



DVP Hotel Development LP

TRANSPORTATION IMPACT STUDY

PROPOSED RESIDENTIAL
DEVELOPMENT

175 WYNFORD DRIVE
CITY OF TORONTO

September 2020
21030

Disclaimer

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September 15, 2020

Reference Number: 21030/100

DVP Hotel Development LP
Jimmy Sun
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Dear Mr. Sun:

RE: Transportation Impact Study
175 Wynford Drive, City of Toronto

LEA Consulting Ltd. (LEA) is pleased to present the findings of our Transportation Impact Study for the proposed development located at 175 Wynford Drive in the City of Toronto. This report concludes that the traffic associated with the planned development maintains acceptable conditions for the road network in the surrounding area, with some modifications to the network.

Should you have any questions regarding this Transportation Impact Study, please do not hesitate to contact the undersigned.

Yours truly,
LEA CONSULTING LTD.

Kenneth Chan, P.Eng., PTOE, PMP
Vice President, Transportation Engineering and Planning

Jocelyn Lee, EIT
Transportation Analyst

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	Background	1
1.1	Proposed Site Plan	2
1.2	Objectives	3
2	EXISTING CONDITIONS	4
2.1	Pedestrian network	4
2.2	Cycling and trail network	4
2.3	Transit network	5
2.4	Road Network	6
3	FUTURE CONDITIONS	12
3.1	Future Transit Network Improvements	12
3.2	Future Background Traffic Conditions	13
3.3	Site Trips	17
3.4	Trip Distribution and Assignment	19
3.5	Future Total Traffic Conditions	21
4	PROPOSED TRAFFIC SIGNAL	26
5	PARKING AND LOADING REVIEW	29
5.1	Parking Review	29
5.2	Loading Review	31
6	TRANSPORTATION DEMAND MANAGEMENT (TDM)	32
6.1	Parking Demand Management	32
6.1.1	Limiting Residential Parking Supply	32
6.1.2	No Free Employee Parking	33
6.1.3	Encourage Carpooling	33
6.1.4	Car-Sharing Programs	33
7.1	Cycling Infrastructure	34
6.1.5	Long Term Bicycle Parking	34
6.1.6	Bike Share	34
8.1	Pedestrian/Transit Connectivity	35
6.1.7	On-Site Pedestrian Infrastructure	35
6.1.8	Interactive Transit Route Planning	35
9.1	Measures for Off-Peak Time	35
10.1	TDM Marketing	36
7	CONCLUSIONS AND RECOMMENDATIONS	37

LIST OF APPENDICES

APPENDIX A	EXISTING TRAFFIC DATA AND SIGNAL TIMING PLANS
APPENDIX B	INTERSECTION CAPACITY ANALYSIS RESULTS – EXISTING CONDITIONS
APPENDIX C	INTERSECTION CAPACITY ANALYSIS RESULTS – FUTURE BACKGROUND CONDITIONS
APPENDIX D	INTERSECTION CAPACITY ANALYSIS RESULTS – FUTURE TOTAL CONDITIONS

LIST OF FIGURES

Figure 1-1: Subject Site and Surrounding Area	1
Figure 1-2: Existing Site Layout	2
Figure 1-3: Proposed Site Plan	3
Figure 2-1: Existing Cycling and Trail Networks	4
Figure 2-2: Existing Transit Services	5
Figure 2-3: Existing Lane Configurations	7
Figure 2-4: Existing Traffic Volumes	9
Figure 3-1: Future Eglinton Crosstown LRT Network	12
Figure 3-2: Future Ontario Line Route	13
Figure 3-3: Future Background Traffic Volumes	14
Figure 3-4: Site Traffic	20
Figure 3-5: Future Total Traffic Volumes	22
Figure 4-1: Proposed Traffic Signal	26
Figure 4-2: Visualization of Queues from SimTraffic Report	27

LIST OF TABLES

Table 2-1: Summary of Traffic Data	8
Table 2-2: Existing Signalized Intersection Capacity Analysis (AM Peak)	10
Table 2-3: Existing Signalized Intersection Capacity Analysis (PM Peak)	11
Table 3-1: Future Background Signalized Intersection Capacity Analysis (AM Peak)	15
Table 3-2: Future Background Signalized Intersection Capacity Analysis (PM Peak)	16
Table 3-3: Existing Modal Split of the Study Area – 2011 TTS Data	17
Table 3-4: Existing Modal Split of the Study Area – 2016 TTS Data	17
Table 3-5: Vehicular Modal Split Reduction	18
Table 3-6: Trip Generation	18
Table 3-7: Trip Distribution	19
Table 3-8: Future Total Signalized Intersection Capacity Analysis (AM Peak)	23
Table 3-9: Future Total Signalized Intersection Capacity Analysis (PM Peak)	24
Table 4-1: SimTraffic Queueing Report	27
Table 5-1: Minimum Parking Requirements – Site-Specific Zoning By-law 112-2016	29
Table 5-2: Minimum Parking Requirements – Policy Area 3	29
Table 5-3: Proposed Parking Supply	30
Table 5-4: Residential Bicycle Parking Space Requirement	30
Table 5-5: Loading Space Requirement	31

1 INTRODUCTION

1.1 BACKGROUND

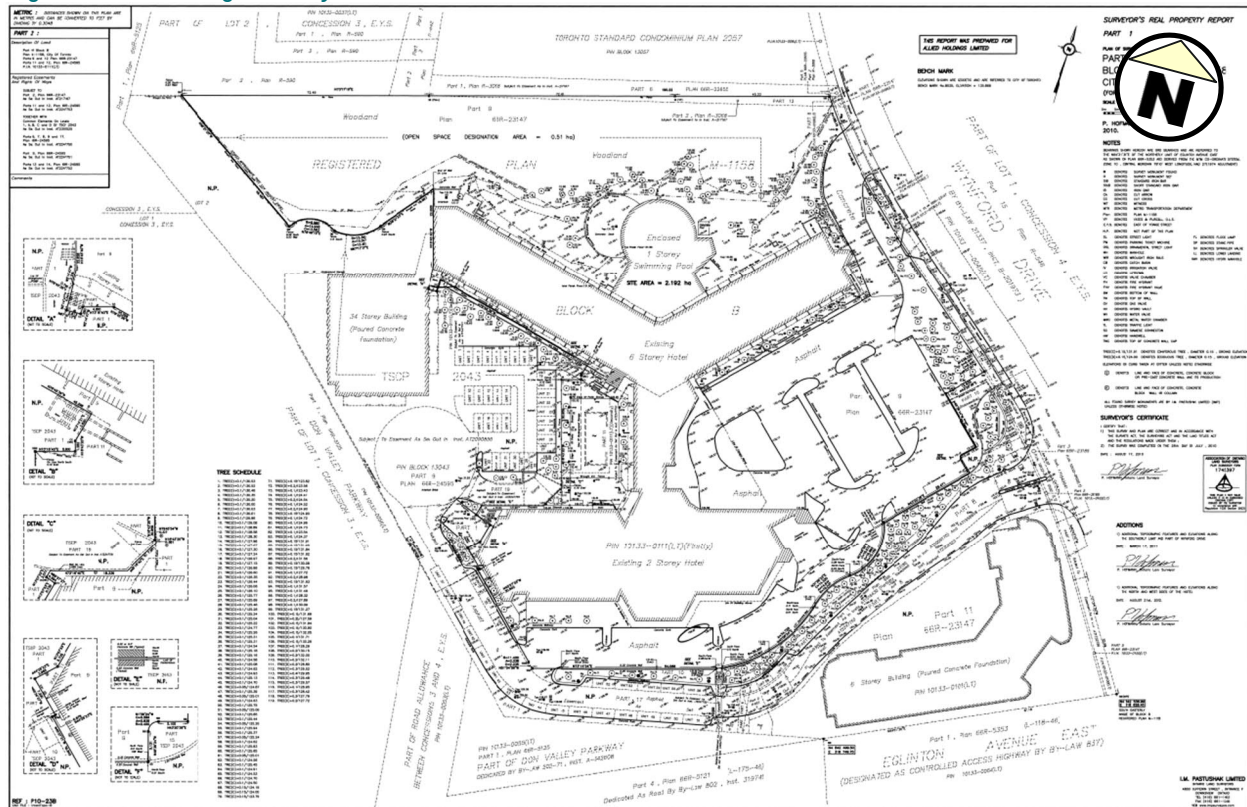
LEA Consulting Ltd. (LEA) has been retained to undertake a Transportation Impact Study (TIS) in support for a Zoning By-Law Amendment (ZBA) for 175 Wynford Drive (herein referred to as “subject site”) in the City of Toronto. The subject site is located north of Eglinton Avenue East and east of the Don Valley Parkway. Figure 1-1 illustrates the subject site and context of its location.

Figure 1-1: Subject Site and Surrounding Area



The subject site is currently occupied by the Don Valley Hotel & Suites, containing 353 rooms and a conference centre. The street south of the subject site providing access to Accolade and Delmanor is a private road. Figure 1.2 illustrates the layout of the existing site.

Figure 1-2: Existing Site Layout



There are two main accesses to the complex, via two driveways on Wynford Drive. A driveway (herein referred to as “Private Driveway”), which is shared between the Delmanor residence, Accolade condominiums, and the hotel, is provided opposite of the Wynford Drive/Eglinton Avenue East Westbound On/Off-Ramp signalized intersection. A north driveway access (herein referred to as “North Driveway”) to the hotel is provided on Wynford Drive approximately 100 m north of the Wynford Drive/Eglinton Avenue East Westbound On/Off-Ramp signalized intersection. The driveway currently provides direct access to the surface parking and pick-up/drop-off area in the hotel.

1.1 PROPOSED SITE PLAN

The proposed site plan includes a mix of residential and hotel uses. These will be housed in four towers (a 54-storey tower, a 45-storey tower, a 47-storey tower, and a 49-storey tower) and two 8-storey podiums. The entire site will be connected by an underground parking garage. A pedestrian path will be constructed on the north end of the site, where the existing North Driveway is located. The pedestrian path will bisect the site in the north-south direction and connect to Eglinton Avenue East, near the planned Wynford Light Rail Transit Stop. Residential vehicular traffic will be accessible via a right-in/right-out access along Wynford Drive, and through the North Driveway. Hotel access for vehicles will be via the Private Driveway at Wynford Drive and the Eglinton Avenue East Westbound On/Off-Ramps. The site is planned to be constructed in two phases, with Phase 1 including the two towers on the west side of the site, and Phase 2 including the two towers on the east side of the site. Figure 1.3 illustrates the proposed site plan.

Figure 1-3: Proposed Site Plan



1.2 OBJECTIVES

This study has been undertaken to understand the existing and future transportation network opportunities and constraints, which includes the review of various modes of travel within the network, including vehicular, cycling, pedestrian, and transit users. This report will also review the existing by-laws related to parking and loading for the subject site.

2 EXISTING CONDITIONS

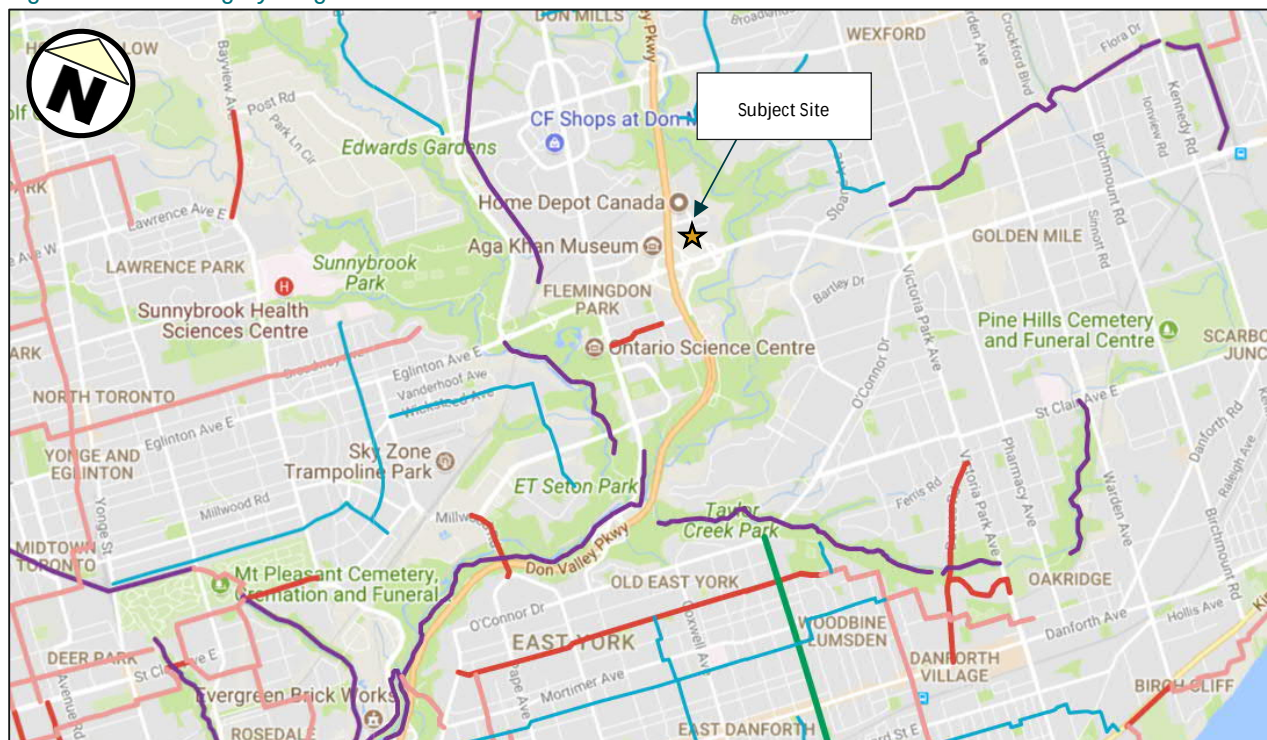
2.1 PEDESTRIAN NETWORK

In the area immediately surrounding the subject site, the existing pedestrian network and environment is good. Continuous sidewalks are available on both sides of all streets in the study area, and crosswalks on all approaches are available at all major intersections. The subject site has a pedestrian access to Eglinton Avenue East, through a set of staircases.

2.2 CYCLING AND TRAIL NETWORK

The existing cycling infrastructure in the immediate area is limited. However, a number of facilities exist in the greater surrounding area, which provide north-south and east-west connectivity. Most notably, the Lower Don Trail can be accessed on Don Mills Road south of Eglinton Avenue East. This multi-use trail runs parallel to the Don Valley Parkway, extending south to Lakeshore Boulevard East and provides connectivity to several other cycling routes. Additionally, the Don Mills Trail can be accessed west of Don Mills Road, and runs north to York Mills Road. Figure 2-1 displays the existing cycling network.

Figure 2-1: Existing Cycling and Trail Networks



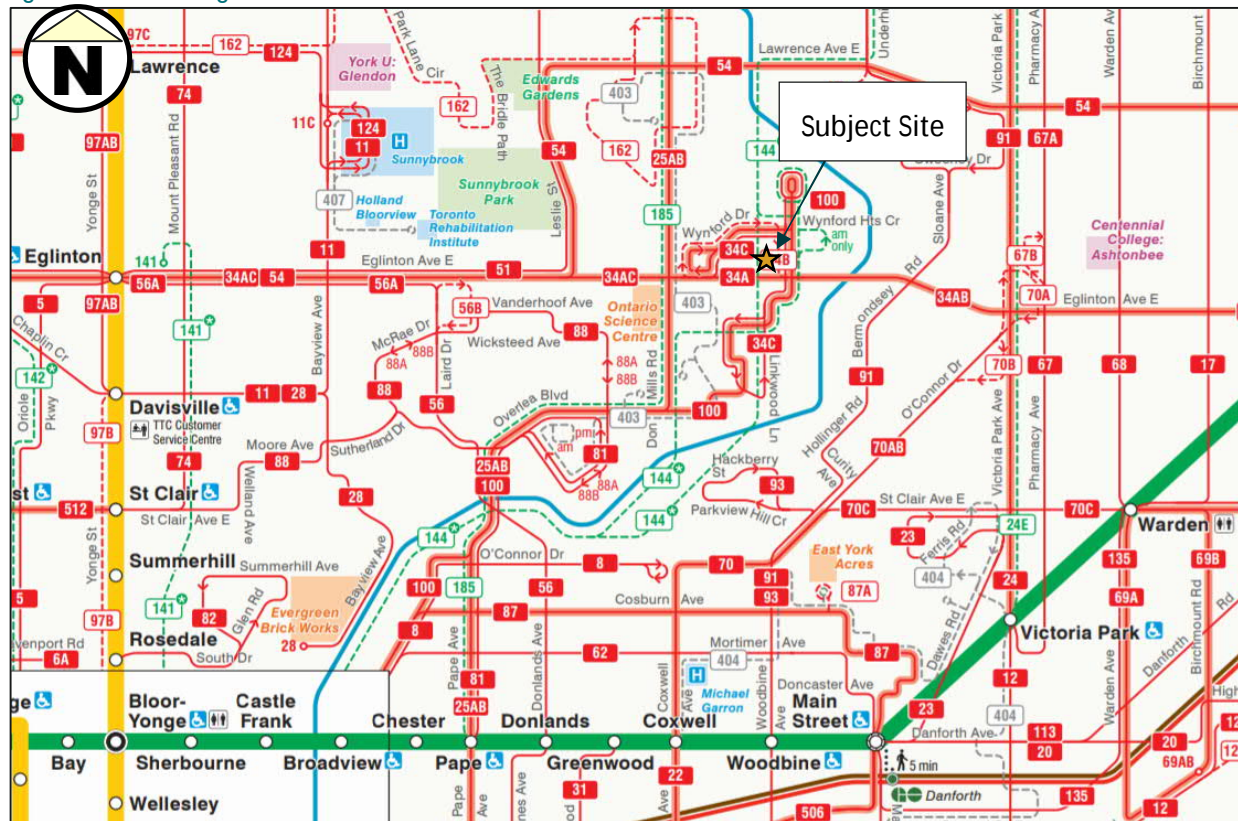
Source: City of Toronto (June 2020)

The 2019-2021 Cycling Improvement Program for the City of Toronto has on-street bicycle facilities delineated along Eglinton Avenue East in the vicinity of the subject site. This will significantly increase the cycling network connectivity in the study area.

2.3 TRANSIT NETWORK

The subject site is located nearby a number of transit options in the form of bus routes serviced by the Toronto Transit Commission (TTC). All buses can be accessed on Wynford Drive or Eglinton Avenue East, adjacent to the subject site. Figure 2-2 illustrates the existing transit network within vicinity of the study area. In addition to the extensive existing transit network, significant new transit facilities are being introduced to the area and will be detailed in Section 3.1 of this TIS.

Figure 2-2: Existing Transit Services



Source: TTC System Map (June 2020)

The TTC bus routes which operate within the study area include:

34 Eglinton East bus route provides east-west service along Eglinton Avenue East. The route operates from Eglinton Subway station and continues east to Kennedy Station, providing connectivity to TTC Line 1 and Line 4. There are three (3) route branches, 34 A, B and C. The 34 C operates along Wynford Drive. The bus route operates all day with a frequency of 10 minutes or better.

100 Flemington Park bus route operates generally in a north-south direction. The bus route operates between Broadview Station and the area of Don Mills Road and Wynford Drive, providing connectivity to TTC Line 2. The bus route operates all day with a frequency of 10 minutes or better.

144 Downtown/Don Valley Express operates generally in a north-south direction only during morning and afternoon peak periods. The bus route operates between the area of York Mills Road and Parkwoods Village Drive, the area of Wynford Drive and Concorde Place, and the downtown Toronto area. It also passes within one block of the Queen, Osgoode, St. Andrew and King Stations on TTC Line 1. Service is available every 10 minutes during these peak periods.

2.4 ROAD NETWORK

The following intersections within the study area were examined in detail:

- ▶ Wynford Drive & DVP Southbound Off-Ramp (Signalized);
- ▶ Wynford Drive & DVP Northbound On-Ramp (Unsignalized);
- ▶ Wynford Drive & Concorde Place & Wynford Heights Crescent (N) (Signalized);
- ▶ Wynford Drive & Wynford Heights Crescent (S) (Unsignalized);
- ▶ Wynford Drive & North Driveway (Unsignalized);
- ▶ Wynford Drive & Private Driveway & Eglinton Avenue East Westbound On/Off-Ramp (Signalized); and
- ▶ Wynford Drive & St. Dennis Drive & Eglinton Avenue East Eastbound On/Off-Ramp (Signalized).

All roadways within the study area are under the jurisdiction of City of Toronto unless otherwise noted:

Don Valley Parkway (DVP) is a controlled access freeway under the jurisdiction of the City of Toronto. A signalized off-ramp exit for southbound DVP is provided at Wynford Drive within the study area. An unsignalized northbound DVP on-ramp connection is provided on Wynford Drive approximately 75 m east of the southbound DVP off-ramp.

Eglinton Avenue East is an east-west major arterial road within the study area. Eglinton Avenue East operates with a six-lane cross-section, with turning lanes at major intersections. The posted speed limit of the roadway is 60 km/h. Vehicular access to and from Wynford Drive is available via the on/off-ramp structures provided within the study area. Eglinton Avenue East is currently undergoing construction for the Eglinton Crosstown LRT, which is further discussed in Section 3 of this report.

Wynford Drive is a four-lane minor arterial road that terminates at Don Mills Road west of the study area, and at the Eglinton Avenue East Eastbound on/off-ramp, where it takes the name of St. Dennis Drive. The posted speed limit on Wynford Drive and St. Dennis Drive is 50 km/h. St. Dennis Drive provides connection to areas west of the DVP.

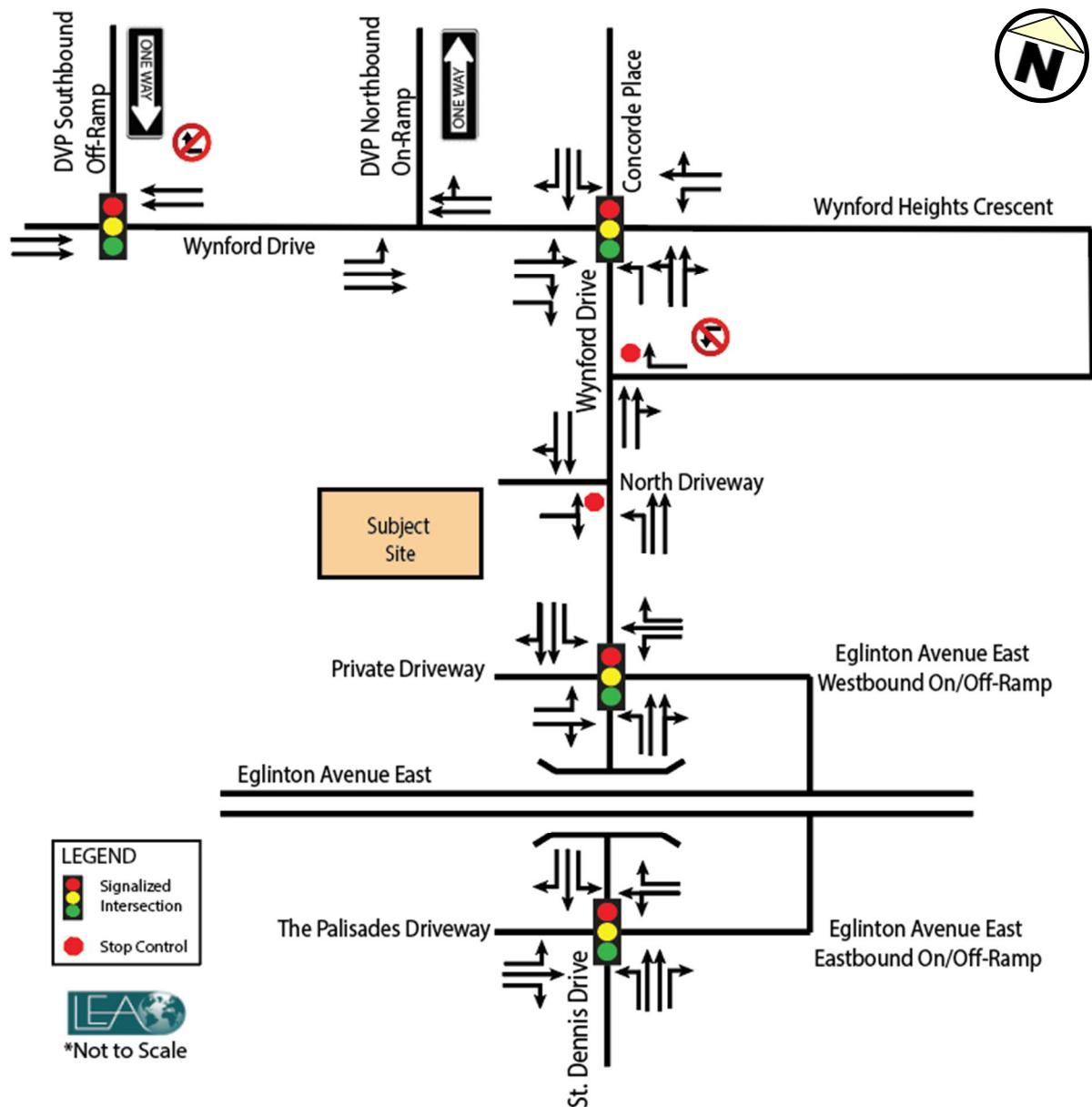
Wynford Heights Crescent is a collector roadway that provides connection to residential areas northeast of the study area. The road intersects with Wynford Drive twice. The intersection of Wynford Drive/Concorde Place/Wynford Heights Crescent (North) is signalized and operates under split signal phasing where the eastbound dual right-turn lanes operate under their own signal phase shared with the northbound direction. Right-turn-on-red (RTOR) movements are prohibited for the eastbound direction. The intersection of Wynford Drive/Wynford Heights Crescent (South) is stop-controlled for Wynford Heights Crescent. Southbound left-turns, with the exception of TTC vehicles, and westbound left-turns are prohibited at this intersection.

The Private Driveway is a private roadway in the study area connecting the existing hotel, residential complex, and retirement home to Wynford Drive via the Wynford Drive/Private Driveway/Eglinton Avenue East Westbound On/Off-Ramps.

The North Driveway is a driveway within the study area providing alternative access to the Toronto Don Valley Hotel & Suites. It accesses Wynford Drive via an unsignalized intersection. The driveway approaches Wynford Drive at a grade of approximately 5%.

Figure 2-3 illustrates the existing lane configurations.

Figure 2-3: Existing Lane Configurations



Turning movement counts (TMCs) for the intersections within the study area were obtained from the City of Toronto and LEA's database.

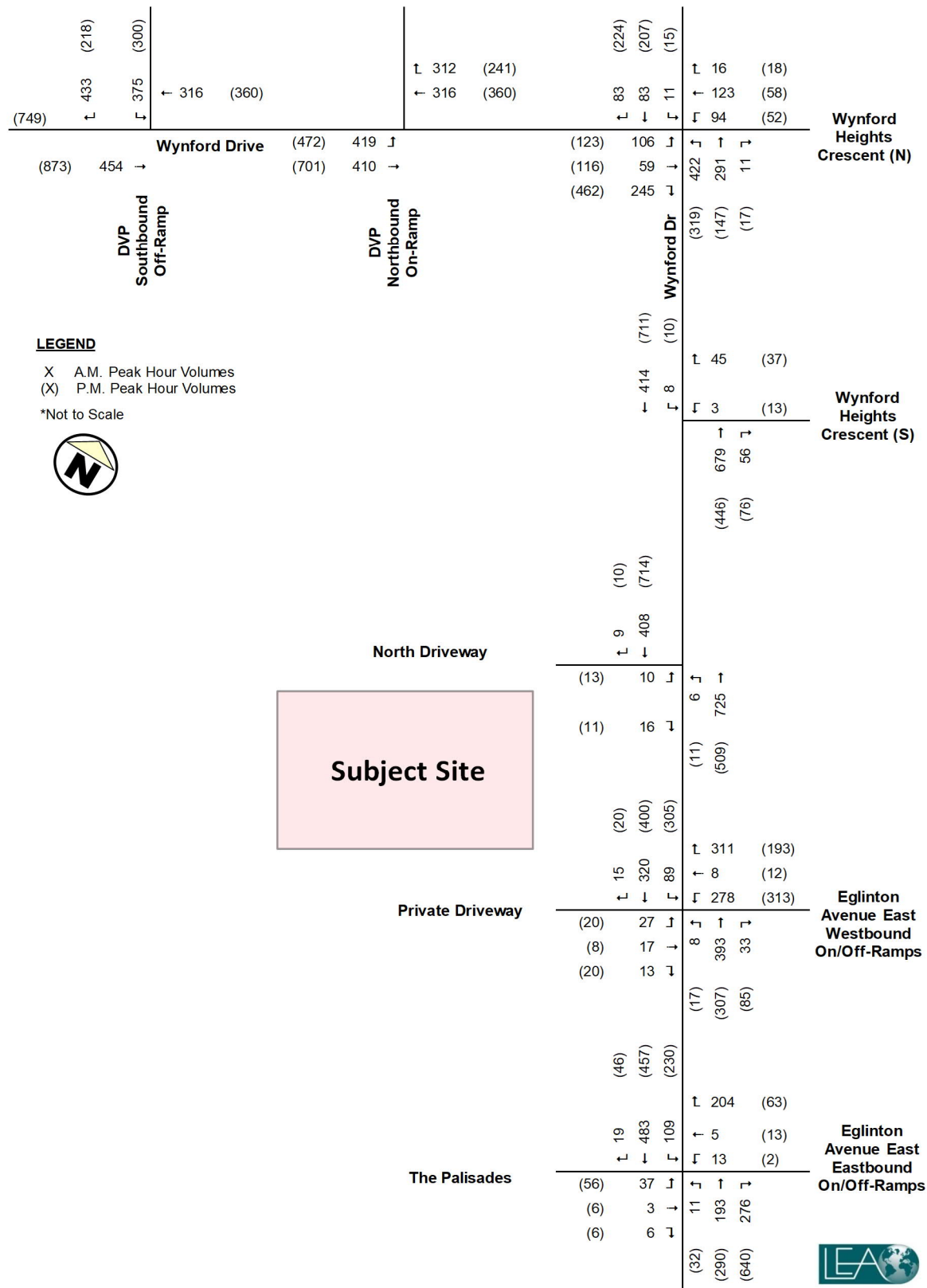
It is noted that some counts were obtained for intersections in the study area in 2018 by Ontario Traffic Inc. for WSP's 10 Concorde Place TIS submission. These volumes were analyzed to be used for our submission, but ultimately not used. This is due to the construction along Don Mills Road and Eglinton Avenue East, which caused major delays along Eglinton Avenue East. The traffic data showed that the construction resulted in major changes in traffic patterns, with significant traffic volumes attempting to bypass the construction by heading north on Wynford Drive from Eglinton Avenue East to continue along Don Mills Road. This construction is currently ongoing, and therefore TMCs were not able to be collected. As such, TMCs were used from before construction at Don Mills Road and Eglinton Avenue East began.

