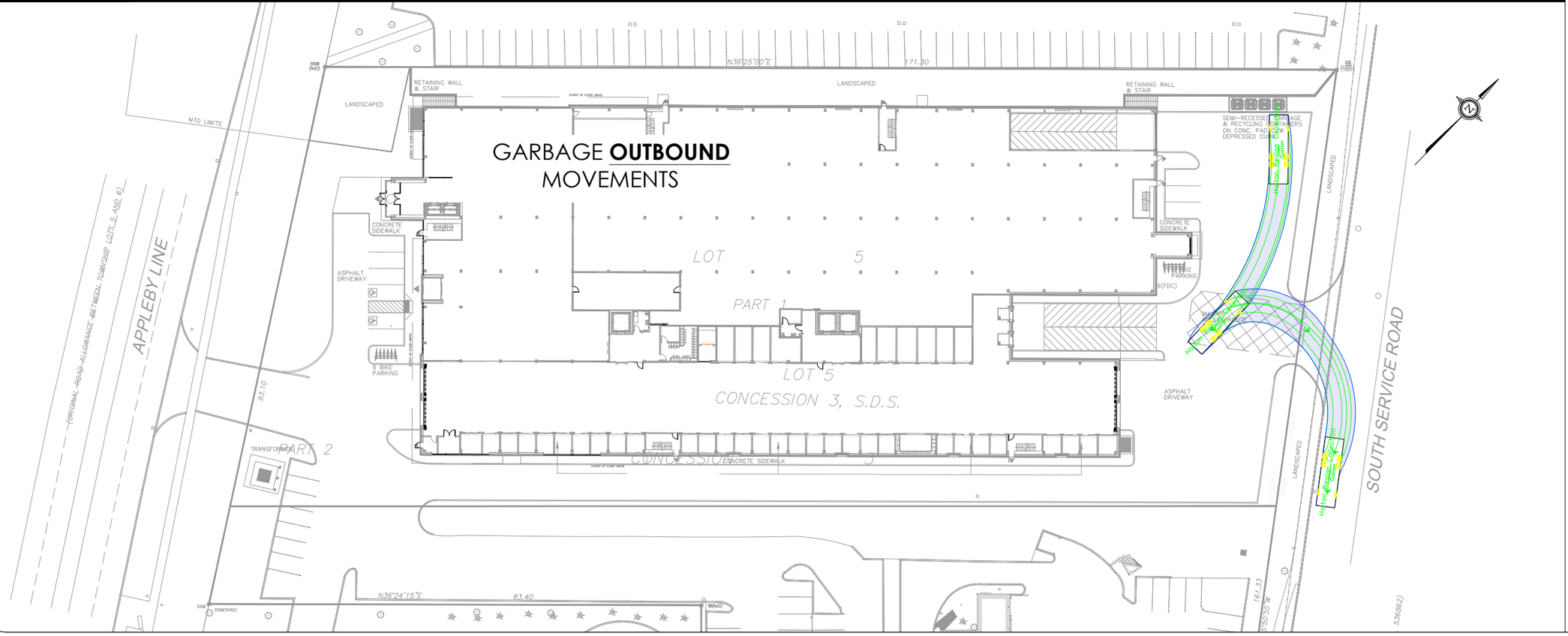
ARCHITECT:

SITE: 875 Appleby Line

TITLE: Wb-20 Turning Movements
Loading Bay Movements

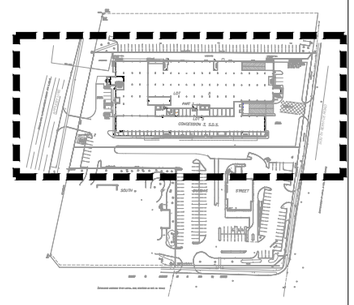
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-03-26	AN	MC
PROJECT NO:	DRAWING NO:		REVISION:
2021-122	003		06

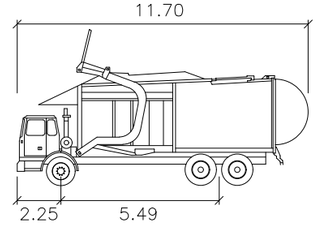




Notes:

Key Map:





Halton Region Collection

	meters
Width	: 3.20
Track	: 3.20
Lock to Lock Time	: 6.0
Steering Angle	: 28.8

REV:	DESCRIPTION:	BY:	DATE:
06	Updated Site Plan	AN	2024-03-26

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Dymon Group of Companies

ARCHITECT:

SITE: 875 Appleby Line

TITLE: Turning Movement Analysis
Garbage Turning Movements

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2024-03-26	AN	MC
PROJECT NO:	DRAWING NO:		REVISION:
2021-122	004		06

Appendix N

Traffic Signal Warrants

Intersection: RIRO Access @ Appleby Line

Major Street:	North-South	Lanes:	2+
Minor Street:	East-West	Lanes:	1
Urban/Rural:	Urban		
Legs:	3		

New/Existing Intersection: Existing

Scenario: FT 2031

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AHV	0	827	20	0	940	0	0	0	0	0	0	26
AM		1657	50		1590							31
PM		1649	31		2170							73

1 1

RIRO Access @ Appleby Line
FT 2031

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	1813	201%	23%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	39	23%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	1787	199%	0%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	0	0%		

Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B
5. Correction to 2B, as per MTO and City of Ottawa, for '2 or More Lanes' has been applied

Intersection: Full-moves Access @ South Service Road

Major Street:	North-South	Lanes:	1
Minor Street:	East-West	Lanes:	1
Urban/Rural:	Urban		
Legs:	3		

New/Existing Intersection: New

Scenario: FT 2031

	NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
AHV	11	83	0	0	128	5	3	0	14	0	0	0
AM	30	244			198	13	3		16			
PM	15	86			312	7	8		39			

1 1

Full-moves Access @ South Service Road
FT 2031

Justification #7

Justification	Description	Minimum Requirement 1 Lane Highway		Minimum Requirement 2 or More Lanes		Compliance Sectional		Compliance Entire %	Signal
		Free Flow	Restr. Flow	Free Flow	Restr. Flow	Numerical	%		
1. Minimum Vehicular Volume	A. Vehicle volume, all approaches (average hour)	480	720	600	900	243	34%	15%	No
	B. Vehicle volume, along minor streets (average hour)	120	170	120	170	25	15%		
2. Delay to Cross Traffic	A. Vehicle volumes, major street (average hour)	480	720	600	900	226	31%	4%	No
	B. Combined vehicle and pedestrian volume crossing artery from minor streets (average hour)	50	75	50	75	3	4%		

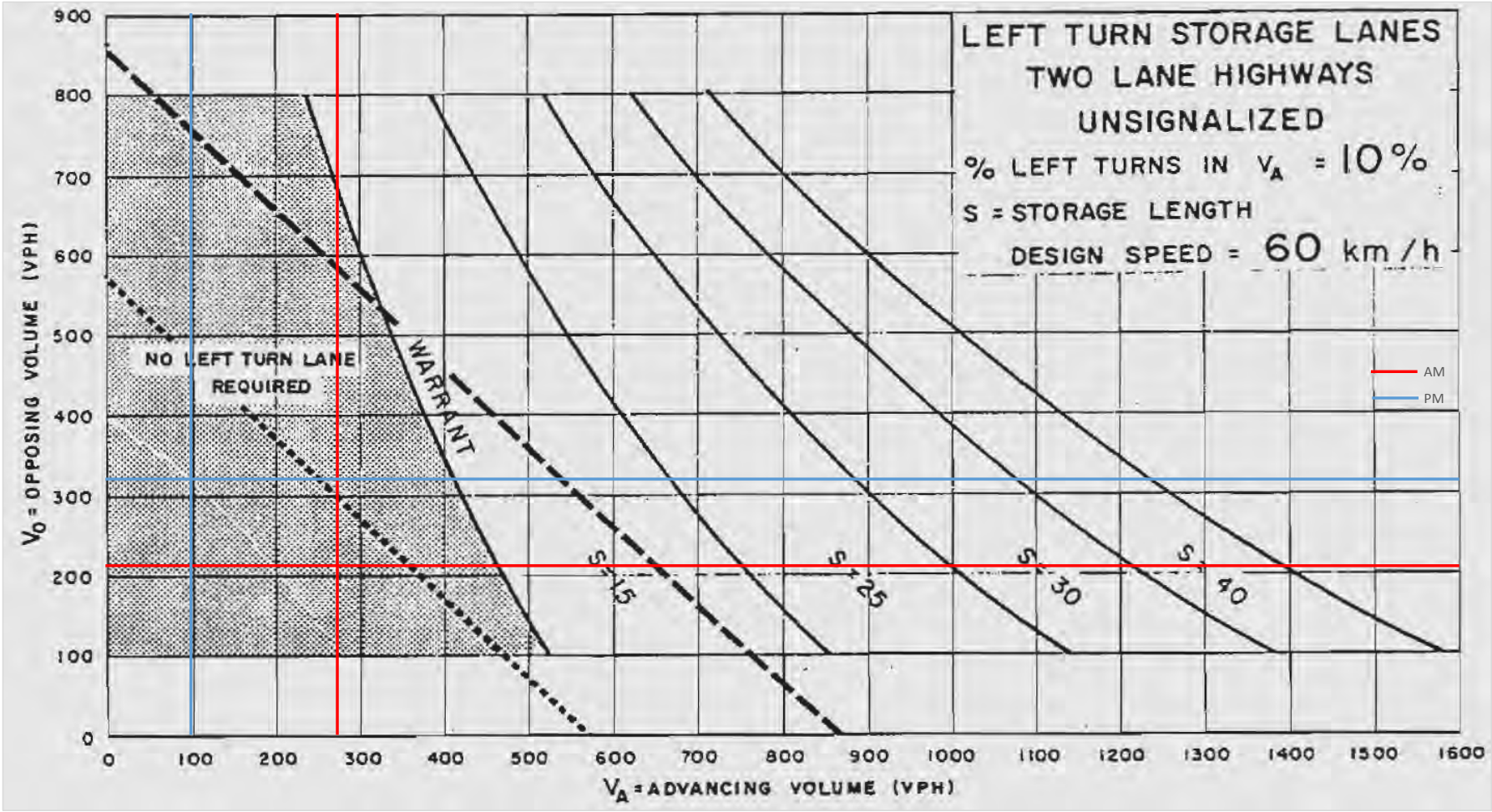
Notes
1. Refer to OTM Book 12, pg 92, Mar 2012
2. Lowest section percentage governs justification
3. Average hourly volumes estimated from peak hour volumes, AHV = PM/2 or (AM + PM) / 4, including amplifcation factors
4. T-intersection factor corrected, applies only to 1B
5. Correction to 2B, as per MTO and City of Ottawa, for '2 or More Lanes' has been applied

