URBANTRANS
Engineering Solutions Inc.

Traffic Impact Study (TIS)

Proposed Residential Development

1786 Polaris Way
City of Mississauga

UT-23-065

November 15, 2024

November 25, 2024

Mississauga Road Properties Inc.
1660 North Service Rd E, Suite 109B
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RE: Traffic Impact Study (TIS)
Proposed Residential Development
1786 Polaris Way, Mississauga ON
Reference No.: UT-23-065

UrbanTrans Engineering Solutions Inc. was retained by Mississauga Road Properties Inc. (the "Client") to complete this Traffic Impact Study (TIS) in support of an Official Plan Amendment and Zoning By-law Amendment application(s). The proposed development is located north of Mississauga Road and south of Eglinton Avenue West municipally known as 1786 Polaris Way, in the City of Mississauga.

The subject lands are currently vacant. Based on the concept plan provided in **Appendix A**, it is our understanding that the development proposal involves four (4) semi-detached homes and 32 three-storey townhomes totalling 36 residential units. At a minimum, two (2) car parking spaces will be provided for each unit with one (1) in garage and one (1) in lead in driveway portion. Additionally, a total of five (5) visitor parking spaces are proposed including one (1) accessible parking space. A full movement vehicular entrance is proposed via Mississauga Road.

This report concludes the proposed residential development will have negligible traffic operations and/or safety impacts to the immediate roadways and nearby intersections. The proposed full movement vehicle entrance is expected to operate at excellent levels of service, v/c ratios and delay with no critical movements identified.

It is understood that the City of Mississauga is the Municipal authority to review and approve the Traffic Impact Study for the proposed development. The study is in accordance with the City of Mississauga Traffic Impact Study Guidelines as well as the Terms of Reference comments received in a timely manner from the City Staff (see **Appendix B**) and Certification Form (see **Appendix C**). We thank you for the opportunity to undertake this study.

We trust the enclosed comply with your requirements. Should you have any questions, please do not hesitate to contact the undersigned.

Kind Regards,
UrbanTrans Engineering Solutions Inc.

Signature

Engineer's Seal

Annosan Srikantha, P.Eng.
President

DISCLAIMER

This document entitled '1786 Polaris Way – Traffic Impact Study' or named part thereof (the "project") was prepared by UrbanTrans Engineering Solutions Inc. ("UrbanTrans") for the account of Mississauga Road Properties Inc. (the "Client"). This document is confidential and prepared solely for approval and commenting municipalities and their agencies in their review and approval of this project. The materials in this report reflect best judgement based on the information available at the time the document was issued. Any reliance on this document by any third party is strictly prohibited and UrbanTrans accepts no responsibility for damages, if any, suffered by any third party by reason of decisions made or actions based on this document.

RECORD OF REVISIONS

Revision	Date	Identification	Description
0	November 25,2024	Final Report	Final Submission

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1.0 INTRODUCTION

1.1 Background

UrbanTrans Engineering Solutions Inc. was retained by Mississauga Road Properties Inc. (the "Client") to complete this Traffic Impact Study (TIS) in support of an Official Plan Amendment and Zoning By-law Amendment application(s).

1.2 Objective

The study will assess the following components:

- Evaluate potential impacts of traffic changes prompted by the proposed development on municipal roadways and identify any infrastructure enhancements or mitigation measures warranted to ensure the road network will operate acceptably and safely upon completion of the proposed development.
- Evaluate and identify potential safety and/or operational issues associated with access conflicts.
- Determine whether the proposed vehicle supply conforms to the City's Zoning By-law requirements.
- Simulate vehicle swept path analysis to determine adequate space requirements are provided for passenger cars, waste collection and fire/emergency truck.

1.3 Development Proposal

The proposed development is located north of Mississauga Road and south of Eglinton Avenue West municipally known as 1786 Polaris Way, in the City of Mississauga.

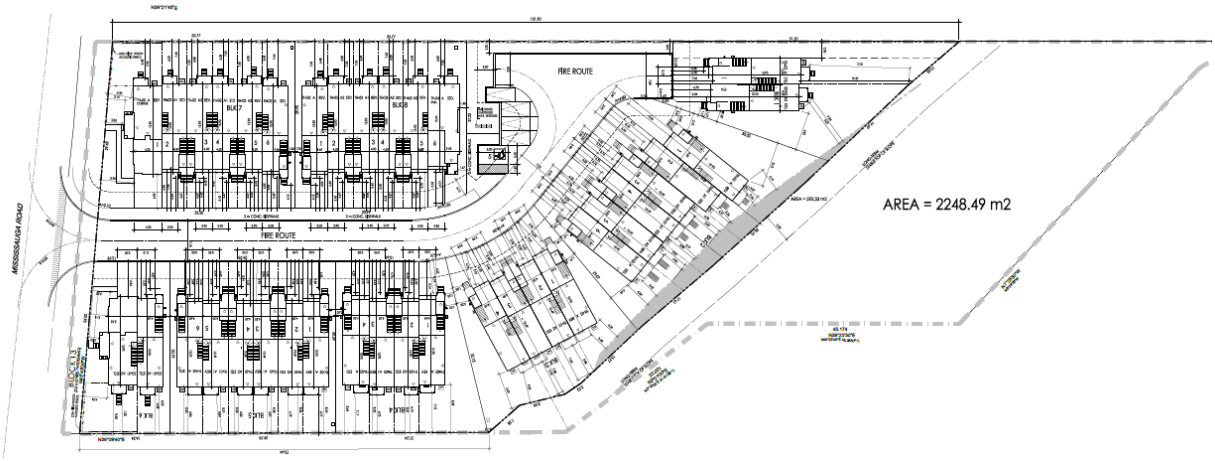
The subject lands are currently vacant. Based on the concept plan provided, it is our understanding that the development proposal involves four (4) semi-detached homes and 32 three-storey townhomes totalling 36 residential units. At a minimum, two (2) car parking spaces will be provided for each unit with one (1) in garage and one (1) in lead in driveway portion. Additionally, a total of five (5) visitor parking spaces are proposed including one (1) accessible parking space. A full movement vehicular entrance is proposed via Mississauga Road.

The location of the proposed development is illustrated in **Figure 1**. The proposed site plan is illustrated in **Figure 2; Appendix A** also provides a larger scale version of the proposed site plan.

Figure 1 - Site Location

Source: Google Map

Figure 2 – Proposed Site Plan



Source: RN Design

2.0 EXISTING CONDITIONS

This section documents the transportation network in the study area in 2023, including existing roadways, transit services, active transportation network, traffic control measures, and intersection performances.

2.1 Road Network

To provide clarity throughout this report, Mississauga Road has been given a north-south orientation. On this basis, the characteristics of the roads and intersections within the vicinity of the subject site are described below:

- **Mississauga Road** is a north-south minor collector under the jurisdiction of the City of Mississauga. It operates as a 2-lane cross-section, with exclusive left and right turn lanes at the Eglington Avenue intersection. Mississauga Road maintains an unposted speed limit 50 km/hr.
- **Eglington Avenue West** is an east-west major arterial under the jurisdiction of the City of Mississauga. It operates as a 6-lane cross-section, with a vegetated road median. It has exclusive left and right turn lanes at the Mississauga Road intersection. Eglington Avenue West maintains a posted speed limit of 60 km/h.

2.2 Transit Network

The proposed subject site is situated within an area that is currently well serviced by the existing TTC transit network and GO Transit. Both TTC bus stops and the Mimico GO Station are easily accessible from the proposed development.

Based on existing 2016 TTS data for the area surrounding the proposed development, during peak hours, approximately 21% and 6% of residents primarily use TTC buses and GO Transit, respectively. TTC bus stops are located within an easily walkable distance of less than 200m from the subject site. The Mimico GO Station is located approximately 500m from the subject site and is easily accessible by existing TTC buses and the cycling facility along Royal York Road. Travel times to both TTC and Mimico GO are illustrated below in **Table 1**.

Table 1: Travel time to Transit

Type	Distance	Mode of Travel	Time
MiWay Bus	220 m	Walk Bike	3 minute 1 minute
GO Bus Stop	250 m	Walk Bike	3 minutes 1 minute

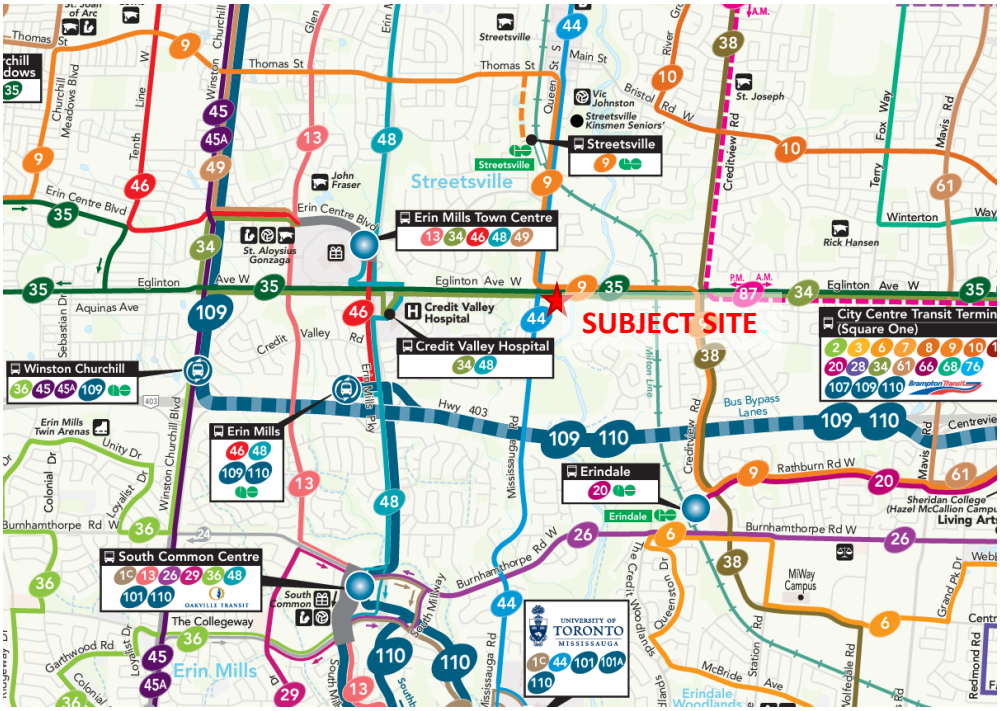
TTC Transit Network

The transit routes are provided in **Appendix D** and the route services in the vicinity of the subject site are summarized in **Table 2**. The existing MiWay Transit System Map in the vicinity of the subject site is illustrated in **Figure 3** to **Figure 5**.

Table 2: Available MiWay Transit

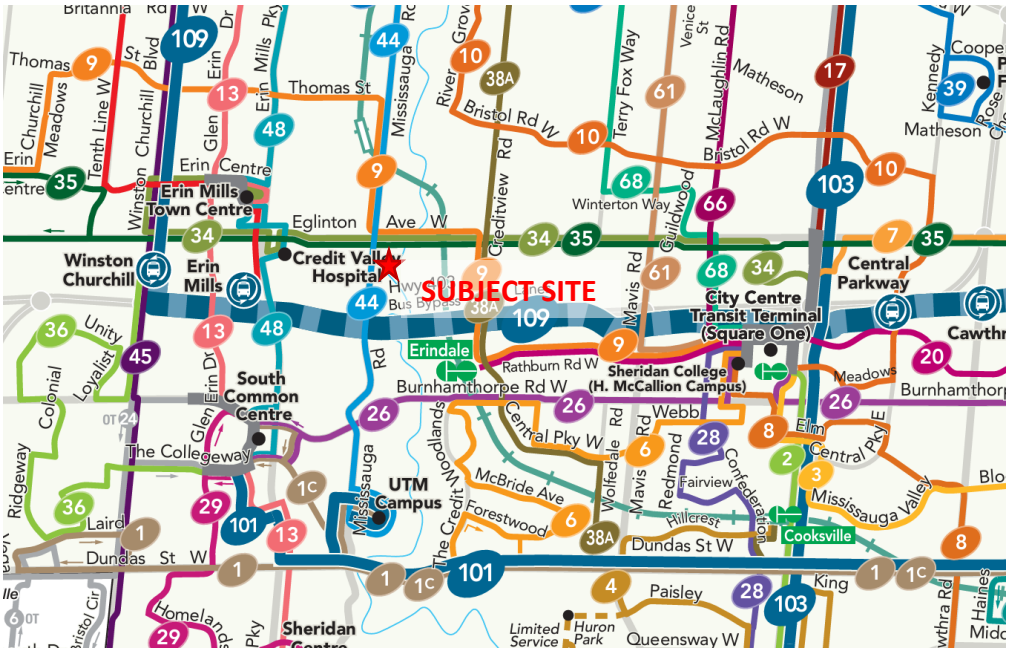
Bus Route	Route Description	Frequency
44 Mississauga Road (MiWay)	Operates in a mostly north-south direction between Meadowvale Town Centre to U of T Mississauga Campus. The 44 Mississauga bus operates every day, from 5:30am to 1:30 am.	15 minutes (peak) 40 minutes (off-peak)
34 Credit Valley (MiWay)	Operates in a mostly northeast-southwest direction between the City Centre Transit Terminal to Erin Mills Town Centre Bus Terminal, Platform B. The 34 Credit Valley bus operates every day, from 5:00am to 12:00 am	15 minutes (peak) 40 minutes (off-peak)
35 Eglington (MiWay)	Operates in mostly northeast-southwest direction between Churchill Meadows Community Centre to Kipling Terminal, Platform 3. The 35 Eglington bus operates every day, from 4:00 am to 1:00 am.	25 minutes
9 Rathburn-Thomas (MiWay)	Operates in Mostly east-west direction between the City Centre Transit Terminal to Churchill Meadows Community Centre. The 9 Rahtburn-Thomas bus operates every day, weekdays from 5:00 am to 12:00 am; weekends from 7:00 am to 12:00 am	25 minutes (weekdays) 40 minutes (weekends)

Figure 3: MiWay Transit Map – Weekdays



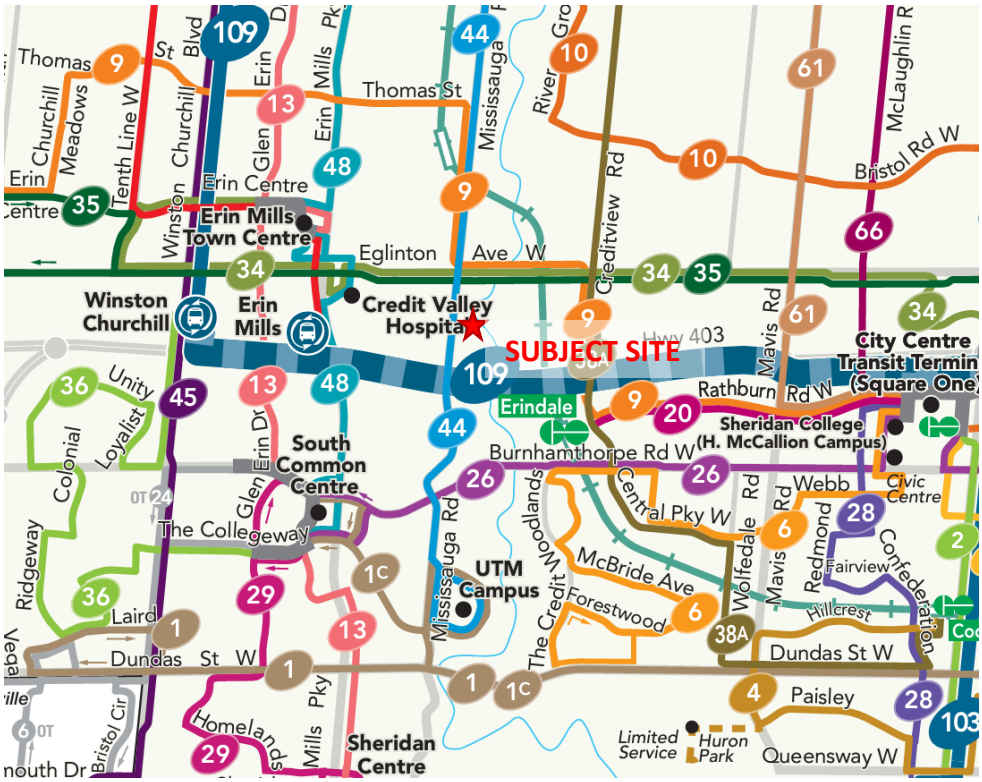
Source: https://www.mississauga.ca/miway-

Figure 4: MiWay Transit Map - Saturdays



Source: https://www.mississauga.ca/miway-

Figure 5: MiWay Transit Map - Sundays



Source: https://www.mississauga.ca/miway-

GO Transit Network

GO Bus 21 Milton is currently unable to provide a direct route to Union Station, due to ongoing construction on the Gardiner Expressway. GO Transit has offered three alternative connecting routes from Milton and the area to Union Station during this period. Additionally, the bus no longer serves Dixie GO Station.

GO Transit offered three alternative routes to accommodate existing travel delays. Transit route 21 A begins at Milton Station, connecting at the Oakville GO Station, ending at Union Station in both directions. Transit route 21 C begins at Erindale, connects at Port Credit, ending at Union Station. Our primary focus will be on Route 21 B/D Milton Lisgar Station (D-Express Route) as it includes a stop near the subject site. For further details on the 21 B/D Milton bus route, refer to **Table 3**.

Table 3: 21 B/D Milton GO Bus Route

Bus Route	Route Description	Frequency
21 B	Two-way route from Lisgar – Clarkson and operates on weekdays and weekends.	30 minutes 60 minutes
21 D Express	Two-way route from Lisgar – Clarkson and operates on weekdays and weekdays.	60 minutes
21 Milton (Go Transit)	Operates in mostly east-west direction between Milton Go Bus Station to Union Station, making a stop at Eglington Ave W & Mississauga Road intersection. The 21 Milton Go operates all day, every day.	30 – 60 minutes

The 21 Milton Line (A, B, and C) line currently provides an all day, two-way, 7 days a week train service between Milton to Union Station, with a stop near subject site. Service between Lisgar to Clarkson operates in a frequency of 30 minutes or better, while Clarkson to Union is 15 minutes or better during peak periods. **Figure 6** illustrates existing GO Transit System Map in the vicinity of the subject site**.**

Figure 6: Milton 21 GO Bus Route

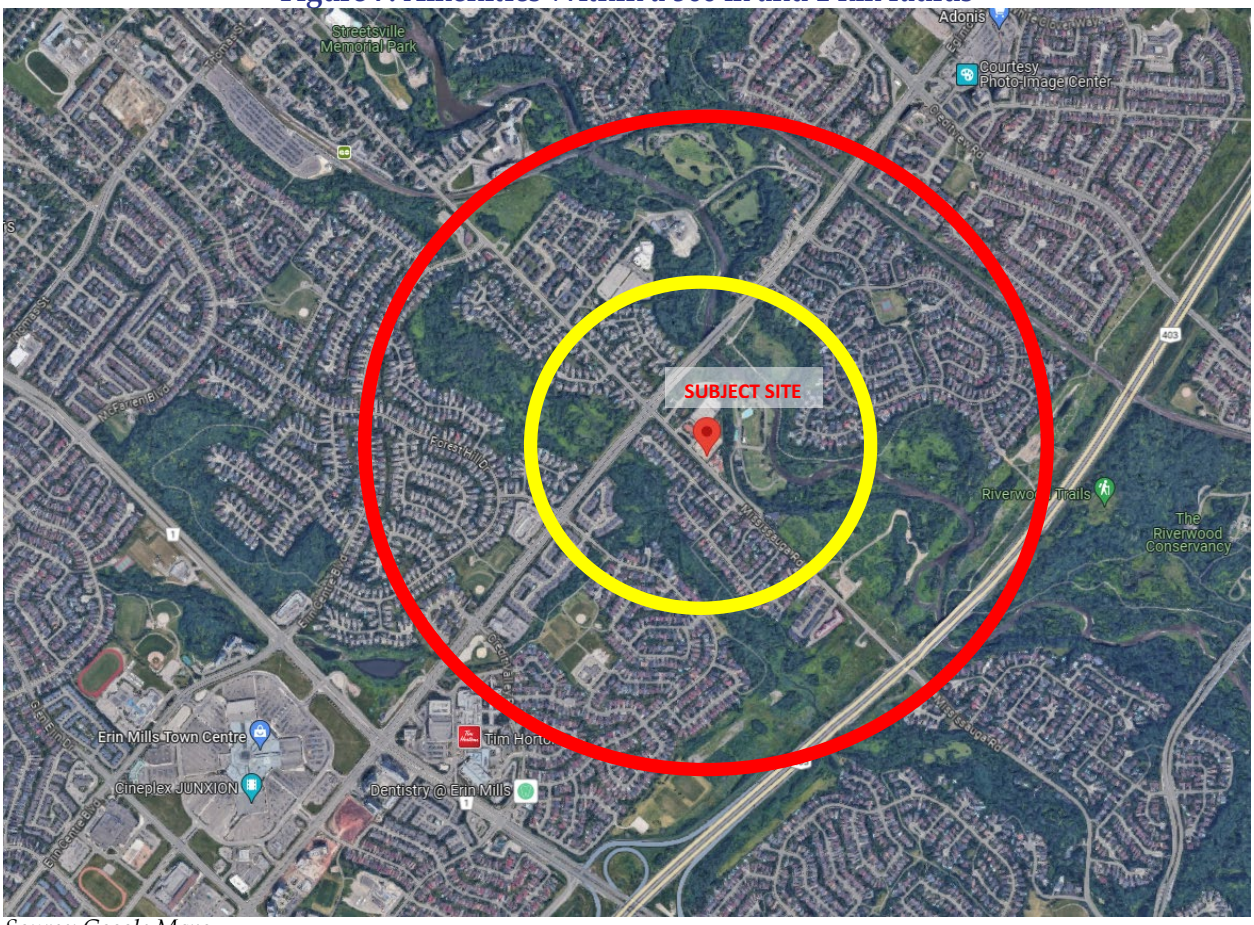
Source: https://www.gotransit.com/en/trip-

2.3 Active Transportation Network

Active transportation network involves human-powered forms of travel with walking and cycling being the most dominant and can be combined with other modes such as public transit. The following amenities are located within an area that is well serviced by the existing active transportation network and are located within an easily walkable or bikeable area of 500 m and 1 km. The area is illustrated in **Figure 7.**

- Hwy 403
- Grocery Stores
- Banks
- Hospital
- Pharmacy and Clinics
- Restaurants
- Parks and Trails
- Community Centre

Figure 7: Amenities Within a 500 m and 1 km radius



Source: Google Maps

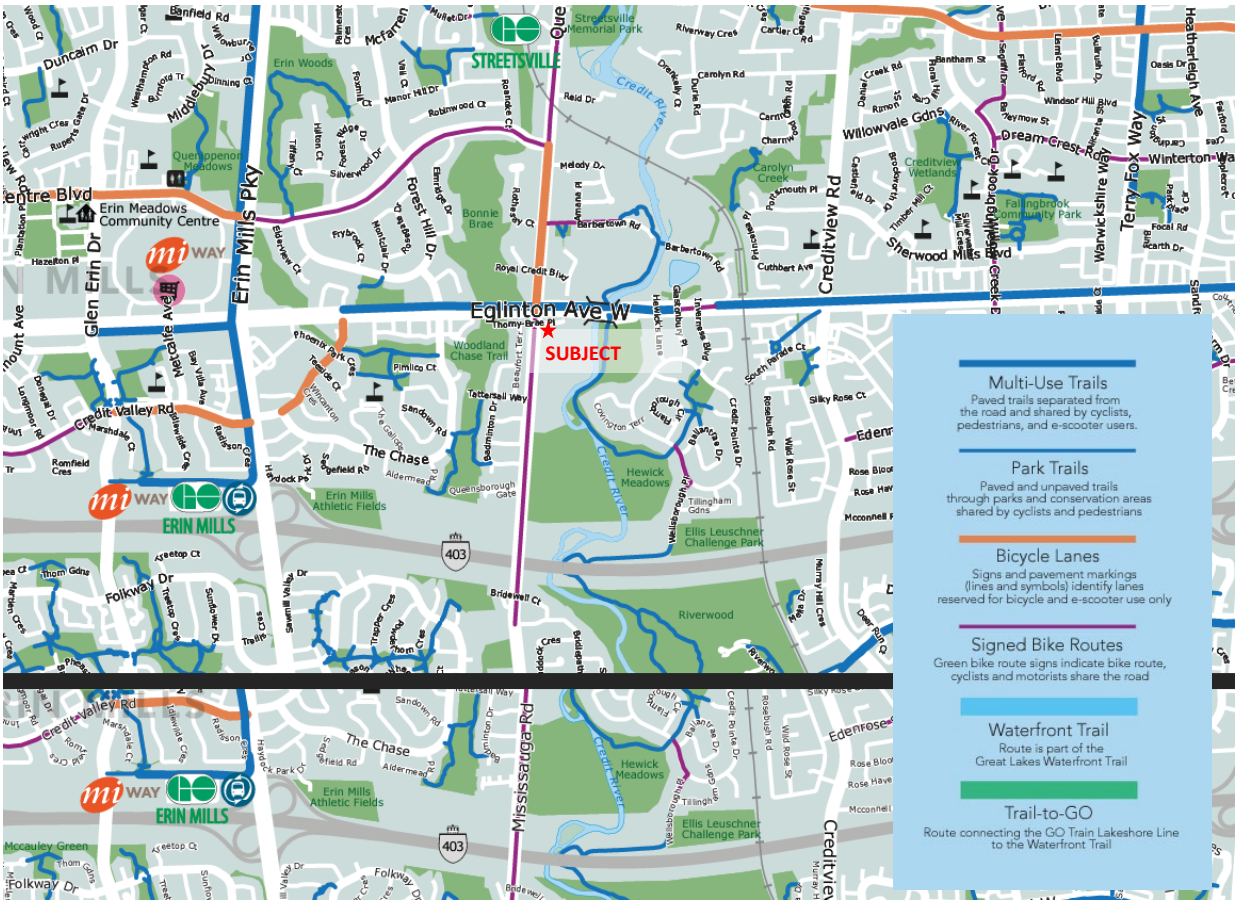
2.3.1 Sidewalk Network

Currently, there is a continuous walk located on the west side of Mississauga Road, and the east sidewalk begins at subject site moving north. Eglington Avenue West has a sidewalk to the south of the road, and a multi-use path to the north of the road. The proposed development provides direct sidewalk connections to the surrounding road network. The sidewalk connections to the surrounding intersections and roadways will facilitate pedestrian movement to and from the development.

2.3.2 Bicycle Network

Currently, within the general area of the proposed development, Mississauga Road and Eglington Avenue West are both designated cycling routes. See **Figure 8** for details.

