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Transportation Study – Addendum

PROPOSED RESIDENTIAL DEVELOPMENT

1725 Barbertown Road
City of Mississauga, Ontario

Third Submission: March 22nd, 2019
Second Submission: May 1st, 2018
First Submission: January 2017

Project No: NT-15-048

March 22nd, 2019

**Re: Transportation Impact Study – Addendum
Zoning By-law Amendment and Site Plan Application for Proposed Residential Development
1725 Barbertown Road, City of Mississauga
Our Project No. NT-15-048**

On behalf of our client, Barbertown Ventures Inc., we acknowledge City of Mississauga second submission transportation comments from June 2018, provided in **Appendix A**, with respect to our Transportation Impact Study Addendum dated May 2018.

The subject site is currently occupied by a one-storey residential building and is located at the north side of Eglinton Avenue and west of Creditview Road in the City of Mississauga. In the second submission the development plan included 83 townhouse units and 189 parking spaces (168 tenant and 21 visitor). However, based on the revised site plan provided in **Appendix B**, the plan currently proposes 75 townhouse units and a total of 176 parking spaces (157 tenant and 19 visitor). Vehicular access remains the same and is proposed via an internal road which intersects with Barbertown Road.

Based on the second submission comments received, our responses in the context of the revised site plan are addressed in the accompanying revised TIS as follows:

TRANSPORTATION IMPACT STUDY COMMENTS

1. *The report should include the existing signal timing plans for this intersection. Note: The study has increased the cycle length of Eglinton Avenue/Inverness Boulevard from 130s to 140s. As a result, the optimized signal timing plans will be forwarded to the City's Signals group for further review.*

Response

The signal timing is now provided in **Appendix C**.

2. *Table 3-2: the table name should be revised to "Recommended Optimized Signal Timing for AM Peak Period".*

Response

Acknowledged, the name of **Table 3.2** has been revised to read "Recommended Optimized Signal Timing for AM Peak Period".

3. *The report shall clarify whether the future total scenario is based on the optimized signal timing plans.*

Response

A statement noting the future total scenario is based on the optimized signal timing plans has been included in the introduction of **Section 5.0**.

4. The following TDM measures shall be considered and incorporated into the report:
 - a. The owner agrees to provide the purchaser/tenant of each dwelling unit with one (1) PRESTO – transit smart card loaded with a minimum value of \$25.00 (twenty-five dollars).
 - b. The Owner agrees to provide transit and active transportation information at a prominent location within the development area.

Response

The above TDM measures have been included in **Section 8.0** of the revised TIS report.

5. Clearance from the Fire and Peel Waste Collection is required. Note: The design vehicle used by AutoTURN templates illustrated in the updated Traffic Impact Study (dated May 2018) is not a standard Emergency or Waste Collection vehicle.

Response

AutoTURN templates, **Figure 7-1** and **Figure 7-2**, illustrate and confirm the maneuverability of Region of Peel Rear Loading and Fully-Automated Side-Loading Cart waste collection vehicles.

We trust the enclosed sufficiently addresses your needs. Should you have any questions, please do not hesitate to contact the undersigned.

Yours truly,

NEXTRANS ENGINEERING

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EXECUTIVE SUMMARY

NexTrans Consulting Engineers was retained by Barbertown Ventures Inc. (the 'Client') to undertake a Transportation Impact Study for a Zoning By-law Amendment and Site Plan Application in support of a proposed residential development in the City of Mississauga, Ontario. The subject property is located at the north side of Eglinton Avenue and west of Creditview Road.

Development Proposal

The development proposal is to redevelop the existing 46, 300 m² site to include 75 townhouse units. Vehicular access to the site is proposed via an internal road which intersects with Barbertown Road.

Traffic Analysis

The proposed development is anticipated to generate 41 two-way auto trips (7 inbound and 34 outbound) during the weekday morning peak hour and 47 two-way auto trips (31 inbound and 16 outbound) during the weekday afternoon peak hour.

The intersection capacity analysis results (based on the methodology and procedures outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board) indicate that the study area intersections and proposed vehicular access are expected to operate with acceptable levels of service.

Access/Parking Review

It is recommended that appropriate signage consisting of a STOP sign (Ra-1) and STOP bar be provided at the internal road egress intersection with Barbertown Road.

Based on the City of Mississauga By-law 0225-2007, a total of 169 parking spaces (150 tenant and 19 visitor) will be required for the proposed residential development. The preliminary site plan provides for a total of 176 parking spaces (157 tenant and 19 visitor) resulting in a surplus of seven (7) spaces and meeting the City of Mississauga parking requirements. On this basis, the future parking demand with the proposed redevelopment is completely satisfied with the proposed parking provision.

Vehicle Maneuverability Review

AutoTURN software was used to generate vehicular turning template to confirm and demonstrate the accessibility of the Region of Peel Rear Loading and Fully-Automated Side-Loading Cart waste collection vehicles through the proposed study area.

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1.0 INTRODUCTION

This Transportation Study was prepared in support of a Zoning By-Law Amendment and Site Plan Application for a residential townhouse development located at 1725 Barbertown Road in the City of Mississauga (herein referred to as the “subject site”).

The subject site is located at the north side of Eglinton Avenue and west of Creditview Road in the City of Mississauga. The site is currently occupied by a single family residence which will be demolished to accommodate 75 residential townhouses units. A new private roadway will be constructed via Barbertown Road to provide vehicle access to the subject site development. **Figure 1-1** illustrates the subject site location.

Figure 1-1 – Site Location



The preliminary site plan provides 157 residential parking spaces and 19 surface visitor parking spaces to be shared by all 75 townhouse units. The proposed site plan is provided in **Figure 1-2, Appendix B** also provides a larger scale version of the proposed site plan.

Figure 1-2 – Proposed Site Plan



2.0 EXISTING TRAFFIC CONDITIONS

2.1. Existing Road Network

The existing road network within the study area is described as follows:

Eglinton Avenue West is a major Arterial Road in Mississauga stretching between multiple jurisdictions in the southern G.T.A. In the vicinity of the subject site, the roadway consists of a 7-lane cross-section (includes two-way-left-turn-lane) with sidewalks on both sides of the roadway. It is under the jurisdictional control of the Regional Municipality of Peel and maintains a posted speed limit of 60 km/h in the vicinity of the subject site.

Inverness Blvd/Barbertown Road is a local residential 2-lane road under the jurisdiction of City of Mississauga and maintains a speed limit of 50 km/h in the vicinity of the site.

The intersection of Eglinton Avenue and Inverness Blvd/Barbertown Road creates a signalized intersection with exclusive left turn lanes on all approaches along Eglinton Avenue. The cross section of Inverness Blvd/Barbertown Road provides for exclusive SB Left turn lane with a shared Through/Right Lane and in the NB direction a shared Left/Through Lane is provided and an exclusive right turn lane. A single inbound lane is provided on both North/South approaches to the intersection. The signalized intersection of Eglinton Avenue West and Inverness Blvd/Barbertown Road is under the jurisdictional control of the Regional Municipality of Peel.

2.2. Existing Traffic Volumes

The study area includes the intersections of Eglinton Avenue W at Inverness Boulevard/Barbertown Road, Inverness Boulevard at Barbertown Road, and Eglinton Avenue West at Barbertown Road. Turning movement counts were conducted on Thursday October 26, 2017, by Spectrum Traffic on behalf of NexTrans Consulting Engineers during the weekday morning (7:00am to 10:00am) and afternoon (4:00pm to 7:00pm) peak periods. The detailed traffic data are provided in **Appendix C**.

2.3. Existing Traffic Assessment

The existing road network and existing traffic volumes during the weekday AM and PM peak hours are illustrated in **Figure 2-1**. Capacity analysis at the studied area intersections was carried out using Synchro version 10 and SimTraffic simulations for queue assessment. The methodology of the software follows the procedures described and outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board. **Table 2.1** shows the existing levels of service for the given intersection. A detailed analysis is provided in **Appendix D**.

Table 2.1 – Existing Traffic Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)
Eglinton Avenue West and Inverness Boulevard / Barbertown Road <i>(Signalized)</i>	OVERALL	C (0.71)	31.0	-	C (0.63)	25.8	-
	EBL	B (0.04)	13.9	6.1	C (0.30)	21.9	8.7
	EBTR	D (0.96)	38.0	165.6	C (0.54)	22.4	95.3
	WBL	C (0.36)	32.0	16.6	B (0.45)	16.4	48.8
	WBTR	B (0.40)	13.6	85.0	C (0.88)	27.6	174.0
	NBLT	D (0.24)	41.1	29.8	D (0.08)	35.6	14.3
	NBR	D (0.22)	40.5	37.3	C (0.04)	34.9	17.2
	SBL	D (0.08)	38.1	13.0	C (0.03)	34.8	6.8
	SBTR	D (0.02)	37.1	9.5	C (0.01)	34.4	5.5
	EBTR	A (0.02)	8.6	10.5	A (0.01)	8.7	7.8
Inverness Boulevard and Barbertown Road <i>(Unsignalized)</i>	WBLT	A (0.03)	9.1	12.8	A (0.02)	9.1	11.4
	NBLR	A (0.01)	5.0	0.0	A (0.01)	3.4	0.0
	SBR	A (0.01)	9.3	9.6	B (0.01)	11.4	7.3

Table 2.1 indicates that the study area intersections are currently operating at acceptable levels of service and at an overall LOS 'D' or better during peak hour time periods. Furthermore, all individual turning movements are operating below capacity with acceptable LOS and no critical movements identified.

3.0 FUTURE BACKGROUND CONDITIONS

A standard 5-year planning horizon from 2018 (year 2023) was selected for the purpose of this study, which coincides with the expected full build out of the proposed development. A general growth rate of 2% compounded annually was applied to the through movements to represent traffic growth from beyond the study area.

Future background traffic volumes are illustrated in **Figure 3-1**, and were analyzed using Synchro 10 and SimTraffic simulations for queue assessment. The detailed calculations are provided in **Appendix E** and summarized in **Table 3.1**.

Table 3.1: Future (2023) Background Traffic Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)
Eglinton Avenue West and Inverness Boulevard/Barbertown Road <i>(Signalized)</i>	OVERALL	D (0.77)	41.5	-	C (0.69)	27.1	-
	EBL	B (0.04)	13.1	23.2	C (0.30)	20.2	5.0
	EBTR	D (1.03)	54.6	200.4	C (0.57)	21.1	94.7
	WBL	C (0.36)	34.6	19.7	B (0.48)	16.3	55.7
	WBTR	B (0.43)	13.1	86.0	C (0.94)	30.3	194.9
	NBLT	D (0.25)	42.9	35.8	D (0.08)	38.0	16.1
	NBR	D (0.23)	42.2	40.0	D (0.04)	37.3	16.0
	SBL	D (0.08)	39.6	13.4	D (0.03)	37.2	7.5
	SBTR	D (0.02)	38.6	8.3	D (0.01)	36.8	4.6
Inverness Boulevard and Barbertown Road <i>(Unsignalized)</i>	EBTR	A (0.02)	8.6	10.2	A (0.01)	8.7	8.3
	WBLT	A (0.03)	9.1	12.5	A (0.02)	9.1	11.4
	NBLR	A (0.01)	5.0	0.0	A (0.01)	3.4	0.0
Eglinton Avenue West and Barbertown Road <i>(Unsignalized)</i>	SBR	A (0.01)	9.3	13.0	B (0.02)	13.0	9.4

As summarized in **Table 3.1** it is shown that during future background traffic conditions, the subject study area intersections continue to operate at overall acceptable level of services with minimal changes to expected operations. During the AM peak hour, the Eglinton Avenue West and Inverness Boulevard/Barbertown Road intersection experiences a volume-to-capacity (v/c) ratio greater than one (1) at the eastbound through movement. As a result, signal timing optimization was undertaken by adjusting the total split times for all directions in the AM peak hour only. **Table 3.2** provides a summary of the existing and optimized signal timings and **Table 3.3** provides the optimized results.

Table 3.2 – Recommended Optimized Signal Timing for AM Peak Period

Intersection	Movement	MIN. (s)	Amber (s)	All Red (s)	Total Split (s)	
					Existing	Optimized
Eglinton Avenue West and Inverness Boulevard / Barbertown Road <i>(Signalized)</i>	EBL/EBTR	78	4	3	85	95
	WBL	5	3	0	10	7
	WBTR	78	4	3	85	102
	NBLT/NBR	37	4	4	45	38
	SBL/SBTR	37	4	4	45	38

Table 3.3 – Optimized Future (2023) Background Traffic Levels of Service

Intersection	Movement	Weekday AM Peak Hour		
		v/c ratio	Delay (s)	95 th Queue (m)
Eglinton Avenue West and Inverness Boulevard / Barbertown Road <i>(Signalized)</i>	OVERALL	C (0.78)	25.3	-
	EBL	A (0.04)	10.0	4.9
	EBTR	C (0.94)	29.9	150.8
	WBL	C (0.46)	34.7	17.6
	WBTR	B (0.41)	10.4	75.4
	NBLT	D (0.30)	48.3	33.4
	NBR	D (0.35)	49.0	34.6
	SBL	D (0.10)	44.2	13.8
	SBTR	D (0.02)	42.9	9.9
Inverness Boulevard and Barbertown Road <i>(Unsignalized)</i>	EBTR	A (0.02)	8.6	9.9
	WBLT	A (0.03)	9.1	12.7
	NBLR	A (0.01)	5.0	0.0
Eglinton Avenue West and Barbertown Road <i>(Unsignalized)</i>	SBR	A (0.01)	9.3	12.2

After optimizing the traffic operations, the traffic network continues to operate at acceptable level of services and the eastbound through movement at the Eglinton Avenue West and Inverness Boulevard/Barbertown Road intersection, now operates at a level of service of 'C' with a v/c ratio of less than one (1). The optimized signal timings will be carried forward and applied to the future total AM peak hour traffic assessment.

4.0 SITE TRAFFIC TRIP GENERATION, TRIP DISTRIBUTION / ASSIGNMENT

The proposed development plan for the subject site is comprised of 75 residential units. Trip generation for the residential component of the development were determined using equations contained in the Trip Generation Manual, 9th Edition, published by the ITE for the Residential Condominium / Townhouse land use (Land Use Code 230). The trip generation calculation is provided in **Table 4.1**.

Table 4.1 – Site Traffic Trip Generation

Land Use	Parameter	Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Condominium/ Townhouse <i>(75 Units)</i>	Gross Auto Trips	7	34	41	31	16	47
	Gross Rate	0.09	0.46	0.55	0.41	0.22	0.63
	New Auto Trips	7	34	41	31	16	47

Based on the trip generation calculations, the proposed and future background residential development is expected to generate 41 two-way auto trips (7 inbound and 34 outbound) during the weekday morning peak hour and 47 two-way auto trips (31 inbound and 16 outbound) during the weekday afternoon peak hour.

4.1. Trip Distribution and Trip Assignment

Based on the location of the subject development, existing travel patterns and 2011 Transportation Tomorrow Survey Data, it is determined that the majority of the site traffic will travel eastbound during the AM peak and westbound during the PM peak . The site trip distribution is summarized for the inbound and outbound site traffic movements during the morning and afternoon peak hours in **Table 4.2** with the trip assignment illustrated in **Figure 4-1**.

Table 4.2 – Site Traffic Trip Distribution

Direction	Via	AM Peak Hour		PM Peak Hour	
		Inbound	Outbound	Inbound	Outbound
East	Eglinton Avenue	56%	56%	52%	52%
West	Eglinton Avenue	44%	44%	48%	48%
	Total	100%	100%	100%	100%

5.0 FUTURE TOTAL TRAFFIC CONDITIONS

Future total traffic was determined by adding site generated traffic to future background traffic future total traffic volumes during the weekday AM and PM peak hours are illustrated in **Figure 5-1**. **Table 5.1** summarizes the levels of service at the intersections under future background traffic conditions. Detailed analysis outputs can be found in **Appendix F**.

It shall be noted that the future total weekday AM peak hour assessment at the Eglinton Avenue West and Inverness Boulevard/Barbertown Road intersection is based on the optimized signal timing summarized in **Table 3.2**.

Table 5.1 – Future (2023) Total Traffic Levels of Service

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	95 th Queue (m)	LOS (v/c)	Delay (s)	95 th Queue (m)
Eglinton Avenue West and Inverness Boulevard/Barbertown Road <i>(Signalized)</i>	OVERALL	C (0.78)	25.4	-	C (0.70)	27.1	-
	EBL	B (0.06)	10.1	6.8	C (0.44)	24.5	17.4
	EBTR	C (0.94)	29.9	134.9	C (0.56)	20.8	66.2
	WBL	C (0.46)	34.7	18.4	B (0.48)	16.0	62.6
	WBTR	B (0.41)	10.4	31.5	C (0.94)	30.4	126.6
	NBLT	D (0.30)	48.3	30.2	D (0.09)	38.4	14.7
	NBR	D (0.35)	49.0	38.3	D (0.04)	37.7	16.2
	SBL	D (0.18)	45.6	15.3	D (0.06)	38.0	11.8
	SBTR	D (0.02)	42.9	9.3	D (0.01)	37.2	5.6
Inverness Boulevard and Barbertown Road <i>(Unsignalized)</i>	EBTR	A (0.02)	8.6	9.2	A (0.01)	8.8	8.9
	WBLT	A (0.13)	9.8	14.3	A (0.05)	9.4	13.7
	NBLR	A (0.01)	3.6	1.3	A (0.01)	1.8	1.2
Eglinton Avenue West and Barbertown Road <i>(Unsignalized)</i>	SBR	A (0.04)	9.4	14.1	B (0.05)	13.3	12.4
Barbertown Road and Site Access <i>(Unsignalized)</i>	SBLR	A (0.04)	8.7	13.3	A (0.02)	8.7	10.1

As summarized in **Table 5.1**, it is shown that during future total traffic conditions, the subject study area intersections continue to operate at acceptable levels of services. The proposed site access is expected to operate within capacity and excellent level of service; no critical movements were identified. It shall be noted that the peak hour factor for the eastbound left movement at the Eglinton Avenue West and Inverness Boulevard/Barbertown Road intersection, was adjusted due the noticeable change in volume from existing conditions. Through consultation with the City, see **Appendix G**, the PHF was adjusted from 0.31 to 0.83 in the PM peak hour only, to match that in the westbound turn lane for a better representation of future traffic conditions.

6.0 PARKING

The City-wide Zoning By-law No. 0225-2007 has been adopted by the City of Mississauga and it was enacted on June 20th, 2007. The Zoning By-law is a comprehensive By-law covering the entire amalgamated City of Mississauga. The technical parking requirement for the proposed development is detailed in **Table 6.1**.

Table 6.1 – Vehicular Parking Requirement Zoning By-law 0225-2007

Use	Units	Minimum Parking Rate	Parking Requirement	Parking Provided	Difference
Townhouse Dwelling	75	2.0 spaces per unit	150	157	+7
		0.25 visitor spaces per unit	19	19	0
Total			169	176	+7

Based on the City of Mississauga By-law 0225-2007, a total of 169 parking spaces (150 tenant and 19 visitor) will be required for the proposed residential development. The preliminary site plan provides for a total of 176 parking spaces (157 tenant and 19 visitor) resulting in a surplus of seven (7) spaces and meeting the City of Mississauga parking requirements.

7.0 SITE ACCESS & ON-SITE CIRCULATION

7.1. Site Access

According to the site plan provided, access to the site is proposed via a full movement intersection located on Barbertown Road. In accordance with Ontario Traffic Manual (OTM) Book 5, we recommend appropriate signage consisting of a STOP sign (Ra-1) and STOP bar be provided at the intersection of the proposed street with Barbertown Road.

7.2. Vehicle Maneuverability and Assessment

AutoTURN software was used to generate a vehicular turning template to confirm and demonstrate the accessibility of the proposed site. As illustrated in **Figure 7-1** and **Figure 7-2**, the AutoTURN analysis demonstrates that Region of Peel Rear Loading and Fully-Automated Side-Loading Cart waste collection vehicles, respectively, can effectively maneuver through the study area.

8.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation demand management (TDM) refers to variety of strategies to reduce congestion, minimize the number of single-occupant vehicles, encourage non-auto modes of travel, and reduce vehicle dependency to create a sustainable transportation system. Typically, TDM strategies are for residential and office developments where large quantities of people congregate in one origin or destination.

The City of Mississauga has put together an office consolidation of the Mississauga Official Plan updated to include Ontario Municipal Board decisions and City Council approved amendments, dated January 10, 2018. The Mississauga Official Plan currently illustrates the future transportation network in support of creating a multi-modal city. Eglinton Avenue West, most specifically in the study area, is a transit priority corridor and a primary on-road/boulevard cycling route as depicted in Schedules 6 and 7, respectively.

In order to encourage other modes of transportation for the proposed development, the following TDM measures and incentives are recommended for the proposed development:

- The Owner to provide an information package on transit and active transportation for new residents. The information package will include bus schedules, community and cycling maps, walking trails etc. The Information Package can be distributed at the sale office.
- The Owner to provide a one-time pre-loaded PRESTO Card with the starting value of \$25 (inclusive of the registration fee) for each residential unit on demand basis. The pre-loaded PRESTO Cards can be distributed in conjunction with the Information Package at the time of purchase or at occupancy.

8.1. Transit and Active Transportation Mode Assessment

The public transportation services operated by MiWay provide a reliable, cost effective alternative mode of travelling through the comprehensive and continually growing transit network system. Pedestrian sidewalks are provided on both sides of the roadways, and sidewalk connectivity is provided throughout the proposed municipal road to ensure a complete sidewalk network.

The proposed development is situated in a transit supportive neighborhood with bus stops located approximately 9-minutes to the subject site within comfortable walking distance. The route services are illustrated in **Appendix H**. The route services in the immediate area are described below:

- **9 Rathburn-Thomas:** The 9 Rathburn-Thomas bus route operates approximately every 30 minutes eastbound to the City Centre Transit Terminal Drop Off and westbound to Erin Centre Boulevard at Longford Drive. The 9 Rathburn-Thomas bus route provides service 7 days a week. Weekend service operates approximately every 30 minutes. Accessible service and bike racks are provided on the route.
- **34 Credit Valley:** The 34 Credit Valley bus route operates every 23 minutes eastbound to the City Centre Transit Terminal Platform and westbound to the Erin Mills Town Centre. The 34 Credit Valley bus route provides service 7 days a week. Weekend service operates approximately every 30 minutes. Accessible service is provided on this route.
- **35 Eglinton-Ninth Line:** The 35 Eglinton-Ninth Line bus route operates approximately every 10 minutes eastbound to Islington Subway Bus Terminal and westbound to Erin Centre Boulevard and Longford Drive. The 35 Eglinton-Ninth Line bus route provides service 7 days a week. Weekend service operates every 30 minutes. Accessible service and bike racks are available on this route.
- **305 Streetsville-Bancroft:** The 305 Streetsville-Bancroft is a school bus route operating between 7:23am and 7:50am weekday morning and between 2:49pm and 3:16pm during weekday afternoon. It operates southbound Joymar Drive and Tannery Street in the morning and northbound to Bancroft Drive and Creditview Road in the afternoon. The 305 Streetsville-Bancroft bus route provides weekday service, only. Accessible service and bike racks are available on this route.