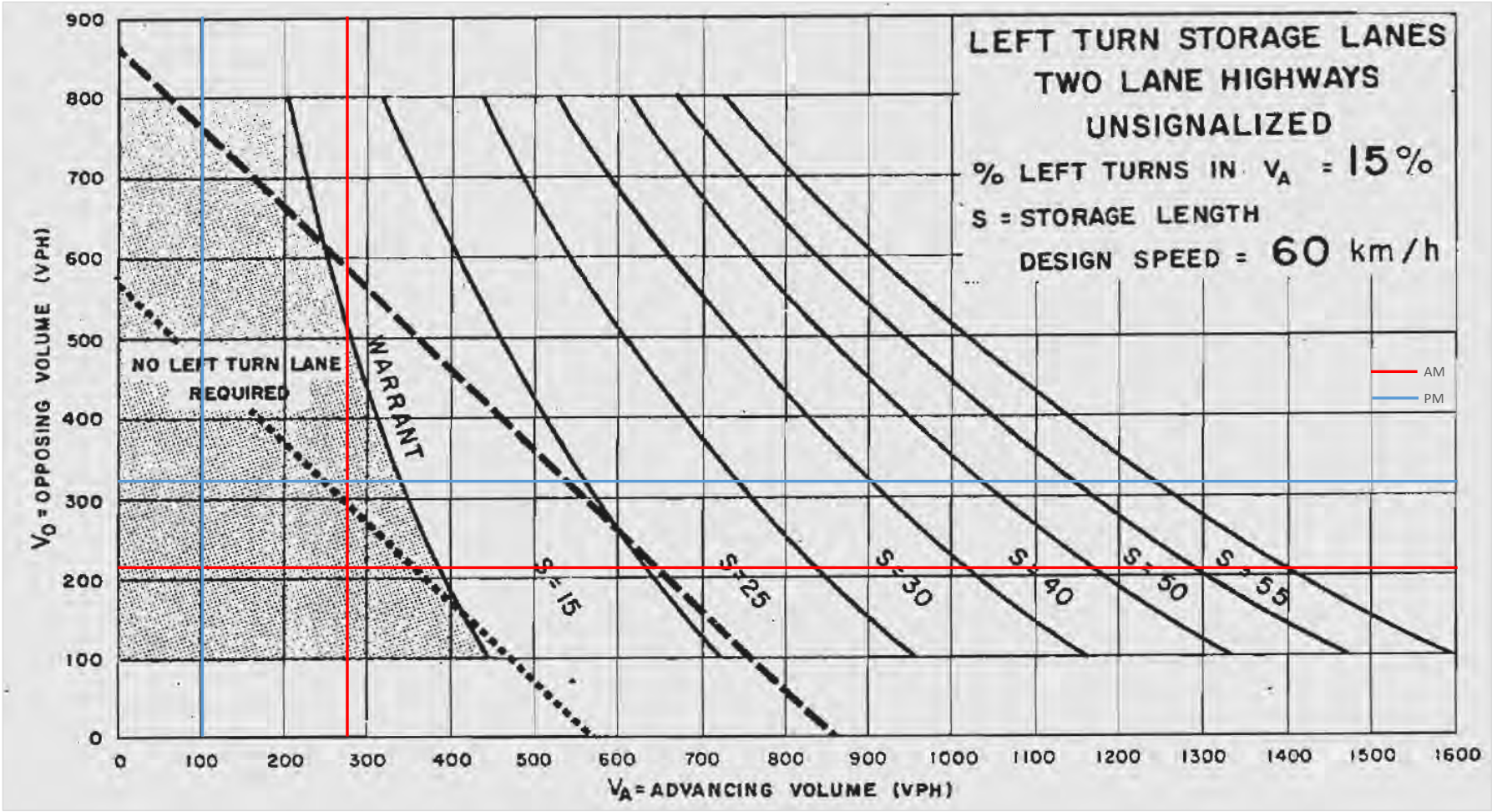
Appendix O

Left Turn Lane Warrants

Left Turn %
Volume Advancing
Volume Opposing

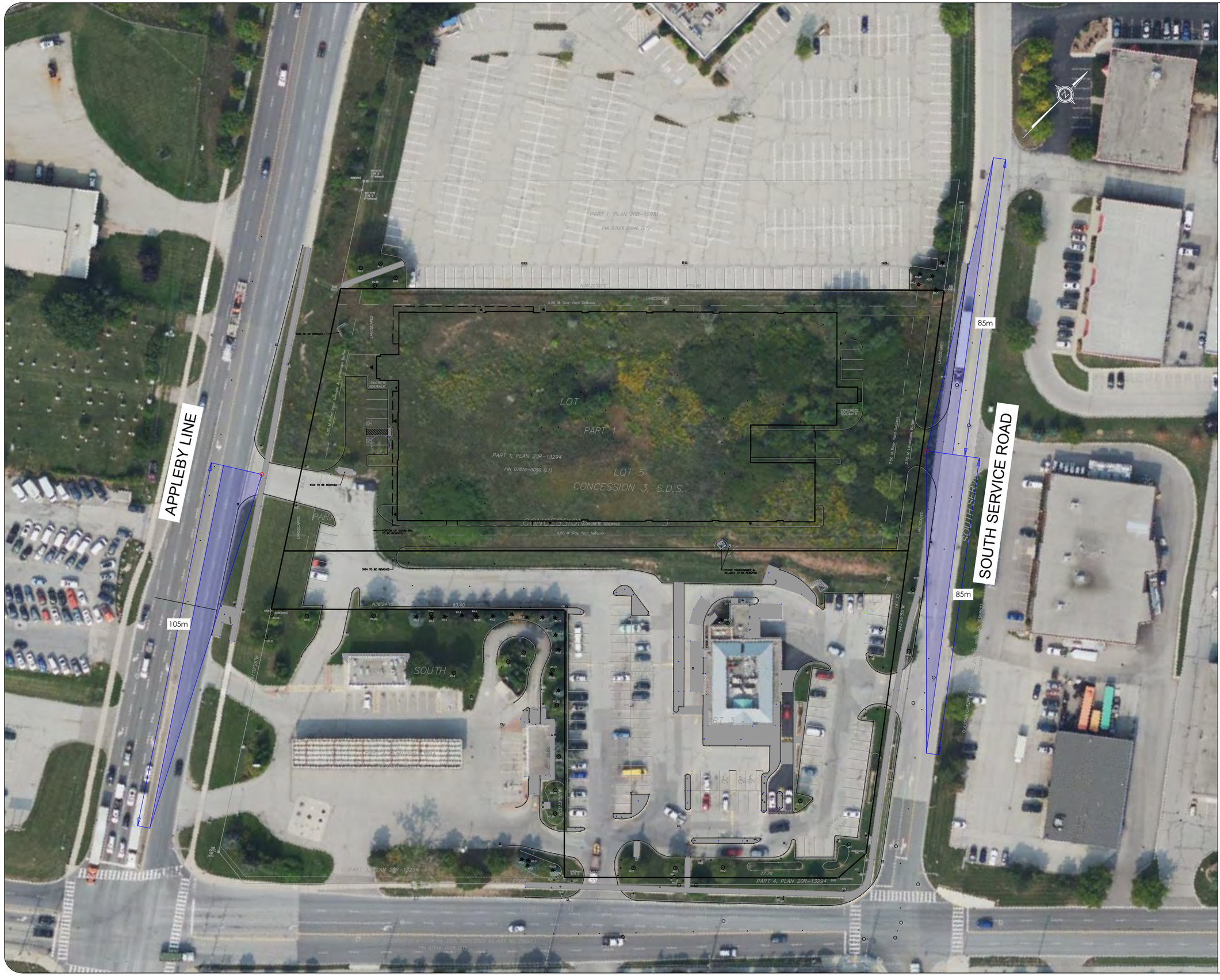
Design Speed	Northbound Left															Yes		
60 km/h	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	%Left Turn	Volume Advancing	Volume Opposing			
AM	3	0	16	0	0	0	30	244	0	0	198	13	10.9%	274	211			
PM	8	0	39	0	0	0	15	86	0	0	312	7	14.9%	101	319			