Figure 8: Current Cycling Network Map



Source: Mississauga.ca

Based on the above, it is UrbanTrans' opinion that the area surrounding the proposed development is well served by existing and proposed active transportation, including walking, cycling, and transit. The existing and future network will continue to reduce the demand of residents for single occupancy vehicles.

2.4 Traffic Data

Based on discussion and acceptance from City Staff (see Appendix A), the study will review and evaluate the following intersections in the vicinity of the subject site:

- Eglinton Ave W & Mississauga Rd (Signalized)
- Mississauga Road & Proposed Site Access (Unsignalized)

The existing traffic volumes at the abovementioned study area intersections were undertaken by Spectrum Traffic Data Inc. on Tuesday, November 14, 2023, during the morning (7:00 AM to 10:00 AM) and afternoon (4:00 PM to 7:00 PM) peak hour periods. The existing 2023 lane configuration and traffic volumes are illustrated in **Figure 9** and the detailed traffic data and signal timing plans are provided for reference in **Appendix E**.

2.5 Base Year (2023) Traffic Operations

To assess the existing traffic conditions, UrbanTrans utilized window-based computer software Synchro Version 11 which incorporates the Highway Capacity Manual 2000 methodology (HCM 2000), to undertake capacity analysis (i.e., level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday AM and PM peak hour periods for the signalized and unsignalized intersections.

The detailed results of the analysis for existing 2023 baseline traffic conditions are provided in **Appendix F** and summarized in **Table 4**.

Table 4: Existing (2023) Traffic Peak Hour Level of Service Analysis

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Eglinton Ave W & Mississauga Rd (Signalized)	OVERALL	61.2	-	1.16	E	41.8	-	1.03	D
	EBL	25.3	32.6	0.48	C	65.4	72.6	0.83	E
	EBT	88.5	312.2	1.08	F	41.8	132.5	0.67	D
	EBR	15.9	34.0	0.26	B	6.6	12.3	0.19	A
	WBL	153.2	130.7	1.16	F	99.0	105.5	1.03	F
	WBT	35.5	118.9	0.52	D	47.4	172.6	0.83	D
	WBR	4.7	6.4	0.22	A	10.1	21.5	0.36	B
	NBL	49.9	43.5	0.39	D	42.9	56.7	0.38	D
	BNT	45.9	76.9	0.36	D	43.1	124.8	0.50	D
	NBR	13.4	38.2	0.41	B	19.7	62.3	0.42	B
	SBL	38.4	70.5	0.61	D	26.7	55.1	0.42	C
	SBTR	42.0	136.3	0.64	D	30.6	122.8	0.50	C

The intersection capacity analysis indicates that under future total traffic conditions, the signalized intersection is expected to operate near capacity due to high traffic volumes with acceptable levels of service, v/c ratios and delay. However, the eastbound through and westbound left turning movement is operating with a failing level of service during the morning peak hour period and higher delay and v/c ratio under the existing traffic signal timing plan. In addition, the westbound left turning movement is operating with a failing level of service during the afternoon peak hour period and higher delay and v/c ratio under the existing traffic signal timing plan.

Although, in theory, it is not possible for an intersection to operate with a v/c ratio greater than 1.0 under existing conditions. In reality, the movement is expected to operate over capacity when long queues are formed, and vehicles are required to wait more than one cycle length to get through the intersection. This is considered a typical condition for signalized intersections where a major and minor arterial roadway otherwise known as high capacity urban roadways meet. Furthermore, factors such as platooning, and gap opportunities are not considered in the analysis as those parameters do not appear in the Synchro inputs.

For the purpose of this assessment, UrbanTrans assessed several scenarios of signal timing optimization to address the morning and afternoon peak periods with critical movements and to reduce queues. As such, UrbanTrans recommends optimizing the splits and phases during the morning and afternoon peak hour periods while maintaining the 160 second cycle length, respectively in order to achieve v/c ratios under 1.0 and no failing level of services. The recommended splits and phase diagram are detailed in **Table 5** for the morning and afternoon peak hour periods and will be carried forward into future background and future total traffic analysis.

Table 5: Recommended Splits and Phase Diagram (Mississauga Road and Eglinton Ave West Intersection)

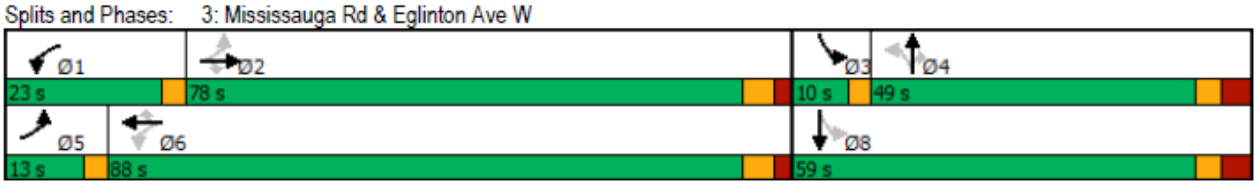
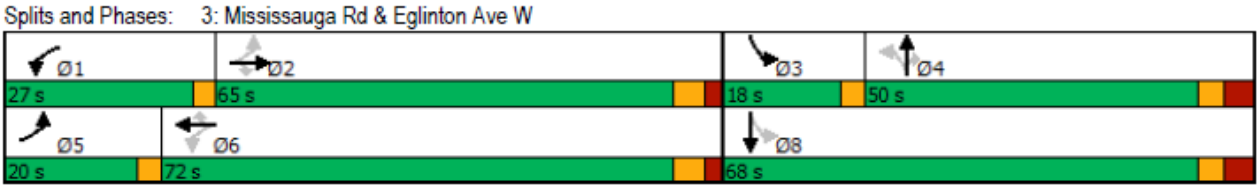
Peak Hour	Splits and Phase Diagram
AM	
PM	

Table 6 summarizes the intersection operations for the morning and afternoon peak hour period based on the proposed signal timing improvements noted above. The detailed optimized timing results of the analysis are provided in **Appendix F**.

Table 6: Existing (2023) Traffic Peak Hour Level of Service Analysis (Optimized Timing)

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Eglinton Ave W & Mississauga Rd (Signalized)	OVERALL	45.3	-	0.97	D	40.1	-	0.82	D
	EBL	18.2	26.5	0.42	B	45.9	54.6	0.69	D
	EBT	56.1	275.4	0.97	E	44.0	143.0	0.71	D
	EBR	12.7	29.9	023	B	8.8	15.1	0.20	A
	WBL	76.4	101.6	0.88	E	51.0	74.5	0.79	D
	WBT	25.2	97.4	0.43	C	45.9	172.6	0.82	D
	WBR	3.3	5.3	0.19	A	10.1	21.5	0.36	B
	NBL	75.4	55.5	0.65	E	47.8	60.5	0.42	D
	BNT	51.9	82.0	0.42	D	47.7	133.2	0.55	D
	NBR	13.3	36.6	0.45	B	23.5	69.7	0.46	C
	SBL	63.3	81.2	0.81	E	29.7	59.1	0.45	C
	SBTR	58.7	156.8	0.79	E	33.7	131.5	0.53	C

Note: Green column details optimized timing results

As indicated in Table 6, with the proposed optimized timings, the intersection is expected to operate near capacity due to high traffic volumes, however, operate with acceptable levels of services (no failing movements), v/c ratios (under 1.0) and delay.

It is recommended that the Region and City monitor these movements in the future and make appropriate adjustments as required based on the optimized signal timings recommended in this study. Furthermore, it is recommended that the Region and City monitors the growth rates along Mississauga Road and Eglinton Ave West and other main corridors in the area so that signal timing plan will be appropriately prioritized for transit vehicles and other modes of transportation. This will facilitate and encourage new residents and employees to take alternative and sustainable modes of transportation to work, school, shopping or other discretionary trips during the peak periods.

3.0 FUTURE BACKGROUND CONDITIONS

3.1 Horizon Years

Based on discussion and acceptance from City Staff (See Appendix B), a five-year horizon (2028) after the entire building process of the proposed development will be analyzed.

3.2 Growth Rate

Based on discussion and acceptance from City Staff (See Appendix B), the growth rates provided by the City are detailed in **Table 7** and email correspondences are provided in **Appendix G**.

Table 7: Annual Growth Rates Obtained from City of Mississauga

Roadway	Movement	Peak Hour		Projected Year
		AM	PM	
Mississauga Rd	Northbound	1.0%	1.0%	(2028)
Mississauga Rd	Southbound	1.0%	0.5%	(2028)
Eglinton Ave W	Eastbound	0.5%	1.5%	(2028)
Eglinton Ave W	Westbound	1.5%	0.5%	(2028)

The growth rates compounded per annum detailed in Table 4 were applied to the 2023 baseline through traffic volumes to estimate the future (2028) background corridor traffic growth.

3.3 Future Background Developments

In addition to general corridor traffic growth, specific allowances have also been made to account for traffic generated by other area developments in the vicinity of the site that are either undergoing the approval process or under construction at the time of this study.

In accordance with the active development applications in the City of Mississauga's Ward 8, it is UrbanTrans' opinion no future background developments are proposed in the vicinity on the subject site.

On this basis, the background developments growth rates from section 3.2 will ultimately provide the volumes for the future background traffic conditions.

3.4 Future Background Traffic Operations

To assess the future background traffic conditions, UrbanTrans utilized window-based computer software Synchro Version 11 which incorporates the Highway Capacity Manual 2000 methodology (HCM 2000), to undertake capacity analysis (i.e., level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday AM and PM peak hour periods for the signalized and unsignalized intersections.

The estimated future (2028) background traffic volumes are illustrated in **Figure 10**. The detailed results of the analysis are provided in **Appendix H** and summarized in **Table 8**.

Table 8: Future (2028) Background Traffic Peak Hour Level of Service Analysis

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Eglinton Ave W & Mississauga Rd (Signalized)	OVERALL	45.3	-	0.97	D	40.1	-	0.82	D
	EBL	18.2	26.5	0.42	B	45.9	54.6	0.69	D
	EBT	56.1	275.4	0.97	E	44.0	143.0	0.71	D
	EBR	12.7	29.9	0.23	B	8.8	15.1	0.20	A
	WBL	76.4	101.6	0.88	E	51.0	74.5	0.79	D
	WBT	25.2	97.4	0.43	C	45.9	172.6	0.82	D
	WBR	3.3	5.3	0.19	A	10.1	21.5	0.36	B
	NBL	75.4	55.5	0.65	E	47.8	60.5	0.42	D
	BNT	51.9	82.0	0.42	D	47.7	133.2	0.55	D
	NBR	13.3	36.6	0.45	B	23.5	69.7	0.46	C
	SBL	63.3	81.2	0.81	E	29.7	59.1	0.45	C
	SBTR	58.7	156.8	0.79	E	33.7	131.5	0.53	C

Note: Green column details optimized timing results

The intersection capacity analysis indicates that under the future background conditions, with the proposed optimized timings, the intersection is expected to operate near capacity due to high traffic volumes, however, operate with acceptable levels of services (no failing movements), v/c ratios (under 1.0) and delay.

It is recommended that the Region and City monitor these movements in the future and make appropriate adjustments as required based on the optimized signal timings recommended in this study. Furthermore, it is recommended that the Region and City monitors the growth rates along Mississauga Road and Eglinton Ave West and other main corridors in the area so that signal timing plan will be appropriately prioritized for transit vehicles and other modes of transportation. This will facilitate and encourage new residents and employees to take alternative and sustainable modes of transportation to work, school, shopping or other discretionary trips during the peak periods.

4.0 SITE GENERATED TRAFFIC VOLUMES

4.1 Proposed Development

As previously mentioned, the development proposal involves four (4) semi-detached homes and 32 three-storey townhomes totalling 36 residential units. At a minimum, two (2) car parking spaces will be provided for each unit with one (1) in garage and one (1) in lead in driveway portion. Additionally, a total of five (5) visitor parking spaces are proposed including one (1) accessible parking space. A full movement vehicular entrance is proposed via Mississauga Road.

4.2 Trip Generation

The number of vehicular trips generated by the proposed development is estimated using the information contained in the ITE Trip Generation Manual (11th Edition) published by the Institute of Transportation Engineers (ITE). For the purpose of this assessment, the average rate of the ITE Land Use Code (LUC 220) "Multifamily Housing (Low-Rise)" has been utilized for the proposed development provided in **Appendix I**.

Table 9 summarizes the trip generation volumes for the proposed development during the weekday AM and PM peak hour for full build-out. For the purpose of this assessment, no modal split reduction has been assumed for the proposed development for conservative analysis.

Table 9: Site Traffic Trip Generation

Land Use (Magnitude)		Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Low-Rise Housing (36 Units)	New Trip	3	11	14	12	6	18

Based on the trip generation calculations, the proposed development is estimated to generate a total 14 two-way trips (3 inbound and 11 outbound) during the weekday morning peak hour and 18 two-way trips (12 inbound and 6 outbound) during the afternoon peak hour.

On this basis, it is UrbanTrans' opinion that the site traffic trip generation will have negligible traffic impacts to the abutting road network.

4.3 Trip Distribution and Trip Assignment

The trips generated by the proposed development were distributed to and from the boundary road network based on the 2016 Transportation Tomorrow Survey (TTS) data. Trip distribution was conducted for traffic zone 3684 which is located in the City of Mississauga. The TTS data detailing the trip distributions are provided in **Appendix J.** The site generated trips were distributed to the study intersections based on the TTS data and engineering judgement. The distribution of trips to the study area intersections are summarized in **Table 10** and illustrated in **Figure 11.**

Table 10: Trip Distribution

Direction	Roadway	To Proposed Development	From Proposed Development
North	Mississauga Rd	15%	15%
South	Mississauga Rd	30%	30%
East	Eglinton Ave W	30%	15%
West	Eglinton Ave W	25%	40%
Total		100%	100%

5.0 FUTURE TOTAL CONDITIONS

The future total traffic volumes are the sum of the existing traffic volumes plus the proposed site generated traffic volumes. To assess the future total traffic conditions for stop-controlled intersections, UrbanTrans utilized window-based computer software Synchro Version 11 which incorporates the Highway Capacity Manual 2000 methodology (HCM 2000), to undertake capacity analysis (i.e., level of services, volume to capacity ratios, delays, queues, etc.) at the study area intersections during weekday AM and PM peak hour periods for the signalized and unsignalized intersections.

The estimated future (2028) total traffic volumes are illustrated in **Figure 12**. The detailed results of the analysis are provided in **Appendix K** and summarized in **Table 11**.

Table 11: Future (2028) Total Traffic Peak Hour Level of Service Analysis

Intersection	Weekday AM Peak Hour					Weekday PM Peak Hour			
	Movement	Control Delay (s)	95th Queue (m)	V/C	LOS	Control Delay (s)	95th Queue (m)	V/C	LOS
Eglinton Ave W & Mississauga Rd (Signalized)	OVERALL	42.7	-	0.95	D	41.8	-	0.85	D
	EBL	19.4	26.5	0.45	B	47.0	54.5	0.68	D
	EBT	52.7	280.2	0.95	D	44.2	152.5	0.72	D
	EBR	12.5	30.6	0.22	B	9.7	19.1	0.19	A
	WBL	76.9	103.7	0.88	E	54.7	78.2	0.80	D
	WBT	26.0	106.5	0.47	C	46.9	192.1	0.85	D
	WBR	3.5	11.3	0.16	A	11.1	32.4	0.31	B
	NBL	64.2	49.1	0.54	E	49.2	59.9	0.41	D
	BNT	52.1	85.1	0.43	D	51.2	139.4	0.59	D
	NBR	14.2	40.3	0.44	B	25.8	72.8	0.48	C
	SBL	50.9	82.5	0.65	D	31.8	58.3	0.47	C
	SBTR	54.0	161.0	0.72	D	34.5	124.3	0.49	C
Mississauga Rd & Site Access (Unsignalized)	WBLR	15.7	0.9	0.03	C	19.4	0.6	0.02	C
	SBLT	0.1	-	<0.01	A	0.3	0.2	0.01	A

Note: Green column details optimized timing results

The intersection capacity analysis indicates that under the future total traffic conditions and the recommended signal timings provided in Table 5, the signalized intersection is expected to

operate near capacity due to high traffic volumes, however, operate with acceptable levels of services (no failing movements), v/c ratios (under 1.0) and delay.

As previously mentioned, the proposed development site traffic adds negligible delay to the overall intersection operations. **Table 12** details the changes in traffic operations from existing to future total traffic conditions for all movements during the morning and afternoon peak hour period.

Table 12: Future Background vs Future Total Level of Services Comparison

Intersection	Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		Control Delay (s)	95th Queue (m)	V/C	Control Delay (s)	95th Queue (m)	V/C
Eglinton Ave W & Mississauga Rd (Signalized)	OVERALL	-2.6	-	-0.02	1.7	-	0.03
	EBL	1.2	-	0.03	1.1	-0.1	-0.01
	EBT	-3.4	4.8	-0.02	0.2	9.5	0.01
	EBR	-0.2	0.7	-0.01	0.9	4.0	-0.01
	WBL	0.5	2.1	-	3.7	3.7	0.01
	WBT	0.8	9.1	0.04	1.0	19.5	0.03
	WBR	0.2	6	-0.03	1.0	10.9	-0.05
	NBL	-11.2	-6.4	-0.11	1.4	-0.6	-0.01
	BNT	0.2	3.1	0.01	3.5	6.2	0.04
	NBR	0.9	3.7	-0.01	2.3	3.1	0.02
	SBL	-12.4	1.3	-0.16	2.1	-0.8	0.02
	SBTR	-4.7	4.2	-0.07	0.8	-7.2	-0.04

Note: Green column details optimized timing results

As indicated in **Table 12**, the proposed development site traffic will not create any adverse impacts to the adjacent road network and operations. Based on the assessment indicated above, it is UrbanTrans' opinion that no improvements are required.

Furthermore, the intersection capacity analysis indicates that under the future total traffic conditions, the proposed site access via Mississauga Road is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.

As previously mentioned, it is recommended that the Municipalities monitor these movements in the future and make appropriate adjustments as required based on the optimized signal timings recommended in this study. Furthermore, it is recommended that the Municipalities monitor the growth rates along Eglinton Ave West and Mississauga Road and other main corridors in the area so that signal timing plan will be appropriately prioritized for transit vehicles and other modes of transportation. This will facilitate and encourage new residents and employees to take alternative and sustainable modes of transportation to work, school, shopping or other discretionary trips during the peak periods.

It is UrbanTrans' opinion the proposed development can adequately be accommodated by the existing transportation network with minimal traffic impacts to the adjacent public roadways during the morning and afternoon peak hour periods.

6.0 TRANSPORTATION IMPACT ASSESSMENT

6.1 Site Access

As previously mentioned, a full movement vehicular entrance is proposed via Mississauga Road.

6.2 On-site Circulation

AutoTURN software was used to generate vehicular turning templates to confirm and demonstrate the accessibility for typical 5.6m long passenger vehicle (P TAC-2017) and Region of Peel Waste Collection, and Fire/Emergency Truck.

Figure 13 to **Figure 15** illustrate the turning movement templates for passenger vehicles, waste collection, and fire/emergency vehicles, respectively. The analysis demonstrates that a passenger vehicle, waste collection and fire/emergency vehicles can maneuver within the designated route with no conflicts.

6.3 Signage and Pavement Marking Plan

In accordance with the Ontario Traffic Manuel (OTM) Book 5, UrbanTrans' recommends appropriate internal signages and pavement marking plans illustrated in **Figure 16** for the proposed site plan. Based on the recommended signages and pedestrian sidewalk within the subject site, it is our opinion the site will operate safely and efficiently for both motorists and pedestrian connectivity.

7.0 PARKING REQUIREMENT

7.1 Zoning By-law Review

As previously mentioned, the development proposal involves four (4) semi-detached homes and 32 three-storey townhomes. At a minimum, two (2) car parking spaces will be provided for each unit with one (1) in garage and one (1) in lead in driveway portion. Additionally, a total of five (5) visitor parking spaces are proposed including one (1) accessible parking space.

The City of Mississauga's Zoning By-law No. 0225-2007 (In Effect) is applied to the proposed development. The parking requirement and supply for the proposed development is detailed in **Table 13**.

Table 13: City of Mississauga Zoning By-law No. 0225-2007 Vehicle Parking Requirements

Type of Use	GFA (Units)	Parking Rates	Required
Semi-Detached and Townhouse	36	2.0 residential spaces per unit	72
		0.25 visitor spaces per unit	9
Total Required			**81**
Total Provided			**77**
Difference			**-4**

Based on the applicable Zoning By-law No. 28-97 detailed in **Table 13**, the proposed development is required to provide 81 parking spaces and a total of 77 parking spaces are proposed resulting in a parking deficiency of four (4) visitor parking spaces. However, the parking deficiency is considered negligible since it is within 10% of the overall requirement (i.e. 5% parking deficiency).

In accordance with the City of Mississauga Terms of Reference Parking Utilization Studies for Site Specific Applications, when the parking reduction is relatively minor (generally less than 10% of the By-law standards) a Letter of Justification based on the nature of the operation and its land use circumstances may be acceptable.

It is UrbanTrans Engineering' opinion that parking management is the best TDM measure to encourage residents to walk and cycle to and from the proposed development. The City continues to evolve into an increasingly urban environment with more prevalent and frequent public transportation and has recognized the need to review its parking standards. High minimum parking requirements contribute to an oversupply of parking, inefficient use of land, and dispersed development patterns, which in turn strengthen automobile dependence and discourages alternative forms of transportation such as transit and walking.

It is UrbanTrans' opinion that the proposed parking supply of two (2) car parking spaces provided for each unit with one (1) in garage and one (1) in lead in driveway portion and a total of five (5) visitor parking spaces including one (1) accessible parking space can adequately accommodate the proposed four (4) semi-detached homes and 32 three-storey townhomes.

7.2 Parking Recommendations for the Proposed Development

As previously mentioned, UrbanTrans recommends a lower parking provision for the proposed development. Given that the proposed subject site is situated within an area that is currently well serviced by the existing TTC transit network and GO Transit are located within an easily walkable distance of less than 250m from the subject site, active transportation network, neighbourhood context and recommended TDM measures and incentives, it is UrbanTrans' opinion that vehicle parking should be reduced for the proposed development. The following justifications are provided in this TIS to support the "reduced parking provision" for the proposed mixed use development:

1. 2016 Transportation Tomorrow Survey Non-Auto Modal Split
2. TTS Vehicle Ownership
3. ITE Parking Generation Manual (5th Edition)
4. Transportation Demand Management (TDM)
5. Transportation Planning Context in the Area

7.2.2 2016 Transportation Tomorrow Survey Non-Auto Modal Split

UrbanTrans reviewed the 2016 Transportation Tomorrow Survey Data Ward 8, in the City of Mississauga. **Table 14** summarizes the non-auto modal split information catered to the proposed development and provided in **Appendix L**.

Table 14: Non-Auto Modal Split Based on 2016 TTS Data (6-9 AM)

Mode of Travel	Percentage	
	Trips Made by Residents (Ward 8)	Trips Made to (Ward 8)
Driver	**67%**	**69%**
Passenger (Carpool)	**13%**	**13%**
Transit	**7%**	**10%**
GO Train	**4%**	**-**
Walk & Cycle	**5%**	**5%**
Other	**5%**	**3%**
Total	**100%**	**100%**

Based on the information outlined in **Table 14**, it is suggested that there is a considerable number of trips made by residents in Ward 8 and trips made to Ward 8 that are non-single occupant vehicles (non-SOV) with approximately 33% and 31%, respectively. This assessment suggests that there are viable alternative modes of transportation other than driving private automobiles.

This assessment suggests that there are viable alternative modes of transportation other than driving private automobiles as outlined previously in this report. On this basis, there is a need to reduce single-occupancy vehicles trips, with a target modal split of 50%. Excessive parking supply can create induced demand for vehicle ownership.

It is UrbanTrans' opinion with the proposed vehicle parking reduction, it will encourage residents to walk, cycle, and utilize transit services with more sustainable choices resulting in reduced auto usage and travel time.

7.2.3 TTS Vehicle Ownership

UrbanTrans reviewed the 2016 Transportation Tomorrow Survey's Statistical Vehicle Ownership information, in the City of Mississauga. Vehicle Ownership was conducted for the City of Mississauga traffic Zone 3684. **Table 15** summarizes the 2016 Vehicle Ownership within the subject site traffic zones for Townhouses and is provided in **Appendix M**.

Table 15: 2016 Vehicle Ownership for "Townhouse"

No. of Vehicles in Household	TTS Zones 3684 - Townhouse Dwelling Type	
	No. of Units	Vehicles Ownership
1 Vehicles	148	148
2 Vehicles	168	336
3 Vehicles	18	54
Total	**334 units**	**538 vehicles**
Average Vehicle Ownership per unit		**1.61 vehicles per unit**

Based on the 2016 TTS information outlined in **Table 15**, the average vehicle ownership for the subject site is 1.61 vehicles per unit. The vehicle ownership data suggests that a reduction in parking supply is feasible in the area. On this basis, the proposed 36 residential units will generate a parking demand of 58 residential parking spaces, thus the proposed parking supply of 72 spaces can sufficiently meet the parking demand, while providing sufficient parking for visitors.

7.2.4 ITE Parking Generation Manual (5th Edition)

The number of vehicular parking spaces generated by the proposed development is estimated using the information contained in the ITE Parking Generation Manual (5th Edition) published by the Institute of Transportation Engineers (ITE). For the purpose of this assessment, the ITE Land Use Codes (LUC) 220 "Multifamily Housing (Low-Rise)", which includes townhouses, fitted curve equations and average rates have been utilized for the proposed development, and is provided in **Appendix N**. **Table 16** summarizes the average parking generation for the proposed development during the weekday in a General Urban/Suburban setting with no nearby rail transit.

Table 16: Site ITE 5th Edition Parking Generation – General Urban/Suburban

Land Use	No. of Units	Parking Rates	Average Parking Requirement	Parking Provided	Difference
Multifamily Housing (Low-Rise)	36	Average: 1.21 space/unit	44	72	+28

Based on the ITE 5th Edition Parking Generation rates outlined in **Table 16**, the average vehicle requirement for the subject site is 1.21 vehicles per unit. On this basis, the proposed 36 residential units will generate a parking demand of 44 parking spaces, thus the proposed parking supply of 72 residential spaces can sufficiently meet the parking demand, while providing sufficient parking for visitors.

8.0 TRANSPORATION DEMAND MANAGEMENT (TDM)

Transportation Demand Management (TDM) Plan discusses measures to reduce congestion, minimize the number of single-occupant vehicles and encourage non-auto modes of travel such as walking, cycling and transit as well as ridesharing. TDM plans consist of specialized policies, targeted plans, innovative mobility services and products that encourage people to use sustainable modes of transportation, rather than driving alone, or make fewer trips by car.