Table 2-1 summarizes the details of the obtained traffic data. The traffic data was grown, where appropriate, by 0.5% per year to 2020 to portray the existing 2020 traffic volumes. Existing traffic volumes are illustrated in Figure 2-4. The obtained traffic data are enclosed in Appendix A.

Table 2-1: Summary of Traffic Data

Intersection	Date	Signalized/Unsignalized	Source
Wynford Drive & DVP Southbound Off-Ramp	August 16, 2012	Signalized	LEA Consulting Ltd.
Wynford Drive & DVP Northbound On-Ramp	August 16, 2012	Unsignalized	
Wynford Drive & Concorde Place & Wynford Heights Crescent (N)	July 8, 2014	Signalized	
Wynford Drive & Wynford Heights Crescent (S)	August 9, 2011	Unsignalized	
Wynford Drive & North Driveway	August 9, 2011	Unsignalized	
Wynford Drive & Private Driveway & Eglinton Avenue East Westbound On/Off-Ramp	August 9, 2011	Signalized	
Wynford Drive & St. Dennis Drive & Eglinton Avenue East Eastbound On/Off-Ramp	August 16, 2016	Signalized	City of Toronto

Figure 2-4: Existing Traffic Volumes



Intersection capacity analyses were conducted using Synchro Software Version 9.0 based on the methodology outlined in the Highway Capacity Manual (2000). The analysis incorporates signal timing plans obtained from the City of Toronto.

Table 2-2 and Table 2-3 summarizes the results of the existing traffic analysis.

Table 2-2: Existing Signalized Intersection Capacity Analysis (AM Peak)

Intersection	Weekday AM Peak Hour								
	Overall			Movement of Interest					
	V/C	Delay (s)	LOS	Move- ment	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th
1: Wynford Drive & Wynford Heights Crescent & Concorde Place	0.45	30	C	EBT	0.40	30	C	28	40
				EBR	0.29	27	C	23	39
				WBL	0.57	46	D	21	36
				WBT	0.49	43	D	29	46
				NBL	0.35	16	B	26	52
				NBT	0.48	30	C	47	72
				SBL	0.02	12	B	1	4
				SBT	0.32	39	D	17	32
				SBR	0.38	40	D	17	32
4: Wynford Drive & Private Driveway/Eglinton Avenue WB On/Off Ramp	0.48	19	B	EBL	0.07	20	B	3	8
				EBT	0.05	20	B	2	7
				WBL	0.78	36	D	40	65
				WBT	0.02	20	B	1	4
				WBR	0.23	21	C	0	16
				NBL	0.02	13	B	1	4
				NBT	0.31	15	B	24	38
				SBL	0.19	8	A	6	14
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off-Ramp	0.42	11	B	SBT	0.19	9	A	14	23
				EBL	0.21	23	C	4	11
				EBT	0.01	21	C	0	2
				WBT	0.08	21	C	2	6
				WBR	0.14	22	C	0	15
				NBL	0.03	8	A	1	3
				NBT	0.12	8	A	6	12
				NBR	0.19	9	A	0	11
				SBL	0.58	28	C	11	26
6: Wynford Drive & DVP Southbound Off-Ramp	0.32	9	A	SBT	0.42	5	A	19	41
				SBR	0.01	4	A	0	1
				EBT	0.24	8	A	8	12.3
				WBT	0.24	8	A	8	14
				SBL	0.29	9	A	9	16
				SBR	0.40	10	B	5	18

Under the existing conditions, in the AM Peak, all intersections operate at a LOS of "C" or better. The v/c ratios are all less than 1.0; the intersection of Private Driveway & Wynford drive & Eglinton Avenue East Westbound On/Off-Ramp has the highest v/c ratio in the network at 0.48.

Table 2-3: Existing Signalized Intersection Capacity Analysis (PM Peak)

Intersection	Weekday PM Peak Hour								
	Overall			Movement of Interest					
	V/C	Delay (s)	LOS	Move- ment	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th
1: Wynford Drive & Wynford Heights Crescent & Concorde Place	0.64	37	D	EBT	0.55	33	C	42	61
				EBR	0.67	40	D	55	75
				WBL	0.37	44	D	11	23
				WBT	0.27	42	D	14	27
				NBL	0.28	18	B	18	33
				NBT	0.38	33	C	33	47
				SBL	0.02	12	B	1	5
				SBT	0.59	38	D	42	70
				SBR	0.77	49	D	48	93
4: Wynford Drive & Private Driveway/Eglinton Avenue WB On/Off Ramp	0.73	19	B	EBL	0.05	19	B	2	7
				EBT	0.03	19	B	1	6
				WBL	0.84	39	D	45	83
				WBT	0.02	19	B	1	5
				WBR	0.15	20	B	0	13
				NBL	0.05	15	B	2	6
				NBT	0.31	18	B	21	33
				SBL	0.63	12	B	26	44
				SBT	0.25	10	A	19	28
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off-Ramp	0.52	17	B	EBL	0.46	27	C	6	15
				EBT	0.03	23	C	1	3
				WBT	0.08	23	C	1	6
				WBR	0.04	24	C	0	5
				NBL	0.08	8	A	2	7
				NBT	0.17	7	A	9	17
				NBR	0.44	11	B	0	16
				SBL	0.98	76	E	26	68
				SBT	0.37	3	A	18	37
6: Wynford Drive & DVP Southbound Off-Ramp	0.35	9	A	SBR	0.03	3	A	0	3
				EBT	0.46	10	A	16	24
				WBT	0.27	9	A	9	15
				SBL	0.23	8	A	7	13
				SBR	0.15	8	A	0	8

The PM Peak has slightly more traffic than the AM Peak under existing conditions. The intersection of Wynford Drive & Wynford Heights Crescent & Concorde Place has a LOS of "D". All other intersections in the network operate at a LOS of "B" or better.

3 FUTURE CONDITIONS

3.1 FUTURE TRANSIT NETWORK IMPROVEMENTS

In addition to the existing transit routes in the study area, the proposed development is located within an area which will be serviced by the future Eglinton Crosstown Light Rail Transit (LRT). A new light rail station will be built at Eglinton Avenue West and Wynford Drive along the Eglinton Crosstown, which is projected to be completed by 2022. The future Eglinton Line with reference to the subject site is illustrated in Figure 3-1.

Figure 3-1: Future Eglinton Crosstown LRT Network



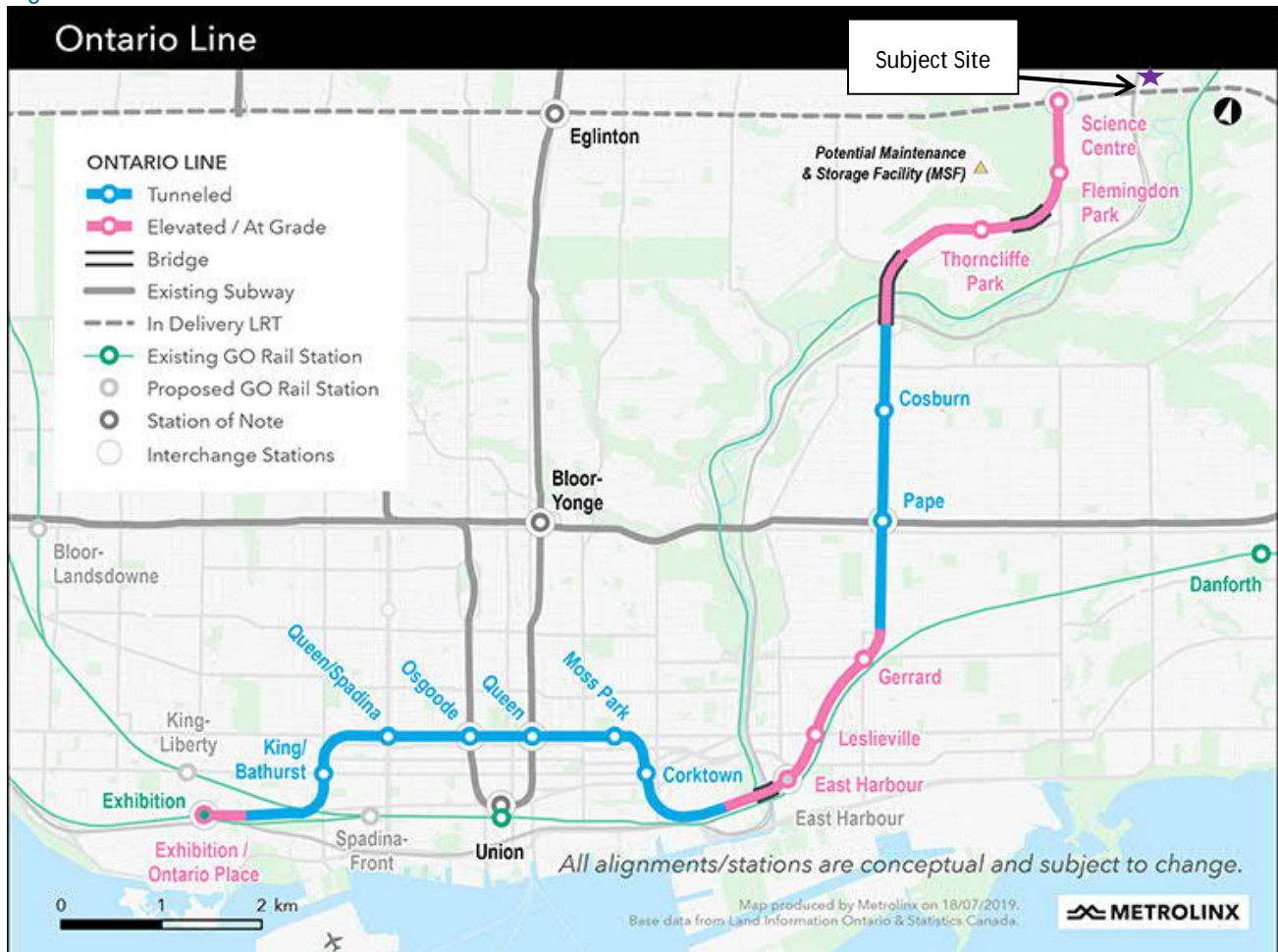
Source: Metrolinx, 2017

The Eglinton Line (Eglinton Crosstown LRT) is a light rail line route running in the east-west direction along Eglinton Avenue corridor through the City and will be comprised of 25 stations/stops. The route will operate from Mount Dennis Station, at Weston Road and Eglinton West Avenue and will continue to the east to terminate at Kennedy Station located at Transway Crescent and Eglinton Avenue East. Wynford Station, located at Wynford Drive and Eglinton Avenue West will be located within 100 metres from the subject site, or within a 5-minute walking distance. The implementation of Wynford Station will significantly increase the transit connectivity in the study area. The subject site will have significant east-west connectivity resulting from the Eglinton Crosstown. It is anticipated that many future residents at the subject site will utilize transit for a wide variety of trips.

The Ontario Line is a subway running in the north-south direction and east-west direction through the city. It will be comprised of 15 stations/stops. The line plans to run between Ontario Place and the Ontario Science Centre, with potential links to GO Transit and TTC Lines 1 and 2. The Ontario Science Center is located two kilometres from the subject site, or within a 10-minute bike ride. Additionally, it is planned to be connected to the Eglinton LRT at the Science Centre station, two stations away from the Wynford Station.

Implementing the Ontario Line would significantly increase transit connectivity in the study area. It is anticipated that the Ontario Line will result in approximately 389,000 daily boardings, and its implementation would significantly increase the transit usage within the study area. Figure 3-2 illustrates the planned route for the line.

Figure 3-2: Future Ontario Line Route



Source: Metrolinx, 2020

3.2 FUTURE BACKGROUND TRAFFIC CONDITIONS

The future background traffic conditions analyze the traffic conditions for a five-year horizon (2025) without the subject development in place. The 10 Concorde Place development was identified as a background development that will increase the traffic flow within the road network and has been added to the future background traffic volumes.

An annual growth rate of 0.5% has been applied to the through movements along Wynford Drive during both the AM and PM peak hours. This is considered conservative since the operation of the Eglinton Crosstown LRT service will likely reduce the background traffic volumes within the study area. The future background volumes are illustrated in Figure 3-3, while the summarized capacity analysis results are shown in Table 3-1 and Table 3-2.

Figure 3-3: Future Background Traffic Volumes

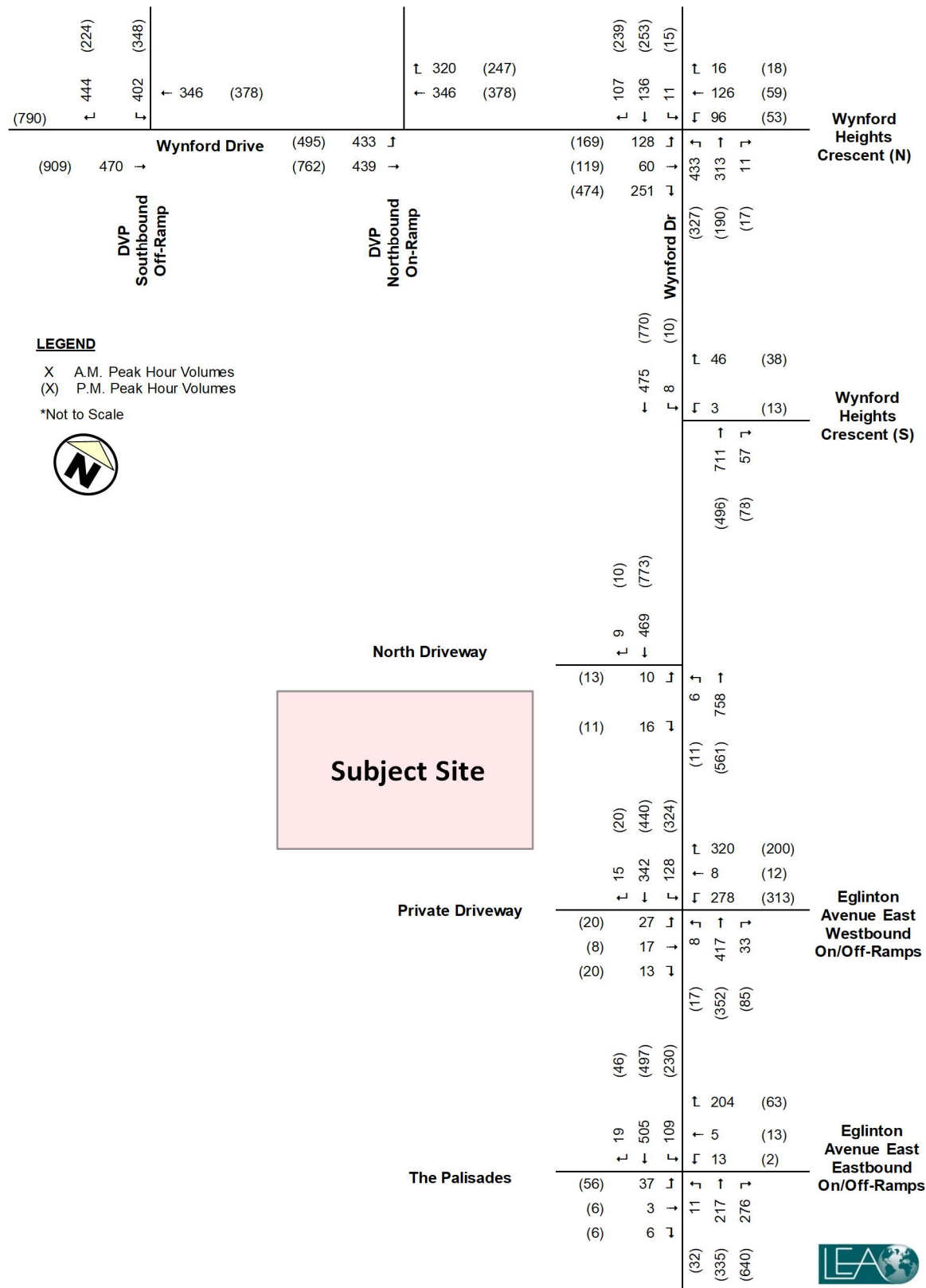


Table 3-1: Future Background Signalized Intersection Capacity Analysis (AM Peak)

Intersection	Weekday AM Peak Hour								
	Overall			Movement of Interest					
	V/C	Delay (s)	LOS	Move- ment	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th
1: Wynford Drive & Wynford Heights Crescent & Concorde Place	0.51	32	C	EBT	0.46	30	C	32	45
				EBR	0.31	28	C	24	40
				WBL	0.59	47	D	21	37
				WBT	0.50	43	D	30	47
				NBL	0.38	18	B	28	53
				NBT	0.52	31	C	51	78
				SBL	0.02	13	B	1	4
				SBT	0.52	41	D	29	49
				SBR	0.49	41	D	23	40
4: Wynford Drive & Private Driveway/Eglinton Avenue WB On/Off Ramp	0.50	19	B	EBL	0.07	20	B	3	8
				EBT	0.05	20	B	2	7
				WBL	0.78	36	D	40	65
				WBT	0.02	20	B	1	4
				WBR	0.24	21	C	0	16
				NBL	0.02	14	B	1	4
				NBT	0.35	16	B	26	41
				SBL	0.28	9	A	9	19
				SBT	0.20	9	A	15	24
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off-Ramp	0.43	11	B	EBL	0.21	23	C	4	11
				EBT	0.01	21	C	0	2
				WBT	0.08	21	C	2	6
				WBR	0.14	22	C	0	15
				NBL	0.03	8	A	1	3
				NBT	0.13	8	A	6	13
				NBR	0.19	9	A	0	11
				SBL	0.58	28	C	11	26
				SBT	0.43	5	A	20	43
6: Wynford Drive & DVP Southbound Off-Ramp	0.36	9	A	SBR	0.01	4	A	0	1
				EBT	0.25	8	A	8	12.7
				WBT	0.26	9	A	8	15
				SBL	0.31	9	A	10	17
				SBR	0.45	11	B	7	22

In the future background condition, all intersections in the network are at a LOS of "C" or better. All intersections have an acceptable v/c ratio (less than 1.0). The 95th percentile queue length for all movements fit within the storage lengths for the movements.

Table 3-2: Future Background Signalized Intersection Capacity Analysis (PM Peak)

Intersection	Weekday PM Peak Hour (Road Peak)								
	Overall			Movement of Interest					
	V/C	Delay (s)	LOS	Move- ment	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th
1: Wynford Drive & Wynford Heights Crescent & Concorde Place	0.71	39	D	EBT	0.68	37	D	52	74
				EBR	0.72	42	D	57	78
				WBL	0.40	44	D	12	24
				WBT	0.27	42	D	14	27
				NBL	0.31	21	C	19	35
				NBT	0.45	35	C	39	54
				SBL	0.03	12	B	1	5
				SBT	0.71	43	D	53	98
				SBR	0.81	52	D	52	104
4: Wynford Drive & Private Driveway/Eglinton Avenue WB On/Off Ramp	0.78	19	B	EBL	0.05	19	B	2	7
				EBT	0.03	19	B	1	6
				WBL	0.84	39	D	45	83
				WBT	0.02	19	B	1	5
				WBR	0.15	20	B	0	13
				NBL	0.06	16	B	2	6
				NBT	0.36	18	B	25	37
				SBL	0.70	14	B	28	#50.5
				SBT	0.27	10	B	21	31
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off-Ramp	0.43	8	A	EBL	0.46	27	C	6	15
				EBT	0.03	23	C	1	3
				WBT	0.08	23	C	1	6
				WBR	0.04	24	C	0	5
				NBL	0.08	8	A	2	7
				NBT	0.19	7	A	11	19
				NBR	0.43	11	B	0	16
				SBL	0.32	3	A	7	15
				SBT	0.40	3	A	21	42
6: Wynford Drive & DVP Southbound Off-Ramp	0.38	9	A	SBR	0.03	3	A	0	3
				EBT	0.48	10	A	17	25
				WBT	0.29	9	A	9	16
				SBL	0.27	9	A	8	15
				SBR	0.15	8	A	0	8

The PM peak has slightly more traffic than the AM peak in the network. The intersection of Wynford Drive & Wynford Heights Crescent & Concorde Place has a LOS of "D". All other signalized intersections in the network have a LOS of "C" or better.

For the intersection of Wynford Drive & Private Driveway/Eglinton Avenue East Westbound On/Off-Ramps, the southbound left-turn movement has a 95th percentile queue length of 50.5 m, which exceeds the storage length. This will be further analyzed in the future total condition.

3.3 SITE TRIPS

To create a trip generation model, several options were considered for the modal split reduction used. The low scenario for modal split is based on our review of 2011 Transportation Tomorrow Survey (TTS) data. Transit trips accounted for 37% to 41% of home-based trips originating from the study area. The medium scenario for modal split is based on our review of 2016 TTS data, where 43% of home-based trips originated from the study area. Further breakdowns of the modal split for 2011 and 2016 TTS data can be found in Table 3.3 and Table 3-4 below.

Table 3-3: Existing Modal Split of the Study Area – 2011 TTS Data

Mode	Percentage		
	AM Peak Hour	PM Peak Hour	Weighted Average
Transit	37%	41%	39%
Auto	46%	52%	48%
Other	17%	7%	13%
Total	100%	100%	100%

Table 3-4: Existing Modal Split of the Study Area – 2016 TTS Data

Mode	Percentage		
	AM Peak Hour	PM Peak Hour	Weighted Average
Transit	43%	43%	43%
Auto	45%	51%	48%
Other	12%	6%	9%
Total	100%	100%	100%

The City of Toronto Golden Mile Transportation Master Plan (TMP) outlines the expected changes to areas surrounding the Eglinton Crosstown LRT. Based on their analysis of existing mode share for condominiums within the study area using 2011 TTS Data (19% transit, 77% auto, and 4% other), it is estimated that the adjusted modal split for residential areas including condominiums and townhouses due to the introduction of the ECLRT will be 61% auto, 30% transit, and 9% other, with an auto occupancy of 1.33. However, the LRT spans a large area, with varying levels of transit options available. In general, the report details that the LRT will result in a 10% reduction of vehicles as the primary mode of travel, and a 10% increase of transit as the primary mode of travel.

Given the proximity of Wynford Drive to the future Ontario Line and Yonge Subway Line, it can be reasonable expected that a significant reduction of vehicles in favour of transit can be expected in the surrounding area. As such, a 10% increase in transit will be used to calculate the high scenario for the modal split rate.

Table 3-5 summarizes the modal split rates for the low, medium, and high scenario.

Table 3-5: Vehicular Modal Split Reduction

Mode	2011 TTS (Low)	2016 TTS (Medium)	2016 TTS + 10% (High)
Transit	39%	43%	53%
Auto	48%	48%	38%
Other	13%	9%	9%
TOTAL	100%	100%	100%

For this analysis, we recommend going forward with the high modal split reduction. Looking at the trend between 2011 and 2016 TTS data, the percentage of trips using transit has steadily increased, without any major changes to the transit infrastructure in the study area. With the introduction of the Eglinton LRT and the Ontario Line, it is reasonable to assume that the transit trips will increase to approximately 53% for the study area.

Trip generation for the development was based on the ITE Trip Generation Manual 10th Edition. Given the proposed use, LUC 222 (Multifamily Housing (High-Rise)) and LUC 310 (Hotel) was used for the development. Table 3-6 summarizes the trip generation of the subject site.

Table 3-6: Trip Generation

	Weekday A.M. Peak			Weekday P.M. Peak		
	In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) – LUC 222: 2750 Units						
Average Trip Rate	0.34			0.39		
In/Out Distribution	21%	79%	100%	62%	38%	100%
Modal Split Reduction	58%*					
Trips Generated	82	311	393	279	172	451
Hotel – LUC 310: 125 Rooms						
Average Trip Rate	0.54			0.61		
In/Out Distribution	54%	46%	100%	58%	42%	100%
Modal Split Reduction	58%*					
Trips Generated	16	13	29	18	13	31
Hotel – LUC 310: 353 Existing Rooms						
Average Trip Rate	0.54			0.61		
In/Out Distribution	54%	46%	100%	58%	42%	100%
Modal Split Reduction	48%**					
Trips Generated	-53	-46	-99	-65	-47	-111
NET TRIPS	45	278	323	233	137	370

*The modal split reduction subtracts the number of trips generated that are not vehicular trips. From the 2016 TTS data + 10%, 38% of trips are expected to be auto trips (meaning that 62% of trips are expected to be non-vehicular trips). However, the ITE trip generation rates already account for some transit trips, therefore a transit reduction of 4% is applied for each modal split scenario, as recommended by the ITE Trip Generation Manual 10th Edition. This reduces the modal split reduction to be 58% (62% - 4% = 58%).

** The modal split reduction for the existing hotel land use is based on existing site conditions, meaning that there are no transit infrastructure improvements in the area when estimating the trips from the existing hotel use. As a result, the 2016 TTS data is used as the basis for non-vehicular trips. Using the same methodology as the other modal split reductions, a 4% transit reduction was also applied.

The proposed development is expected to generate a maximum of 370 two-way vehicular trips during the studied peak hours. In addition, up to 432 transit-based trips are expected and 79 walking/cycling trips are expected during the studied peak hours.

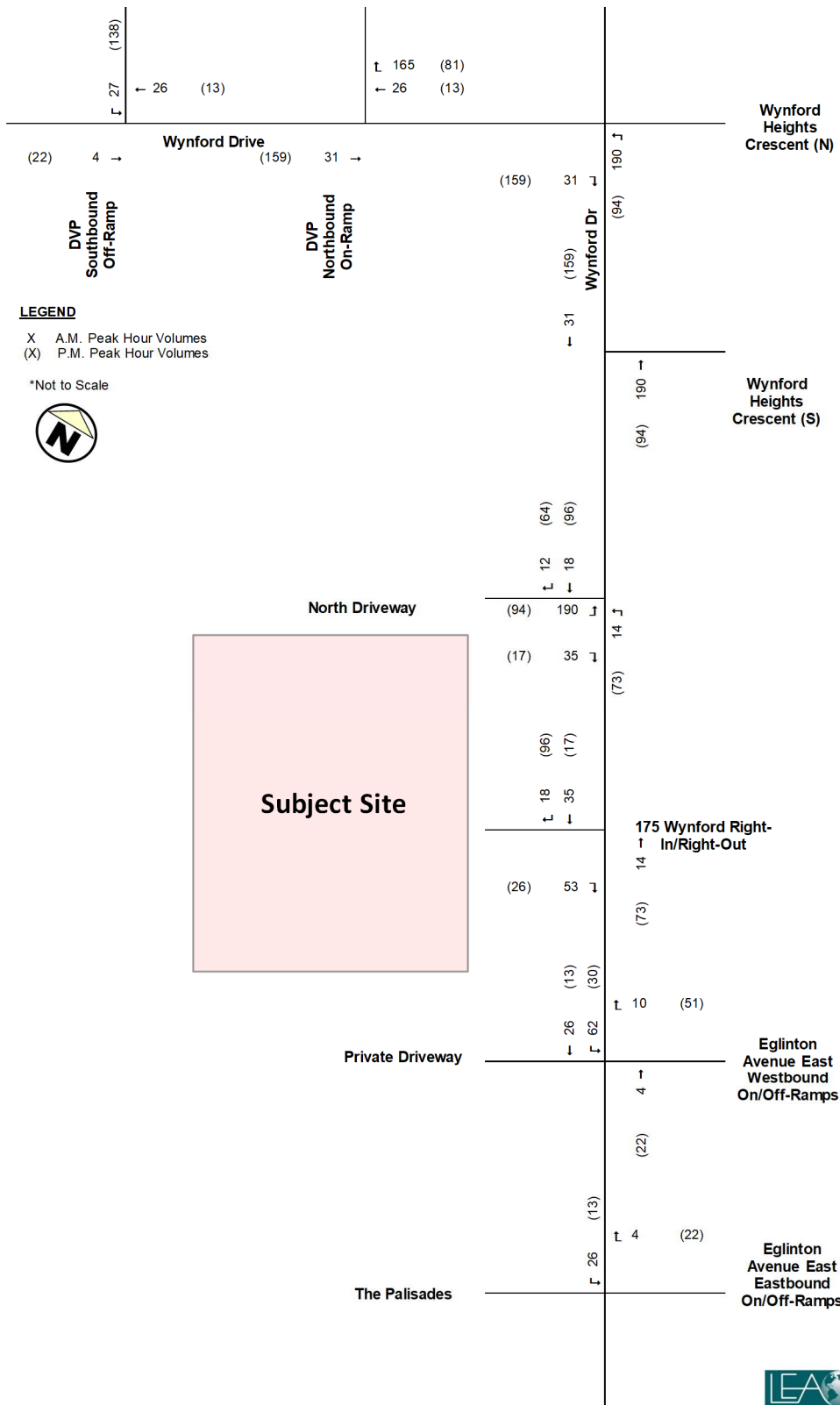
3.4 TRIP DISTRIBUTION AND ASSIGNMENT

Directional trip distribution of the site traffic was derived using Transportation Tomorrow Survey (TTS) 2016 data. The site traffic was assigned to the road network based on trip patterns in the study area, location and configuration of the site access, and the route providing the shortest travel time. The trip distribution for this study is outlined in Table 3-7, while site-generated traffic volumes for the weekday AM and PM peak hours are illustrated in Figure 3.4.

Table 3-7: Trip Distribution

Direction	AM		PM	
	In	Out	In	Out
North	41%	12%	24%	20%
South	21%	16%	28%	18%
East	19%	36%	24%	22%
West	19%	36%	24%	40%
TOTAL	100%		100%	

Figure 3-4: Site Traffic



3.5 FUTURE TOTAL TRAFFIC CONDITIONS

Future total traffic is the summation of the future background traffic and the trips generated by the proposed development. The future total volumes are illustrated in Figure 3-5, while the summarized capacity analysis results are shown in Table 3-8 and Table 3-9.

