March 25, 2025

Mississauga Road Properties Inc.
1660 North Service Rd E, Suite 109B
Oakville ON L6H 7G3

URBANTRANS
Engineering Solutions Inc.

UrbanTrans Engineering Solutions Inc.
9275 Markham Road, Suite 146
Markham ON L6E 0H9
Tel: 437-236-7085
annosan@uteng.ca

RE: Traffic Impact Study - Response to Comments
Proposed Residential Development
1786 Polaris Way, Mississauga ON
Reference No.: UT-23-065

UrbanTrans Engineering Solutions Inc. acknowledges receipt of City of Mississauga Transportation Planning comments dated March 5, 2025, respectively (see **Appendix A**), with respect to our Traffic Impact Study (TIS) dated November 25, 2024, for a proposed residential development in support of an Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) 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 B**, it is our understanding that the development proposal involves four (4) semi-detached homes and 32 three-storey townhomes totaling 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.

Based on the comments received from City of Mississauga Transportation Staff, our responses in the context of the site plan are addressed as follows:

Transportation Planning

1. Please incorporate the anticipated background development from the property to the north (1775 Thorny Brae Place) into your analysis. This will help ensure a comprehensive assessment of future traffic conditions.

Response:

Acknowledge. The site traffic from 1775 Thorny Brae Place has been incorporated into the background development (provided in **Appendix C**) and included in the total traffic volume at the intersection of Mississauga Road and Eglinton Avenue West. In addition, the Peak Hour Factor (PDF) is set to 0.92 in the synchro report for existing, future background and future total traffic conditions.

Existing (2023) Traffic Operations

The estimated existing (2028) traffic volumes are illustrated in **Figure 1**. The detailed results of the analysis are provided in **Appendix D** and summarized in **Table 1**.

Table 1: 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 Avenue West & Mississauga Road (Signalized)	**OVERALL**	53.6	-	1.17	D	41.6	-	0.99	D
	EBL	25.3	32.6	C	0.48	66	71.5	0.83	E
	EBT	70.5	301.8	E	1.02	40.4	128.9	0.63	D
	EBR	14.8	33.7	B	0.24	6.3	14.4	0.17	A
	WBL	156.6	132.8	F	1.17	84	97.8	0.99	F
	WBT	35.5	118.9	D	0.52	47.9	185.7	0.84	D
	WBR	5	13.8	A	0.18	10.9	31.6	0.31	B
	NBL	47.1	41.1	D	0.32	43.3	55.4	0.36	D
	NBT	45.8	75.6	D	0.35	44.5	123.6	0.5	D
	NBR	10	32.3	B	0.39	20.2	62.3	0.43	C
	SBL	33.9	71.6	C	0.48	27.6	54.3	0.41	C
	SBTR	39.2	133.8	D	0.57	30.6	113.2	0.45	C

The intersection capacity analysis indicates that under existing 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 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 morning and afternoon peak hour period and higher delay and v/c ratio under the existing traffic signal timing plan.

Future Background (2028) Traffic Operations

The estimated future (2028) background traffic volumes are illustrated in **Figure 2**. The detailed results of the analysis are provided in **Appendix E** and summarized in **Table 2.**

Table 2: Future (2028) Background 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 Avenue West & Mississauga Road (Signalized)	OVERALL	43.3	-	0.96	D	42.1	-	0.85	D
	EBL	19.4	26.5	0.45	B	47.7	54.5	0.69	D
	EBT	53.2	280.2	0.96	D	44.7	152.5	0.73	D
	EBR	12.5	31.4	0.23	B	9.3	21.5	0.23	A
	WBL	79.1	110	0.9	E	58.1	82.9	0.82	E
	WBT	25.9	106.5	0.47	C	46.8	192.1	0.85	D
	WBR	3.5	11.3	0.16	A	11	32.4	0.31	B
	NBL	71.7	60.3	0.64	E	51	67.4	0.46	D
	NBT	52.8	88.4	0.45	D	51.6	142.8	0.6	D
	NBR	15.6	45.3	0.47	B	26.2	74.8	0.49	C
	SBL	52.2	82.5	0.67	D	32	58.3	0.48	C
	SBTR	54.7	162.5	0.73	D	35	128.7	0.5	D

Note: Green column details optimized timing results

As indicated in **Table 2**, 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.

Future Total (2028) Conditions

The estimated future (2028) total traffic volumes are illustrated in **Figure 3**. The detailed results of the analysis are provided in **Appendix F** and summarized in **Table 3**.

Table 3: Future (2028) Background 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 Avenue West & Mississauga Road (Signalized)	OVERALL	43.4	-	0.96	D	42.2	-	0.85	D
	EBL	19.4	26.5	0.45	B	47.2	54.1	0.68	D
	EBT	53.3	280.2	0.96	D	44.9	152.5	0.73	D
	EBR	12.5	31.4	0.23	B	9.3	22	0.23	A
	WBL	79.3	110	0.9	E	58.5	83.7	0.83	E
	WBT	25.9	106.5	0.47	C	46.8	192.1	0.85	D
	WBR	3.5	11.3	0.16	A	11	32.4	0.31	B
	NBL	73.4	63.2	0.66	E	51.3	68.7	0.47	D
	NBT	52.9	89.3	0.45	D	51.6	143.2	0.6	D
	NBR	15.9	46.1	0.47	B	26.3	75.2	0.49	C
	SBL	52.5	82.5	0.67	D	32	58.3	0.48	C
	SBTR	54.7	162.5	0.73	D	35.1	129	0.51	D
Mississauga Rd & Site Access (Unsignalized)	WBLR	16.1	0.9	0.04	C	20	0.6	0.02	C
	SBLT	16.1	-	0.04	C	20	0.6	0.02	C

The intersection capacity analysis indicates that under the future total traffic conditions and the recommended signal timings provided in **Table 3**, 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.

2. Synchro report as per City's TIS guidelines for Appendix F: Existing Level of Service Calculations.

Response:

Please refer to **Appendix D – Existing (2023) Traffic Level of Service Calculations, Appendix E – Future (2028) Background Traffic Level of Service Calculations** and **Appendix F – Future (2028) Total Traffic Level of Service Calculations.**

3. Site Access Compliance: Confirm that the proposed site access along Mississauga Road adheres to all TAC standards (e.g., corner clearances, vehicular and pedestrian sight lines, proximity/alignment to other driveways/roads, etc.). Any deviations must be technically justified from a traffic safety and operations perspective.

Response:

Corner Clearance to Accesses or Public Lanes at Major Intersection

Figure 8.8.2 Suggest Minimum Corner Clearances to Accesses or Public Lanes at Major Intersections in the Transportation Association of Canada Geometric Design Guide for Canadian Road (GDGCR)

2017 GDGCR outlines minimum recommended corner clearances to accesses from intersections. Mississauga is classified as a "minor collector" roadway. The recommended minimum corner clearance from signalized intersection for the site access is 55 m and a minimum of 25 m from a stop-controlled intersection.

The proposed site access location results in a corner clearance of approximately 195m from the signalized intersection at Eglinton Avenue West; and approximately 140 m from the stop-controlled intersection at Thorny Brae Place. Therefore, the proposed site access meets the minimum recommended intersection corner clearance and spacing requirements outlined in the TAC GDGCR.