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 10%
S = STORAGE LENGTH
DESIGN SPEED = 60 km/h
NO LEFT TURN LANE REQUIRED
WARRANT
S=15
S=25
S=30
S=40
AM
PM
V_O = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600


LEFT TURN STORAGE LANES
TWO LANE HIGHWAYS
UNSIGNALIZED
% LEFT TURNS IN V_A = 15%
S = STORAGE LENGTH
DESIGN SPEED = 60 km/h
NO LEFT TURN LANE REQUIRED
WARRANT
S=15
S=25
S=30
S=40
S=50
S=55
AM
PM
V_O = OPPOSING VOLUME (VPH)
V_A = ADVANCING VOLUME (VPH)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600

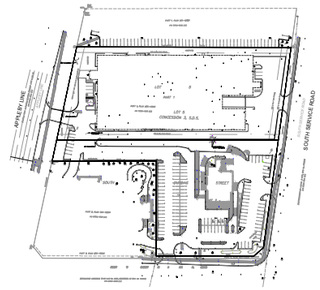
Appendix P

Sightline Analysis Drawings



Notes:

Key Map:



South Service Road

Design Speed: 60km/h
Posted Speed: 50km/h

Stopping Sight Distance: 85m

Appleby Line

Design Speed: 70km/h
Posted Speed: 60km/h

Stopping Sight Distance: 105m

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2023-10-27

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Dymon Group of Companies

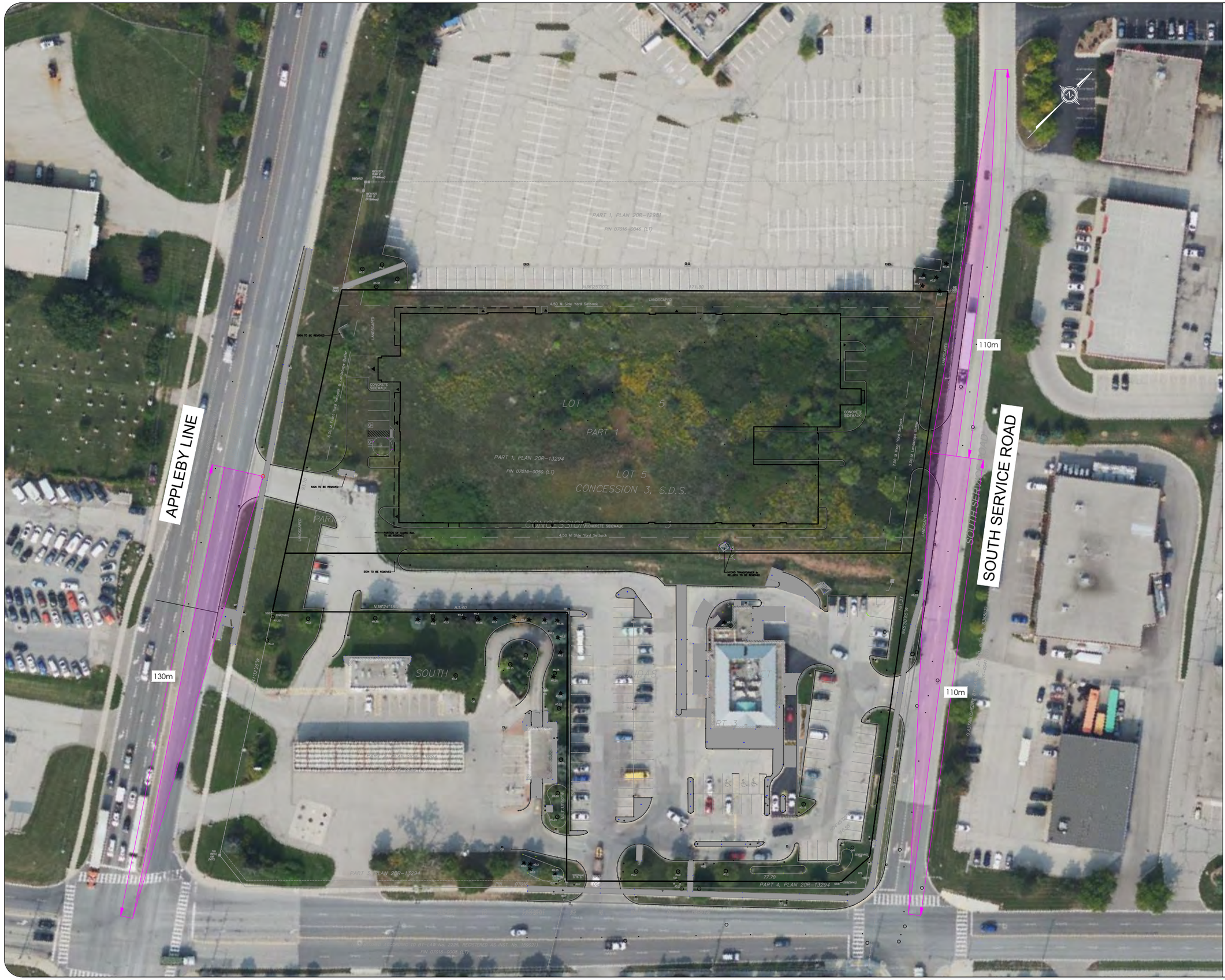
ARCHITECT:

SITE: 875 Appleby Line

TITLE: Sightline Analysis
Stopping Sight Distance

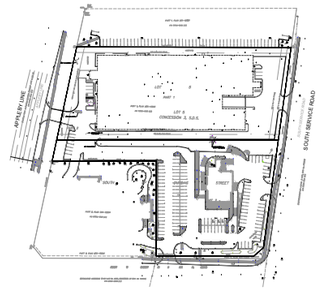
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2023-10-27	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2021-122	001	01



Notes:

Key Map:



South Service Road

Design Speed: 60km/h
Posted Speed: 50km/h

Departure Sight Distance:
Right Turn: 110m
Left Turn: 130m

Appleby Line

Design Speed: 70km/h
Posted Speed: 60km/h

Departure Sight Distance:
Right Turn: 130m
Left Turn: 150m

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2023-10-27

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Dymon Group of Companies

ARCHITECT:

SITE: 875 Appleby Line

TITLE: Sightline Analysis
Departure Sight Distance

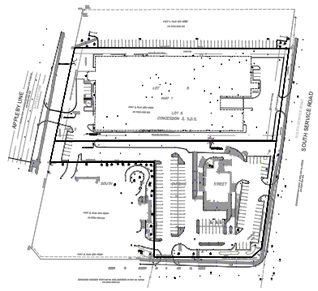
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2023-10-27	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2021-122	002	01



Notes:

Key Map:



South Service Road

Design Speed: 60km/h
Posted Speed: 50km/h

Available Sight Distance:
Right Turn: 120m
Left Turn: 140m

Appleby Line

Design Speed: 60km/h
Posted Speed: 50km/h

Available Sight Distance:
Right Turn: 140m

REV:	DESCRIPTION:	BY:	DATE:
01	Issued for Review	AN	2023-10-27

STATUS:

CGH Transportation
628 Haines Road
Newmarket, ON
L3Y 6V5
(905) 251-4070

CLIENT: Dymon Group of Companies

ARCHITECT:

SITE: 875 Appleby Line

TITLE: Sightline Analysis
Available Sight Distance

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
NTS	2023-10-27	AN	MC

PROJECT NO:	DRAWING NO:	REVISION:
2021-122	003	01

Table 9.9.4: Design Intersection Sight Distance – Case B1, Left Turn From Stop

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	41.7	45
30	35	62.6	65
40	50	83.4	85
50	65	104.3	105
60	85	125.1	130
70	105	146.0	150
80	130	166.8	170
90	160	187.7	190
100	185	208.5	210
110	220	229.4	230
120	250	250.2	255
130	285	271.1	275

Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

Sight distance design for left turns at divided-highway intersections should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, then sight distance for left turns will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of approximately 1 m at both ends of the vehicle, no separate analysis for the departure sight triangle for left turns is needed on the minor-road approach for the near roadway to the left. In most cases, the departure sight triangle for right turns (case B2) will provide sufficient sight distance for a passenger car to cross the near roadway to reach the median. Possible exceptions are addressed in the discussion of case B3.

Table 9.9.6: Design Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver

Design Speed (km/h)	Stopping Sight Distance (m)	Intersection Sight Distance for Passenger Cars	
		Calculated (m)	Design (m)
20	20	36.1	40
30	35	54.2	55
40	50	72.3	75
50	65	90.4	95
60	85	108.4	110
70	105	126.5	130
80	130	144.6	145
90	160	162.6	165
100	185	180.7	185
110	220	198.8	200
120	250	216.8	220
130	285	234.9	235

Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or to cross a two-lane highway with no median and with grades of 3% or less. For other conditions, the time gap should be adjusted and the sight distance recalculated.