Figure 3-5: Future Total Traffic Volumes

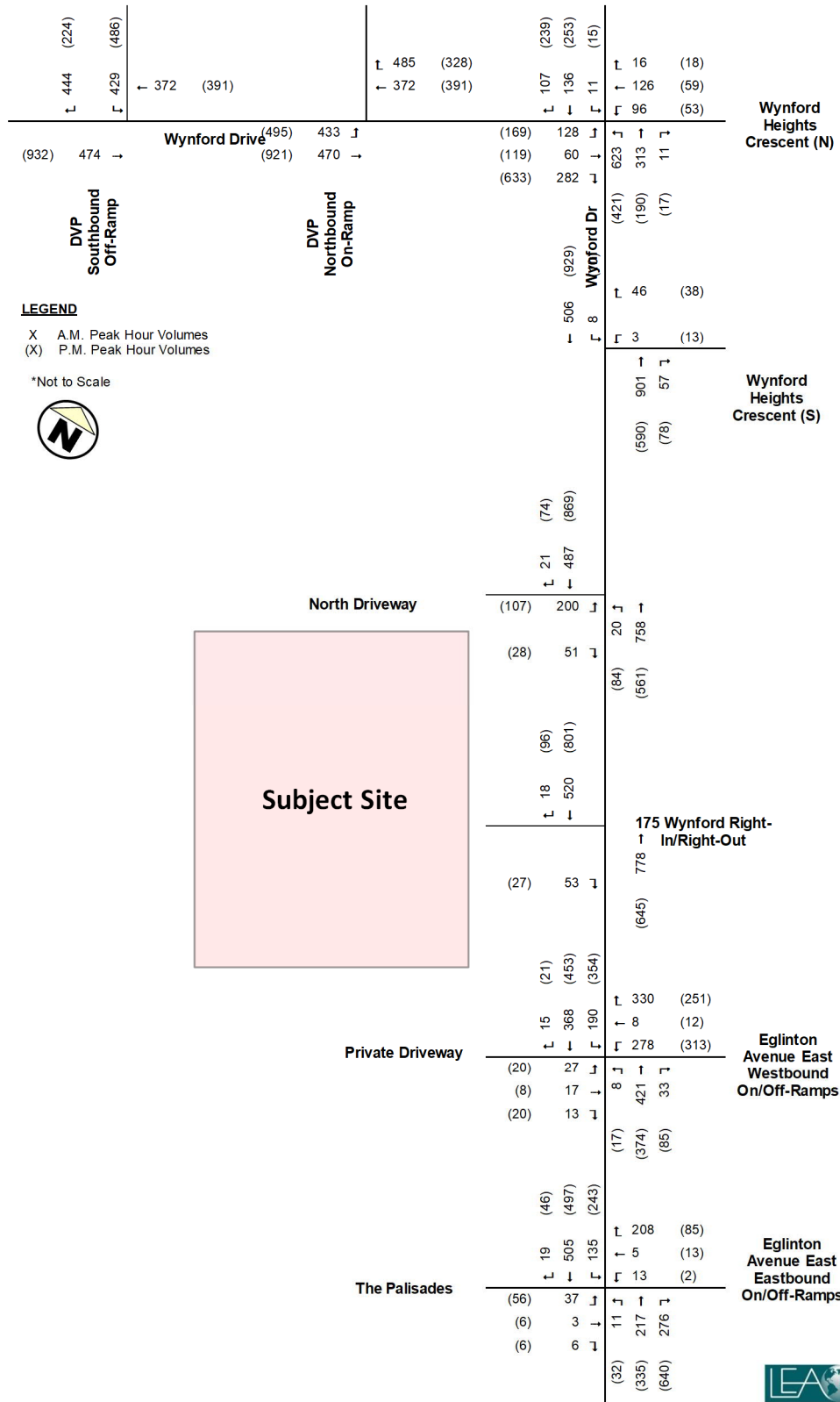


Table 3-8: Future Total Signalized Intersection Capacity Analysis (AM Peak)

Intersection	Weekday AM Peak Hour								
	Overall			Movement of Interest					
	V/C	Delay (s)	LOS	Move- ment	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th
1: Wynford Drive & Wynford Heights Crescent & Concorde Place	0.56	32	C	EBT	0.46	30	C	32	45
				EBR	0.35	28	C	27	45
				WBL	0.59	47	D	21	37
				WBT	0.50	43	D	30	47
				NBL	0.49	19	B	39	72
				NBT	0.63	34	C	66	98
				SBL	0.03	13	B	1	4
				SBT	0.52	41	D	29	49
				SBR	0.49	41	D	23	40
3: Hotel Driveway & Wynford Drive	0.44	8	A	EBL	0.57	20.1	C	18.6	30.5
				EBR	0.16	16.8	B	4.3	9.7
				NBL	0.06	5.1	A	0.8	4
				NBT	0.38	6.4	A	19.1	37.4
				SBT	0.25	5.7	A	11.6	24
4: Wynford Drive & Private Driveway/Eglinton Avenue WB On/Off Ramp	0.56	18	B	EBL	0.07	20	B	3	8
				EBT	0.05	20	B	2	7
				WBL	0.78	36	D	40	65
				WBT	0.02	20	B	1	4
				WBR	0.25	21	C	0	16
				NBL	0.02	14	B	1	4
				NBT	0.36	17	B	28	41
				SBL	0.41	9	A	14	27
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off-Ramp	0.41	9	A	SBT	0.22	9	A	16	26
				EBL	0.21	22	C	4	11
				EBT	0.01	20	C	0	2
				WBT	0.08	21	C	2	6
				WBR	0.14	22	C	0	15
				NBL	0.03	8	A	1	3
				NBT	0.13	8	A	6	13
				NBR	0.19	9	A	0	11
				SBL	0.19	4	A	3	10
				SBT	0.44	5	A	20	43
6: Wynford Drive & DVP Southbound Off-Ramp	0.38	9	A	SBR	0.01	4	A	0	1
				EBT	0.25	8	A	8	12.8
				WBT	0.28	9	A	9	16
				SBL	0.34	9	A	11	18
				SBR	0.48	12	B	8	25
				SBR	0.50	12	B	15	31

In the AM Peak for the Future Total condition, all intersections in the network operate at a LOS of "C" or better. All approaches have a LOS of "D" or better, which indicates acceptable traffic conditions during the future total AM Peak hour.

Table 3-9: Future Total Signalized Intersection Capacity Analysis (PM Peak)

Intersection	Weekday PM Peak Hour (Road Peak)								
	Overall			Movement of Interest					
	V/C	Delay (s)	LOS	Move- ment	V/C	Delay (s)	LOS	Queue (m)	
								50 th	95 th
1: Wynford Drive & Wynford Heights Crescent & Concorde Place	0.79	46	D	EBT	0.68	37	D	52	74
				EBR	0.96	65	E	83	123
				WBL	0.40	44	D	12	24
				WBT	0.27	42	D	14	27
				NBL	0.39	23	C	25	44
				NBT	0.51	36	D	45	62
				SBL	0.03	12	B	1	5
				SBT	0.71	43	D	53	98
				SBR	0.81	52	D	52	104
3: Hotel Driveway & Wynford Drive	0.43	6	A	EBL	0.47	22.2	C	10.2	20.1
				EBR	0.13	20.7	C	2.5	7.3
				NBL	0.37	8	A	3.2	15.2
				NBT	0.24	3.6	A	10.1	20.3
				SBT	0.42	4	A	20	38
4: Wynford Drive & Private Driveway/Eglinton Avenue WB On/Off Ramp	0.83	20	C	EBL	0.05	19	B	2	7
				EBT	0.03	19	B	1	6
				WBL	0.83	39	D	45	83
				WBT	0.02	19	B	1	5
				WBR	0.19	20	B	0	14
				NBL	0.06	16	B	2	6
				NBT	0.39	19	B	27	40
				SBL	0.78	19	B	32	#67.0
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off-Ramp	0.43	9	A	EBL	0.37	25	C	6	15
				EBT	0.03	22	C	1	3
				WBT	0.07	22	C	1	6
				WBR	0.06	23	C	0	9
				NBL	0.08	8	A	2	7
				NBT	0.20	8	A	11	19
				NBR	0.43	11	B	0	16
				SBL	0.35	4	A	7	16
				SBT	0.41	4	A	21	42
				SBR	0.03	3	A	0	3
6: Wynford Drive & DVP Southbound Off-Ramp	0.44	9	A	EBT	0.49	10	A	18	26
				WBT	0.30	9	A	10	17
				SBL	0.38	9	A	12	20
				SBR	0.15	8	A	0	8
				WBT	0.14	8	A	0	8

The PM Peak for the future total condition has all intersections operating at a LOS of “D” or better, with the intersection of Wynford Drive & Wynford Heights Crescent & Concorde Place with the lowest LOS of “D”. The eastbound right-turn movement at the intersection has a LOS of E due to the queue lengths and the delay of 65 seconds. However, the v/c ratio for the movement is 0.96, which indicates that the movement is

operating below capacity. The cycle length of the intersection is 120 seconds; as such it is reasonable to experience a 65 second delay for eastbound right-turning traffic.

The southbound left-turn movement at the intersection of Private Driveway & Wynford Drive & Eglinton Avenue East Westbound On/Off-Ramp has a 95th percentile queue length of 67.0 m. This would exceed the storage length for the turning movement. To further analyze the queue lengths, a SimTraffic simulation was run. SimTraffic is a macroscopic model that simulates a variety of traffic scenarios for the study area, and can provide more insight into the impact of queuing and blocking.

The SimTraffic simulation found that the average queue length for the southbound left-turn lane at Private Driveway & Wynford Drive & Eglinton Avenue East Westbound On/Off-Ramp is 22.4 m, with a maximum queue of 32.7 m and 95th percentile queue of 43.1 m. This indicates that the storage capacity for the southbound left-turn movement is adequate.

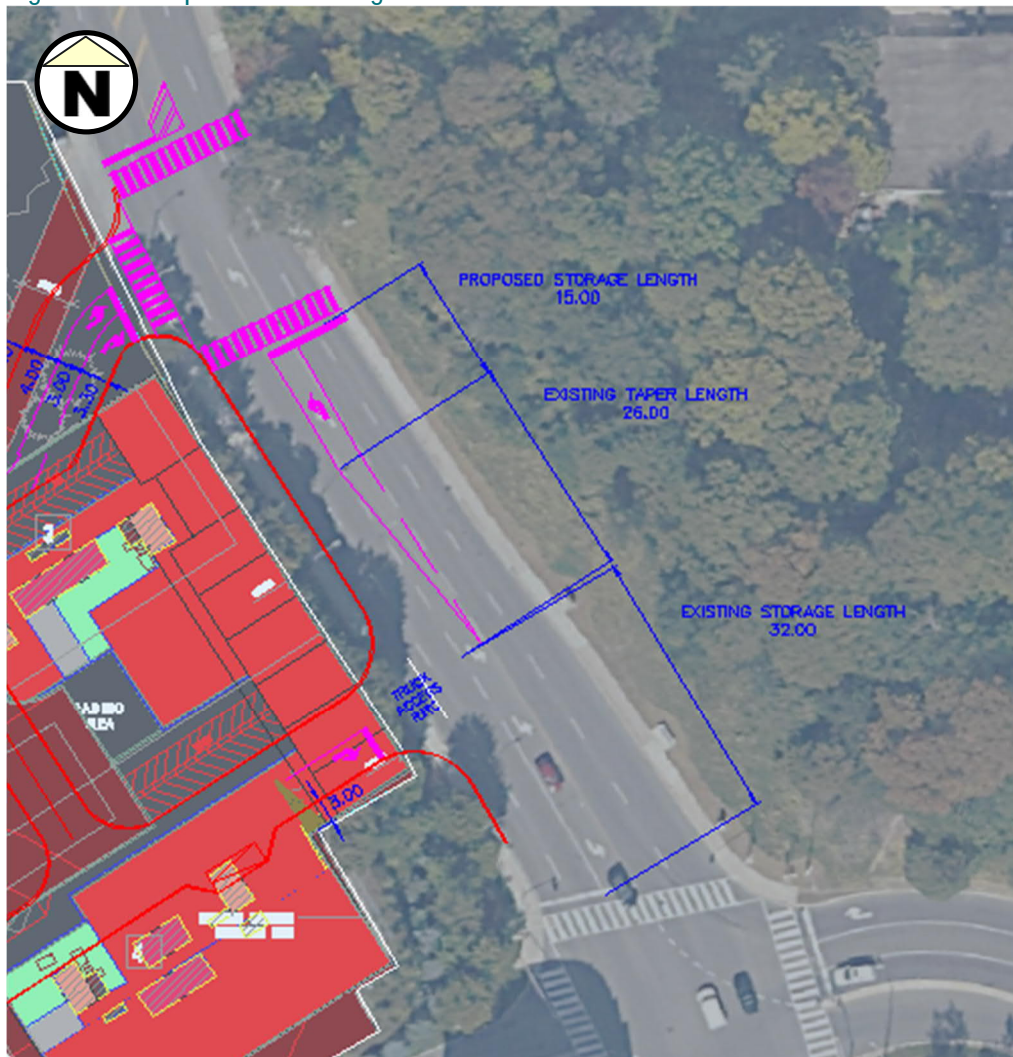
The unsignalized intersections in the study area all operate at acceptable LOS, with all LOS at “C” or better during the AM and PM peak hours.

4 PROPOSED TRAFFIC SIGNAL

A traffic signal is proposed at Wynford Drive and the North Driveway. This is to consolidate traffic generated by the subject site and provide access to the site from a main point. The traffic signal also provides an additional east-west pedestrian crossing, which further improves the pedestrian network and facilitates the proposed north/south pedestrian connection to the Eglinton LRT. The shopping plaza located at Wynford Heights Crescent is approximately 100 m north of the subject site and provides a variety of food options and services. Increasing pedestrian access to the plaza through the introduction of the traffic signal would enhance mobility as a more direct route would be provided.

The proposed traffic signal would be located approximately 75 m north of the signalized intersection of Wynford Drive at Eglinton Avenue East Westbound On/Off-Ramps and Private Driveway. Figure 4-1 illustrates the lane configuration along Wynford Drive between the proposed traffic signal and existing traffic signal.

Figure 4-1: Proposed Traffic Signal

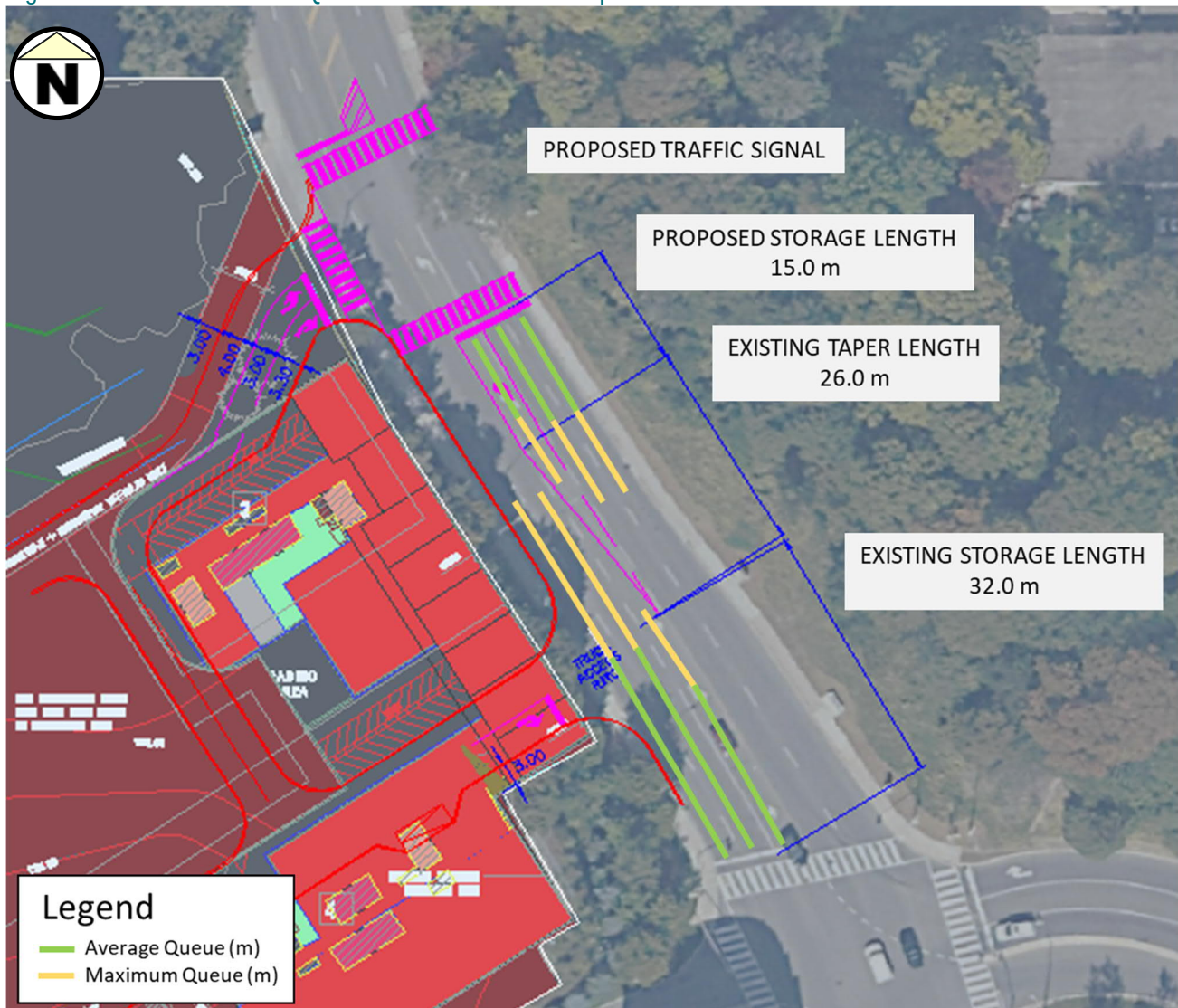


The queues expected within this segment of Wynford Drive are summarized in Table 4-1. Figure 4-2 demonstrates a visualization of the queues modelled in SimTraffic.

Table 4-1: SimTraffic Queueing Report

Parameter	Queue Length			
	At Proposed Signal (North Driveway/Wynford)		At Wynford/Private Driveway/Eglinton Ave E WB On/Off-Ramps	
	NBL	NBT	SBL	SBT
Storage Length (m)	15.0	73.0	32.0	73.0
Maximum Queue (m)	21.0	24.8	32.7	51.6
Average Queue (m)	10.0	14.2	22.4	29.3
95 th Percentile Queue (m)	20.7	26.1	43.1	55.9

Figure 4-2: Visualization of Queues from SimTraffic Report



The average queue for the northbound left-turn into the North Driveway and the southbound left-turn into the Eglinton Avenue East Westbound On/Off-Ramps are both less than the storage lengths for the movements, and do not interfere with through traffic (as shown in Figure 4-2 with the green bars).

When reviewing the maximum queues for the same movements (as shown in Figure 4-2 with the yellow bars), the queue lengths are slightly longer than the storage lengths provided. However, it is our opinion that these queues will not cause significant impacts to the traffic network in the surrounding areas and will not cause safety concerns for vehicles in this segment of Wynford Drive. This is because:

- ▶ Wynford Drive is located in an urban area, with drivers typically expecting vehicles stopped near intersections. This would reduce the likelihood of collisions due to queued vehicles queueing outside of the storage length of the turn lane;
- ▶ The stopping sight distance along the corridor exceeds the minimum stopping sight distance requirements, allowing vehicles to see any stopped vehicles and react appropriately; and
- ▶ Queues typically occur during red phases for northbound and southbound traffic. Queues are expected for northbound-through and southbound-through traffic within this segment of Wynford Drive, meaning that vehicles would already be stopped.

Furthermore, when evaluating the “worst-case scenario” of a maximum queue occurring for all movements within this segment of Wynford Drive, the total queue lengths for the northbound and southbound movements (calculated as the left-turn movement queue length that exceeds the storage length plus the through movement queue length) do not exceed the stop-bar to stop-bar distance of 73 m for the two intersections. The maximum queue length that would occur in the worst-case scenario would be 32.3 m.

Based on this reasoning, it can be determined that the proposed storage lengths for the northbound left-turn movement at North Driveway at Wynford Drive and the southbound left-turn movement at Eglinton Avenue East Westbound On/Off-Ramps at Private Driveway at Wynford Drive will adequately accommodate the traffic demand at the intersections without causing excessive delays to the traffic network.

5 PARKING AND LOADING REVIEW

5.1 PARKING REVIEW

Vehicular Parking

The parking for the site is governed by the Site-Specific Zoning By-law 112-2016. Currently, the subject site does not fall under any of the Policy Area's or special districts within Zoning By-law 569-2013. Table 5-1 below summarizes the parking requirements.

Table 5-1: Minimum Parking Requirements – Site-Specific Zoning By-law 112-2016

Proposed Use	Number of Units	Minimum Requirements (Site Specific Zoning By-law 112-2016)	
		Rate	Spaces Required
Bachelor Apartment	138 Units	0.8 per dwelling unit	110
1-Bedroom Apartment	1,870 Units	0.9 per dwelling unit	1683
2-Bedroom Apartment	467 Units	1.0 per dwelling unit	468
3-Bedroom Apartment	275 Units	1.2 per dwelling unit	330
Visitor	2,750 Units	0.2 per dwelling unit	550
Hotel	125 Rooms	0.54 per guest room	68
Total		3,209	

The Site-Specific Zoning By-law specifies a minimum of 3,209 parking spaces should be provided for the development. However, the current minimum parking rates used are not supportive of a transit-oriented development reflective of the Eglinton Crosstown and Ontario Line investment by the City of Toronto. In reviewing the Draft Golden Mile Secondary Plan, the City has adopted a Policy Area 3 rates within the Zoning By-law 569-2013. Policy Area 3 encompasses designated areas with intensification potential around major transit corridors which is in fitting with the Eglinton Crosstown.

Table 5-2 summarizes the parking requirements under Policy Area 3. In total, the minimum parking requirements for the subject site under Policy Area 3 would be 2,832 parking spaces.

Table 5-2: Minimum Parking Requirements – Policy Area 3

Proposed Use	Number of Units	Minimum Requirements (Zoning By-law 569-2013 Policy Area 3)	
		Rate	Spaces Required
Bachelor Apartment	138 Units	0.6 per dwelling unit	83
1-Bedroom Apartment	1,870 Units	0.7 per dwelling unit	1,309
2-Bedroom Apartment	467 Units	0.9 per dwelling unit	420
3-Bedroom Apartment	275 Units	1.0 per dwelling unit	275
Visitor	2,750 Units	0.1 per dwelling unit	275
Hotel	10,082 m ²	0.2 per 100 m ² of GFA	20
Total		2,832	

Based on the transportation objectives of the Draft Golden Mile Secondary Plan Study Section 8.4, where there is a desire to reduce single occupancy vehicle use, a reduction in residential parking as compared to what would be required by Policy Area 3 parking rates is being recommended. As part of the TDM plan, a reduced parking supply can contribute to a reduction in single occupancy vehicle trips. Additional TDM

measures, detailed in Section 6 of this report, to support non-auto travel include the provision of bicycle parking, carshare vehicles, and real time transit information boards in residential lobbies.

Major upgrades in transit infrastructure are planned for the areas surrounding 175 Wynford Drive, significantly reducing the number of trips taken by vehicles. The Wynford LRT Stop is planned to be 120 m east of the subject site and will be easily accessible to the subject site via a pedestrian path that bisects the subject site. The Wynford LRT Stop is approximately 1.0 km away from the planned Ontario Line, a major transit hub for the area.

More than 58% of the trips generated from the subject site are expected to be taken by non-auto modes. This significantly reduces the vehicle dependency, and further promotes the use of transit and other modes of transportation for the area.

Table 5-3 outlines the proposed supply for parking spaces. A recommended minimum residential parking rate of 0.40 parking spaces per unit is used, with 0.1 parking spaces per unit for visitor parking, which is an approximate 49% reduction in parking compared to the by-law requirement. The hotel use is recommended to maintain the Site-Specific Zoning By-law 112-2016.

Table 5-3: Proposed Parking Supply

Proposed Use	Number of Units	Proposed Supply	
		Rate	Number of Spaces
Bachelor Apartment	138 Units	0.4 per dwelling unit	55
1-Bedroom Apartment	1,870 Units	0.4 per dwelling unit	748
2-Bedroom Apartment	467 Units	0.4 per dwelling unit	187
3-Bedroom Apartment	275 Units	0.4 per dwelling unit	110
Visitor	2,750 Units	0.1 per dwelling unit	275
Hotel	125 Rooms	0.54 per guest room	68
Total		1,443	

Currently, a vehicular parking easement allows hotel-use-vehicles to park within the Accolade's lands and in their underground parking. 176 parking spaces are allocated under this parking easement, which will be maintained for the subject site. Additional parking will be provided in an underground parking structure connecting the entire site.

The latest site plan indicates 1,552 parking spaces would be provided. This satisfies the proposed parking supply requirements outlined by LEA. The proposed development adopts a TOD approach, aiming to support a transit-oriented lifestyle. With close proximity to high-order transit, cycling lanes, and improved pedestrian network connectivity, residents of the proposed development will have many more travel mode options.

Bicycle Parking

Bicycle Parking for the subject site is governed by the City of Toronto By-law 569-2013. Based on the specified bicycle zones in the By-law, the subject site falls into Bicycle Zone 1. Table 5-4 below summarizes the residential bicycle parking requirements for the subject site.

Table 5-4: Residential Bicycle Parking Space Requirement

Land Use	Number of Units	Minimum Requirement			
		Short Term		Long Term	
Residential	2,750 dwelling units	0.1 spaces per dwelling unit	275 spaces	0.9 spaces per dwelling unit	2,475 spaces

Hotel	13,940 m ² GFA	-	-
Total		275 Spaces	2,475 Spaces

The by-law specifies a total of 2,750 bicycle parking spaces (275 short-term spaces and 2,475 long-term spaces). Bicycle parking will be provided in various locations in the subject site, on the first floor near the residential lobbies. The latest site plan indicates that this requirement will be met, with a total of 2,757 bicycle parking spaces provided.

5.2 LOADING REVIEW

The loading spaces for the site are regulated by the City of Toronto By-law 569-2013. Table 5-5 below summarizes the loading requirements. The latest site plan indicates that this requirement will be met.

Table 5-5: Loading Space Requirement

Land Use	Number of Units	Minimum Requirement	
		Rate	Requirement
Residential	2,750 dwelling units	400 dwelling units or more	4 Type "G" and 4 Type "C"
Hotel	13,940 m ² GFA	10,000 to 19,999 m ² GFA	3 Type "B"

6 TRANSPORTATION DEMAND MANAGEMENT (TDM)

The construction of the Eglinton Crosstown LRT will provide a significant transit option for the movement of people in Toronto, further supporting a shift towards transit modes and active modes of transportation. However, investing in transit infrastructure alone is not sufficient. To ensure the success of the massive investments in transit infrastructure, a Transit-Oriented Development (TOD) approach is proposed to be adopted at the site.

TOD refers to compact, mixed-use development in close proximity to transit stations and surrounded by effective pedestrian environments. The goal of TODs is to encourage transit use, walking, and cycling, while consequently reducing automobile dependency. In other words, TODs focus on the movement of people instead of vehicles.

TODs integrate land use, density, and transportation planning principles to ensure high ridership for new transit services. Careful planning is undertaken to develop “complete communities” and “complete streets”, along with comprehensive Transportation Demand Management (TDM) strategies that aim to encourage transit use. Also, high ridership provides the required fiscal resources to operate and maintain these transit services responsibly.

The following section identifies the principles adopted by the proposed development to ensure the successful implementation of a TOD approach for the site. The subject site will not only increase the intensity of the land use, but also increases the diversity of the land uses by integrating traditionally segregated uses (residential, office, and retail). This activates urban areas during more hours of the day and also promotes shorter-frequency trips for day-to-day activities such as shopping, leisure, and entertainment. Individuals working and living at the proposed development are able to eliminate certain trips entirely by utilizing facilities located onsite such as the retail and the gym components. Redevelopment of the site in a mixed-use community is expected to occur over time, structured by new public streets and development blocks that are anticipated to proceed in multiple phases and implemented through future rezoning, subdivision, and site plan approval. To develop a successful TOD, the following TDM measures will be introduced to encourage a shift to more sustainable modes of transportation:

6.1 PARKING DEMAND MANAGEMENT

Parking management TDM measures not only help to reduce the auto modal split, but also are able to increase auto occupancy. Residential parking demand management at the subject site includes measures to control both the supply and price of parking.

6.1.1 Limiting Residential Parking Supply

The reduction of dedicated the residential parking supply is a TDM measure that influences how people travel. A purchased parking space, either separately or as part of the purchase of a residence, is a fixed cost. The more the space gets used the more value the owner will perceive in their purchase. If the owner does not already own a car to occupy the space, the perception that the parking space should be used can lead to two separate outcomes: (1) the owner will purchase a vehicle to occupy the spot, or (2) the owner will lease out the spot for somebody else to use.

The recommended minimum residential parking rate represents an approximate 45% reduction in parking. It is anticipated that this reduction will account for more than a 15% reduction in single occupancy driver trips.

6.1.2 No Free Employee Parking

Parking management TDM measures not only help to reduce the auto modal split, but also are able to increase auto occupancy. The City of Toronto found parking management works by making single occupant auto trips a less cost-effective choice and thereby increasing the relative attractiveness of other modes such as transit or ridesharing. Parking demand management at the subject site includes measures to control both the supply and price of parking.

Eliminating free parking for employees shifts the cost-benefit analysis for employees towards non-single occupant auto modes. This could be achieved by employees deciding to carpool in order to save parking costs or by choosing a non-auto-oriented mode such as transit, cycling, or walking.

In the short term as the area is still in transition it may not be feasible to attract employers to the office space if there is a parking charge. If that is the case carpooling should be encouraged with preferential parking for registered carpool vehicles and participation in Smart Commute.

6.1.3 Encourage Carpooling

Making carpooling a more convenient and attractive option is a TDM measure that influences when and how people travel. In order to make carpooling more desirable parking preferential parking location will be implemented. The Alternative Transportation parking capacity credit for LEED suggests 5% of the total provided parking supply for non-residential uses be dedicated carpooling spaces, or 72 spaces for the proposed development. Furthermore, preferential carpool parking spaces should be reserved near the building entrances to provide further incentive for individuals to carpool.

Attracting more people to carpooling increases auto occupancy. The schedule of travel for auto passengers is largely dependent on that of the associated drivers. In order to reduce the dependency of the auto passenger on the driver's schedule any formal carpooling program should be complemented by ease of access to other mode choices.

One tool for tenants to consider when establishing a formal carpooling program is Smart Commute. Smart Commute is a joint venture project between Metrolinx and the municipalities in the Greater Toronto and Hamilton Area (GTHA). Smart Commute and Smart Commute – Central Toronto can set up a database with travel profiles completed by employees for individual companies, BIAs, or building management to match employees looking to carpool.

In addition to connecting commuters, Smart Commute provides resources regarding employee work arrangement solutions including: telework, compressed work weeks and flex hours, workshops, lunch-and-learns and seminars. Information regarding smart commute can be provided in the tenant welcome packages, have flyers posted in major access points of the building, and have handout brochures available at the concierge booth.

6.1.4 Car-Sharing Programs

Providing car-share spaces on site is a TDM measure that influences how people travel. While the site is well serviced by a wide range of sustainable transportation options, residents who have the occasional need for a car can be accommodated by the car-sharing programs anticipated to be located on-site. It is recommended that car-share vehicles be located in readily available areas in the commercial parking areas or on-street. These services offer the convenience of access to a motor vehicle without assuming the responsibilities that are associated with owning a car. The car-share vehicles located at the subject site will serve all users of the

proposed development (commercial/ residential), as well as provide occasional vehicle access to others in the neighbourhood.

A study conducted by Transport Canada and CommunAuto in Quebec (2006), found that car-sharing significantly reduced parking demand and auto-ownership; 53% of participating service users refrained from purchasing a vehicle, while 24% sold their car. This resulted in each shared car replacing 4 to 8 owned vehicles. These findings were matched by internal studies conducted by the AutoShare and Zipcar vehicle-sharing services active in Toronto.