Google Street View and Good Earth have confirmed that there are no obstructions, such as vegetation or noise walls, to the north and south of the driveway. As a result, vehicles exiting the proposed driveway will have an adequate sight line to observe pedestrians and traffic on Mississauga Road.

4. Clear Throat Length: Please confirm that the minimum clear throat length at the site access meets TAC guidelines to prevent vehicle queuing and conflicts at the entrance. Provide a diagram illustrating queue storage and site circulation impacts during peak hours.

Response:

The clear throat length or set back distance is used to prevent blocking on-site circulation roads and queueing of entering vehicles. *Table 8.9.3* in the GDGCR provides a guideline for suggested minimum clear throat lengths for the various development. **Table 4** highlights the recommended values or the minimum throat length for apartments with less than 100 units (similar land use as a townhouse development) connecting to a collector road in comparison to the existing road conditions. A minimum clear throat length of 15m is recommended for apartments with less than 100 units. The site driveway throat length was measured to be 54 m, which satisfied this requirement.

Table 4: Throat Length

Measurement	TAC Guide Distance	Driveway Measurement (m)	Requirement Satisfied
Driveway Throat Length for Apartment with <100 units connecting to Arterial Road	15	54	Yes

Appendix G illustrates a comparative analysis of throat length and 95th percentile queue lengths during afternoon peak periods, as projected by Synchro simulations for the future (2028) total condition. The analysis demonstrates that the provided clear throat length of 54 meters is more than sufficient to accommodate the anticipated 95th percentile queue length of 0.6 meters at the site access point. This indicates that the designed throat length adequately addresses potential queuing concerns during peak afternoon traffic periods in the projected future scenario.

Appendix F compares the lane storage and 95th percentile queue lengths during the afternoon peak periods in the future (2028) background and the future (2028) total traffic conditions. The analysis demonstrated that the 95th percentile queues at the total future (2028) total traffic conditions are similar to the 95th percentile queues at the future (2028) background traffic conditions. The traffic generated by the subject site will have a negligible effect on the operation of all study intersections and roadways.

5. Sight Line Analysis: Conduct a detailed sight line analysis at the proposed full-movement access on Mississauga Road. Verify that sight distances are unobstructed, considering adjacent driveways and potential visual obstructions (e.g., trees, noise wall etc.),

6. Sight Distance Evaluation: Ensure that the proposed access meets TAC stopping sight distance (SSD) and intersection sight distance (ISD) requirements based on posted speed limits and observed operating speeds on Mississauga Road. If deficiencies are identified, recommend mitigation measures such as access relocation, restricted turning movements, or geometric adjustments.

Response 5 & 6:

Sight Distance Evaluation

Currently the posted speed limit on Mississauga Road is 50 km/h. for the purpose of sight distance assessment, a design speed of 70 km/h under stop control will be utilized. Sight distance requirements will be evaluated for the following movements:

1. Westbound left turn vehicles from Site Access to Mississauga Road
2. Westbound right turn vehicles from Site Access to Mississauga Road
3. Southbound left turn vehicles from Mississauga Road to Site Access

These assessments will consider both approaching and departing distances for passengers vehicles from a stopped position.

Stopping Sight Distance

Stopping Sight distance (SSD) is a near worst-case distance where a vehicle driver must be able to see in order to have room to stop before colliding with something in the roadway such as a pedestrian in crosswalk, a stopped vehicle, an intersection ahead and/or road debris.

Based on *Transportation Association of Canada's (TAC 2017) Geometric Design Guide for Canadian Roads Section 2.4.3.3* states the driver eye height of 1.08 m should be applied, and *Section 2.5.2.1*, target object height of 0.6 m for vehicle tail lights or brake light can be used. As such, these values (1.08 m and 0.6 m) have been used in the *2017 TAC* to determine stopping sight distance requirement outlined in *Table 2.5.2*. Based on TAC guidelines, road grades less than 3% can be considered to be level grade for the purposes of its impact on braking distance which is factored is stopping sight distance. Furthermore, brake distance is predicated on a time of 2.5 seconds and deceleration rate of 3.4 m/s^2 is used to determine calculated sight distance. As a result, the

minimum stopping sight distance for a design speed of 70 km/h on level grade is 105 m based on *Table 2.5.2* of the TAC Design Guide.

Table 5: SSD Assessment at Mississauga Road and Site Access

Intersection Movement	Approach	Required	Achieved	Difference
Southbound Left	North	105m	250m	**145m**
Northbound Right	South	105m	250m	**145m**

Table 5 indicates that the stopping sight distance achieves an excess of 145 m in distances for the northbound right and southbound left turning movements.

Given the information summarized above, it is our opinion that a driver approaching from the north with standard eye height has sufficient time to stop safely and is supportable from a traffic engineering and stopping sight distance perspective.

Departure Sight Distance

Departure Sight distance (DSD) is defined as the sight distance available from a point where vehicles are stopped before the intersecting road, where drivers are looking left and right along the major roadway, before entering or crossing the major road.

Departure Sight distance is considered for each of the three basic maneuvers, left turn, right turn and through for a stopped vehicle at an intersection.

Based on *Transportation Association of Canada's (TAC 2017) Geometric Design Guide for Canadian Roads Section 9.9.2.2* departure site triangles the traffic control Case B1- Left turn from the Minor Road guidelines was applied to determine the minimum/required intersection sight distance for left turn from stop sign controlled intersection. As such, based on *Table 9.9.4*, the minimum departure sight distance for a passenger car turning left on a two-lane road with no median, a grade less than 3% and a design speed of 60 km/h is 130 m.

Actual sight distances for southbound traffic approaching Mississauga Road on Site Access have been determined through Google Streetview. Actual sight distance on site was conducted at 4.4 m (the Vertex) from the edge of the major-road travelled way which represents the typical position of the minor-road driver's eye when a vehicle is stopped relatively close to the major road.

The departure sight distances are illustrated in **Figure 4** results are summarized in **Table 6**.

Table 6: DSD Assessment at Oriole Drive & Sluse Road Intersection

Intersection Movement	Approach from	Required	Achieved	Difference
Westbound Left	North	150m	250m	**100m**
	South	150m	250m	**100m**
Westbound Right	South	130m	250m	**120m**

Table 6 indicates that the departure sight distance achieves an excess of 100m and 120m for the northbound and southbound approaches.

Given the information summarized above, it is our opinion that vehicles can sufficiently complete a right turn and left turns from proposed future driveway location and is supportable from a traffic engineering and departure sight distance perspective.

7. The TIS shall include a section in the report 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 that are related to traffic shall also be addressed in this section.

Response:

The proposed development is expected to generate a manageable volume of new site trips to the adjacent road network and study intersections, as detailed in **Figure 5 –** Site Traffic. The traffic generated by the subject site will have a minimal impact on the operation of all study intersections and roadways.

Table 7 summarizes the changes in 95th, queue lengths of the critical movements at the major signalized intersection during the afternoon peak period in Synchro outputs under future (2028) background and future (2028) total traffic conditions. The detailed Synchro results of the analysis for all movements for the signalized intersection are provided in **Appendix E** and **Appendix F**.