TDM strategies have multiple benefits including reduce auto-related emissions to improve air quality, decreased traffic congestion to reduce travel time, increased travel options, reduce personal transportation costs and energy consumption and support Provincial smart growth objectives.

The primary objective of this TDM plan are as follows:

- Provision of facilities/operations to promote behavioural change for reduced automobile uses and encourage the use of alternative sustainable transportation modes aside from single-occupancy vehicle (SOV).
- Maximize average auto occupancies, with the intent of a net minimization of site-related auto trips.
- Create and support opportunities for an inclusive transportation system to accommodate and facilitate all potential road uses in a safe and efficient manner.

8.1 City of Mississauga Traffic Management Plan (TDM)

The City recognizes the limitations in expanding its road network and identifies the adverse effects of continued growth in motor vehicle trips, particularly single occupancy vehicles (SOV). To enhance the efficiency of transportation, the City is focusing on promoting more sustainable modes of travel. The Transportation Demand Management (TDM) Plan, building on prior initiatives by the City and other government levels such as the Region of Peel and the Province of Ontario, highlights the significance of TDM in an urbanizing environment. The plan recommends measures to reduce automobile usage by enhancing the appeal of sustainable modes, including walking, cycling, carpooling, and public transit.

8.2 Smart Commute

The Smart Commute Mississauga and Smart Commute Pearson Airport are non-profit Transportation Management Associations (TMAs) that promote commuter options and transportation services and promote sustainable transportation which are ways of travelling between places with little or no effect on the environment. The Smart Commute are partnered with Metrolinx and the Greater Toronto/Hamilton Area (GTHA) municipalities. The aim is to reduce traffic and fight climate change by encouraging people to use cleaner ways of travelling in and around Mississauga and Pearson Airport. They are devoted to:

- Reduce traffic congestion, and improve air quality and health by reducing vehicle emissions
- Support for improved transit service, and increased local transportation infrastructure
- Bus-only and cycling lanes, and a wider network of subway and light rapid transit;
- Encourage the benefits of transit-supportive development and smart-growth strategies.

- Promote legislative flexibility in support of high value, cost effective transportation strategies such as vanpools, telework, transit subsidies and shuttle services; and,
- Increase opportunities for TMA collaboration with business and government.

8.3 TDM Incentives and Recommendations

The following TDM measures and incentives are recommended for the proposed development:

- The Owner shall provide direct shared pedestrian/bicycle connections from the proposed development to Mississauga Road.
- The Owner shall coordinate with City of Mississauga to deliver and promote the Transit Incentive information packages and programs for new residents. The information packages include TTC schedules, community and cycling maps, where appropriate. The Information Package can be distributed at the sale office; and
- Provide one-time pre-loaded PRESTO Cards with the starting value of $25 (inclusive of the registration fee) for each residential unit on demand basis. This will help the future residents to consider taking TTC transit network and GO Transit services as an alternative mode of transportation. The pre-loaded PRESTO Cards can be distributed in conjunction with the Information Package at the time of occupancy.

It is UrbanTrans' opinion that the abovementioned Transportation Demand Management measures and incentives will reduce the numbers of single-occupant-vehicles to and from the proposed development.

9.0 Mississauga Transportation Master Plan, May 2019

This comprehensive plan is the outcome of extensive stakeholder and public engagement, backed by in-depth, evidence-based research and analysis. Serving as a guiding framework, it directs the City's investment and stewardship of the transportation system, recognizing its large scope going beyond roads and traffic lanes. Encompassing infrastructure, public spaces, services, regulations, and people's interactions, the plan adopts a long-term strategic view to determine appropriate actions for the short, medium, and long term. Initial steps involve detailed network planning, forecasting, project scoping, costing, budgeting, and annual prioritization. Ultimately, the plan is intended to steer Mississauga and its transportation system toward future goals.

9.1 City of Mississauga Transit and Road Infrastructure Plan (TRIP)

The Transit and Road Infrastructure Plan (TRIP) is a comprehensive city-wide initiative aimed at addressing road-use challenges and enhancing transportation experiences for city users. The plan is designed to establish both a long-term transit network and road network, facilitating additional infrastructure support and promoting diverse modes of travel, including transit, cycling, and walking. Over the next two decades, TRIP will serve as a guiding framework for City actions, policies, and investments in transportation, aligning with the key principles outlined in the previously approved Transportation Master Plan (TMP) of 2019. The TMP functions as a comprehensive guide shaping the future of transportation in Mississauga.

The plan aims to:

- Evaluate existing restrictions in the transportation network.
- Assess network connectivity and multimodal additions at key locations (e.g., nodes, major transit station areas, mobility hubs, and major transfer points).
- Review the needs and justification for road capacity improvements outlined in the Capital Plan.
- Examine and evaluate various potential transit options, including priority, high-frequency, and rapid transit alternatives.
- Assess people movement options to improve on the congestion at critical points in the transportation network.
- Include safety principles from Vision Zero into transportation infrastructure improvement options.
- Prepare a strategy for establishing mode share targets.
- Evaluate the potential need and justification for additional rail grade separations in the City.
- Develop a prioritization and phasing plan for recommended transportation infrastructure improvements.

Based on our review of the Official Plan Transportation Policies and directions indicate that there is a desire to steer development towards areas with a well-developed transportation network. This will have the effect of reducing single-occupant-vehicle trips and to support other modes of transportation such as public transit and active transportation.

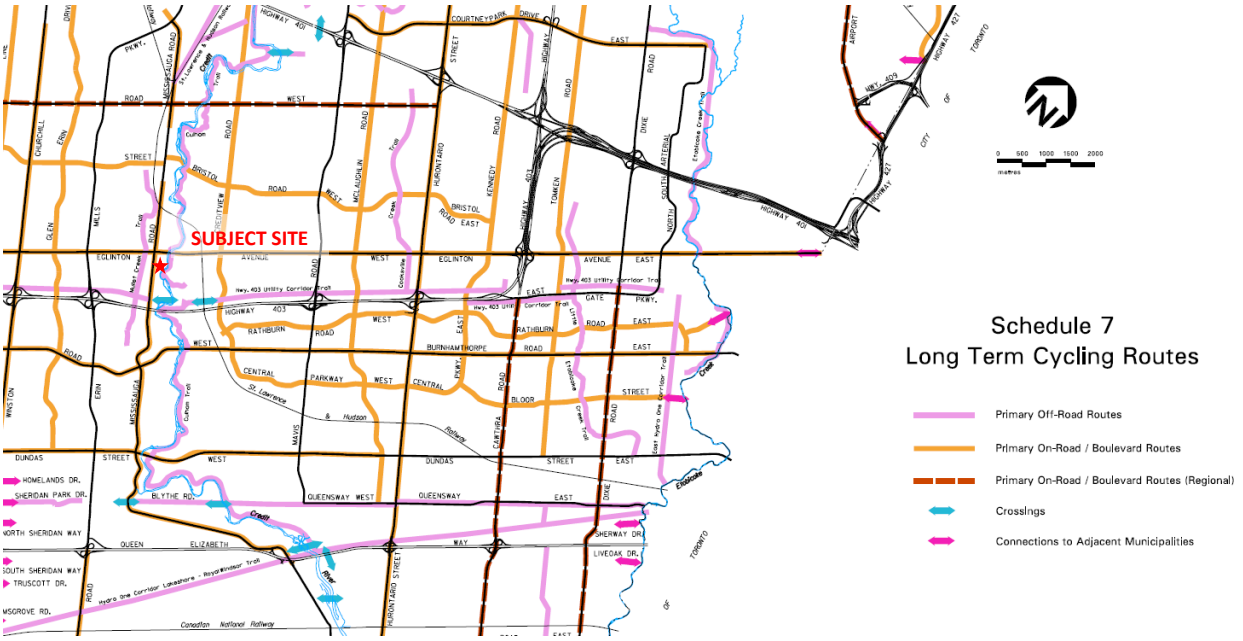
9.2 City of Mississauga, Cycling Master Plan

The Cycling Master Plan will provide recommendations for the City's cycling network, comprising 897 kilometers of infrastructure to be constructed over a 27-year period. This plan includes the following key items to improve the City of Mississauga's cycling network.

- Cycle tracks: Physically separated from the road by a curb, at sidewalk level or slightly lower, reserved for bicycles only.
- Bicycle lanes with separation from traffic lanes using flexible posts, planters, parking stalls, curbs, or other barriers, reserved for bicycles only.
- Bicycle lanes where cyclists travel in a lane beside regular traffic lanes, reserved for bicycles only.
- Multi-use trails along boulevards and through parks.
- Shared routes between cyclists and motorists on roads with lower speeds.

Refer to **Figure 17** for an illustration of future development of long term cycling routes within the vicinity of the subject site.

Figure 17: Long Term Cycling Routes Map



Source: Mississauga.ca

The proposed City of Mississauga Cycling Master Plan outlines different programs to implement to improve the existing cycling network. There will be several improvements surrounding the residential site off Polaris Way. This includes a Primary On-Road/Boulevard Routes along Eglington Avenue West & Mississauga Road.

9.3 Port Credit GO Station Improvements

Metrolinx has officially named the Hurontario light rail transit (LRT) project as the Hazel McCallion Line, honoring the former Mississauga mayor. The 18-kilometer Hazel McCallion Line, once operational, will provide a new, environmentally friendly, and reliable transportation option for a growing region. The transit system will feature 19 stops, cross between two urban growth centres, and connect to major transit systems, including GO Transit (Milton and Lakeshore West lines), the Mississauga Transitway, Brampton Transit, ZUM, and MiWay. Operating in its own dedicated lane, the Hazel McCallion Line is designed for a smooth and convenient ride along the region's busiest street. As both Mississauga and Brampton expand, the line addresses the need for sustainable and reliable transit with clean, electrically powered light rail vehicles, producing near-zero emissions.

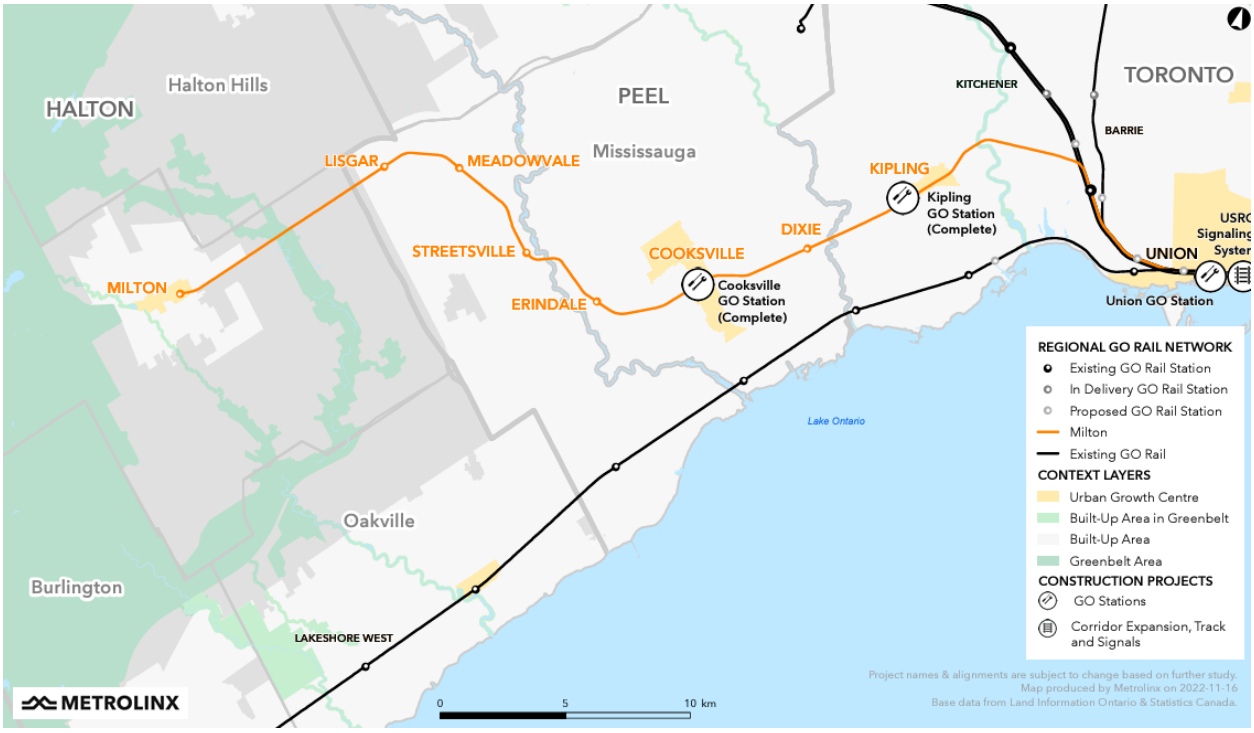
9.4 Milton Line GO Expansion

The Milton GO line provides weekday rush-hour service running east in the morning and west in the afternoon, connecting Milton to Toronto and all stops in between. The service aims to accommodate commuters living outside the city who work away from home. Efforts have been made to enhance the rush-hour commute, including the addition of new trains, more trips, and supplying 3,000 additional seats. The initiative also seeks to expand service frequency at all stops

along the line, offering more transit choices for residents in Milton, Mississauga, Etobicoke, central Toronto, and neighboring communities.

The latest improvements on the Milton GO Line will enhance smoother transit services, including a 30% increase in trips, providing higher frequency with a 15-minute interval during rush hours. This initiative brings substantial improvements, featuring an additional 3,000 seats, the introduction of a new train, and the inclusion of two new trips. Furthermore, the transit enhancements contribute to increased connectivity with three transit hub connections, making commuting more efficient and accommodating the diverse needs of residents and commuters. **Figure 18** illustrates Milton GO Line Expansion Map.

Figure 18: Milton GO Line Expansion Map



These improvements will have the effect of reducing single-occupant-vehicle trips and supporting other modes of transportation such as public transit and active transportation and will therefore support a reduction in the parking supply.

10.0 CONCLUSIONS

The following section provides a brief overview of the study findings and our assessment of the transportation related aspects of the proposed development.

DEVELOPMENT PROPOSAL

- The proposed development is located north of Mississauga Road and south of Eglinton Avenue West municipally known as 1786 Polaris Way, in the City of Mississauga.
- The subject lands are currently vacant. Based on the concept plan provided, it is our understanding that the development proposal involves four (4) semi-detached homes and 32 three-storey townhomes totalling 36 residential units. At a minimum, two (2) car parking spaces will be provided for each unit with one (1) in garage and one (1) in lead in driveway portion. Additionally, a total of five (5) visitor parking spaces are proposed including one (1) accessible parking space. A full movement vehicular entrance is proposed via Mississauga Road.

Base Year (2023) Traffic Operations

- The intersection capacity analysis indicates that under future total traffic conditions, the signalized intersection is expected to operate near capacity due to high traffic volumes with acceptable levels of service, v/c ratios and delay. However, the eastbound through and westbound left turning movement is operating with a failing level of service during the morning peak hour period and higher delay and v/c ratio under the existing traffic signal timing plan. In addition, the westbound left turning movement is operating with a failing level of service during the afternoon peak hour period and higher delay and v/c ratio under the existing traffic signal timing plan.
- Although, in theory, it is not possible for an intersection to operate with a v/c ratio greater than 1.0 under existing conditions. In reality, the movement is expected to operate over capacity when long queues are formed, and vehicles are required to wait more than one cycle length to get through the intersection. This is considered a typical condition for signalized intersections where a major and minor arterial roadway otherwise known as high capacity urban roadways meet. Furthermore, factors such as platooning, and gap opportunities are not considered in the analysis as those parameters do not appear in the Synchro inputs.
- For the purpose of this assessment, UrbanTrans assessed several scenarios of signal timing optimization to address the morning and afternoon peak periods with critical movements and to reduce queues. As such, UrbanTrans recommends optimizing the splits and phases during the morning and afternoon peak hour periods while maintaining the 160 second cycle length, respectively in order to achieve v/c ratios under 1.0 and no failing level of services. The recommended splits and phase diagram are detailed in **Table 5** for the morning and afternoon peak hour periods and will be carried forward into future background and future total traffic analysis.

- Based on the proposed optimized timings, the intersection is expected to operate near capacity due to high traffic volumes, however, operate with acceptable levels of services (no failing movements), v/c ratios (under 1.0) and delay.
- It is recommended that the Region and City monitor these movements in the future and make appropriate adjustments as required based on the optimized signal timings recommended in this study. Furthermore, it is recommended that the Region and City monitors the growth rates along Mississauga Road and Eglinton Ave West and other main corridors in the area so that signal timing plan will be appropriately prioritized for transit vehicles and other modes of transportation. This will facilitate and encourage new residents and employees to take alternative and sustainable modes of transportation to work, school, shopping or other discretionary trips during the peak periods.

Future Background Traffic Volumes

- The intersection capacity analysis indicates that under the future background conditions, with the proposed optimized timings, the intersection is expected to operate near capacity due to high traffic volumes, however, operate with acceptable levels of services (no failing movements), v/c ratios (under 1.0) and delay.

Site Generated Traffic Volumes

- Based on the trip generation calculations, the proposed development is estimated to generate a total 14 two-way trips (3 inbound and 11 outbound) during the weekday morning peak hour and 18 two-way trips (12 inbound and 6 outbound) during the afternoon peak hour.
- **On this basis, it is UrbanTrans' opinion that the site traffic trip generation will have negligible traffic impacts to the abutting road network.**

Future Total Traffic Operations

- The intersection capacity analysis indicates that under the future total traffic conditions and the recommended signal timings provided in **Table 11**, the signalized intersection is expected to operate near capacity due to high traffic volumes, however, operate with acceptable levels of services (no failing movements), v/c ratios (under 1.0) and delay.
- The proposed development site traffic will not create any adverse impacts to the adjacent road network and operations. Based on the assessment indicated above, it is UrbanTrans' opinion that no improvements are required.
- Furthermore, the intersection capacity analysis indicates that under the future total traffic conditions, the proposed site access via Mississauga Road is expected to operate at acceptable levels of service based on overall intersection levels of service, v/c ratios and delay with no critical movements identified.
- As previously mentioned, it is recommended that the Municipalities monitor these movements in the future and make appropriate adjustments as required based on the optimized signal timings recommended in this study. Furthermore, it is recommended that the Municipalities monitor the growth rates along Eglinton Ave West and

Mississauga Road and other main corridors in the area so that signal timing plan will be appropriately prioritized for transit vehicles and other modes of transportation. This will facilitate and encourage new residents and employees to take alternative and sustainable modes of transportation to work, school, shopping or other discretionary trips during the peak periods.

- **It is UrbanTrans' opinion the proposed development can adequately be accommodated by the existing transportation network with minimal traffic impacts to the adjacent public roadways during the morning and afternoon peak hour periods.**

Site Access

- The analysis demonstrates that a typical 5.6m long passenger vehicle (P TAC-2017) and Region of Peel Waste Collection, and Fire/Emergency Truck can maneuver within the designated route with no conflicts.
- In accordance with the Ontario Traffic Manuel (OTM) Book 5, UrbanTrans' recommends appropriate internal signages and pavement marking plans illustrated in **Figure 16** for the proposed site plan. Based on the recommended signages and pedestrian sidewalk within the subject site, it is our opinion the site will operate safely and efficiently for both motorists and pedestrian connectivity.

Parking Requirement

- Based on the applicable Zoning By-law No. 28-97 detailed in **Table 13**, the proposed development is required to provide 81 parking spaces and a total of 77 parking spaces are proposed resulting in a parking deficiency of four (4) visitor parking spaces. However, parking deficiency is considered negligible since it is within 10% of the overall requirement (i.e. 5% parking deficiency).
- In accordance with the City of Mississauga Terms of Reference Parking Utilization Studies for Site Specific Applications, when the parking reduction is relatively minor (generally less than 10% of the By-law standards) a Letter of Justification based on the nature of the operation and its land use circumstances may be acceptable.
- Based on 2016 Transportation Tomorrow Survey Data Ward 8, in the City of Mississauga, it is suggested that there is a considerable number of trips made by residents in Ward 8 and trips made to Ward 8 that are non-single occupant vehicles (non-SOV) with approximately 33% and 31%, respectively. This assessment suggests that there are viable alternative modes of transportation other than driving private automobiles.
- Based on the 2016 TTS information outlined in **Table 15**, the average vehicle ownership for the subject site is 1.61 vehicles per unit. The vehicle ownership data suggests that a reduction in parking supply is feasible in the area. On this basis, the proposed 36 residential units will generate a parking demand of 58 residential parking spaces, thus the proposed parking supply of 72 spaces can sufficiently meet the parking demand, while providing sufficient parking for visitors.

- Based on the ITE 5th Edition Parking Generation rates outlined in **Table 16**, the average vehicle requirement for the subject site is 1.21 vehicles per unit. On this basis, the proposed 36 residential units will generate a parking demand of 44 parking spaces, thus the proposed parking supply of 72 residential spaces can sufficiently meet the parking demand, while providing sufficient parking for visitors.

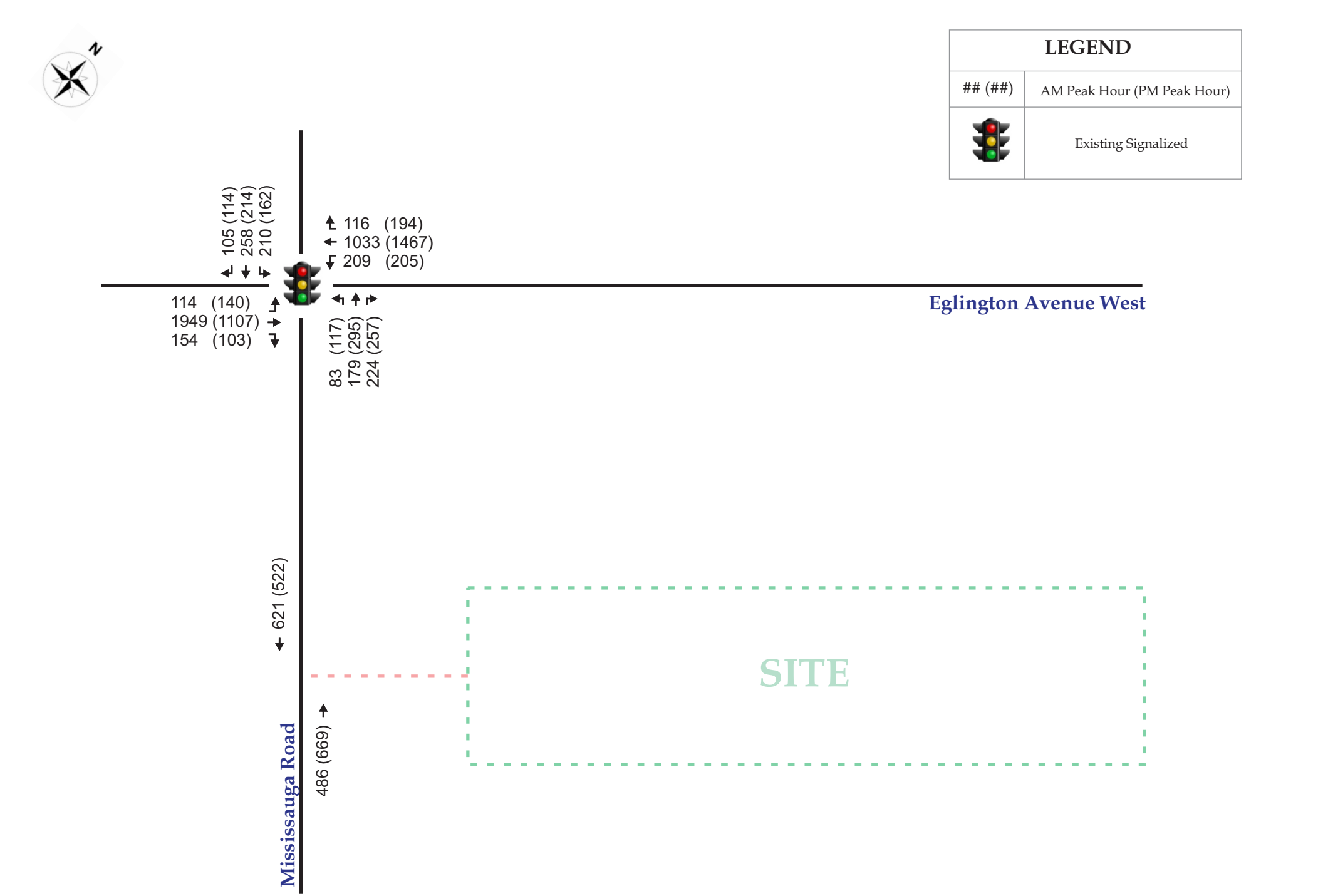
11.0 RECOMMNEDATIONS

The following section provides our recommendations for the proposed development.

- UrbanTrans assessed several scenarios of signal timing optimization to address the existing morning and afternoon peak periods with critical movements and to reduce queues. As such, UrbanTrans recommends optimizing the splits and phases during the morning and afternoon peak hour periods while maintaining the 160 second cycle length, respectively in order to achieve v/c ratios under 1.0 and no failing level of services. The optimized timings are recommended to be carried forward into future background and future total traffic analysis.
- It is recommended that the Region and City monitor these movements in the future and make appropriate adjustments as required based on the optimized signal timings recommended in this study. Furthermore, it is recommended that the Region and City monitors the growth rates along Mississauga Road and Eglinton Ave West and other main corridors in the area so that signal timing plan will be appropriately prioritized for transit vehicles and other modes of transportation. This will facilitate and encourage new residents and employees to take alternative and sustainable modes of transportation to work, school, shopping or other discretionary trips during the peak periods.
- In accordance with the Ontario Traffic Manuel (OTM) Book 5, UrbanTrans' recommends appropriate internal signages and pavement marking plans illustrated in **Figure 16** for the proposed site plan.