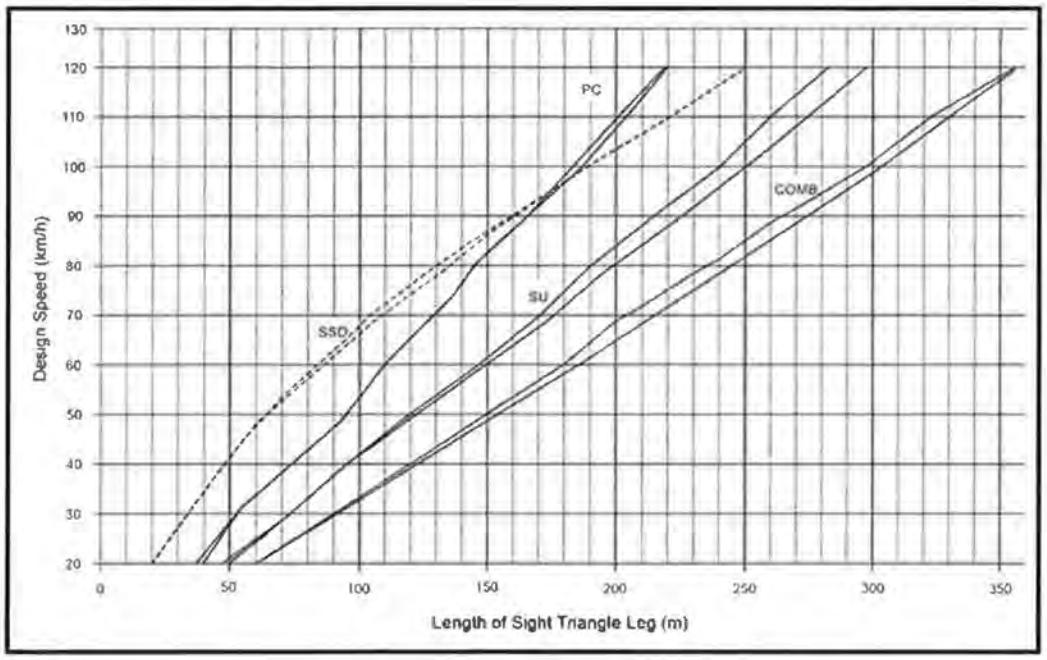


Figure 9.9.5: Intersection Sight Distance – Case B2, Right Turn from Stop, and Case B3, Crossing Maneuver (Calculated and Design Values Plotted)

Stopping sight distance is the sum of the distance travelled during the perception and reaction time and the braking distance.

$$SSD = 0.278Vt + 0.039 \frac{V^2}{a} \quad (2.5.2)$$

Where:

SSD = Stopping sight distance (m)
t = Brake reaction time, 2.5 s
V = Design speed (km/h)
a = Deceleration rate (m/s^2)

Table 2.5.2 gives the minimum stopping sight distances on level grade, on wet pavement, for a range of design speeds. These values are used for vertical curve design, intersection geometry and the placement of traffic control devices. The stopping sight distances quoted in **Table 2.5.2** may need to be increased for a variety of reasons related to grade and vehicle type as noted below.

Table 2.5.2: Stopping Sight Distance on level roadways for Automobiles[54]

Design speed (km/h)	Brake reaction distance (m)	Braking distance on level (m)	Stopping sight distance	
			Calculated (m)	Design (m)
20	13.9	4.6	18.5	20
30	20.9	10.3	31.2	35
40	27.8	18.4	46.2	50
50	34.8	28.7	63.5	65
60	41.7	41.3	83.0	85
70	48.7	56.2	104.9	105
80	55.6	73.4	129.0	130
90	62.6	92.9	155.5	160
100	69.5	114.7	184.2	185
110	76.5	138.8	215.3	220
120	83.4	165.2	248.6	250
130	90.4	193.8	284.2	285

Note: Brake reaction distance predicated on a time of 2.5 s; deceleration rate of 3.4 m/s^2 used to determine calculated sight distance.

Appendix Q

Proxy Site Parking Data



Dymon Storage – Coventry & Lola

Off-Street Parking Usage

Dymon Storage - Off Street Parking Inventory

Dymon Storage

323 Coventry Road, Ottawa, ON K1K 3X6

Day: MONDAY **Date:** 10 June 2019 **Survey Hours:** 0730-2130

Weather: Partly cloudy +16C/Overcast Light Rain after 1900 +23C **Surveyor (s):** Brazeau/Carmody

Time	Number of Parked Vehicles by Area							Comments
	Area 1 Main Entrance	Area 2 Accessible	Area 3 Loading Dock	Area 4 West Side Unsecured	Area 5 West Side Secured	Area 6 North Side Secured	Area 7 North Side Unsecured	
0700								Area 4 - west side parking area, one
0730	0	0	1	3	3	15	2	of the vehicles was a trailer parked for
0800	1	0	0	3	3	15	2	every time period.
0830	1	0	2	3	3	15	2	
0900	1	0	2	3	3	15	2	⬅ Area 5 - one truck parked in middle
0930	1	0	3	3	3	15	2	⬅ Area 3 - truck in loading dock
1000	1	0	4	3	3	15	2	
1030	2	0	0	5	3	15	2	
1100	2	0	5	6	3	15	2	⬅ Area 5 - landscaping truck in middle
1130	2	0	6	5	3	14	2	
1200	2	0	7	6	3	14	2	
1230	1	0	7	4	3	14	2	
1300	1	0	1	4	4	15	2	
1330	0	0	1	3	3	15	2	
1400	0	0	1	5	3	15	2	⬅ Area 2 - truck parked beside accessible spot
1430	1	0	5	4	3	14	2	⬅ Area 5 - truck parked in middle of lot
1500	3	0	3	5	3	14	2	
1530	4	0	1	4	4	14	2	⬅ Area 3 - truck in loading dock
1600	2	0	3	4	4	14	2	⬅ Area 3 - truck in loading dock
1630	1	0	1	4	3	16	2	
1700	1	0	0	3	3	16	2	
1730	2	0	1	3	3	16	2	
1800	3	0	2	3	3	16	2	
1830	3	0	3	4	3	16	2	
1900	3	0	0	2	3	17	2	⬅ Area 5 - pickup truck loading
1930	2	0	1	2	3	16	2	Area 6 - north side parking area. Although
2000	3	0	1	2	3	16	2	there are 30 spaces, parking is prohibited
2030	3	0	1	2	3	16	2	in 8 of them to permit tractor trailers to
2100	3	0	0	2	3	16	2	manoeuvre into the loading dock.
2130	2	0	0	2	3	16	2	Accordingly, only 22 spaces are available
# of Pkg Spaces ➡	4	1	N/A	11	4	22	2	for long term parking.

323 Coventry Weekday	Area 1 Main Entrance	Area 2 Accessible	Area 3 Loading Dock	Area 4 West Side Unsecured	Area 5 West Side Secured	Area 6 North Side Secured	Area 7 North Side Unsecured	Total (Exterior)	Total (Short Term)	Total (Interior)	Total	Total (Short Term)
Stalls	4	1	N/A	11	4	22	2	44				
730	0	0	1	3	3	15	2	23	0	1	24	1
800	1	0	0	3	3	15	2	24	1	0	24	1
830	1	0	2	3	3	15	2	24	1	2	26	3
900	1	0	2	3	3	15	2	24	1	2	26	3
930	1	0	3	3	3	15	2	24	1	3	27	4
1000	1	0	4	3	3	15	2	24	1	4	28	5
1030	2	0	0	5	3	15	2	27	4	0	27	4
1100	2	0	5	6	3	15	2	28	5	5	33	10
1130	2	0	6	5	3	14	2	26	3	6	32	9
1200	2	0	7	6	3	14	2	27	4	7	34	11
1230	1	0	7	4	3	14	2	24	1	7	31	8
1300	1	0	1	4	4	15	2	26	3	1	27	4
1330	0	0	1	3	3	15	2	23	0	1	24	1
1400	0	0	1	5	3	15	2	25	2	1	26	3
1430	1	0	5	4	3	14	2	24	1	5	29	6
1500	3	0	3	5	3	14	2	27	4	3	30	7
1530	4	0	1	4	4	14	2	28	5	1	29	6
1600	2	0	3	4	4	14	2	26	3	3	29	6
1630	1	0	1	4	3	16	2	26	3	1	27	4
1700	1	0	0	3	3	16	2	25	2	0	25	2
1730	2	0	1	3	3	16	2	26	3	1	27	4
1800	3	0	2	3	3	16	2	27	4	2	29	6
1830	3	0	3	4	3	16	2	28	5	3	31	8
1900	3	0	0	2	3	17	2	27	4	0	27	4
1930	2	0	1	2	3	16	2	25	2	1	26	3
2000	3	0	1	2	3	16	2	26	3	1	27	4
2030	3	0	1	2	3	16	2	26	3	1	27	4
2100	3	0	0	2	3	16	2	26	3	0	26	3
2130	2	0	0	2	3	16	2	25	2	0	25	2