Table 7: 95th Percentile Queue Lengths (Synchro)

Intersection	Movements	Synchro Output 95th Queue (m)
Future (2028) Background Traffic Conditions		
Eglinton Avenue West and Mississauga Road (Signalized)	NBL NBT NBR	67.4 142.8 74.8
Future (2028) Total Traffic Conditions		
Eglinton Avenue West and Mississauga Road (Signalized)	NBL NBT NBR	68.7 143.2 75.2

As indicated in **Table 7**, the longest 95th percentile queue for the northbound approach movement including northbound left-turn, through and right-turn at the intersection of Eglinton Avenue West and Mississauga Road is 55.4, 123.6 and 62.3 m, respectively during the afternoon peak hour. Therefore, the proposed full moves site access located approximately 195 m south from the stop line on Mississauga Road is not expected to be blocked by the north traffic queues at the intersection of Eglinton Avenue West and Mississauga Road.

As previously mentioned, the proposed development site traffic adds negligible delay to the overall intersection operations. **Table 8** 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 8: Future (2028) Background vs Future (2028) Total Level of Services Comparison

Intersection	Weekday AM Peak Hour				Weekday PM Peak Hour		
	Movement	Control Delay (s)	95th Queue (m)	V/C	Control Delay (s)	95th Queue (m)	V/C
Eglinton Avenue West & Mississauga Road (Signalized)	OVERALL	0.1	-	<0.01	0.1	-	<0.01
	EBL	-	-	<0.01	-0.5	-0.4	-0.01
	EBT	0.1	-	<0.01	0.2	-	<0.01
	EBR	-	-	<0.01	-	0.5	<0.01
	WBL	0.2	-	<0.01	0.4	0.8	0.01
	WBT	-	-	<0.01	-	-	<0.01
	WBR	-	-	<0.01	-	-	<0.01
	NBL	1.7	-	0.02	0.3	1.3	0.01
	NBT	0.1	0.9	<0.01	-	0.4	<0.01
	NBR	0.3	0.8	<0.01	0.1	0.4	<0.01
	SBL	0.3	-	<0.01	-	-	<0.01
	SBTR	-	-	<0.01	0.1	0.3	0.01

Note: Green column details optimized timing results

As indicated in **Table 8**, 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.

8. Considering the parking deficiency will have an impact on visitor parking spaces, they would like a letter focusing on rationalizing the reduction from a visitor parking spaces standpoint.

Following consultations with City Staff, it has been confirmed that a proxy study is not required at this time. A review of the development requirements has determined that 9 visitor parking spaces are needed, based on a calculation of 0.25 spaces per residential unit.

The current proposal includes 5 visitor parking spaces, resulting in a shortfall of 4 spaces. As noted, City's Transportation Staff has affirmed that a proxy survey is unnecessary to address this shortfall.

It is important to highlight that Transportation Demand Management (TDM) measures have already been incorporated into the development plan. Given the relatively minor nature of the deficiency (4 spaces) and the provision of 2 parking spaces per residential unit, we respectfully request the City's approval and processing of this matter through a site-specific amendment to the municipal by-law.

We trust the enclosed Traffic Impact Study – Response to Comments complies 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

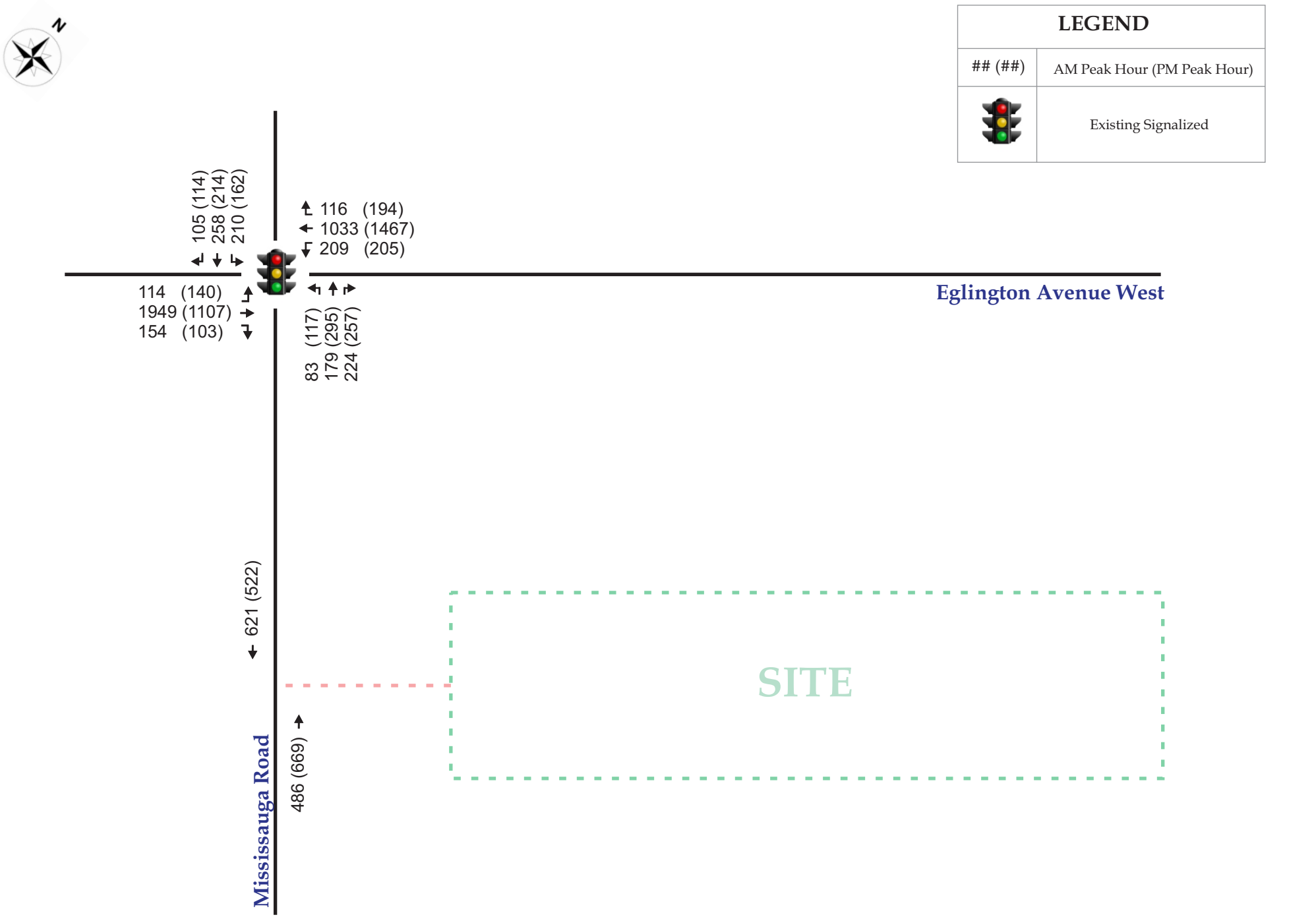
Annosan Srikantha, P.Eng.
President

DISCLAIMER

This document entitled '1786 Polaris Way – Traffic Impact Study – Response To Comments' 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