9.0 CONCLUSIONS / FINDINGS

The findings and conclusions of our analysis are as follows:

- The development proposal is to redevelop the existing 46,300 m² site to include 75 townhouse units. Vehicular access to the site is proposed via an internal road which intersects with Barbertown Road.
- The intersection capacity analysis results (based on the methodology and procedures outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board) indicate that the study intersections are expected to operate with sufficient capacity and acceptable levels of service.
 - The future background traffic conditions are expected to continue to operate at acceptable levels of services with only minor changes to the weekday AM peak hour signal timings. The recommended timings are carried forward to the future total weekday AM peak period.
 - The proposed site access will operate at acceptable levels of services during the future total traffic scenarios.
- The proposed development is expected to generate 41 two-way auto trips (7 inbound and 34 outbound) during the weekday morning peak hour and 47 two-way auto trips (31 inbound and 16 outbound) during the weekday afternoon peak hour.
- Based on the City of Mississauga Zoning By-law 0225-2007, a total of 169 parking spaces (150 tenant and 19 visitor) will be required for the proposed residential development. The preliminary site plan provides for a total of 176 parking spaces (157 tenant and 19 visitor) resulting in a surplus of seven (7) spaces. On this basis, the future parking demand is completely satisfied with the proposed parking provision.
- There will be one full movement site access via an internal road intersection Barbertown Road which will serve the development. It is recommended that a STOP sign (Ra-12) and STOP bar be provided on the internal road egress at Barbertown Road.
- AutoTURN analysis demonstrates that the standard Region of Peel waste collection vehicles will be able to circulate throughout the proposed site.

Figure 2-1 - Existing Traffic Volumes

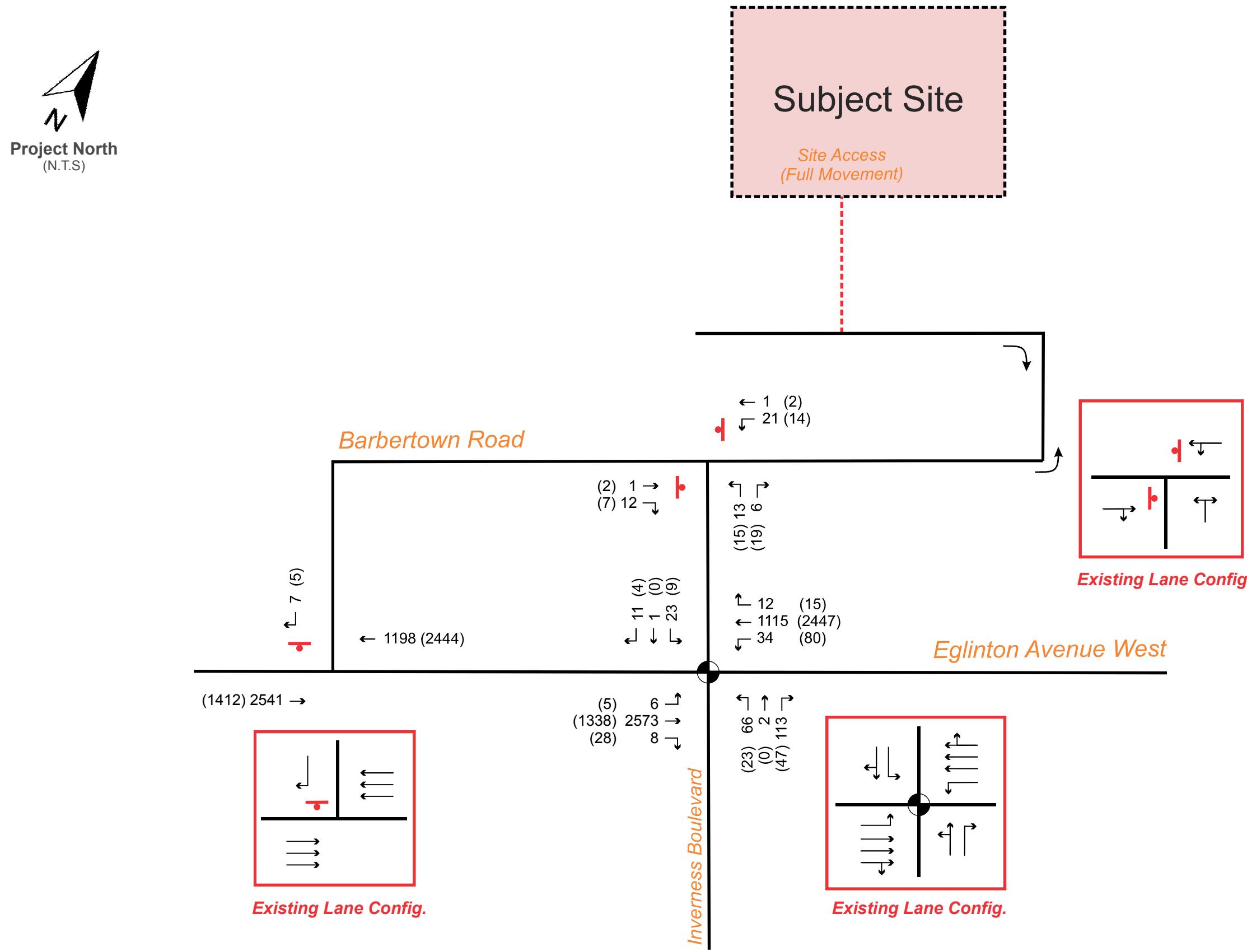
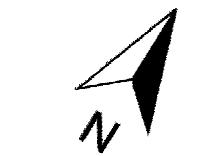
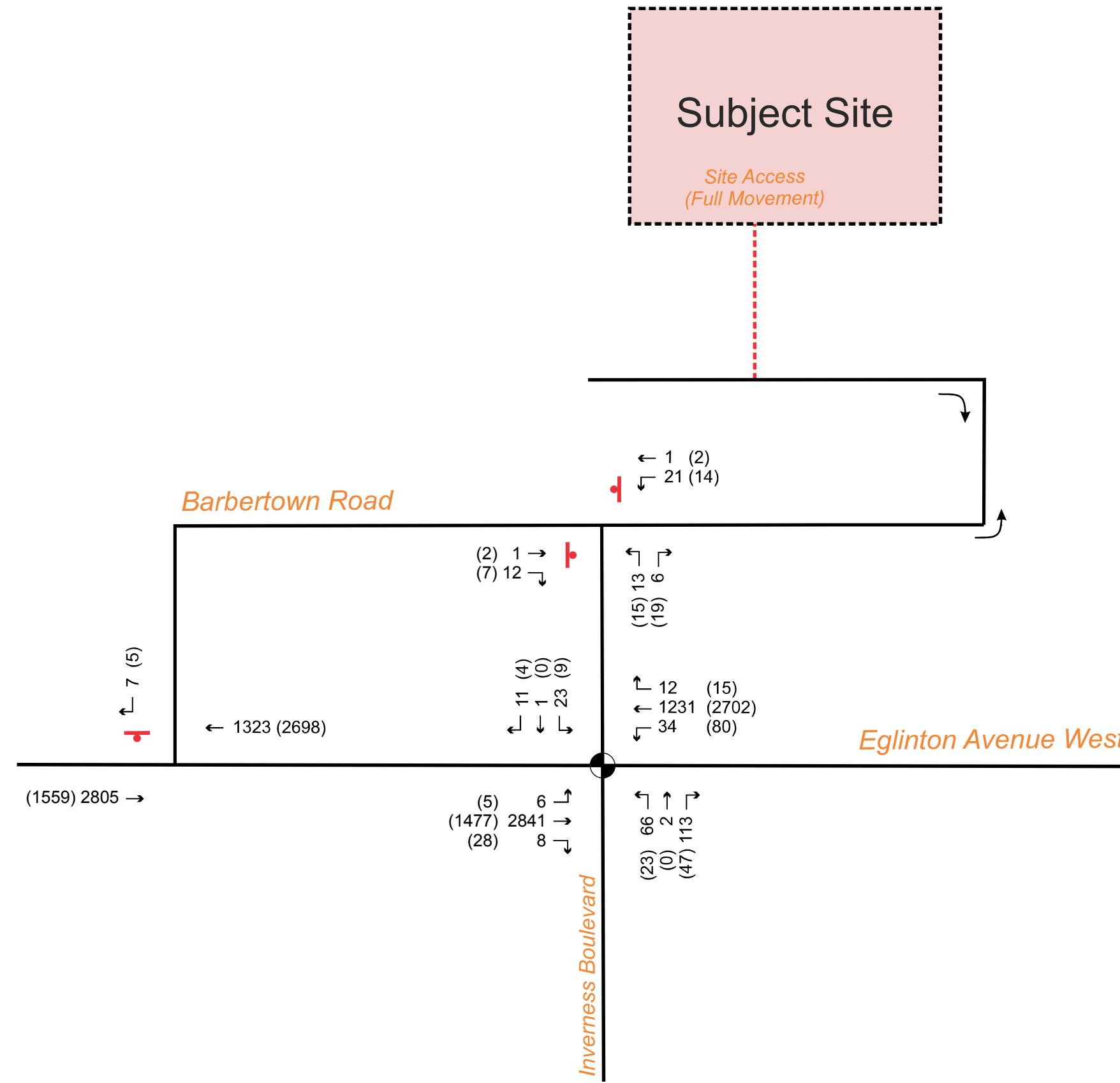


Figure 3-1 - Future (2023) Background Traffic Volumes



Project North
(N.T.S)



Legend

- xx - AM Peak Hour
- (xx) - PM Peak Hour
- ✓ - Existing Stop Sign
- - Existing Signalized

Figure 4-1 - Site Traffic Volumes

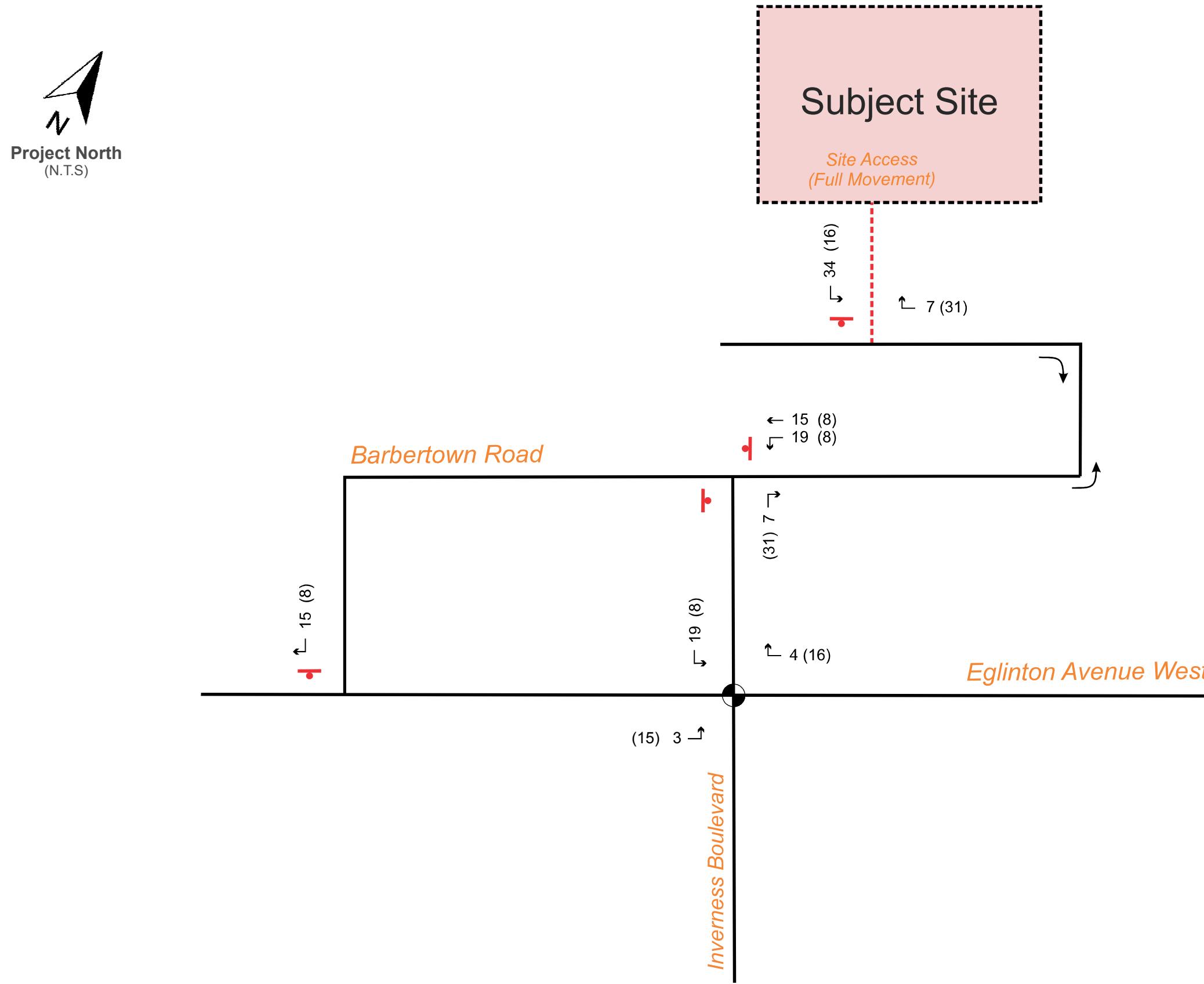
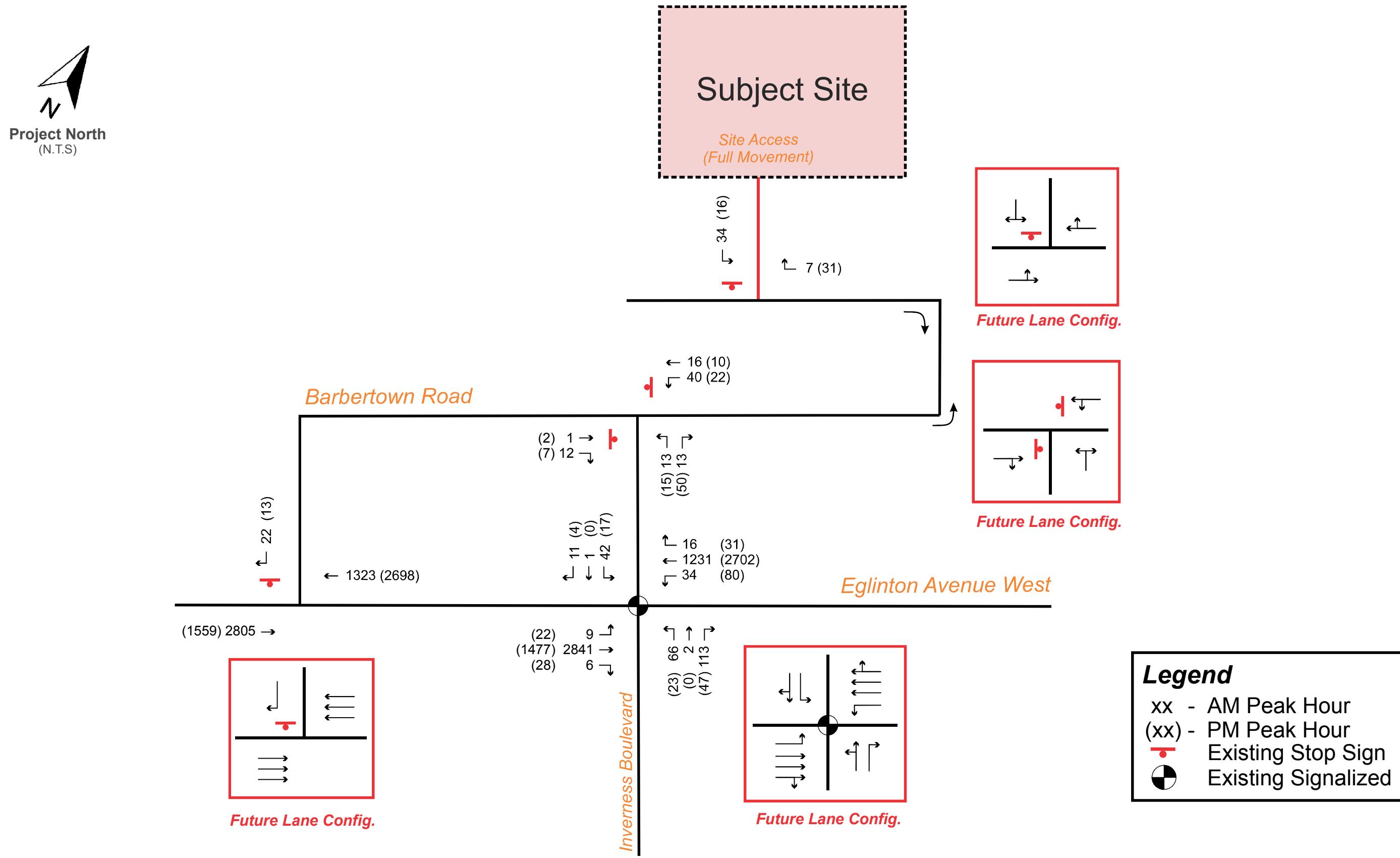
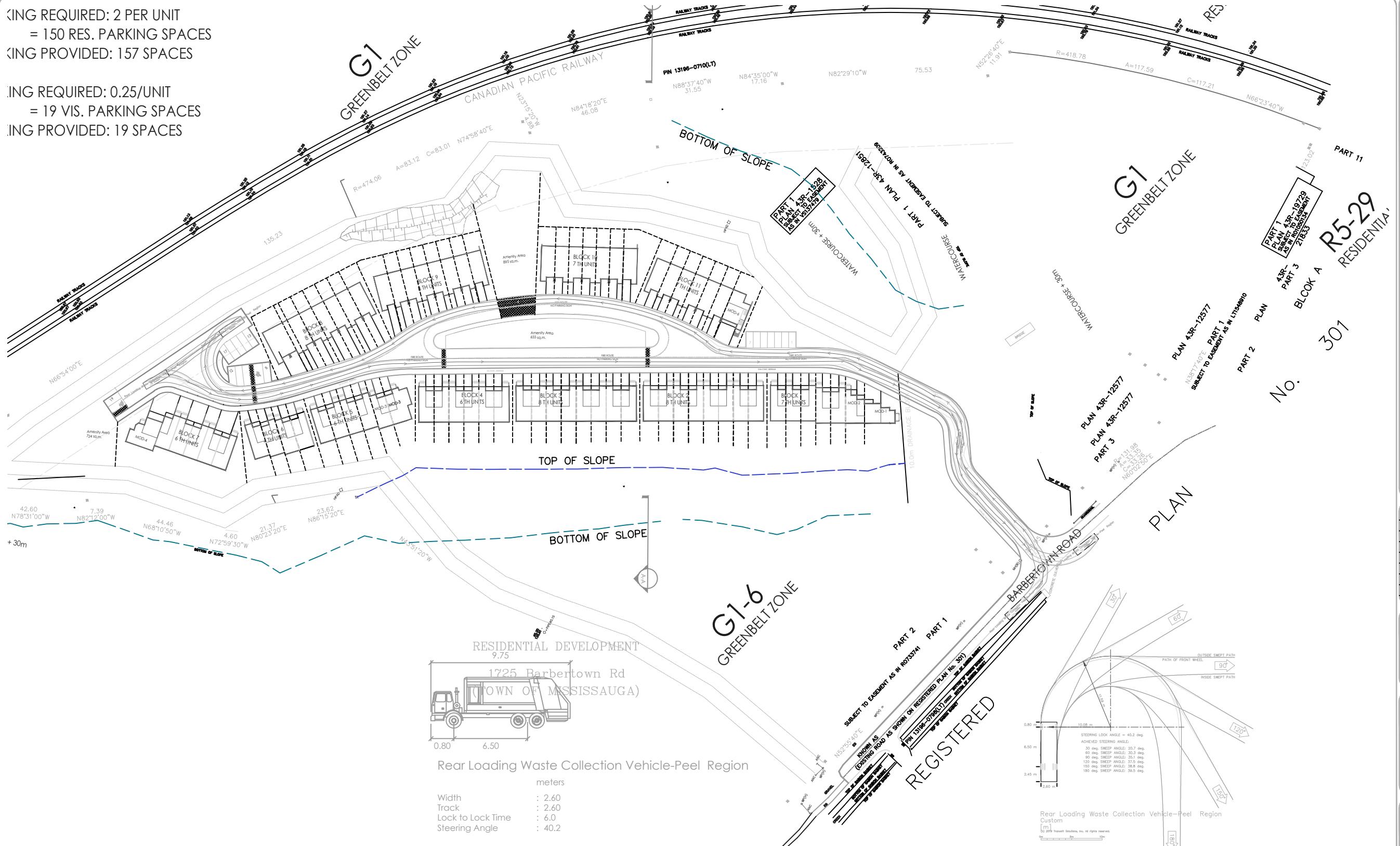


Figure 5-1 - Future (2023) Total Traffic Volumes



**KING REQUIRED: 2 PER UNIT
= 150 RES. PARKING SPACES**
KING PROVIDED: 157 SPACES

.ING REQUIRED: 0.25/UNIT
= 19 VIS. PARKING SPACES
.ING PROVIDED: 19 SPACES



BENCHMARK



PROJECT NAME:
RESIDENTIAL DEVELOPMENT

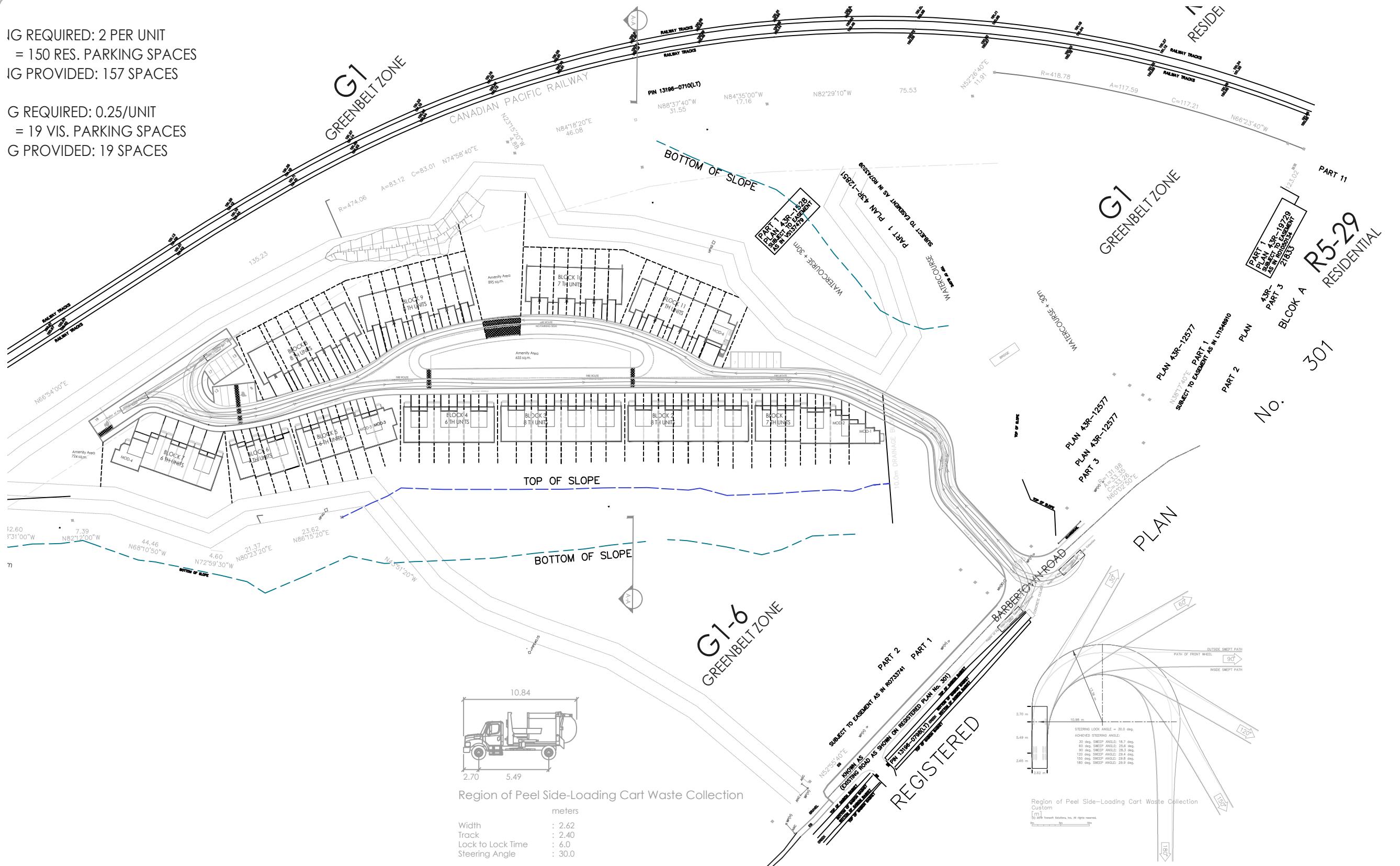
1725 Barbertown Rd
(TOWN OF MISSISSAUGA)

DRAWING TITLE:
AutoTURN Analysis
(Rear Loading Waste Collection Vehicle)

DESIGN BY:	A.S.	DATE:	March 6, 2019
CHECKED BY:	R.P.	PROJECT NO.	
DRAWN BY:	A.S.		NT-15-048
SCALE:	NTS	DRAWING NO.	