Car-sharing is complementary to other alternative modes of transportation, transit in particular. Zipcar members reported a 47% increase in public transit use, a 10% increase in cycling and a 26% increase in walking. A report by IBI Group confirmed these findings; car-sharing was very successful in areas where transit, walking, and cycling are already practical alternatives. The complementary services represent a viable alternative to owning and driving a personal car. This same report makes the recommendation that one car share vehicle replaces 4 resident parking spaces¹.

For the proposed development a specific ratio of car-share spaces to reduction in residential spaces is not being recommended. The proposed overall residential parking supply, in the range of 0.5 spaces per unit is anticipated to be supported by a combination of factors, all outlined in this report. Based on information provided in the Metro Vancouver Car Share Study Technical Report, Car share providers typically strive for upwards of 60 members per car share vehicle to ensure a cost-effective utilization level². An Apartment Household Survey, conducted as part of that same report, found only about 25% of households that responded to the survey had a car share membership³. Based on this a provision one car-share vehicle for every 250 residential units in the proposed development would be appropriate.

7.1 CYCLING INFRASTRUCTURE

TDM cycling measures at the subject site focus on providing bicycle access and parking. The initiatives provide residents and commuters with bicycle related facilities and ensure that non-motorist transportation options are safe and convenient.

The cyclist TDM facilities at the proposed development seek to influence how people travel by reducing the barriers to cycling and provide individuals with the facilities they require to commute by bicycle for all trip types.

6.1.5 Long Term Bicycle Parking

TDM cycling measures at the subject site will focus on providing bicycle access and parking. The initiatives will provide residents and commuters with bicycle related facilities and ensure that non-motorist transportation options are safe and convenient. Details of access will be further developed with the site plan applications for each development block.

6.1.6 Bike Share

There is currently no Bike Share Toronto infrastructure adjacent to the site. However, over time the network has been expanding, particularly along transit lines. It is anticipated that by the time full buildout of the

¹ Parking Standards Review: Examination of Potential Options and Impacts of Car Share Programs on Parking Standards, IBI Group, March 2009

² Metro Vancouver Car Share Technical Report, Metro Vancouver, November 2014, Table 8, Page 15

³ Metro Vancouver Car Share Technical Report, Metro Vancouver, November 2014, Table 75, Page 54

proposed development that Bike Share Toronto infrastructure will be available adjacent to the site to encourage one-way as well as two-way cycling trips for residents, employees, and retail customers. For example a retail customer could take advantage of bike share to get to the site, purchase a lot of goods, and take transit or a taxi home when carrying the purchased goods is not feasible on bicycle.

8.1 PEDESTRIAN/TRANSIT CONNECTIVITY

The pedestrian and transit TDM elements of the proposed development focus on encouraging walking and transit as alternatives to driving. The subject site provides a high level of pedestrian/transit connectivity, providing users with more convenient transit access for a wide range of trip types.

6.1.7 On-Site Pedestrian Infrastructure

The Wynford Drive stop on the Eglinton Crosstown will be located in close proximity to the subject site. The on-site infrastructure will provide for a safe pedestrian access to the transit station, while allowing strong connections to/from the proposed development and adjacent neighbourhoods. This can include, but not be limited to, the following elements on the site:

- ▶ Appropriate signage and wayfinding on the proposed development that navigates people towards adjacent transit stops, available parking, and different land uses on the site.
- ▶ Include pedestrian-ordained design elements. This can include minimizing curb cuts to ensure a continuous pedestrian edge, minimizing conflicts between pedestrians, cyclists and motorized forms of travel, re-design intersections surrounding the site to allow for better crossing opportunities.
- ▶ Three pedestrian-only access points are proposed along Eglinton to respond to increased activity in this area. These access points will provide additional porosity through the site, particularly in the centre leading towards the proposed public square.

6.1.8 Interactive Transit Route Planning

The ability for staff to plan their transit route home from their staff/break room allows for the most efficient use of transit. With staff able to wait inside until they know a streetcar or bus is about to arrive, transit becomes less unattractive in the winter months and when there is poor weather. This could be something like a small internet connected tablet with local transit apps.

Similar services could be provided to residents and their visitors with an interactive transit arrival information board located in residential lobbies.

9.1 MEASURES FOR OFF-PEAK TIME

The TDM measures explored above can be extended beyond the peak times; thereby effecting the off-peak flows as well. Specifically, a key combination of measures for off-peak use is the close proximity to public transit.

Off-Peak times are also often subject to decreased transit service; however, given the location of this development in proximity to the Eglinton Crosstown, users can take advantage of the frequent service extended into the off-peak periods. Therefore, the off-peak application of the TDM plan continues to provide viable access to mass transit and sustainable transportation methods. The ability for people to travel to and from the subject site using non-auto forms of transport is not restricted to peak hours.

10.1 TDM MARKETING

Marketing is an important tool to promote the available options and specific programs to potential users. In order to ensure the success of TDM measures at the subject site, it is recommended that the following promotional strategies be employed to promote the use of non-auto modes of travel.

- ▶ Actively include bike route, Bike Share Toronto, and Car Share information into tenant welcoming packages as well as readily distribute this information at the concierge booth.
- ▶ Introduce the Smart Commute program through literature and concierge service to tenants.
- ▶ Promote the Smart Commute carpool program through posters, brochure and newsletter distribution.

7 CONCLUSIONS AND RECOMMENDATIONS

The proposed development at 175 Wynford Drive will consist of the construction of four residential buildings and hotel. The development is planned to be a transit-oriented development, due to the close proximity to large transit infrastructure upgrades. The subject site proposes to add 2,750 residential units, and 125 hotel rooms.

The existing traffic condition was estimated using 2011 TMC data grown to 2020. This was done to accurately capture traffic patterns and conditions, as the construction at Don Mills Road and Eglinton Avenue East resulted in significant congestion, causing a significant increase in by-pass trips via Wynford Drive. The Synchro model showed that existing traffic conditions operated at acceptable levels, with no intersections experiencing significant delays or queues.

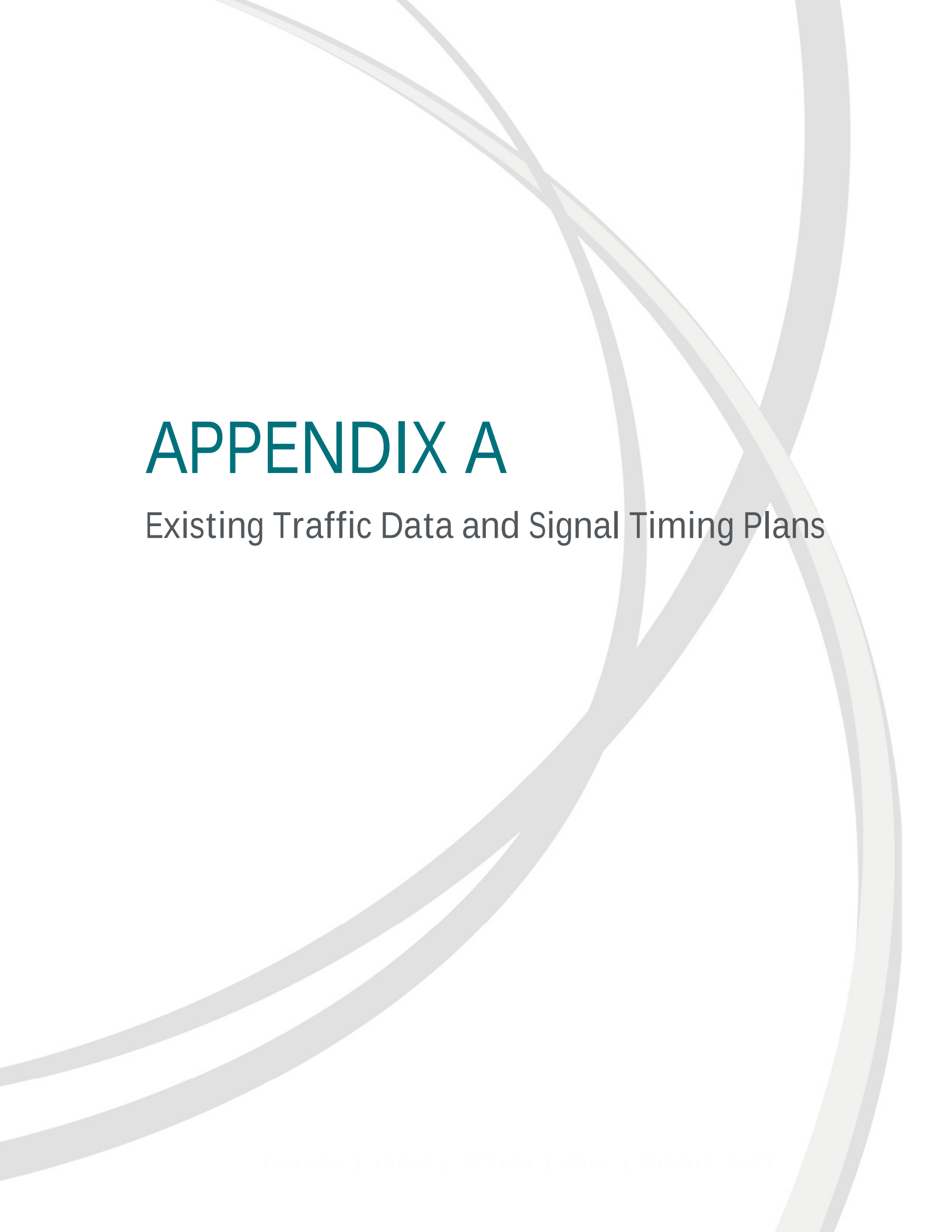
The future background traffic condition was grown by 0.5% per year and included 10 Concorde Place as a background development. The future background traffic conditions were analysed in a Synchro model, and were found to be acceptable in terms of delays and queue lengths, except for the southbound left-turn lane at Wynford Drive and the Eglinton Avenue East Westbound On/Off-Ramps and the Private Driveway. This movement was identified to be further analyzed in the future total conditions.

Trip generation for the site was based on the ITE Trip Generation Manual (10th Edition) and found that a maximum of 370 two-way vehicular trips is anticipated to be generated during the weekday AM and PM peak hours. A maximum of 432 transit-based trips and 79 walking/cycling based trips is also anticipated to be generated from the subject site during the weekday AM and PM peak hours.

The future total traffic condition analyzed the future background traffic condition with the trip generation expected from the subject site. The traffic conditions analyzed in Synchro and SimTraffic were found to be acceptable during the AM and PM peak hours.

A signalized intersection is recommended at the intersection of Wynford Drive and North Driveway, as demonstrated in the Future Total condition. The intersection would be located approximately 75 m north of the signalized intersection at Wynford Drive and Eglinton Avenue East Westbound On/Off-Ramps and Private Driveway. In addition, a right-in/right-out at Wynford Drive is recommended approximately 30 m north of the signalized intersection at Wynford Drive and Eglinton Avenue East Westbound On/Off-Ramps and Private Driveway. This would help further accommodate the new site generated traffic.

The loading for the subject site is expected to meet the minimum requirements, with four (4) Type “G”, four (4) Type “C”, and three (3) Type “B” loading spaces. Parking spaces are proposed to be provided at a reduced rate in comparison to the minimum requirements, with 1,552 spaces provided (resulting in a proposed deficit of 1,714 spaces, when compared to the minimum requirements). Bicycle parking spaces are expected to meet the minimum requirements, with 2,757 bicycle parking spaces proposed for the subject site.



APPENDIX A

Existing Traffic Data and Signal Timing Plans

Turning Movement Count Summary Report

CONCORDE PL AT WYNFORD DR & WYNFORD HEIGHTS CRES (PX 1455)

Survey Date: 2014-Jul-08 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				Exits	EASTBOUND				Exits	SOUTHBOUND				Exits	WESTBOUND				Total	Peds	Bike	Other
			Left	Thru	Right	Total		Left	Thru	Right	Total		Left	Thru	Right	Total		Left	Thru	Right	Total				
08:15-09:15 AM PEAK	CAR	413	410	291	11	712	81	106	59	238	403	415	11	83	83	177	616	94	123	16	233	N	26	1	0
	TRK	21	10	14	2	26	11	4	8	11	23	19	1	3	5	9	22	5	7	3	15	S	6	0	0
	BUS	36	1	21	0	22	1	15	1	0	16	18	0	17	22	39	24	1	1	0	2	E W	53 20	0	0
TOTAL:		470	421	326	13	760	93	125	68	249	442	452	12	103	110	225	662	100	131	19	250				
16:45-17:45 PM PEAK	CAR	288	310	147	17	474	148	123	116	448	687	707	15	207	224	446	592	52	58	18	128	N	19	0	0
	TRK	16	22	11	3	36	10	5	6	12	23	21	1	9	8	18	38	0	8	0	8	S	16	0	0
	BUS	31	3	17	0	20	1	13	1	4	18	14	0	10	16	26	20	0	1	1	2	E W	26 17	0	0
TOTAL:		335	335	175	20	530	159	141	123	464	728	742	16	226	248	490	650	52	67	19	138				
OFF HR AVG	CAR	153	188	85	12	285	97	55	75	199	329	319	10	72	74	156	346	48	84	13	145	N	21	0	0
	TRK	17	15	10	2	27	10	6	7	18	31	28	1	6	7	14	32	4	10	1	15	S	21	0	0
	BUS	18	1	10	0	11	2	8	2	2	12	10	0	8	7	15	9	0	1	0	1	E W	39 14	0	0
TOTAL:		188	204	105	14	323	109	69	84	219	372	357	11	86	88	185	387	52	95	14	161				
07:30-09:30 2 HR AM	CAR	751	747	531	16	1,294	143	186	106	403	695	719	21	150	143	314	1,137	166	247	34	447	N	59	3	0
	TRK	29	21	18	3	42	17	6	13	26	45	37	1	4	8	13	45	7	16	5	28	S	15	0	0
	BUS	74	2	43	1	46	3	31	2	0	33	41	0	37	41	78	45	4	2	0	6	E W	98 35	1	0
TOTAL:		854	770	592	20	1,382	163	223	121	429	773	797	22	191	192	405	1,227	177	265	39	481				
16:00-18:00 2 HR PM	CAR	526	606	292	33	931	297	200	232	873	1,305	1,338	32	368	391	791	1,113	97	116	34	247	N	35	1	0
	TRK	23	40	16	3	59	19	7	15	26	48	42	1	14	15	30	71	2	16	0	18	S	25	0	0
	BUS	57	3	30	1	34	2	25	1	7	33	23	0	16	25	41	29	0	1	2	3	E W	46 34	0	0
TOTAL:		606	649	338	37	1,024	318	232	248	906	1,386	1,403	33	398	431	862	1,213	99	133	36	268				
07:30-18:00 8 HR SUM	CAR	1,886	2,105	1,161	95	3,361	825	606	637	2,073	3,316	3,333	93	804	828	1,725	3,630	456	697	119	1,272	N	177	4	0
	TRK	118	119	74	13	206	77	36	57	122	215	188	7	42	51	100	240	24	70	8	102	S	123	0	0
	BUS	200	9	111	3	123	12	87	9	13	109	102	0	84	92	176	106	5	5	2	12	E W	300 123	1	0
TOTAL:		2,204	2,233	1,346	111	3,690	914	729	703	2,208	3,640	3,623	100	930	971	2,001	3,976	485	772	129	1,386				

Total 8 Hour Vehicle Volume: 10,717

Total 8 Hour Bicycle Volume: 6

Total 8 Hour Intersection Volume: 10,723

Comment:

Intersection Detailed 15 Minutes Movement Report

CONCORDE PL AT WYNFORD DR & WYNFORD HEIGHTS CRES (PX 1455)

Survey Date: Jul-08-2014 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
07:45	CARS	47	0	77	15	23	18	12	14	1	37	6	21
	DUALS	0	0	2	1	7	1	1	0	0	3	1	2
	BUSES	5	0	1	0	0	6	6	5	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		1	(0)	1	(0)	
	PEDS	North Side		15	East Side		10	South Side		1	West Side		7
08:00	CARS	70	1	86	9	35	15	19	13	4	31	4	18
	DUALS	0	0	2	1	3	0	0	0	0	4	0	0
	BUSES	6	0	0	0	0	4	6	4	0	0	0	1
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		12	South Side		3	West Side		3
08:15	CARS	53	2	74	10	42	21	17	17	3	35	6	16
	DUALS	1	1	5	1	3	0	0	1	0	2	1	0
	BUSES	6	0	0	0	0	4	6	4	0	0	0	2
	BIKE (OTHER)		0	(0)		0	(0)		1	(0)	0	(0)	
	PEDS	North Side		6	East Side		12	South Side		2	West Side		1
08:30	CARS	64	2	87	10	59	22	21	17	3	39	6	24
	DUALS	3	1	3	3	2	1	1	0	0	5	1	1
	BUSES	6	0	0	0	0	5	4	5	0	0	0	1
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		8	East Side		10	South Side		3	West Side		9
08:45	CARS	71	5	106	13	42	24	18	20	3	35	3	28
	DUALS	1	0	3	2	2	0	0	2	0	0	0	3
	BUSES	4	0	0	0	0	5	6	3	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		8	East Side		15	South Side		0	West Side		3
09:00	CARS	77	2	105	17	71	25	20	21	3	26	4	20
	DUALS	6	1	2	2	4	1	1	1	1	1	2	1
	BUSES	5	0	0	0	0	2	3	7	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		1	(0)	0	(0)	
	PEDS	North Side		4	East Side		14	South Side		1	West Side		4
09:15	CARS	79	2	112	19	66	35	24	25	2	23	3	22
	DUALS	4	0	2	1	3	2	1	2	0	1	0	0
	BUSES	6	0	1	1	0	3	4	7	0	1	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		14	South Side		2	West Side		4

Intersection Detailed 15 Minutes Movement Report

CONCORDE PL AT WYNFORD DR & WYNFORD HEIGHTS CRES (PX 1455)

Survey Date: Jul-08-2014 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
09:30	CARS	70	2	100	13	65	26	19	16	2	21	2	17
	DUALS	3	0	2	2	2	1	0	2	0	0	0	0
	BUSES	5	1	0	1	0	2	2	6	0	1	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		11	South Side		3	West Side		4
10:15	CARS	27	3	49	16	39	13	12	17	2	21	3	13
	DUALS	3	0	0	2	9	2	2	2	0	2	0	2
	BUSES	1	0	0	0	0	2	1	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		19	South Side		3	West Side		4
10:30	CARS	20	1	47	10	42	16	11	17	4	32	0	25
	DUALS	3	0	2	3	2	1	1	0	0	2	0	0
	BUSES	3	0	1	1	1	3	1	2	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		9	East Side		17	South Side		7	West Side		5
10:45	CARS	22	0	38	19	42	9	18	22	2	23	1	15
	DUALS	3	1	3	1	6	1	1	1	0	4	0	1
	BUSES	1	0	0	0	0	2	2	2	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		7	East Side		12	South Side		6	West Side		5
11:00	CARS	13	2	48	20	43	10	12	17	0	23	0	12
	DUALS	1	0	3	3	10	1	1	2	1	2	0	0
	BUSES	2	0	0	0	0	3	2	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		20	South Side		4	West Side		1
11:15	CARS	18	6	36	17	46	15	12	15	3	26	0	12
	DUALS	0	0	4	2	3	2	0	3	0	3	0	1
	BUSES	3	0	0	1	0	1	3	3	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		10	South Side		1	West Side		1
11:30	CARS	23	4	39	17	30	10	20	22	4	19	2	12
	DUALS	4	1	3	3	4	1	1	1	0	1	0	2
	BUSES	2	0	0	0	0	2	1	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		21	South Side		7	West Side		5

Intersection Detailed 15 Minutes Movement Report

CONCORDE PL AT WYNFORD DR & WYNFORD HEIGHTS CRES (PX 1455)

Survey Date: Jul-08-2014 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
11:45	CARS	25	3	38	15	41	13	24	25	3	18	3	15
	DUALS	3	0	2	1	3	0	3	0	0	2	0	1
	BUSES	2	1	0	2	1	0	2	2	0	1	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		17	South Side		3	West Side		3
12:00	CARS	22	4	35	11	46	10	21	20	2	20	3	17
	DUALS	2	0	2	2	3	1	2	1	0	3	0	1
	BUSES	3	0	0	0	1	2	2	2	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		15	South Side		4	West Side		3
13:15	CARS	25	2	50	21	45	17	21	21	1	20	4	10
	DUALS	2	0	3	0	2	1	0	2	1	4	0	2
	BUSES	2	0	1	0	2	1	1	3	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		1	East Side		0	South Side		11	West Side		6
13:30	CARS	17	3	50	19	64	23	19	14	3	15	11	9
	DUALS	2	0	5	0	4	3	1	4	1	2	2	0
	BUSES	4	0	0	0	0	1	5	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		3	South Side		5	West Side		2
13:45	CARS	22	4	47	25	57	16	21	21	5	20	2	20
	DUALS	3	0	7	3	3	2	0	1	0	3	0	1
	BUSES	2	0	0	0	0	2	1	2	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		1	East Side		1	South Side		5	West Side		2
14:00	CARS	22	2	42	26	49	19	20	23	1	15	5	15
	DUALS	3	0	6	1	7	1	2	2	0	2	0	2
	BUSES	2	0	0	0	0	2	2	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		7	South Side		8	West Side		4
14:15	CARS	17	2	61	27	55	9	16	11	1	12	3	9
	DUALS	1	0	3	1	3	2	1	2	1	1	1	0
	BUSES	3	0	0	0	0	2	3	3	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		15	East Side		6	South Side		7	West Side		1

Intersection Detailed 15 Minutes Movement Report

CONCORDE PL AT WYNFORD DR & WYNFORD HEIGHTS CRES (PX 1455)

Survey Date: Jul-08-2014 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
14:30	CARS	18	5	59	20	66	13	16	15	3	21	3	4
	DUALS	5	2	6	3	4	2	3	2	0	2	0	1
	BUSES	3	0	0	0	0	3	1	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		3	South Side		6	West Side		4
14:45	CARS	21	3	53	17	69	15	20	18	4	22	6	3
	DUALS	3	1	4	2	3	1	4	3	1	3	0	0
	BUSES	2	0	1	1	0	2	2	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		0	South Side		3	West Side		3
15:00	CARS	26	2	60	19	63	12	23	16	2	27	5	2
	DUALS	2	2	5	2	4	2	2	2	0	2	0	1
	BUSES	3	0	1	1	1	3	2	1	0	1	0	1
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		5	South Side		3	West Side		5
16:15	CARS	30	3	68	29	101	19	36	43	3	15	4	8
	DUALS	2	0	3	2	1	1	2	2	0	1	0	1
	BUSES	3	0	0	0	0	2	2	2	0	0	0	0
	BIKE (OTHER)		0	(0)		1	(0)		1	(0)	0	(0)	
	PEDS	North Side		5	East Side		2	South Side		2	West Side		1
16:30	CARS	40	3	81	29	98	12	31	29	7	16	5	14
	DUALS	1	0	4	4	5	0	0	1	0	4	0	0
	BUSES	3	0	0	0	2	5	1	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		5	South Side		2	West Side		8
16:45	CARS	40	7	72	32	125	18	48	46	4	11	4	13
	DUALS	0	0	4	1	5	1	1	2	0	1	0	0
	BUSES	3	0	0	0	0	2	1	3	0	0	1	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		9	South Side		2	West Side		3
17:00	CARS	31	5	73	23	113	24	54	49	3	15	3	12
	DUALS	1	0	7	0	2	1	3	2	0	2	0	0
	BUSES	4	0	0	0	0	2	2	4	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		5	South Side		3	West Side		6

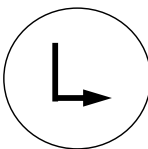
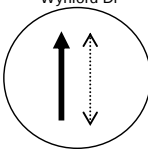
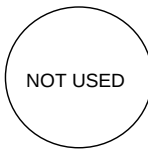
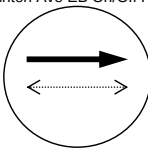
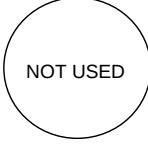
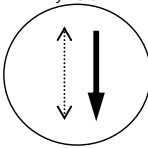
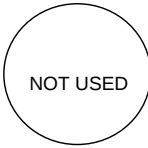
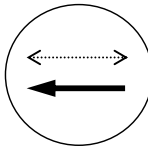
Intersection Detailed 15 Minutes Movement Report

CONCORDE PL AT WYNFORD DR & WYNFORD HEIGHTS CRES (PX 1455)

Survey Date: Jul-08-2014 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
17:15	CARS	35	4	76	30	116	30	47	56	5	12	5	15
	DUALS	3	0	5	1	3	1	2	3	0	1	0	0
	BUSES	5	0	1	0	1	3	2	5	0	0	1	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		7	South Side		4	West Side		0
17:30	CARS	43	5	83	29	112	37	55	61	3	18	4	11
	DUALS	4	2	6	3	3	2	1	1	1	2	0	0
	BUSES	3	0	1	1	2	5	3	3	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		9	South Side		4	West Side		7
17:45	CARS	38	3	78	34	107	32	51	58	4	13	6	14
	DUALS	3	1	4	2	4	1	3	2	0	3	0	0
	BUSES	5	0	1	0	1	3	3	4	0	1	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		5	South Side		5	West Side		4
18:00	CARS	35	3	75	26	101	28	46	49	3	16	3	10
	DUALS	2	0	7	2	3	0	2	2	0	2	0	1
	BUSES	4	1	0	0	1	3	2	4	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		4	South Side		3	West Side		5

LOCATION:		Wynford Dr & Eglinton Ave EB On/Off Ramp				DISTRICT: Toronto and East York		N ↑
MODE/COMMENT:		SA2-VMG with WRM & 2-Wire Polara APS				COMPUTER SYSTEM: TransSuite		
TCS:		1462				CONTROLLER/CABINET TYPE: PEEK ATC-1000 / TS2 T1		
PREPARED/CHECKED BY:		SQ/HL				CONFLICT FLASH: Red & Red		
PREPARATION DATE:		November 29, 2016				DESIGN WALK SPEED: 1.0 m/s (FDW based on full crossing at 1.2 m/s)		
IMPLEMENTATION DATE:		January 10, 2017				CHANNEL/DROP: 5008/5		
CONTROLLER FIRMWARE: 3.018.1.2976								
NEMA Phase		Off All Other Times	AM 07:00- 09:30 M-F	PM 15:45-18:00 M-F	NGHT 21:00-07:00 Daily	Phase Mode (Fixed/Demanded or Callable)	Remarks	
	Local Plan	Pattern 1	Pattern 2	Pattern 3	Pattern 4			
	Split Table	Split 1	Split 2	Split 3	Split 4			
1		WLK FDW MIN 6 MAX1 7 AMB 3 ALR 1 SPLIT				Callable/Extendable by 9m setback loop 24 hrs Daily.	Pedestrian Minimums: NSWK = 7 sec, NSFD = 15 sec EWWK = 7 sec, EWFD = 18 sec	
2	Wynford Dr 	WLK 7 FDW 15 MIN 22 MAX1 27 AMB 4 ALR 2 SPLIT				Fixed.	EW phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum EWG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the EWG is capable of providing vehicle extensions up to the maximum. If a pedestrian call is received, the pedestrian minimums will be served. The EWWK & EWFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Under coordinated operation, unused extension time is given to the NSG.	
3		WLK FDW MIN MAX1 AMB ALR SPLIT					Side Street Passage Time = 3 sec Left-Turn Passage Time = 2 sec.	
4	Eglinton Ave EB On/Off Ramp 	WLK 7 FDW 18 MIN 7 MAX1 25 AMB 4 ALR 2 SPLIT				Callable by Stopbar Loop and/or Push Button. Extendable by Stopbar Loop.	During coordinated operation, signal serves NSFD every cycle. Side street decision point at end of NSFD. Actuated APS on during 7 secs of NS & EW Walk only & when no LT arrows are displayed. Extended Push Activation for APS = 3 secs During free plan, signal rests in NSWK and does not cycle through NSFD unless there is a side street &/or APS call.	
5		WLK FDW MIN MAX1 AMB ALR SPLIT					NGT free plan operates through Pattern 4 with the following timings: The signal will serve 7 sec NSWK following WRM. MAX1 value is the green time for phase 1,2,4,6 & 8.	
6	Wynford Dr 	WLK 7 FDW 15 MIN 22 MAX1 38 AMB 4 ALR 2 SPLIT				Fixed.		
7		WLK FDW MIN MAX1 AMB ALR SPLIT						
8	Eglinton Ave EB On/Off Ramp 	WLK 7 FDW 18 MIN 7 MAX1 25 AMB 4 ALR 2 SPLIT				Callable by Stopbar Loop and/or Push Button. Extendable by Stopbar Loop.		
		CL OF	75 1	75 1	80 74	0 Free		

NOTES:

Turning Movement Count Summary Report

ST DENNIS DR AT WYNFORD DR & EGLINTON E/B ON RAMP S TCS (PX 1462)

Survey Date: 2016-Aug-16 (Tuesday)

Survey Type: Routine Hours

Time Period	Vehicle Type	Exits	NORTHBOUND				Exits	EASTBOUND				Exits	SOUTHBOUND				Exits	WESTBOUND				Total	Peds	Bike	Other
			Left	Thru	Right	Total		Left	Thru	Right	Total		Left	Thru	Right	Total		Left	Thru	Right	Total				
08:15-09:15 AM PEAK	CAR	307	11	72	268	351	369	37	3	6	46	441	98	428	16	542	32	7	5	198	210	N	31	0	0
	TRK	5	0	0	8	8	18	0	0	0	0	21	10	15	3	28	3	6	0	5	11	S	0	0	0
	BUS	6	0	5	0	5	1	0	0	0	0	20	1	20	0	21	0	0	0	1	1	E	28	1	0
																						W	0	0	0
TOTAL:		318	11	77	276	364	388	37	3	6	46	482	109	463	19	591	35	13	5	204	222				
16:00-17:00 PM PEAK	CAR	648	32	538	586	1,156	807	48	6	6	60	394	215	386	46	647	91	2	13	62	77	N	16	0	0
	TRK	41	0	32	52	84	65	8	0	0	8	15	13	15	0	28	0	0	0	1	1	S	6	6	0
	BUS	26	0	26	2	28	4	0	0	0	0	21	2	21	0	23	0	0	0	0	0	E	17	0	0
																						W	14	0	0
TOTAL:		715	32	596	640	1,268	876	56	6	6	68	430	230	422	46	698	91	2	13	63	78				
OFF HR AVG	CAR	404	20	271	291	582	446	64	23	13	100	227	132	205	29	366	54	9	5	69	83	N	13	0	0
	TRK	31	1	19	25	45	39	6	4	1	11	18	10	16	3	29	4	1	0	6	7	S	9	1	0
	BUS	20	0	20	1	21	3	0	1	0	1	10	1	10	1	12	1	0	0	0	0	E	12	0	0
																						W	8	1	0
TOTAL:		455	21	310	317	648	488	70	28	14	112	255	143	231	33	407	59	10	5	75	90				
07:30-09:30 2 HR AM	CAR	518	19	143	468	630	652	73	4	7	84	783	180	766	30	976	56	10	7	302	319	N	54	1	0
	TRK	10	0	1	20	21	39	0	0	0	0	43	19	35	5	59	5	8	0	9	17	S	0	0	0
	BUS	8	0	5	0	5	3	0	0	0	0	41	3	41	0	44	0	0	0	3	3	E	48	1	0
																						W	0	0	0
TOTAL:		536	19	149	488	656	694	73	4	7	84	867	202	842	35	1,079	61	18	7	314	339				
16:00-18:00 2 HR PM	CAR	990	46	824	879	1,749	1,256	66	9	10	85	729	368	715	76	1,159	144	4	22	100	126	N	29	0	0
	TRK	66	1	55	75	131	96	10	0	1	11	28	21	27	0	48	1	0	0	1	1	S	13	6	0
	BUS	40	0	39	4	43	7	0	0	0	0	41	3	41	0	44	0	0	0	1	1	E	29	0	0
																						W	28	0	0
TOTAL:		1,096	47	918	958	1,923	1,359	76	9	11	96	798	392	783	76	1,251	145	4	22	102	128				
07:30-18:00 8 HR SUM	CAR	3,122	144	2,049	2,510	4,703	3,689	396	105	69	570	2,418	1,074	2,300	223	3,597	415	49	48	677	774	N	134	2	0
	TRK	199	5	130	196	331	289	34	14	5	53	143	79	125	18	222	24	13	1	35	49	S	47	8	0
	BUS	128	0	124	8	132	19	0	2	0	2	123	9	123	3	135	3	0	0	4	4	E	125	1	0
																						W	60	4	0
TOTAL:		3,449	149	2,303	2,714	5,166	3,997	430	121	74	625	2,684	1,162	2,548	244	3,954	442	62	49	716	827				