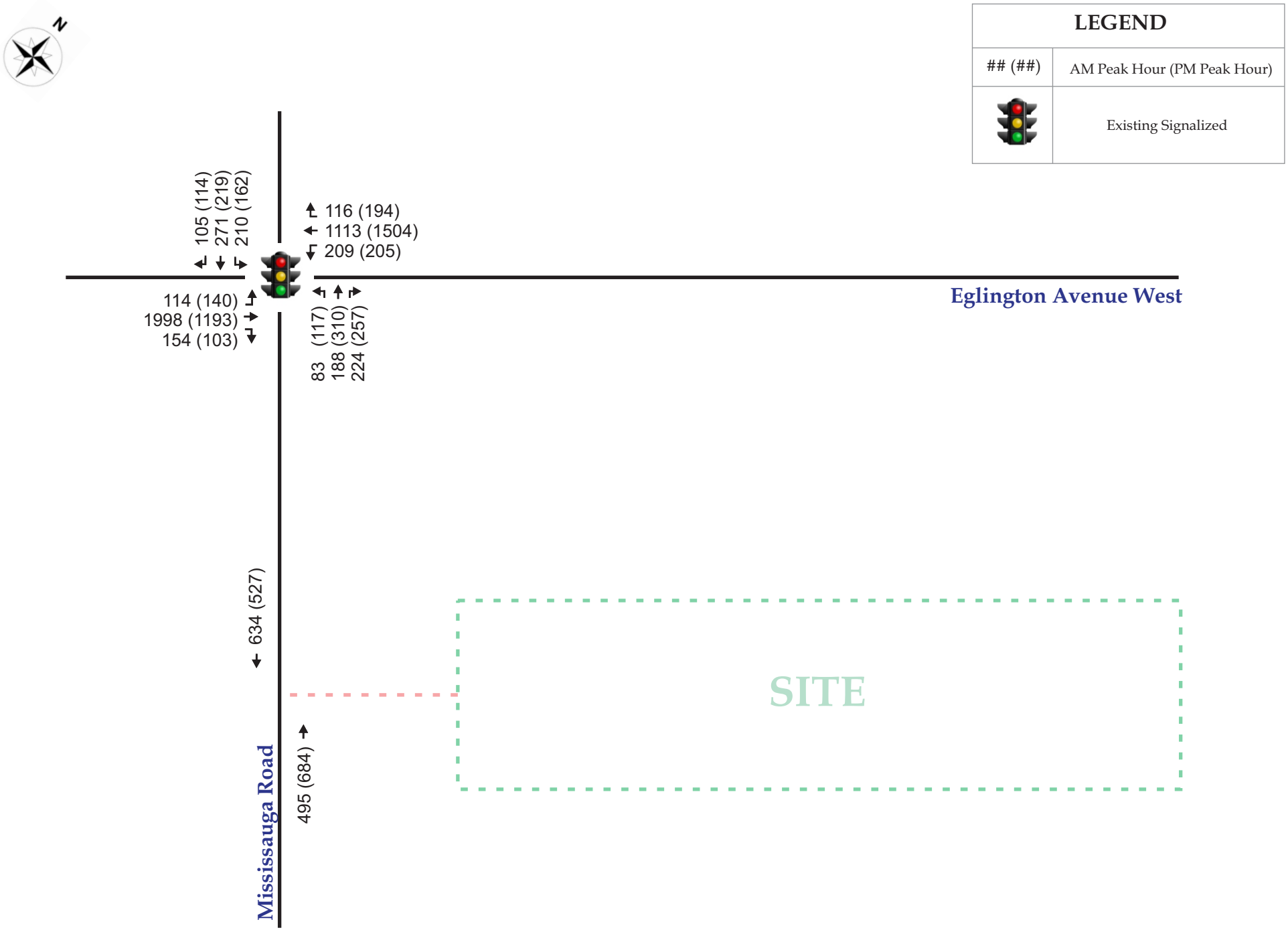
Revision	Date	Identification	Description
0	November 25, 2024	Final Report	Final Submission
1	March 25, 2025	Response To Comments	First Submission



URBANTRANS Engineering Solutions Inc.

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

Figure 1 - Existing (2023) Traffic Volumes



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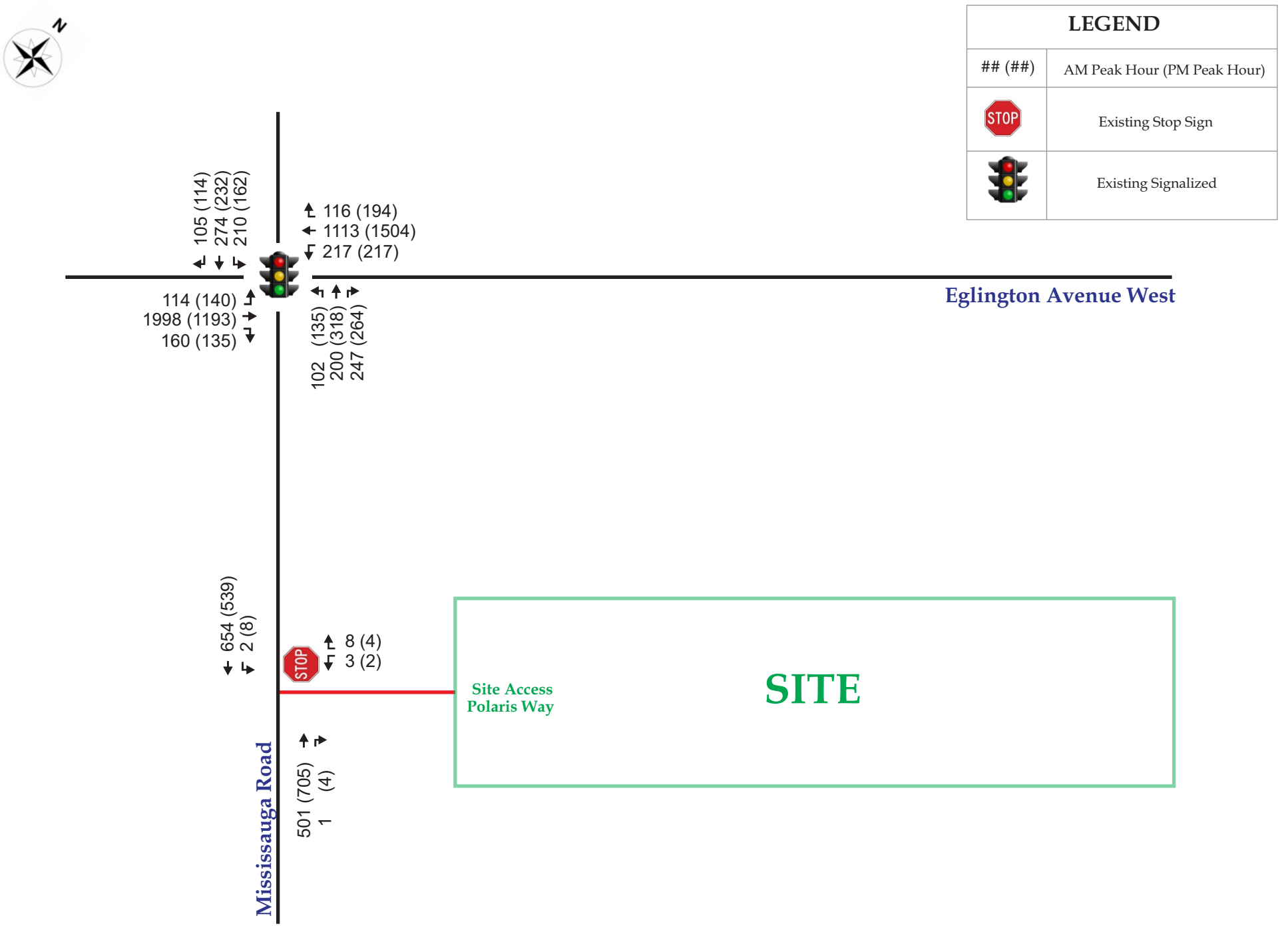
1786 Polaris Way, City of Mississauga ON
Project No. UT-23-065
December 2023