The primary objective of this TDM plan are as follows:

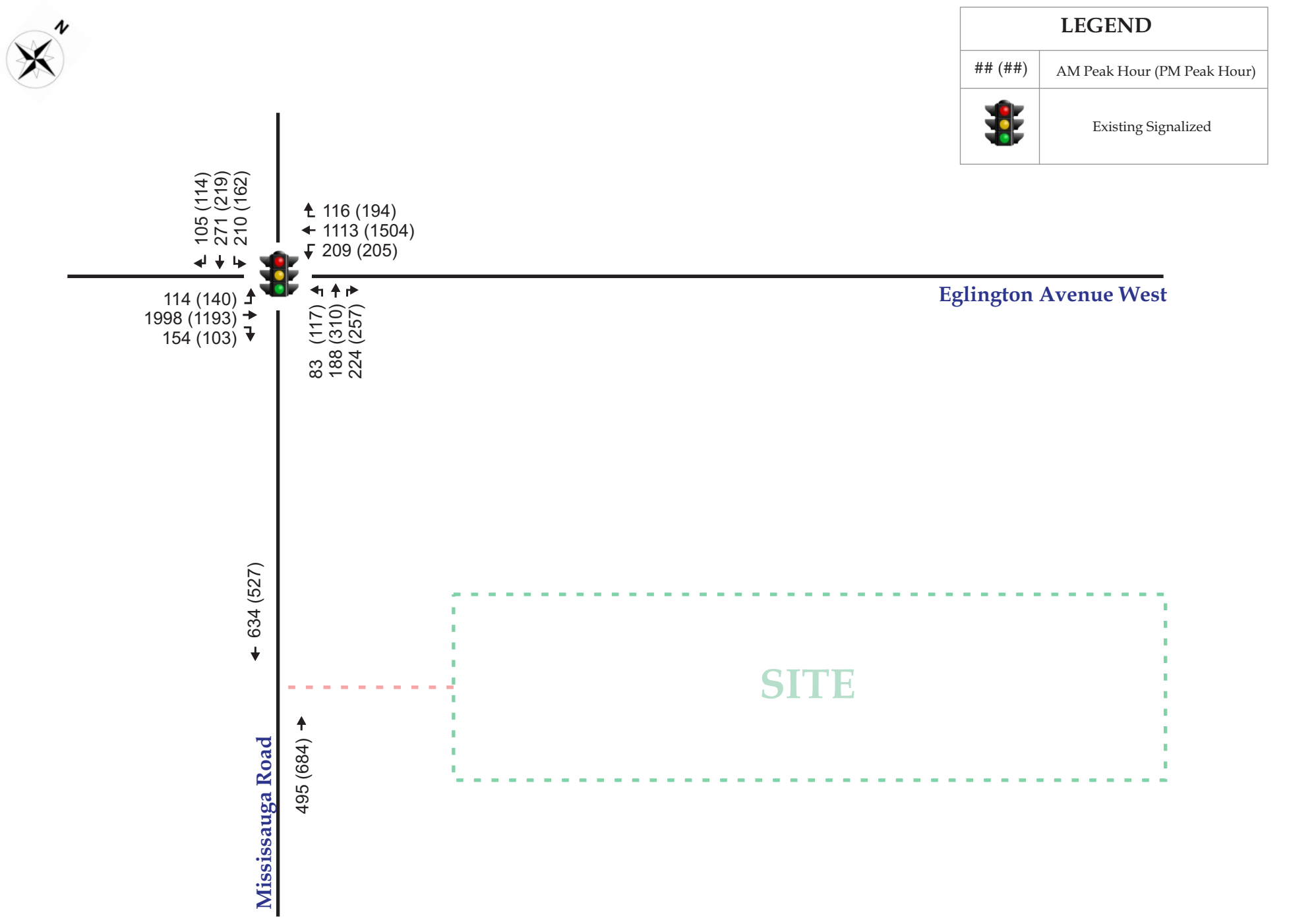
- Provision of facilities/operations to promote behavioural change for reduced automobile uses and encourage the use of alternative sustainable transportation modes aside from single-occupancy vehicle (SOV).
- Maximize average auto occupancies, with the intent of a net minimization of site-related auto trips.
- Create and support opportunities for an inclusive transportation system to accommodate and facilitate all potential road uses in a safe and efficient manner.



URBANTRANS Engineering Solutions Inc.

1786 Polaris Way, City of Mississauga ON
Project No. UT-23-065
December 2023

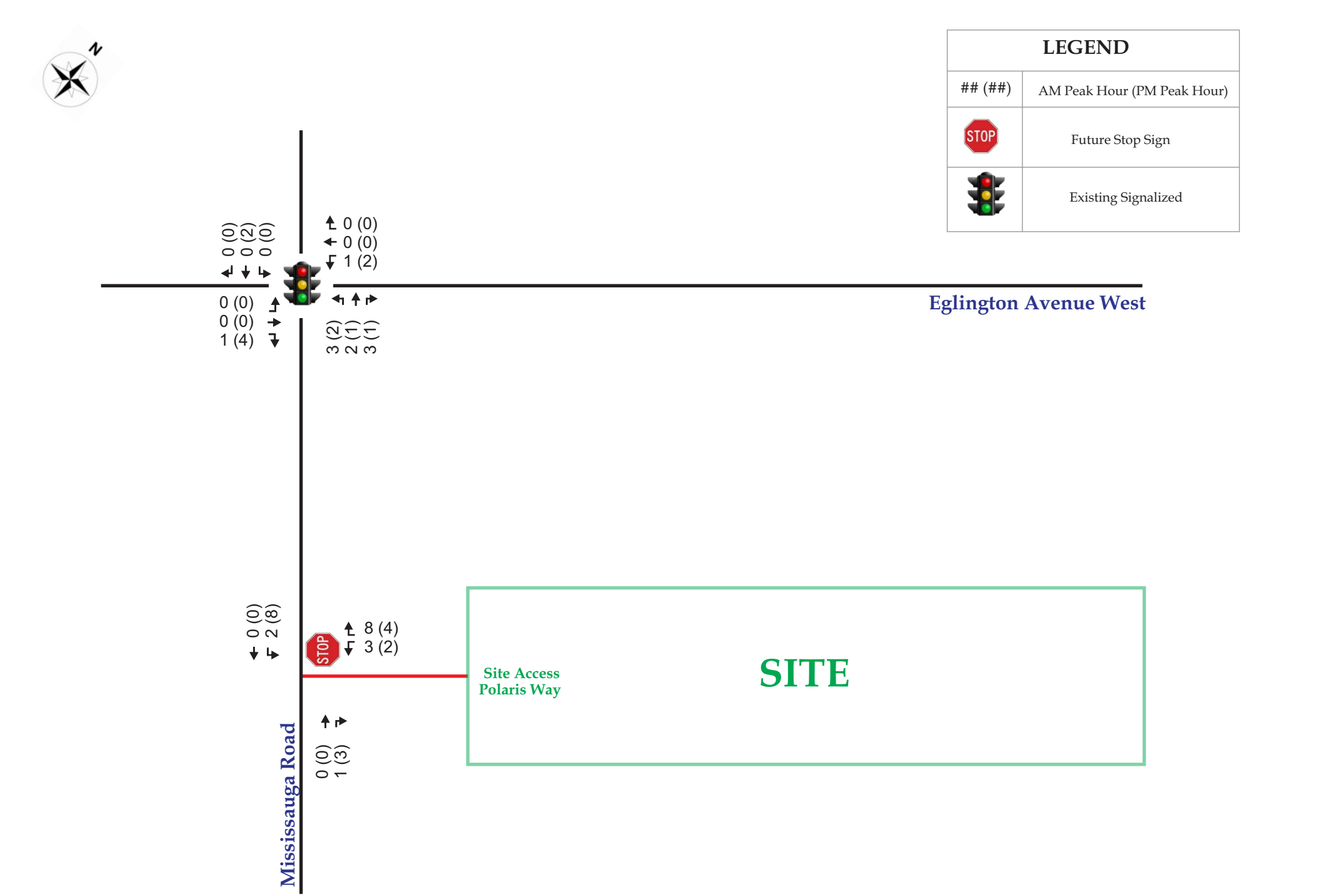
Figure 9 - Existing (2023) Traffic Volumes



URBANTRANS Engineering Solutions Inc.

1786 Polaris Way, City of Mississauga ON
Project No. UT-23-065
December 2023

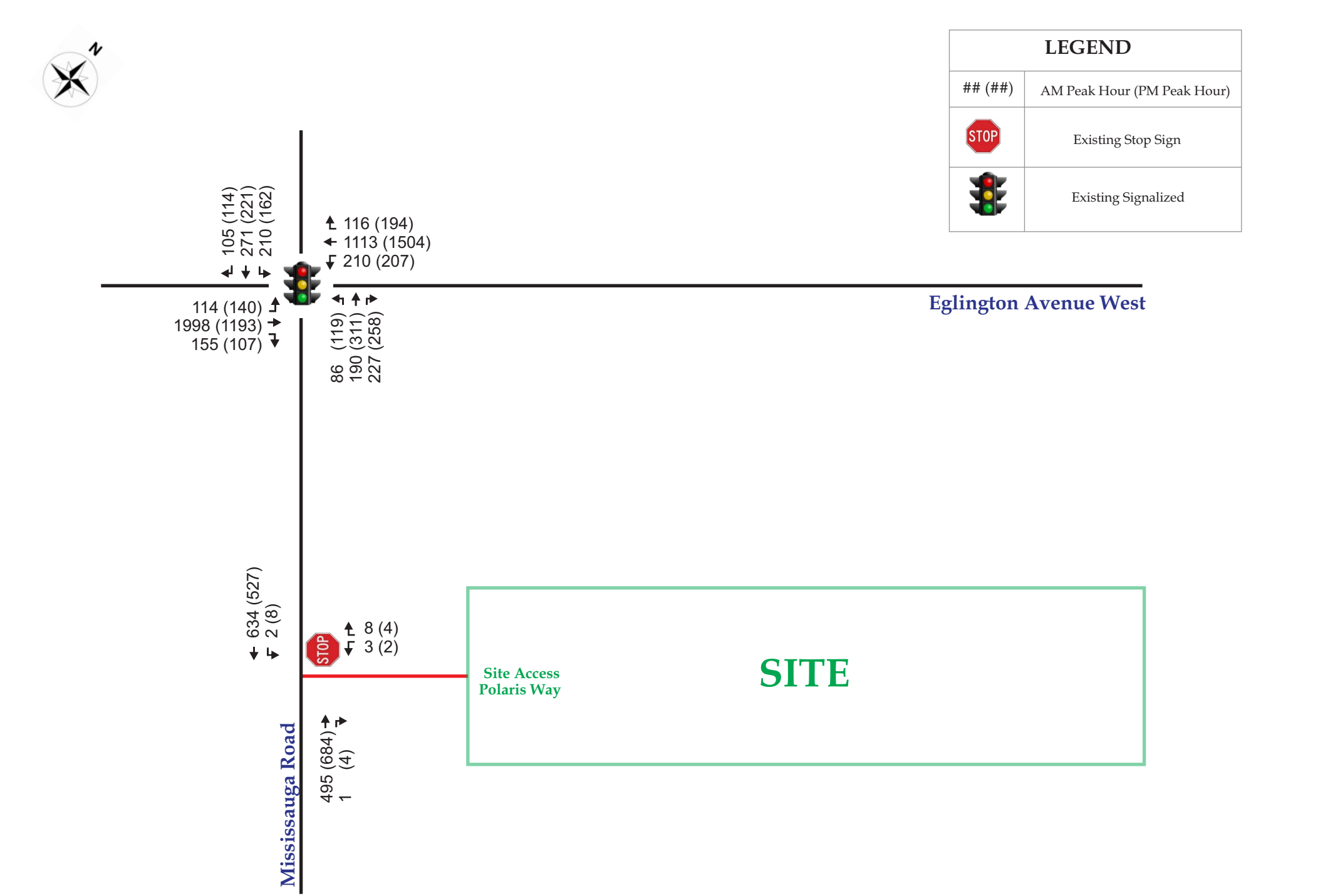
Figure 10 - Future (2028) Background Traffic Volumes



URBANTRANS Engineering Solutions Inc.

1786 Polaris Way, City of Mississauga ON
Project No. UT-23-065
December 2023

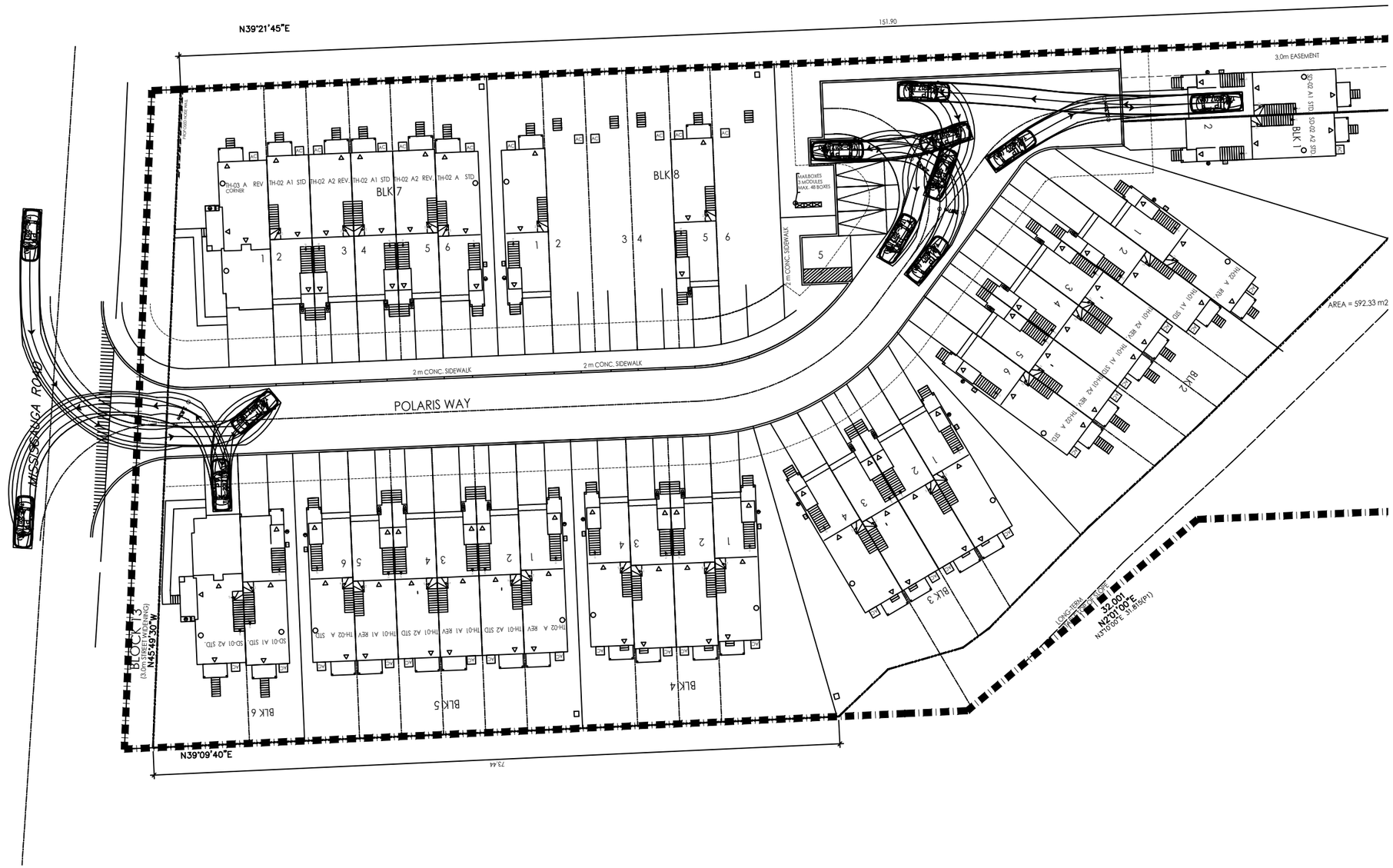
Figure 11- Site Traffic Volumes

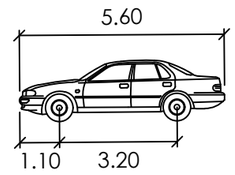


URBANTRANS Engineering Solutions Inc.

1786 Polaris Way, City of Mississauga ON
Project No. UT-23-065
December 2023

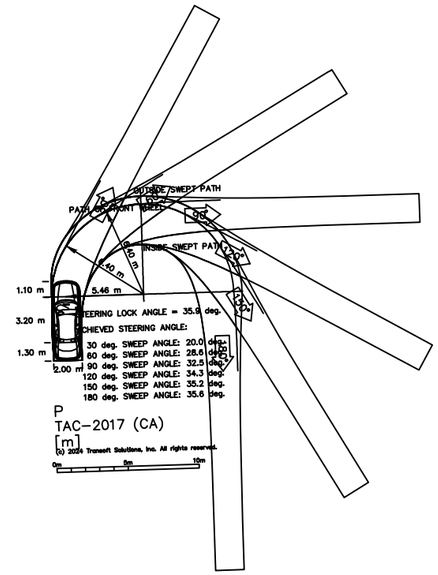
Figure 12 - Future (2028) Total Traffic Volumes





P

	meters
Width	: 2.00
Track	: 2.00
Lock to Lock Time	: 6.0
Steering Angle	: 35.9

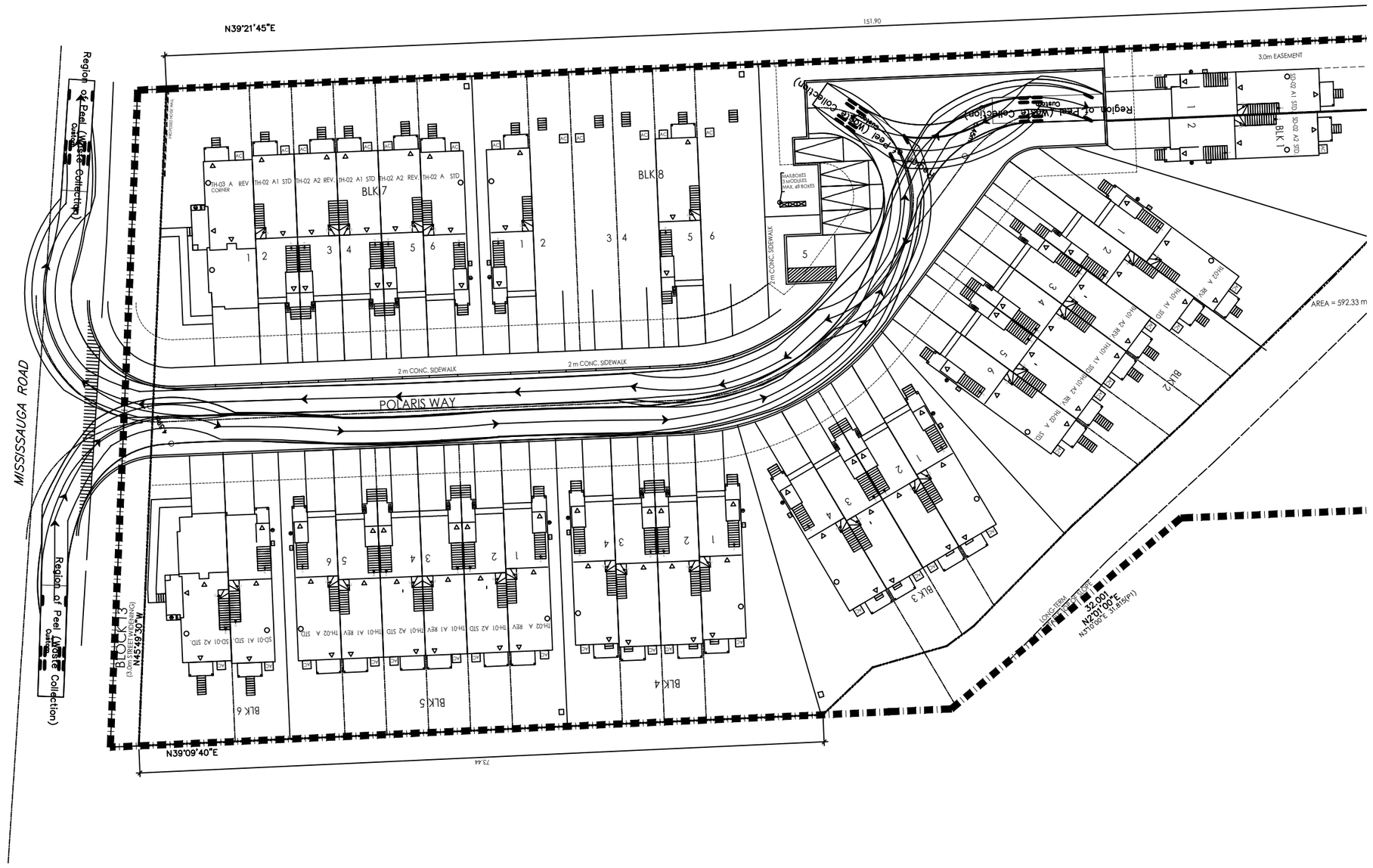


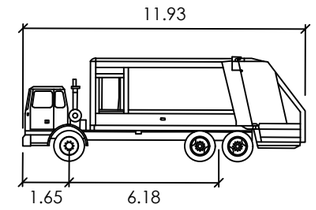
URBANTRANS Engineering Solutions Inc.

Project Name:

Proposed Residential Development
1786 Polaris Way, City of Mississauga

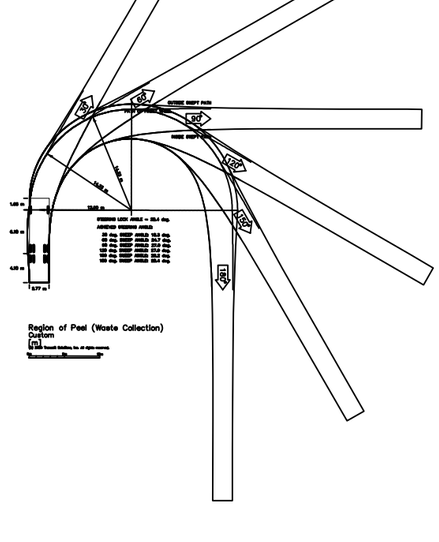
Drawing Title:	AutoTURN Analysis Passenger Vehicle (P TAC - 2017)		
Drawing No.:	Figure 13	Date:	November 25, 2024
Project No.:	UT-23-065	Drawn By:	AS
Scale:	NTS	Notes:	





Region of Peel (Waste Collection)

	meters
Width	: 2.77
Track	: 2.77
Lock to Lock Time	: 6.0
Steering Angle	: 28.4

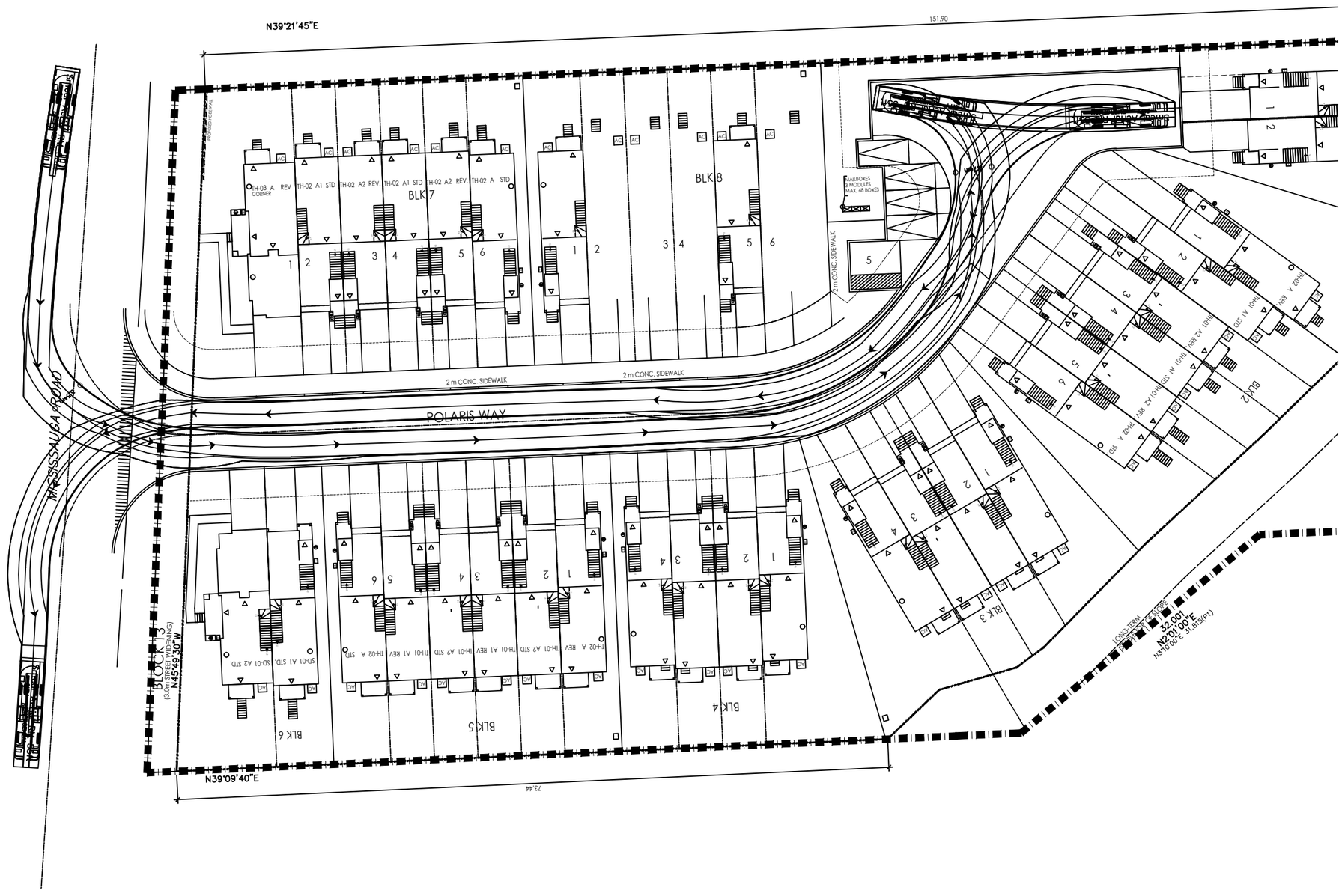


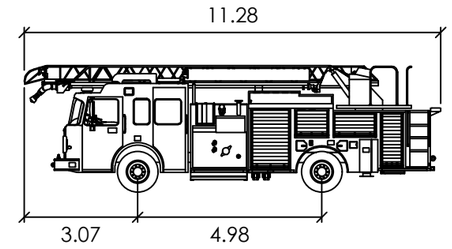
URBANTRANS Engineering Solutions Inc.