IG REQUIRED: 2 PER UNIT
= 150 RES. PARKING SPACES
IG PROVIDED: 157 SPACES

G REQUIRED: 0.25/UNIT
= 19 VIS. PARKING SPACES
G PROVIDED: 19 SPACES



PROJECT NAME:
RESIDENTIAL DEVELOPMENT

DRAWING TITLE:
AutoTURN Analysis
(Side Loading Cart Waste Collection)

DESIGN BY:	A.S.	DATE:	March 6, 2019
CHECKED BY:	R.P.	PROJECT NO.	
DRAWN BY:	A.S.	NT-15-048	
SCALE:	NTS	DRAWING NO.	

Figure 7-2

Figure 7-2

Appendix A – Second Submission City of Mississauga Comments

File: 21T-M 17001

Proposal: 83 townhomes on a common element condominium private road

TRANSPORTATION AND WORKS

TRAFFIC REVIEW (PPP)

Contact: Linda Wu Tel. (905) 615-3200 x3597

No	Milestone	Condition
1	RECOMMENDATION REPORT	[June 2018] - Clearance from Fire and Peel Waste Collection is required.

Note: The design vehicle used by AutoTurn templates illustrated in the updated Traffic Impact Study (dated May 2018) is not a standard Emergency or Waste Collection vehicle.

[Previous Comment]

Staff is in receipt of the AutoTurn Analysis enclosed with the submitted Traffic Impact Study dated January 2017. Staff notes that the utilized design vehicle MSU TAC-1999 has a smaller radius and length than Fire and Peel waste collection trucks. As such, the AutoTurn analysis is to be updated using standard vehicle designs, in order to demonstrate how the combined function and feasibility of the emergency access, garbage/ loading will occur to the satisfaction of Fire, Transportation and Works and Planning and Building (Urban Design).

Created : 2017-04-18 03:41:20

Last Modified : 2018-07-20 04:04:46

TRANSPORTATION AND WORKS**TRAFFIC REVIEW (PPP)**

Contact: Linda Wu Tel. (905) 615-3200 x3597

No	Milestone	Condition
2	RECOMMENDATION REPORT	<p>[June 2018] - Having reviewed an updated TIS report dated May 2018, prepared by nexTrans Consulting, staff provides the following comments:</p> <ul style="list-style-type: none"> (1) The report should include the existing signal timing plans for this intersection. <p>Note: The study has increased the cycle length for the intersection of Eglinton Avenue/Inverness Boulevard from 130s to 140s. As a result, the optimized signal timing plans will be forwarded to the City's Signals group for further review.</p> <ul style="list-style-type: none"> (2) Table 3-2: the table name should be revised to " Recommended Optimized Signal Timing for AM Peak Period" (3) The report shall clarify whether the future total scenario is based on the optimized signal timing plans. (4) The following TDM measures shall be considered and incorporated into the report: <ul style="list-style-type: none"> -The owner agrees to provide the purchaser/ tenant of each dwelling unit with one (1) PRESTO - transit smart card loaded with a minimum value of \$25.00 (twenty-five dollars). -The Owner agrees to provide transit and active transportation information at a prominent location within the development area.

[Previous Comment]

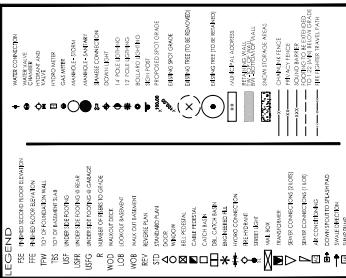
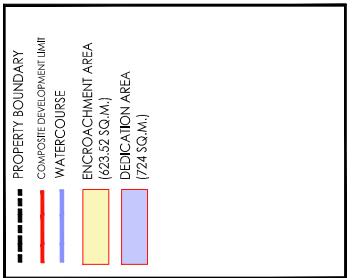
Staff is in receipt of the TIS report dated January 2017, prepared by nexTrans Consulting. Having reviewed the submitted TIS report, staff provides the following comments:

- Page 6-Trip Generation: the assumed 10% transit mode share may have been overestimated given the site location. In order to obtain conservative estimates of traffic impact, the study is not to apply transit reduction to trip generation.
- The Peak-hour factor utilized in Synchro analysis should be based on traffic counts as opposed to the value of 1.00 to capture traffic fluctuation.
- The study should include queuing results (95th percentile) for the intersection of Barberville Road/Inverness Boulevard and Eglinton Avenue using Synchro and SimTraffic.
- The study should include analysis for the intersection of Barberville Road and Inverness Boulevard (in front of 1549 and 1553 Barberville Road).
- The study should address the intersection of Barberville Road and Eglinton Avenue (near the east end of the Eglinton Avenue bridge).
- The study should include a Transportation Demand Management component, considering comment #5-TDM.

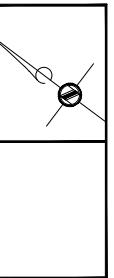
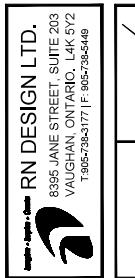
Created : 2017-04-18 03:41:20**Last Modified :** 2018-07-20 04:04:46

Appendix B – Proposed Site Plan

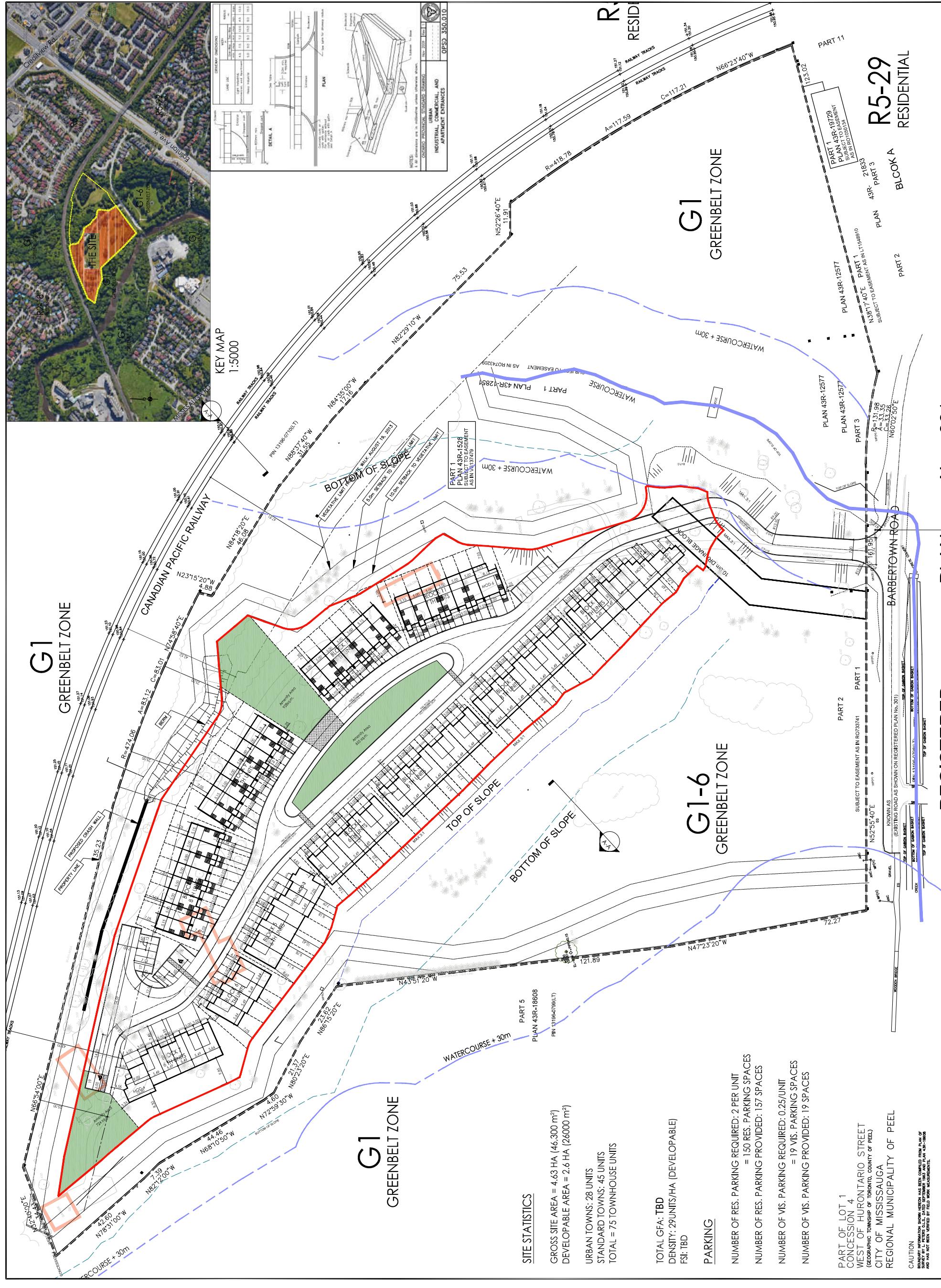
THESE DRAWINGS ARE NOT TO BE SCALED:
ALL DIMENSIONS MUST BE VERIFIED BY CONTRACTOR PRIOR TO
COMMENCEMENT OF ANY WORK. ANY DISCREPANCIES MUST BE
REPORTED DIRECTLY TO SPIN ARCHITECTS INC.



ISSUED OR REVISED COMMENTS						
NO.	DESCRIPTION	DATE	DVN	C-H	R/C	MA
1	REvised C-BREVW	31-AUG-06	AA	AA	AA	AA
2	REvised C-BREVW AND C-BLCOM	17-SEPT-07	AA	AA	AA	AA
3	REvised C-BREVW	20-MAY-08	EGS	MA	MA	MA
4	REvised C-BREVW	26-MAY-09	EGS	MA	MA	MA



BARRERTOWN VENTURES INC.	
PROJECT LOCATION	1725 BARRERTOWN ROAD, MISSISSAUGA, ON.
DRAWING NO.	CONCEPT SITE PLAN
DATE DRAWN BY	SCALE 1:600
JAN 17/21 MA	CHECKED BY MA
PROJECT NUMBER	DEMAND-S NUMBER
14113	SP-100



Appendix C – Existing Traffic Data



Turning Movement Count (1 . BARBERTOWN RD & INVERNESS BLVD)

Start Time	E Approach BARBERTOWN RD					S Approach INVERNESS BLVD					W Approach BARBERTOWN RD					Int. Total (15 min)	Int. Total (1 hr)
	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	U-Turn W:W	Peds W:	Approach Total		
07:00:00	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	3	
07:15:00	0	4	0	0	4	2	1	0	0	3	2	0	0	0	2	9	
07:30:00	0	2	0	0	2	0	2	0	0	2	0	0	0	0	0	4	
07:45:00	0	4	0	1	4	2	2	0	0	4	4	0	0	0	4	12	28
08:00:00	0	6	0	4	6	1	4	1	0	6	2	0	0	0	2	14	39
08:15:00	1	6	0	0	7	1	4	1	0	6	4	1	0	0	5	18	48
08:30:00	0	5	0	0	5	2	3	0	0	5	2	0	0	0	2	12	56
08:45:00	1	1	0	1	2	3	3	0	0	6	1	1	0	0	2	10	54
09:00:00	0	4	0	0	4	1	0	0	0	1	1	0	0	0	1	6	46
09:15:00	0	6	0	0	6	5	1	0	0	6	1	0	0	0	1	13	41
09:30:00	0	2	0	0	2	0	3	1	0	4	1	1	0	0	2	8	37
09:45:00	0	4	0	0	4	2	1	0	0	3	2	0	0	0	2	9	36

BREAK

16:00:00	1	3	0	0	4	6	5	0	0	11	3	0	0	0	3	18	
16:15:00	0	3	0	0	3	4	2	0	0	6	1	1	0	0	2	11	
16:30:00	0	4	0	0	4	4	5	0	0	9	2	0	0	0	2	15	
16:45:00	1	4	0	0	5	5	3	0	0	8	1	1	0	0	2	15	59
17:00:00	0	0	0	2	0	3	2	0	0	5	2	0	0	0	2	7	48
17:15:00	0	1	0	1	1	4	1	0	0	5	2	0	0	0	2	8	45
17:30:00	0	1	0	1	1	0	3	0	0	3	2	0	0	0	2	6	36
17:45:00	0	1	0	0	1	2	4	1	0	7	1	0	0	0	1	9	30
18:00:00	0	2	0	0	2	1	3	0	0	4	0	1	0	0	1	7	30
18:15:00	0	4	0	0	4	3	1	0	0	4	0	0	0	0	0	8	30
18:30:00	0	0	0	0	0	1	4	1	0	6	2	0	0	0	2	8	32



18:45:00	0	2	0	0	2	3	2	0	0	5	1	0	0	0	1	8	31
Grand Total	4	70	0	10	74	55	61	5	0	121	37	6	0	0	43	238	-
Approach%	5.4%	94.6%	0%		-	45.5%	50.4%	4.1%		-	86%	14%	0%		-	-	-
Totals %	1.7%	29.4%	0%		31.1%	23.1%	25.6%	2.1%		50.8%	15.5%	2.5%	0%		18.1%	-	-
Heavy	0	0	0		-	0	5	0		-	0	0	0		-	-	-
Heavy %	0%	0%	0%		-	0%	8.2%	0%		-	0%	0%	0%		-	-	-
Bicycles	0	0	0		-	0	1	0		-	1	0	0		-	-	-
Bicycle %	0%	0%	0%		-	0%	1.6%	0%		-	2.7%	0%	0%		-	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather:

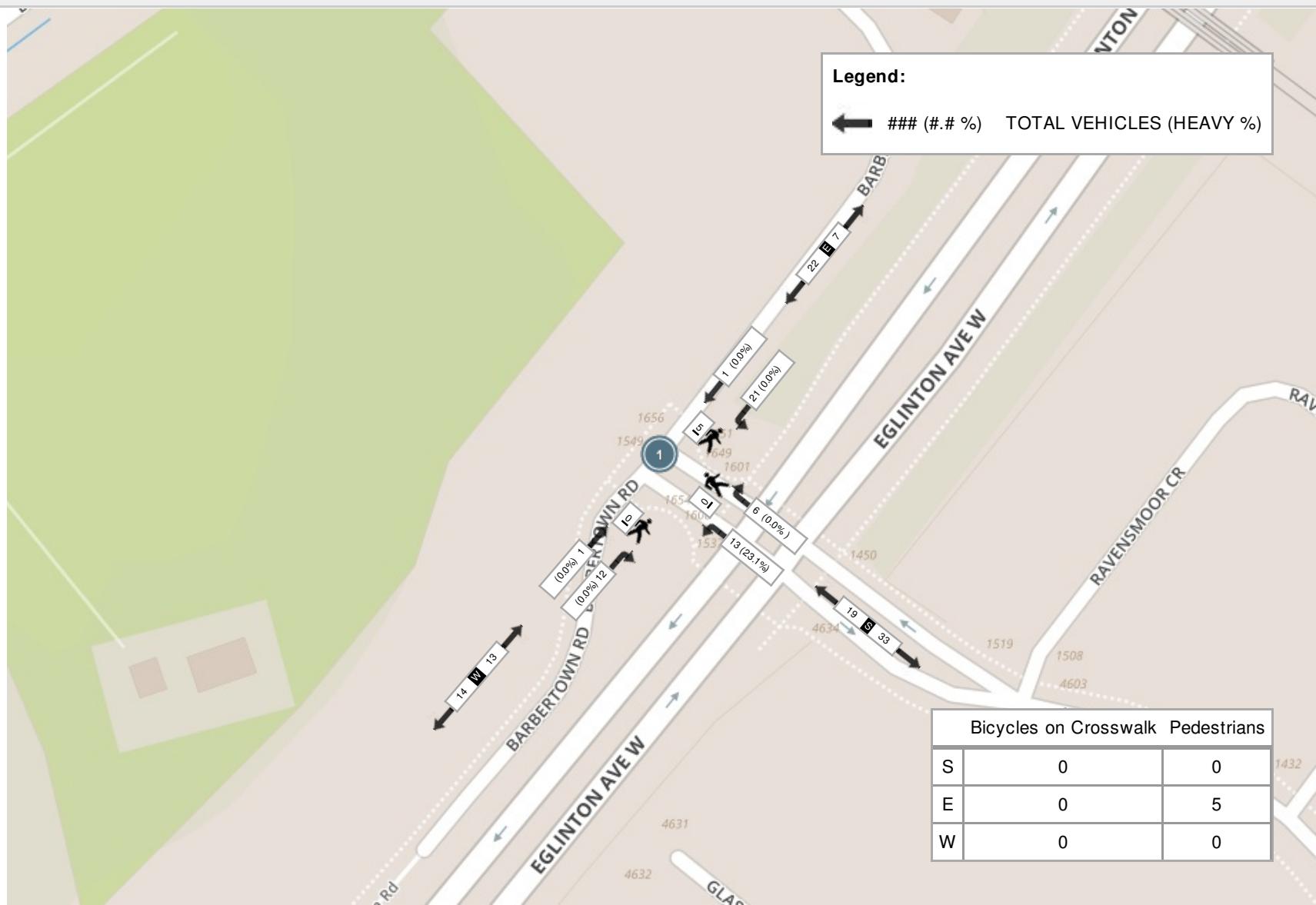
Start Time	E Approach BARBERTOWN RD					S Approach INVERNESS BLVD					W Approach BARBERTOWN RD					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
07:45:00	0	4	0	1	4	2	2	0	0	4	4	0	0	0	4	12
08:00:00	0	6	0	4	6	1	4	1	0	6	2	0	0	0	2	14
08:15:00	1	6	0	0	7	1	4	1	0	6	4	1	0	0	5	18
08:30:00	0	5	0	0	5	2	3	0	0	5	2	0	0	0	2	12
Grand Total	1	21	0	5	22	6	13	2	0	21	12	1	0	0	13	56
Approach%	4.5%	95.5%	0%		-	28.6%	61.9%	9.5%		-	92.3%	7.7%	0%		-	-
Totals %	1.8%	37.5%	0%		39.3%	10.7%	23.2%	3.6%		37.5%	21.4%	1.8%	0%		23.2%	-
PHF	0.25	0.88	0		0.79	0.75	0.81	0.5		0.88	0.75	0.25	0		0.65	-
Heavy	0	0	0		0	0	3	0		3	0	0	0		0	-
Heavy %	0%	0%	0%		0%	0%	23.1%	0%		14.3%	0%	0%	0%		0%	-
Lights	1	21	0		22	6	10	2		18	12	1	0		13	-
Lights %	100%	100%	0%		100%	100%	76.9%	100%		85.7%	100%	100%	0%		100%	-
Buses	0	0	0		0	0	3	0		3	0	0	0		0	-
Buses %	0%	0%	0%		0%	0%	23.1%	0%		14.3%	0%	0%	0%		0%	-
Pedestrians	-	-	-	5	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	100%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-



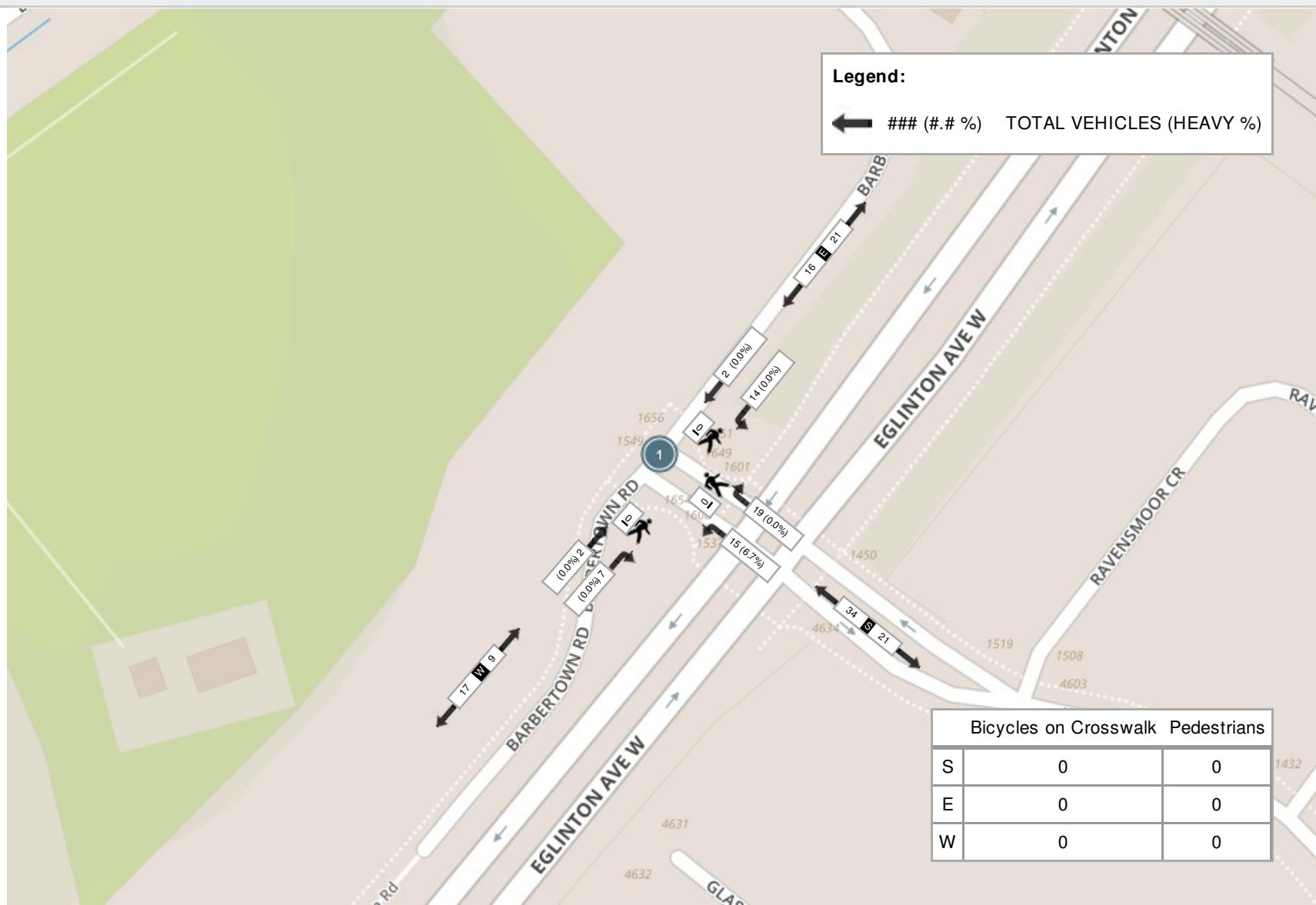
Peak Hour: 04:00 PM - 05:00 PM Weather:

Start Time	E Approach BARBERTOWN RD					S Approach INVERNESS BLVD					W Approach BARBERTOWN RD					Int. Total (15 min)
	Thru	Left	U-Turn	Peds	Approach Total	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	
16:00:00	1	3	0	0	4	6	5	0	0	11	3	0	0	0	3	18
16:15:00	0	3	0	0	3	4	2	0	0	6	1	1	0	0	2	11
16:30:00	0	4	0	0	4	4	5	0	0	9	2	0	0	0	2	15
16:45:00	1	4	0	0	5	5	3	0	0	8	1	1	0	0	2	15
Grand Total	2	14	0	0	16	19	15	0	0	34	7	2	0	0	9	59
Approach%	12.5%	87.5%	0%	-	55.9%	44.1%	0%	-	77.8%	22.2%	0%	-	-	-	-	-
Totals %	3.4%	23.7%	0%	27.1%	32.2%	25.4%	0%	57.6%	11.9%	3.4%	0%	15.3%	-	-	-	-
PHF	0.5	0.88	0	0.8	0.79	0.75	0	0.77	0.58	0.5	0	0.75	-	-	-	-
Heavy	0	0	0	0	0	1	0	1	0	0	0	0	-	-	-	-
Heavy %	0%	0%	0%	0%	0%	6.7%	0%	2.9%	0%	0%	0%	0%	-	-	-	-
Lights	2	14	0	16	19	14	0	33	7	2	0	9	-	-	-	-
Lights %	100%	100%	0%	100%	100%	93.3%	0%	97.1%	100%	100%	0%	100%	-	-	-	-
Buses	0	0	0	0	0	1	0	1	0	0	0	0	-	-	-	-
Buses %	0%	0%	0%	0%	0%	6.7%	0%	2.9%	0%	0%	0%	0%	-	-	-	-
Pedestrians	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	-
Pedestrians%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-
Bicycles on Crosswalk	-	-	-	0	-	-	-	0	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-
Bicycles on Road	0	0	0	0	-	0	0	0	-	0	0	0	-	-	-	-
Bicycles on Road%	-	-	-	0%	-	-	-	0%	-	-	-	0%	-	-	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather:



Peak Hour: 04:00 PM - 05:00 PM Weather:





Turning Movement Count (3 . EGLINTON AVE W & BARBERTOWN RD)

Start Time	N Approach BARBERTOWN RD					E Approach EGLINTON AVE W					W Approach EGLINTON AVE W					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	U-Turn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	1	0	0	0	1	0	176	0	0	176	344	0	0	0	344	521	
07:15:00	0	0	0	0	0	0	193	0	0	193	473	0	0	0	473	666	
07:30:00	1	0	0	0	1	0	279	0	0	279	601	0	0	0	601	881	
07:45:00	3	0	0	0	3	0	294	0	0	294	650	0	0	0	650	947	3015
08:00:00	3	0	0	0	3	0	310	0	0	310	642	0	0	0	642	955	3449
08:15:00	0	0	0	0	0	0	256	0	0	256	607	0	0	0	607	863	3646
08:30:00	1	0	0	0	1	0	338	0	0	338	642	0	0	0	642	981	3746
08:45:00	3	0	0	0	3	0	307	0	0	307	595	0	0	0	595	905	3704
09:00:00	0	0	0	0	0	1	272	0	0	273	468	0	0	0	468	741	3490
09:15:00	2	0	0	0	2	0	251	0	0	251	407	0	0	0	407	660	3287
09:30:00	1	0	0	0	1	0	215	0	0	215	310	0	0	0	310	526	2832
09:45:00	0	0	0	0	0	0	257	0	0	257	312	0	0	0	312	569	2496

BREAK

16:00:00	1	0	0	0	1	0	473	0	0	473	343	0	0	0	343	817	
16:15:00	3	0	0	0	3	0	511	0	0	511	370	0	0	0	370	884	
16:30:00	0	0	0	0	0	0	541	0	0	541	341	0	0	0	341	882	
16:45:00	4	0	0	0	4	1	590	0	0	591	355	0	0	0	355	950	3533
17:00:00	2	0	0	0	2	0	576	0	0	576	341	0	0	0	341	919	3635
17:15:00	0	0	0	0	0	0	618	0	0	618	332	0	0	0	332	950	3701
17:30:00	1	0	0	0	1	0	659	0	0	659	367	0	0	0	367	1027	3846
17:45:00	2	0	0	0	2	0	591	0	0	591	372	0	0	0	372	965	3861
18:00:00	2	0	0	0	2	0	575	0	0	575	339	0	0	0	339	916	3858
18:15:00	1	0	0	0	1	0	577	0	0	577	332	0	0	0	332	910	3818
18:30:00	1	0	0	0	1	0	488	0	0	488	302	0	0	0	302	791	3582



18:45:00	0	0	0	0	0	0	445	0	0	445	300	0	0	0	300	745	3362
Grand Total	32	0	0	0	32	2	9792	0	0	9794	10145	0	0	0	10145	19971	-
Approach%	100%	0%	0%		-	0%	100%	0%		-	100%	0%	0%		-	-	-
Totals %	0.2%	0%	0%		0.2%	0%	49%	0%		49%	50.8%	0%	0%		50.8%	-	-
Heavy	5	0	0		-	0	225	0		-	266	0	0		-	-	-
Heavy %	15.6%	0%	0%		-	0%	2.3%	0%		-	2.6%	0%	0%		-	-	-
Bicycles	0	0	0		-	0	2	0		-	1	0	0		-	-	-
Bicycle %	0%	0%	0%		-	0%	0%	0%		-	0%	0%	0%		-	-	-



Peak Hour: 07:45 AM - 08:45 AM Weather:

Start Time	N Approach BARBERTOWN RD					E Approach EGLINTON AVE W					W Approach EGLINTON AVE W					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
07:45:00	3	0	0	0	3	0	294	0	0	294	650	0	0	0	650	947
08:00:00	3	0	0	0	3	0	310	0	0	310	642	0	0	0	642	955
08:15:00	0	0	0	0	0	0	256	0	0	256	607	0	0	0	607	863
08:30:00	1	0	0	0	1	0	338	0	0	338	642	0	0	0	642	981
Grand Total	7	0	0	0	7	0	1198	0	0	1198	2541	0	0	0	2541	3746
Approach%	100%	0%	0%		-	0%	100%	0%		-	100%	0%	0%		-	-
Totals %	0.2%	0%	0%		0.2%	0%	32%	0%		32%	67.8%	0%	0%		67.8%	-
PHF	0.58	0	0		0.58	0	0.89	0		0.89	0.98	0	0		0.98	-
Heavy	3	0	0		3	0	50	0		50	54	0	0		54	-
Heavy %	42.9%	0%	0%		42.9%	0%	4.2%	0%		4.2%	2.1%	0%	0%		2.1%	-
Lights	4	0	0		4	0	1148	0		1148	2487	0	0		2487	-
Lights %	57.1%	0%	0%		57.1%	0%	95.8%	0%		95.8%	97.9%	0%	0%		97.9%	-
Single-Unit Trucks	0	0	0		0	0	10	0		10	17	0	0		17	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.8%	0%		0.8%	0.7%	0%	0%		0.7%	-
Buses	3	0	0		3	0	37	0		37	35	0	0		35	-
Buses %	42.9%	0%	0%		42.9%	0%	3.1%	0%		3.1%	1.4%	0%	0%		1.4%	-
Articulated Trucks	0	0	0		0	0	3	0		3	2	0	0		2	-
Articulated Trucks %	0%	0%	0%		0%	0%	0.3%	0%		0.3%	0.1%	0%	0%		0.1%	-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	%		-	-	-	%		-	-	-	%	-	-



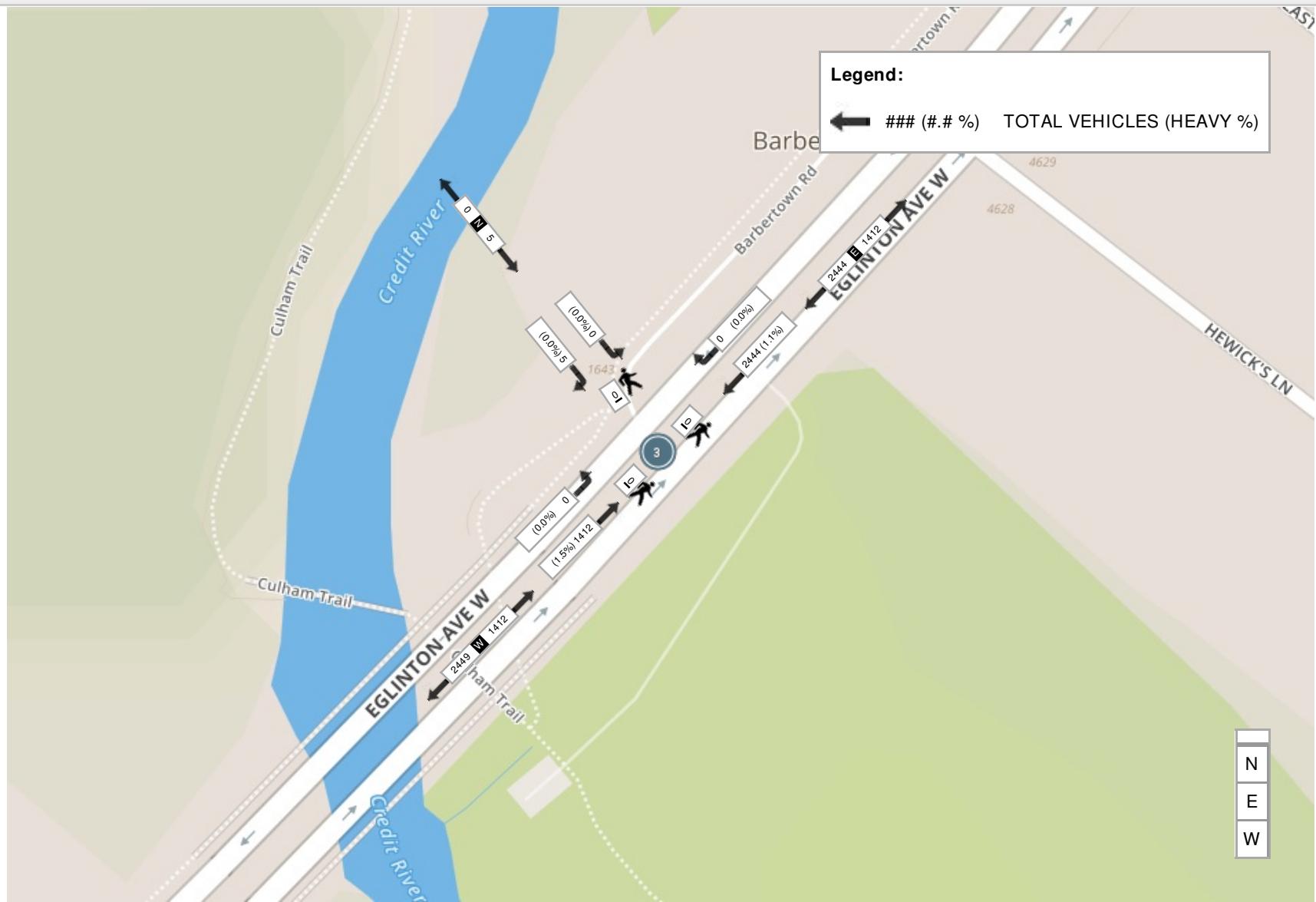
Peak Hour: 05:00 PM - 06:00 PM Weather:

Start Time	N Approach BARBERTOWN RD					E Approach EGLINTON AVE W					W Approach EGLINTON AVE W					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	2	0	0	0	2	0	576	0	0	576	341	0	0	0	341	919
17:15:00	0	0	0	0	0	0	618	0	0	618	332	0	0	0	332	950
17:30:00	1	0	0	0	1	0	659	0	0	659	367	0	0	0	367	1027
17:45:00	2	0	0	0	2	0	591	0	0	591	372	0	0	0	372	965
Grand Total	5	0	0	0	5	0	2444	0	0	2444	1412	0	0	0	1412	3861
Approach%	100%	0%	0%		-	0%	100%	0%		-	100%	0%	0%		-	-
Totals %	0.1%	0%	0%		0.1%	0%	63.3%	0%		63.3%	36.6%	0%	0%		36.6%	-
PHF	0.63	0	0		0.63	0	0.93	0		0.93	0.95	0	0		0.95	-
Heavy	0	0	0		0	0	28	0		28	21	0	0		21	-
Heavy %	0%	0%	0%		0%	0%	1.1%	0%		1.1%	1.5%	0%	0%		1.5%	-
Lights	5	0	0		5	0	2416	0		2416	1391	0	0		1391	-
Lights %	100%	0%	0%		100%	0%	98.9%	0%		98.9%	98.5%	0%	0%		98.5%	-
Single-Unit Trucks	0	0	0		0	0	6	0		6	4	0	0		4	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0.2%	0%		0.2%	0.3%	0%	0%		0.3%	-
Buses	0	0	0		0	0	19	0		19	17	0	0		17	-
Buses %	0%	0%	0%		0%	0%	0.8%	0%		0.8%	1.2%	0%	0%		1.2%	-
Articulated Trucks	0	0	0		0	0	3	0		3	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0.1%	0%		0.1%	0%	0%	0%		0%	-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	%		-	-	-	%		-	-	-	%	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather:



Peak Hour: 05:00 PM - 06:00 PM Weather:





Turning Movement Count (2 . EGLINTON AVE W & INVERNESS BLVD)

Start Time	N Approach INVERNESS BLVD						E Approach EGLINTON AVE W						S Approach INVERNESS BLVD						W Approach EGLINTON AVE W						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	1	0	0	0	0	1	1	165	6	0	1	172	26	0	6	0	0	32	1	344	1	0	0	346	551	
07:15:00	2	0	4	0	0	6	1	178	7	0	0	186	17	0	8	0	0	25	3	474	2	0	0	479	696	
07:30:00	2	0	0	0	0	2	1	263	6	0	0	270	37	0	14	0	0	51	0	612	0	0	0	612	935	
07:45:00	2	0	6	0	0	8	2	272	9	0	1	283	25	0	20	0	1	45	2	676	1	0	0	679	1015	3197
08:00:00	2	0	7	0	0	9	3	293	10	0	0	306	40	1	15	0	1	56	0	618	2	0	0	620	991	3637
08:15:00	4	1	6	0	0	11	5	246	7	0	1	258	31	0	15	0	0	46	2	640	1	0	0	643	958	3899
08:30:00	3	0	4	0	0	7	2	304	8	0	1	314	17	1	16	0	1	34	2	639	2	0	0	643	998	3962
08:45:00	0	0	2	0	0	2	3	296	10	0	0	309	21	1	13	0	0	35	3	604	2	0	0	609	955	3902
09:00:00	3	0	3	0	0	6	1	253	14	0	0	268	13	0	8	0	0	21	1	458	0	1	0	460	755	3666
09:15:00	1	0	6	0	0	7	3	243	4	0	0	250	17	0	6	0	0	23	2	396	4	1	0	403	683	3391
09:30:00	0	1	3	0	0	4	4	196	7	0	0	207	13	0	4	0	0	17	0	319	0	0	0	319	547	2940
09:45:00	3	0	3	0	0	6	1	242	4	0	0	247	6	0	6	0	0	12	1	314	2	0	0	317	582	2567
BREAK																										
16:00:00	3	0	3	0	0	6	6	456	14	0	2	476	12	1	6	0	0	19	2	349	4	1	3	356	857	
16:15:00	2	0	2	0	0	4	4	505	17	0	0	526	11	0	8	0	1	19	2	354	2	1	0	359	908	
16:30:00	2	0	4	0	0	6	9	545	12	1	1	567	8	0	9	0	0	17	3	332	1	0	0	336	926	
16:45:00	2	0	3	0	0	5	5	571	19	0	0	595	9	0	10	0	2	19	5	335	3	1	0	344	963	3654
17:00:00	2	0	0	0	0	2	5	590	14	0	6	609	10	0	3	0	1	13	8	312	0	0	0	320	944	3741
17:15:00	1	0	3	0	0	4	2	610	21	0	0	633	15	0	6	0	0	21	7	337	4	0	1	348	1006	3839
17:30:00	1	0	3	0	0	4	2	654	21	0	0	677	13	0	8	0	0	21	7	347	1	0	1	355	1057	3970
17:45:00	0	0	3	0	0	3	6	593	24	1	2	624	9	0	6	0	3	15	6	342	0	0	0	348	990	3997
18:00:00	1	0	1	0	0	2	3	555	18	0	1	576	9	0	6	0	1	15	6	320	3	1	2	330	923	3976
18:15:00	2	1	1	0	1	4	4	570	20	0	1	594	7	0	10	0	1	17	9	306	0	5	1	320	935	3905
18:30:00	2	0	1	0	0	3	5	498	28	0	2	531	16	0	3	0	0	19	4	293	2	0	2	299	852	3700
18:45:00	0	0	2	0	1	2	5	427	17	1	0	450	11	0	5	0	0	16	3	291	0	0	1	294	762	3472
Grand Total	41	3	70	0	2	114	83	9525	317	3	19	9928	393	4	211	0	12	608	79	10012	37	11	11	10139	20789	-



Turning Movement Count
Location Name: EGLINTON AVE W & INVERNESS BLVD
Date: Thu, Oct 26, 2017 Deployment Lead: Theo Daglis

NexTrans
4261-A14 Highway 7 East
Suite 489
Markham ON, CANADA, L3R 9W6



Peak Hour: 07:45 AM - 08:45 AM Weather:

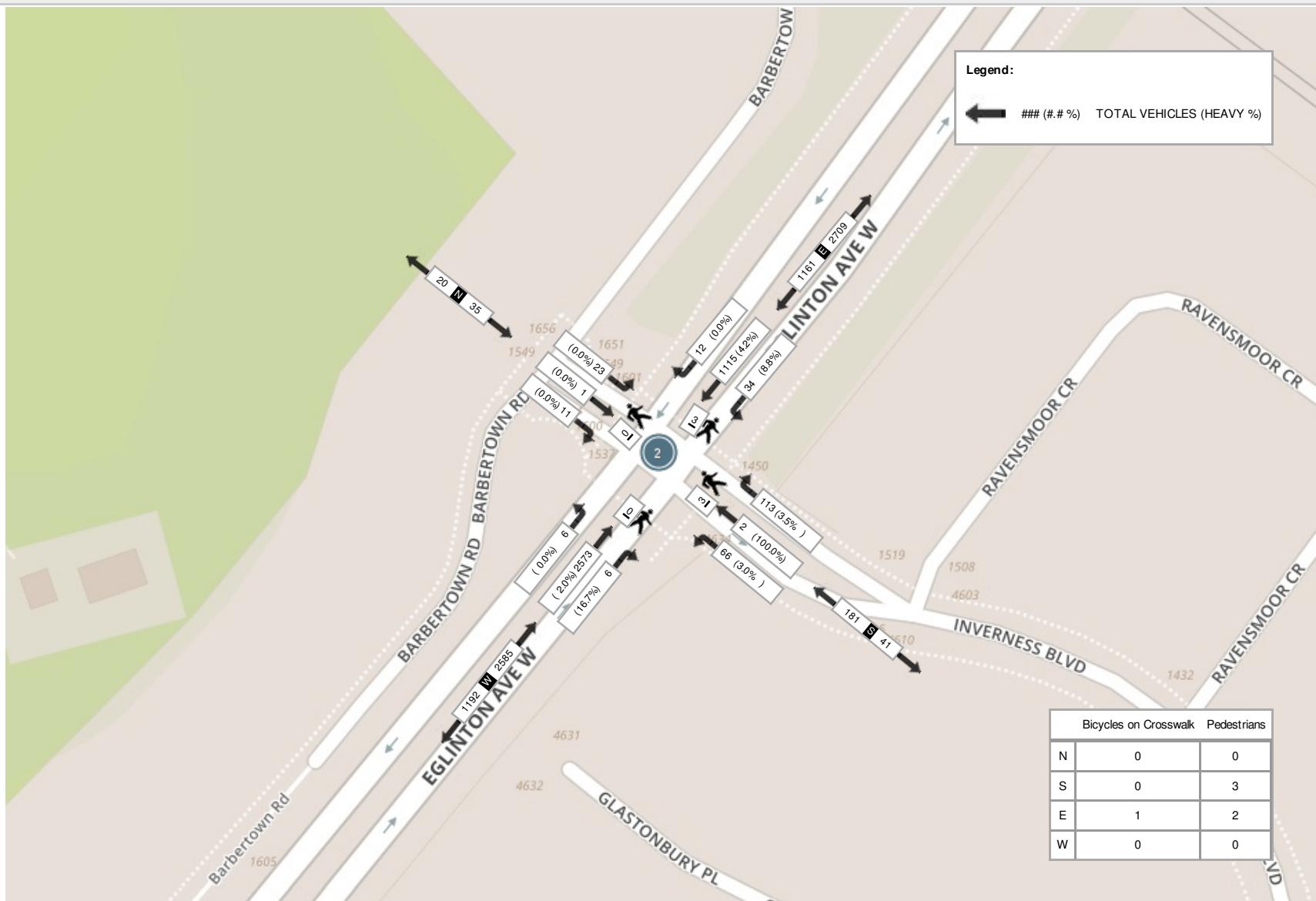
Start Time	N Approach INVERNESS BLVD						E Approach EGLINTON AVE W						S Approach INVERNESS BLVD						W Approach EGLINTON AVE W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
07:45:00	2	0	6	0	0	8	2	272	9	0	1	283	25	0	20	0	1	45	2	676	1	0	0	679	1015
08:00:00	2	0	7	0	0	9	3	293	10	0	0	306	40	1	15	0	1	56	0	618	2	0	0	620	991
08:15:00	4	1	6	0	0	11	5	246	7	0	1	258	31	0	15	0	0	46	2	640	1	0	0	643	958
08:30:00	3	0	4	0	0	7	2	304	8	0	1	314	17	1	16	0	1	34	2	639	2	0	0	643	998
Grand Total	11	1	23	0	0	35	12	1115	34	0	3	1161	113	2	66	0	3	181	6	2573	6	0	0	2585	3962
Approach%	31.4%	2.9%	65.7%	0%	-	1%	96%	2.9%	0%	-	62.4%	1.1%	36.5%	0%	-	0.2%	99.5%	0.2%	0%	-	-	-	-	-	
Totals %	0.3%	0%	0.6%	0%	0.9%	0.3%	28.1%	0.9%	0%	29.3%	2.9%	0.1%	1.7%	0%	4.6%	0.2%	64.9%	0.2%	0%	65.2%	-	-	-	-	
PHF	0.69	0.25	0.82	0	0.8	0.6	0.92	0.85	0	0.92	0.71	0.5	0.83	0	0.81	0.75	0.95	0.75	0	0.95	-	-	-	-	
Heavy	0	0	0	0	0	0	0	47	3	0	50	4	2	2	0	8	1	51	0	0	52	-	-	-	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	4.2%	8.8%	0%	4.3%	3.5%	100%	3%	0%	4.4%	16.7%	2%	0%	0%	2%	-	-	-	-
Lights	11	1	23	0	35	12	1068	31	0	1111	109	0	64	0	173	5	2522	6	0	2533	-	-	-	-	
Lights %	100%	100%	100%	0%	100%	100%	95.8%	91.2%	0%	95.7%	96.5%	0%	97%	0%	95.6%	83.3%	98%	100%	0%	98%	-	-	-	-	
Single-Unit Trucks	0	0	0	0	0	0	0	8	0	0	8	0	0	1	0	1	1	18	0	0	19	-	-	-	-
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0.7%	0%	0%	0.7%	0%	0%	1.5%	0%	0.6%	16.7%	0.7%	0%	0%	0.7%	-	-	-	-
Buses	0	0	0	0	0	0	0	36	3	0	39	4	2	1	0	7	0	30	0	0	30	-	-	-	-
Buses %	0%	0%	0%	0%	0%	0%	0%	3.2%	8.8%	0%	3.4%	3.5%	100%	1.5%	0%	3.9%	0%	1.2%	0%	0%	1.2%	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	0	3	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0.3%	0%	0%	0.3%	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0.1%	-	-	-	-
Pedestrians	-	-	-	-	0	-	-	-	-	2	-	-	-	-	3	-	-	-	-	0	-	-	-	-	
Pedestrians%	-	-	-	-	0%	-	-	-	-	33.3%	-	-	-	-	50%	-	-	-	-	0%	-	-	-	-	
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	16.7%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-	-	-	
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	