Figure 2 - Future (2028) Background Traffic Volumes



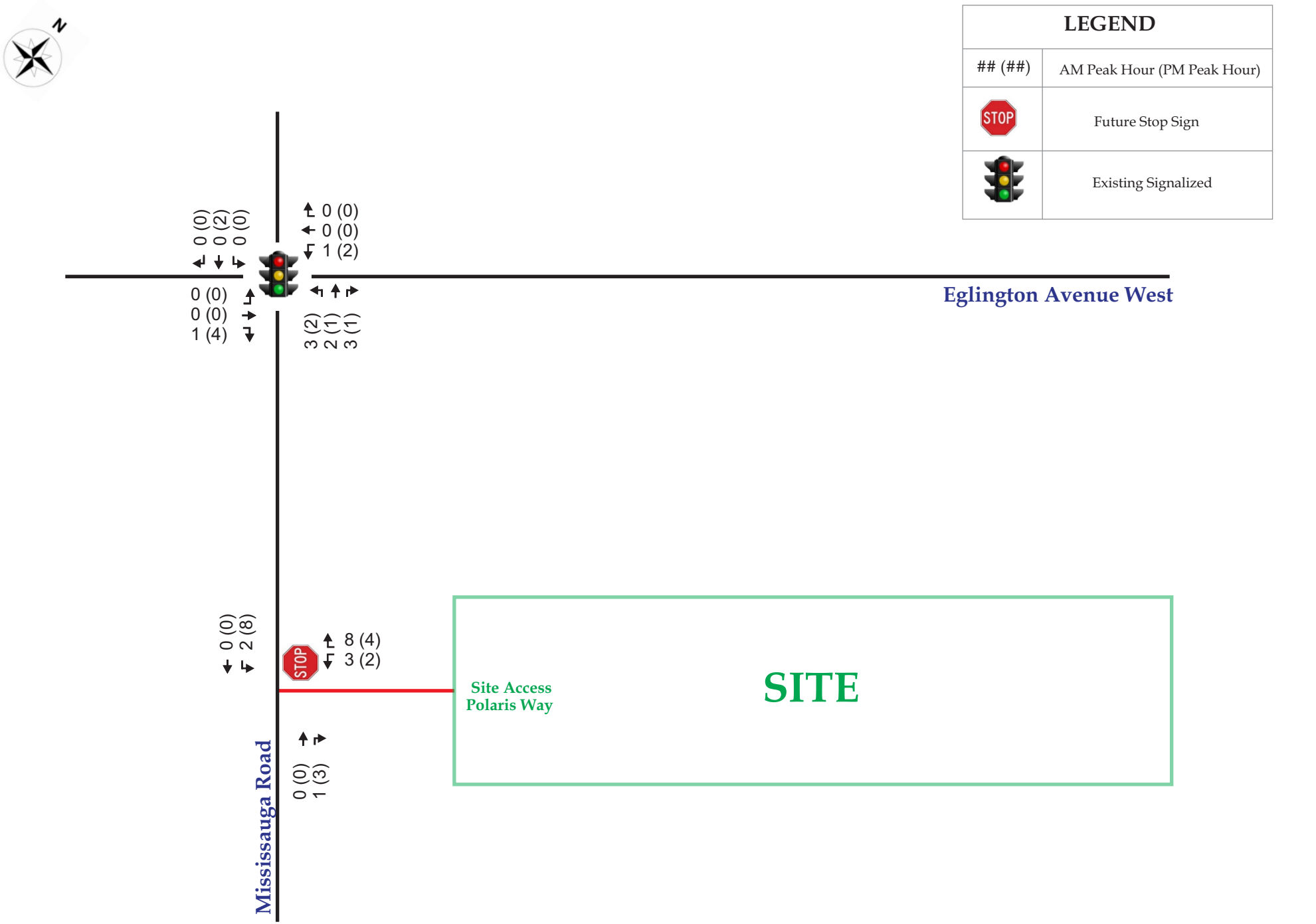
URBANTRANS Engineering Solutions Inc.

1786 Polaris Way, City of Mississauga ON
Project No. UT-23-065
March 2025

Figure 3 - Future (2028) Total Traffic Volumes

LEGEND	
↔	Available Sight Distance
↔	Stopping Sight Distance (SSD)
↔	Departure Sight Distance (DSD)

Figure 4 - Sight Distance (Mississauga Road and Site Access)



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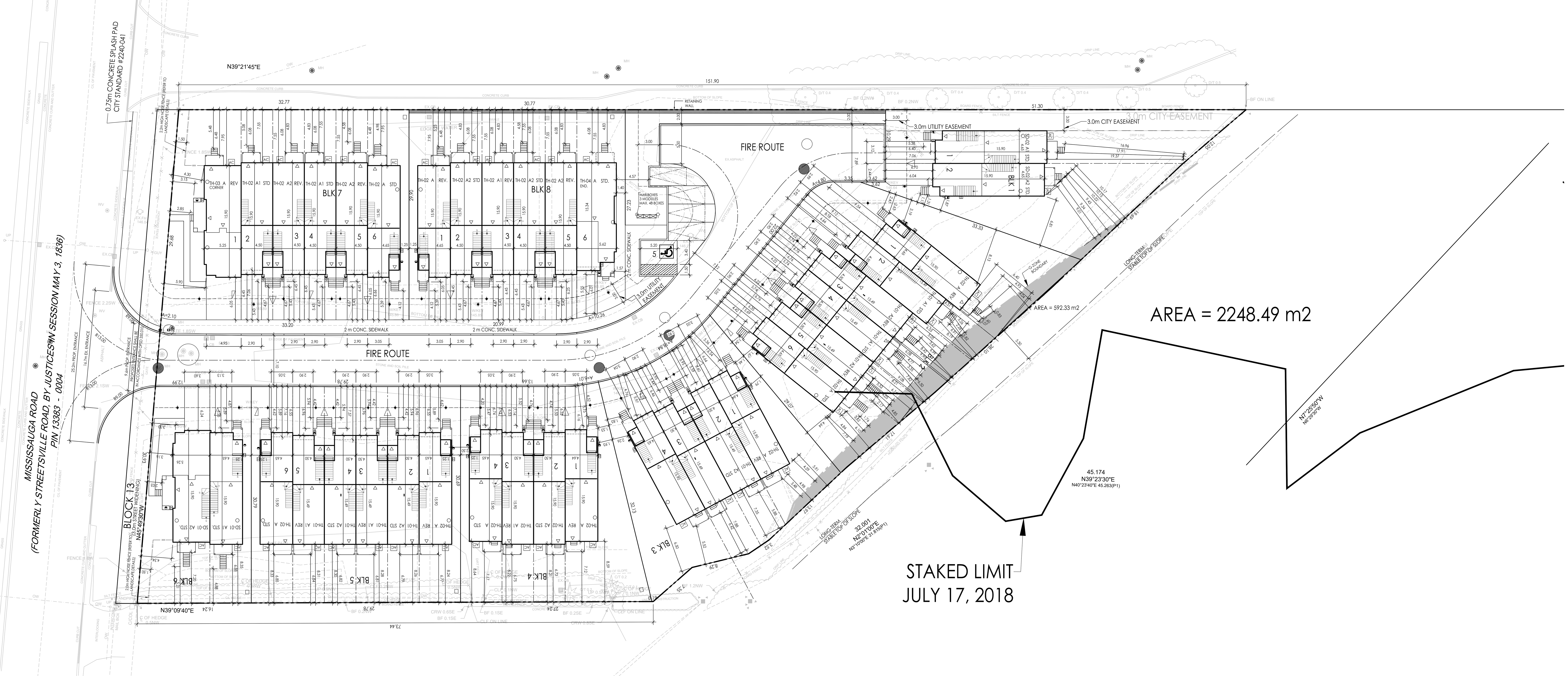
1786 Polaris Way, City of Mississauga ON
Project No. UT-23-065
March 2023