Project Name:

Proposed Residential Development
1786 Polaris Way, City of Mississauga

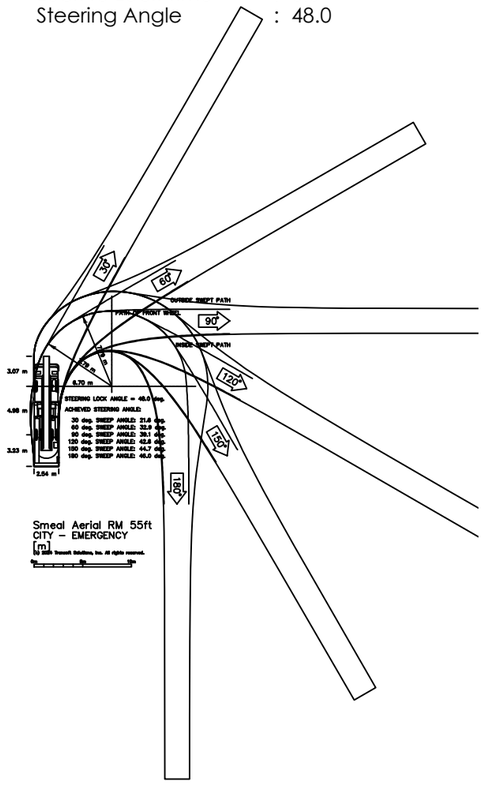
Drawing Title:	AutoTURN Analysis Region of Peel (Waste Collection Vehicle)		
Drawing No.:	Figure 14	Date:	November 25, 2024
Project No.:	UT-23-065	Drawn By:	AS
Scale:	NTS	Notes:	





Smeal Aerial RM 55ft

	meters
Width	: 2.54
Track	: 2.40
Lock to Lock Time	: 6.0
Steering Angle	: 48.0



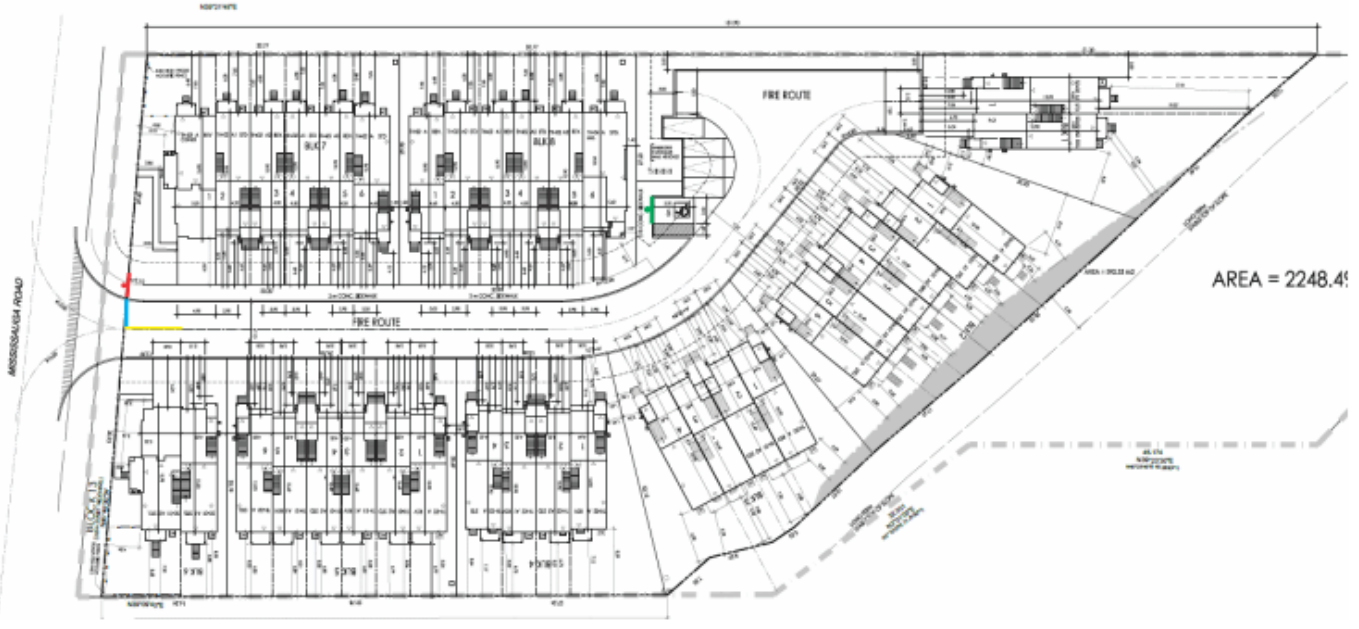
URBANTRANS
Engineering Solutions Inc.

Project Name:

Proposed Residential Development
1786 Polaris Way, City of Mississauga

Drawing Title:	AutoTURN Analysis Fire/Emergency Truck		
Drawing No.:	Figure 15	Date:	November 25, 2024
Project No.:	UT-23-065	Drawn By:	AS
Scale:	NTS	Notes:	

LEGEND	
SYMBOL	DESCRIPTION
	STOP Sign (Rs-1)
	DISABLED PARKING Sign PERMIT (Rb-93)
	STOP BAR (Solid White Retro-Reflective Line between 30cm and 60 cm wide)
	Solid Yellow Pavement Marking



URBANTRANS Engineering Solutions Inc.

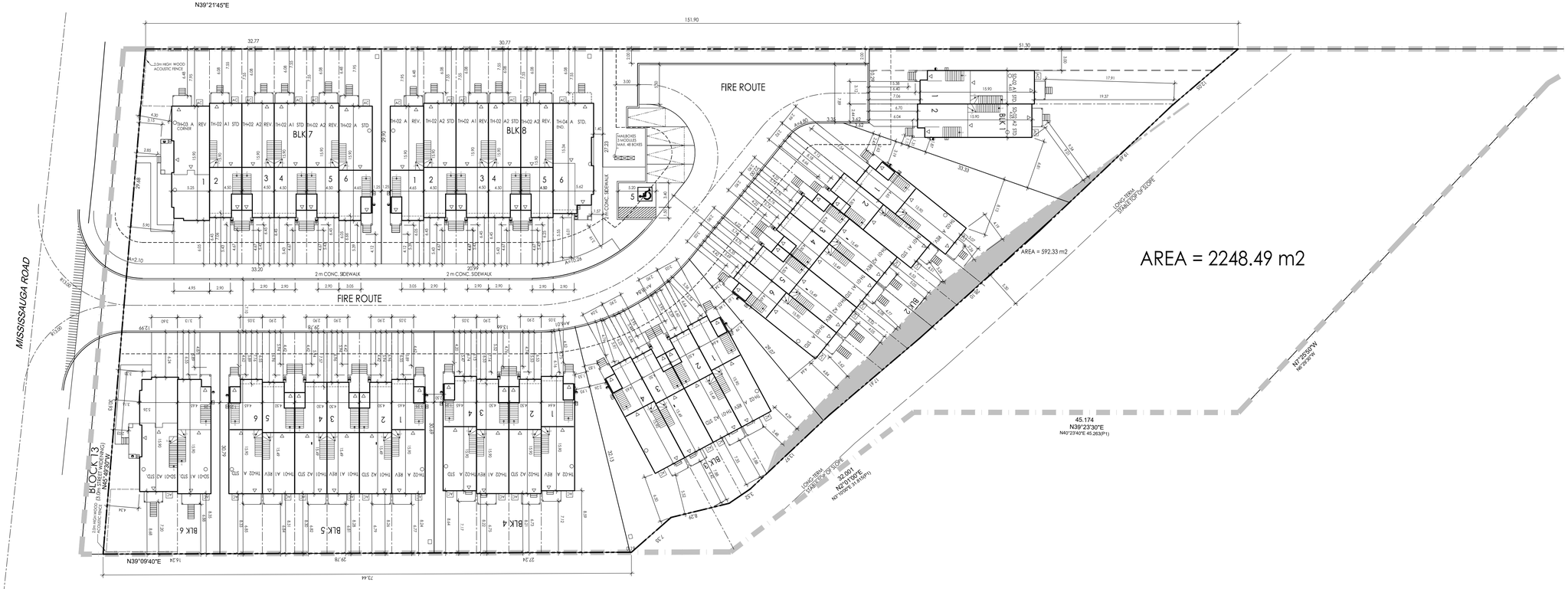
Project Name:

PROPOSED RESIDENTIAL DEVELOPMENT
1786 Polaris Way, City of Mississauga

Drawing Title:	Signage and Pavement Marking Plan		
Drawing No.:	Figure 17	Date:	November 25, 2024
Project No.:	UT-23-065	Drawn By:	AS
Scale:	NTS	Notes:	

Appendix A
Proposed Site Plan

KEY PLAN



SETBACK TO STEP
SETBACK TO PORCH
SETBACK TO MAIN WALL OF DWELLING
SETBACK TO GARAGE

SITE STATISTICS

LOT AREA	0.79 Ha	7950.56m2
BUILDING AREA	2711.4 m2	
LOT COVERAGE	34.10%	
TOTAL GFA	6373.82 m2	
SEMI DETACHED	4	
3 ST. - FL TOWNS	32	
TOTAL NO. OF UNITS	36	
DENSITY	46 UPH	

PARKING STATISTICS

	REQUIRED	PROPOSED	TOTAL SPACES
RESIDENCE SPACES	72 (2 SPACES PER UNIT)	72 (2 SPACES PER UNIT)	72
VISITOR SPACES	9 (0.25 SPACES PER UNIT)	5 (0.14 SPACES PER UNIT)	5
		TOTAL:	77

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 SRN ARCHITECTS INC.

PROJECT CONSULTANTS:

LEGEND

FSE FINISHED SECOND FLOOR ELEVATION	WATER CONNECTION
FFE FINISHED FLOOR ELEVATION	WATER VALVE CHAMBER
TFW TOP OF FOUNDATION WALL	HYDRANT AND VALVE
TBS TOP OF BASEMENT SLAB	HYDRO METER
USF UNDER SIDE FOOTING	GAS METER
USFR UNDER SIDE FOOTING @ REAR	DOWN LIGHT
USFG UNDER SIDE FOOTING @ GARAGE	14' POLE LIGHTING
R NUMBER OF RISERS TO GRADE	12' POLE LIGHTING
WOD WALKOUT DECK	BOLLARD LIGHTING
LOB LOOKOUT BASEMENT	STOP SIGN
WOB WALK OUT BASEMENT	NO PARKING
WUB WALK UP BASEMENT	NO PARKING IN LANEWAY
REV REVISED PLAN	FIRE ROUTE
STD STANDARD PLAN	3HRS PARKING (RIGHT)
DOOR	3HRS PARKING (LEFT)
WINDOW	PROPOSED SPOT GRADE
BELL PEDESTAL	EXISTING SPOT GRADE
CABLE PEDESTAL	EXISTING TREE (TO BE REMOVED)
CATCH BASIN	
DBL. CATCH BASIN	EXISTING TREE (TO BE RETAINED)
ENGINEERED FILL	MUNICIPAL ADDRESS
HYDRO CONNECTION	RETAINING WALL BY OTHERS/ RE: SOIL/GEOTECH WALL
FIRE HYDRANT	SNOW STORAGE AREAS
STREET LIGHT	CHAINLINK FENCE
MAIL BOX	PRIVACY FENCE
TRANSFORMER	SOUND BARRIER
SEWER CONNECTIONS (2 LOTS)	TO BE DETERMINED
SEWER CONNECTIONS (1 LOT)	CO-ORDINATED WITH ELECTRICAL
AIR CONDITIONING	FIRE FIGHTER TRAVEL PATH
DOWN SPOUT TO SPLASH PAD	REVERSE CHECK FOUNDATION
SWALE DIRECTION	
SUMP PUMP	

ISSUED OR REVISION COMMENTS				
NO.	DESCRIPTION	DATE	DWN	CHK
1	ISSUED FOR REVIEW	17-MAR-23	RP	
2	ISSUED FOR REVIEW	22-MAR-23	DA	
3	PARKING STATS ADDED	31-MAR-23	DA	
4	ISSUED FOR DARC SUBMISSION	24-JUL-23	AG	RP
5	ISSUED FOR REVIEW	27-SEP-23	AG	RP
6	ISSUED FOR COORDINATION	26-OCT-23	RP	
7	ISSUED FOR COORDINATION	13-FEB-24	PP	
8	ISSUED FOR COORDINATION	29-FEB-24	MSA	
9	ISSUED FOR COORDINATION	11-JUN-24	RP	
10	ISSUED FOR COORDINATION	13-sep-24	RP	

RN DESIGN
WWW.RNDESIGN.COM
T:905-738-3177
WWW.THEPLUSGROUP.CA

CLIENT: KINGRIDGE DEVELOPMENTS

PROJECT/LOCATION: MISSISSAUGA RD PROPERTIES SOUTH SITE

DRAWING: CONCEPT PLAN

DATE	SCALE
27-SEP-23	1:300
DRAWN BY: RP	CHECKED BY: RP
PROJECT NUMBER: 22070	DRAWING NUMBER: A100

Appendix B
Terms of Reference Comments (City of Mississauga)

From: Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Sent: Thursday, October 12, 2023 2:27 PM
To: Annosan Srikantha <annosan@uteng.ca>
Cc: 'Dan Marion' <dan@kingridgedevelopments.ca>; 'Mark Fogliato' <mark@kingridgedevelopments.ca>; Michael Turco <Michael.Turco@mississauga.ca>; Trans Projects <Trans.Projects@mississauga.ca>
Subject: RE: Terms of Reference (1786 Polaris Way)

Good afternoon Annosan,

Please find attached stamped and approved ToR for the proposed development, which encompasses City comments. Other items to note:

- Certification Form - The Transportation Consultant must complete, sign, and seal (if appropriate) the attached Certification Form from the City's TIS Guidelines (2022) and submit the document with the application/report to ensure compliance with qualification requirements. The TIS Guidelines can be found at https://www.mississauga.ca/wp-content/uploads/2023/03/CMississauga-TIS-Guidelines-Version-5.1-Dec-2022.pdf . It must be ensured that the report conforms to the City's TIS Guidelines.

Should you have any questions, please feel free to contact myself.

Thank you,

Kate (Jekaterina) Vassilyev
Traffic Planning Technologist
300 City Centre Drive, Mississauga
T 905-615-3200 ext.8171
kate.vassilyev@mississauga.ca

City of Mississauga | Transportation and Works Department,
Infrastructure Planning Division

Appendix B

APPROVED
By Kate Vassilyev at 2:20 pm, Oct 12, 2023

Pre-Study Consultation Checklist

Description	Information	Section Reference
Development Information		
Development Description (land use, size, and number of phases of development)	• The proposed development is located north of Mississauga Road and south of Eglinton Avenue West municipally known as 1786 Polaris Way, in the City of Mississauga.	2.3.6
Transportation Impact Assessment		
Step 1 – Screening		
Type of Application (attach a drawing)	☑ Official Plan Amendment ☑ Zoning Amendment ☐ Site Plan Control Application ☐ Plan of Subdivision ☐ Other _____	2.3.5
Screening Criteria	☐ Trip Generation Trigger Satisfied ☐ Location Trigger Satisfied ☐ Operational/Safety Trigger Satisfied	2.2.1
Type of Study	☑ Transportation Impact Study ☐ Access Review ☐ No Additional Study Required	2.2.1
Step 2 – Scoping		
Study Area (intersections to be analyzed) Note: The Transportation Consultant is responsible to identify any further intersections impacted as the study progresses.	• Turning movement counts undertaken during weekday AM (7am-10am) and weekday PM (4pm-7pm) peak periods at the following study area intersections: ○ Mississauga Road and Eglinton Avenue W (Signalized) ➢ UrbanTrans will utilize Traffic Data Count undertaken by Spectrum Traffic Data Inc. on Wednesday, October 19, 2022 ○ Mississauga Road and Site Access (Unsignalized) •	2.3.8

Description	Information	Section Reference
Horizon Years	☑ 5 years from date of TIS ☐ Interim years_____ ☐ Other_____	2.3.9
Analysis Periods	☑ AM weekday peak hour of adjacent roadway ☑ PM weekday peak hour of adjacent roadway ☐ Saturday peak hour of adjacent roadway ☐ AM weekday peak hour of development ☐ PM weekday peak hour of development ☐ Saturday peak hour of development ☐ Other _____	2.3.10
Input Parameters and Assumptions (potential deviations)	• • • •	2.3.13
Existing Transportation Conditions	☐ City data sources ☑ New data collection_____ ☐ Other _____	2.3.14
Planned Network Improvements (with timing)	• • •	2.3.16
Other Planned Developments (per City's Website)	• • • • • •	2.3.17
Identification of Mitigation Improvement Measures	☐ Neighbourhood Traffic Management Plan ☐ Other_____	2.3.23
Safety Analysis (any special issues)	• • • •	2.3.25
Site Access and Circulation (design vehicles)	☑ Passenger Car (P) ☐ Light Single Unit Truck (LSU) ☐ Medium Single Unit Truck (MSU) ☐ Heavy Single Unit Truck (HSU) ☐ Pumper Fire Truck ☐ WB-20 Tractor Semi-Trailer Truck ☐ Other_Waste Collection and Fire Emergency Truck	2.3.26
Impacts During Construction (any special issues)	• • • •	2.3.27

Description	Information	Section Reference
Step 3 – Forecasting		
Growth Rate	☑ Obtained from City ☐ Historical traffic counts ☐ Travel demand forecasts ☐ Proposed Growth Rate: _____	2.3.15
Site Trip Generation	☑ ITE Trip Generation Manual ☐ "First Principles" ☐ Observed rates for similar developments in area ☐ Other _____	2.3.19
Trip Reductions	☐ Internal capture reductions for mixed-use developments ☐ Pass-by reductions ☐ Other _____	2.3.19
Trip Distribution	☐ Local traffic patterns ☑ TTS ☐ Travel demand model ☐ Population and employment distribution ☐ Market analysis of catchment area ☐ Other _____	2.3.20
Trip Assignment	☐ Local traffic patterns ☐ Shortest distance ☐ Site layout, access design and logical routing ☐ Existing turning movements ☐ Other _____	2.3.21
Transportation Demand Management Plan		
Format	☐ Within a TIA Report ☐ Standalone	3.2.1
Type of Transportation Demand Management Plan	☑ TDM Statement ☐ TDM Scheme	3.2.2
Pedestrian Circulation Plan		
Format	☐ Within a TIA Report ☐ Standalone	4.2.1
Additional Comments		
• Please include new TMC counts as 2022 counts are not accepted due to pandemic. • The TIS shall include a section to address Community Impacts. This section shall include summary statements outlining the resulting traffic increases to the critical streets, movements and intersections. Comments or concerns from the community through future public meetings and engagements. • Please complete Appendix A Certification Form (attached).		

From: Bruno, David <david.bruno@peelregion.ca>
Sent: Monday, December 11, 2023 11:34 AM
To: Annosan Srikantha <annosan@uteng.ca>
Cc: Harder, Ranelyn <ranelyn.harder@peelregion.ca>
Subject: FW: Region of Peel Waste Collection Design Standards Inquiry

Hi Annosan,

My is David, I work together with Ranelyn. The dimensions you have provided below are correct for the type of curbside waste collection vehicle we use in Peel.

Hope this helps.

Please let me know if you have any further questions.

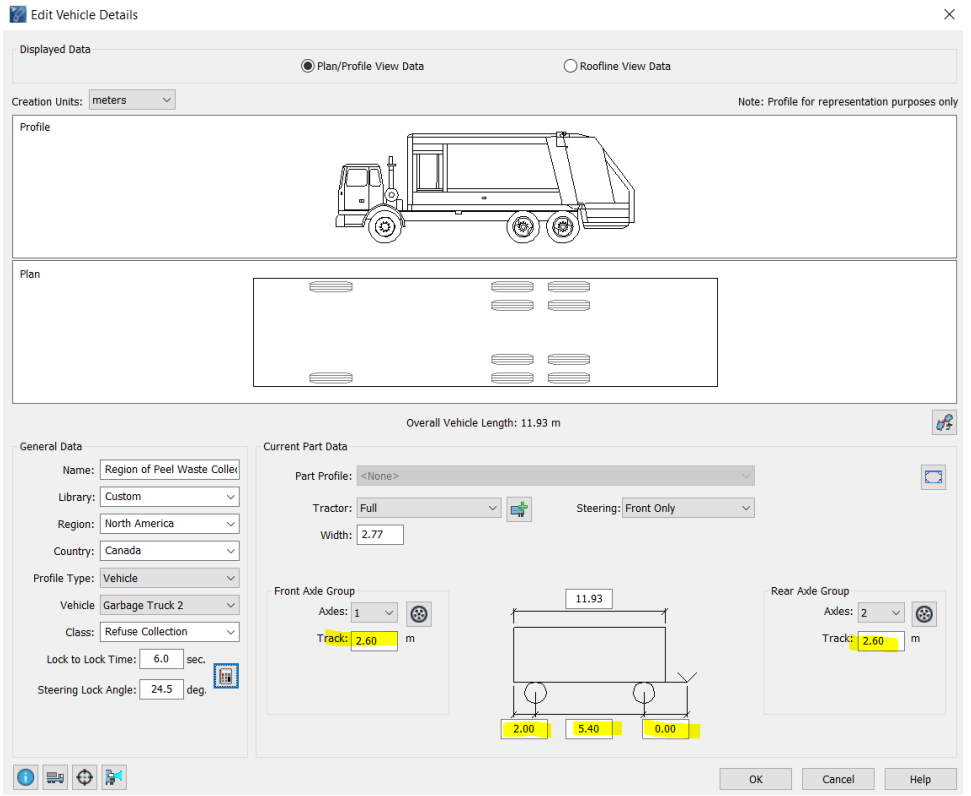
Thank you,

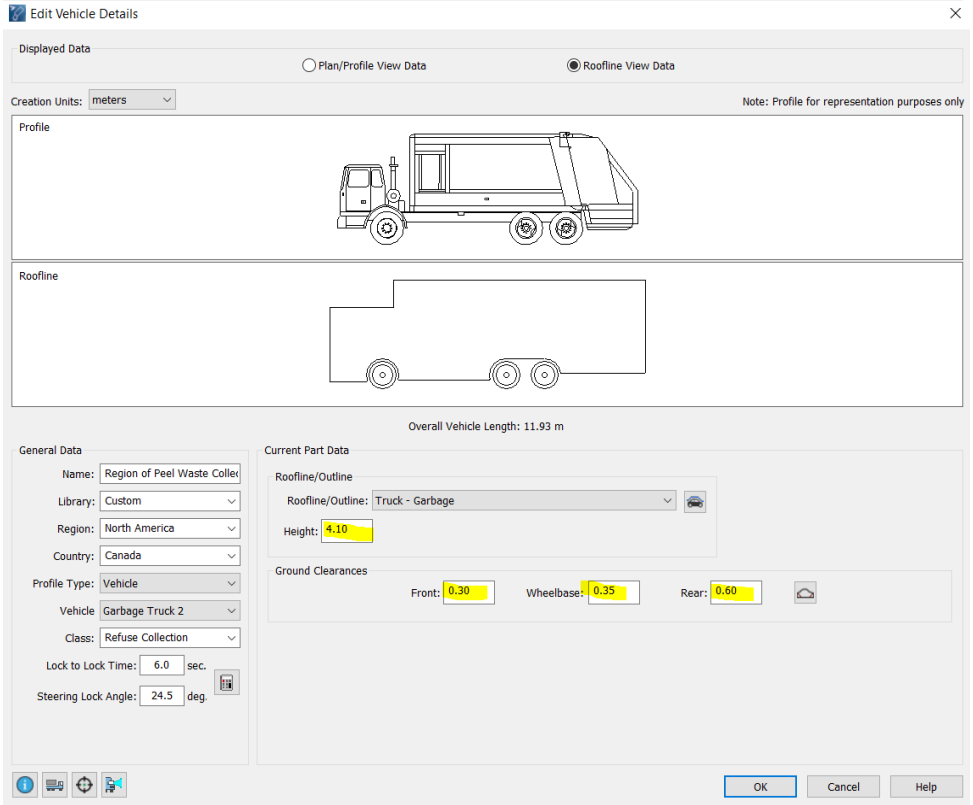
David Bruno
Specialist, Municipal Development Design WC
AM SOGR - Infrastructure, Waste Management
Region of Peel
10 Peel Centre Drive, Suite A (4th Floor)
Brampton, ON L6T 4B9
Mobile: (416) 540-8648

From: Annosan Srikantha <annosan@uteng.ca>
Sent: December 11, 2023 10:31 AM
To: Harder, Ranelyn <ranelyn.harder@peelregion.ca>
Cc: Annosan Srikantha <annosan@uteng.ca>
Subject: Region of Peel Waste Collection Design Standards Inquiry

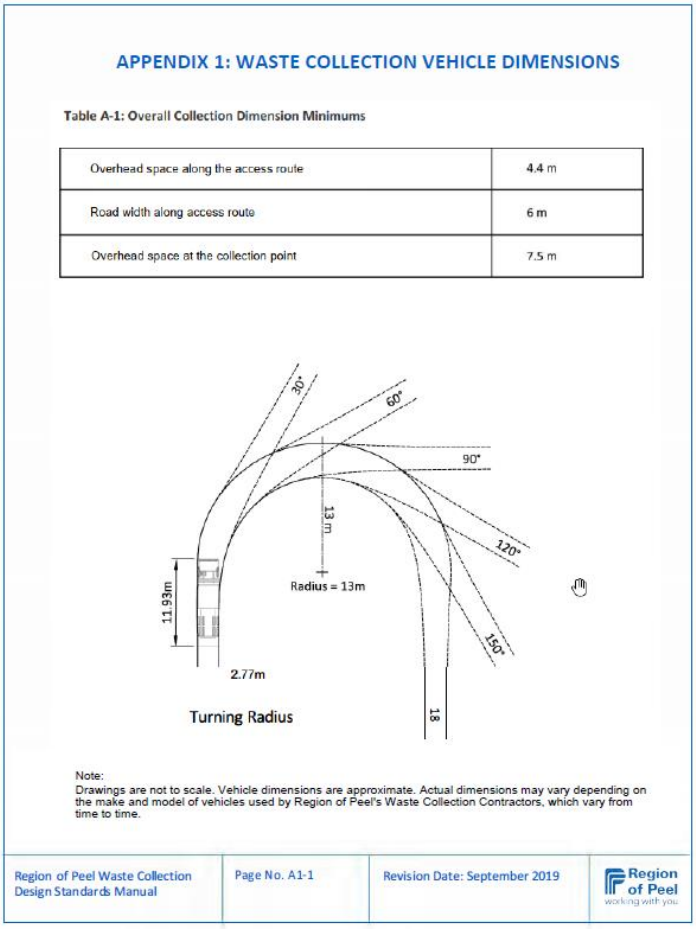
Hi Ranelyn,

Can you provide the measurements for the highlighted entries noted below:





City Standard below:



APPENDIX 1: WASTE COLLECTION VEHICLE DIMENSIONS

Table A-1: Overall Collection Dimension Minimums

Overhead space along the access route	4.4 m
Road width along access route	6 m
Overhead space at the collection point	7.5 m

Note:
Drawings are not to scale. Vehicle dimensions are approximate. Actual dimensions may vary depending on the make and model of vehicles used by Region of Peel's Waste Collection Contractors, which vary from time to time.

Also, can you please advise if this truck will serve City of Mississauga Local roads? If not, can you provide the truck specification that will.

Kind regards,

URBANTRANS
Engineering Solutions Inc.

Annosan Srikantha, P.Eng.
President

P: 437-236-7085
E: annosan@uteng.ca
10-9275 Markham Road, Suite 146 | Markham ON | L6E 0H9

Appendix C
Certification Form

Appendix A

Certification Form

Individuals submitting reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Mississauga's Official Plan, Transportation Master Plan, and Transportation Impact Study Guidelines.