Off-Street Parking Usage

Dymon Storage - Off Street Parking Inventory

Dymon Storage

323 Coventry Road, Ottawa, ON K1K 3X6

Day: SATURDAY **Date:** 8 June 2019 **Survey Hours:** 0830 -1830

Weather: AM Clear +10ºC PM Clear +23ºC **Surveyor (s):** Morgan/Carmody

Time	Number of Parked Vehicles by Area						
	Area 1 Main Entrance	Area 2 Accessible	Area 3 Loading Dock	Area 4 West Side Unsecured	Area 5 West Side Secured	Area 6 North Side Secured	Area 7 North Side Unsecured
0700							
0730							
0800							
0830	1	0	1	3	2	14	2
0900	2	0	4	2	3	14	2
0930	3	1	5	2	3	14	2
1000	3	0	4	2	3	14	2
1030	3	0	4	3	3	14	2
1100	3	0	2	3	4	14	2
1130	3	0	0	5	4	14	2
1200	4	0	1	5	3	14	2
1230	4	0	1	2	3	14	2
1300	3	0	2	2	3	14	2
1330	2	0	1	2	3	14	2
1400	3	0	2	2	3	13	2
1430	4	0	1	3	3	14	2
1500	3	0	6	3	3	14	2
1530	3	0	2	3	3	15	2
1600	4	0	2	3	3	15	2
1630	3	0	2	3	3	15	2
1700	3	0	1	2	3	15	2
1730	4	0	1	2	3	15	2
1800	3	0	3	2	3	15	2
1830	2	0	1	2	3	15	2
1900							
1930							
2000							
2030							
2100							
2130							
# of Pkg Spaces ➡	4	1	N/A	11	4	22	2

Comments

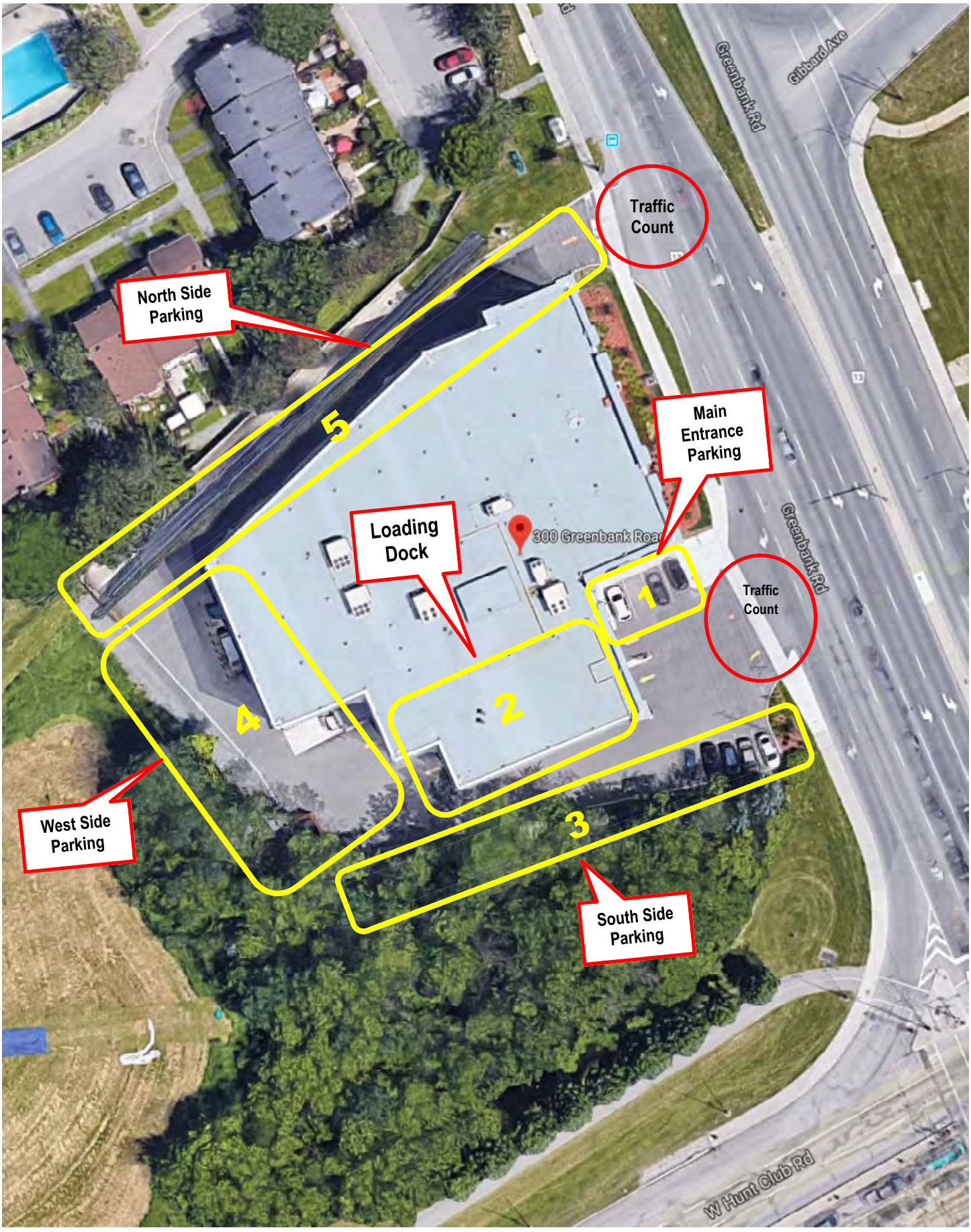
Area 4 - west side parking area one of the vehicles was a trailer parked for every time period.

Area 5 - west side parking area at 1100 and at 1130, one of the vehicles was a tractor trailer in the loading dock.

Area 6 - north side parking area 2 vehicles were trailers from 0830-1500 and after 1500-1830 3 of the vehicles were trailers.

Area 6 - north side parking area Although there are 30 spaces, parking is prohibited in 8 of them to permit tractor trailers to manoeuvre into the loading dock. Accordingly, only 22 spaces are available for long term parking.

323 Coventry Saturday	Area 1 Main Entrance	Area 2 Accessible	Area 3 Loading Dock	Area 4 West Side Unsecured	Area 5 West Side Secured	Area 6 North Side Secured	Area 7 North Side Unsecured	Total (Exterior)	Total (Short Term)	Total (Interior)	Total	Total (Short Term)
Stalls	4	1	N/A	11	4	22	2	44				
830	1	0	1	3	2	14	2	22	0	1	23	1
900	2	0	4	2	3	14	2	23	1	4	27	5
930	3	1	5	2	3	14	2	25	3	5	30	8
1000	3	0	4	2	3	14	2	24	2	4	28	6
1030	3	0	4	3	3	14	2	25	3	4	29	7
1100	3	0	2	3	4	14	2	26	4	2	28	6
1130	3	0	0	5	4	14	2	28	6	0	28	6
1200	4	0	1	5	3	14	2	28	6	1	29	7
1230	4	0	1	2	3	14	2	25	3	1	26	4
1300	3	0	2	2	3	14	2	24	2	2	26	4
1330	2	0	1	2	3	14	2	23	1	1	24	2
1400	3	0	2	2	3	13	2	23	1	2	25	3
1430	4	0	1	3	3	14	2	26	4	1	27	5
1500	3	0	6	3	3	14	2	25	3	6	31	9
1530	3	0	2	3	3	15	2	26	4	2	28	6
1600	4	0	2	3	3	15	2	27	5	2	29	7
1630	3	0	2	3	3	15	2	26	4	2	28	6
1700	3	0	1	2	3	15	2	25	3	1	26	4
1730	4	0	1	2	3	15	2	26	4	1	27	5
1800	3	0	3	2	3	15	2	25	3	3	28	6
1830	2	0	1	2	3	15	2	24	2	1	25	3



Dymon Storage – Greenbank & West Hunt Club

Off-Street Parking Usage

Dymon Storage - Off Street Parking Inventory

Dymon Storage

300 Greenbank Road, Ottawa, ON K2H 0B6

Day: MONDAY **Date:** 10 June 2019 **Survey Hours:** 0700-0900 & 1600-1800

Weather: Partly Cloudy +16C/Overcast Light Rain after 1900 +23C **Surveyor (s):** Mousseau

Time	Number of Parked Vehicles by Area							Comments
	Area 1 Main Entrance	Area 2 Loading Dock	Area 3 South Side Parking	Area 4 West Side Parking	Area 5 North Side Parking			
0700	0	0	0	0	0			
0730	0	0	2	0	0			1 employee parked
0800	0	0	3	1	0			1 employee Dymon van parked
0830	0	1	3	0	0			near gargage bin
0900	0	1	3	0	0			
0930								
1000								
1030								
1100								
1130								
1200								
1230								
1300								
1330								
1400								
1430								
1500								
1530								
1600	1	2	2	0	0			BFG van parked next to building
1630	0	3	1	0	0			
1700	0	2	1	0	0			
1730	0	2	4	0	0			Jordash van parked in fire lane
1800	1	3	4	0	0			
1830								
1900								
1930								
2000								
2030								
2100								Accessible parking area is
2130								located within the loading dock.
# of Pkg Spaces ➡	4	N/A	5	0	0			