Total 8 Hour Vehicle Volume: 10,572

Total 8 Hour Bicycle Volume: 15

Total 8 Hour Intersection Volume: 10,587

Comment:

Intersection Detailed 15 Minutes Movement Report

ST DENNIS DR AT WYNFORD DR & EGLINTON E/B ON RAMP S TCS (PX 1462)

Survey Date: Aug-16-2016 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
07:45	CARS	10	38	1	0	0	9	54	5	17	1	19	0
	DUALS	0	3	0	0	0	0	4	0	3	0	2	0
	BUSES	0	0	0	0	0	0	5	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		5	South Side		0	West Side		0
08:00	CARS	11	42	1	0	0	6	81	4	20	0	17	1
	DUALS	0	4	0	0	0	0	5	0	1	0	0	0
	BUSES	0	0	0	0	0	0	3	0	1	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		3	South Side		0	West Side		0
08:15	CARS	15	70	2	1	1	8	108	3	27	0	29	0
	DUALS	1	1	0	0	0	0	7	2	3	0	0	1
	BUSES	0	0	0	0	0	0	7	0	1	0	1	0
	BIKE (OTHER)		0	(0)		0	(0)		1	(0)	0	(0)	
	PEDS	North Side		7	East Side		8	South Side		0	West Side		0
08:30	CARS	19	65	5	0	0	4	113	6	24	3	43	0
	DUALS	0	2	0	0	0	0	3	1	5	0	1	1
	BUSES	0	0	0	0	0	0	5	0	1	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		6	South Side		0	West Side		0
08:45	CARS	14	81	2	1	1	8	115	5	27	1	57	2
	DUALS	0	1	0	0	0	0	4	1	1	0	0	2
	BUSES	1	0	0	0	0	0	5	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	1	(0)	
	PEDS	North Side		14	East Side		11	South Side		0	West Side		0
09:00	CARS	15	67	1	0	0	15	102	3	25	0	53	2
	DUALS	0	3	0	0	0	0	4	1	2	0	2	1
	BUSES	0	0	0	0	0	0	5	0	0	0	1	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		5	South Side		0	West Side		0
09:15	CARS	24	55	3	2	5	10	98	2	22	1	45	3
	DUALS	0	2	0	0	0	0	4	0	2	0	2	2
	BUSES	4	0	0	0	0	0	5	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		6	South Side		0	West Side		0

Intersection Detailed 15 Minutes Movement Report

ST DENNIS DR AT WYNFORD DR & EGLINTON E/B ON RAMP S TCS (PX 1462)

Survey Date: Aug-16-2016 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
09:30	CARS	35	50	4	0	0	13	95	2	18	1	39	2
	DUALS	0	4	0	0	0	0	4	0	2	0	2	1
	BUSES	0	0	0	0	0	0	6	0	0	0	1	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		4	South Side		0	West Side		0
10:15	CARS	52	45	5	0	0	17	65	7	24	1	22	1
	DUALS	0	5	0	0	0	0	7	1	4	0	5	0
	BUSES	0	0	0	0	0	0	1	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		10	East Side		9	South Side		0	West Side		0
10:30	CARS	62	52	2	10	6	22	38	4	27	2	17	1
	DUALS	0	6	0	2	0	0	8	2	4	0	2	0
	BUSES	6	0	0	0	0	0	1	0	0	0	0	0
	BIKE (OTHER)		2	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		6	South Side		2	West Side		0
10:45	CARS	56	60	2	6	2	14	51	6	30	0	11	2
	DUALS	8	6	0	0	0	2	4	0	3	0	2	0
	BUSES	2	0	0	0	0	0	2	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		9	East Side		8	South Side		0	West Side		0
11:00	CARS	48	50	2	4	4	16	41	10	26	2	14	1
	DUALS	6	4	0	2	0	2	3	1	1	0	1	0
	BUSES	4	0	0	0	0	0	4	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		2	South Side		2	West Side		0
11:15	CARS	60	54	2	4	4	30	50	4	28	1	19	4
	DUALS	6	10	0	4	0	0	2	1	4	0	1	0
	BUSES	8	0	0	0	0	0	3	1	1	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		1	East Side		1	South Side		0	West Side		2
11:30	CARS	52	68	4	6	4	14	33	11	21	1	18	1
	DUALS	4	2	0	2	0	2	2	0	3	0	1	0
	BUSES	6	0	0	0	0	0	2	0	0	0	0	0
	BIKE (OTHER)		0	(0)		4	(0)		0	(0)	0	(0)	
	PEDS	North Side		0	East Side		0	South Side		0	West Side		6

Intersection Detailed 15 Minutes Movement Report

ST DENNIS DR AT WYNFORD DR & EGLINTON E/B ON RAMP S TCS (PX 1462)

Survey Date: Aug-16-2016 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
11:45	CARS	56	74	2	4	4	18	42	8	32	0	15	3
	DUALS	4	6	0	0	2	0	2	0	1	0	1	1
	BUSES	6	2	0	0	0	0	3	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		3	South Side		6	West Side		4
12:00	CARS	62	76	8	6	6	14	36	7	26	1	18	4
	DUALS	8	4	0	0	2	0	3	1	1	0	2	0
	BUSES	6	0	0	2	0	0	3	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		3	South Side		4	West Side		4
13:15	CARS	56	86	4	6	4	12	57	12	40	3	12	2
	DUALS	2	8	0	0	0	2	4	1	3	0	1	0
	BUSES	4	0	0	0	0	0	3	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		1	East Side		1	South Side		6	West Side		4
13:30	CARS	52	90	10	8	2	8	43	9	39	0	11	1
	DUALS	0	8	0	0	0	2	4	3	4	0	3	2
	BUSES	6	2	0	0	0	0	3	0	1	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		0	East Side		0	South Side		0	West Side		0
13:45	CARS	66	90	6	8	2	10	68	5	31	1	13	2
	DUALS	8	8	0	0	0	2	5	1	3	0	0	0
	BUSES	4	0	0	0	0	0	2	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		0	East Side		3	South Side		0	West Side		0
14:00	CARS	78	80	2	10	6	8	57	9	34	3	22	2
	DUALS	6	10	0	2	0	0	1	0	1	0	1	0
	BUSES	4	0	0	0	0	0	3	0	1	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		0	East Side		1	South Side		0	West Side		0
14:15	CARS	72	88	8	10	2	30	59	8	42	2	21	3
	DUALS	8	6	2	0	0	2	5	0	1	1	2	2
	BUSES	6	0	0	0	0	0	3	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		1	South Side		2	West Side		0

Intersection Detailed 15 Minutes Movement Report

ST DENNIS DR AT WYNFORD DR & EGLINTON E/B ON RAMP S TCS (PX 1462)

Survey Date: Aug-16-2016 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
14:30	CARS	102	78	10	4	2	14	64	5	47	1	25	2
	DUALS	4	6	0	0	0	4	6	0	1	0	0	0
	BUSES	4	0	0	0	0	0	3	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		3	South Side		2	West Side		2
14:45	CARS	110	88	6	2	0	18	57	7	42	1	20	3
	DUALS	6	4	0	2	0	4	3	1	2	0	2	0
	BUSES	8	0	0	0	0	0	2	1	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		4	East Side		4	South Side		6	West Side		4
15:00	CARS	98	84	6	4	4	12	58	5	37	0	17	3
	DUALS	4	8	2	0	0	2	4	1	3	0	1	0
	BUSES	6	0	0	0	0	0	3	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		1	(0)	0	(0)	
	PEDS	North Side		3	East Side		3	South Side		4	West Side		6
16:15	CARS	102	128	6	2	0	12	110	15	75	2	19	1
	DUALS	6	6	0	0	0	0	5	0	3	0	0	0
	BUSES	2	0	0	0	0	0	6	0	2	0	0	0
	BIKE (OTHER)		2	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		6	East Side		7	South Side		0	West Side		0
16:30	CARS	144	146	4	2	0	10	92	14	45	6	18	0
	DUALS	4	18	0	0	0	4	4	0	4	0	0	0
	BUSES	10	0	0	0	0	0	5	0	0	0	0	0
	BIKE (OTHER)		4	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		5	South Side		2	West Side		4
16:45	CARS	152	150	12	0	4	16	95	10	50	3	15	1
	DUALS	10	14	0	0	0	0	4	0	2	0	1	0
	BUSES	6	0	0	0	0	0	5	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		5	South Side		0	West Side		6
17:00	CARS	140	162	10	2	2	10	89	7	45	2	10	0
	DUALS	12	14	0	0	0	4	2	0	4	0	0	0
	BUSES	8	2	0	0	0	0	5	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		0	East Side		0	South Side		4	West Side		4

Intersection Detailed 15 Minutes Movement Report

ST DENNIS DR AT WYNFORD DR & EGLINTON E/B ON RAMP S TCS (PX 1462)

Survey Date: Aug-16-2016 (Tuesday)

Survey Type: Routine Hours

Time Period		NORTH BOUND			EAST BOUND			SOUTH BOUND			WEST BOUND		
		Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left
17:15	CARS	78	83	3	0	2	5	90	9	47	4	13	1
	DUALS	7	6	0	0	0	1	4	0	2	0	0	0
	BUSES	3	1	0	0	0	0	6	0	0	0	1	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		3	South Side		3	West Side		3
17:30	CARS	73	76	2	1	0	4	86	11	40	3	13	0
	DUALS	5	5	0	0	1	0	3	0	2	0	0	0
	BUSES	4	0	0	0	0	0	4	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		2	East Side		2	South Side		0	West Side		5
17:45	CARS	68	71	4	0	2	4	78	6	36	0	0	0
	DUALS	6	6	0	0	0	0	2	0	2	0	0	0
	BUSES	3	0	0	0	0	0	5	0	0	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		5	East Side		4	South Side		0	West Side		3
18:00	CARS	67	63	5	2	0	5	75	4	30	2	12	1
	DUALS	5	6	1	0	0	1	3	0	2	0	0	0
	BUSES	3	1	0	0	0	0	5	0	1	0	0	0
	BIKE (OTHER)		0	(0)		0	(0)		0	(0)	0	(0)	
	PEDS	North Side		3	East Side		3	South Side		4	West Side		3

CITY OF TORONTO - TRANSPORTATION SERVICES
TRAFFIC MANAGEMENT CENTRE - URBAN TRAFFIC CONTROL SYSTEMS
703 Don Mills Rd, Toronto ON M3C 3N3
Phone: (416) 397 5770, Fax (416) 397 5777

CURRENT SIGNAL TIMING INFORMATION

Intersection:	<u>Wynford Dr & DVP SB Off-ramp</u>		PX: <u>1037</u>
Preparation Date:	<u>30-Aug-12</u>	Our Ref: <u>12132</u>	Staff: <u>MK/JS</u>
System:	<u>MTSS</u>	MOC: <u>SA2 - VMG</u>	Controller Type: <u>SP40</u>
Implementation Date:	<u>July 7, 1994</u>		
Issued to:	<u>Lea Consulting Ltd (Anatole V.Kung)</u>		

PLAN	AM PK	OFF PK	PM PK
TIME PERIOD	06:30-09:30 Mon-Fri	All Other Times	15:45-18:30 Mon - Fri
E-W PHASE			
EWSA/EWWK	33 (18)	23 (13)	23 (13)
EWSA/EWFD	10	10	10
EWY/EWDW	4	4	4
ALLR	3	3	3
N-S PHASE			
SBG/NSDW or SBG/NSWK	8	8	8
SBG/NSDW or SBG/NSFD	6 (21)	6 (16)	6 (16)
SBY/NSDW	3	3	3
ALLR	3	3	3
CYCLE LENGTH			
	70	60	60
OFFSETS			
	57	33	33

COMMENTS:

SB phase callable by vehicle and/or pedestrian actuation. If a vehicle call is received, the min SBG is 14 secs in all time periods. If ongoing vehicle demand exists on the stop bar loop, the SBG can serve up to a maximum of 29/24/24 secs during AM/OFF/PM peak periods. If a pedestrian call is received, the maximum extension is served. Extension is based on vehicle /pedestrian demand and is taken from EWG. The NSWK and NSFD are only displayed on the pedestrian signal heads if a pedestrian call is received.

Uncoordinated operation from 22:00 to 06:00 everyday.

LOCATION:	Wynford Dr & Eglinton Ave WB Off-Ramp	DISTRICT:	North York
MODE/COMMENT:	SA2-VMG with WRM and 2-Wire Polara APS	COMPUTER SYSTEM:	TransSuite
TCS:	1463	CONTROLLER/CABINET TYPE:	PEEK ATC-1000 / TS2 T1
PREPARED/CHECKED BY:	SQ/HL	CONFLICT FLASH:	Red & Red
PREPARATION DATE:	November 29, 2016	DESIGN WALK SPEED:	1.0 m/s (FDW based on full crossing at 1.2m/s)
IMPLEMENTATION DATE:	January 10, 2017	CHANNEL/DROP:	5008/6
		CONTROLLER FIRMWARE:	3.018.1.2976

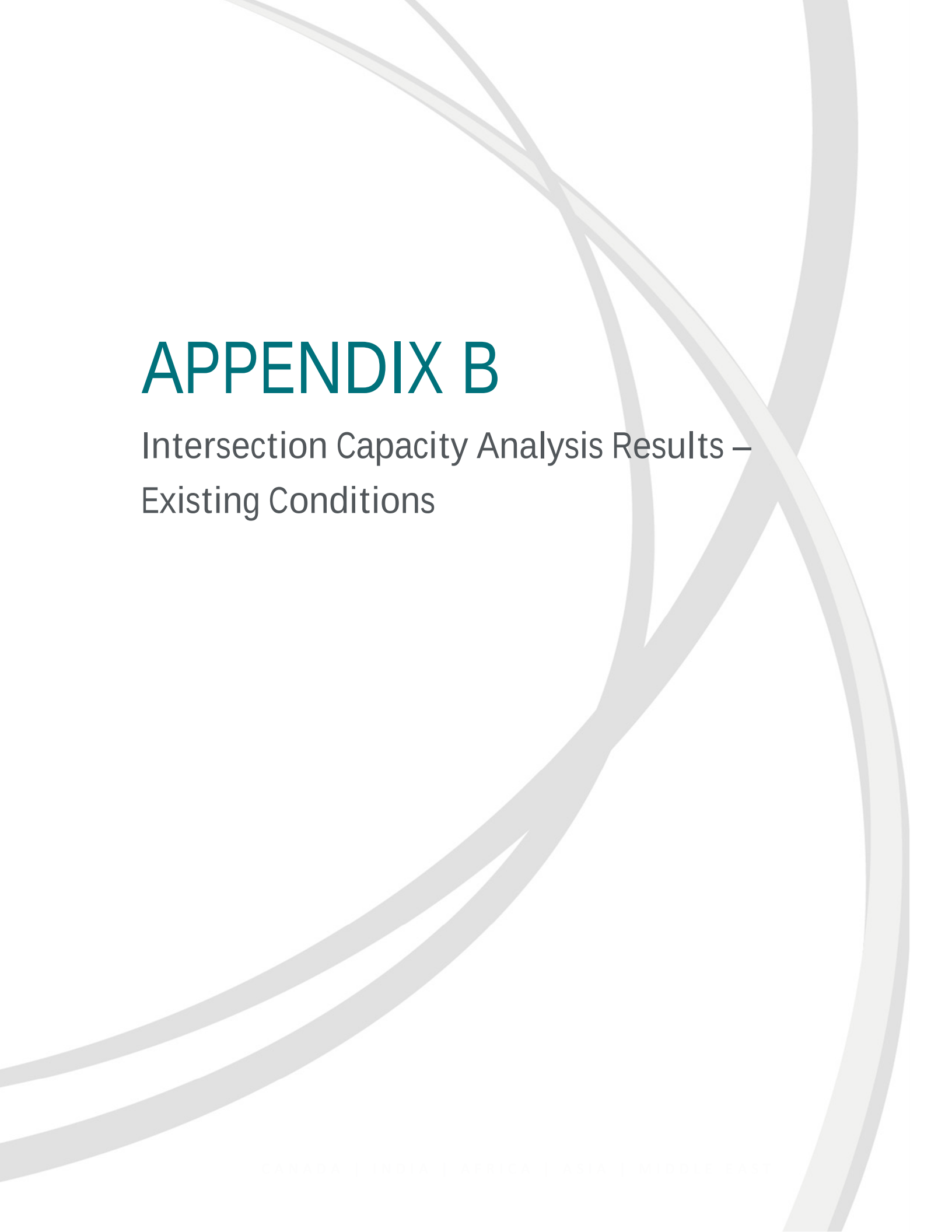


NEMA Phase		OFF	AM	PM	NIGHT	Phase Mode (Fixed/Demanded or Callable)	Remarks
		All Other Times Pattern 1	7:00-9:30 M-F Pattern 2	15:45-18:00 Pattern 3	21:00-07:00 Daily Pattern 4		
	Local Plan	Split 1	Split 2	Split 3	Split 4		
1	 WLK FDW MIN 6 MAX 1 7 AMB 3 ALR 1 SPLIT	11	11	19	7	Callable/Extendable by 9.0m setback loop 24 hours daily.	Pedestrian Minimums: NSWK = 7 sec, NSFD = 20 sec EWWK = 7 sec, EWFD = 20 sec EW phase is callable by vehicle or pedestrian actuation. If a vehicle call is received, the minimum EWG is 7 seconds. If ongoing vehicle demand exists on the stopbar loop, the EWG is capable of providing vehicle extensions up to the maximum. If a pedestrian call is received, the pedestrian minimums will be served. The EWWK & EWFD are only displayed on the pedestrian signal heads if a pedestrian call is received. Extension time is based on vehicle demand. Unused extension time is given to the NSG.
2	Wynford Dr WLK 7 FDW 20 MIN 27 MAX 1 29 AMB 4 ALR 3 SPLIT	35	35	37	29	Fixed	NSFD reverts to NSWK if there is no side street vehicle demand at the end of the NSFD.
3	 WLK FDW MIN MAX 1 AMB ALR SPLIT						Side Street Passage Time = 3 sec Left Turn Passage Time = 2 sec During coordinated operation, signal serves NSFD every cycle. Side street decision point at the end of NSFD. During free plan, signal rests in NSWK and does not cycle through NSFD unless there is a side street and/or APS call.
4	Private Access WLK 7 FDW 20 MIN 7 MAX 1 27 AMB 3 ALR 3 SPLIT	34	34	34	27	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	NGT free plan operates through Pattern 4 with the following timings: The signal will serve 7 sec NSWK following WRM. MAX1 value is the green time for phases 1,2,4,6 & 8. Actuated APS on during 7 secs of NS & EW WALK periods only, when no LT arrows are displayed. Extended Push Activation = 3 secs
5	 WLK FDW MIN MAX 1 AMB ALR SPLIT						
6	Wynford Dr WLK 7 FDW 20 MIN 27 MAX 1 40 AMB 4 ALR 3 SPLIT	46	46	56	40	Fixed	
7	 WLK FDW MIN MAX 1 AMB ALR SPLIT						
8	Eglinton Ave E (WB Off-Ramp) WLK 7 FDW 20 MIN 7 MAX 1 27 AMB 3 ALR 3 SPLIT	34	34	34	27	Callable by stopbar loop and/or pushbutton; Extendable by stopbar loop.	
	CL OF	80 1	80 1	90 1	0 FREE		

NOTES:

LOCATION:		Wynford Dr & Concorde Pl/Wynford Heights Cr					DISTRICT:		North York		N ↑
TCS:		1455					COMPUTER SYSTEM:		TransSuite		
MODE/COMMENT:		SAP with WRM, EBLA (Transit Only)*					CONTROLLER/CABINET TYPE:		Econolite ASC/3-1000 / TS2 T1		
PREPARED BY / DATE:		Masoud Ramezani / February 12, 2019					CONFLICT FLASH:		Red & Red		
CHECKED BY / DATE:							DESIGN WALK SPEED:		1.0 m/s (FDW based on full crossing @ 1.2m/s)		
IMPLEMENTATION DATE:		February 28, 2019					CHANNEL/DROP:		4093/05		
							CONTROLLER FIRMWARE:		2.47.1		
NEMA Phase		TP1	TP2	TP3	OFF	AM	PM	Phase Mode (Fixed/Demanded/ Callable)	Remarks		
		Patrn 1	Patrn 2	Patrn 3	All Other Times	06:30-09:30 M-F	15:30-18:00 M-F				
	System Plan Local Plan				1 Pattern 1	2 Pattern 2	3 Pattern 3				
1		WLK FDW MIN MAX1 AMB (NSDW) ALR SPLIT	7 8 15 15 2 0	7 8 15 15 2 0	7 8 15 15 2 0			NSWK (on West leg, South of median) callable by ped pushbutton. Served concurrently with NBG/NBLA/NSWK E/S	Pedestrian Minimums: North leg - crossing dist. = 24.6 m South leg - crossing dist. = 23.8 m EWWK = 7 sec., EWFD = 21 sec. East Leg - crossing dist. = 11.2 m NSWK = 7 sec., NSFD = 9 sec. West Leg, North of median - crossing dist. = 15.5 m		
2		WLK WLK MAX FDW MIN MAX1 NBV/EBRY ALR SPLIT	7 8 9 16 17 4 2	7 13 9 16 22 4 2	7 13 9 16 22 4 2			Fixed. NBG/NBLA NSWK (East leg only). Veh Overlap A Ped Overlap 2	NSWK = 7 sec., NSFD = 13 sec. West Leg, South of median - crossing dist. = 9.5 m NSWK = 7 sec., NSFD = 8 sec. EW and SB phase are callable by vehicle or pedestrian actuation. If a vehicle and/or pedestrian call is received, the maximum EWG and/or SBG are served. The WK & FDW are displayed on the pedestrian signal heads if a vehicle and/or pedestrian call is received.		
3		WLK FDW MIN MAX1 AMB ALR SPLIT							During Free plans, signal rests in NBG/NBLA/EBRA/NSWK (on East leg) and does not cycle through NSFD unless there is demand on phase(s) 4/8, 6, or 7.		
4		WLK FDW MIN MAX1 AMB ALR SPLIT	7 21 28 28 4 2	7 21 28 28 4 2	7 21 28 28 4 2			EBG/EWWK S/S Callable by stopbar loop and/or pushbutton.	NSFD reverts to NSWK if there is no side street vehicle demand at the end of the NSFD. Off, AM and PM plans operate through Patterns 1, 2 & 3 respectively with the following timings:		
5		WLK FDW MIN MAX1 AMB ALR SPLIT	16 17 4 2	16 22 4 2	16 22 4 2			Fixed EBRA Served concurrently with NBG/NBLA/NSWK E/S when Phase 2 is timing Overlap B	• Walk Max value on Phase 2 is the NSWK time • The signal will serve a minimum 7 sec NSWK following WRM to improve response to side street demand. • Max1 value is the green time for each phase • TP1 used for Backup Free		
6		WLK FDW MIN MAX1 AMB ALR SPLIT	7 13 20 20 4 2	7 13 20 20 4 2	7 13 20 20 4 2			SBG/SBLA/NSWK W/S callable by Wavetrax and/or pedestrian pushbutton (on West leg, North of median).	Ring Sequence: *1 2/5 4/7 4/8 6 		
7		WLK FDW MIN MAX AMB ALR SPLIT	6 16 3 1	6 16 3 1	6 16 3 1			EBLA Callable by Transit loop 24/7. Extendable by transit loop.	*1 - Unused time from Phase 1 is allocated to Phase 2 Phases 1PED, 4/8, 6 & 7 are callable and skippable, but not swappable.		
8		WLK FDW MIN MAX1 AMB ALR SPLIT	7 21 28 28 4 2	7 21 28 28 4 2	7 21 28 28 4 2			WBG / EWWK N/S Callable by Wavetrax and/or pushbutton.			
	CL OF VP				120 0 (Free) 0	125 0 (Free) 0	125 0 (Free) 0				

NOTES:



APPENDIX B

Intersection Capacity Analysis Results – Existing Conditions

Queues

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	179	266	102	151	252	535	12	90	90
v/c Ratio	0.36	0.29	0.57	0.50	0.34	0.48	0.02	0.32	0.38
Control Delay	26.4	28.4	54.7	45.7	15.5	30.8	11.6	41.9	44.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	28.4	54.7	45.7	15.5	30.8	11.6	41.9	44.4
Queue Length 50th (m)	28.2	22.5	20.8	29.4	26.2	47.0	1.0	16.8	17.0
Queue Length 95th (m)	39.8	38.5	36.2	46.3	51.5	72.4	4.2	31.6	32.4
Internal Link Dist (m)	152.3			102.0		57.8		144.2	
Turn Bay Length (m)					75.0		25.0		
Base Capacity (vph)	572	905	226	381	737	1112	537	298	246
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	0.29	0.45	0.40	0.34	0.48	0.02	0.30	0.37

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	59	245	94	123	16	422	291	11	11	83	83
Future Volume (vph)	106	59	245	94	123	16	422	291	11	11	83	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		1.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	0.88	1.00	1.00		0.91	0.91		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		0.96	1.00	0.99	1.00		0.98	1.00		0.99	1.00	1.00
Frt		1.00	0.85	1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)		1571	2627	1598	1806		1503	3222		1670	1491	1231
Flt Permitted		0.78	1.00	0.64	1.00		0.70	0.98		0.34	1.00	1.00
Satd. Flow (perm)		1263	2627	1084	1806		1105	3222		593	1491	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	115	64	266	102	134	17	459	316	12	12	90	90
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	179	266	102	147	0	252	534	0	12	90	90
Confl. Peds. (#/hr)	50		8	8		50	20		36	36		20
Heavy Vehicles (%)	16%	3%	1%	4%	1%	0%	0%	6%	0%	0%	26%	17%
Turn Type	pm+pt	NA	Over	Perm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases	4	4 7	2		7		2	2		8	8	
Permitted Phases	4 7			7			8			2		8
Actuated Green, G (s)		33.0	37.0	17.2	17.2		57.0	37.0		57.0	20.0	20.0
Effective Green, g (s)		35.0	38.0	18.2	18.2		59.0	38.0		59.0	21.0	21.0
Actuated g/C Ratio		0.32	0.35	0.17	0.17		0.54	0.35		0.54	0.19	0.19
Clearance Time (s)			6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)			3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		448	907	179	298		730	1113		523	284	235
v/s Ratio Prot		c0.06	0.10		0.08		0.12	c0.17		0.00	0.06	
v/s Ratio Perm		0.07		c0.09			0.07			0.01		c0.07
v/c Ratio		0.40	0.29	0.57	0.49		0.35	0.48		0.02	0.32	0.38
Uniform Delay, d1		29.3	26.2	42.3	41.7		15.3	28.2		12.3	38.3	38.8
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.6	0.8	4.1	1.3		0.3	1.5		0.0	0.6	1.0
Delay (s)		29.9	27.0	46.4	43.0		15.6	29.7		12.3	39.0	39.9
Level of Service		C	C	D	D		B	C		B	D	D
Approach Delay (s)		28.2			44.4			25.2			37.7	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			30.3				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			65.0%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Wynford Drive & Wynford Heights Crescent

08/31/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	45	679	56	8	414
Future Volume (Veh/h)	3	45	679	56	8	414
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	3	46	693	57	8	422
Pedestrians	60		60			60
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		5			5
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			183			82
pX, platoon unblocked	0.96	0.96			0.96	
vC, conflicting volume	1068	495			810	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	983	385			713	
tC, single (s)	6.8	7.0			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.5	
p0 queue free %	99	91			99	
cM capacity (veh/h)	215	531			684	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	49	462	288	149	281	
Volume Left	3	0	0	8	0	
Volume Right	46	0	57	0	0	
cSH	487	1700	1700	684	1700	
Volume to Capacity	0.10	0.27	0.17	0.01	0.17	
Queue Length 95th (m)	2.5	0.0	0.0	0.3	0.0	
Control Delay (s)	13.2	0.0	0.0	0.7	0.0	
Lane LOS	B			A		
Approach Delay (s)	13.2	0.0		0.2		
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			40.1%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Wynford Drive & Hotel Driveway

08/31/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	16	6	725	408	9
Future Volume (Veh/h)	10	16	6	725	408	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	17	6	763	429	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				91	174	
pX, platoon unblocked	0.93					
vC, conflicting volume	827	219	438			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	660	219	438			
tC, single (s)	7.2	7.0	4.8			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.5			
p0 queue free %	97	98	99			
cM capacity (veh/h)	330	773	926			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	28	6	382	382	286	152
Volume Left	11	6	0	0	0	0
Volume Right	17	0	0	0	0	9
cSH	506	926	1700	1700	1700	1700
Volume to Capacity	0.06	0.01	0.22	0.22	0.17	0.09
Queue Length 95th (m)	1.3	0.1	0.0	0.0	0.0	0.0
Control Delay (s)	12.5	8.9	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	12.5	0.1			0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			30.0%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	32	302	9	338	9	463	97	364
v/c Ratio	0.07	0.06	0.78	0.02	0.50	0.02	0.31	0.18	0.19
Control Delay	18.0	12.1	39.8	16.8	5.1	16.5	16.3	9.2	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	12.1	39.8	16.8	5.1	16.5	16.3	9.2	9.8
Queue Length 50th (m)	3.0	1.9	40.3	0.9	0.0	0.8	24.0	6.1	13.6
Queue Length 95th (m)	8.0	7.1	65.2	3.7	15.8	3.8	38.2	13.6	22.6
Internal Link Dist (m)		160.8		113.7			171.4		66.7
Turn Bay Length (m)	15.0					30.0		35.0	
Base Capacity (vph)	477	597	460	681	739	419	1490	549	1890
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05	0.66	0.01	0.46	0.02	0.31	0.18	0.19