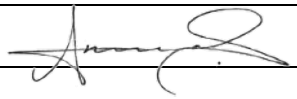
By submitting the attached report (and any associated documents) and signing this document, I acknowledge that:

- I have reviewed and have a sound understanding of the objectives, needs, and requirements of the City of Mississauga's Official Plan, Transportation Master Plan, and the Transportation Impact Study Guidelines as they apply to this submission;
- I have sound knowledge of industry standard practices pertaining to the preparation of development-related transportation study reports;
- I have substantial experience (more than five years) in completing development-related transportation studies and strong background knowledge of the transportation planning and engineering principles underpinning these studies; and
- I am registered as a Professional Engineer (P.Eng.), Licensed Engineering Technologist (LET), Certified Engineering Technologist (C.E.T.), or Registered Professional Planner (RPP) in good standing in the Province of Ontario with specific training in transportation planning and engineering.

Dated at Markham (City) this 11th day of December, 2023.

Name: Annosan Srikantha

Professional Title: registered Professional Engineer (P.Eng.)

Signature: 

Office Contact Information (Please Print)

Address: 10-9275 Markham Rd,

City/Postal Code: Markham ON L6E 0H9

Telephone/Extension: 437-236-7085

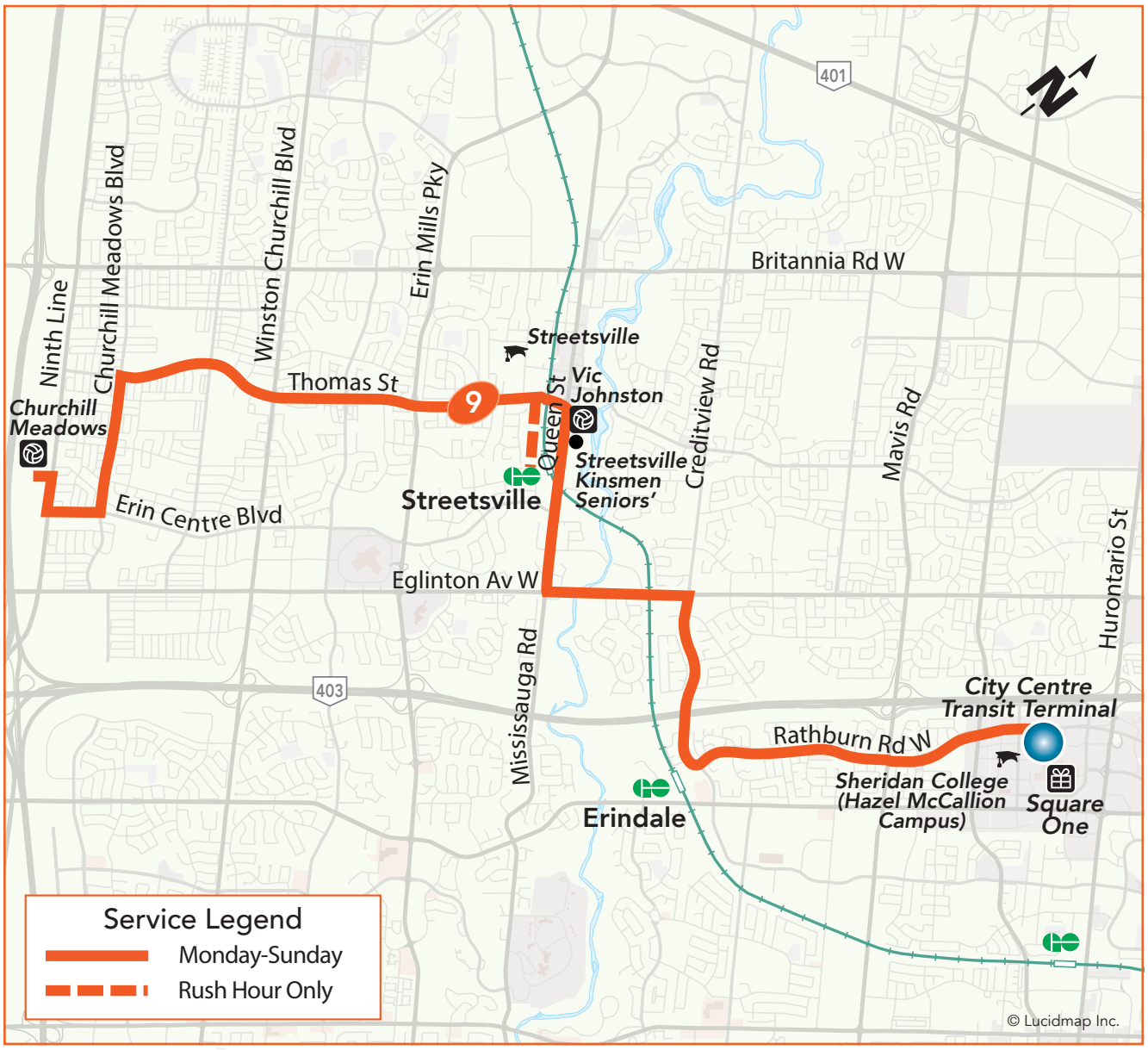
E-mail Address: annosan@uteng.ca

Appendix D
Transit Routes

9 Rathburn-Thomas

Local Route
Monday to Sunday

Eastbound to City Centre Transit Terminal
Westbound to Churchill Meadows Community Centre Terminal



Legend

- Terminal
- Transitway Station
- High School, University or College
- TTC Subway Station
- GO Train Station
- Hospital
- Library
- Community Centre
- Shopping Centre

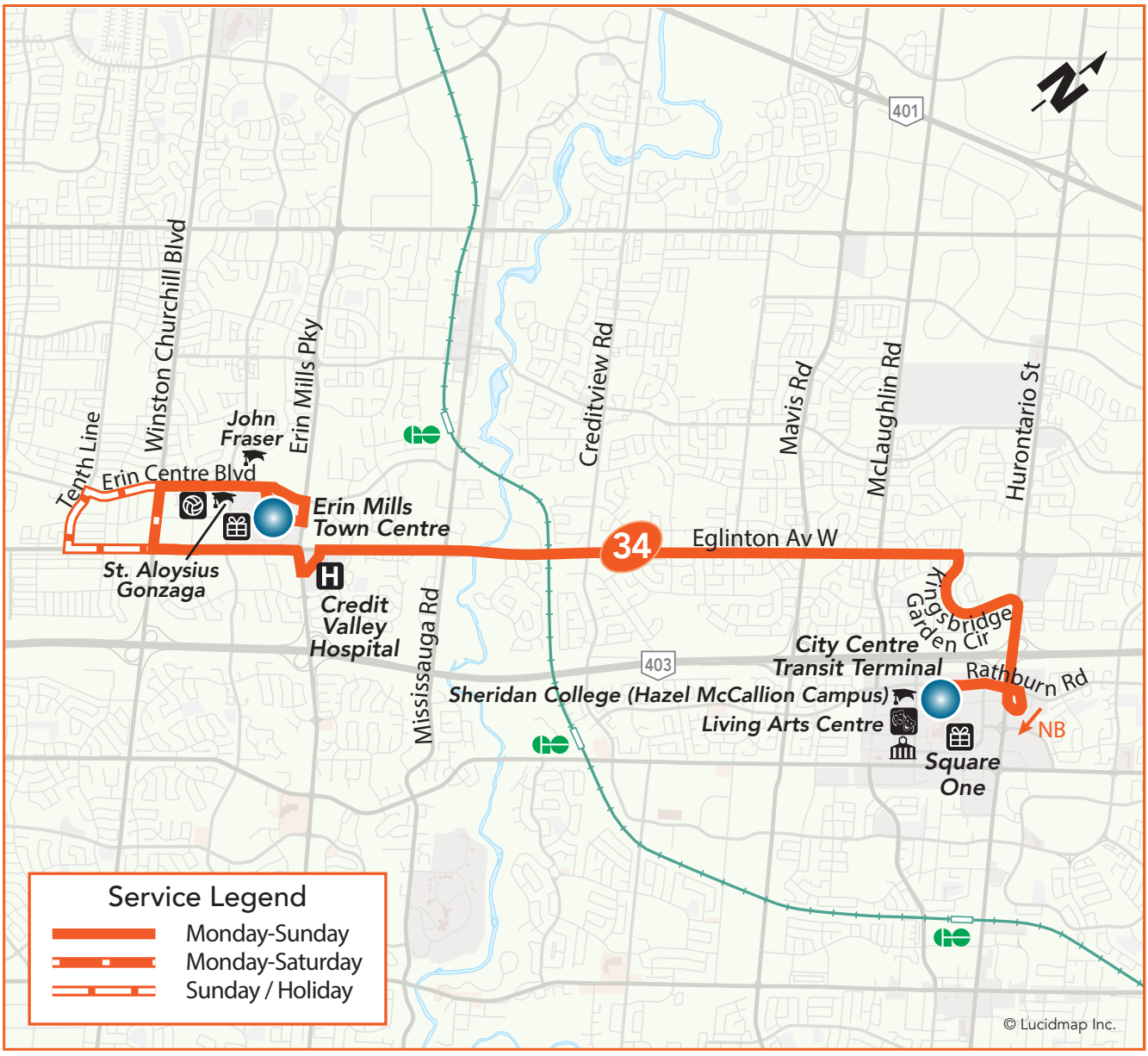
Effective: October 25, 2021

MiWAY MISSISSAUGA

34 Credit Valley

Local Route
Monday to Sunday

Eastbound to City Centre Transit Terminal
Westbound to Erin Mills Town Centre



Legend

- Terminal
- Transitway Station
- High School, University or College
- TTC Subway Station
- GO Train Station
- Hospital
- Library
- Community Centre
- Shopping Centre

Effective: February 26, 2018

MiWAY MISSISSAUGA

35 Eglinton

Local Route
Monday to Sunday

Eastbound to Kipling Bus Terminal
Westbound to Churchill Meadows Community Centre Terminal

Legend

- Terminal
- Transitway Station
- High School, University or College
- TTC Subway Station
- GO Train Station
- Hospital
- Library
- Community Centre
- Shopping Centre

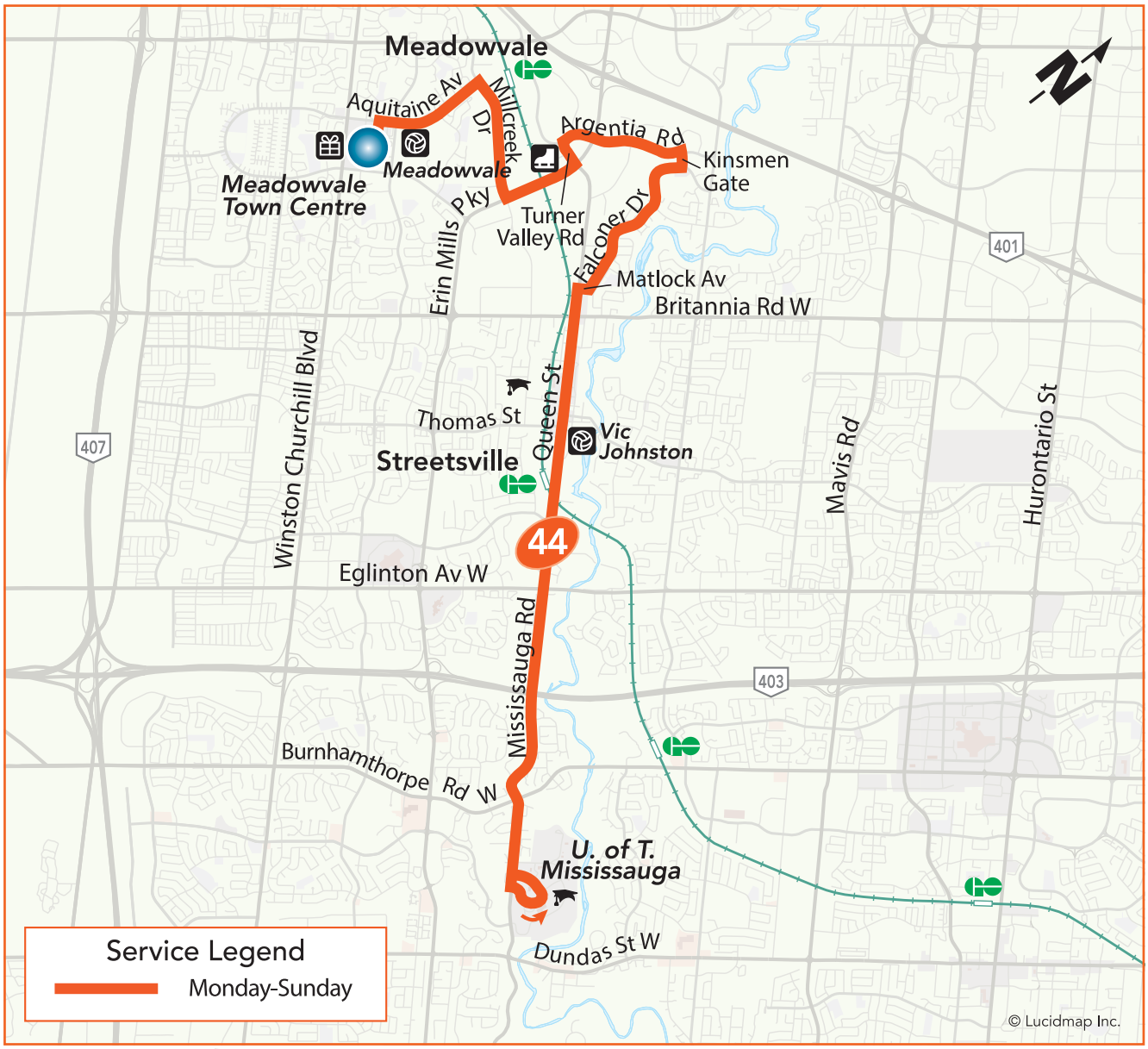
Effective: October 25, 2021

MiWAY MISSISSAUGA

44 Mississauga Road

Local Route
Monday to Sunday

Northbound to Meadowvale Town Centre
Southbound to U of T Mississauga



Legend

- Terminal
- Transitway Station
- High School, University or College
- TTC Subway Station
- GO Train Station
- Hospital
- Library
- Community Centre
- Shopping Centre

Effective: June 28, 2021

MiWAY MISSISSAUGA

Appendix E
Existing Traffic Data & Signal Timing Plan

Spectrum

Turning Movement Count
Location Name: EGLINTON AVE W & MISSISSAUGA RD
Date: Tue, Nov 14, 2023 Deployment Lead: David Chu

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Turning Movement Count (1 . EGLINTON AVE W & MISSISSAUGA RD)

Start Time	N Approach MISSISSAUGA RD						E Approach EGLINTON AVE						S Approach MISSISSAUGA RD						W Approach EGLINTON AVE						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	12	19	26	0	3	57	8	111	18	0	0	137	21	28	12	0	0	61	12	160	15	0	4	187	442	
07:15:00	22	15	24	0	1	61	15	170	26	0	1	211	22	24	1	0	3	47	16	188	16	0	0	220	539	
07:30:00	24	54	21	0	3	99	16	210	42	0	2	268	31	34	12	0	5	77	16	239	22	0	4	277	721	
07:45:00	20	55	38	0	9	113	21	222	45	0	0	288	55	42	15	0	0	112	25	358	26	0	5	409	922	2624
08:00:00	19	54	38	0	9	111	27	259	47	0	0	333	64	41	23	0	3	128	32	503	31	0	1	566	1138	3320
08:15:00	24	71	59	0	11	154	26	230	54	0	0	310	64	48	19	0	1	131	34	491	26	0	5	551	1146	3927
08:30:00	33	79	72	0	5	184	39	280	52	0	2	371	46	50	22	0	2	118	43	558	29	0	7	630	1303	4509
08:45:00	29	54	41	0	11	124	24	264	56	0	0	344	50	40	19	0	2	109	45	397	28	0	6	470	1047	4634
09:00:00	26	29	44	0	5	99	20	207	32	0	0	259	60	51	26	0	0	137	14	310	33	0	3	357	852	4348
09:15:00	10	31	38	0	10	79	21	201	23	0	0	245	50	36	16	0	0	102	14	255	27	0	7	296	722	3924
09:30:00	17	29	33	0	14	79	25	185	42	0	0	252	30	45	26	0	1	101	22	206	20	0	4	248	680	3301
09:45:00	16	25	26	0	1	67	27	208	28	1	0	264	24	36	16	0	1	76	22	247	20	0	4	289	696	2950
BREAK																										
16:00:00	27	42	36	0	3	105	36	340	40	0	3	416	48	56	23	0	12	127	26	301	39	0	1	366	1014	
16:15:00	26	48	41	0	11	115	39	315	50	0	1	404	47	86	31	0	6	164	32	263	33	0	3	328	1011	
16:30:00	16	54	41	0	3	111	38	348	66	0	6	452	60	77	32	0	8	169	23	255	35	0	6	313	1045	
16:45:00	20	62	40	0	6	122	62	371	43	0	0	476	57	73	31	0	1	161	31	278	37	0	3	346	1105	4175
17:00:00	32	56	30	0	2	118	46	347	52	0	3	445	69	81	33	0	2	183	24	244	30	0	5	298	1044	4205
17:15:00	39	53	46	0	7	138	44	371	56	0	0	471	64	67	26	0	0	157	18	307	34	0	1	359	1125	4319
17:30:00	23	43	46	0	6	112	42	378	54	0	7	474	67	74	27	0	11	168	30	278	39	0	5	347	1101	4375
17:45:00	40	60	39	0	1	139	53	330	62	0	3	445	64	56	39	0	3	159	25	282	29	0	1	336	1079	4349
18:00:00	35	32	41	0	4	108	47	342	45	0	2	434	49	63	26	0	9	138	25	284	38	0	3	347	1027	4332
18:15:00	17	26	32	0	2	75	38	257	39	0	4	334	58	62	20	0	1	140	15	242	30	0	3	287	836	4043
18:30:00	28	37	31	0	0	96	33	249	58	0	2	340	43	51	21	0	4	115	30	248	36	0	3	314	865	3807
18:45:00	29	31	26	0	3	86	37	248	44	0	0	329	69	51	14	0	0	134	19	249	39	0	2	307	856	3584
Grand Total	584	1059	909	0	130	2552	784	6443	1074	1	36	8302	1212	1272	530	0	75	3014	593	7143	712	0	86	8448	**22316**	-
Approach%	22.9%	41.5%	35.6%	0%		-	9.4%	77.6%	12.9%	0%		-	40.2%	42.2%	17.6%	0%		-	7%	84.6%	8.4%	0%		-	**-**	-
Totals %	2.6%	4.7%	4.1%	0%		11.4%	3.5%	28.9%	4.8%	0%		37.2%	5.4%	5.7%	2.4%	0%		13.5%	2.7%	32%	3.2%	0%		37.9%	**-**	-
Heavy	24	40	35	0		-	37	141	16	0		-	18	32	5	0		-	10	149	19	0		-	**-**	-
Heavy %	4.1%	3.8%	3.9%	0%		-	4.7%	2.2%	1.5%	0%		-	1.5%	2.5%	0.9%	0%		-	1.7%	2.1%	2.7%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Spectrum

Turning Movement Count
Location Name: EGLINTON AVE W & MISSISSAUGA RD
Date: Tue, Nov 14, 2023 Deployment Lead: David Chu

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Broken Clouds (5.16 °C)**

Start Time	N Approach MISSISSAUGA RD						E Approach EGLINTON AVE						S Approach MISSISSAUGA RD						W Approach EGLINTON AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	19	54	38	0	9	111	27	259	47	0	0	333	64	41	23	0	3	128	32	503	31	0	1	566	1138
08:15:00	24	71	59	0	11	154	26	230	54	0	0	310	64	48	19	0	1	131	34	491	26	0	5	551	1146
08:30:00	33	79	72	0	5	184	39	280	52	0	2	371	46	50	22	0	2	118	43	558	29	0	7	630	1303
08:45:00	29	54	41	0	11	124	24	264	56	0	0	344	50	40	19	0	2	109	45	397	28	0	6	470	1047
Grand Total	105	258	210	0	36	573	116	1033	209	0	2	1358	224	179	83	0	8	486	154	1949	114	0	19	2217	**4634**
Approach%	18.3%	45%	36.6%	0%		-	8.5%	76.1%	15.4%	0%		-	46.1%	36.8%	17.1%	0%		-	6.9%	87.9%	5.1%	0%		-	**-**
Totals %	2.3%	5.6%	4.5%	0%		12.4%	2.5%	22.3%	4.5%	0%		29.3%	4.8%	3.9%	1.8%	0%		10.5%	3.3%	42.1%	2.5%	0%		47.8%	**-**
PHF	0.8	0.82	0.73	0		0.78	0.74	0.92	0.93	0		0.92	0.88	0.9	0.9	0		0.93	0.86	0.87	0.92	0		0.88	**-**
Heavy	10	13	8	0		31	11	22	1	0		34	3	7	2	0		12	5	43	1	0		49	**-**
Heavy %	9.5%	5%	3.8%	0%		5.4%	9.5%	2.1%	0.5%	0%		2.5%	1.3%	3.9%	2.4%	0%		2.5%	3.2%	2.2%	0.9%	0%		2.2%	**-**
Lights	95	243	202	0		540	105	1011	208	0		1324	221	172	81	0		474	149	1906	113	0		2168	**-**
Lights %	90.5%	94.2%	96.2%	0%		94.2%	90.5%	97.9%	99.5%	0%		97.5%	98.7%	96.1%	97.6%	0%		97.5%	96.8%	97.8%	99.1%	0%		97.8%	**-**
Single-Unit Trucks	1	4	1	0		6	0	7	1	0		8	2	2	0	0		4	2	13	0	0		15	**-**
Single-Unit Trucks %	1%	1.6%	0.5%	0%		1%	0%	0.7%	0.5%	0%		0.6%	0.9%	1.1%	0%	0%		0.8%	1.3%	0.7%	0%	0%		0.7%	**-**
Buses	5	8	6	0		19	11	14	0	0		25	1	5	2	0		8	3	26	0	0		29	**-**
Buses %	4.8%	3.1%	2.9%	0%		3.3%	9.5%	1.4%	0%	0%		1.8%	0.4%	2.8%	2.4%	0%		1.6%	1.9%	1.3%	0%	0%		1.3%	**-**
Articulated Trucks	4	1	1	0		6	0	1	0	0		1	0	0	0	0		0	0	4	1	0		5	**-**
Articulated Trucks %	3.8%	0.4%	0.5%	0%		1%	0%	0.1%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.2%	0.9%	0%		0.2%	**-**
Bicycles on Road	0	2	0	0		2	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0.8%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	35	-	-	-	-	-	1	-	-	-	-	-	7	-	-	-	-	-	18	-	**-**
Pedestrians%	-	-	-	-	53.8%		-	-	-	-	1.5%		-	-	-	-	10.8%		-	-	-	-	27.7%		**-**
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	**-**
Bicycles on Crosswalk%	-	-	-	-	1.5%		-	-	-	-	1.5%		-	-	-	-	1.5%		-	-	-	-	1.5%		**-**

Spectrum

Turning Movement Count
Location Name: EGLINTON AVE W & MISSISSAUGA RD
Date: Tue, Nov 14, 2023 Deployment Lead: David Chu

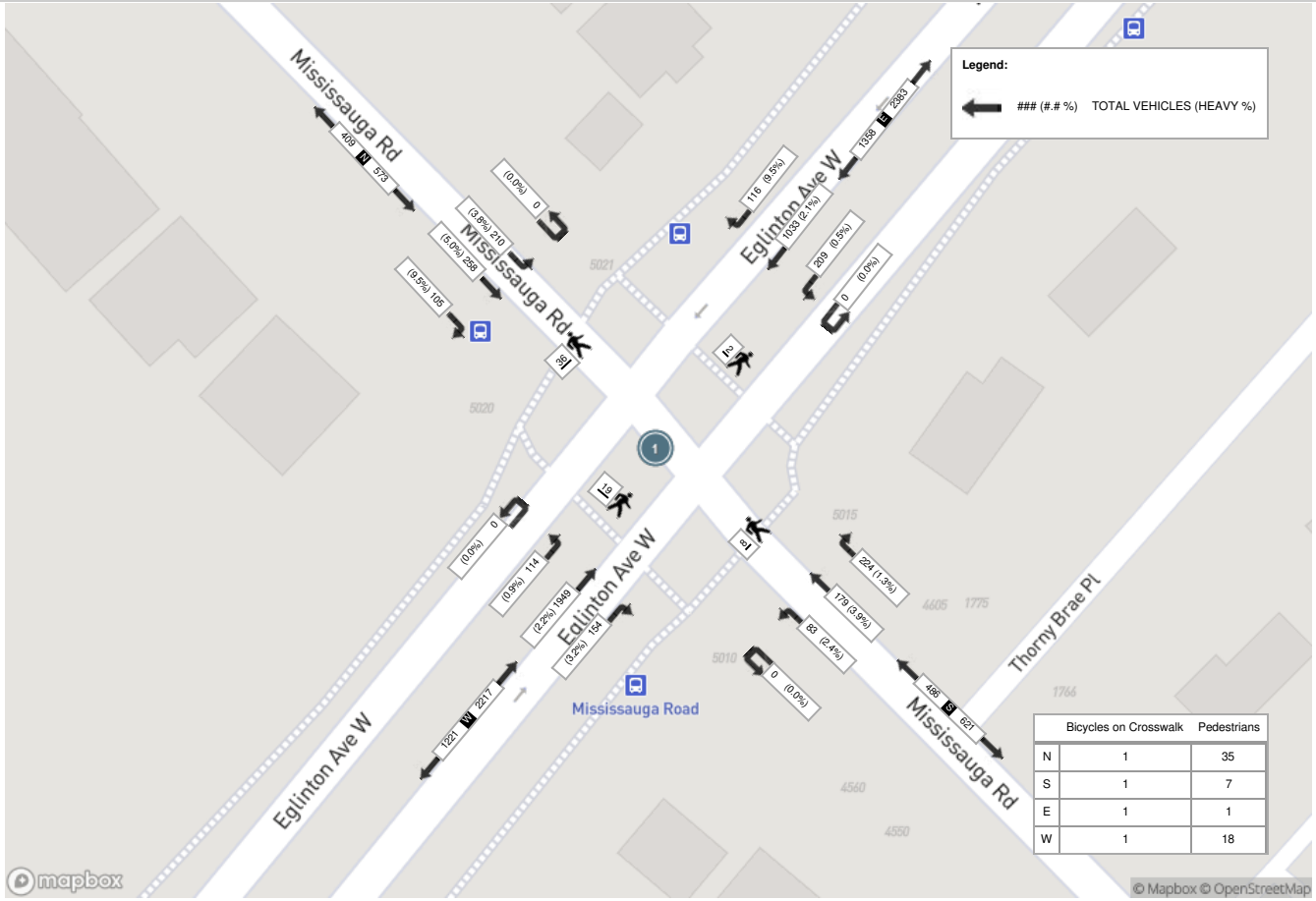
Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Few Clouds (8 °C)**