300 Greenbank Weekday	Area 1 Main Entrance	Area 2 Loading Dock	Area 3 South Side Parking	Area 4 West Side Parking	Area 5 North Side Parking	Total (Exterior)	Total (Interior)	Total
Stalls	4	N/A	5	0	0	9		
700	0	0	0	0	0	0	0	0
730	0	0	2	0	0	0	2	2
800	0	0	3	1	0	1	3	4
830	0	1	3	0	0	1	3	4
900	0	1	3	0	0	1	3	4
1600	1	2	2	0	0	3	2	5
1630	0	3	1	0	0	3	1	4
1700	0	2	1	0	0	2	1	3
1730	0	2	4	0	0	2	4	6
1800	1	3	4	0	0	4	4	8

Off-Street Parking Usage

Dymon Storage - Off Street Parking Inventory

Dymon Storage

300 Greenbank Road, Ottawa, ON K2H 0B6

Day: SATURDAY **Date:** 8 June 2019 **Survey Hours:** 1100 - 1600

Weather: Clear +10ºC Clear +23ºC **Surveyor (s):** Mousseau

Time	Number of Parked Vehicles by Area						
	Area 1 Main Entrance	Area 2 Loading Dock	Area 3 South Side Parking	Area 4 West Side Parking	Area 5 North Side Parking		
0700							
0730							
0800							
0830							
0900							
0930							
1000							
1030							
1100	1	4	4	0	0		
1130	2	6	3	0	0		
1200	1	4	3	0	0		
1230	1	1	3	0	1		
1300	1	2	3	0	0		
1330	1	1	4	0	0		
1400	0	2	5	0	1		
1430	0	2	3	0	0		
1500	0	7	4	0	0		
1530	1	6	4	0	0		
1600	0	2	4	0	0		
1630							
1700							
1730							
1800							
1830							
1900							
1930							
2000							
2030							
2100							
2130							
# of Pkg Spaces ➡	4	N/A	5	0	0		

Comments

At 1100 and at 1500 a van parked in the fire lane.

Employee parking takes place in Area #3 (3 vehicles)

Accessible parking area is located within the loading dock.

300 Greenbank Saturday	Area 1 Main Entrance	Area 2 Loading Dock	Area 3 South Side Parking	Area 4 West Side Parking	Area 5 North Side Parking	Total (Exterior)	Total (Interior)	Total
Stalls	4	N/A	5	0	0	9		
1100	1	4	4	0	0	5	4	9
1130	2	6	3	0	0	8	3	11
1200	1	4	3	0	0	5	3	8
1230	1	1	3	0	1	3	3	6
1300	1	2	3	0	0	3	3	6
1330	1	1	4	0	0	2	4	6
1400	0	2	5	0	1	3	5	8
1430	0	2	3	0	0	2	3	5
1500	0	7	4	0	0	7	4	11
1530	1	6	4	0	0	7	4	11
1600	0	2	4	0	0	2	4	6



NOTE:

GENERAL CONTRACTOR IS RESPONSIBLE TO USE OWNER'S LAND SURVEYOR & GEOTECH ENGINEER TO LOCATE BUILDING AND TO CONFIRM SOILS AND COMPACTION.

LEGAL DESCRIPTION OF PROPERTY:

BLOCK 4
PLAN 43M-879
CITY OF BRAMPTON

BOUNDARY INFORMATION FROM SURVEY BY: LLOYD & PURCELL LTD., ONTARIO LAND SURVEYORS, 2015.

STATISTIC	ZONING	PROPOSED
LOT AREA	2,000 m² / 21527sf	7,972 m² / 85,809 sf
LOT COVERAGE	NO MAX.	45 %
MAX. % ACCESSORY RETAIL	15% OF TOTAL GFA	4.6%
MIN. LOADING SPACE REQUIREMENT	5 spaces	16 spaces
COMMERCIAL SELF STORAGE WAREHOUSE	109	-
RETAIL ESTABLISHMENT	41	-
TOTAL	150	41

FRONT YARD LANDSCAPE AREA		21.5%
FRONT YARD LANDSCAPE BUFFER		0 m
EXTERIOR SIDE YARD LANDSCAPE AREA	238.14m²	44.86%

Ground Floor Dymon Warehouse Retail	564 m² (6,070 sf²)
Ground Floor Dymon	696 m² (7,502 sf²)
Second Floor Dymon	3,508 m² (37,759 sf²)
Third Floor Dymon	3,544 m² (38,147 sf²)
Fourth Floor Dymon	3,544 m² (38,147 sf²)
PROPOSED Self-Storage Ground Floor	1,156 m² (12,443 sf²)
TOTAL SELF STORAGE	12,448 m² (133,998 sf²)
TOTAL GFA WITH 4 STOREYS	13,012 m² (140,068 sf²)

LEGEND

- PROPERTY LINE
- LANDS TO BE DEDICATED TO REGION OF PEEL
- BUILDING ENTRY/EXIT
- NEW CONCRETE PAVING
- NEW PRECAST CONCRETE PERMEABLE PAVING
- LANDSCAPED AREA – SEE LANDSCAPE.
- NEW CURB
- NEW MOUNTABLE CURB
- HYD EXISTING FIRE HYDRANT
- CB EXISTING CATCH BASIN
- MH EXISTING MANHOLE
- LS EXISTING LIGHT STANDARD
- SIAMESE CONNECTION
- NEW CATCH BASIN
- NEW MANHOLE (STORM)
- NEW MANHOLE (SANITARY)
- ORNAMENTAL FENCE
- NLS (NEW LIGHT STANDARD) SEE ELECTRICAL

1. Contractor must verify all job dimensions, all drawings, details, specifications and report any discrepancies to owners before proceeding with work.
2. All drawings and specifications are instruments of service and the property of the architects which must be returned at the completion of the work, and may not be reproduced without their written permission.

ref	description	date
19	ISSUED FOR DISCUSSION	2020/06/24
18	ISSUED FOR PERMIT	2018/09/21
17	REVISED TO PERMIT	2017/11/08
16	REVISED FOR REGION OF PEEL	2017/09/08
15	FOR FINAL SITE PLAN APPLICATION	2017/08/31
14	ISSUED FOR TENDER	2017/08/17
13	REVISED FOR REGION OF PEEL	2017/08/16
12	REVISED FOR APPROVAL	2017/07/19
11	REVISED FOR APPROVAL	2017/07/14
10	REVISED FOR APPROVAL	2017/07/10
9	ISSUED FOR APPROVAL	2017/06/28
8	FOR PERMIT APPLICATION	2017/05/10
7	FOR FINAL SITE PLAN APPLICATION	2017/04/12
6	~~FOR PERMIT APPLICATION~~	~~2017/03/03~~
5	REVISED FOR SUBMISSION	2017/02/1
4	FOR CLIENT REVIEW	2017/01/23
3	REVISED FOR SUBMISSION	2017/01/06
2	FOR MINOR VARIENCE SUBMISSION	2016/11/08
1	FOR SITE PLAN APPLICATION REV01	2016/08/16

revisions

DESIGN ARCHITECT
TACT Architecture Inc.
660R College St (Rear Lane) Toronto ON M6G 1B8
tel: (416 516 1949)
email: info@tactdesign.ca

STRUCTURAL ENGINEER
Cleland Jardine Engineering Ltd.
200-580 Terry Fox Drive, Kanata ON K2L 4B9
tel: (613) 591-1533 fax: (613) 591-1703
e-mail: mail@clelandjardine.com

MECHANICAL/ELECTRICAL
Tristar Engineering Ltd.
118-30 West Beaver Creek Rd., Richmond Hill, ON L4B 3K1
tel: (905) 882 1662 fax: (905) 882 0736

CIVIL ENGINEER
Cole Engineering Ltd
70 Valleywood Drive, Markham ON L3R 4T5
tel: (416) 987-6161 or (905) 940-6161 fax: (905) 940-2064
www. coleengineering.ca

PLANNING & URBAN DESIGN
Fotenn
223 McLeod Street, Ottawa ON K2P 0Z8
tel: (613) 730-5709 fax: (613) 730-1136
www.fotenn.com

owner:
Dymon Capital Corporation
2-1830 Walkley Road
Ottawa ON K1H 8K3
tel: 613-247-0888 fax: 613-247-7730

architect
nicholas caragianis architect inc.
137 Parrilla Street,
Ottawa, ON K1S 3K9
t: 613 937 6801
f: 613 937 8289
e: info@ncarchitect.ca
www.ncarchitect.ca

TRUE NORTH

PROJECT NORTH

project & location

DYMON SELF-STORAGE
5 NEVETS ROAD
BRAMPTON, ONT.