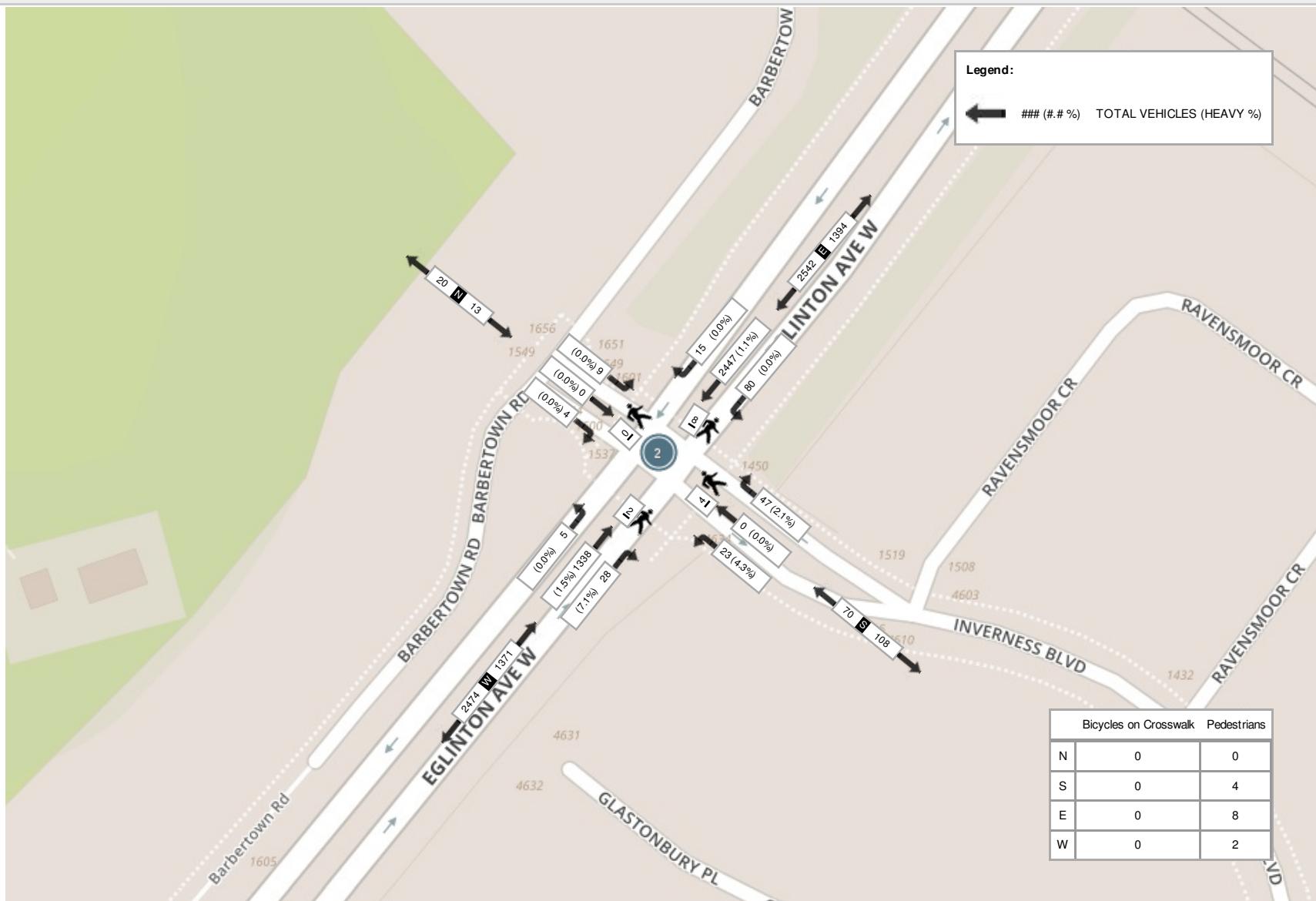
Peak Hour: 05:00 PM - 06:00 PM Weather:

Start Time	N Approach INVERNESS BLVD						E Approach EGLINTON AVE W						S Approach INVERNESS BLVD						W Approach EGLINTON AVE W						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
17:00:00	2	0	0	0	0	2	5	590	14	0	6	609	10	0	3	0	1	13	8	312	0	0	0	320	944
17:15:00	1	0	3	0	0	4	2	610	21	0	0	633	15	0	6	0	0	21	7	337	4	0	1	348	1006
17:30:00	1	0	3	0	0	4	2	654	21	0	0	677	13	0	8	0	0	21	7	347	1	0	1	355	1057
17:45:00	0	0	3	0	0	3	6	593	24	1	2	624	9	0	6	0	3	15	6	342	0	0	0	348	990
Grand Total	4	0	9	0	0	13	15	2447	80	1	8	2543	47	0	23	0	4	70	28	1338	5	0	2	1371	3997
Approach%	30.8%	0%	69.2%	0%	-	0.6%	96.2%	3.1%	0%	-	67.1%	0%	32.9%	0%	-	2%	97.6%	0.4%	0%	-	-	-	-	-	
Totals %	0.1%	0%	0.2%	0%	0.3%	0.4%	61.2%	2%	0%	63.6%	1.2%	0%	0.6%	0%	1.8%	0.7%	33.5%	0.1%	0%	34.3%	-	-	-	-	
PHF	0.5	0	0.75	0	0.81	0.63	0.94	0.83	0.25	0.94	0.78	0	0.72	0	0.83	0.88	0.96	0.31	0	0.97	-	-	-	-	
Heavy	0	0	0	0	0	0	0	27	0	0	27	1	0	1	0	2	2	20	0	0	22	-	-	-	-
Heavy %	0%	0%	0%	0%	0%	0%	0%	1.1%	0%	0%	1.1%	2.1%	0%	4.3%	0%	2.9%	7.1%	1.5%	0%	0%	1.6%	-	-	-	-
Lights	4	0	9	0	13	15	2420	80	1	2516	46	0	22	0	68	26	1318	5	0	1349	-	-	-	-	
Lights %	100%	0%	100%	0%	100%	100%	98.9%	100%	100%	98.9%	97.9%	0%	95.7%	0%	97.1%	92.9%	98.5%	100%	0%	98.4%	-	-	-	-	
Single-Unit Trucks	0	0	0	0	0	0	0	4	0	1	0	1	0	2	2	2	0	0	0	4	-	-	-	-	
Single-Unit Trucks %	0%	0%	0%	0%	0%	0%	0%	0.2%	0%	0%	0.2%	2.1%	0%	4.3%	0%	2.9%	7.1%	0.1%	0%	0%	0.3%	-	-	-	-
Buses	0	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	0	18	0	0	18	-	-	-	-
Buses %	0%	0%	0%	0%	0%	0%	0%	0.8%	0%	0%	0.8%	0%	0%	0%	0%	0%	0%	1.3%	0%	0%	1.3%	-	-	-	-
Articulated Trucks	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	-	-	-	-
Articulated Trucks %	0%	0%	0%	0%	0%	0%	0%	0.1%	0%	0%	0.1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	
Pedestrians	-	-	-	-	0	-	-	-	-	8	-	-	-	-	4	-	-	-	-	-	2	-	-	-	-
Pedestrians%	-	-	-	-	0%	-	-	-	-	57.1%	-	-	-	-	28.6%	-	-	-	-	-	14.3%	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-
Bicycles on Crosswalk%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	0	-	
Bicycles on Road%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	0%	-	-	-	-	-	0%	-	-	-	-

Peak Hour: 07:45 AM - 08:45 AM Weather:



Peak Hour: 05:00 PM - 06:00 PM Weather:



City of Mississauga
3185 Mavis Road
MISSISSAUGA ON L5C 1T7



Leading today for tomorrow

www.mississauga.ca

File: CA.13.SIG
Signal Timing Request
RT.07.3106

May 22, 2015

Nextrans
4261 - A14 Highway 7 East
Suite 489
Markham, ON L3R 9W6

Dear Mr. Sri Kantha:

Re: Traffic Signal Timing

Please find the attached traffic signal timing for the intersections of:

Eglinton Avenue at Inverness Boulevard/Barbertown Road as requested May 21, 2015.

The side street phase (4) is actuated; meaning a vehicle or pedestrian must be present on the side street before the side street is given a green indication. Vehicle presence on the side street would result in a possible green time of between the minimum and maximum time noted, depending on demand. Similarly, phase (1) is also actuated. Pedestrian "Walk" and flashing "Don't Walk" time on the side street, as noted, would be used in the event that the pedestrian push button is activated. During the side street pedestrian indications, the side street vehicle green is concurrently displayed. Should there be no demand on the actuated phase; the signals would result in a green indication on the major street (2).

Note: All times recorded in seconds, based on full demand.

Mr. Sri Kantha

Re: Traffic Signal Timing – Eglinton Avenue at Inverness Blvd/Barbertown Road

May 22, 2015

Page 2

The system data “Selection Plan” is used for system control operation. In the event that the “mode” is computer control (CC), the cycle length as noted, would be used along with the system split time given for each phase. When the “mode” is local control (LO), all other functions are redundant with no system split time given, and the intersection operates using the timings at the intersection, as noted in the report.

Should you require further information, please contact Jim Kartsomanis, at 905-615-3200 extension 3964.

Sincerely,



Jim Kartsomanis
Coordinator, Traffic Signal System
Traffic Signals and Street Lighting
Transportation and Works Department
City of Mississauga
905-615-3200 ext. 3964
jim.kartsomanis@mississauga.ca

c: John Clarke, Manager, Traffic Signals and Street Lighting

JK:kl

?? SHOW TIMING REPORT, ACT1-3, I503

SCHEDULED DATA

INT	TIME	SELECTION			PLANS		IN USE		ALTERNATES			
		MODE	CYC	OFF	SPLT	SPEC	DUP	MODE	CYC	OFF	SPLT	SPEC
DUP		LEN	NO.	NO.	FUNC	ISEC		LEN	NO.	NO.	FUNC	
ISEC												
503	00:00	/	/	/	/	/	LO	101	2	2	2	
503	06:00	1/1	/	/	/	1/1	CC	140	1	1	1	
1019												

LOCATION: EGLINTON @ INVERNESS

INTERSECTION NO.: 503

DATE: 22-MAY-2015

TIME: 06:00

SCHEDULE: 1

SPEC. FUNC.: 1 - N 2 - Y 3

- N

MAIN ST.: EGLINTON AVE

CONTROLLER TYPE: S4

NO. OF PH: 3

CONTROL MODE: CC

1. WBL
EGLINTON AVE

- Minimum green = 5 seconds
- Maximum green = 7 seconds
- Clearance = 3 seconds

2. EW
EGLINTON AVE

- Walk = 63 seconds
- FL. Don't Walk = 15 seconds
- Amber = 4 seconds
- All Red = 3 seconds

4. NS
INVERNESS BLVD

- Walk = 14 seconds
- FL. Don't Walk = 19 seconds
- Sd. Don't Walk = 4 seconds
- Maximum = 37 seconds
- Amber = 4 seconds
- All Red = 4 seconds

Total Cycle Length = 140 seconds

SCHEDULED DATA

INT	TIME	SELECTION			PLANS		IN USE		ALTERNATES			
		MODE	CYC	OFF	SPLT	SPEC	DUP	MODE	CYC	OFF	SPLT	SPEC
DUP		LEN	NO.	NO.	FUNC	ISEC		LEN	NO.	NO.	FUNC	
ISEC												
503	09:30	1/1	/	/	1/1	/	CC	135	2	2	2	
1019												

LOCATION: EGLINTON @ INVERNESS

INTERSECTION NO.: 503

DATE: 22-MAY-2015

TIME: 09:30

SCHEDULE: 1

SPEC. FUNC.: 1 - N 2 - Y 3

- N

MAIN ST.: EGLINTON AVE

CONTROLLER TYPE: S4

NO. OF PH: 3

CONTROL MODE: CC

1.	WBL EGLINTON AVE	- Minimum green = 5 seconds - Maximum green = 11 seconds - Clearance = 3 seconds
2.	EW EGLINTON AVE	- Walk = 53 seconds - FL. Don't Walk = 15 seconds - Amber = 4 seconds - All Red = 3 seconds
4.	NS INVERNESS BLVD	- Walk = 14 seconds - FL. Don't Walk = 19 seconds - Sd. Don't Walk = 5 seconds - Maximum = 38 seconds - Amber = 4 seconds - All Red = 4 seconds

Total Cycle Length = 135 seconds

SCHEDULED DATA												
INT	TIME	SELECTION PLANS			IN USE		ALTERNATES					
		MODE	CYC	OFF	SPLT	SPEC	DUP	MODE	CYC	OFF	SPLT	SPEC
DUP												
ISEC			LEN	NO.	NO.	FUNC	ISEC		LEN	NO.	NO.	FUNC
	503 15:00 1019	1/1	/	/	/	1/1	/	CC	140	3	3	3

LOCATION: EGLINTON @ INVERNESS
 DATE: 22-MAY-2015
 SCHEDULE: 1
 - N

INTERSECTION NO.: 503
 TIME: 15:00
 SPEC. FUNC.: 1 - N 2 - Y 3

MAIN ST.: EGLINTON AVE
 NO. OF PH: 3

CONTROLLER TYPE: S4
 CONTROL MODE: CC

1.	WBL EGLINTON AVE	- Minimum green = 5 seconds - Maximum green = 10 seconds - Clearance = 3 seconds
2.	EW EGLINTON AVE	- Walk = 60 seconds - FL. Don't Walk = 15 seconds - Amber = 4 seconds - All Red = 3 seconds
4.	NS INVERNESS BLVD	- Walk = 14 seconds - FL. Don't Walk = 19 seconds - Sd. Don't Walk = 4 seconds - Maximum = 37 seconds - Amber = 4 seconds - All Red = 4 seconds

Total Cycle Length = 140 seconds

SCHEDULED DATA

INT	TIME	SELECTION				IN USE		ALTERNATES			
		MODE	CYC	OFF	SPLT	SPEC	DUP	MODE	CYC	OFF	SPLT
DUP		LEN	NO.	NO.	FUNC	ISEC		LEN	NO.	NO.	FUNC
ISEC	503 19:30 1/1 / / / 1/1 / CC 135 2 2 2	1019									

LOCATION: EGLINTON @ INVERNESS
 DATE: 22-MAY-2015
 SCHEDULE: 1
 - N

MAIN ST.: EGLINTON AVE	CONTROLLER TYPE: S4
NO. OF PH: 3	CONTROL MODE: CC
1. WBL EGLINTON AVE	- Minimum green = 5 seconds - Maximum green = 11 seconds - Clearance = 3 seconds
2. EW EGLINTON AVE	- Walk = 53 seconds - FL. Don't Walk = 15 seconds - Amber = 4 seconds - All Red = 3 seconds
4. NS INVERNESS BLVD	- Walk = 14 seconds - FL. Don't Walk = 19 seconds - Sd. Don't Walk = 5 seconds - Maximum = 38 seconds - Amber = 4 seconds - All Red = 4 seconds

Total Cycle Length = 135 seconds

SCHEDULED DATA

INT	TIME	SELECTION				IN USE		ALTERNATES			
		MODE	CYC	OFF	SPLT	SPEC	DUP	MODE	CYC	OFF	SPLT
DUP		LEN	NO.	NO.	FUNC	ISEC		LEN	NO.	NO.	FUNC
ISEC	503 00:00 / / / / / LO 101 2 2 2	503 07:00 1/1 / / / 1/1 / CC 135 2 2 2	1019								

LOCATION: EGLINTON @ INVERNESS
 DATE: 22-MAY-2015
 SCHEDULE: 2
 - N

MAIN ST.: EGLINTON AVE	CONTROLLER TYPE: S4
NO. OF PH: 3	CONTROL MODE: CC
1. WBL EGLINTON AVE	- Minimum green = 5 seconds - Maximum green = 11 seconds

		- Clearance	=	3 seconds
2.	EW EGLINTON AVE	- Walk	=	53 seconds
		- FL. Don't Walk	=	15 seconds
		- Amber	=	4 seconds
		- All Red	=	3 seconds
4.	NS INVERNESS BLVD	- Walk	=	14 seconds
		- FL. Don't Walk	=	19 seconds
		- Sd. Don't Walk	=	5 seconds
		- Maximum	=	38 seconds
		- Amber	=	4 seconds
		- All Red	=	4 seconds

Total Cycle Length = 135 seconds

SCHEDULED DATA												
INT	TIME	SELECTION			PLANS	IN USE	ALTERNATES					
DUP		MODE	CYC	OFF	SPLT	SPEC	DUP	MODE	CYC	OFF	SPLT	SPEC
ISEC			LEN	NO.	NO.	FUNC	ISEC		LEN	NO.	NO.	FUNC
1019								LO	101	2	2	2
	503 00:00	/	/	/	/	/	/	CC	135	2	2	2
	503 08:00	1/1	/	/	/	1/1	/					

LOCATION: EGLINTON @ INVERNESS	INTERSECTION NO.: 503
DATE: 22-MAY-2015	TIME: 08:00
SCHEDULE: 3	SPEC. FUNC.: 1 - N 2 - Y 3

- N

MAIN ST.: EGLINTON AVE	CONTROLLER TYPE: S4
NO. OF PH: 3	CONTROL MODE: CC

1.	WBL EGLINTON AVE	- Minimum green	=	5 seconds
		- Maximum green	=	11 seconds
		- Clearance	=	3 seconds
2.	EW EGLINTON AVE	- Walk	=	53 seconds
		- FL. Don't Walk	=	15 seconds
		- Amber	=	4 seconds
		- All Red	=	3 seconds
4.	NS INVERNESS BLVD	- Walk	=	14 seconds
		- FL. Don't Walk	=	19 seconds
		- Sd. Don't Walk	=	5 seconds
		- Maximum	=	38 seconds
		- Amber	=	4 seconds
		- All Red	=	4 seconds

Total Cycle Length = 135 seconds

SCHEDULED DATA										
INT	TIME	SELECTION			PLANS	IN USE	ALTERNATES			

DUP MODE CYC OFF SPLT SPEC DUP MODE CYC OFF SPLT SPEC

ISEC LEN NO. NO. FUNC ISEC LEN NO. NO. FUNC

1019

?? SHOW CDT503

CYCLE DEFINITION TABLE: 503

PHASE	DIR	VEH	PED	PED	AMBER	ALL	COMM	SPECIAL	STREET
		MIN	MIN	CLEAR		RED	DELAY	FEATURE	NAME
1	WBL	5			3		1		EGLINTON AVE
2	EW		10	15	4	3	1	C	EGLINTON AVE
3	NBL						1		INVERNESS BLVD
4	NS		14	19	4	4	1		INVERNESS BLVD
5							1		
6							1		
7							1		
8							1		

VALID SPECIAL FUNCTIONS (Y/N)

1	2	3	1&2	1&3	2&3	ALL
Y	Y	Y	Y	Y	Y	Y

?? SHOW DINTREP,ACT1-3,I503

DAILY INTERSECTION REPORT FOR ACT SCH 1 (MON TUE WED THU FRI)

INT	TIME	SELECTION PLANS IN USE				ALTERNATES						
DUP		MODE	CYC	OFF	SPLT	SPEC	DUP	MODE	CYC	OFF	SPLT	SPEC
ISEC			LEN	NO.	NO.	FUNC	ISEC		LEN	NO.	NO.	FUNC
1019	503 00:00	/	/	/	/	/	/	LO	101	2	2	2
	503 06:00	1/1	/	/	/	1/1	/	CC	140	1	1	1
1019	503 09:30	1/1	/	/	/	1/1	/	CC	135	2	2	2
1019	503 15:00	1/1	/	/	/	1/1	/	CC	140	3	3	3
1019	503 19:30	1/1	/	/	/	1/1	/	CC	135	2	2	2

DAILY INTERSECTION REPORT FOR ACT SCH 2 (SAT)

1019	503 00:00	/	/	/	/	/	/	LO	101	2	2	2
	503 07:00	1/1	/	/	/	1/1	/	CC	135	2	2	2

DAILY INTERSECTION REPORT FOR ACT SCH 3 (SUN HOL)

1019	503 00:00	/	/	/	/	/	/	LO	101	2	2	2
	503 08:00	1/1	/	/	/	1/1	/	CC	135	2	2	2

1019

?? SHOW SPL1-3,I503

SPLIT TABLE

TABLE	INTERSECTION 503 EGLINTON @ INVERNESS								(MAX SPLIT) PHASE NUMBER							
NO.	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
	WBL	EW	NBL	NS												
1	7	61		32					12	0		0				

2	10	56	34	15	0	0
3	9	59	32	15	0	0

?? SHOW SPF1-3,I503
SPECIAL FUNCTIONS
INTERSECTION 503 EGLINTON @ INVERNESS
SPECIAL IN(Y) /OUT(N)
FUNCTION # 1 2 3
WBL NA CAL PHASE OMIT
1 N Y N
2 N Y N
3 N Y N

?? SHOW OFF1-3,I503
OFFSET TABLE
INTERSECTION 503 EGLINTON @ INVERNESS
OFFSET # OFFSET %
1 58
2 57
3 45

??