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	17	13	278	8	311	8	393	33	89	320	15
Future Volume (vph)	27	17	13	278	8	311	8	393	33	89	320	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1665	1626		1638	1879	1445	1646	3279		1681	3376	
Flt Permitted	0.75	1.00		0.74	1.00	1.00	0.53	1.00		0.44	1.00	
Satd. Flow (perm)	1318	1626		1270	1879	1445	926	3279		770	3376	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	18	14	302	9	338	9	427	36	97	348	16
RTOR Reduction (vph)	0	10	0	0	0	235	0	7	0	0	4	0
Lane Group Flow (vph)	29	22	0	302	9	103	9	456	0	97	360	0
Confl. Peds. (#/hr)	8		21	21		8	26		8	8		26
Heavy Vehicles (%)	0%	0%	15%	1%	0%	1%	0%	4%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	17	17	0	0	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.3	23.3		23.3	23.3	23.3	34.4	34.4		43.7	43.7	
Effective Green, g (s)	24.3	24.3		24.3	24.3	24.3	35.4	35.4		44.7	44.7	
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.44	0.44		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	7.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	400	493		385	570	438	409	1450		501	1886	
v/s Ratio Prot		0.01			0.00			c0.14		0.02	c0.11	
v/s Ratio Perm	0.02			c0.24		0.07	0.01			0.09		
v/c Ratio	0.07	0.05		0.78	0.02	0.23	0.02	0.31		0.19	0.19	
Uniform Delay, d1	19.8	19.7		25.5	19.5	20.9	12.6	14.4		8.4	8.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		10.1	0.0	0.3	0.1	0.6		0.1	0.2	
Delay (s)	19.9	19.7		35.5	19.5	21.2	12.7	15.0		8.4	8.9	
Level of Service	B	B		D	B	C	B	B		A	A	
Approach Delay (s)		19.8			27.8			15.0			8.8	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			18.5									
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			80.0									
Intersection Capacity Utilization			64.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

											
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	3	7	19	222	12	210	300	118	525	21
v/c Ratio	0.21	0.01	0.02	0.08	0.54	0.03	0.11	0.32	0.48	0.42	0.02
Control Delay	24.2	20.0	0.2	21.1	9.2	9.5	8.6	2.6	30.2	5.9	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	20.0	0.2	21.1	9.2	9.5	8.6	2.6	30.2	5.9	0.8
Queue Length 50th (m)	3.7	0.3	0.0	1.7	0.0	0.6	5.6	0.0	11.2	18.5	0.0
Queue Length 95th (m)	10.7	2.1	0.0	6.3	14.9	3.1	11.7	11.2	25.7	40.6	1.0
Internal Link Dist (m)		64.1		85.7			239.0			171.4	
Turn Bay Length (m)											
Base Capacity (vph)	642	895	788	714	853	437	1834	944	252	1260	1058
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.00	0.01	0.03	0.26	0.03	0.11	0.32	0.47	0.42	0.02
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

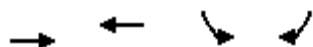
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	3	6	13	5	204	11	193	276	109	483	19
Future Volume (vph)	37	3	6	13	5	204	11	193	276	109	483	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	3.0	5.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	1883	1601		1817	1601	1789	3579	1601	1789	1883	1601
Flt Permitted	0.75	1.00	1.00		0.80	1.00	0.47	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1403	1883	1601		1502	1601	884	3579	1601	1789	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	3	7	14	5	222	12	210	300	118	525	21
RTOR Reduction (vph)	0	0	6	0	0	192	0	0	154	0	0	7
Lane Group Flow (vph)	40	3	1	0	19	30	12	210	146	118	525	14
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8			2		1		6
Permitted Phases	4		4	8		8	2		2			6
Actuated Green, G (s)	7.9	7.9	7.9		7.9	7.9	28.1	28.1	28.1	5.6	37.7	37.7
Effective Green, g (s)	7.9	8.9	7.9		8.9	7.9	28.1	29.1	28.1	6.6	38.7	37.7
Actuated g/C Ratio	0.14	0.15	0.14		0.15	0.14	0.49	0.51	0.49	0.11	0.67	0.65
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	192	290	219		232	219	431	1808	781	204	1265	1047
v/s Ratio Prot		0.00						0.06		c0.07	c0.28	
v/s Ratio Perm	c0.03		0.00		0.01	0.02	0.01		0.09			0.01
v/c Ratio	0.21	0.01	0.00		0.08	0.14	0.03	0.12	0.19	0.58	0.42	0.01
Uniform Delay, d1	22.1	20.6	21.5		20.9	21.9	7.7	7.5	8.3	24.2	4.3	3.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0		0.2	0.3	0.1	0.1	0.5	3.9	0.2	0.0
Delay (s)	22.6	20.6	21.5		21.0	22.2	7.8	7.6	8.8	28.1	4.5	3.5
Level of Service	C	C	C		C	C	A	A	A	C	A	A
Approach Delay (s)		22.3			22.1			8.3			8.7	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.2									
HCM 2000 Level of Service										B		
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			57.6									
Sum of lost time (s)										13.0		
Intersection Capacity Utilization			65.0%									
ICU Level of Service										C		
Analysis Period (min)			15									
c Critical Lane Group												

Queues

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020

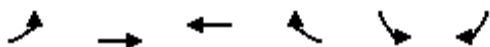


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	493	343	408	471
v/c Ratio	0.24	0.24	0.29	0.55
Control Delay	8.4	8.5	8.9	5.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	8.5	8.9	5.4
Queue Length 50th (m)	7.6	7.6	9.0	4.6
Queue Length 95th (m)	12.3	13.5	15.7	18.3
Internal Link Dist (m)	54.1	67.8	202.4	
Turn Bay Length (m)				
Base Capacity (vph)	2056	1431	1388	855
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	0.24	0.24	0.29	0.55
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	454	316	0	375	433
Future Volume (vph)	0	454	316	0	375	433
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5142	3579		3471	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5142	3579		3471	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	493	343	0	408	471
RTOR Reduction (vph)	0	0	0	0	0	215
Lane Group Flow (vph)	0	493	343	0	408	256
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		16.0	16.0		16.0	16.0
Effective Green, g (s)		16.0	16.0		16.0	16.0
Actuated g/C Ratio		0.40	0.40		0.40	0.40
Clearance Time (s)		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)		2056	1431		1388	640
v/s Ratio Prot		c0.10	0.10		0.12	
v/s Ratio Perm						c0.16
v/c Ratio		0.24	0.24		0.29	0.40
Uniform Delay, d1		8.0	8.0		8.2	8.6
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.4		0.5	1.9
Delay (s)		8.2	8.4		8.7	10.4
Level of Service		A	A		A	B
Approach Delay (s)		8.2	8.4		9.6	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			9.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.32			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			48.6%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection Sign configuration not allowed in HCM analysis.

Queues

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	260	502	57	83	173	352	16	225	243
v/c Ratio	0.49	0.67	0.38	0.30	0.28	0.39	0.02	0.59	0.77
Control Delay	29.9	40.6	49.4	37.7	15.0	33.1	10.7	43.6	56.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.9	40.6	49.4	37.7	15.0	33.1	10.7	43.6	56.4
Queue Length 50th (m)	41.6	55.0	11.2	13.6	18.1	33.4	1.4	42.0	47.9
Queue Length 95th (m)	61.2	75.4	23.2	27.1	32.5	47.4	4.6	69.8	#92.8
Internal Link Dist (m)	152.3			102.0		57.8		144.2	
Turn Bay Length (m)					75.0		25.0		
Base Capacity (vph)	613	746	210	375	625	914	650	380	314
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.67	0.27	0.22	0.28	0.39	0.02	0.59	0.77

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	116	462	52	58	18	319	147	17	15	207	224
Future Volume (vph)	123	116	462	52	58	18	319	147	17	15	207	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		1.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	0.88	1.00	1.00		0.91	0.91		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		0.96	1.00	0.99	1.00		0.99	1.00		0.98	1.00	1.00
Frt		1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)		1600	2627	1600	1745		1519	3209		1656	1491	1231
Flt Permitted		0.83	1.00	0.60	1.00		0.47	0.98		0.46	1.00	1.00
Satd. Flow (perm)		1366	2627	1008	1745		753	3209		795	1491	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	134	126	502	57	63	20	347	160	18	16	225	243
RTOR Reduction (vph)	0	0	0	0	11	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	260	502	57	72	0	173	348	0	16	225	243
Confl. Peds. (#/hr)	50		8	8		50	20		36	36		20
Heavy Vehicles (%)	16%	3%	1%	4%	1%	0%	0%	6%	0%	0%	26%	17%
Turn Type	pm+pt	NA	Over	Perm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases	4	4 7	2		7		2	2		8	8	
Permitted Phases	4 7			7			8			2		8
Actuated Green, G (s)		32.7	30.2	15.7	15.7		57.3	30.2		57.3	27.1	27.1
Effective Green, g (s)		34.7	31.2	16.7	16.7		59.3	31.2		59.3	28.1	28.1
Actuated g/C Ratio		0.32	0.28	0.15	0.15		0.54	0.28		0.54	0.26	0.26
Clearance Time (s)			6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)			3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		469	745	153	264		623	910		648	380	314
v/s Ratio Prot		c0.09	c0.19		0.04		0.08	0.11		0.01	0.15	
v/s Ratio Perm		0.08		0.06			0.07			0.01		c0.20
v/c Ratio		0.55	0.67	0.37	0.27		0.28	0.38		0.02	0.59	0.77
Uniform Delay, d1		31.2	34.9	41.9	41.3		18.2	31.7		11.9	35.9	38.0
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		1.4	4.8	1.5	0.6		0.2	1.2		0.0	2.5	11.3
Delay (s)		32.7	39.7	43.5	41.8		18.4	32.9		11.9	38.4	49.3
Level of Service		C	D	D	D		B	C		B	D	D
Approach Delay (s)		37.3			42.5			28.1			43.0	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			36.6				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			71.2%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Wynford Drive & Wynford Heights Crescent

08/31/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	37	446	76	10	711
Future Volume (Veh/h)	13	37	446	76	10	711
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	13	38	455	78	10	726
Pedestrians	60		60			60
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		5			5
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			183			82
pX, platoon unblocked						
vC, conflicting volume	997	386			593	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	997	386			593	
tC, single (s)	6.8	7.0			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.5	
p0 queue free %	94	93			99	
cM capacity (veh/h)	220	553			802	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	51	303	230	252	484	
Volume Left	13	0	0	10	0	
Volume Right	38	0	78	0	0	
cSH	399	1700	1700	802	1700	
Volume to Capacity	0.13	0.18	0.14	0.01	0.28	
Queue Length 95th (m)	3.3	0.0	0.0	0.3	0.0	
Control Delay (s)	15.3	0.0	0.0	0.5	0.0	
Lane LOS	C			A		
Approach Delay (s)	15.3	0.0		0.2		
Approach LOS	C					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			45.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Wynford Drive & Hotel Driveway

08/31/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	11	11	509	714	10
Future Volume (Veh/h)	13	11	11	509	714	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	14	12	12	536	752	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				91	174	
pX, platoon unblocked	0.95					
vC, conflicting volume	1050	382	763			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	950	382	763			
tC, single (s)	7.2	7.0	4.8			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.5			
p0 queue free %	93	98	98			
cM capacity (veh/h)	213	605	670			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	26	12	268	268	501	262
Volume Left	14	12	0	0	0	0
Volume Right	12	0	0	0	0	11
cSH	304	670	1700	1700	1700	1700
Volume to Capacity	0.09	0.02	0.16	0.16	0.29	0.15
Queue Length 95th (m)	2.1	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	18.0	10.5	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	18.0	0.2			0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			30.1%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	31	340	13	210	18	426	332	457
v/c Ratio	0.05	0.06	0.84	0.02	0.35	0.05	0.33	0.60	0.25
Control Delay	17.4	9.6	43.7	16.8	4.5	17.4	16.5	15.4	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	9.6	43.7	16.8	4.5	17.4	16.5	15.4	10.6
Queue Length 50th (m)	2.2	0.9	45.3	1.3	0.0	1.8	21.3	26.0	18.8
Queue Length 95th (m)	6.7	6.1	#83.1	4.7	12.8	6.0	32.6	43.9	28.4
Internal Link Dist (m)		160.8		113.7			171.4		66.7
Turn Bay Length (m)	15.0					30.0		35.0	
Base Capacity (vph)	475	552	460	681	657	332	1288	557	1832
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.06	0.74	0.02	0.32	0.05	0.33	0.60	0.25

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	8	20	313	12	193	17	307	85	305	400	20
Future Volume (vph)	20	8	20	313	12	193	17	307	85	305	400	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1665	1485		1638	1879	1445	1650	3213		1680	3374	
Flt Permitted	0.75	1.00		0.74	1.00	1.00	0.49	1.00		0.45	1.00	
Satd. Flow (perm)	1313	1485		1271	1879	1445	849	3213		789	3374	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	9	22	340	13	210	18	334	92	332	435	22
RTOR Reduction (vph)	0	15	0	0	0	143	0	30	0	0	4	0
Lane Group Flow (vph)	22	16	0	340	13	67	18	396	0	332	453	0
Confl. Peds. (#/hr)	8		21	21		8	26		8	8		26
Heavy Vehicles (%)	0%	0%	15%	1%	0%	1%	0%	4%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	17	17	0	0	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	24.6	24.6		24.6	24.6	24.6	30.4	30.4		42.4	42.4	
Effective Green, g (s)	25.6	25.6		25.6	25.6	25.6	31.4	31.4		43.4	43.4	
Actuated g/C Ratio	0.32	0.32		0.32	0.32	0.32	0.39	0.39		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	7.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	420	475		406	601	462	333	1261		528	1830	
v/s Ratio Prot		0.01			0.01			0.12		c0.07	0.13	
v/s Ratio Perm	0.02			c0.27		0.05	0.02			c0.27		
v/c Ratio	0.05	0.03		0.84	0.02	0.15	0.05	0.31		0.63	0.25	
Uniform Delay, d1	18.8	18.7		25.3	18.6	19.4	15.1	16.8		10.6	9.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		14.0	0.0	0.1	0.3	0.7		1.7	0.3	
Delay (s)	18.9	18.7		39.2	18.6	19.5	15.4	17.5		12.3	10.0	
Level of Service	B	B		D	B	B	B	B		B	A	
Approach Delay (s)		18.8			31.4			17.4			11.0	
Approach LOS		B			C			B			B	

Intersection Summary

HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	75.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues

5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp



Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	61	7	7	16	68	35	315	696	250	497	50
v/c Ratio	0.27	0.02	0.02	0.05	0.21	0.07	0.16	0.59	0.94	0.33	0.04
Control Delay	24.6	20.0	0.2	20.4	4.3	9.9	8.2	3.6	71.4	4.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	20.0	0.2	20.4	4.3	9.9	8.2	3.6	71.4	4.5	1.7
Queue Length 50th (m)	5.8	0.6	0.0	1.4	0.0	1.9	9.1	0.0	26.3	18.3	0.0
Queue Length 95th (m)	14.6	3.4	0.0	5.5	5.1	6.6	16.7	16.0	#67.6	37.4	2.8
Internal Link Dist (m)		64.1		85.7			239.0			171.4	
Turn Bay Length (m)											
Base Capacity (vph)	716	948	829	904	829	477	1952	1173	266	1492	1263
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.01	0.01	0.02	0.08	0.07	0.16	0.59	0.94	0.33	0.04

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

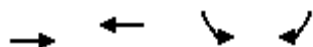
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	6	6	2	13	63	32	290	640	230	457	46
Future Volume (vph)	56	6	6	2	13	63	32	290	640	230	457	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	3.0	5.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	1883	1601		1872	1601	1789	3579	1601	1789	1883	1601
Flt Permitted	0.78	1.00	1.00		0.95	1.00	0.48	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1477	1883	1601		1797	1601	907	3579	1601	1789	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	7	7	2	14	68	35	315	696	250	497	50
RTOR Reduction (vph)	0	0	6	0	0	62	0	0	345	0	0	15
Lane Group Flow (vph)	61	7	1	0	16	6	35	315	351	250	497	35
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8			2		1		6
Permitted Phases	4		4	8		8	2		2			6
Actuated Green, G (s)	5.1	5.1	5.1		5.1	5.1	28.7	28.7	28.7	7.1	39.8	39.8
Effective Green, g (s)	5.1	6.1	5.1		6.1	5.1	28.7	29.7	28.7	8.1	40.8	39.8
Actuated g/C Ratio	0.09	0.11	0.09		0.11	0.09	0.50	0.52	0.50	0.14	0.72	0.70
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	132	201	143		192	143	457	1868	807	254	1350	1119
v/s Ratio Prot		0.00						0.09		c0.14	0.26	
v/s Ratio Perm	c0.04		0.00		0.01	0.00	0.04		c0.22			0.02
v/c Ratio	0.46	0.03	0.00		0.08	0.04	0.08	0.17	0.44	0.98	0.37	0.03
Uniform Delay, d1	24.6	22.8	23.6		22.9	23.7	7.3	7.1	9.0	24.3	3.1	2.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.6	0.1	0.0		0.2	0.1	0.3	0.2	1.7	51.7	0.2	0.0
Delay (s)	27.1	22.8	23.6		23.1	23.8	7.6	7.3	10.7	76.0	3.3	2.6
Level of Service	C	C	C		C	C	A	A	B	E	A	A
Approach Delay (s)		26.4			23.7			9.6			26.0	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay	17.3			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.52											
Actuated Cycle Length (s)	56.9			Sum of lost time (s)			13.0					
Intersection Capacity Utilization	70.7%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

Queues

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020

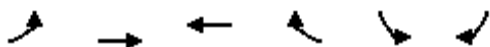


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	949	391	326	237
v/c Ratio	0.46	0.27	0.23	0.30
Control Delay	9.7	8.7	8.5	2.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.7	8.7	8.5	2.8
Queue Length 50th (m)	16.2	8.7	7.0	0.0
Queue Length 95th (m)	23.9	15.3	12.7	8.3
Internal Link Dist (m)	54.1	67.8	202.4	
Turn Bay Length (m)				
Base Capacity (vph)	2056	1431	1388	782
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	0.46	0.27	0.23	0.30
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

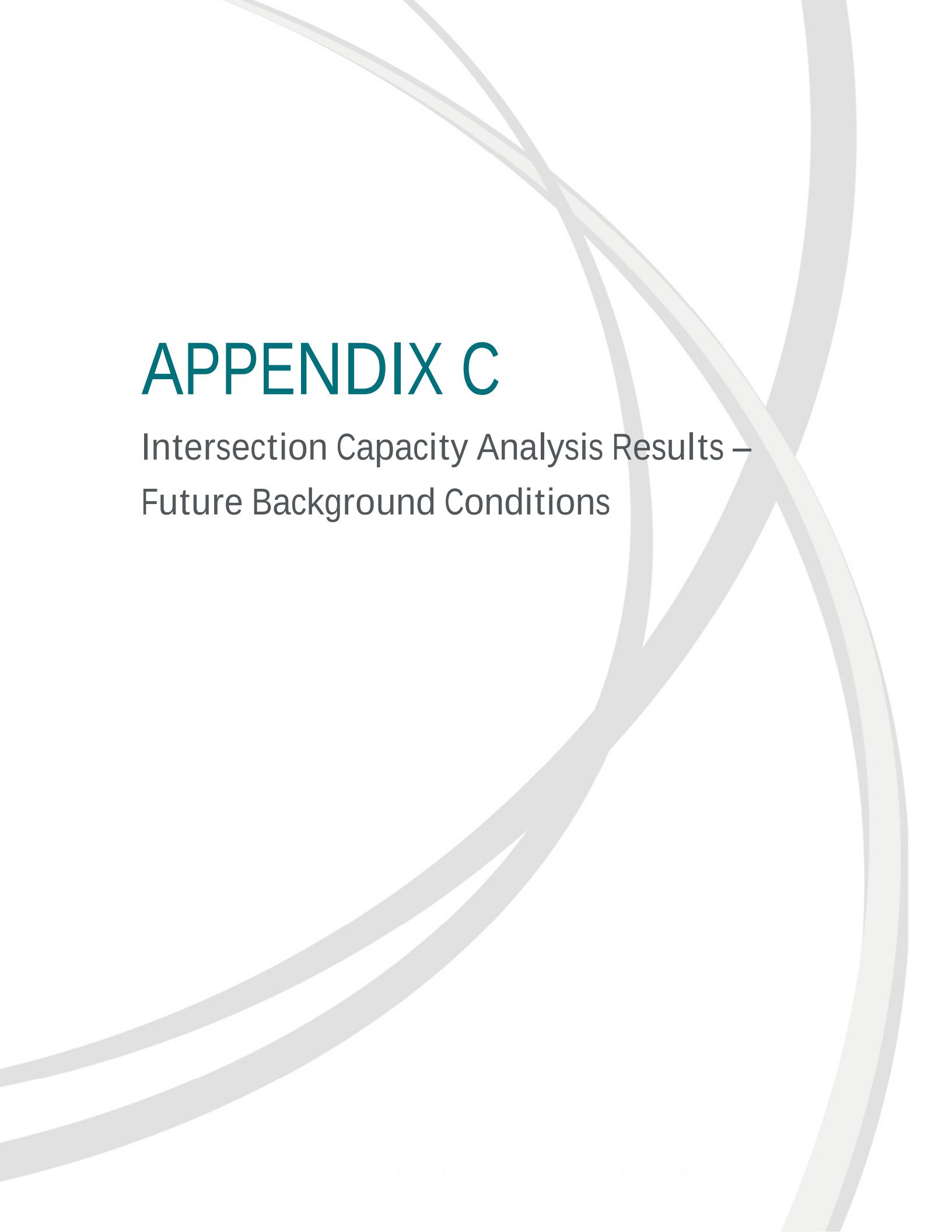
6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	873	360	0	300	218
Future Volume (vph)	0	873	360	0	300	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5142	3579		3471	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5142	3579		3471	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	949	391	0	326	237
RTOR Reduction (vph)	0	0	0	0	0	142
Lane Group Flow (vph)	0	949	391	0	326	95
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		16.0	16.0		16.0	16.0
Effective Green, g (s)		16.0	16.0		16.0	16.0
Actuated g/C Ratio		0.40	0.40		0.40	0.40
Clearance Time (s)		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)		2056	1431		1388	640
v/s Ratio Prot		c0.18	0.11		c0.09	
v/s Ratio Perm						0.06
v/c Ratio		0.46	0.27		0.23	0.15
Uniform Delay, d1		8.8	8.1		7.9	7.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.5		0.4	0.5
Delay (s)		9.6	8.6		8.3	8.1
Level of Service		A	A		A	A
Approach Delay (s)		9.6	8.6		8.3	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			9.0		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.35			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			50.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection Sign configuration not allowed in HCM analysis.



APPENDIX C

Intersection Capacity Analysis Results – Future Background Conditions

Queues

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	204	273	104	154	259	564	12	148	116
v/c Ratio	0.42	0.31	0.59	0.50	0.38	0.52	0.02	0.52	0.49
Control Delay	27.0	29.3	55.7	45.7	17.8	32.2	12.0	47.0	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	29.3	55.7	45.7	17.8	32.2	12.0	47.0	47.4
Queue Length 50th (m)	32.1	23.7	21.2	29.9	28.1	51.2	1.0	28.8	22.5
Queue Length 95th (m)	45.0	40.0	37.1	47.2	53.0	77.6	4.2	48.6	40.1
Internal Link Dist (m)	152.3			102.0		57.8		144.2	
Turn Bay Length (m)					75.0		25.0		
Base Capacity (vph)	553	885	221	381	689	1088	518	298	246
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.31	0.47	0.40	0.38	0.52	0.02	0.50	0.47

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	60	251	96	126	16	433	313	11	11	136	107
Future Volume (vph)	128	60	251	96	126	16	433	313	11	11	136	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		1.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	0.88	1.00	1.00		0.91	0.91		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		0.96	1.00	0.99	1.00		0.99	1.00		0.99	1.00	1.00
Frt		1.00	0.85	1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)		1562	2627	1598	1807		1512	3223		1672	1491	1231
Flt Permitted		0.73	1.00	0.63	1.00		0.57	0.98		0.31	1.00	1.00
Satd. Flow (perm)		1178	2627	1060	1807		908	3223		549	1491	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	65	273	104	137	17	471	340	12	12	148	116
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	204	273	104	150	0	259	563	0	12	148	116
Confl. Peds. (#/hr)	50		8	8		50	20		36	36		20
Heavy Vehicles (%)	16%	3%	1%	4%	1%	0%	0%	6%	0%	0%	26%	17%
Turn Type	pm+pt	NA	Over	Perm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases	4	4 7	2		7		2	2		8	8	
Permitted Phases	4 7			7			8			2		8
Actuated Green, G (s)		33.7	36.1	17.4	17.4		56.3	36.1		56.3	20.2	20.2
Effective Green, g (s)		35.7	37.1	18.4	18.4		58.3	37.1		58.3	21.2	21.2
Actuated g/C Ratio		0.32	0.34	0.17	0.17		0.53	0.34		0.53	0.19	0.19
Clearance Time (s)			6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)			3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		442	886	177	302		684	1087		507	287	237
v/s Ratio Prot		c0.07	0.10		0.08		0.13	c0.17		0.00	c0.10	
v/s Ratio Perm		0.08		c0.10			0.07			0.01		0.09
v/c Ratio		0.46	0.31	0.59	0.50		0.38	0.52		0.02	0.52	0.49
Uniform Delay, d1		29.5	27.0	42.3	41.6		18.0	29.3		12.7	39.8	39.6
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.8	0.9	4.9	1.3		0.4	1.8		0.0	1.6	1.6
Delay (s)		30.3	27.9	47.2	42.9		18.3	31.0		12.7	41.4	41.2
Level of Service		C	C	D	D		B	C		B	D	D
Approach Delay (s)		28.9			44.6			27.0			40.0	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			32.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			80.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Wynford Drive & Wynford Heights Crescent

08/31/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	46	711	57	8	475
Future Volume (Veh/h)	3	46	711	57	8	475
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	3	47	726	58	8	485
Pedestrians	60		60			60
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		5			5
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			183			82
pX, platoon unblocked	0.95	0.95			0.95	
vC, conflicting volume	1134	512			844	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1026	369			720	
tC, single (s)	6.8	7.0			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.5	
p0 queue free %	98	91			99	
cM capacity (veh/h)	199	537			671	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	50	484	300	170	323	
Volume Left	3	0	0	8	0	
Volume Right	47	0	58	0	0	
cSH	487	1700	1700	671	1700	
Volume to Capacity	0.10	0.28	0.18	0.01	0.19	
Queue Length 95th (m)	2.6	0.0	0.0	0.3	0.0	
Control Delay (s)	13.2	0.0	0.0	0.6	0.0	
Lane LOS	B			A		
Approach Delay (s)	13.2	0.0		0.2		
Approach LOS	B					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			41.0%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Wynford Drive & Hotel Driveway

08/31/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	10	16	6	758	469	9
Future Volume (Veh/h)	10	16	6	758	469	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	11	17	6	798	494	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				91	174	
pX, platoon unblocked	0.92					
vC, conflicting volume	910	252	503			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	724	252	503			
tC, single (s)	7.2	7.0	4.8			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.5			
p0 queue free %	96	98	99			
cM capacity (veh/h)	296	736	869			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	28	6	399	399	329	174
Volume Left	11	6	0	0	0	0
Volume Right	17	0	0	0	0	9
cSH	465	869	1700	1700	1700	1700
Volume to Capacity	0.06	0.01	0.23	0.23	0.19	0.10
Queue Length 95th (m)	1.5	0.2	0.0	0.0	0.0	0.0
Control Delay (s)	13.2	9.2	0.0	0.0	0.0	0.0
Lane LOS	B	A				
Approach Delay (s)	13.2	0.1			0.0	
Approach LOS	B					
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			31.0%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	32	302	9	348	9	489	139	388
v/c Ratio	0.07	0.06	0.78	0.02	0.51	0.02	0.35	0.26	0.21
Control Delay	18.0	12.1	39.8	16.8	5.1	16.6	17.3	9.7	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	12.1	39.8	16.8	5.1	16.6	17.3	9.7	9.9
Queue Length 50th (m)	3.0	1.9	40.3	0.9	0.0	0.8	26.3	8.9	14.6
Queue Length 95th (m)	8.0	7.1	65.2	3.7	16.0	3.8	40.5	18.5	24.1
Internal Link Dist (m)		160.8		113.7			171.4		66.7
Turn Bay Length (m)	15.0					30.0		35.0	
Base Capacity (vph)	477	597	460	681	745	384	1399	531	1891
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05	0.66	0.01	0.47	0.02	0.35	0.26	0.21

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	17	13	278	8	320	8	417	33	128	342	15
Future Volume (vph)	27	17	13	278	8	320	8	417	33	128	342	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.97	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1665	1626		1638	1879	1445	1647	3281		1681	3377	
Flt Permitted	0.75	1.00		0.74	1.00	1.00	0.52	1.00		0.41	1.00	
Satd. Flow (perm)	1318	1626		1270	1879	1445	906	3281		732	3377	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	18	14	302	9	348	9	453	36	139	372	16
RTOR Reduction (vph)	0	10	0	0	0	242	0	6	0	0	4	0
Lane Group Flow (vph)	29	22	0	302	9	106	9	483	0	139	384	0
Confl. Peds. (#/hr)	8		21	21		8	26		8	8		26
Heavy Vehicles (%)	0%	0%	15%	1%	0%	1%	0%	4%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	17	17	0	0	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.3	23.3		23.3	23.3	23.3	32.9	32.9		43.7	43.7	
Effective Green, g (s)	24.3	24.3		24.3	24.3	24.3	33.9	33.9		44.7	44.7	
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.42	0.42		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	7.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	400	493		385	570	438	383	1390		501	1886	
v/s Ratio Prot		0.01			0.00			c0.15		c0.03	0.11	
v/s Ratio Perm	0.02			c0.24		0.07	0.01			0.13		
v/c Ratio	0.07	0.05		0.78	0.02	0.24	0.02	0.35		0.28	0.20	
Uniform Delay, d1	19.8	19.7		25.5	19.5	20.9	13.4	15.6		8.7	8.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		10.1	0.0	0.3	0.1	0.7		0.1	0.2	
Delay (s)	19.9	19.7		35.5	19.5	21.2	13.5	16.3		8.8	9.0	
Level of Service	B	B		D	B	C	B	B		A	A	
Approach Delay (s)		19.8			27.7			16.2			9.0	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			18.5									
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			80.0									
Intersection Capacity Utilization			64.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