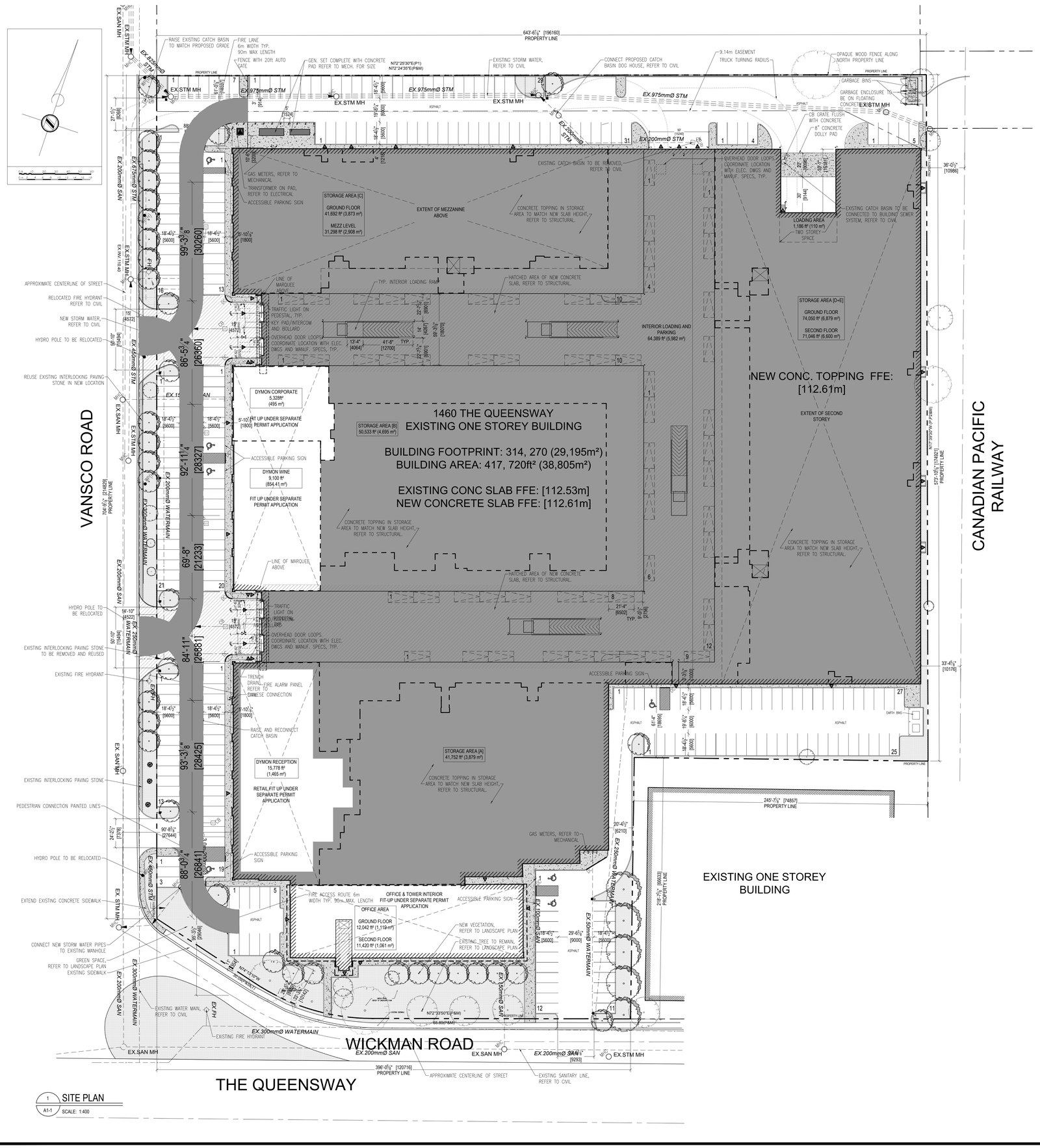
CITY FILE NUMBER: SP16-013.000

title of drawing

SITE PLAN

scale	drawing
1:250	A1-1
date: JAN 2016	
drawn by: KL SS DL	

ID-DYM-16O-BRAMT-AIRPORT&NEVETS



1 SITE PLAN
A1-1 SCALE: 1:400

STATISTICS

LEGAL DESCRIPTION OF PROPERTY:

THE 41,719m² PROPERTY KNOWN MUNICIPALLY AS 1460 THE QUEENSWAY IS LOCATED AT THE NORTHEAST CORNER OF VANSCO ROAD AND THE QUEENSWAY IN THE CITY OF TORONTO (ETOBICOKE).

BOUNDARY INFORMATION FROM SURVEY BY: DAVID B. SEARLES SURVEYING LTD.

BUILDING FOOTPRINT (INCLUDING INTERIOR LOADING):	29,210 m² (314,411 ft²)
TOTAL SELF STORAGE	27,568 m² (371,860 ft²)
TOTAL RECEPTION	1,231 m² (13,212 ft²)
TOTAL OFFICE	2,192 m² (24,749 ft²)
TOTAL GFA	30,991 m² (397,956 ft²)

PARKING STATISTICS

REQUIRED		PROPOSED
CURRENT E1.0 ZONING	FORMER CITY OF ETOBICOKE BY-LAW	
206 SPACES	359 SPACES	266 EXT. SPACES 59 INT. SPACES 325 TOTAL
FOR A COMPLETE LIST OF THE PERFORMANCE STANDARDS FOR BOTH ZONING CATEGORIES PLEASE REFER TO THE TABLE IN APPENDIX A OF THE ASSOCIATED PLANNING RATIONALE REPORT.		

LEGEND

- PROPOSED BUILDING LOCATION
- EXISTING NEIGHBORING BUILDINGS
- LANDSCAPED AREA
- CONCRETE/ SIDEWALK
- BARRIER FREE PARKING CLEARANCE
- INTERLOCKING PAVING STONE (EXISTING TO REMAIN OR REUSE)
- CURB
- DEPRESSED CURB
- NEW TREE/ VEGETATION (REFER TO LANDSCAPE PLAN FOR TYPE, SIZE AND LOCATION)
- EXISTING TREE (VEGETATION IS FOR REFERENCE ONLY, REFER TO LANDSCAPE PLAN)
- BARRIER FREE PARKING
- INTERIOR PARKING
- CATCH BASIN
- SIAMESE CONNECTION
- ENTRANCE/ EXIT LOCATION
- TRANSFORMER
- FENCE & GATE
- MAN HOLE COVER
- WOOD POLE (HYDRO)
- FIRE HYDRANT
- NLS (NEW LIGHT STANDARD, REFER TO ELECTRICAL)
- NEW BOLLARD

BOUNDARY INFORMATION FROM SURVEY BY: DAVID B. SEARLES SURVEYING LTD. ONTARIO LAND SURVEYORS. 04 MAY 2016

1. Contractor must verify all job dimensions, all drawings, details, specifications and report any discrepancies to owners before proceeding with work.
2. All drawings and specifications are instruments of service and the property of the architects which must be returned at the completion of the work, and may not be reproduced without their written permission.

PAGE SIZE: ARCH E1 (30"x42")

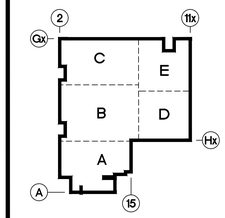
ref	description	date
16	ISSUED FOR PERMIT	2020 09 02
15	RE-ISSUED FOR CONSTRUCTION (FC5)	2018 12 03
14	ISSUED FOR ZONING	2018 04 27
13	FOR COORDINATION	2018 04 26
12	REVISED FOR PERMIT	2018 03 07
11	RE-ISSUED FOR COORDINATION (IFC4)	2018 02 02
10	FOR COORDINATION	2017 01 16
9	FOR COORDINATION	2017 12 12
8	FOR COORDINATION	2017 10 11
7	FOR COORDINATION	2017 09 22
6	FOR COORDINATION	2017 08 23
5	FOR COORDINATION	2017 08 16
4	FOR COORDINATION	2017 08 08
3	FOR COORDINATION	2017 06 29
2	BLDG. STRUCT. & SHELL PERMIT	2017 06 20
1	FOR COORDINATION	2017 06 15

revisions

ONTARIO ASSOCIATION OF ARCHITECTS — M. Cuerrier — LICENCE 3353

2020 09 02
ISSUED FOR PERMIT

key plan:



DESIGN ARCHITECT — TACT Architecture Inc.
660R College St (Rear Lane) Toronto ON M6G 1B8
tel: (416 516 1949)
email: info@tactdesign.ca

STRUCTURAL ENGINEER — Cleland Jardine Engineering Ltd.
200-580 Terry Fox Drive, Kanata ON K2L 4B9
tel: (613) 591-1533 fax: (613) 591-1703
e-mail: mail@clelandjardine.com

MECHANICAL/ELECTRICAL — Tristar Engineering Ltd.
8901 Woodbine Ave. Suite 116, Markham, ON L3R 9Y4
tel: (905) 604 3801
e-mail:

CIVIL ENGINEER — Cole Engineering Ltd
70 Valleywood Drive, Markham ON L3R 4T5
tel: (416) 987-6161 or (905) 940-6161 fax: (905) 940-2064
www. coleengineering.ca

PLANNING & URBAN DESIGN — Fotenn
223 McLeod Street, Ottawa ON K2P 0Z8
tel: (613) 730-5709 fax: (613) 730-1136
www.fotenn.com

owner:
Dymon Capital Corporation
2-1830 Walkley Road
Ottawa ON K1H 8K3
tel: 613-247-0888 fax: 613-247-7730

architect
nicholas caragianis architect Inc.
137 Parrilla Street, Ottawa, ON K1S 3K9
t: 613 937 6801
f: 613 937 8999
e: info@ncarchitect.ca
www.ncarchitect.ca