Appendix D – Existing Traffic Level of Service Calculations

HCM Signalized Intersection Capacity Analysis
3: Inverness Boulevard & Eglinton Avenue West

10/31/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	2573	6	34	1115	12	66	2	113	23	1	11
Future Volume (vph)	6	2573	6	34	1115	12	66	2	113	23	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	0.99	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5080		1656	4978			1685	1522	1792	1672	
Flt Permitted	0.21	1.00		0.05	1.00			0.72	1.00	0.70	1.00	
Satd. Flow (perm)	396	5080		86	4978			1274	1522	1325	1672	
Peak-hour factor, PHF	0.75	0.95	0.75	0.85	0.92	0.60	0.83	0.50	0.71	0.82	0.25	0.69
Adj. Flow (vph)	8	2708	8	40	1212	20	80	4	159	28	4	16
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	66	0	12	0
Lane Group Flow (vph)	8	2716	0	40	1231	0	0	84	93	28	8	0
Confl. Peds. (#/hr)			3	3					3	3		
Heavy Vehicles (%)	0%	2%	17%	9%	4%	0%	3%	100%	4%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			3	8			2			6
Permitted Phases		4			8			2		2		6
Actuated Green, G (s)	78.3	78.3		86.6	86.6			38.4	38.4	38.4	38.4	
Effective Green, g (s)	78.3	78.3		86.6	86.6			38.4	38.4	38.4	38.4	
Actuated g/C Ratio	0.56	0.56		0.62	0.62			0.27	0.27	0.27	0.27	
Clearance Time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	221	2841		112	3079			349	417	363	458	
v/s Ratio Prot		c0.53		0.01	c0.25						0.01	
v/s Ratio Perm		0.02		0.21				c0.07	0.06	0.02		
v/c Ratio	0.04	0.96		0.36	0.40			0.24	0.22	0.08	0.02	
Uniform Delay, d1	13.9	29.2		30.1	13.5			39.5	39.3	37.7	37.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	8.8		2.0	0.1			1.6	1.2	0.4	0.1	
Delay (s)	13.9	38.0		32.0	13.6			41.1	40.5	38.1	37.1	
Level of Service	B	D		C	B			D	D	D	D	
Approach Delay (s)		37.9			14.2			40.7			37.7	
Approach LOS		D			B			D			D	
Intersection Summary												
HCM 2000 Control Delay		31.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			18.0				
Intersection Capacity Utilization		85.7%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

Queues

3: Inverness Boulevard & Eglinton Avenue West

10/31/2017



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	8	2716	40	1232	84	159	28	20
v/c Ratio	0.04	0.96	0.32	0.40	0.24	0.33	0.08	0.04
Control Delay	14.7	38.7	15.0	14.1	42.4	20.0	39.6	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	38.7	15.0	14.1	42.4	20.0	39.6	18.8
Queue Length 50th (m)	1.0	264.1	3.8	61.2	19.4	15.4	6.2	0.9
Queue Length 95th (m)	3.2	#293.7	7.8	70.9	18.4	22.2	13.3	0.0
Internal Link Dist (m)		304.5		176.5	64.2			16.9
Turn Bay Length (m)								
Base Capacity (vph)	221	2842	133	3132	354	489	368	476
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.96	0.30	0.39	0.24	0.33	0.08	0.04

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Unsignalized Intersection Capacity Analysis

4: Inverness Boulevard & Barbertown Road

10/31/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	12	21	1	13	6
Future Volume (Veh/h)	1	12	21	1	13	6
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.25	0.75	0.88	0.25	0.81	0.75
Hourly flow rate (vph)	4	16	24	4	16	8
Pedestrians				5		
Lane Width (m)				3.6		
Walking Speed (m/s)				1.2		
Percent Blockage				0		
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (m)				41		
pX, platoon unblocked						
vC, conflicting volume	45	0	59	41	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	45	0	59	41	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.3	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.4	
p0 queue free %	100	99	97	100	99	
cM capacity (veh/h)	838	1091	911	842	1496	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	20	28	24			
Volume Left	0	24	16			
Volume Right	16	0	8			
cSH	1029	900	1496			
Volume to Capacity	0.02	0.03	0.01			
Queue Length 95th (m)	0.5	0.8	0.3			
Control Delay (s)	8.6	9.1	5.0			
Lane LOS	A	A	A			
Approach Delay (s)	8.6	9.1	5.0			
Approach LOS	A	A				
Intersection Summary						
Average Delay		7.6				
Intersection Capacity Utilization		19.4%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Eglinton Avenue West & Barbertown Road

10/31/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↑↑↑	↑↑↑			↑	
Traffic Volume (veh/h)	0	2541	1198	0	0	7	
Future Volume (Veh/h)	0	2541	1198	0	0	7	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.25	0.98	0.89	0.25	0.25	0.58	
Hourly flow rate (vph)	0	2593	1346	0	0	12	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)			329				
pX, platoon unblocked	0.89			0.89	0.89		
vC, conflicting volume	1346			2210	449		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	940			1916	0		
tC, single (s)	4.1			6.8	7.8		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.7		
p0 queue free %	100			100	99		
cM capacity (veh/h)	653			54	855		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	864	864	864	449	449	449	12
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	12
cSH	1700	1700	1700	1700	1700	1700	855
Volume to Capacity	0.51	0.51	0.51	0.26	0.26	0.26	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.3
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.3
Approach LOS							A
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization		52.4%		ICU Level of Service			A
Analysis Period (min)		15					

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:35	7:35	7:35	7:35	7:35	7:35
End Time	8:45	8:45	8:45	8:45	8:45	8:45
Total Time (min)	70	70	70	70	70	70
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	3965	3932	3879	3951	3885	3920
Vehs Exited	3989	3975	3873	3964	3898	3939
Starting Vehs	77	98	77	69	64	75
Ending Vehs	53	55	83	56	51	58
Travel Distance (km)	2213	2198	2160	2191	2163	2185
Travel Time (hr)	69.4	69.0	69.6	71.0	69.6	69.7
Total Delay (hr)	29.7	29.4	30.6	31.4	30.5	30.3
Total Stops	1989	1966	2062	2139	2000	2030
Fuel Used (l)	213.7	211.9	210.6	214.4	209.3	212.0

Interval #0 Information Seeding

Start Time	7:35
End Time	7:45
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Run Number	1	2	3	4	5	Avg
Vehs Entered	3965	3932	3879	3951	3885	3920
Vehs Exited	3989	3975	3873	3964	3898	3939
Starting Vehs	77	98	77	69	64	75
Ending Vehs	53	55	83	56	51	58
Travel Distance (km)	2213	2198	2160	2191	2163	2185
Travel Time (hr)	69.4	69.0	69.6	71.0	69.6	69.7
Total Delay (hr)	29.7	29.4	30.6	31.4	30.5	30.3
Total Stops	1989	1966	2062	2139	2000	2030
Fuel Used (l)	213.7	211.9	210.6	214.4	209.3	212.0

Queuing and Blocking Report

Baseline

04/17/2018

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	L	TR
Maximum Queue (m)	9.7	199.4	183.1	146.3	23.5	98.9	94.1	56.5	35.5	46.2	14.5	10.3
Average Queue (m)	1.3	121.2	111.2	87.4	6.4	57.4	42.7	13.9	13.8	19.5	5.1	2.7
95th Queue (m)	6.1	165.6	157.6	130.2	16.6	85.0	76.5	42.5	29.8	37.3	13.0	9.5
Link Distance (m)	302.4	302.4	302.4	302.4	185.9	185.9	185.9	185.9	70.2	70.2	11.6	11.6
Upstream Blk Time (%)											5	1
Queuing Penalty (veh)											1	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: Inverness Boulevard & Barbertown Road

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (m)	9.0	10.6
Average Queue (m)	3.5	5.3
95th Queue (m)	10.5	12.8
Link Distance (m)		125.9
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Eglinton Avenue West & Barbertown Road

Movement	EB	EB	SB
Directions Served	T	T	R
Maximum Queue (m)	31.2	44.8	15.3
Average Queue (m)	1.3	6.6	2.1
95th Queue (m)	11.8	27.6	9.6
Link Distance (m)	39.4	39.4	-1.4
Upstream Blk Time (%)	0	0	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBTL
Maximum Green (s)	37.0	7.0	78.0	37.0	78.0
Minimum Green (s)	4.0	1.0	1.0	4.0	4.0
Recall	C-Max	None	None	C-Max	None
Avg. Green (s)	38.4	6.1	82.8	38.4	86.6
g/C Ratio	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	56	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	100	12	88	100	88
Cycles with Peds (%)	8	0	8	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

HCM Signalized Intersection Capacity Analysis
3: Inverness Boulevard & Eglinton Avenue West

10/31/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑↑		↑	↑↑↑			↑	↑	↑	↑↑	
Traffic Volume (vph)	5	1338	28	80	2447	15	23	0	47	9	0	4
Future Volume (vph)	5	1338	28	80	2447	15	23	0	47	9	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	8.0
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99	1.00	0.98	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5058		1805	5129			1727	1532	1769	1587	
Flt Permitted	0.05	1.00		0.12	1.00			0.75	1.00	0.74	1.00	
Satd. Flow (perm)	104	5058		231	5129			1368	1532	1371	1587	
Peak-hour factor, PHF	0.31	0.96	0.88	0.83	0.92	0.63	0.72	0.25	0.78	0.75	0.25	0.50
Adj. Flow (vph)	16	1394	32	96	2660	24	32	0	60	12	0	8
RTOR Reduction (vph)	0	2	0	0	1	0	0	0	42	0	6	0
Lane Group Flow (vph)	16	1424	0	96	2683	0	0	32	18	12	2	0
Confl. Peds. (#/hr)			4	4			2		8	8		2
Heavy Vehicles (%)	0%	2%	7%	0%	1%	0%	4%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			3	8			2			6
Permitted Phases		4			8			2		2		6
Actuated Green, G (s)	73.2	73.2		83.1	83.1			41.9	41.9	41.9	41.9	
Effective Green, g (s)	73.2	73.2		83.1	83.1			41.9	41.9	41.9	41.9	
Actuated g/C Ratio	0.52	0.52		0.59	0.59			0.30	0.30	0.30	0.30	
Clearance Time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	54	2644		214	3044			409	458	410	474	
v/s Ratio Prot		0.28		0.02	c0.52						0.00	
v/s Ratio Perm		0.15		0.24				c0.02	0.01	0.01		
v/c Ratio	0.30	0.54		0.45	0.88			0.08	0.04	0.03	0.01	
Uniform Delay, d1	18.9	22.2		14.9	24.3			35.2	34.8	34.7	34.4	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.1	0.2		1.5	3.3			0.4	0.2	0.1	0.0	
Delay (s)	21.9	22.4		16.4	27.6			35.6	34.9	34.8	34.4	
Level of Service	C	C		B	C			D	C	C	C	
Approach Delay (s)		22.4			27.2			35.2			34.7	
Approach LOS		C			C			D			C	
Intersection Summary												
HCM 2000 Control Delay		25.8			HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				18.0			
Intersection Capacity Utilization		92.3%			ICU Level of Service				F			
Analysis Period (min)		15										
c Critical Lane Group												

Queues

3: Inverness Boulevard & Eglinton Avenue West

10/31/2017



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	1426	96	2684	32	60	12	8
v/c Ratio	0.30	0.54	0.43	0.88	0.08	0.12	0.03	0.02
Control Delay	34.2	22.7	16.0	28.2	38.4	9.7	38.0	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.2	22.7	16.0	28.2	38.4	9.7	38.0	0.0
Queue Length 50th (m)	2.5	96.4	10.4	228.0	6.8	0.0	2.5	0.0
Queue Length 95th (m)	2.2	103.2	15.1	231.6	4.4	8.4	6.9	0.0
Internal Link Dist (m)	304.5			176.5			64.2	
Turn Bay Length (m)								
Base Capacity (vph)	57	2820	223	3225	409	500	410	513
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.51	0.43	0.83	0.08	0.12	0.03	0.02

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis

4: Inverness Boulevard & Barbertown Road

10/31/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2	7	14	2	15	19
Future Volume (Veh/h)	2	7	14	2	15	19
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.85	0.88	0.50	0.75	0.79
Hourly flow rate (vph)	4	8	16	4	20	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (m)				41		
pX, platoon unblocked						
vC, conflicting volume	64	0	62	52	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64	0	62	52	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.2	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.3	
p0 queue free %	100	99	98	100	99	
cM capacity (veh/h)	820	1091	919	833	1591	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	12	20	44			
Volume Left	0	16	20			
Volume Right	8	0	24			
cSH	983	900	1591			
Volume to Capacity	0.01	0.02	0.01			
Queue Length 95th (m)	0.3	0.5	0.3			
Control Delay (s)	8.7	9.1	3.4			
Lane LOS	A	A	A			
Approach Delay (s)	8.7	9.1	3.4			
Approach LOS	A	A				
Intersection Summary						
Average Delay		5.7				
Intersection Capacity Utilization		17.5%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Eglinton Avenue West & Barbertown Road

10/31/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↑↑↑	↑↑↑			↑	
Traffic Volume (veh/h)	0	1412	2444	0	0	5	
Future Volume (Veh/h)	0	1412	2444	0	0	5	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.25	0.95	0.93	0.25	0.25	0.63	
Hourly flow rate (vph)	0	1486	2628	0	0	8	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)			329				
pX, platoon unblocked	0.52			0.52	0.52		
vC, conflicting volume	2628			3123	876		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	911			1861	0		
tC, single (s)	4.1			6.8	6.9		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.3		
p0 queue free %	100			100	99		
cM capacity (veh/h)	394			35	569		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	495	495	495	876	876	876	8
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	8
cSH	1700	1700	1700	1700	1700	1700	569
Volume to Capacity	0.29	0.29	0.29	0.52	0.52	0.52	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	11.4
Lane LOS							B
Approach Delay (s)	0.0			0.0			11.4
Approach LOS							B
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization		57.2%		ICU Level of Service			B
Analysis Period (min)		15					

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
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	4170	4033	4045	3968	4100	4062
Vehs Exited	4175	4035	4030	3961	4111	4062
Starting Vehs	62	60	50	45	76	58
Ending Vehs	57	58	65	52	65	59
Travel Distance (km)	2315	2234	2241	2201	2277	2254
Travel Time (hr)	71.7	70.5	71.4	66.6	72.5	70.5
Total Delay (hr)	30.8	31.1	31.9	27.7	32.2	30.7
Total Stops	2022	2040	2090	1903	2158	2041
Fuel Used (l)	226.8	221.0	220.7	212.5	226.3	221.5

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	4170	4033	4045	3968	4100	4062
Vehs Exited	4175	4035	4030	3961	4111	4062
Starting Vehs	62	60	50	45	76	58
Ending Vehs	57	58	65	52	65	59
Travel Distance (km)	2315	2234	2241	2201	2277	2254
Travel Time (hr)	71.7	70.5	71.4	66.6	72.5	70.5
Total Delay (hr)	30.8	31.1	31.9	27.7	32.2	30.7
Total Stops	2022	2040	2090	1903	2158	2041
Fuel Used (l)	226.8	221.0	220.7	212.5	226.3	221.5

Queuing and Blocking Report

Baseline

04/17/2018

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	L	TR
Maximum Queue (m)	10.4	114.5	101.7	76.2	62.2	189.4	160.9	130.7	17.9	21.2	11.3	8.8
Average Queue (m)	1.9	65.9	57.6	37.1	13.1	124.3	106.7	74.0	4.5	7.3	1.6	1.0
95th Queue (m)	8.7	95.3	86.3	63.9	48.8	174.0	149.2	114.4	14.3	17.2	6.8	5.5
Link Distance (m)	302.4	302.4	302.4	302.4	185.9	185.9	185.9	185.9	70.2	70.2	11.6	11.6
Upstream Blk Time (%)					0	1	0				0	0
Queuing Penalty (veh)					0	0	0				0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: Inverness Boulevard & Barbertown Road

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (m)	8.9	9.3
Average Queue (m)	1.9	3.9
95th Queue (m)	7.8	11.4
Link Distance (m)		125.9
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Eglinton Avenue West & Barbertown Road

Movement	EB	WB	WB	WB	SB	B9
Directions Served	T	T	T	T	R	T
Maximum Queue (m)	4.2	58.8	56.2	3.0	11.7	2.0
Average Queue (m)	0.2	2.0	1.9	0.1	1.5	0.1
95th Queue (m)	2.4	41.5	39.6	2.1	7.3	1.4
Link Distance (m)	39.4	302.4	302.4	302.4	-1.4	267.6
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBTL
Maximum Green (s)	37.0	7.0	78.0	37.0	78.0
Minimum Green (s)	4.0	1.0	53.0	4.0	4.0
Recall	C-Max	None	None	C-Max	None
Avg. Green (s)	38.9	6.5	80.1	38.9	86.7
g/C Ratio	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	28	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	100	40	80	100	80
Cycles with Peds (%)	28	0	8	8	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Appendix E – Future Background Traffic Level of Service Calculations

HCM Signalized Intersection Capacity Analysis
3: Inverness Boulevard & Eglinton Avenue West

04/17/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑↓		↑	↑↑↓			↑	↑	↑	↑	
Traffic Volume (vph)	6	2841	6	34	1231	12	66	2	113	23	1	11
Future Volume (vph)	6	2841	6	34	1231	12	66	2	113	23	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	0.99	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5081		1656	4979			1685	1522	1792	1672	
Flt Permitted	0.18	1.00		0.04	1.00			0.72	1.00	0.70	1.00	
Satd. Flow (perm)	341	5081		77	4979			1274	1522	1325	1672	
Peak-hour factor, PHF	0.75	0.95	0.75	0.85	0.92	0.60	0.83	0.50	0.71	0.82	0.25	0.69
Adj. Flow (vph)	8	2991	8	40	1338	20	80	4	159	28	4	16
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	43	0	12	0
Lane Group Flow (vph)	8	2999	0	40	1357	0	0	84	116	28	8	0
Confl. Peds. (#/hr)			3	3					3	3		
Heavy Vehicles (%)	0%	2%	17%	9%	4%	0%	3%	100%	4%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			3	8			2			6
Permitted Phases		4			8			2		2		6
Actuated Green, G (s)	88.0	88.0		94.2	94.2			30.8	30.8	30.8	30.8	
Effective Green, g (s)	88.0	88.0		94.2	94.2			30.8	30.8	30.8	30.8	
Actuated g/C Ratio	0.63	0.63		0.67	0.67			0.22	0.22	0.22	0.22	
Clearance Time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	214	3193		87	3350			280	334	291	367	
v/s Ratio Prot		c0.59		0.01	c0.27						0.00	
v/s Ratio Perm		0.02		0.30				0.07	c0.08	0.02		
v/c Ratio		0.04	0.94	0.46	0.41			0.30	0.35	0.10	0.02	
Uniform Delay, d1	9.9	23.6		30.9	10.3			45.6	46.1	43.5	42.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	6.3		3.8	0.1			2.7	2.8	0.7	0.1	
Delay (s)	10.0	29.9		34.7	10.4			48.3	49.0	44.2	42.9	
Level of Service	A	C		C	B			D	D	D	D	
Approach Delay (s)		29.8			11.1			48.7			43.6	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay		25.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.78										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			18.0				
Intersection Capacity Utilization		90.9%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

Queues

3: Inverness Boulevard & Eglinton Avenue West

04/17/2018



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	8	2999	40	1358	84	159	28	20
v/c Ratio	0.04	0.94	0.41	0.41	0.29	0.42	0.09	0.05
Control Delay	10.7	30.8	19.5	10.9	49.4	34.3	45.3	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.7	30.8	19.5	10.9	49.4	34.3	45.3	21.6
Queue Length 50th (m)	0.9	274.2	3.2	59.1	20.8	26.0	6.6	0.9
Queue Length 95th (m)	2.6	300.0	6.9	67.9	19.7	34.0	14.3	0.0
Internal Link Dist (m)		304.5		176.5	64.2			16.9
Turn Bay Length (m)								
Base Capacity (vph)	213	3196	98	3380	285	383	296	386
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.94	0.41	0.40	0.29	0.42	0.09	0.05

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis

4: Inverness Boulevard & Barbertown Road

04/17/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	12	21	1	13	6
Future Volume (Veh/h)	1	12	21	1	13	6
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.25	0.75	0.88	0.25	0.81	0.75
Hourly flow rate (vph)	4	16	24	4	16	8
Pedestrians				5		
Lane Width (m)				3.6		
Walking Speed (m/s)				1.2		
Percent Blockage				0		
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (m)				41		
pX, platoon unblocked						
vC, conflicting volume	45	0	59	41	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	45	0	59	41	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.3	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.4	
p0 queue free %	100	99	97	100	99	
cM capacity (veh/h)	838	1091	911	842	1496	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	20	28	24			
Volume Left	0	24	16			
Volume Right	16	0	8			
cSH	1029	900	1496			
Volume to Capacity	0.02	0.03	0.01			
Queue Length 95th (m)	0.5	0.8	0.3			
Control Delay (s)	8.6	9.1	5.0			
Lane LOS	A	A	A			
Approach Delay (s)	8.6	9.1	5.0			
Approach LOS	A	A				
Intersection Summary						
Average Delay		7.6				
Intersection Capacity Utilization	19.4%		ICU Level of Service		A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Eglinton Avenue West & Barbertown Road

04/17/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↑↑↑	↑↑↑			↑	
Traffic Volume (veh/h)	0	2805	1323	0	0	7	
Future Volume (Veh/h)	0	2805	1323	0	0	7	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.25	0.98	0.89	0.25	0.25	0.58	
Hourly flow rate (vph)	0	2862	1487	0	0	12	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh)							
Upstream signal (m)			329				
pX, platoon unblocked	0.89			0.89	0.89		
vC, conflicting volume	1487			2441	496		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1104			2179	0		
tC, single (s)	4.1			6.8	7.8		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.7		
p0 queue free %	100			100	99		
cM capacity (veh/h)	568			36	856		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	954	954	954	496	496	496	12
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	12
cSH	1700	1700	1700	1700	1700	1700	856
Volume to Capacity	0.56	0.56	0.56	0.29	0.29	0.29	0.01
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.3
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.3
Approach LOS							A
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization		57.5%		ICU Level of Service			B
Analysis Period (min)			15				

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:35	7:35	7:35	7:35	7:35	7:35
End Time	8:45	8:45	8:45	8:45	8:45	8:45
Total Time (min)	70	70	70	70	70	70
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	4341	4363	4362	4353	4308	4344
Vehs Exited	4368	4386	4392	4378	4324	4369
Starting Vehs	83	87	82	80	67	78
Ending Vehs	56	64	52	55	51	53
Travel Distance (km)	2426	2436	2443	2436	2403	2429
Travel Time (hr)	74.1	75.4	74.0	73.8	72.7	74.0
Total Delay (hr)	30.4	31.5	30.0	29.9	29.4	30.2
Total Stops	2015	2115	2069	2010	2023	2049
Fuel Used (l)	231.9	233.5	233.4	231.3	228.1	231.6

Interval #0 Information Seeding

Start Time	7:35
End Time	7:45
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:45
End Time	8:45
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	4341	4363	4362	4353	4308	4344
Vehs Exited	4368	4386	4392	4378	4324	4369
Starting Vehs	83	87	82	80	67	78
Ending Vehs	56	64	52	55	51	53
Travel Distance (km)	2426	2436	2443	2436	2403	2429
Travel Time (hr)	74.1	75.4	74.0	73.8	72.7	74.0
Total Delay (hr)	30.4	31.5	30.0	29.9	29.4	30.2
Total Stops	2015	2115	2069	2010	2023	2049
Fuel Used (l)	231.9	233.5	233.4	231.3	228.1	231.6

Queuing and Blocking Report

Baseline

04/16/2018

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	L	TR
Maximum Queue (m)	6.3	172.3	158.2	125.8	21.6	84.0	78.2	45.5	42.6	42.9	14.2	11.2
Average Queue (m)	1.2	113.6	104.7	84.6	7.0	51.3	35.7	9.1	15.2	18.7	5.6	2.9
95th Queue (m)	4.9	150.8	140.9	118.9	17.6	75.4	65.6	29.7	33.4	34.6	13.8	9.9
Link Distance (m)	302.4	302.4	302.4	302.4	185.9	185.9	185.9	185.9	70.2	70.2	11.6	11.6
Upstream Blk Time (%)											5	1
Queuing Penalty (veh)											1	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: Inverness Boulevard & Barbertown Road

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (m)	8.6	11.8
Average Queue (m)	3.2	5.0
95th Queue (m)	9.9	12.7
Link Distance (m)		125.9
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Eglinton Avenue West & Barbertown Road

Movement	EB	EB	SB
Directions Served	T	T	R
Maximum Queue (m)	39.1	45.3	17.4
Average Queue (m)	3.4	12.1	2.9
95th Queue (m)	20.8	38.2	12.2
Link Distance (m)	39.4	39.4	-1.4
Upstream Blk Time (%)	0	1	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Network Summary

Network wide Queuing Penalty: 1

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBTL
Maximum Green (s)	30.0	4.0	88.0	30.0	95.0
Minimum Green (s)	4.0	1.0	1.0	4.0	4.0
Recall	C-Max	None	None	C-Max	None
Avg. Green (s)	30.3	4.4	94.7	30.3	94.7
g/C Ratio	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	63	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	100	38	96	100	96
Cycles with Peds (%)	4	0	12	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