Figure 5 - Site Traffic Volumes

Appendix A
Proposed Site Plan



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

SETBACK TO STEP

SETBACK TO PORCH

SETBACK TO MAIN WALL OF DWELLING

SETBACK TO GARAGE

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

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	
11	ISSUED FOR COORDINATION	17-DEC-24	PP	
12	ISSUED FOR COORDINATION	18-DEC-24	PP	
13	ISSUED FOR COORDINATION	19-DEC-24	PP	
14	ISSUED FOR COORDINATION	20-MAR.-25	PP	
15	REV PER PLANNER COMMENTS	24-MAR.-25	AG	

RN DESIGN
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CLIENT
KINGRIDGE DEVELOPMENTS

PROJECT/LOCATION
MISSISSAUGA RD PROPERTIES
SOUTH SITE

DRAWING
CONCEPT PLAN

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

Appendix B
Transportation Staff Comments

- Please incorporate the anticipated background development from the property to the north (1775 Thorny Brae Place) into your analysis. This will help ensure a comprehensive assessment of future traffic conditions.
- Please ensure the PHF is set to 0.92 in the synchro report as per City's TIS guidelines for Appendix F: Existing Level of Service Calculations.
- Access
    - *Site Access Compliance:* Confirm that the proposed site access along Mississauga Road adheres to all TAC standards (e.g., corner clearances, vehicular and pedestrian sight lines, proximity/alignment to other driveways/roads, etc.). Any deviations must be technically justified from a traffic safety and operations perspective.
    - *Clear Throat Length:* Please confirm that the minimum clear throat length at the site access meets TAC guidelines to prevent vehicle queuing and conflicts at the entrance. Provide a diagram illustrating queue storage and site circulation impacts during peak hours.
    - *Sight Line Analysis:* Conduct a detailed sight line analysis at the proposed full-movement access on Mississauga Road. Verify that sight distances are unobstructed, considering adjacent driveways and potential visual obstructions (e.g., trees, noise wall etc.).
    - *Sight Distance Evaluation:* Ensure that the proposed access meets TAC stopping sight distance (SSD) and intersection sight distance (ISD) requirements based on posted speed limits and observed operating speeds on Mississauga Road. If deficiencies are identified, recommend mitigation measures such as access relocation, restricted turning movements, or geometric adjustments.
- The TIS shall include a section in the report 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 that are related to traffic shall also be addressed in this section.

Parking Justification:

A separate document is required in the form of a Parking Justification Letter addressing the following information cohesively:

What are the components of a Letter of Justification?	A Letter of Justification has similar components of a Parking Utilization Study, but does not require surveying and may be prepared by the applicant. A Letter of Justification should provide information about the application, operational details and unique features of the business, site description, general observations of the on-site parking or other information to help justify the requested reduction in parking, and a conclusion/recommendation.

www.mississauga.ca/wp-content/uploads/2020/07/15084526/COM-Parking-Studies-ToR-2021-09.pdf

Appendix C
Site Traffic - 1775 Thorny Brae Place

4.0 SITE GENERATED TRAFFIC VOLUMES

4.1 Proposed Development

As previously mentioned, subject lands are currently occupied by four (4) single detached dwelling units and vacant land. Based on the concept plan provided in Appendix A, it is our understanding that the development proposal involves eight (8) semi-detached homes and 208 stacked townhouses totalling 216 residential units. At a minimum, four (4) car parking spaces will be provided for each semi-detached unit with two (2) in the garage and two (2) in the lead in driveway portion totalling 32 parking spaces. Additionally, a total of 366 parking spaces are proposed underground including 54 visitor parking spaces. 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 215) "Single-Family Attached Housing" and (LUC 220) "Multifamily Housing (Low-Rise)" has been utilized for the proposed development provided in **Appendix J**.

Table 11 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 11: Site Traffic Trip Generation

Land Use (Magnitude)		Weekday AM Peak Hour			Weekday PM Peak Hour		
		In	Out	Total	In	Out	Total
Single-Family Attached Housing (8 Units)	New Trip	1	3	4	3	2	5
Low-Rise Housing (208 Units)	New Trip	20	63	83	67	39	106
Total New Trips		**21**	**66**	**87**	**70**	**41**	**111**

Based on the trip generation calculations, the proposed development is estimated to generate a total 87 two-way trips (21 inbound and 66 outbound) during the weekday morning peak hour and 111 two-way trips (70 inbound and 41 outbound) during the afternoon peak hour.