Start Time	N Approach MISSISSAUGA RD						E Approach EGLINTON AVE						S Approach MISSISSAUGA RD						W Approach EGLINTON AVE						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	20	62	40	0	6	122	62	371	43	0	0	476	57	73	31	0	1	161	31	278	37	0	3	346	1105
17:00:00	32	56	30	0	2	118	46	347	52	0	3	445	69	81	33	0	2	183	24	244	30	0	5	298	1044
17:15:00	39	53	46	0	7	138	44	371	56	0	0	471	64	67	26	0	0	157	18	307	34	0	1	359	1125
17:30:00	23	43	46	0	6	112	42	378	54	0	7	474	67	74	27	0	11	168	30	278	39	0	5	347	1101
Grand Total	114	214	162	0	21	490	194	1467	205	0	10	1866	257	295	117	0	14	669	103	1107	140	0	14	1350	**4375**
Approach%	23.3%	43.7%	33.1%	0%		-	10.4%	78.6%	11%	0%		-	38.4%	44.1%	17.5%	0%		-	7.6%	82%	10.4%	0%		-	**-**
Totals %	2.6%	4.9%	3.7%	0%		11.2%	4.4%	33.5%	4.7%	0%		42.7%	5.9%	6.7%	2.7%	0%		15.3%	2.4%	25.3%	3.2%	0%		30.9%	**-**
PHF	0.73	0.86	0.88	0		0.89	0.78	0.97	0.92	0		0.98	0.93	0.91	0.89	0		0.91	0.83	0.9	0.9	0		0.94	**-**
Heavy	2	5	4	0		11	4	15	1	0		20	0	4	0	0		4	1	12	1	0		14	**-**
Heavy %	1.8%	2.3%	2.5%	0%		2.2%	2.1%	1%	0.5%	0%		1.1%	0%	1.4%	0%	0%		0.6%	1%	1.1%	0.7%	0%		1%	**-**
Lights	112	208	158	0		478	190	1452	204	0		1846	257	291	117	0		665	102	1095	139	0		1336	**-**
Lights %	98.2%	97.2%	97.5%	0%		97.6%	97.9%	99%	99.5%	0%		98.9%	100%	98.6%	100%	0%		99.4%	99%	98.9%	99.3%	0%		99%	**-**
Single-Unit Trucks	1	1	1	0		3	0	7	0	0		7	0	1	0	0		1	1	2	0	0		3	**-**
Single-Unit Trucks %	0.9%	0.5%	0.6%	0%		0.6%	0%	0.5%	0%	0%		0.4%	0%	0.3%	0%	0%		0.1%	1%	0.2%	0%	0%		0.2%	**-**
Buses	0	4	2	0		6	3	8	1	0		12	0	3	0	0		3	0	9	0	0		9	**-**
Buses %	0%	1.9%	1.2%	0%		1.2%	1.5%	0.5%	0.5%	0%		0.6%	0%	1%	0%	0%		0.4%	0%	0.8%	0%	0%		0.7%	**-**
Articulated Trucks	1	0	1	0		2	1	0	0	0		1	0	0	0	0		0	0	1	1	0		2	**-**
Articulated Trucks %	0.9%	0%	0.6%	0%		0.4%	0.5%	0%	0%	0%		0.1%	0%	0%	0%	0%		0%	0%	0.1%	0.7%	0%		0.1%	**-**
Bicycles on Road	0	1	0	0		1	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	**-**
Bicycles on Road %	0%	0.5%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	19	-	-	-	-	-	10	-	-	-	-	-	14	-	-	-	-	-	14	-	**-**
Pedestrians%	-	-	-	-	32.2%		-	-	-	-	16.9%		-	-	-	-	23.7%		-	-	-	-	23.7%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	3.4%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		**-**

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 08:00 AM - 09:00 AM **Weather: Broken Clouds (5.16 °C)**

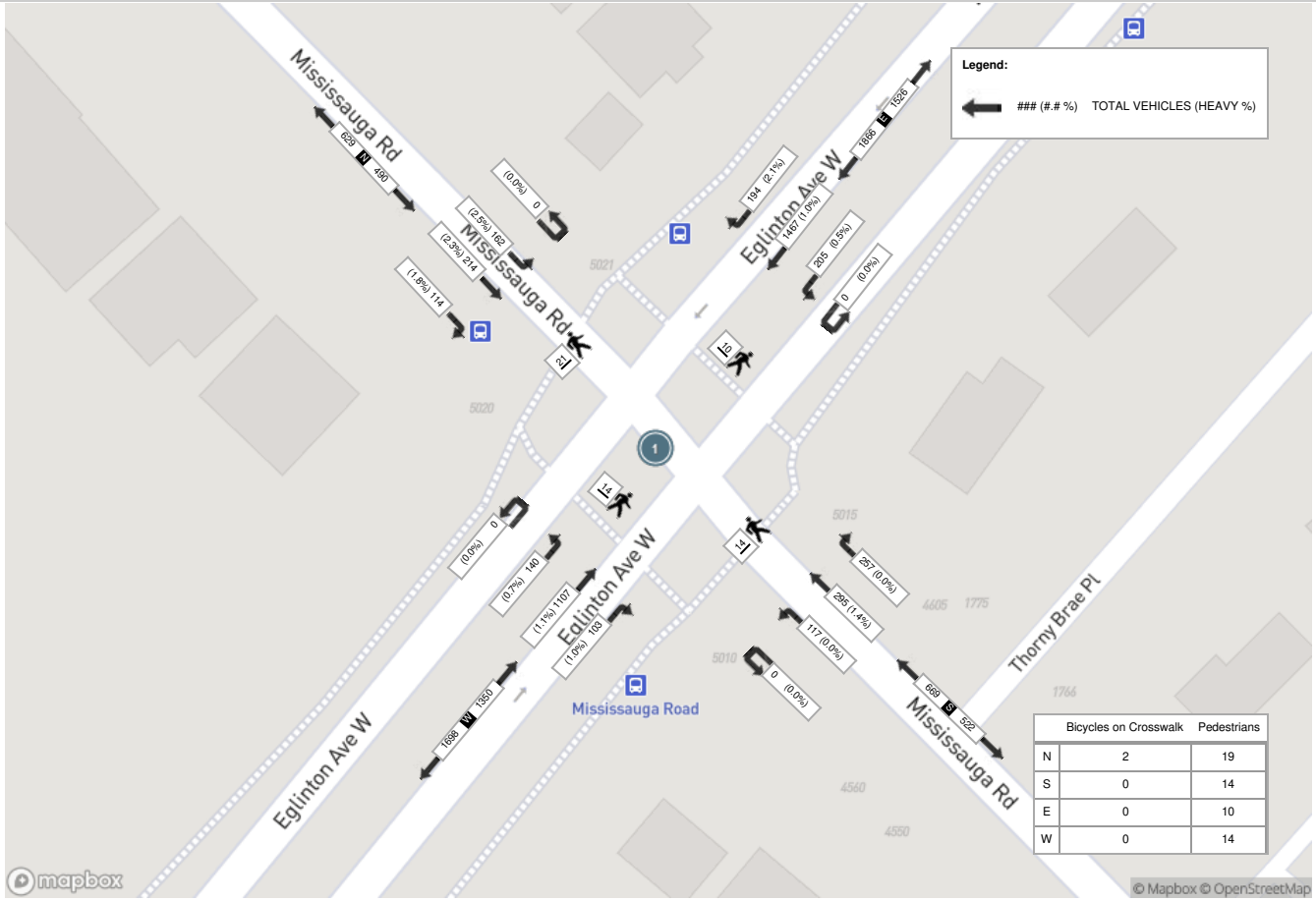


Spectrum

Turning Movement Count
Location Name: EGLINTON AVE W & MISSISSAUGA RD
Date: Tue, Nov 14, 2023 Deployment Lead: David Chu

Urban Trans Engineering Solutions Inc
146 9275 MARKHAM ROAD
MARKHAM ONTARIO, L6E 0H9
CANADA

Peak Hour: 04:45 PM - 05:45 PM **Weather: Few Clouds (8 °C)**



	Bicycles on Crosswalk	Pedestrians
N	2	19
S	0	14
E	0	10
W	0	14

File: CA.13.SIG
Signal Timing Request
RT.07.3105

November 17, 2023

To Annosan Srikantha:

Re: Traffic Signal Timing

Eglinton Avenue at Mississauga Road

The side street phases (4,8) are actuated, unless noted in the timing plan, this means a vehicle or pedestrian must be present on the side street before the side street is given a green indication. Phases 1,3 & 5 are also actuated. Vehicle presence on the side street would result in a possible green time of between the minimum and maximum time noted, depending on demand. 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 (2,6).

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

The time of day plan is used for system control operation. In the event that the coordination pattern has a cycle length, offset and split value identified, the cycle length, split and offset values, as noted, would be used. However, when the time of day plan is programed using 'Action' 7 and/or 8, the mode is 'Free', meaning no cycle length, split and offset values are given and the intersection operates using the phase timings provided in the report.

Should you require further information, please contact Steve Gee, at 905-615-3200 ext. 5169.

Thank you,

Steve Gee
Traffic System Coordinator, Traffic Systems and ITS
Traffic Systems and ITS
Transportation and Works Department
City of Mississauga
905-615-3200 ext. 5169
steve.gee@mississauga.ca

c: Jim Kartsomanis, Supervisor, Traffic Systems and ITS

Intelight 3105 EGLINTON AVENUE E @ Mississauga Road

Phase - Parameter 1-16	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Phase Description*	String								
Walk	Sec	0	10	0	10	0	10	0	10
Ped Clear	Sec	0	20	0	31	0	20	0	31
Min Green	Sec	7	10	7	10	7	10	0	10
Passage	Sec	2.0	3.0	2.0	3.0	2.0	3.0	0.0	3.0
Maximum 1	Sec	10	42	10	30	10	42	0	30
Maximum 2	Sec	10	42	10	30	10	42	0	35
Yellow Change	Sec	3.0	4.0	3.0	3.5	3.0	4.0	3.0	3.5
Red Clearance	Sec	0.0	2.5	0.0	4.0	0.0	2.5	0.0	4.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before Reduction	Sec	0	0	0	0	0	0	0	0
Cars Before Reduction	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	phaseNotOn	redClear	phaseNotOn	phaseNotOn	phaseNotOn	redClear	other	phaseNotOn
[P2] Options	Bit	0:Enabled Phase 5:Non Lock Detector Memory	0:Enabled Phase 3:Non-Actuated 1 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase 13:Actuated Rest In Walk	0:Enabled Phase 5:Non Lock Detector Memory	0:Enabled Phase 5:Non Lock Detector Memory 10:Dual Entry Phase	0:Enabled Phase 5:Non Lock Detector Memory	0:Enabled Phase 3:Non-Actuated 1 7:Max Vehicle Recall 8:Ped. Recall 10:Dual Entry Phase 13:Actuated Rest In Walk		0:Enabled Phase 5:Non Lock Detector Memory 10:Dual Entry Phase
[P2] Ring	Ring	1	1	1	1	2	2	0	2
[P2] Concurrency	Phase (,)	(5,6,15,11)	(5,6,15,11)	(8)	(8)	(1,2,15)	(1,2,15,11)	()	(3,4)

Coordination - Pattern 1-32	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	160	160	160	0	0	0	0	0
Offset	Sec	29	106	31	0	0	0	0	0
Split	Split	1	2	3	4	5	6	7	8
Sequence	Sequence	1	1	1	1	1	1	1	1
Phase Parameter Table*	Number								
Coord Phase Reference Point*	Enum								
Coord Mode*	Enum								

Coordination - Splits	Units	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Phase 6	Phase 7	Phase 8
Split 1 - Mode	Enum	none	none	none	none	none	none	none	none
Split 1 - Time	Sec	16	72	16	56	16	72	0	72
Split 1 - Coord	Enum	False	True	False	False	False	True	False	False
Split 1 - Coord Phase Options*	Bit								
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	24	59	23	54	17	66	0	77
Split 2 - Coord	Enum	False	True	False	False	False	True	False	False
Split 2 - Coord Phase Options*	Bit								
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	14	72	17	57	14	72	0	74
Split 3 - Coord	Enum	False	True	False	False	False	True	False	False
Split 3 - Coord Phase Options*	Bit								
Split 4 - Mode	Enum	none	none	none	none	none	none	none	none
Split 4 - Time	Sec	0	0	0	0	0	0	0	0
Split 4 - Coord	Enum	False	True	False	False	False	True	False	False
Split 4 - Coord Phase Options*	Bit								

Time Base - Day Plans	Units	Evt 1	Evt 2	Evt 3	Evt 4	Evt 5	Evt 6
Plan 1 Hour	Hour	0	6	9	15	19	3
Plan 1 Minute	Min	0	0	30	0	30	0
Plan 1 Action	Number	8	1	2	3	2	7
Plan 2 Hour	Hour	0	7	3	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0
Plan 3 Minute	Min	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0

Time Base - Action 1-32	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit								
Spec. Functions	Bit								

Time Base - Action 1-32	Units	9	10
Pattern	Enum	Pattern 9	Pattern 10
Aux. Functions	Bit		
Spec. Functions	Bit		

Appendix F
Existing (2023) Traffic Level of Service Calculations

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	1949	154	209	1033	116	83	179	224	210	258	105
Future Volume (vph)	114	1949	154	209	1033	116	83	179	224	210	258	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5085	1568	1787	5085	1468	1770	1827	1599	1736	1706	0
Flt Permitted	0.173			0.059			0.422			0.518		
Satd. Flow (perm)	325	5085	1568	111	5085	1468	786	1827	1599	946	1706	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			91			157			194		16	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.87	0.86	0.93	0.92	0.74	0.90	0.90	0.88	0.73	0.82	0.80
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%	1%	2%	10%	2%	4%	1%	4%	5%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	2240	179	225	1123	157	92	199	255	288	446	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	36.5	36.5	10.0	36.5	36.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	16.0	72.0	72.0	16.0	72.0	72.0	56.0	56.0	56.0	16.0	72.0	
Total Split (%)	10.0%	45.0%	45.0%	10.0%	45.0%	45.0%	35.0%	35.0%	35.0%	10.0%	45.0%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	79.8	65.5	65.5	83.7	67.7	67.7	48.5	48.5	48.5	69.0	64.5	
Actuated g/C Ratio	0.50	0.41	0.41	0.52	0.42	0.42	0.30	0.30	0.30	0.43	0.40	
v/c Ratio	0.48	1.08	0.26	1.16	0.52	0.22	0.39	0.36	0.41	0.61	0.64	
Control Delay	25.3	88.5	15.9	153.2	35.5	4.7	49.9	45.9	13.4	38.4	42.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	25.3	88.5	15.9	153.2	35.5	4.7	49.9	45.9	13.4	38.4	42.0	

3: Mississauga Rd & Eglinton Ave W

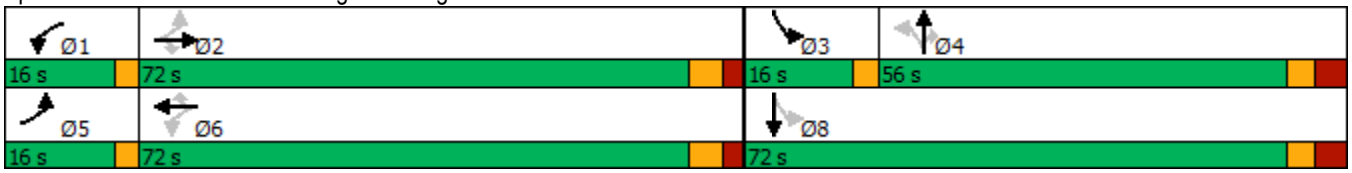
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	F	B	F	D	A	D	D	B	D	D	
Approach Delay		80.3			49.9			31.4			40.6	
Approach LOS		F			D			C			D	
Queue Length 50th (m)	20.4	~304.6	18.3	~71.4	101.5	0.0	24.4	52.4	14.9	65.2	115.5	
Queue Length 95th (m)	32.6	#312.2	34.0	#130.7	118.9	6.4	43.5	76.9	38.2	70.5	136.3	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	285	2081	695	194	2151	711	238	553	619	472	697	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.44	1.08	0.26	1.16	0.52	0.22	0.39	0.36	0.41	0.61	0.64	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.16			
Intersection Signal Delay: 61.2		Intersection LOS: E	
Intersection Capacity Utilization 138.8%		ICU Level of Service H	
Analysis Period (min) 15			

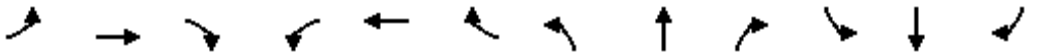
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W



3: Mississauga Rd & Eglinton Ave W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	1949	154	209	1033	116	83	179	224	210	258	105
Future Volume (vph)	114	1949	154	209	1033	116	83	179	224	210	258	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5085	1568	1787	5085	1468	1770	1827	1599	1736	1706	0
Flt Permitted	0.215			0.054			0.290			0.490		
Satd. Flow (perm)	404	5085	1568	102	5085	1468	540	1827	1599	895	1706	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			157			207		14	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.87	0.86	0.93	0.92	0.74	0.90	0.90	0.88	0.73	0.82	0.80
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%	1%	2%	10%	2%	4%	1%	4%	5%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	2240	179	225	1123	157	92	199	255	288	446	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	36.5	36.5	10.0	36.5	36.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	13.0	78.0	78.0	23.0	88.0	88.0	49.0	49.0	49.0	10.0	59.0	
Total Split (%)	8.1%	48.8%	48.8%	14.4%	55.0%	55.0%	30.6%	30.6%	30.6%	6.3%	36.9%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	84.3	71.5	71.5	96.2	80.4	80.4	41.5	41.5	41.5	56.0	51.5	
Actuated g/C Ratio	0.53	0.45	0.45	0.61	0.51	0.51	0.26	0.26	0.26	0.35	0.33	
v/c Ratio	0.42	0.97	0.23	0.88	0.43	0.19	0.65	0.42	0.45	0.81	0.79	
Control Delay	18.2	56.1	12.7	76.4	25.2	3.3	75.4	51.9	13.3	63.3	58.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	18.2	56.1	12.7	76.4	25.2	3.3	75.4	51.9	13.3	63.3	58.7	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	E	B	E	C	A	E	D	B	E	E	
Approach Delay		51.2			30.6			37.8			60.5	
Approach LOS		D			C			D			E	
Queue Length 50th (m)	16.6	268.8	15.7	56.5	85.0	0.0	27.7	55.8	12.4	75.2	133.1	
Queue Length 95th (m)	26.5	275.4	29.9	#101.6	97.4	5.3	#55.5	82.0	36.6	81.2	156.8	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	304	2298	762	275	2619	832	141	479	572	354	564	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.41	0.97	0.23	0.82	0.43	0.19	0.65	0.42	0.45	0.81	0.79	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158.2			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 45.3		Intersection LOS: D	
Intersection Capacity Utilization 138.8%		ICU Level of Service H	
Analysis Period (min) 15			

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

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1107	103	205	1467	194	117	295	257	162	214	114
Future Volume (vph)	140	1107	103	205	1467	194	117	295	257	162	214	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5136	1599	1805	5136	1583	1805	1881	1615	1752	1755	0
Flt Permitted	0.076			0.112			0.522			0.391		
Satd. Flow (perm)	143	5136	1599	213	5136	1583	992	1881	1615	721	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			115			188			149		24	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.83	0.92	0.97	0.78	0.89	0.91	0.93	0.88	0.86	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	0%	1%	0%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1230	124	223	1512	249	131	324	276	184	405	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	43.5	43.5	10.0	43.5	43.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	14.0	72.0	72.0	14.0	72.0	72.0	57.0	57.0	57.0	17.0	74.0	
Total Split (%)	8.8%	45.0%	45.0%	8.8%	45.0%	45.0%	35.6%	35.6%	35.6%	10.6%	46.3%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	67.0	52.5	52.5	67.0	52.5	52.5	51.1	51.1	51.1	71.2	66.7	
Actuated g/C Ratio	0.45	0.36	0.36	0.45	0.36	0.36	0.35	0.35	0.35	0.48	0.45	
v/c Ratio	0.83	0.67	0.19	1.03	0.83	0.36	0.38	0.50	0.42	0.42	0.50	
Control Delay	65.4	41.8	6.6	99.0	47.4	10.1	42.9	43.1	19.7	26.7	30.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	65.4	41.8	6.6	99.0	47.4	10.1	42.9	43.1	19.7	26.7	30.6	

3: Mississauga Rd & Eglinton Ave W

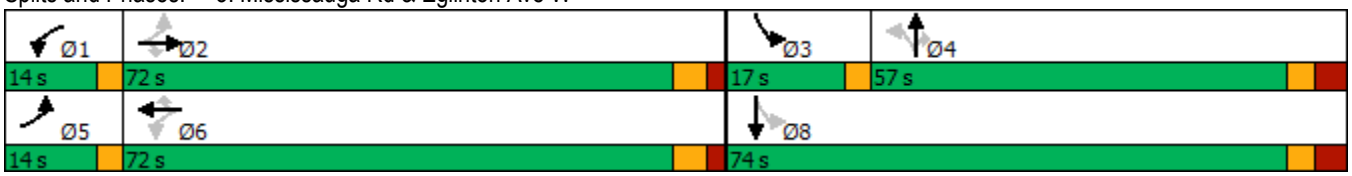
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D	A	F	D	B	D	D	B	C	C	
Approach Delay		41.4			48.5			34.2			29.4	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	29.8	116.4	1.8	~46.6	154.3	12.5	30.5	79.1	28.5	31.7	80.9	
Queue Length 95th (m)	#72.6	132.5	12.3	#105.5	172.6	21.5	56.7	124.8	62.3	55.1	122.8	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	188	2291	777	216	2291	810	343	651	657	447	808	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.83	0.54	0.16	1.03	0.66	0.31	0.38	0.50	0.42	0.41	0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147.3			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay: 41.8		Intersection LOS: D	
Intersection Capacity Utilization 125.9%		ICU Level of Service H	
Analysis Period (min) 15			

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

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

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W



3: Mississauga Rd & Eglinton Ave W

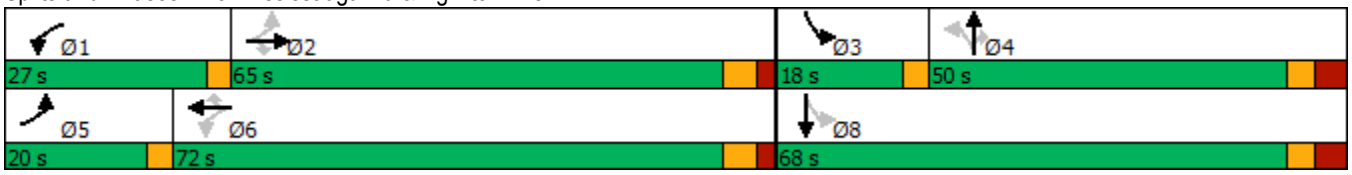
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1107	103	205	1467	194	117	295	257	162	214	114
Future Volume (vph)	140	1107	103	205	1467	194	117	295	257	162	214	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5136	1599	1805	5136	1583	1805	1881	1615	1752	1755	0
Flt Permitted	0.084			0.097			0.522			0.365		
Satd. Flow (perm)	158	5136	1599	184	5136	1583	992	1881	1615	673	1755	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			107			188			140		23	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.83	0.92	0.97	0.78	0.89	0.91	0.93	0.88	0.86	0.73
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	0%	1%	0%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	1230	124	223	1512	249	131	324	276	184	405	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	43.5	43.5	10.0	43.5	43.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	20.0	65.0	65.0	27.0	72.0	72.0	50.0	50.0	50.0	18.0	68.0	
Total Split (%)	12.5%	40.6%	40.6%	16.9%	45.0%	45.0%	31.3%	31.3%	31.3%	11.3%	42.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	65.0	47.9	47.9	70.6	51.0	51.0	44.9	44.9	44.9	65.5	60.9	
Actuated g/C Ratio	0.46	0.34	0.34	0.49	0.36	0.36	0.31	0.31	0.31	0.46	0.43	
v/c Ratio	0.69	0.71	0.20	0.79	0.82	0.36	0.42	0.55	0.46	0.45	0.53	
Control Delay	45.9	44.0	8.8	51.0	45.9	10.1	47.8	47.7	23.5	29.7	33.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	45.9	44.0	8.8	51.0	45.9	10.1	47.8	47.7	23.5	29.7	33.7	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D	A	D	D	B	D	D	C	C	C	
Approach Delay		41.3			42.0			38.6			32.5	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	26.3	115.6	3.4	42.5	149.3	12.1	31.2	81.0	31.7	32.5	83.0	
Queue Length 95th (m)	54.6	143.0	15.1	74.5	172.6	21.5	60.5	133.2	69.7	59.1	131.5	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	270	2121	723	366	2374	833	312	591	603	423	762	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.58	0.17	0.61	0.64	0.30	0.42	0.55	0.46	0.43	0.53	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 142.7			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 40.1		Intersection LOS: D	
Intersection Capacity Utilization 125.9%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W



Appendix G
Growth Rates (City of Mississauga)

From: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Sent: Monday, December 11, 2023 10:45 AM
To: Annosan Srikantha <annosan@uteng.ca>
Subject: RE: Terms of Reference (1786 Polaris Way)

Hi Annosan,

Below are the recommended growth rates to be used along Eglinton Avenue and Mississauga Road. These rates are compounded annually from existing to 2028.