											
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	3	7	19	222	12	236	300	118	549	21
v/c Ratio	0.21	0.01	0.02	0.08	0.54	0.03	0.13	0.32	0.48	0.44	0.02
Control Delay	24.2	20.0	0.2	21.1	9.2	9.5	8.7	2.6	30.2	6.0	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.2	20.0	0.2	21.1	9.2	9.5	8.7	2.6	30.2	6.0	0.8
Queue Length 50th (m)	3.7	0.3	0.0	1.7	0.0	0.6	6.4	0.0	11.2	19.8	0.0
Queue Length 95th (m)	10.7	2.1	0.0	6.3	14.9	3.1	13.1	11.2	25.7	43.3	1.0
Internal Link Dist (m)		64.1		85.7			239.0			171.4	
Turn Bay Length (m)											
Base Capacity (vph)	642	895	788	714	853	427	1834	944	252	1260	1058
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.00	0.01	0.03	0.26	0.03	0.13	0.32	0.47	0.44	0.02
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

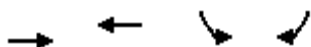
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	3	6	13	5	204	11	217	276	109	505	19
Future Volume (vph)	37	3	6	13	5	204	11	217	276	109	505	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	3.0	5.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	1883	1601		1817	1601	1789	3579	1601	1789	1883	1601
Flt Permitted	0.75	1.00	1.00		0.80	1.00	0.46	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1403	1883	1601		1502	1601	864	3579	1601	1789	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	3	7	14	5	222	12	236	300	118	549	21
RTOR Reduction (vph)	0	0	6	0	0	192	0	0	154	0	0	7
Lane Group Flow (vph)	40	3	1	0	19	30	12	236	146	118	549	14
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm
Protected Phases		4			8			2		1		6
Permitted Phases	4		4	8		8	2		2			6
Actuated Green, G (s)	7.9	7.9	7.9		7.9	7.9	28.1	28.1	28.1	5.6	37.7	37.7
Effective Green, g (s)	7.9	8.9	7.9		8.9	7.9	28.1	29.1	28.1	6.6	38.7	37.7
Actuated g/C Ratio	0.14	0.15	0.14		0.15	0.14	0.49	0.51	0.49	0.11	0.67	0.65
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	192	290	219		232	219	421	1808	781	204	1265	1047
v/s Ratio Prot		0.00						0.07		c0.07	c0.29	
v/s Ratio Perm	c0.03		0.00		0.01	0.02	0.01		0.09			0.01
v/c Ratio	0.21	0.01	0.00		0.08	0.14	0.03	0.13	0.19	0.58	0.43	0.01
Uniform Delay, d1	22.1	20.6	21.5		20.9	21.9	7.7	7.5	8.3	24.2	4.4	3.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0		0.2	0.3	0.1	0.1	0.5	3.9	0.2	0.0
Delay (s)	22.6	20.6	21.5		21.0	22.2	7.8	7.7	8.8	28.1	4.6	3.5
Level of Service	C	C	C		C	C	A	A	A	C	A	A
Approach Delay (s)		22.3			22.1			8.3			8.6	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay	11.1			HCM 2000 Level of Service			B					
HCM 2000 Volume to Capacity ratio	0.43											
Actuated Cycle Length (s)	57.6			Sum of lost time (s)			13.0					
Intersection Capacity Utilization	66.1%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

Queues

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020

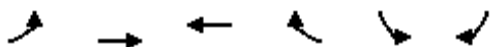


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	511	376	437	483
v/c Ratio	0.25	0.26	0.31	0.58
Control Delay	8.4	8.7	9.0	6.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	8.7	9.0	6.6
Queue Length 50th (m)	7.9	8.4	9.8	6.8
Queue Length 95th (m)	12.7	14.7	16.8	22.4
Internal Link Dist (m)	54.1	67.8	202.4	
Turn Bay Length (m)				
Base Capacity (vph)	2056	1431	1388	833
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	0.25	0.26	0.31	0.58
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	470	346	0	402	444
Future Volume (vph)	0	470	346	0	402	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5142	3579		3471	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5142	3579		3471	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	511	376	0	437	483
RTOR Reduction (vph)	0	0	0	0	0	193
Lane Group Flow (vph)	0	511	376	0	437	290
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		16.0	16.0		16.0	16.0
Effective Green, g (s)		16.0	16.0		16.0	16.0
Actuated g/C Ratio		0.40	0.40		0.40	0.40
Clearance Time (s)		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)		2056	1431		1388	640
v/s Ratio Prot		0.10	c0.11		0.13	
v/s Ratio Perm						c0.18
v/c Ratio		0.25	0.26		0.31	0.45
Uniform Delay, d1		8.0	8.0		8.2	8.8
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.4		0.6	2.3
Delay (s)		8.3	8.5		8.8	11.1
Level of Service		A	A		A	B
Approach Delay (s)		8.3	8.5		10.0	
Approach LOS		A	A		B	
Intersection Summary						
HCM 2000 Control Delay			9.2		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.36			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			66.4%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Intersection Sign configuration not allowed in HCM analysis.

Queues

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	313	515	58	84	181	399	16	275	260
v/c Ratio	0.61	0.72	0.40	0.30	0.31	0.45	0.03	0.71	0.81
Control Delay	32.8	42.8	50.3	37.6	17.1	34.9	10.9	48.8	59.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	42.8	50.3	37.6	17.1	34.9	10.9	48.8	59.3
Queue Length 50th (m)	52.2	56.9	11.5	13.8	19.0	38.7	1.4	53.4	52.2
Queue Length 95th (m)	73.9	77.6	23.6	27.0	34.6	53.7	4.7	#98.2	#103.7
Internal Link Dist (m)	152.3			102.0		57.8		144.2	
Turn Bay Length (m)					75.0		25.0		
Base Capacity (vph)	591	716	200	375	581	878	629	390	322
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.72	0.29	0.22	0.31	0.45	0.03	0.71	0.81

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	119	474	53	59	18	327	190	17	15	253	239
Future Volume (vph)	169	119	474	53	59	18	327	190	17	15	253	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		1.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	0.88	1.00	1.00		0.91	0.91		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		0.95	1.00	0.99	1.00		0.99	1.00		0.99	1.00	1.00
Frt		1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)		1575	2627	1601	1747		1524	3211		1662	1491	1231
Flt Permitted		0.79	1.00	0.57	1.00		0.39	0.98		0.40	1.00	1.00
Satd. Flow (perm)		1286	2627	961	1747		630	3211		708	1491	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	129	515	58	64	20	355	207	18	16	275	260
RTOR Reduction (vph)	0	0	0	0	11	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	313	515	58	73	0	181	396	0	16	275	260
Confl. Peds. (#/hr)	50		8	8		50	20		36	36		20
Heavy Vehicles (%)	16%	3%	1%	4%	1%	0%	0%	6%	0%	0%	26%	17%
Turn Type	pm+pt	NA	Over	Perm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases	4	4 7	2		7		2	2		8	8	
Permitted Phases	4 7			7			8			2		8
Actuated Green, G (s)		33.2	29.0	15.8	15.8		56.8	29.0		56.8	27.8	27.8
Effective Green, g (s)		35.2	30.0	16.8	16.8		58.8	30.0		58.8	28.8	28.8
Actuated g/C Ratio		0.32	0.27	0.15	0.15		0.53	0.27		0.53	0.26	0.26
Clearance Time (s)			6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)			3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		459	716	146	266		580	875		628	390	322
v/s Ratio Prot		c0.11	c0.20		0.04		0.09	0.12		0.01	0.18	
v/s Ratio Perm		0.10		0.06			0.08			0.01		c0.21
v/c Ratio		0.68	0.72	0.40	0.27		0.31	0.45		0.03	0.71	0.81
Uniform Delay, d1		32.5	36.2	42.0	41.2		20.8	33.2		12.2	36.8	38.0
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		4.2	6.1	1.8	0.6		0.3	1.7		0.0	5.7	13.8
Delay (s)		36.7	42.3	43.8	41.8		21.1	34.9		12.2	42.5	51.8
Level of Service		D	D	D	D		C	C		B	D	D
Approach Delay (s)		40.2			42.6			30.6			46.0	
Approach LOS		D			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			39.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			73.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Wynford Drive & Wynford Heights Crescent

08/31/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	13	38	496	78	10	770
Future Volume (Veh/h)	13	38	496	78	10	770
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	13	39	506	80	10	786
Pedestrians	60		60			60
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		5			5
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			183			82
pX, platoon unblocked	0.98	0.98			0.98	
vC, conflicting volume	1079	413			646	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1036	355			594	
tC, single (s)	6.8	7.0			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.5	
p0 queue free %	94	93			99	
cM capacity (veh/h)	203	567			784	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	52	337	249	272	524	
Volume Left	13	0	0	10	0	
Volume Right	39	0	80	0	0	
cSH	391	1700	1700	784	1700	
Volume to Capacity	0.13	0.20	0.15	0.01	0.31	
Queue Length 95th (m)	3.5	0.0	0.0	0.3	0.0	
Control Delay (s)	15.6	0.0	0.0	0.5	0.0	
Lane LOS	C			A		
Approach Delay (s)	15.6	0.0		0.2		
Approach LOS	C					
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			47.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

3: Wynford Drive & Hotel Driveway

08/31/2020

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	13	11	11	561	773	10
Future Volume (Veh/h)	13	11	11	561	773	10
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	14	12	12	591	814	11
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (m)				91	174	
pX, platoon unblocked	0.93					
vC, conflicting volume	1139	412	825			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1004	412	825			
tC, single (s)	7.2	7.0	4.8			
tC, 2 stage (s)						
tF (s)	3.7	3.4	2.5			
p0 queue free %	93	98	98			
cM capacity (veh/h)	191	577	630			
Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	26	12	296	296	543	282
Volume Left	14	12	0	0	0	0
Volume Right	12	0	0	0	0	11
cSH	277	630	1700	1700	1700	1700
Volume to Capacity	0.09	0.02	0.17	0.17	0.32	0.17
Queue Length 95th (m)	2.3	0.4	0.0	0.0	0.0	0.0
Control Delay (s)	19.3	10.8	0.0	0.0	0.0	0.0
Lane LOS	C	B				
Approach Delay (s)	19.3	0.2			0.0	
Approach LOS	C					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			31.7%		ICU Level of Service	A
Analysis Period (min)			15			

Queues

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	31	340	13	217	18	475	352	500
v/c Ratio	0.05	0.06	0.84	0.02	0.36	0.06	0.37	0.66	0.27
Control Delay	17.4	9.6	43.7	16.8	4.5	17.4	17.6	18.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	9.6	43.7	16.8	4.5	17.4	17.6	18.2	10.9
Queue Length 50th (m)	2.2	0.9	45.3	1.3	0.0	1.8	25.1	28.1	21.0
Queue Length 95th (m)	6.7	6.1	#83.1	4.7	13.0	6.0	37.3	#50.5	31.2
Internal Link Dist (m)		160.8		113.7			171.4		66.7
Turn Bay Length (m)	15.0					30.0		35.0	
Base Capacity (vph)	475	552	460	681	662	315	1272	532	1832
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.06	0.74	0.02	0.33	0.06	0.37	0.66	0.27

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	8	20	313	12	200	17	352	85	324	440	20
Future Volume (vph)	20	8	20	313	12	200	17	352	85	324	440	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.97	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1665	1485		1638	1879	1445	1652	3224		1681	3376	
Flt Permitted	0.75	1.00		0.74	1.00	1.00	0.47	1.00		0.41	1.00	
Satd. Flow (perm)	1313	1485		1271	1879	1445	815	3224		727	3376	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	9	22	340	13	217	18	383	92	352	478	22
RTOR Reduction (vph)	0	15	0	0	0	148	0	25	0	0	4	0
Lane Group Flow (vph)	22	16	0	340	13	69	18	450	0	352	496	0
Confl. Peds. (#/hr)	8		21	21		8	26		8	8		26
Heavy Vehicles (%)	0%	0%	15%	1%	0%	1%	0%	4%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	17	17	0	0	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	24.6	24.6		24.6	24.6	24.6	30.0	30.0		42.4	42.4	
Effective Green, g (s)	25.6	25.6		25.6	25.6	25.6	31.0	31.0		43.4	43.4	
Actuated g/C Ratio	0.32	0.32		0.32	0.32	0.32	0.39	0.39		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	7.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	420	475		406	601	462	315	1249		506	1831	
v/s Ratio Prot		0.01			0.01			0.14		c0.08	0.15	
v/s Ratio Perm	0.02			c0.27		0.05	0.02			c0.30		
v/c Ratio	0.05	0.03		0.84	0.02	0.15	0.06	0.36		0.70	0.27	
Uniform Delay, d1	18.8	18.7		25.3	18.6	19.4	15.3	17.4		11.0	9.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		14.0	0.0	0.2	0.3	0.8		3.3	0.4	
Delay (s)	18.9	18.7		39.2	18.6	19.6	15.7	18.2		14.3	10.2	
Level of Service	B	B		D	B	B	B	B		B	B	
Approach Delay (s)		18.8			31.3			18.2			11.9	
Approach LOS		B			C			B			B	

Intersection Summary

HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues

5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

											
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	61	7	7	16	68	35	364	696	250	540	50
v/c Ratio	0.27	0.02	0.02	0.05	0.20	0.08	0.18	0.59	0.30	0.36	0.04
Control Delay	24.5	20.0	0.2	20.4	4.3	10.0	8.2	3.5	3.8	4.7	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.5	20.0	0.2	20.4	4.3	10.0	8.2	3.5	3.8	4.7	1.7
Queue Length 50th (m)	5.8	0.6	0.0	1.4	0.0	1.9	10.6	0.0	6.6	20.5	0.0
Queue Length 95th (m)	14.6	3.4	0.0	5.5	5.1	6.6	19.1	16.0	15.3	41.7	2.8
Internal Link Dist (m)		64.1		85.7			239.0			171.4	
Turn Bay Length (m)											
Base Capacity (vph)	723	957	835	913	835	464	1972	1177	852	1456	1226
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.01	0.01	0.02	0.08	0.08	0.18	0.59	0.29	0.37	0.04
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

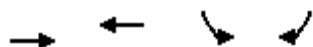
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	6	6	2	13	63	32	335	640	230	497	46
Future Volume (vph)	56	6	6	2	13	63	32	335	640	230	497	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	3.0	5.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	1883	1601		1872	1601	1789	3579	1601	1789	1883	1601
Flt Permitted	0.78	1.00	1.00		0.95	1.00	0.46	1.00	1.00	0.49	1.00	1.00
Satd. Flow (perm)	1477	1883	1601		1797	1601	872	3579	1601	915	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	7	7	2	14	68	35	364	696	250	540	50
RTOR Reduction (vph)	0	0	6	0	0	62	0	0	342	0	0	15
Lane Group Flow (vph)	61	7	1	0	16	6	35	364	354	250	540	35
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	5.1	5.1	5.1		5.1	5.1	28.7	28.7	28.7	39.4	39.4	39.4
Effective Green, g (s)	5.1	6.1	5.1		6.1	5.1	28.7	29.7	28.7	40.4	40.4	39.4
Actuated g/C Ratio	0.09	0.11	0.09		0.11	0.09	0.51	0.53	0.51	0.72	0.72	0.70
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	133	203	144		194	144	442	1881	813	773	1346	1116
v/s Ratio Prot		0.00						0.10		0.04	c0.29	
v/s Ratio Perm	c0.04		0.00		0.01	0.00	0.04		0.22	0.19		0.02
v/c Ratio	0.46	0.03	0.00		0.08	0.04	0.08	0.19	0.43	0.32	0.40	0.03
Uniform Delay, d1	24.4	22.6	23.4		22.7	23.5	7.1	7.1	8.8	2.8	3.2	2.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	2.5	0.1	0.0		0.2	0.1	0.3	0.2	1.7	0.2	0.2	0.0
Delay (s)	26.9	22.6	23.4		22.9	23.6	7.5	7.3	10.5	3.0	3.4	2.7
Level of Service	C	C	C		C	C	A	A	B	A	A	A
Approach Delay (s)		26.2			23.5			9.3			3.3	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay	8.1			HCM 2000 Level of Service			A					
HCM 2000 Volume to Capacity ratio	0.43											
Actuated Cycle Length (s)	56.5			Sum of lost time (s)			13.0					
Intersection Capacity Utilization	70.7%			ICU Level of Service			C					
Analysis Period (min)	15											
c Critical Lane Group												

Queues

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020

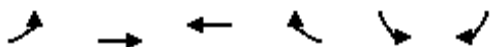


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	988	411	378	243
v/c Ratio	0.48	0.29	0.27	0.31
Control Delay	9.9	8.8	8.8	2.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	9.9	8.8	8.8	2.8
Queue Length 50th (m)	17.0	9.3	8.3	0.0
Queue Length 95th (m)	25.0	16.0	14.5	8.4
Internal Link Dist (m)	54.1	67.8	202.4	
Turn Bay Length (m)				
Base Capacity (vph)	2056	1431	1388	786
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	0.48	0.29	0.27	0.31
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

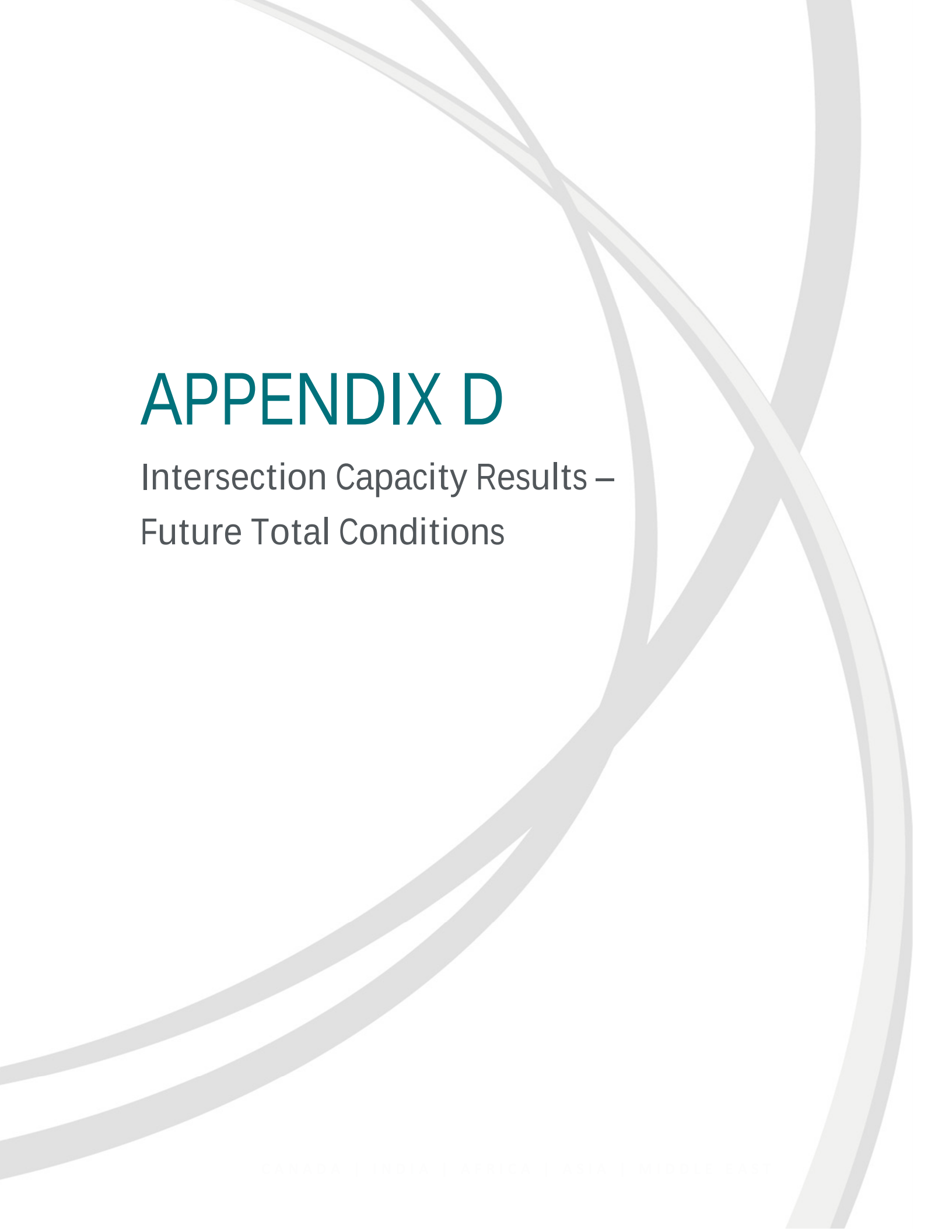
6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	909	378	0	348	224
Future Volume (vph)	0	909	378	0	348	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5142	3579		3471	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5142	3579		3471	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	988	411	0	378	243
RTOR Reduction (vph)	0	0	0	0	0	146
Lane Group Flow (vph)	0	988	411	0	378	97
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		16.0	16.0		16.0	16.0
Effective Green, g (s)		16.0	16.0		16.0	16.0
Actuated g/C Ratio		0.40	0.40		0.40	0.40
Clearance Time (s)		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)		2056	1431		1388	640
v/s Ratio Prot		c0.19	0.11		c0.11	
v/s Ratio Perm						0.06
v/c Ratio		0.48	0.29		0.27	0.15
Uniform Delay, d1		8.9	8.1		8.1	7.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	0.5		0.5	0.5
Delay (s)		9.7	8.6		8.6	8.2
Level of Service		A	A		A	A
Approach Delay (s)		9.7	8.6		8.4	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			9.1		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			52.5%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

Intersection Sign configuration not allowed in HCM analysis.



APPENDIX D

Intersection Capacity Results – Future Total Conditions

Queues

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	204	307	104	154	338	691	12	148	116
v/c Ratio	0.42	0.35	0.59	0.50	0.49	0.64	0.03	0.52	0.49
Control Delay	27.0	29.9	55.7	45.7	21.0	34.9	12.0	47.0	47.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	29.9	55.7	45.7	21.0	34.9	12.0	47.0	47.4
Queue Length 50th (m)	32.1	27.0	21.2	29.9	39.1	66.0	1.0	28.8	22.5
Queue Length 95th (m)	45.0	45.0	37.1	47.2	71.7	98.0	4.2	48.6	40.1
Internal Link Dist (m)	152.3			102.0		57.8		144.2	
Turn Bay Length (m)					75.0		25.0		
Base Capacity (vph)	553	885	221	381	689	1088	472	298	246
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.35	0.47	0.40	0.49	0.64	0.03	0.50	0.47

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	128	60	282	96	126	16	623	313	11	11	136	107
Future Volume (vph)	128	60	282	96	126	16	623	313	11	11	136	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		1.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	0.88	1.00	1.00		0.91	0.91		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	0.99		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		0.96	1.00	0.99	1.00		0.99	1.00		1.00	1.00	1.00
Frt		1.00	0.85	1.00	0.98		1.00	1.00		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)		1562	2627	1598	1807		1512	3229		1678	1491	1231
Flt Permitted		0.73	1.00	0.63	1.00		0.57	0.98		0.23	1.00	1.00
Satd. Flow (perm)		1178	2627	1060	1807		908	3229		406	1491	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	139	65	307	104	137	17	677	340	12	12	148	116
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	204	307	104	150	0	338	690	0	12	148	116
Confl. Peds. (#/hr)	50		8	8		50	20		36	36		20
Heavy Vehicles (%)	16%	3%	1%	4%	1%	0%	0%	6%	0%	0%	26%	17%
Turn Type	pm+pt	NA	Over	Perm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases	4	4 7	2		7		2	2		8	8	
Permitted Phases	4 7			7			8			2		8
Actuated Green, G (s)		33.7	36.1	17.4	17.4		56.3	36.1		56.3	20.2	20.2
Effective Green, g (s)		35.7	37.1	18.4	18.4		58.3	37.1		58.3	21.2	21.2
Actuated g/C Ratio		0.32	0.34	0.17	0.17		0.53	0.34		0.53	0.19	0.19
Clearance Time (s)			6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)			3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		442	886	177	302		684	1089		460	287	237
v/s Ratio Prot		c0.07	0.12		0.08		0.17	c0.21		0.01	c0.10	
v/s Ratio Perm		0.08		c0.10			0.10			0.01		0.09
v/c Ratio		0.46	0.35	0.59	0.50		0.49	0.63		0.03	0.52	0.49
Uniform Delay, d1		29.5	27.4	42.3	41.6		18.5	30.7		13.2	39.8	39.6
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		0.8	1.1	4.9	1.3		0.6	2.8		0.0	1.6	1.6
Delay (s)		30.3	28.4	47.2	42.9		19.1	33.5		13.2	41.4	41.2
Level of Service		C	C	D	D		B	C		B	D	D
Approach Delay (s)		29.2			44.6			28.8			40.1	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			32.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			80.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Wynford Drive & Wynford Heights Crescent

08/31/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	46	901	57	8	506
Future Volume (Veh/h)	3	46	901	57	8	506
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	3	47	919	58	8	516
Pedestrians	60		60			60
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		5			5
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			92			82
pX, platoon unblocked	0.89	0.89			0.89	
vC, conflicting volume	1342	608			1037	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1135	310			792	
tC, single (s)	6.8	7.0			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.5	
p0 queue free %	98	91			99	
cM capacity (veh/h)	159	551			589	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	50	613	364	180	344	
Volume Left	3	0	0	8	0	
Volume Right	47	0	58	0	0	
cSH	480	1700	1700	589	1700	
Volume to Capacity	0.10	0.36	0.21	0.01	0.20	
Queue Length 95th (m)	2.6	0.0	0.0	0.3	0.0	
Control Delay (s)	13.4	0.0	0.0	0.7	0.0	
Lane LOS	B			A		
Approach Delay (s)	13.4	0.0		0.2		
Approach LOS	B					
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			46.2%	ICU Level of Service		A
Analysis Period (min)			15			

Queues

3: Wynford Drive & Hotel Driveway

08/31/2020



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	211	54	21	798	535
v/c Ratio	0.57	0.16	0.06	0.38	0.25
Control Delay	23.4	15.7	7.2	7.4	6.7
Queue Delay	0.0	0.0	0.0	0.4	0.0
Total Delay	23.4	15.7	7.2	7.8	6.7
Queue Length 50th (m)	18.6	4.3	0.8	19.1	11.6
Queue Length 95th (m)	30.5	9.7	4.0	37.4	24.0
Internal Link Dist (m)	62.2			10.1	68.3
Turn Bay Length (m)			20.0		
Base Capacity (vph)	601	584	357	2124	2101
Starvation Cap Reductn	0	0	0	735	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	0.09	0.06	0.57	0.25
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

3: Wynford Drive & Hotel Driveway

08/31/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	200	51	20	758	487	21
Future Volume (vph)	200	51	20	758	487	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.0	5.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1404	1422	1267	3570	3532	
Flt Permitted	0.95	1.00	0.45	1.00	1.00	
Satd. Flow (perm)	1404	1422	600	3570	3532	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	211	54	21	798	513	22
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	211	54	21	798	535	0
Heavy Vehicles (%)	20%	6%	33%	0%	0%	11%
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	13.7	13.7	32.3	32.3	32.3	
Effective Green, g (s)	14.7	13.7	33.3	33.3	33.3	
Actuated g/C Ratio	0.26	0.24	0.59	0.59	0.59	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	368	347	356	2122	2100	
v/s Ratio Prot	c0.15			c0.22	0.15	
v/s Ratio Perm		0.04	0.03			
v/c Ratio	0.57	0.16	0.06	0.38	0.25	
Uniform Delay, d1	17.9	16.6	4.8	5.9	5.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.2	0.2	0.3	0.5	0.3	
Delay (s)	20.1	16.8	5.1	6.4	5.7	
Level of Service	C	B	A	A	A	
Approach Delay (s)	19.4			6.4	5.7	
Approach LOS	B			A	A	

Intersection Summary

HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Queues

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	32	302	9	359	9	494	207	416
v/c Ratio	0.07	0.06	0.78	0.02	0.52	0.02	0.36	0.39	0.22
Control Delay	18.0	12.1	39.8	16.8	5.1	16.8	17.7	10.9	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0
Total Delay	18.0	12.1	39.8	16.8	5.1	16.8	17.7	12.2	10.0
Queue Length 50th (m)	3.0	1.9	40.3	0.9	0.0	0.9	27.7	13.9	16.0
Queue Length 95th (m)	8.0	7.1	65.2	3.7	16.1	3.8	40.9	26.8	25.9
Internal Link Dist (m)		160.8		113.7			171.4		32.7
Turn Bay Length (m)	15.0					30.0		60.0	
Base Capacity (vph)	479	597	460	681	759	367	1375	532	1891
Starvation Cap Reductn	0	0	0	0	0	0	0	166	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.05	0.66	0.01	0.47	0.02	0.36	0.57	0.22

Intersection Summary

HCM Signalized Intersection Capacity Analysis

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	17	13	278	8	330	8	421	33	190	368	15
Future Volume (vph)	27	17	13	278	8	330	8	421	33	190	368	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00	0.98	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1673	1626		1638	1879	1464	1648	3281		1681	3379	
Flt Permitted	0.75	1.00		0.74	1.00	1.00	0.51	1.00		0.41	1.00	
Satd. Flow (perm)	1324	1626		1270	1879	1464	882	3281		723	3379	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	18	14	302	9	359	9	458	36	207	400	16
RTOR Reduction (vph)	0	10	0	0	0	250	0	6	0	0	3	0
Lane Group Flow (vph)	29	22	0	302	9	109	9	488	0	207	413	0
Confl. Peds. (#/hr)	8		21	21		8	26		8	8		26
Heavy Vehicles (%)	0%	0%	15%	1%	0%	1%	0%	4%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	17	17	0	0	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	23.3	23.3		23.3	23.3	23.3	32.4	32.4		43.7	43.7	
Effective Green, g (s)	24.3	24.3		24.3	24.3	24.3	33.4	33.4		44.7	44.7	
Actuated g/C Ratio	0.30	0.30		0.30	0.30	0.30	0.42	0.42		0.56	0.56	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	7.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	402	493		385	570	444	368	1369		503	1888	
v/s Ratio Prot		0.01			0.00			0.15		c0.04	0.12	
v/s Ratio Perm	0.02			c0.24		0.07	0.01			c0.19		
v/c Ratio	0.07	0.05		0.78	0.02	0.25	0.02	0.36		0.41	0.22	
Uniform Delay, d1	19.8	19.7		25.5	19.5	21.0	13.7	15.9		9.1	8.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		10.1	0.0	0.3	0.1	0.7		0.2	0.3	
Delay (s)	19.9	19.7		35.5	19.5	21.2	13.8	16.7		9.3	9.1	
Level of Service	B	B		D	B	C	B	B		A	A	
Approach Delay (s)		19.8			27.6			16.6			9.2	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			18.2									
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			80.0									
Intersection Capacity Utilization			67.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

											
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	40	3	7	19	226	12	236	300	147	549	21
v/c Ratio	0.20	0.01	0.02	0.08	0.54	0.03	0.13	0.32	0.18	0.44	0.02
Control Delay	24.1	20.0	0.2	21.0	9.1	9.5	8.7	2.6	3.6	6.1	0.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.1	20.0	0.2	21.0	9.1	9.5	8.7	2.6	3.6	6.1	0.8
Queue Length 50th (m)	3.7	0.3	0.0	1.7	0.0	0.6	6.4	0.0	3.4	19.8	0.0
Queue Length 95th (m)	10.7	2.1	0.0	6.3	15.1	3.1	13.1	11.2	9.5	43.4	1.0
Internal Link Dist (m)		64.1		85.7			239.0			171.4	
Turn Bay Length (m)									125.0		
Base Capacity (vph)	650	906	797	723	863	425	1827	941	828	1276	1071
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.00	0.01	0.03	0.26	0.03	0.13	0.32	0.18	0.43	0.02
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

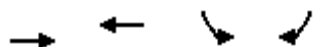
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	3	6	13	5	208	11	217	276	135	505	19
Future Volume (vph)	37	3	6	13	5	208	11	217	276	135	505	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	3.0	5.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.96	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	1883	1601		1817	1601	1789	3579	1601	1789	1883	1601
Flt Permitted	0.75	1.00	1.00		0.80	1.00	0.46	1.00	1.00	0.55	1.00	1.00
Satd. Flow (perm)	1403	1883	1601		1502	1601	864	3579	1601	1031	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	3	7	14	5	226	12	236	300	147	549	21
RTOR Reduction (vph)	0	0	6	0	0	195	0	0	154	0	0	7
Lane Group Flow (vph)	40	3	1	0	19	31	12	236	146	147	549	14
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	7.9	7.9	7.9		7.9	7.9	27.7	27.7	27.7	37.1	37.1	37.1
Effective Green, g (s)	7.9	8.9	7.9		8.9	7.9	27.7	28.7	27.7	38.1	38.1	37.1
Actuated g/C Ratio	0.14	0.16	0.14		0.16	0.14	0.49	0.50	0.49	0.67	0.67	0.65
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	194	294	221		234	221	419	1802	778	774	1258	1042
v/s Ratio Prot		0.00						0.07		0.02	c0.29	
v/s Ratio Perm	c0.03		0.00		0.01	0.02	0.01		0.09	0.11		0.01
v/c Ratio	0.21	0.01	0.00		0.08	0.14	0.03	0.13	0.19	0.19	0.44	0.01
Uniform Delay, d1	21.8	20.3	21.2		20.6	21.6	7.6	7.5	8.3	3.5	4.4	3.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.5	0.0	0.0		0.1	0.3	0.1	0.2	0.5	0.1	0.2	0.0
Delay (s)	22.3	20.3	21.2		20.7	21.9	7.8	7.7	8.8	3.6	4.7	3.5
Level of Service	C	C	C		C	C	A	A	A	A	A	A
Approach Delay (s)		22.0			21.8			8.3			4.4	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.1									
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			57.0									
Intersection Capacity Utilization			66.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Queues

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020

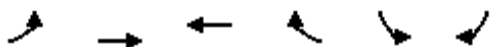


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	515	404	466	483
v/c Ratio	0.25	0.28	0.34	0.59
Control Delay	8.4	8.8	9.2	7.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	8.8	9.2	7.3
Queue Length 50th (m)	7.9	9.1	10.5	8.2
Queue Length 95th (m)	12.8	15.7	17.8	25.0
Internal Link Dist (m)	54.1	67.8	202.4	
Turn Bay Length (m)				
Base Capacity (vph)	2056	1431	1388	816
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	0.25	0.28	0.34	0.59
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	474	372	0	429	444
Future Volume (vph)	0	474	372	0	429	444
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5142	3579		3471	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5142	3579		3471	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	515	404	0	466	483
RTOR Reduction (vph)	0	0	0	0	0	176
Lane Group Flow (vph)	0	515	404	0	466	307
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		16.0	16.0		16.0	16.0
Effective Green, g (s)		16.0	16.0		16.0	16.0
Actuated g/C Ratio		0.40	0.40		0.40	0.40
Clearance Time (s)		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)		2056	1431		1388	640
v/s Ratio Prot		0.10	c0.11		0.13	
v/s Ratio Perm						c0.19
v/c Ratio		0.25	0.28		0.34	0.48
Uniform Delay, d1		8.0	8.1		8.3	8.9
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.3	0.5		0.7	2.6
Delay (s)		8.3	8.6		9.0	11.5
Level of Service		A	A		A	B
Approach Delay (s)		8.3	8.6		10.2	
Approach LOS		A	A		B	
Intersection Summary						
HCM 2000 Control Delay			9.4		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			72.5%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Intersection Sign configuration not allowed in HCM analysis.