4.3 Trip Distribution and Trip Assignment

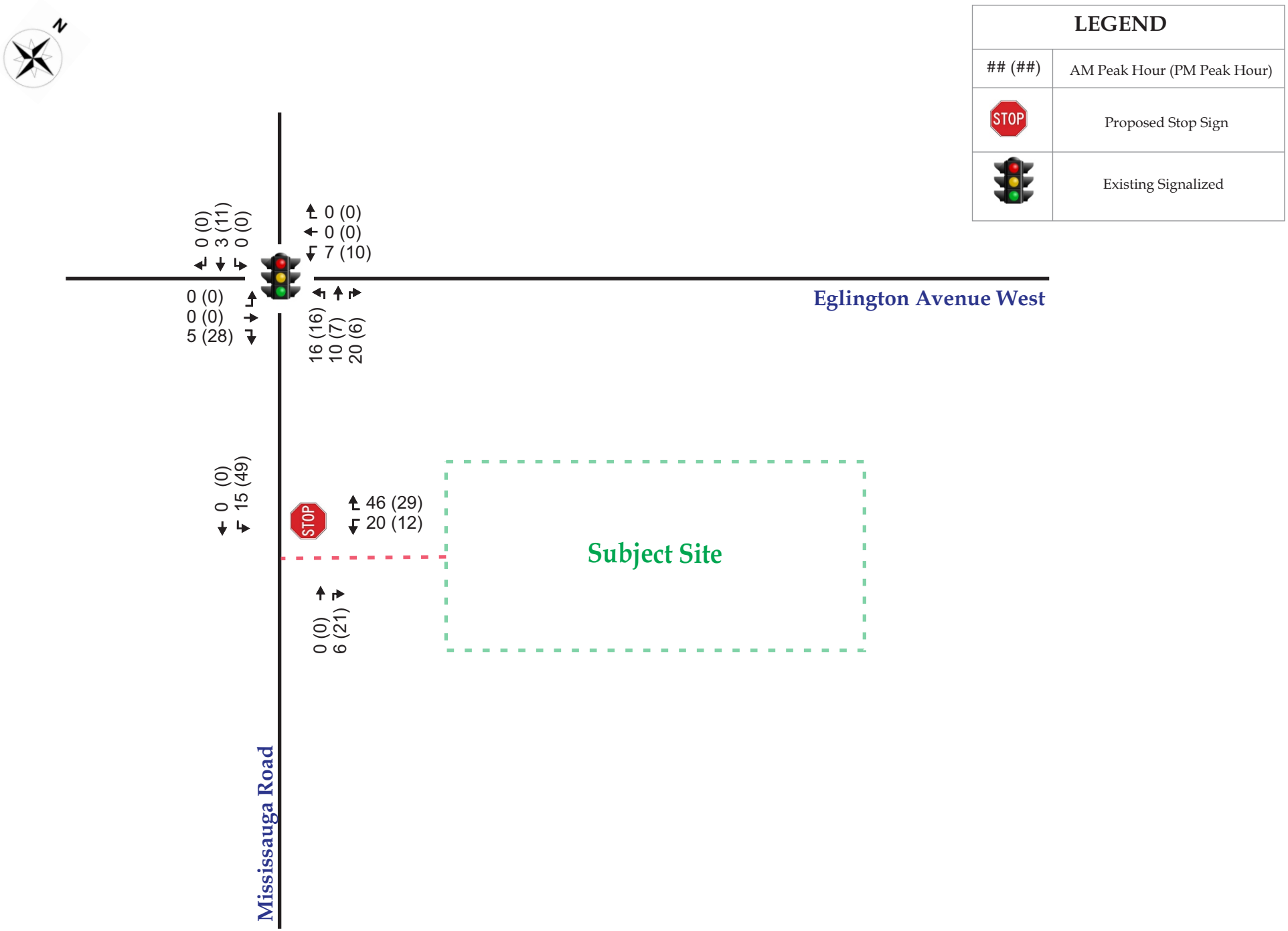
The trips generated by the proposed development were distributed to and from the boundary road network based on the 2016 Transportation Tomorrow Survey (TTS) data. Trip distribution was conducted for traffic zone 3684 which is located in the City of Mississauga. The TTS data detailing the trip distributions are provided in **Appendix K.** 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 12** and illustrated in **Figure 11.**

Table 12: 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%

Source: Traffic Impact Study – 1775 Thorny Brae Place (UrbanTrans Engineering Solutions)



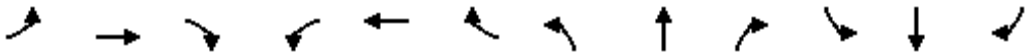
URBANTRANS Engineering Solutions Inc.

1775 Thorny Brae Place, City of Mississauga ON
Project No. UT-22-063
February 2024

Figure 11- Site Generated Traffic Volumes

Appendix D
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	1708	0
Flt Permitted	0.173			0.059			0.494			0.524		
Satd. Flow (perm)	325	5085	1568	111	5085	1468	920	1827	1599	957	1708	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90			126			208		15	
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	2118	167	227	1123	126	90	195	243	228	394	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	1.02	0.24	1.17	0.52	0.18	0.32	0.35	0.39	0.48	0.57	
Control Delay	25.3	70.5	14.8	156.6	35.5	5.0	47.1	45.8	10.0	33.9	39.2	
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	70.5	14.8	156.6	35.5	5.0	47.1	45.8	10.0	33.9	39.2	

3: Mississauga Rd & Eglinton Ave W

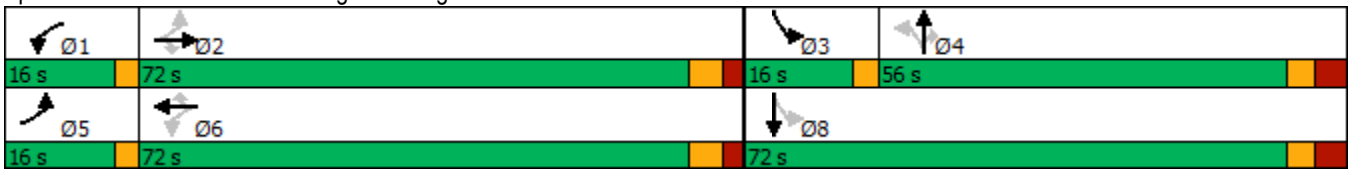
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	E	B	F	D	A	D	D	B	C	D	
Approach Delay		64.3			51.5			29.5			37.3	
Approach LOS		E			D			C			D	
Queue Length 50th (m)	20.4	~273.6	15.9	~72.8	101.5	0.0	23.4	51.2	8.4	49.6	97.7	
Queue Length 95th (m)	32.6	#301.8	33.7	#132.8	118.9	13.8	41.4	75.6	32.3	71.6	133.8	
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)	285	2081	695	194	2151	694	278	553	629	476	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	1.02	0.24	1.17	0.52	0.18	0.32	0.35	0.39	0.48	0.57	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 160			
Natural Cycle: 135			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 1.17			
Intersection Signal Delay: 53.6		Intersection LOS: D	
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)	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	1766	0
Flt Permitted	0.072			0.125			0.548			0.388		
Satd. Flow (perm)	135	5136	1599	238	5136	1583	1041	1881	1615	716	1766	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			106			151			152		20	
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	1203	112	223	1595	211	127	321	279	176	357	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)	69.9	55.4	55.4	69.9	55.4	55.4	51.0	51.0	51.0	71.2	66.7	
Actuated g/C Ratio	0.47	0.37	0.37	0.47	0.37	0.37	0.34	0.34	0.34	0.47	0.44	
v/c Ratio	0.83	0.63	0.17	0.99	0.84	0.31	0.36	0.50	0.43	0.41	0.45	
Control Delay	66.0	40.4	6.3	84.0	47.9	10.9	43.3	44.5	20.2	27.6	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	66.0	40.4	6.3	84.0	47.9	10.9	43.3	44.5	20.2	27.6	30.6	