Eglinton Avenue

	Compounded Annual Growth from Existing to 2028	
	EB	WB
AM Peak	0.5%	1.5%
PM Peak	1.5%	0.5%

Mississauga Road

	Compounded Annual Growth from Existing to 2028	
	NB	SB
AM Peak	1.0%	1.0%
PM Peak	1.0%	0.5%

Regards,

Tyler Xuereb
Transportation Planning Analyst
T 905-615-3200 ext.4783
Tyler.xuereb@mississauga.ca

City of Mississauga | Transportation and Works Department,
Infrastructure Planning and Engineering Services Division

Appendix H
Future (2028) Background Traffic Level of Service Calculations

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	1998	154	209	1113	116	83	188	224	210	271	105
Future Volume (vph)	114	1998	154	209	1113	116	83	188	224	210	271	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5085	1568	1787	5085	1468	1770	1827	1599	1736	1711	0
Flt Permitted	0.189			0.054			0.351			0.484		
Satd. Flow (perm)	356	5085	1568	102	5085	1468	654	1827	1599	884	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			94			126			195		13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%	1%	2%	10%	2%	4%	1%	4%	5%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	2172	167	227	1210	126	90	204	243	228	409	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	36.5	36.5	10.0	36.5	36.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	13.0	78.0	78.0	23.0	88.0	88.0	49.0	49.0	49.0	10.0	59.0	
Total Split (%)	8.1%	48.8%	48.8%	14.4%	55.0%	55.0%	30.6%	30.6%	30.6%	6.3%	36.9%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	83.4	70.6	70.6	95.3	79.5	79.5	41.5	41.5	41.5	56.1	51.6	
Actuated g/C Ratio	0.53	0.45	0.45	0.61	0.51	0.51	0.26	0.26	0.26	0.36	0.33	
v/c Ratio	0.45	0.95	0.22	0.88	0.47	0.16	0.52	0.42	0.43	0.65	0.72	
Control Delay	19.4	52.6	12.4	76.7	26.0	3.5	63.2	51.9	13.6	50.5	54.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.4	52.6	12.4	76.7	26.0	3.5	63.2	51.9	13.6	50.5	54.0	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D	B	E	C	A	E	D	B	D	D	
Approach Delay		48.2			31.5			36.5			52.7	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	16.6	254.6	14.0	57.2	93.8	0.0	26.1	57.4	12.4	57.2	118.3	
Queue Length 95th (m)	26.5	#280.2	30.4	#103.7	106.5	11.3	47.8	84.1	39.0	82.5	161.0	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	281	2312	764	276	2635	821	172	481	565	352	569	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.44	0.94	0.22	0.82	0.46	0.15	0.52	0.42	0.43	0.65	0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 157.4			
Natural Cycle: 135			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 42.5		Intersection LOS: D	
Intersection Capacity Utilization 139.8%		ICU Level of Service H	
Analysis Period (min) 15			

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

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W

3: Mississauga Rd & Eglinton Ave W

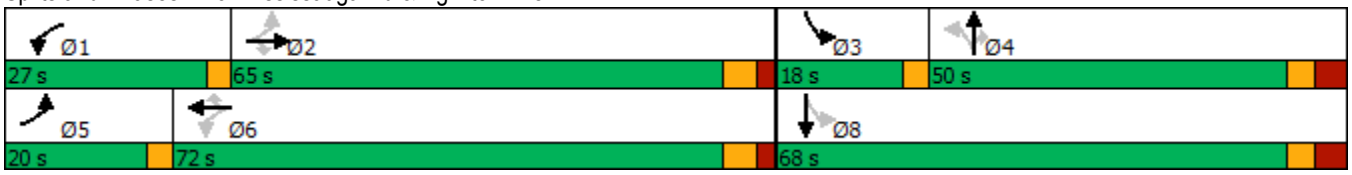
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1193	103	205	1504	194	117	310	257	162	219	114
Future Volume (vph)	140	1193	103	205	1504	194	117	310	257	162	219	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5136	1599	1805	5136	1583	1805	1881	1615	1752	1768	0
Flt Permitted	0.077			0.088			0.545			0.336		
Satd. Flow (perm)	145	5136	1599	167	5136	1583	1036	1881	1615	620	1768	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			92			148			136		19	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	0%	1%	0%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	1297	112	223	1635	211	127	337	279	176	362	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	43.5	43.5	10.0	43.5	43.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	20.0	65.0	65.0	27.0	72.0	72.0	50.0	50.0	50.0	18.0	68.0	
Total Split (%)	12.5%	40.6%	40.6%	16.9%	45.0%	45.0%	31.3%	31.3%	31.3%	11.3%	42.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	69.0	51.7	51.7	75.1	55.2	55.2	44.8	44.8	44.8	65.4	60.9	
Actuated g/C Ratio	0.47	0.35	0.35	0.51	0.38	0.38	0.30	0.30	0.30	0.44	0.41	
v/c Ratio	0.68	0.72	0.18	0.80	0.85	0.31	0.40	0.59	0.48	0.47	0.49	
Control Delay	47.5	44.0	9.7	54.4	46.9	11.1	49.0	51.1	25.7	31.8	34.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.5	44.0	9.7	54.4	46.9	11.1	49.0	51.1	25.7	31.8	34.5	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D	A	D	D	B	D	D	C	C	C	
Approach Delay		41.9			44.0			41.2			33.6	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	27.1	125.6	4.0	45.4	168.2	12.6	32.1	91.2	36.2	33.7	78.4	
Queue Length 95th (m)	54.8	152.5	18.8	77.5	192.1	32.4	59.1	139.0	72.1	58.3	123.2	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	261	2059	696	354	2303	791	315	572	586	392	743	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.63	0.16	0.63	0.71	0.27	0.40	0.59	0.48	0.45	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 41.8		Intersection LOS: D	
Intersection Capacity Utilization 126.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W



Appendix I
ITE 11th Edition (Trip Generation Calculations)

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
220

LAND USE GROUP:
(200-299) Residential

LAND USE :
220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

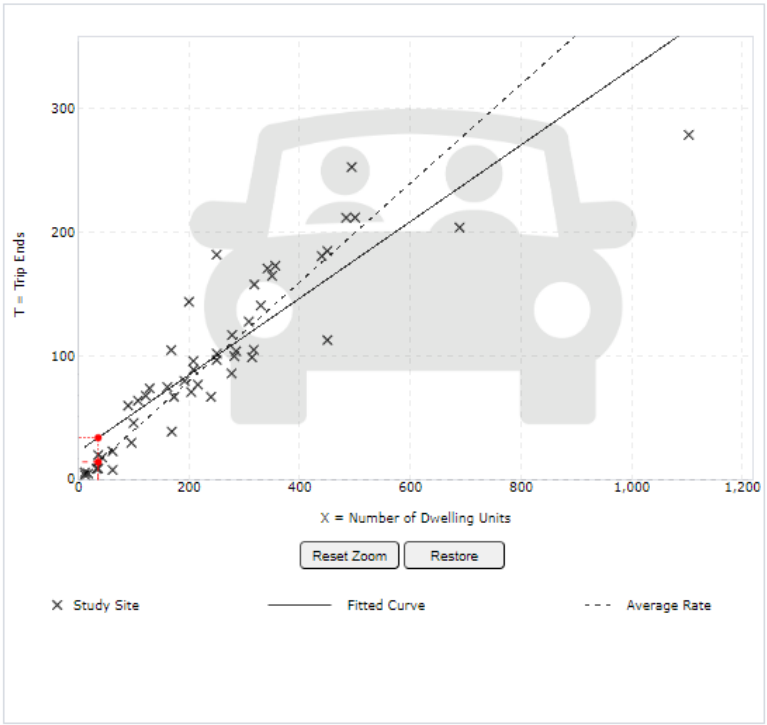
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffi

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
36 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (Low-Rise) - Not Close to Rail Transit (220) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
49

Avg. Num. of Dwelling Units:
249

Average Rate:
0.40

Range of Rates:
0.13 - 0.73

Standard Deviation:
0.12

Fitted Curve Equation:
T = 0.31(X) + 22.85

R^2:
0.79

Directional Distribution:
24% entering, 76% exiting

Calculated Trip Ends:
Average Rate: 14 (Total), 3 (Entry), 11 (Exit)
Fitted Curve: 34 (Total), 8 (Entry), 26 (Exit)

Query | Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
220

LAND USE GROUP:
(200-299) Residential

LAND USE :
220 - Multifamily Housing (Low-Rise)

LAND USE SUBCATEGORY:
Not Close to Rail Transit

SETTING/LOCATION:
General Urban/Suburban

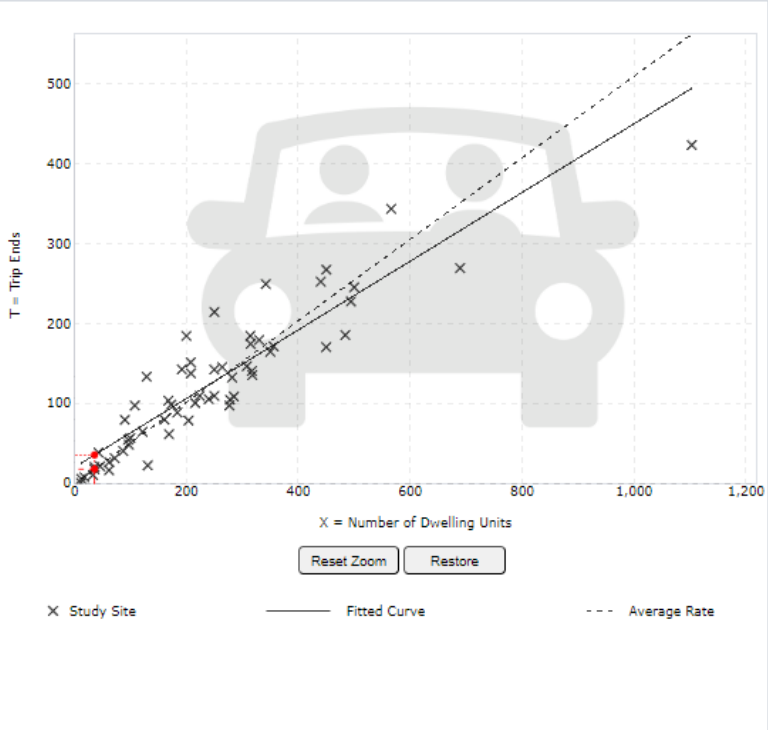
INDEPENDENT VARIABLE (IV):
Dwelling Units

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffi

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
36 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:
Multifamily Housing (Low-Rise) - Not Close to Rail Transit (220) Click for Description and Data Plots

Independent Variable:
Dwelling Units

Time Period:
Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
59

Avg. Num. of Dwelling Units:
241

Average Rate:
0.51

Range of Rates:
0.08 - 1.04

Standard Deviation:
0.15

Fitted Curve Equation:
T = 0.43(X) + 20.55

R^2:
0.84

Directional Distribution:
63% entering, 37% exiting

Calculated Trip Ends:
Average Rate: 18 (Total), 12 (Entry), 6 (Exit)
Fitted Curve: 36 (Total), 23 (Entry), 13 (Exit)

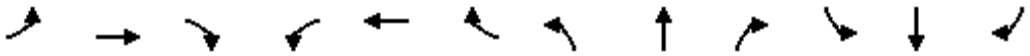
Appendix J
2016 TTS Data Trip Distribution

Column1	Column2	Column3	Column4	Column5	Column6	Column7	Column8	Column9	Column10	Column11	Column12	Column13	Column14	Column15
Sat Dec 09 2023 13:50:31 GMT-0500 (Eastern Standard Time) - Run Time: 3421ms														
Cross Tabulation Query Form - Trip - 2016 v1.1														
Row: 2006 GTA zone of origin - gta06_orig														
Column: Planning district of destination - pd_dest														
Filters:														
(2006 GTA zone of origin - gta06_orig In 3684														
and														
Start time of trip - start_time In 600-859														
and														
Trip purpose of origin - purp_orig In H	)													
Trip 2016														
Table:														
	PD 1 of Toronto	PD 7 of Toronto	PD 8 of Toronto	PD 9 of Toronto	PD 10 of Toronto	King	Vaughan	Brampton	Mississauga	Oakville	Burlington	Hamilton	Waterloo	
3684	157	21	20	35	33	29	31	49	712	63	64	21	8	1243
to	E 50 S 50	S 100	E 50 S 50	E 100	E 100	E 100	E 100	W 33 N 33 E 33	25 N/S/E/W	W 50 S 50	W 100	w 100	W 50 N 50	
from	S 50 W 50	S 100	S 50 W 50	S 100	S 33 N 33 W 33	w 100	w 100	W 33 N 33 E 33	25 N/S/E/W	W 50 S 50	W 50 S 50	w 100	w 100	

to				
	N	198	16%	15%
	S	319	26%	30%
	E	411	33%	30%
	W	315	25%	25%
		1243	100%	100%
from	N	205	17%	15%
	S	397	32%	30%
	E	194	16%	15%
	W	446	36%	40%
		1242	100%	100%

Appendix K
Future (2028) Total Traffic Level of Service Calculations

3: Mississauga Rd & Eglinton Ave W



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	1998	155	210	1113	116	86	190	227	210	271	105
Future Volume (vph)	114	1998	155	210	1113	116	86	190	227	210	271	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5085	1568	1787	5085	1468	1770	1827	1599	1736	1711	0
Flt Permitted	0.190			0.054			0.351			0.479		
Satd. Flow (perm)	357	5085	1568	102	5085	1468	654	1827	1599	875	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			94			126			195		13	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	3%	1%	2%	10%	2%	4%	1%	4%	5%	10%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	124	2172	168	228	1210	126	93	207	247	228	409	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	36.5	36.5	10.0	36.5	36.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	13.0	78.0	78.0	23.0	88.0	88.0	49.0	49.0	49.0	10.0	59.0	
Total Split (%)	8.1%	48.8%	48.8%	14.4%	55.0%	55.0%	30.6%	30.6%	30.6%	6.3%	36.9%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	83.4	70.6	70.6	95.4	79.6	79.6	41.5	41.5	41.5	56.1	51.6	
Actuated g/C Ratio	0.53	0.45	0.45	0.61	0.51	0.51	0.26	0.26	0.26	0.36	0.33	
v/c Ratio	0.45	0.95	0.22	0.88	0.47	0.16	0.54	0.43	0.44	0.65	0.72	
Control Delay	19.4	52.7	12.5	76.9	26.0	3.5	64.2	52.1	14.2	50.9	54.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	19.4	52.7	12.5	76.9	26.0	3.5	64.2	52.1	14.2	50.9	54.0	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D	B	E	C	A	E	D	B	D	D	
Approach Delay		48.3			31.6			37.0			52.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	16.6	254.6	14.2	57.5	93.8	0.0	27.1	58.4	13.5	57.2	118.3	
Queue Length 95th (m)	26.5	#280.2	30.6	#103.7	106.5	11.3	49.1	85.1	40.3	82.5	161.0	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	281	2311	763	276	2634	821	172	481	565	349	568	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.44	0.94	0.22	0.83	0.46	0.15	0.54	0.43	0.44	0.65	0.72	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 157.5			
Natural Cycle: 135			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.95			
Intersection Signal Delay: 42.7		Intersection LOS: D	
Intersection Capacity Utilization 139.8%		ICU Level of Service H	
Analysis Period (min) 15			

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

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W

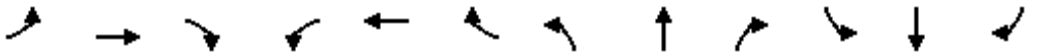
7: Mississauga Rd & Site Access

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	8	495	1	2	634
Future Volume (Veh/h)	3	8	495	1	2	634
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	9	538	1	2	689
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						230
pX, platoon unblocked	0.77					
vC, conflicting volume	1232	538			539	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1151	538			539	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	98			100	
cM capacity (veh/h)	168	543			1029	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	12	539	691
Volume Left	3	0	2
Volume Right	9	1	0
cSH	349	1700	1029
Volume to Capacity	0.03	0.32	0.00
Queue Length 95th (m)	0.9	0.0	0.0
Control Delay (s)	15.7	0.0	0.1
Lane LOS	C		A
Approach Delay (s)	15.7	0.0	0.1
Approach LOS	C		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	45.0%	ICU Level of Service	A
Analysis Period (min)	15		

3: Mississauga Rd & Eglinton Ave W



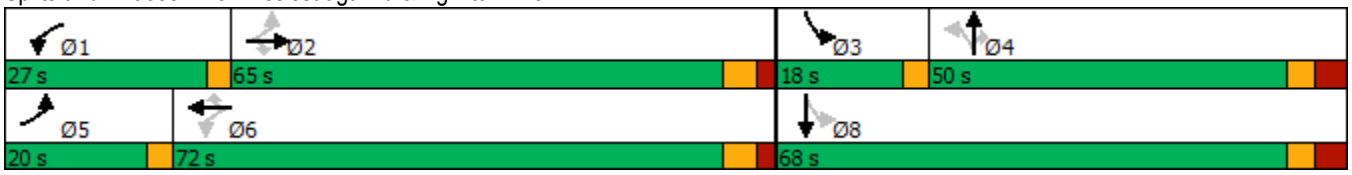
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1193	107	207	1504	194	119	311	258	162	221	114
Future Volume (vph)	140	1193	107	207	1504	194	119	311	258	162	221	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (m)	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Grade (%)		0%			0%			0%			0%	
Storage Length (m)	95.0		0.0	65.0		0.0	110.0		35.0	0.0		0.0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (m)	7.5			7.5			7.5			7.5		
Satd. Flow (prot)	1787	5136	1599	1805	5136	1583	1805	1881	1615	1752	1768	0
Flt Permitted	0.078			0.088			0.544			0.335		
Satd. Flow (perm)	147	5136	1599	167	5136	1583	1034	1881	1615	618	1768	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			95			148			136		19	
Link Speed (k/h)		60			60			50			50	
Link Distance (m)		188.0			178.1			229.5			139.1	
Travel Time (s)		11.3			10.7			16.5			10.0	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	1%	1%	0%	1%	2%	0%	1%	0%	3%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	152	1297	116	225	1635	211	129	338	280	176	364	0
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	
Protected Phases	5	2		1	6			4		3	8	
Permitted Phases	2		2	6		6	4		4	8		
Detector Phase	5	2	2	1	6	6	4	4	4	3	8	
Switch Phase												
Minimum Initial (s)	7.0	30.0	30.0	7.0	30.0	30.0	41.0	41.0	41.0	7.0	41.0	
Minimum Split (s)	10.0	43.5	43.5	10.0	43.5	43.5	48.5	48.5	48.5	10.0	48.5	
Total Split (s)	20.0	65.0	65.0	27.0	72.0	72.0	50.0	50.0	50.0	18.0	68.0	
Total Split (%)	12.5%	40.6%	40.6%	16.9%	45.0%	45.0%	31.3%	31.3%	31.3%	11.3%	42.5%	
Yellow Time (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.5	3.5	3.5	3.0	3.5	
All-Red Time (s)	0.0	2.5	2.5	0.0	2.5	2.5	4.0	4.0	4.0	0.0	4.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	3.0	6.5	6.5	3.0	6.5	6.5	7.5	7.5	7.5	3.0	7.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lag	Lag	Lead		
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		
Recall Mode	None	None	None	None	None	None	Max	Max	Max	None	Max	
Act Effct Green (s)	68.9	51.5	51.5	75.2	55.2	55.2	44.8	44.8	44.8	65.4	60.9	
Actuated g/C Ratio	0.47	0.35	0.35	0.51	0.38	0.38	0.30	0.30	0.30	0.44	0.41	
v/c Ratio	0.68	0.72	0.19	0.80	0.85	0.31	0.41	0.59	0.48	0.47	0.49	
Control Delay	47.0	44.2	9.7	54.7	46.9	11.1	49.2	51.2	25.8	31.8	34.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	47.0	44.2	9.7	54.7	46.9	11.1	49.2	51.2	25.8	31.8	34.5	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D	A	D	D	B	D	D	C	C	C	
Approach Delay		41.9			44.1			41.3			33.7	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	26.9	126.0	4.2	46.0	168.2	12.6	32.7	91.4	36.5	33.7	79.0	
Queue Length 95th (m)	54.5	152.5	19.1	78.2	192.1	32.4	59.9	139.4	72.8	58.3	124.3	
Internal Link Dist (m)		164.0			154.1			205.5			115.1	
Turn Bay Length (m)	95.0			65.0			110.0		35.0			
Base Capacity (vph)	262	2057	697	354	2303	791	314	572	586	391	743	
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.58	0.63	0.17	0.64	0.71	0.27	0.41	0.59	0.48	0.45	0.49	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 147			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 41.8		Intersection LOS: D	
Intersection Capacity Utilization 126.4%		ICU Level of Service H	
Analysis Period (min) 15			

Splits and Phases: 3: Mississauga Rd & Eglinton Ave W



7: Mississauga Rd & Site Access

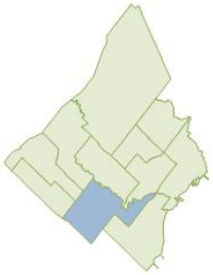
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	4	684	4	8	527
Future Volume (Veh/h)	2	4	684	4	8	527
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	4	743	4	9	573
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						230
pX, platoon unblocked	0.83					
vC, conflicting volume	1336	745			747	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1302	745			747	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	99			99	
cM capacity (veh/h)	145	414			861	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	747	582
Volume Left	2	0	9
Volume Right	4	4	0
cSH	256	1700	861
Volume to Capacity	0.02	0.44	0.01
Queue Length 95th (m)	0.6	0.0	0.3
Control Delay (s)	19.4	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	19.4	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix L
2016 TTS Data (City of Markham - Ward 8)

CITY OF MISSISSAUGA
WARD 8



WARD 8

HOUSEHOLD CHARACTERISTICS

Households	Dwelling Type			Household Size					Number of Available Vehicles					Household Averages				
	House	Townhouse	Apartment	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
23,000	56%	20%	24%	17%	28%	20%	20%	15%	6%	33%	44%	12%	5%	2.9	1.5	2.1	1.8	5.9

POPULATION CHARACTERISTICS

Population	Age							Daily Trips per Person (age 11+)	Daily Work Trips per Worker	Population	Employment Type			Student	Licensed	Transit Pass
	0-10	11-15	16-25	26-45	46-64	65+	Median				Full Time	Part Time	At Home			
										Male						
										32,700	43%	7%	4%	24%	73%	20%
										Female						
67,700	12%	6%	14%	24%	29%	16%	41.3	2.3	0.73	35,000	32%	9%	3%	22%	67%	21%

TRIPS MADE BY RESIDENTS OF CITY OF MISSISSAUGA - WARD 8

Time Period	Trips	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	33,600	24.8%	45%	21%	26%	8%	67%	13%	7%	4%	5%	5%	8.2	2.8	6.8	27.7
24 Hrs	135,500		31%	13%	43%	13%	70%	14%	7%	3%	4%	3%	6.6	4.8	6.5	27.8

TRIPS MADE TO CITY OF MISSISSAUGA - WARD 8 - BY RESIDENTS OF THE TTS AREA

Time Period	Trips	% 24 hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	33,300	23%	45%	23%	8%	24%	69%	13%	10%	0%	5%	3%	7.6	3.8	7.2	22.4
24 Hrs	144,900		16%	9%	40%	34%	70%	14%	9%	1%	4%	2%	6.5	5.2	6.6	27.6

Appendix M
2016 TTS Data Vehicle Ownership Data for "Townhouse"

Column1	Column2
Sun Dec 10 2023 11:25:03 GMT-0500 (Eastern Standard Time) - Run Time: 652ms	
Cross Tabulation Query Form - Household - 2016 v1.1	
Row: No. of vehicles in household - n_vehicle	
Column: Type of dwelling unit - dwell_type	
Filters:	
(2006 GTA zone of household - gta06_hhld In 3684)	
and	
Type of dwelling unit - dwell_type In 3	
and	
No. of drivers in household - n_licence In 0-99	
Household 2016	
Table:	
	Townhouse
1	148
2	162
3	18

Appendix N
Site ITE 5th Edition Parking Generation – General Urban/Suburban

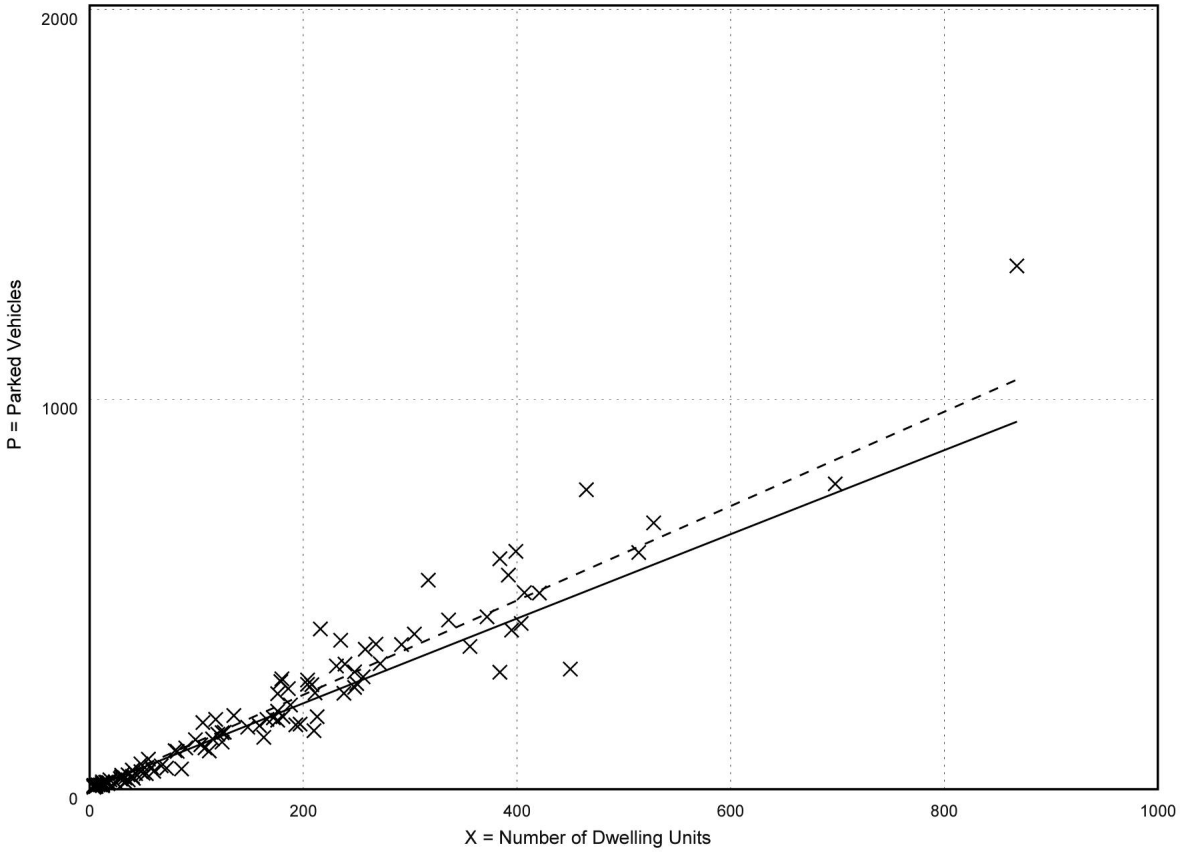
Multifamily Housing (Low-Rise)
(220)

Peak Period Parking Demand vs: Dwelling Units
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban (no nearby rail transit)
Peak Period of Parking Demand: 11:00 p.m. - 6:00 a.m.
Number of Studies: 119
Avg. Num. of Dwelling Units: 156

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.21	0.58 - 2.50	1.03 / 1.52	1.16 - 1.26	0.27 (22%)

Data Plot and Equation



Fitted Curve Equation: Ln(P) = 0.99 Ln(X) + 0.15

R^2= 0.96