HCM Unsignalized Intersection Capacity Analysis

8: Wynford Drive

08/31/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↗↗	↗↗	
Traffic Volume (veh/h)	0	53	0	778	520	18
Future Volume (Veh/h)	0	53	0	778	520	18
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	58	0	846	565	20
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				57	34	
pX, platoon unblocked	0.94	0.93	0.93			
vC, conflicting volume	998	292	585			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	550	97	411			
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	93	100			
cM capacity (veh/h)	437	877	1068			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	58	423	423	377	208	
Volume Left	0	0	0	0	0	
Volume Right	58	0	0	0	20	
cSH	877	1700	1700	1700	1700	
Volume to Capacity	0.07	0.25	0.25	0.22	0.12	
Queue Length 95th (m)	1.6	0.0	0.0	0.0	0.0	
Control Delay (s)	9.4	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.4	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			24.9%	ICU Level of Service		A
Analysis Period (min)			15			

Queues

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020



Lane Group	EBT	EBR	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	313	688	58	84	229	454	16	275	260
v/c Ratio	0.61	0.96	0.40	0.30	0.39	0.52	0.03	0.71	0.81
Control Delay	32.8	65.5	50.3	37.6	19.5	36.0	10.9	48.8	59.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	65.5	50.3	37.6	19.5	36.0	10.9	48.8	59.3
Queue Length 50th (m)	52.2	82.7	11.5	13.8	24.9	44.9	1.4	53.4	52.2
Queue Length 95th (m)	73.9	#123.0	23.6	27.0	43.6	61.5	4.7	#98.2	#103.7
Internal Link Dist (m)	152.3			102.0		57.8		144.2	
Turn Bay Length (m)					75.0		25.0		
Base Capacity (vph)	591	716	200	375	581	879	607	390	322
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.96	0.29	0.22	0.39	0.52	0.03	0.71	0.81

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Wynford Drive & Wynford Heights Crescent & Concorde Place

08/31/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	169	119	633	53	59	18	421	190	17	15	253	239
Future Volume (vph)	169	119	633	53	59	18	421	190	17	15	253	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)		1.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	5.0
Lane Util. Factor		1.00	0.88	1.00	1.00		0.91	0.91		1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00	0.97		1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes		0.95	1.00	0.99	1.00		0.99	1.00		0.99	1.00	1.00
Frt		1.00	0.85	1.00	0.96		1.00	0.99		1.00	1.00	0.85
Flt Protected		0.97	1.00	0.95	1.00		0.95	0.98		0.95	1.00	1.00
Satd. Flow (prot)		1575	2627	1601	1747		1524	3216		1667	1491	1231
Flt Permitted		0.79	1.00	0.57	1.00		0.39	0.98		0.35	1.00	1.00
Satd. Flow (perm)		1286	2627	961	1747		630	3216		622	1491	1231
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	184	129	688	58	64	20	458	207	18	16	275	260
RTOR Reduction (vph)	0	0	0	0	11	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	313	688	58	73	0	229	451	0	16	275	260
Confl. Peds. (#/hr)	50		8	8		50	20		36	36		20
Heavy Vehicles (%)	16%	3%	1%	4%	1%	0%	0%	6%	0%	0%	26%	17%
Turn Type	pm+pt	NA	Over	Perm	NA		D.P+P	NA		D.P+P	NA	Perm
Protected Phases	4	4 7	2		7		2	2		8	8	
Permitted Phases	4 7			7			8			2		8
Actuated Green, G (s)		33.2	29.0	15.8	15.8		56.8	29.0		56.8	27.8	27.8
Effective Green, g (s)		35.2	30.0	16.8	16.8		58.8	30.0		58.8	28.8	28.8
Actuated g/C Ratio		0.32	0.27	0.15	0.15		0.53	0.27		0.53	0.26	0.26
Clearance Time (s)			6.0	6.0	6.0		6.0	6.0		6.0	6.0	6.0
Vehicle Extension (s)			3.0	3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		459	716	146	266		580	877		606	390	322
v/s Ratio Prot		c0.11	c0.26		0.04		0.11	0.14		0.01	0.18	
v/s Ratio Perm		0.10		0.06			0.10			0.01		c0.21
v/c Ratio		0.68	0.96	0.40	0.27		0.39	0.51		0.03	0.71	0.81
Uniform Delay, d1		32.5	39.4	42.0	41.2		22.2	33.8		12.3	36.8	38.0
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2		4.2	25.3	1.8	0.6		0.4	2.2		0.0	5.7	13.8
Delay (s)		36.7	64.7	43.8	41.8		22.7	36.0		12.3	42.5	51.8
Level of Service		D	E	D	D		C	D		B	D	D
Approach Delay (s)		56.0			42.6			31.5			46.0	
Approach LOS		E			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			45.8				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			110.0				Sum of lost time (s)			16.0		
Intersection Capacity Utilization			73.9%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: Wynford Drive & Wynford Heights Crescent

08/31/2020



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	🛑🛑		🛑🛑			🛑🛑
Traffic Volume (veh/h)	13	38	590	78	10	929
Future Volume (Veh/h)	13	38	590	78	10	929
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Hourly flow rate (vph)	13	39	602	80	10	948
Pedestrians	60		60			60
Lane Width (m)	3.0		3.5			3.5
Walking Speed (m/s)	1.2		1.2			1.2
Percent Blockage	4		5			5
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)			92			82
pX, platoon unblocked	0.95	0.95			0.95	
vC, conflicting volume	1256	461			742	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1172	339			633	
tC, single (s)	6.8	7.0			4.6	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.5	
p0 queue free %	92	93			99	
cM capacity (veh/h)	162	567			736	
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	52	401	281	326	632	
Volume Left	13	0	0	10	0	
Volume Right	39	0	80	0	0	
cSH	348	1700	1700	736	1700	
Volume to Capacity	0.15	0.24	0.17	0.01	0.37	
Queue Length 95th (m)	3.9	0.0	0.0	0.3	0.0	
Control Delay (s)	17.1	0.0	0.0	0.5	0.0	
Lane LOS	C			A		
Approach Delay (s)	17.1	0.0		0.2		
Approach LOS	C					
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			51.8%	ICU Level of Service		A
Analysis Period (min)			15			

Queues

3: Wynford Drive & Hotel Driveway

08/31/2020



Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	113	29	88	591	993
v/c Ratio	0.41	0.11	0.35	0.23	0.40
Control Delay	23.1	18.6	10.8	4.4	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	18.6	10.8	4.4	5.3
Queue Length 50th (m)	10.2	2.5	3.2	10.1	19.7
Queue Length 95th (m)	20.1	7.3	15.2	20.3	38.0
Internal Link Dist (m)	62.2			10.1	68.3
Turn Bay Length (m)			20.0		
Base Capacity (vph)	601	584	251	2553	2501
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	0.19	0.05	0.35	0.23	0.40
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

3: Wynford Drive & Hotel Driveway

08/31/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	107	28	84	561	869	74
Future Volume (vph)	107	28	84	561	869	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.0	3.0	3.5	3.5	3.0
Total Lost time (s)	4.0	5.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	
Frt	1.00	0.85	1.00	1.00	0.99	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1404	1422	1267	3570	3498	
Flt Permitted	0.95	1.00	0.26	1.00	1.00	
Satd. Flow (perm)	1404	1422	352	3570	3498	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	113	29	88	591	915	78
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	113	29	88	591	993	0
Heavy Vehicles (%)	20%	6%	33%	0%	0%	11%
Turn Type	Prot	Perm	Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases		4	2			
Actuated Green, G (s)	8.7	8.7	37.3	37.3	37.3	
Effective Green, g (s)	9.7	8.7	38.3	38.3	38.3	
Actuated g/C Ratio	0.17	0.16	0.68	0.68	0.68	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	243	220	240	2441	2392	
v/s Ratio Prot	c0.08			0.17	c0.28	
v/s Ratio Perm		0.02	0.25			
v/c Ratio	0.47	0.13	0.37	0.24	0.42	
Uniform Delay, d1	20.8	20.4	3.7	3.4	3.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.4	0.3	4.3	0.2	0.5	
Delay (s)	22.2	20.7	8.0	3.6	4.4	
Level of Service	C	C	A	A	A	
Approach Delay (s)	21.9			4.2	4.4	
Approach LOS	C			A	A	

Intersection Summary

HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	56.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Queues

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	22	31	340	13	273	18	499	385	515
v/c Ratio	0.05	0.06	0.83	0.02	0.42	0.06	0.40	0.74	0.28
Control Delay	17.2	9.5	43.1	16.7	4.6	17.5	18.2	22.8	11.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.4
Total Delay	17.2	9.5	43.1	16.7	4.6	17.5	18.2	27.9	11.5
Queue Length 50th (m)	2.2	0.9	44.6	1.3	0.0	1.8	27.0	32.2	22.2
Queue Length 95th (m)	6.7	6.1	#83.1	4.7	14.4	6.0	39.7	#67.0	32.3
Internal Link Dist (m)		160.8		113.7			171.4		32.7
Turn Bay Length (m)	15.0					30.0		60.0	
Base Capacity (vph)	478	552	460	681	704	307	1258	519	1826
Starvation Cap Reductn	0	0	0	0	0	0	0	82	812
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.06	0.74	0.02	0.39	0.06	0.40	0.88	0.51

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

08/31/2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	8	20	313	12	251	17	374	85	354	453	21
Future Volume (vph)	20	8	20	313	12	251	17	374	85	354	453	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0	3.0	3.5	3.0
Total Lost time (s)	5.0	5.0		5.0	5.0	5.0	6.0	6.0		3.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	1.00	0.98	1.00	0.99		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		0.98	1.00	1.00	0.98	1.00		1.00	1.00	
Frt	1.00	0.89		1.00	1.00	0.85	1.00	0.97		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1673	1485		1638	1879	1464	1653	3228		1681	3376	
Flt Permitted	0.75	1.00		0.74	1.00	1.00	0.46	1.00		0.39	1.00	
Satd. Flow (perm)	1319	1485		1271	1879	1464	804	3228		696	3376	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	22	9	22	340	13	273	18	407	92	385	492	23
RTOR Reduction (vph)	0	15	0	0	0	185	0	23	0	0	4	0
Lane Group Flow (vph)	22	16	0	340	13	88	18	476	0	385	511	0
Confl. Peds. (#/hr)	8		21	21		8	26		8	8		26
Heavy Vehicles (%)	0%	0%	15%	1%	0%	1%	0%	4%	0%	0%	5%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	17	17	0	0	0
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		4			8			2		1	6	
Permitted Phases	4			8		8	2			6		
Actuated Green, G (s)	24.8	24.8		24.8	24.8	24.8	29.6	29.6		42.2	42.2	
Effective Green, g (s)	25.8	25.8		25.8	25.8	25.8	30.6	30.6		43.2	43.2	
Actuated g/C Ratio	0.32	0.32		0.32	0.32	0.32	0.38	0.38		0.54	0.54	
Clearance Time (s)	6.0	6.0		6.0	6.0	6.0	7.0	7.0		4.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	425	478		409	605	472	307	1234		494	1823	
v/s Ratio Prot		0.01			0.01			0.15		c0.09	0.15	
v/s Ratio Perm	0.02			c0.27		0.06	0.02			c0.33		
v/c Ratio	0.05	0.03		0.83	0.02	0.19	0.06	0.39		0.78	0.28	
Uniform Delay, d1	18.7	18.6		25.1	18.5	19.5	15.6	17.9		12.0	10.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.1	0.0		13.4	0.0	0.2	0.4	0.9		7.0	0.4	
Delay (s)	18.7	18.6		38.5	18.5	19.7	16.0	18.8		18.9	10.4	
Level of Service	B	B		D	B	B	B	B		B	B	
Approach Delay (s)		18.6			29.9			18.7			14.0	
Approach LOS		B			C			B			B	

Intersection Summary

HCM 2000 Control Delay	20.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Queues

5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

											
Lane Group	EBL	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	61	7	7	16	92	35	364	696	264	540	50
v/c Ratio	0.30	0.02	0.02	0.05	0.29	0.08	0.20	0.61	0.33	0.39	0.04
Control Delay	25.8	20.0	0.2	20.4	7.5	10.2	9.0	3.7	4.3	5.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	20.0	0.2	20.4	7.5	10.2	9.0	3.7	4.3	5.5	1.7
Queue Length 50th (m)	5.8	0.6	0.0	1.4	0.0	1.9	10.6	0.0	7.1	20.5	0.0
Queue Length 95th (m)	14.7	3.4	0.0	5.5	8.9	6.6	19.1	16.0	16.2	41.7	2.8
Internal Link Dist (m)		64.1		85.7			239.0			171.4	
Turn Bay Length (m)									125.0		
Base Capacity (vph)	654	909	799	873	799	433	1844	1146	803	1370	1157
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.09	0.01	0.01	0.02	0.12	0.08	0.20	0.61	0.33	0.39	0.04
Intersection Summary											

HCM Signalized Intersection Capacity Analysis

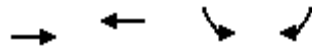
5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off Ramp

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	6	6	2	13	85	32	335	640	243	497	46
Future Volume (vph)	56	6	6	2	13	85	32	335	640	243	497	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	5.0	6.0		5.0	6.0	6.0	5.0	6.0	3.0	5.0	6.0
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00		0.99	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	1883	1601		1872	1601	1789	3579	1601	1789	1883	1601
Flt Permitted	0.75	1.00	1.00		0.96	1.00	0.46	1.00	1.00	0.48	1.00	1.00
Satd. Flow (perm)	1407	1883	1601		1809	1601	872	3579	1601	912	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	7	7	2	14	92	35	364	696	264	540	50
RTOR Reduction (vph)	0	0	6	0	0	81	0	0	358	0	0	16
Lane Group Flow (vph)	61	7	1	0	16	11	35	364	338	264	540	34
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	pm+pt	NA	Perm
Protected Phases		4			8			2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Actuated Green, G (s)	6.7	6.7	6.7		6.7	6.7	27.9	27.9	27.9	38.7	38.7	38.7
Effective Green, g (s)	6.7	7.7	6.7		7.7	6.7	27.9	28.9	27.9	39.7	39.7	38.7
Actuated g/C Ratio	0.12	0.13	0.12		0.13	0.12	0.49	0.50	0.49	0.69	0.69	0.67
Clearance Time (s)	6.0	6.0	6.0		6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	164	252	186		242	186	423	1801	778	749	1302	1079
v/s Ratio Prot		0.00						0.10		0.05	c0.29	
v/s Ratio Perm	c0.04		0.00		0.01	0.01	0.04		0.21	0.20		0.02
v/c Ratio	0.37	0.03	0.00		0.07	0.06	0.08	0.20	0.43	0.35	0.41	0.03
Uniform Delay, d1	23.4	21.6	22.4		21.7	22.5	7.9	7.9	9.6	3.3	3.8	3.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0	0.0		0.1	0.1	0.4	0.3	1.8	0.3	0.2	0.0
Delay (s)	24.8	21.6	22.4		21.8	22.7	8.3	8.1	11.4	3.6	4.0	3.1
Level of Service	C	C	C		C	C	A	A	B	A	A	A
Approach Delay (s)		24.3			22.5			10.2			3.9	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		8.8			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.43										
Actuated Cycle Length (s)		57.4			Sum of lost time (s)			13.0				
Intersection Capacity Utilization		71.4%			ICU Level of Service			C				
Analysis Period (min)		15										
c Critical Lane Group												

Queues

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020

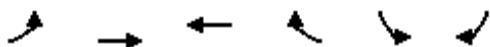


Lane Group	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	1013	425	528	243
v/c Ratio	0.49	0.30	0.38	0.31
Control Delay	10.0	8.9	9.5	2.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.0	8.9	9.5	2.8
Queue Length 50th (m)	17.5	9.6	12.2	0.0
Queue Length 95th (m)	25.8	16.5	20.2	8.4
Internal Link Dist (m)	54.1	67.8	202.4	
Turn Bay Length (m)				
Base Capacity (vph)	2056	1431	1388	786
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	0.49	0.30	0.38	0.31
Intersection Summary				

HCM Signalized Intersection Capacity Analysis

6: Wynford Drive & DVP Southbound Off-Ramp

08/31/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑		↑↑	↑
Traffic Volume (vph)	0	932	391	0	486	224
Future Volume (vph)	0	932	391	0	486	224
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0		4.0	4.0
Lane Util. Factor		0.91	0.95		0.97	1.00
Frt		1.00	1.00		1.00	0.85
Flt Protected		1.00	1.00		0.95	1.00
Satd. Flow (prot)		5142	3579		3471	1601
Flt Permitted		1.00	1.00		0.95	1.00
Satd. Flow (perm)		5142	3579		3471	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1013	425	0	528	243
RTOR Reduction (vph)	0	0	0	0	0	146
Lane Group Flow (vph)	0	1013	425	0	528	97
Turn Type		NA	NA		Prot	Perm
Protected Phases		4	8		6	
Permitted Phases						6
Actuated Green, G (s)		16.0	16.0		16.0	16.0
Effective Green, g (s)		16.0	16.0		16.0	16.0
Actuated g/C Ratio		0.40	0.40		0.40	0.40
Clearance Time (s)		4.0	4.0		4.0	4.0
Lane Grp Cap (vph)		2056	1431		1388	640
v/s Ratio Prot		c0.20	0.12		c0.15	
v/s Ratio Perm						0.06
v/c Ratio		0.49	0.30		0.38	0.15
Uniform Delay, d1		9.0	8.2		8.5	7.7
Progression Factor		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8	0.5		0.8	0.5
Delay (s)		9.8	8.7		9.3	8.2
Level of Service		A	A		A	A
Approach Delay (s)		9.8	8.7		8.9	
Approach LOS		A	A		A	
Intersection Summary						
HCM 2000 Control Delay			9.3		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.44			
Actuated Cycle Length (s)			40.0		Sum of lost time (s)	8.0
Intersection Capacity Utilization			63.2%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Intersection Sign configuration not allowed in HCM analysis.

HCM Unsignalized Intersection Capacity Analysis

8: Wynford Drive

08/31/2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗		↕↕	↕↗	
Traffic Volume (veh/h)	0	27	0	645	801	96
Future Volume (Veh/h)	0	27	0	645	801	96
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	29	0	701	871	104
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)				57	34	
pX, platoon unblocked	0.92	0.88	0.88			
vC, conflicting volume	1274	488	975			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	685	141	696			
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	96	100			
cM capacity (veh/h)	353	774	787			
Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	
Volume Total	29	350	350	581	394	
Volume Left	0	0	0	0	0	
Volume Right	29	0	0	0	104	
cSH	774	1700	1700	1700	1700	
Volume to Capacity	0.04	0.21	0.21	0.34	0.23	
Queue Length 95th (m)	0.9	0.0	0.0	0.0	0.0	
Control Delay (s)	9.8	0.0	0.0	0.0	0.0	
Lane LOS	A					
Approach Delay (s)	9.8	0.0		0.0		
Approach LOS	A					
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			35.2%	ICU Level of Service		A
Analysis Period (min)			15			

SimTraffic Simulation Summary

Weekday PM

08/31/2020

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:30	4:30	4:30	4:30	4:30	4:30
End Time	5:45	5:45	5:45	5:45	5:45	5:45
Total Time (min)	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1
Vehs Entered	2698	2406	4466	4350	4407	3668
Vehs Exited	2365	2080	4449	4349	4410	3529
Starting Vehs	113	137	140	119	150	131
Ending Vehs	446	463	157	120	147	261
Travel Distance (km)	1201	1058	2416	2327	2345	1870
Travel Time (hr)	723.5	960.9	171.6	129.4	151.7	427.4
Total Delay (hr)	694.5	935.5	113.8	73.5	95.5	382.6
Total Stops	3207	2988	8217	6785	6920	5621
Fuel Used (l)	708.8	896.5	335.8	293.7	312.0	509.4

Interval #0 Information Seeding

Start Time	4:30
End Time	4:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	4:45
End Time	5:45
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	2698	2406	4466	4350	4407	3668
Vehs Exited	2365	2080	4449	4349	4410	3529
Starting Vehs	113	137	140	119	150	131
Ending Vehs	446	463	157	120	147	261
Travel Distance (km)	1201	1058	2416	2327	2345	1870
Travel Time (hr)	723.5	960.9	171.6	129.4	151.7	427.4
Total Delay (hr)	694.5	935.5	113.8	73.5	95.5	382.6
Total Stops	3207	2988	8217	6785	6920	5621
Fuel Used (l)	708.8	896.5	335.8	293.7	312.0	509.4

Queuing and Blocking Report
Weekday PM

08/31/2020

Intersection: 1: Wynford Drive & Wynford Heights Crescent & Concorde Place

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	LT	R	R	L	TR	L	LT	TR	L	T	R
Maximum Queue (m)	142.2	158.8	147.0	62.0	51.4	57.2	60.9	54.4	22.2	165.6	167.6
Average Queue (m)	68.2	127.3	102.9	35.9	20.4	25.9	34.7	25.4	1.9	118.4	133.1
95th Queue (m)	151.5	188.8	168.4	105.2	62.4	54.6	64.7	53.3	12.1	196.2	202.9
Link Distance (m)	151.7	151.7	151.7	112.9	112.9		59.1	59.1		153.1	153.1
Upstream Blk Time (%)	2	37	1	18	6	0	1	0		38	51
Queuing Penalty (veh)	7	114	2	0	0	0	2	1		0	0
Storage Bay Dist (m)						75.0			25.0		
Storage Blk Time (%)						0	1			65	
Queuing Penalty (veh)						0	1			10	

Intersection: 2: Wynford Drive & Wynford Heights Crescent

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	TR	LT	T
Maximum Queue (m)	67.3	57.7	36.2	82.5	71.3
Average Queue (m)	34.5	18.8	15.6	63.8	35.7
95th Queue (m)	101.4	54.0	56.3	106.9	82.9
Link Distance (m)	118.5	75.2	75.2	59.1	59.1
Upstream Blk Time (%)	15	9	12	34	32
Queuing Penalty (veh)	0	29	42	159	150
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: Wynford Drive & Hotel Driveway

Movement	EB	EB	NB	NB	NB	SB	SB
Directions Served	L	R	L	T	T	T	TR
Maximum Queue (m)	63.4	32.3	21.0	24.8	16.7	80.6	68.8
Average Queue (m)	27.4	8.7	10.0	14.2	8.7	35.9	16.5
95th Queue (m)	60.3	33.9	20.7	26.1	19.9	83.2	50.2
Link Distance (m)	71.6	71.6		15.5	15.5	75.2	75.2
Upstream Blk Time (%)	12	3	10	19	15	2	0
Queuing Penalty (veh)	0	0	0	60	47	10	0
Storage Bay Dist (m)			20.0				
Storage Blk Time (%)			10	19			
Queuing Penalty (veh)			28	16			

Queuing and Blocking Report
Weekday PM

08/31/2020

Intersection: 4: Wynford Drive & South Main Driveway/Eglinton Avenue WB On/Off Ramp

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	T	R	L	T	TR	L	T	TR
Maximum Queue (m)	15.2	44.1	85.8	31.7	79.7	26.4	109.7	105.6	32.7	51.6	33.4
Average Queue (m)	4.6	8.2	37.5	10.0	39.2	2.9	54.6	47.6	22.4	29.3	9.9
95th Queue (m)	15.0	32.6	75.1	59.3	106.1	13.9	143.6	150.8	43.1	55.9	28.0
Link Distance (m)		167.0	121.9	121.9	121.9		168.2	168.2		32.8	32.8
Upstream Blk Time (%)			0	6	17		16	15	8	13	0
Queuing Penalty (veh)			0	0	0		38	37	0	53	1
Storage Bay Dist (m)	15.0					30.0			60.0		
Storage Blk Time (%)	11	1					16		8	13	
Queuing Penalty (veh)	3	0					3		19	45	

Intersection: 5: St. Dennis Drive/Wynford Drive & The Palisades/Eglinton Avenue East Eastbound On/Off

Movement	EB	EB	EB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	LT	R	L	T	T	R	L	T	R
Maximum Queue (m)	42.1	9.7	8.0	29.0	39.2	107.8	118.5	108.0	157.4	34.5	45.5	8.0
Average Queue (m)	16.8	1.4	0.9	9.7	11.8	21.0	36.9	29.4	47.2	13.7	16.0	1.7
95th Queue (m)	46.9	6.7	4.9	47.6	62.2	124.5	150.8	144.0	143.9	28.0	37.9	6.8
Link Distance (m)	74.7	74.7	74.7	94.1	94.1	246.9	246.9	246.9	246.9		168.2	168.2
Upstream Blk Time (%)	7			6	10	6	6	4	5			
Queuing Penalty (veh)	0			0	0	0	0	0	0			
Storage Bay Dist (m)										125.0		
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 6: Wynford Drive & DVP Southbound Off-Ramp

Movement	EB	EB	EB	WB	WB	SB	SB	SB
Directions Served	T	T	T	T	T	L	L	R
Maximum Queue (m)	73.8	61.8	37.0	37.7	31.0	116.0	109.9	25.1
Average Queue (m)	51.2	31.8	16.1	16.5	12.2	70.8	61.7	8.2
95th Queue (m)	80.3	56.6	39.5	33.1	27.4	204.9	184.7	19.5
Link Distance (m)	68.8	68.8	68.8	74.9	74.9	210.1	210.1	210.1
Upstream Blk Time (%)	30	2	1			23	0	
Queuing Penalty (veh)	0	0	0			0	0	
Storage Bay Dist (m)								
Storage Blk Time (%)								
Queuing Penalty (veh)								

Queuing and Blocking Report Weekday PM

08/31/2020

Intersection: 7: Wynford Drive & DVP Northbound On-Ramp

Movement	EB	EB	EB	WB	WB
Directions Served	L	T	T	T	TR
Maximum Queue (m)	59.0	77.2	50.6	66.1	105.4
Average Queue (m)	24.7	32.1	32.7	4.1	32.1
95th Queue (m)	58.5	92.1	92.8	37.2	88.4
Link Distance (m)		74.9	74.9	151.7	151.7
Upstream Blk Time (%)		29	31	0	1
Queuing Penalty (veh)		207	221	0	2
Storage Bay Dist (m)	52.0				
Storage Blk Time (%)	1	29			
Queuing Penalty (veh)	5	143			

Intersection: 8: Wynford Drive

Movement	EB	NB	NB	SB	SB
Directions Served	R	T	T	T	TR
Maximum Queue (m)	16.4	36.6	37.4	24.0	16.5
Average Queue (m)	5.7	15.1	11.7	10.8	1.1
95th Queue (m)	14.3	38.0	36.4	25.0	8.0
Link Distance (m)	28.9	32.8	32.8	15.5	15.5
Upstream Blk Time (%)		10	20	9	0
Queuing Penalty (veh)		33	64	41	1
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Network Summary

Network wide Queuing Penalty: 1593