TRUE NORTH — PROJECT NORTH

project & location
DYMON CAPITAL CORP
1460 THE QUEENSWAY
TORONTO, ONTARIO

title of drawing
SITE PLAN

scale	drawing
AS NOTED	A1-1
date: DEC 2016	
drawn by: KL, DL	

2015.0035.01 DYM-ON-ETOBIQUEEN1460

Ontario Traffic Inc - Parking Counts

Time			Saturday, February 12, 2022						Tuesday, February 15, 2022					
			1460 The Queensway			5 Nevets Rd			1460 The Queensway			5 Nevets Rd		
			Legal	Illegal	Off-Site	Legal	Disabled	Off-Site	Legal	Illegal	Off-Site	Legal	Disabled	Off-Site
10:00	to	10:30	15	4	0	8	0	0	42	3	0	6	0	0
10:30	to	11:00	18	4	0	8	0	0	55	4	0	7	0	0
11:00	to	11:30	21	4	0	10	0	0	60	3	0	8	0	0
11:30	to	12:00	26	4	0	9	0	0	67	2	0	9	0	0
12:00	to	12:30	31	5	0	11	0	0	71	2	0	10	0	0
12:30	to	13:00	33	4	0	9	0	0	69	2	0	10	0	0
13:00	to	13:30	30	4	0	9	0	0	66	2	0	9	0	0
13:30	to	14:00	36	4	0	10	0	0	67	2	0	11	0	0
14:00	to	14:30	25	4	0	7	0	0	55	2	0	11	0	0
14:30	to	15:00	32	4	0	10	0	0	59	2	0	8	0	0
15:00	to	15:30	30	4	0	13	0	0	56	1	0	10	0	0
15:30	to	16:00	29	4	0	12	0	0	51	1	0	9	0	0
Available Spaces =			202			32	2		202			32	2	

Location: 1460 The Queensway
Site ID:
Date: 20-Oct-22

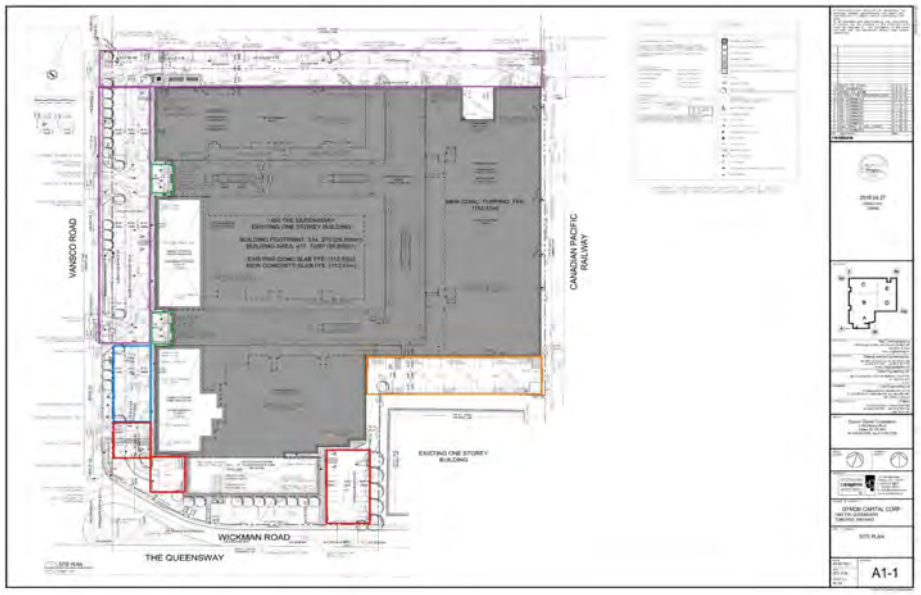
Time			Thursday, October 20, 2022 Work Refined Members Access			Thursday, October 20, 2022 in front of Work Refined			Thursday, October 20, 2022 Vansco access #1 to access #2				Thursday, October 20, 2022 Vansco access #2 to access #3		
			Legal	Illegal	Off-Site	Legal	Illegal	Off-Site	Legal	Illegal	Off-Site	Notes	Legal	Illegal	Off-Site
08:00	to	08:30	5	0	0	1	0	0	13	0	0				
08:30	to	09:00	7	0	0	5	0	0	18	0	0	at least 1 going to WR			
09:00	to	09:30	10	0	0	8	0	0	26	0	0	1			
09:30	to	10:00	11	1	0	9	0	0	27	0	0	2 going to WR	7	0	0
10:00	to	10:30	11	1	0	10	1	0	28	0	0	2	10	0	0
10:30	to	11:00	12	1	0	9	0	0	28	0	0	1	14	0	0
11:00	to	11:30	14	2	0	9	0	0	32	0	0	1	13	0	0
11:30	to	12:00	15	2	0	9	0	0	31	0	0		16	0	0
12:00	to	12:30	15	2	0	9	0	0	28	0	0		17	0	0
12:30	to	13:00	14	2	0	10	0	0	26	0	0		18	0	0
13:00	to	13:30	13	2	0	10	0	0	29	0	0		13	0	0
13:30	to	14:00	13	2	0	9	1	0	28	0	0		13	0	0
14:00	to	14:30	13	2	0	7	0	0	26	0	0		13	0	0
14:30	to	15:00	13	2	0	7	0	0	24	0	0	1 out from WR	14	0	0
15:00	to	15:30	14	2	0	7	0	0	26	0	0		14	0	0
15:30	to	16:00	12	2	0	6	0	0	23	0	0	1 out from WR	12	0	0
16:00	to	16:30	12	2	0	7	0	0	22	0	0	1 out from WR			
16:30	to	17:00	8	2	0	8	0	0	19	0	0				
Available Spaces =			23			10			35				41		

Ontario Traffic Inc - Parking Study

Location: 1460 The Queensway (Dymon Self-Storage)

Date: Saturday, April 01, 2023

Time			Parking Area				
			Red	Orange	Blue	Green Drive-Thru	Purple
8:00	to	8:30	0	0	1	8	15
8:30	to	9:00	0	0	1	9	16
9:00	to	9:30	0	0	2	8	14
9:30	to	10:00	0	0	1	8	12
10:00	to	10:30	3	0	2	12	8
10:30	to	11:00	5	0	4	14	10
11:00	to	11:30	8	0	3	15	11
11:30	to	12:00	7	0	4	13	11
12:00	to	12:30	7	0	6	14	10
12:30	to	13:00	7	0	4	14	11
13:00	to	13:30	7	0	3	17	12
13:30	to	14:00	8	0	3	14	14
14:00	to	14:30	8	0	3	14	12
14:30	to	15:00	7	0	2	13	13
15:00	to	15:30	7	0	2	11	14
15:30	to	16:00	6	0	3	12	15
16:00	to	16:30	6	0	3	11	16
16:30	to	17:00	6	0	4	9	20
17:00	to	17:30	4	0	2	10	17
17:30	to	18:00	3	0	1	11	16
18:00	to	18:30	3	0	1	12	15
18:30	to	19:00	3	0	1	13	13
19:00	to	19:30	3	0	1	12	10
19:30	to	20:00	3	0	1	12	8
Available Spaces =			**40**	**53**	**28**		**145**



Ontario Traffic Inc - Parking Study

Location: 1460 The Queensway (Dymon Self-Storage)

Time			Wednesday, March 29, 2023					Thursday, March 30, 2023					Friday, March 31, 2023				
			Parking Area					Parking Area					Parking Area				
			Red	Orange	Blue	Green Drive-Thru	Purple	Red	Orange	Blue	Green Drive-Thru	Purple	Red	Orange	Blue	Green Drive-Thru	Purple
08:30	to	09:00	13	0	4	13	17	13	0	2	12	17	14	0	4	13	18
09:00	to	09:30	16	0	7	14	20	24	0	5	15	18	21	0	4	17	17
09:30	to	10:00	23	0	8	15	22	25	0	12	21	19	27	0	6	15	18
10:00	to	10:30	26	0	14	19	21	30	0	15	22	20	31	0	15	17	21
10:30	to	11:00	27	0	14	18	21	32	0	21	24	20	31	0	21	17	20
11:00	to	11:30	29	0	15	21	23	30	0	21	25	21	31	0	23	17	20
11:30	to	12:00	30	0	19	27	21	29	0	20	25	23	29	0	25	19	21
12:00	to	12:30	30	0	19	24	21	28	0	21	25	24	30	0	25	18	21
12:30	to	13:00	30	0	20	27	23	31	0	17	27	24	31	0	25	18	22
13:00	to	13:30	32	0	24	30	25	33	0	15	27	22	31	0	23	20	23
13:30	to	14:00	36	0	27	38	30	32	0	16	25	29	32	0	21	20	33
14:00	to	14:30	35	0	23	32	26	35	0	19	22	33	31	0	20	20	32
14:30	to	15:00	35	0	22	30	24	34	0	20	21	32	29	0	20	23	31
15:00	to	15:30	34	0	20	31	22	34	0	22	22	31	25	0	19	22	25
15:30	to	16:00	34	0	18	32	20	32	0	21	19	33	24	0	18	20	23
16:00	to	16:30	31	0	14	30	20	31	0	18	18	34	22	0	16	23	20
16:30	to	17:00	27	0	10	27	19	31	0	16	18	22	19	0	12	29	17
17:00	to	17:30	25	0	6	21	17	23	0	14	20	23	15	0	10	25	15
Available Spaces =			**40**	**53**	**28**		**145**	**40**	**53**	**28**		**145**	**40**	**53**	**28**		**145**