HCM Signalized Intersection Capacity Analysis
3: Inverness Boulevard & Eglinton Avenue West

10/31/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑↑		↑	↑↑↑			↑	↑	↑	↑↑	
Traffic Volume (vph)	5	1477	28	80	2702	15	23	0	47	9	0	4
Future Volume (vph)	5	1477	28	80	2702	15	23	0	47	9	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99	1.00	0.98	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5061		1805	5130			1727	1532	1769	1587	
Flt Permitted	0.05	1.00		0.10	1.00			0.75	1.00	0.74	1.00	
Satd. Flow (perm)	99	5061		193	5130			1368	1532	1371	1587	
Peak-hour factor, PHF	0.31	0.96	0.88	0.83	0.92	0.63	0.72	0.25	0.78	0.75	0.25	0.50
Adj. Flow (vph)	16	1539	32	96	2937	24	32	0	60	12	0	8
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	43	0	6	0
Lane Group Flow (vph)	16	1570	0	96	2960	0	0	32	17	12	2	0
Confl. Peds. (#/hr)			4	4			2		8	8		2
Heavy Vehicles (%)	0%	2%	7%	0%	1%	0%	4%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			3	8			2			6
Permitted Phases		4			8			2		2		6
Actuated Green, G (s)	76.5	76.5		86.4	86.4			38.6	38.6	38.6		38.6
Effective Green, g (s)	76.5	76.5		86.4	86.4			38.6	38.6	38.6		38.6
Actuated g/C Ratio	0.55	0.55		0.62	0.62			0.28	0.28	0.28		0.28
Clearance Time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0		8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	54	2765		198	3165			377	422	378		437
v/s Ratio Prot		0.31		0.02	c0.58							0.00
v/s Ratio Perm		0.16		0.27				c0.02	0.01	0.01		
v/c Ratio	0.30	0.57		0.48	0.94			0.08	0.04	0.03		0.01
Uniform Delay, d1	17.2	20.9		14.4	24.3			37.6	37.1	37.0		36.8
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2	3.1	0.3		1.9	6.0			0.4	0.2	0.2		0.0
Delay (s)	20.2	21.1		16.3	30.3			38.0	37.3	37.2		36.8
Level of Service	C	C		B	C			D	D	D		D
Approach Delay (s)		21.1			29.9			37.6				37.0
Approach LOS		C			C			D				D
Intersection Summary												
HCM 2000 Control Delay		27.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.69										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			18.0				
Intersection Capacity Utilization		92.3%			ICU Level of Service			F				
Analysis Period (min)		15										
c Critical Lane Group												

Queues

3: Inverness Boulevard & Eglinton Avenue West

10/31/2017



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	1571	96	2961	32	60	12	8
v/c Ratio	0.30	0.57	0.48	0.94	0.08	0.13	0.03	0.02
Control Delay	34.0	21.6	16.8	31.1	39.7	9.8	38.8	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	21.6	16.8	31.1	39.7	9.8	38.8	0.0
Queue Length 50th (m)	2.4	103.6	9.5	262.2	7.1	0.0	2.6	0.0
Queue Length 95th (m)	2.2	117.8	15.1	287.2	4.4	8.4	6.9	0.0
Internal Link Dist (m)	304.5			176.5			64.2	
Turn Bay Length (m)								
Base Capacity (vph)	55	2821	204	3225	377	466	378	477
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.56	0.47	0.92	0.08	0.13	0.03	0.02

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis

4: Inverness Boulevard & Barbertown Road

10/31/2017



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2	7	14	2	15	19
Future Volume (Veh/h)	2	7	14	2	15	19
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.85	0.88	0.50	0.75	0.79
Hourly flow rate (vph)	4	8	16	4	20	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (m)				41		
pX, platoon unblocked						
vC, conflicting volume	64	0	62	52	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	64	0	62	52	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.2	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.3	
p0 queue free %	100	99	98	100	99	
cM capacity (veh/h)	820	1091	919	833	1591	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	12	20	44			
Volume Left	0	16	20			
Volume Right	8	0	24			
cSH	983	900	1591			
Volume to Capacity	0.01	0.02	0.01			
Queue Length 95th (m)	0.3	0.5	0.3			
Control Delay (s)	8.7	9.1	3.4			
Lane LOS	A	A	A			
Approach Delay (s)	8.7	9.1	3.4			
Approach LOS	A	A				
Intersection Summary						
Average Delay		5.7				
Intersection Capacity Utilization		17.5%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Eglinton Avenue West & Barbertown Road

10/31/2017



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations		↑↑↑	↑↑↑			↑	
Traffic Volume (veh/h)	0	1559	2698	0	0	5	
Future Volume (Veh/h)	0	1559	2698	0	0	5	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.25	0.95	0.93	0.25	0.25	0.63	
Hourly flow rate (vph)	0	1641	2901	0	0	8	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)			329				
pX, platoon unblocked	0.42			0.42	0.42		
vC, conflicting volume	2901			3448	967		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	685			1990	0		
tC, single (s)	4.1			6.8	6.9		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.3		
p0 queue free %	100			100	98		
cM capacity (veh/h)	385			23	457		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	547	547	547	967	967	967	8
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	8
cSH	1700	1700	1700	1700	1700	1700	457
Volume to Capacity	0.32	0.32	0.32	0.57	0.57	0.57	0.02
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	13.0
Lane LOS							B
Approach Delay (s)	0.0			0.0			13.0
Approach LOS							B
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization		62.1%		ICU Level of Service			B
Analysis Period (min)		15					

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
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	4369	4489	4535	4515	4433	4470
Vehs Exited	4370	4496	4549	4525	4422	4472
Starting Vehs	81	93	72	70	69	76
Ending Vehs	80	86	58	60	80	73
Travel Distance (km)	2434	2500	2530	2513	2459	2487
Travel Time (hr)	77.4	81.0	82.7	82.0	80.7	80.8
Total Delay (hr)	34.5	36.9	38.1	37.6	37.4	36.9
Total Stops	2194	2276	2397	2382	2409	2333
Fuel Used (l)	241.5	251.0	253.7	251.1	247.4	248.9

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	4369	4489	4535	4515	4433	4470
Vehs Exited	4370	4496	4549	4525	4422	4472
Starting Vehs	81	93	72	70	69	76
Ending Vehs	80	86	58	60	80	73
Travel Distance (km)	2434	2500	2530	2513	2459	2487
Travel Time (hr)	77.4	81.0	82.7	82.0	80.7	80.8
Total Delay (hr)	34.5	36.9	38.1	37.6	37.4	36.9
Total Stops	2194	2276	2397	2382	2409	2333
Fuel Used (l)	241.5	251.0	253.7	251.1	247.4	248.9

Queuing and Blocking Report

Baseline

04/16/2018

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	L	TR
Maximum Queue (m)	9.8	101.4	101.1	73.0	121.5	191.7	175.7	139.6	21.5	20.9	11.6	7.0
Average Queue (m)	0.9	69.9	59.4	39.3	14.5	145.6	125.8	88.2	6.0	6.4	1.8	0.7
95th Queue (m)	5.0	94.7	86.5	64.4	55.7	194.9	168.9	128.3	16.1	16.0	7.5	4.6
Link Distance (m)	302.4	302.4	302.4	302.4	185.9	185.9	185.9	185.9	70.2	70.2	11.6	11.6
Upstream Blk Time (%)					0	2	0				1	0
Queuing Penalty (veh)					0	0	0				0	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: Inverness Boulevard & Barbertown Road

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (m)	8.9	9.3
Average Queue (m)	2.2	4.0
95th Queue (m)	8.3	11.4
Link Distance (m)		125.9
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Eglinton Avenue West & Barbertown Road

Movement	EB	WB	WB	WB	SB	B9
Directions Served	T	T	T	T	R	T
Maximum Queue (m)	5.5	61.2	125.3	56.1	14.6	4.0
Average Queue (m)	0.3	2.0	4.2	1.9	2.2	0.1
95th Queue (m)	2.8	43.2	63.5	39.5	9.4	2.0
Link Distance (m)	39.4	302.4	302.4	302.4	-1.4	267.6
Upstream Blk Time (%)		0	0			
Queuing Penalty (veh)		0	0			
Storage Bay Dist (m)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBTL
Maximum Green (s)	37.0	7.0	78.0	37.0	78.0
Minimum Green (s)	4.0	1.0	53.0	4.0	4.0
Recall	C-Max	None	None	C-Max	None
Avg. Green (s)	37.5	6.4	81.0	37.5	87.5
g/C Ratio	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	28	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	100	36	92	100	92
Cycles with Peds (%)	24	0	8	8	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Appendix F – Future Total Traffic Level of Service Calculations

HCM Signalized Intersection Capacity Analysis
3: Inverness Boulevard & Eglinton Avenue West

04/17/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑↓		↑	↑↑↓			↑	↑	↑	↑	
Traffic Volume (vph)	9	2841	6	34	1231	16	66	2	113	44	1	11
Future Volume (vph)	9	2841	6	34	1231	16	66	2	113	44	1	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	1.00	0.99	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85	1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5081		1656	4976			1685	1522	1792	1672	
Flt Permitted	0.18	1.00		0.04	1.00			0.72	1.00	0.70	1.00	
Satd. Flow (perm)	338	5081		77	4976			1274	1522	1325	1672	
Peak-hour factor, PHF	0.75	0.95	0.75	0.85	0.92	0.60	0.83	0.50	0.71	0.82	0.25	0.69
Adj. Flow (vph)	12	2991	8	40	1338	27	80	4	159	54	4	16
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	43	0	12	0
Lane Group Flow (vph)	12	2999	0	40	1363	0	0	84	116	54	8	0
Confl. Peds. (#/hr)			3	3					3	3		
Heavy Vehicles (%)	0%	2%	17%	9%	4%	0%	3%	100%	4%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			3	8			2			6
Permitted Phases		4			8			2		2		6
Actuated Green, G (s)	88.0	88.0		94.2	94.2			30.8	30.8	30.8	30.8	
Effective Green, g (s)	88.0	88.0		94.2	94.2			30.8	30.8	30.8	30.8	
Actuated g/C Ratio	0.63	0.63		0.67	0.67			0.22	0.22	0.22	0.22	
Clearance Time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	212	3193		87	3348			280	334	291	367	
v/s Ratio Prot		c0.59		0.01	c0.27						0.00	
v/s Ratio Perm		0.04		0.30				0.07	c0.08	0.04		
v/c Ratio	0.06	0.94		0.46	0.41			0.30	0.35	0.19	0.02	
Uniform Delay, d1	10.0	23.6		30.9	10.3			45.6	46.1	44.4	42.8	
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.1	6.3		3.8	0.1			2.7	2.8	1.4	0.1	
Delay (s)	10.1	29.9		34.7	10.4			48.3	49.0	45.8	42.9	
Level of Service	B	C		C	B			D	D	D	D	
Approach Delay (s)		29.8			11.1			48.7			45.0	
Approach LOS		C			B			D			D	
Intersection Summary												
HCM 2000 Control Delay		25.4			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.78										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			18.0				
Intersection Capacity Utilization		90.9%			ICU Level of Service			E				
Analysis Period (min)		15										
c Critical Lane Group												

Queues

3: Inverness Boulevard & Eglinton Avenue West

04/17/2018



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	12	2999	40	1365	84	159	54	20
v/c Ratio	0.06	0.94	0.41	0.41	0.29	0.42	0.18	0.05
Control Delay	11.0	30.8	19.5	10.9	49.4	34.3	47.0	21.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	30.8	19.5	10.9	49.4	34.3	47.0	21.6
Queue Length 50th (m)	1.3	274.2	3.2	59.5	20.8	26.0	13.0	0.9
Queue Length 95th (m)	3.5	300.0	6.9	68.2	19.7	34.0	23.4	0.0
Internal Link Dist (m)		304.5		176.5	64.2			16.9
Turn Bay Length (m)								
Base Capacity (vph)	212	3196	98	3378	285	383	296	386
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.94	0.41	0.40	0.29	0.42	0.18	0.05

Intersection Summary

HCM Unsignalized Intersection Capacity Analysis

4: Inverness Boulevard & Barbertown Road

04/17/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1	12	42	17	13	13
Future Volume (Veh/h)	1	12	42	17	13	13
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.25	0.75	0.88	0.25	0.81	0.75
Hourly flow rate (vph)	4	16	48	68	16	17
Pedestrians				5		
Lane Width (m)				3.6		
Walking Speed (m/s)				1.2		
Percent Blockage				0		
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (m)				41		
pX, platoon unblocked						
vC, conflicting volume	54	0	64	46	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	54	0	64	46	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.3	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.4	
p0 queue free %	100	99	95	92	99	
cM capacity (veh/h)	829	1091	905	838	1496	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	20	116	33			
Volume Left	0	48	16			
Volume Right	16	0	17			
cSH	1026	864	1496			
Volume to Capacity	0.02	0.13	0.01			
Queue Length 95th (m)	0.5	3.7	0.3			
Control Delay (s)	8.6	9.8	3.6			
Lane LOS	A	A	A			
Approach Delay (s)	8.6	9.8	3.6			
Approach LOS	A	A				
Intersection Summary						
Average Delay		8.5				
Intersection Capacity Utilization		21.4%	ICU Level of Service		A	
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Eglinton Avenue West & Barbertown Road

04/17/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	0	2805	1323	0	0	23	
Future Volume (Veh/h)	0	2805	1323	0	0	23	
Sign Control		Free	Free		Stop		
Grade		0%	0%		0%		
Peak Hour Factor	0.25	0.98	0.89	0.25	0.25	0.58	
Hourly flow rate (vph)	0	2862	1487	0	0	40	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh)							
Upstream signal (m)			329				
pX, platoon unblocked	0.89			0.89	0.89		
vC, conflicting volume	1487			2441	496		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	1103			2178	0		
tC, single (s)	4.1			6.8	7.8		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.7		
p0 queue free %	100			100	95		
cM capacity (veh/h)	568			36	856		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	954	954	954	496	496	496	40
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	40
cSH	1700	1700	1700	1700	1700	1700	856
Volume to Capacity	0.56	0.56	0.56	0.29	0.29	0.29	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	9.4
Lane LOS							A
Approach Delay (s)	0.0			0.0			9.4
Approach LOS							A
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization		57.5%		ICU Level of Service			B
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

11: Barbertown Road & Site Access

04/17/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	7	37	0
Future Volume (Veh/h)	0	0	0	7	37	0
Sign Control	Free	Free		Stop		
Grade	0%	0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	8	40	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None	None				
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	8			4	4	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	8			4	4	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			96	100	
cM capacity (veh/h)	1612			1018	1080	
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	0	8	40			
Volume Left	0	0	40			
Volume Right	0	8	0			
cSH	1700	1700	1018			
Volume to Capacity	0.00	0.00	0.04			
Queue Length 95th (m)	0.0	0.0	1.0			
Control Delay (s)	0.0	0.0	8.7			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay		7.2				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	7:35	7:35	7:35	7:35	7:35	7:35
End Time	8:45	8:45	8:45	8:45	8:45	8:45
Total Time (min)	70	70	70	70	70	70
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	4360	4339	4426	4475	4320	4385
Vehs Exited	4385	4370	4449	4497	4337	4407
Starting Vehs	77	80	84	76	77	79
Ending Vehs	52	49	61	54	60	55
Travel Distance (km)	2450	2431	2481	2504	2420	2457
Travel Time (hr)	80.7	78.5	80.6	81.1	79.0	80.0
Total Delay (hr)	36.3	34.6	35.7	35.7	35.1	35.5
Total Stops	2186	2106	2197	2305	2060	2171
Fuel Used (l)	239.0	234.4	240.2	243.3	233.5	238.1

Interval #0 Information Seeding

Start Time	7:35
End Time	7:45
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Run Number	1	2	3	4	5	Avg
Vehs Entered	4360	4339	4426	4475	4320	4385
Vehs Exited	4385	4370	4449	4497	4337	4407
Starting Vehs	77	80	84	76	77	79
Ending Vehs	52	49	61	54	60	55
Travel Distance (km)	2450	2431	2481	2504	2420	2457
Travel Time (hr)	80.7	78.5	80.6	81.1	79.0	80.0
Total Delay (hr)	36.3	34.6	35.7	35.7	35.1	35.5
Total Stops	2186	2106	2197	2305	2060	2171
Fuel Used (l)	239.0	234.4	240.2	243.3	233.5	238.1

Queuing and Blocking Report

Baseline

04/16/2018

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	L	TR
Maximum Queue (m)	11.7	172.4	165.2	139.3	21.0	93.4	78.9	39.6	43.4	52.6	14.3	12.7
Average Queue (m)	1.6	115.3	108.9	87.2	7.0	54.6	39.6	11.5	16.5	21.4	8.3	2.4
95th Queue (m)	6.8	153.9	148.3	126.1	18.2	81.2	70.1	33.6	34.2	42.9	16.6	9.3
Link Distance (m)	302.4	302.4	302.4	302.4	185.9	185.9	185.9	185.9	70.2	70.2	11.6	11.6
Upstream Blk Time (%)										0	12	1
Queuing Penalty (veh)										0	3	0
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: Inverness Boulevard & Barbertown Road

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (m)	8.7	26.3
Average Queue (m)	3.1	9.5
95th Queue (m)	9.8	18.2
Link Distance (m)		119.3
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Eglinton Avenue West & Barbertown Road

Movement	EB	EB	SB
Directions Served	T	T	R
Maximum Queue (m)	43.8	45.1	19.7
Average Queue (m)	2.5	10.8	5.6
95th Queue (m)	18.0	38.4	16.1
Link Distance (m)	39.4	39.4	-1.4
Upstream Blk Time (%)	0	1	
Queuing Penalty (veh)	0	0	
Storage Bay Dist (m)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Queuing and Blocking Report

Baseline

04/16/2018

Intersection: 11: Barbertown Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	14.5
Average Queue (m)	6.3
95th Queue (m)	13.5
Link Distance (m)	49.2
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 4

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBTL
Maximum Green (s)	30.0	4.0	88.0	30.0	95.0
Minimum Green (s)	4.0	1.0	1.0	4.0	4.0
Recall	C-Max	None	None	C-Max	None
Avg. Green (s)	31.1	4.1	93.3	31.1	94.2
g/C Ratio	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	58	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	100	42	92	100	92
Cycles with Peds (%)	8	0	8	0	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

HCM Signalized Intersection Capacity Analysis
3: Inverness Boulevard & Eglinton Avenue West

04/16/2018

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑↑		↑	↑↑↑			↑	↑	↑	↑↑	
Traffic Volume (vph)	22	1477	28	80	2702	33	23	0	47	18	0	4
Future Volume (vph)	22	1477	28	80	2702	33	23	0	47	18	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0	8.0	
Lane Util. Factor	1.00	0.91		1.00	0.91			1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00			1.00	0.97	1.00	0.98	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			0.99	1.00	0.98	1.00	
Frt	1.00	1.00		1.00	1.00			1.00	0.85	1.00	0.85	
Flt Protected	0.95	1.00		0.95	1.00			0.95	1.00	0.95	1.00	
Satd. Flow (prot)	1805	5061		1805	5123			1727	1532	1769	1587	
Flt Permitted	0.05	1.00		0.10	1.00			0.75	1.00	0.74	1.00	
Satd. Flow (perm)	99	5061		194	5123			1368	1532	1371	1587	
Peak-hour factor, PHF	0.83	0.96	0.88	0.83	0.92	0.63	0.72	0.25	0.78	0.75	0.25	0.50
Adj. Flow (vph)	27	1539	32	96	2937	52	32	0	60	24	0	8
RTOR Reduction (vph)	0	1	0	0	1	0	0	0	44	0	6	0
Lane Group Flow (vph)	27	1570	0	96	2988	0	0	32	16	24	2	0
Confl. Peds. (#/hr)			4	4			2		8	8		2
Heavy Vehicles (%)	0%	2%	7%	0%	1%	0%	4%	0%	2%	0%	0%	0%
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			3	8			2			6
Permitted Phases		4			8			2		2		6
Actuated Green, G (s)	77.1	77.1		87.0	87.0			38.0	38.0	38.0		38.0
Effective Green, g (s)	77.1	77.1		87.0	87.0			38.0	38.0	38.0		38.0
Actuated g/C Ratio	0.55	0.55		0.62	0.62			0.27	0.27	0.27		0.27
Clearance Time (s)	7.0	7.0		3.0	7.0			8.0	8.0	8.0		8.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	54	2787		199	3183			371	415	372		430
v/s Ratio Prot		0.31		0.02	c0.58							0.00
v/s Ratio Perm		0.27		0.27				c0.02	0.01	0.02		
v/c Ratio	0.50	0.56		0.48	0.94			0.09	0.04	0.06		0.01
Uniform Delay, d1	19.5	20.5		14.1	24.1			38.0	37.6	37.8		37.2
Progression Factor	1.00	1.00		1.00	1.00			1.00	1.00	1.00		1.00
Incremental Delay, d2	7.1	0.3		1.8	6.3			0.5	0.2	0.3		0.0
Delay (s)	26.6	20.7		16.0	30.3			38.5	37.7	38.2		37.2
Level of Service	C	C		B	C			D	D	D		D
Approach Delay (s)		20.8			29.9			38.0				37.9
Approach LOS		C			C			D				D
Intersection Summary												
HCM 2000 Control Delay		27.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.70										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			18.0				
Intersection Capacity Utilization		92.3%			ICU Level of Service			F				
Analysis Period (min)		15										
c Critical Lane Group												

Queues

3: Inverness Boulevard & Eglinton Avenue West

04/16/2018



Lane Group	EBL	EBT	WBL	WBT	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	27	1571	96	2989	32	60	24	8
v/c Ratio	0.50	0.56	0.47	0.94	0.09	0.13	0.06	0.02
Control Delay	55.2	21.3	16.4	31.2	39.8	9.8	39.3	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	21.3	16.4	31.2	39.8	9.8	39.3	0.0
Queue Length 50th (m)	4.6	103.6	9.5	268.8	7.1	0.0	5.3	0.0
Queue Length 95th (m)	#18.4	117.8	15.1	294.3	4.4	8.4	11.0	0.0
Internal Link Dist (m)		304.5		176.5	64.2			16.9
Turn Bay Length (m)								
Base Capacity (vph)	55	2821	206	3220	371	460	372	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.56	0.47	0.93	0.09	0.13	0.06	0.02

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Unsignalized Intersection Capacity Analysis

4: Inverness Boulevard & Barbertown Road

04/16/2018



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	2	7	23	10	15	54
Future Volume (Veh/h)	2	7	23	10	15	54
Sign Control	Stop			Stop	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.50	0.85	0.88	0.50	0.75	0.79
Hourly flow rate (vph)	4	8	26	20	20	68
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None		
Median storage veh						
Upstream signal (m)				41		
pX, platoon unblocked						
vC, conflicting volume	108	0	84	74	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108	0	84	74	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.2	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.3	
p0 queue free %	99	99	97	98	99	
cM capacity (veh/h)	776	1091	889	810	1591	
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	12	46	88			
Volume Left	0	26	20			
Volume Right	8	0	68			
cSH	961	853	1591			
Volume to Capacity	0.01	0.05	0.01			
Queue Length 95th (m)	0.3	1.4	0.3			
Control Delay (s)	8.8	9.5	1.7			
Lane LOS	A	A	A			
Approach Delay (s)	8.8	9.5	1.7			
Approach LOS	A	A				
Intersection Summary						
Average Delay		4.7				
Intersection Capacity Utilization		19.3%		ICU Level of Service		A
Analysis Period (min)		15				

HCM Unsignalized Intersection Capacity Analysis

8: Eglinton Avenue West & Barbertown Road

04/16/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR	
Lane Configurations							
Traffic Volume (veh/h)	0	1559	2698	0	0	13	
Future Volume (Veh/h)	0	1559	2698	0	0	13	
Sign Control	Free	Free		Stop			
Grade		0%	0%		0%		
Peak Hour Factor	0.25	0.95	0.93	0.25	0.25	0.63	
Hourly flow rate (vph)	0	1641	2901	0	0	21	
Pedestrians							
Lane Width (m)							
Walking Speed (m/s)							
Percent Blockage							
Right turn flare (veh)							
Median type		None	None				
Median storage veh							
Upstream signal (m)			329				
pX, platoon unblocked	0.42			0.42	0.42		
vC, conflicting volume	2901			3448	967		
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	651			1968	0		
tC, single (s)	4.1			6.8	6.9		
tC, 2 stage (s)							
tF (s)	2.2			3.5	3.3		
p0 queue free %	100			100	95		
cM capacity (veh/h)	393			23	453		
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3	SB 1
Volume Total	547	547	547	967	967	967	21
Volume Left	0	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0	21
cSH	1700	1700	1700	1700	1700	1700	453
Volume to Capacity	0.32	0.32	0.32	0.57	0.57	0.57	0.05
Queue Length 95th (m)	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	13.3
Lane LOS							B
Approach Delay (s)	0.0			0.0			13.3
Approach LOS							B
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization		62.1%		ICU Level of Service			B
Analysis Period (min)		15					

HCM Unsignalized Intersection Capacity Analysis

11: Barbertown Road & Site Access

04/16/2018



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	35	17	0
Future Volume (Veh/h)	0	0	0	35	17	0
Sign Control	Free	Free		Stop		
Grade	0%	0%		0%		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	0	38	18	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None	None				
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	38			19	19	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	38			19	19	
tC, single (s)	4.1			6.4	6.2	
tC, 2 stage (s)						
tF (s)	2.2			3.5	3.3	
p0 queue free %	100			98	100	
cM capacity (veh/h)	1572			998	1059	
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	0	38	18			
Volume Left	0	0	18			
Volume Right	0	38	0			
cSH	1700	1700	998			
Volume to Capacity	0.00	0.02	0.02			
Queue Length 95th (m)	0.0	0.0	0.4			
Control Delay (s)	0.0	0.0	8.7			
Lane LOS			A			
Approach Delay (s)	0.0	0.0	8.7			
Approach LOS			A			
Intersection Summary						
Average Delay		2.8				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

Summary of All Intervals

Run Number	1	2	3	4	5	Avg
Start Time	4:50	4:50	4:50	4:50	4:50	4:50
End Time	6:00	6:00	6:00	6:00	6:00	6:00
Total Time (min)	70	70	70	70	70	70
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	4528	4571	4492	4447	4577	4523
Vehs Exited	4494	4594	4463	4454	4586	4519
Starting Vehs	41	100	52	72	83	68
Ending Vehs	75	77	81	65	74	73
Travel Distance (km)	2535	2578	2503	2492	2579	2538
Travel Time (hr)	82.1	89.9	81.6	80.6	85.4	83.9
Total Delay (hr)	37.1	44.1	37.2	36.4	39.6	38.9
Total Stops	2401	2568	2407	2337	2439	2432
Fuel Used (l)	253.0	264.5	250.8	249.0	257.8	255.0

Interval #0 Information Seeding

Start Time	4:50
End Time	5:00
Total Time (min)	10
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	5:00
End Time	6:00
Total Time (min)	60
Volumes adjusted by Growth Factors.	

Run Number	1	2	3	4	5	Avg
Vehs Entered	4528	4571	4492	4447	4577	4523
Vehs Exited	4494	4594	4463	4454	4586	4519
Starting Vehs	41	100	52	72	83	68
Ending Vehs	75	77	81	65	74	73
Travel Distance (km)	2535	2578	2503	2492	2579	2538
Travel Time (hr)	82.1	89.9	81.6	80.6	85.4	83.9
Total Delay (hr)	37.1	44.1	37.2	36.4	39.6	38.9
Total Stops	2401	2568	2407	2337	2439	2432
Fuel Used (l)	253.0	264.5	250.8	249.0	257.8	255.0

Queuing and Blocking Report

Baseline

04/16/2018

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	SB	SB
Directions Served	L	T	T	TR	L	T	T	TR	LT	R	L	TR
Maximum Queue (m)	25.6	113.8	102.5	78.1	154.5	192.6	186.8	142.3	17.3	21.6	12.6	9.5
Average Queue (m)	12.1	69.9	59.2	39.0	18.9	145.8	127.5	87.4	4.4	7.1	3.9	1.0
95th Queue (m)	29.8	99.2	91.6	68.0	79.7	195.8	173.1	131.5	13.2	16.1	10.7	5.7
Link Distance (m)	302.4	302.4	302.4	302.4	185.9	185.9	185.9	185.9	70.2	70.2	11.6	11.6
Upstream Blk Time (%)					0	2	0			2	0	
Queuing Penalty (veh)					0	0	0			0	0	
Storage Bay Dist (m)												
Storage Blk Time (%)												
Queuing Penalty (veh)												

Intersection: 4: Inverness Boulevard & Barbertown Road

Movement	EB	WB
Directions Served	TR	LT
Maximum Queue (m)	8.6	10.7
Average Queue (m)	2.3	5.9
95th Queue (m)	8.5	13.1
Link Distance (m)		119.5
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (m)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 8: Eglinton Avenue West & Barbertown Road

Movement	EB	WB	WB	SB	B9
Directions Served	T	T	T	R	T
Maximum Queue (m)	2.3	158.7	44.6	15.6	3.5
Average Queue (m)	0.1	5.3	1.6	4.0	0.2
95th Queue (m)	1.6	66.9	31.6	12.3	3.1
Link Distance (m)	39.4	302.4	302.4	-1.4	267.6
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (m)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Queuing and Blocking Report

Baseline

04/16/2018

Intersection: 11: Barbertown Road & Site Access

Movement	SB
Directions Served	LR
Maximum Queue (m)	8.8
Average Queue (m)	3.8
95th Queue (m)	10.8
Link Distance (m)	47.3
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (m)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 0

Intersection: 3: Inverness Boulevard & Eglinton Avenue West

Phase	2	3	4	6	8
Movement(s) Served	NBTL	WBL	EBTL	SBTL	WBTL
Maximum Green (s)	37.0	7.0	78.0	37.0	78.0
Minimum Green (s)	4.0	1.0	53.0	4.0	4.0
Recall	C-Max	None	None	C-Max	None
Avg. Green (s)	37.0	6.5	82.1	37.0	87.9
g/C Ratio	NA	-0.01	NA	NA	NA
Cycles Skipped (%)	0	33	0	0	0
Cycles @ Minimum (%)	0	0	0	0	0
Cycles Maxed Out (%)	100	33	96	100	96
Cycles with Peds (%)	24	0	8	4	0

Controller Summary

Average Cycle Length (s): NA

Number of Complete Cycles : 0

Appendix G – Email Correspondence Regarding Peak Hour Factor

Madeleine Catz

From: Linda Wu <Linda.Wu@mississauga.ca>
Sent: December-12-17 3:08 PM
To: Madeleine Catz
Subject: RE: 1725 Barbertown Transportation Study

Hi Madeleine,

We have reviewed the counts and the Synchro sheet. While we agree that the existing low PHF is likely due to the low EBL volume, you need to provide a rational for PHF adjustment.

I recommend that you use 0.83 which is the PHF for the WBL and note this adjustment in the revised report.

Thanks,

Linda

From: Madeleine Catz [mailto:madeleine@nextrans.ca]
Sent: 2017/11/20 5:16 PM
To: Linda Wu
Subject: RE: 1725 Barbertown Transportation Study

Good afternoon Linda,

I was wondering if you had the time to look over the Synchro reports?

My main concern is whether the City will allow a PHF adjustment of 0.88 for the EBL movement at the Inverness Boulevard and Eglinton Avenue West intersection. In existing conditions the PHF for the EBL movement is 0.31, this is mostly due to the low number of vehicles turning left (5 vehicles). In my future total synchro analysis the EBL movement serves 22 vehicles and fails at a PHF of 0.31 but when adjusted to 0.88 it has a level of service of C.

Please let me know if you have any suggestions, or if I can adjust the PHF for the EBL movement since it does experience a greater volume than existing conditions.

Thank you,

Madeleine Catz, B.Eng., EIT

Transportation Analyst

o: 905-503-2563 ext. 207

c: 647-893-1640

e: madeleine@nextrans.ca

w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201

Aurora ON L4G 6W8

From: Madeleine Catz
Sent: November-10-17 3:27 PM
To: 'Linda Wu' <Linda.Wu@mississauga.ca>
Subject: RE: 1725 Barbertown Transportation Study

Hi Linda,

That is alright, thank you!

Have a nice weekend,

Madeleine Catz, B.Eng., EIT

Transportation Analyst

o: 905-503-2563 ext. 207

c: 647-893-1640

e: madeleine@nextrans.ca

w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

From: Linda Wu [<mailto:Linda.Wu@mississauga.ca>]
Sent: November-09-17 3:14 PM
To: Madeleine Catz <madeleine@nextrans.ca>
Subject: RE: 1725 Barbertown Transportation Study

Hi Madeleine,

I would not be able to look at them by this week, but will do it next week.

Sorry about that.

Linda

From: Madeleine Catz [<mailto:madeleine@nextrans.ca>]
Sent: 2017/10/31 3:10 PM
To: Linda Wu
Subject: 1725 Barbertown Transportation Study

Good afternoon Linda,

Please see the attached synchro reports for future total conditions of the study area intersections at the 1725 Barbertown proposed development. I have also attached the TMC report for your reference.

The existing TMC data collected provided a PHF of 0.31 for the EBL movement at Eglinton Ave W and Inverness Boulevard in the PM peak hour. Should I carry this PHF through to the future total EBL? The existing traffic flow at the EBL movement is 5, whereas in the future it is 22.

Appendix H – Transit Route Services

9 Rathburn-Thomas

Monday-Sunday Service

Effective: October 24, 2016



Legend

	TTC Subway Station		Major Transit Terminal		Shopping Centre		Public Library
	GO Train Station		Hospital		High School, University or College		Living Arts Centre
	Transitway Station		Ice Rink		Recreation or Community Centre		Civic Centre (City Hall)



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@MiWayHelps

miway.ca/feedback

905-615-INFO (4636)

miway.info@mississauga.ca

TTY: 905-615-3886



Find a schedule or trip plan



m.miway.ca



miway.ca/planatrip

citylink
905-615-4BUS(4287)

Call and enter a four-digit bus stop number.

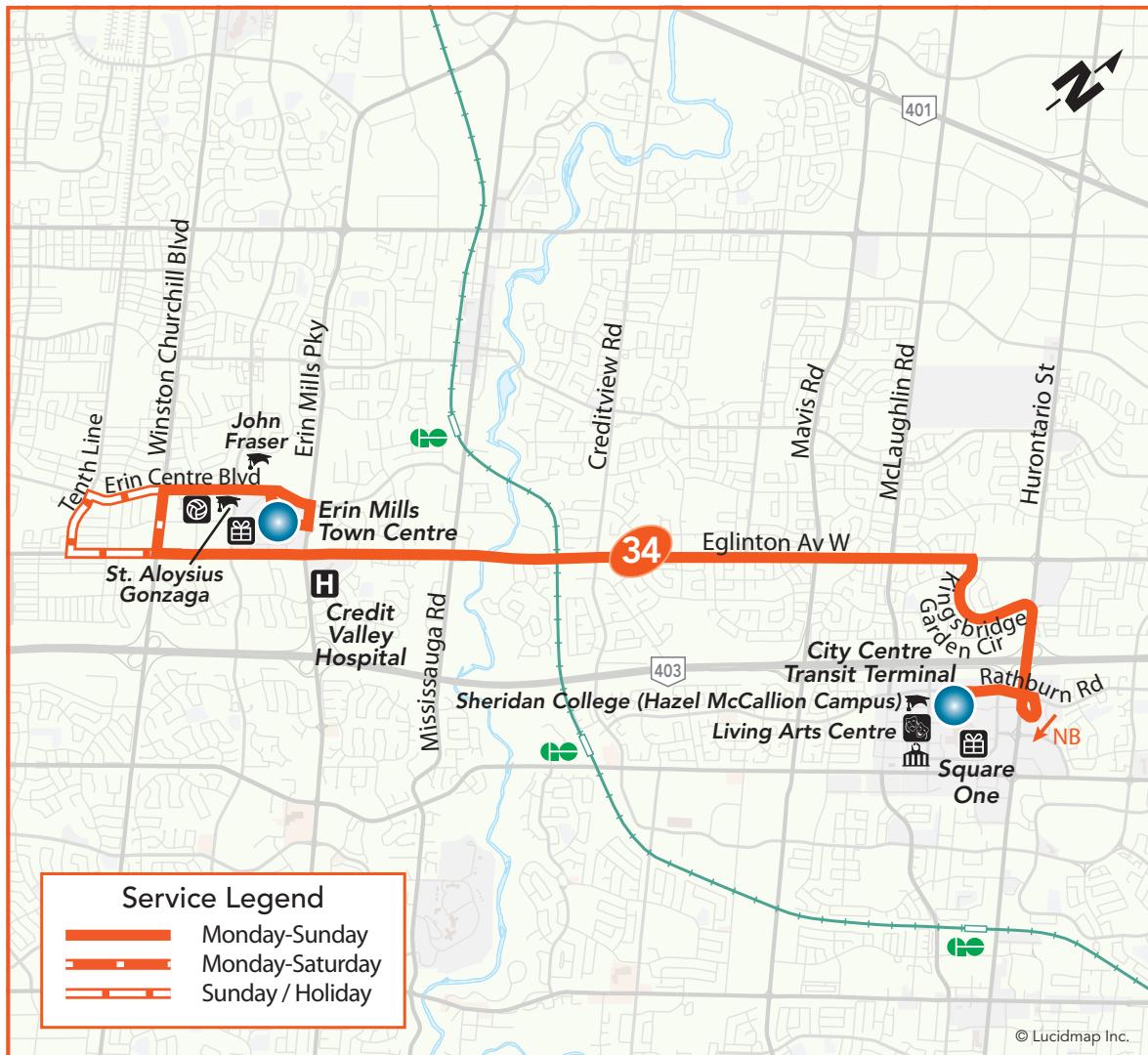


MISSISSAUGA

34 Credit Valley

Monday-Sunday Service

Effective: September 5, 2016



Legend

	TTC Subway Station		Major Transit Terminal		Shopping Centre		Public Library
	GO Train Station		Hospital		High School, University or College		Living Arts Centre
	Transitway Station		Ice Rink		Recreation or Community Centre		Civic Centre (City Hall)



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miway.ca/planatrip

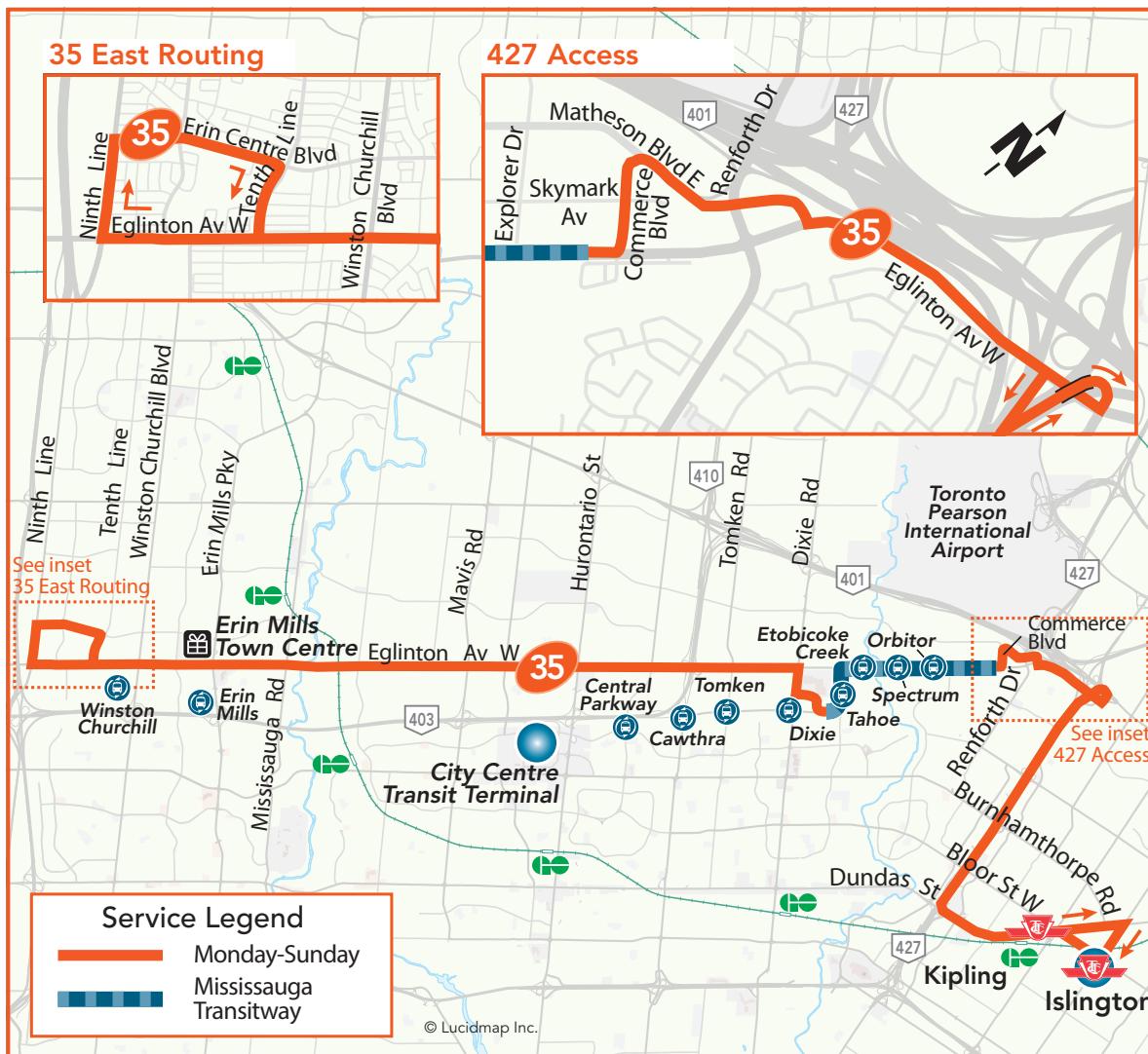


Call and enter a four-digit bus stop number.

35 Eglinton-Ninth Line

Monday-Sunday Service

Effective: July 3, 2017



Legend

	TTC Subway Station		Major Transit Terminal		Shopping Centre		Public Library
	GO Train Station		Hospital		High School, University or College		Living Arts Centre
	Transitway Station		Ice Rink		Recreation or Community Centre		Civic Centre (City Hall)

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- Customer Service Ambassadors
In person at various locations

Trip Plans & Schedules

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Mobile Site
- miway.ca/planatrip
Online Trip Planner

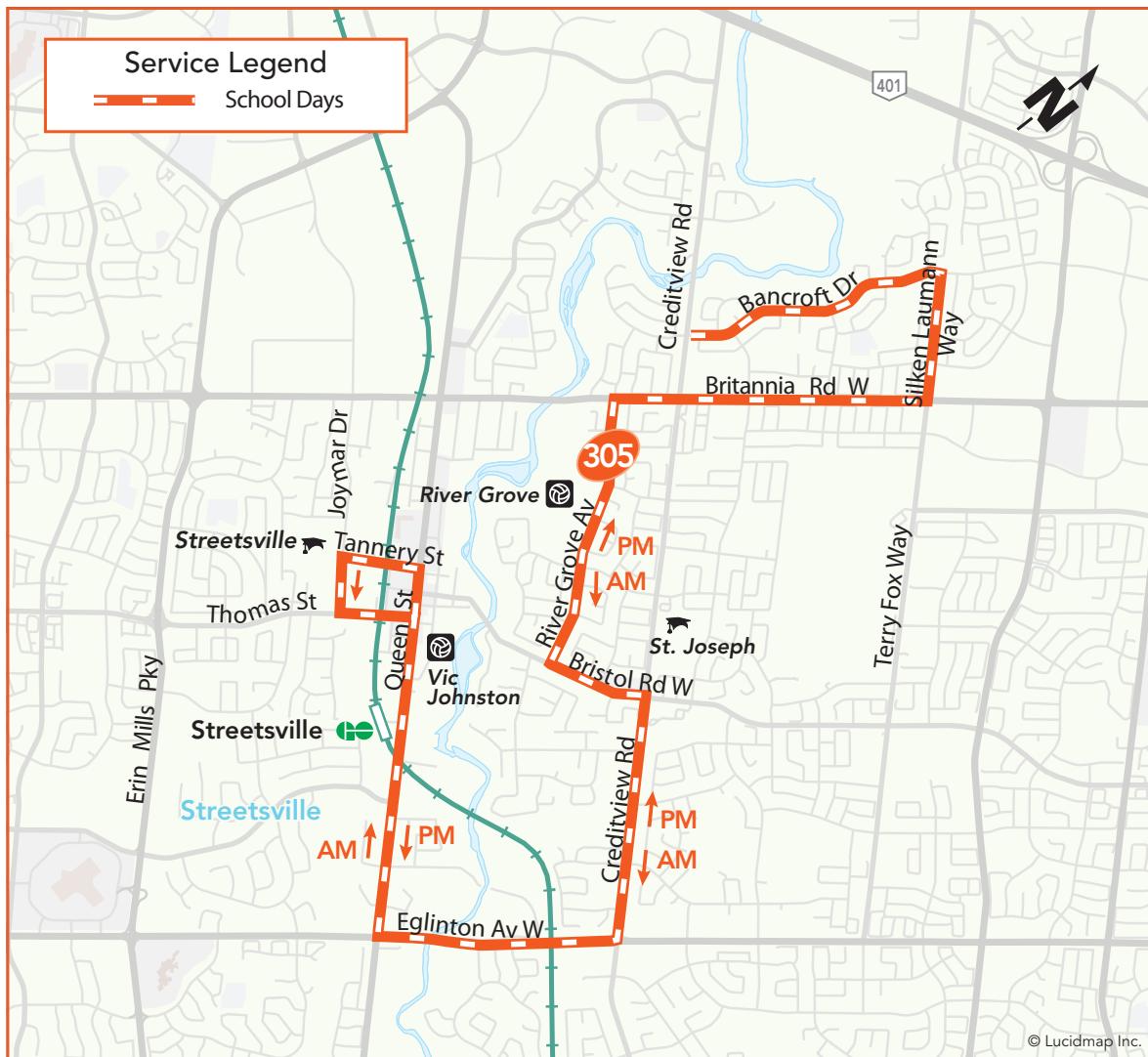


Call and enter a four-digit bus stop number.

305 Streetsville-Bancroft

Monday-Friday Service

Effective: October 23, 2017



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Legend

	TTC Subway Station		Major Transit Terminal		Shopping Centre		Public Library
	GO Train Station		Hospital		High School, University or College		Living Arts Centre
	Transitway Station		Ice Rink		Recreation or Community Centre		Civic Centre (City Hall)

MiWay Customer Service

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- miway.ca/feedback
- 905-615-INFO (4636)

- TTY: 905-615-3886
- miwayhelps@mississauga.ca
- Customer Service Ambassadors
In person at various locations

Trip Plans & Schedules



m.miway.ca
Mobile Site



miway.ca/planatrip
Online Trip Planner



Call and enter a four-digit
bus stop number.