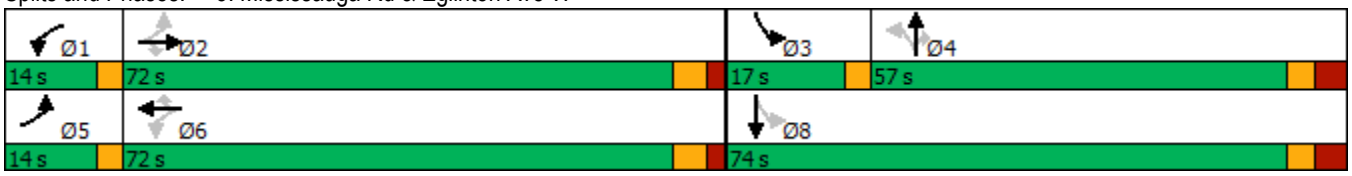
3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D	A	F	D	B	D	D	C	C	C	
Approach Delay		40.5			48.0			35.0			29.6	
Approach LOS		D			D			C			C	
Queue Length 50th (m)	29.8	113.2	1.2	40.2	166.6	12.3	30.6	81.9	30.1	32.0	73.0	
Queue Length 95th (m)	#71.5	128.9	14.4	#97.8	185.7	31.6	55.4	123.6	62.3	54.3	113.2	
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)	184	2246	759	225	2246	777	353	639	649	436	795	
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	0.15	0.99	0.71	0.27	0.36	0.50	0.43	0.40	0.45	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 150.1			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 41.6		Intersection LOS: D	
Intersection Capacity Utilization 125.9%		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



Appendix E
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	159	216	1113	116	99	198	244	210	274	105
Future Volume (vph)	114	1998	159	216	1113	116	99	198	244	210	274	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	0.191			0.054			0.344			0.465		
Satd. Flow (perm)	359	5085	1568	102	5085	1468	641	1827	1599	850	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97			126			201		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	173	235	1210	126	108	215	265	228	412	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)	83.5	70.7	70.7	96.0	80.2	80.2	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	0.45	0.96	0.23	0.90	0.47	0.16	0.64	0.45	0.47	0.67	0.73	
Control Delay	19.4	53.2	12.5	79.1	25.9	3.5	71.7	52.8	15.6	52.2	54.7	
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	19.4	53.2	12.5	79.1	25.9	3.5	71.7	52.8	15.6	52.2	54.7	

3: Mississauga Rd & Eglinton Ave W

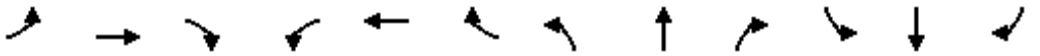
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D	B	E	C	A	E	D	B	D	D	
Approach Delay		48.6			32.1			39.5			53.8	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	16.6	254.6	14.7	60.2	93.8	0.0	32.5	60.9	16.7	57.2	119.5	
Queue Length 95th (m)	26.5	#280.2	31.4	#110.0	106.5	11.3	#60.3	88.4	45.3	82.5	162.5	
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)	281	2302	763	275	2629	819	168	479	568	340	566	
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	0.23	0.85	0.46	0.15	0.64	0.45	0.47	0.67	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 43.3		Intersection LOS: D	
Intersection Capacity Utilization 140.2%		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



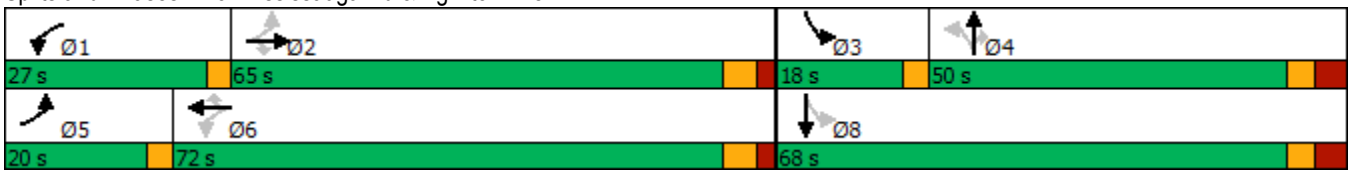
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1193	131	215	1504	194	133	317	263	162	230	114
Future Volume (vph)	140	1193	131	215	1504	194	133	317	263	162	230	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	1770	0
Flt Permitted	0.078			0.086			0.539			0.325		
Satd. Flow (perm)	147	5136	1599	163	5136	1583	1024	1881	1615	600	1770	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			117			148			137		18	
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	142	234	1635	211	145	345	286	176	374	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)	68.2	51.0	51.0	75.3	55.2	55.2	44.8	44.8	44.8	65.4	60.9	
Actuated g/C Ratio	0.46	0.35	0.35	0.51	0.38	0.38	0.30	0.30	0.30	0.45	0.41	
v/c Ratio	0.69	0.73	0.23	0.82	0.85	0.31	0.46	0.60	0.49	0.48	0.50	
Control Delay	47.7	44.7	9.3	58.1	46.8	11.0	51.0	51.6	26.2	32.0	35.0	
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	47.7	44.7	9.3	58.1	46.8	11.0	51.0	51.6	26.2	32.0	35.0	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D	A	E	D	B	D	D	C	C	D	
Approach Delay		41.8			44.5			42.1			34.1	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	27.2	126.9	5.1	49.6	168.1	12.6	37.5	93.7	37.9	33.7	82.0	
Queue Length 95th (m)	54.5	152.5	21.5	82.9	192.1	32.4	67.4	142.8	74.8	58.3	128.7	
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	710	353	2304	791	312	573	587	385	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	0.20	0.66	0.71	0.27	0.46	0.60	0.49	0.46	0.50	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 146.9			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 42.1		Intersection LOS: D	
Intersection Capacity Utilization 126.5%		ICU Level of Service H	
Analysis Period (min) 15			

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



Appendix F
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	160	217	1113	116	102	200	247	210	274	105
Future Volume (vph)	114	1998	160	217	1113	116	102	200	247	210	274	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	0.191			0.054			0.343			0.462		
Satd. Flow (perm)	359	5085	1568	102	5085	1468	639	1827	1599	844	1711	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98			126			202		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	174	236	1210	126	111	217	268	228	412	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)	83.5	70.7	70.7	96.1	80.3	80.3	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	0.45	0.96	0.23	0.90	0.47	0.16	0.66	0.45	0.47	0.67	0.73	
Control Delay	19.4	53.3	12.5	79.3	25.9	3.5	73.4	52.9	15.9	52.5	54.7	
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	19.4	53.3	12.5	79.3	25.9	3.5	73.4	52.9	15.9	52.5	54.7	

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		48.7			32.1			40.1			53.9	
Approach LOS		D			C			D			D	
Queue Length 50th (m)	16.6	254.6	14.7	60.6	93.8	0.0	33.6	61.6	17.2	57.2	119.5	
Queue Length 95th (m)	26.5	#280.2	31.4	#110.0	106.5	11.3	#63.2	89.3	46.1	82.5	162.5	
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)	281	2300	762	275	2628	819	167	479	568	338	566	
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	0.23	0.86	0.46	0.15	0.66	0.45	0.47	0.67	0.73	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 158.1			
Natural Cycle: 145			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 43.4		Intersection LOS: D	
Intersection Capacity Utilization 140.2%		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

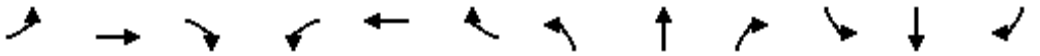
7: Mississauga Rd & Site Access

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	3	8	501	1	2	654
Future Volume (Veh/h)	3	8	501	1	2	654
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	545	1	2	711
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	0.76					
vC, conflicting volume	1260	546			546	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1186	546			546	
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)	159	538			1023	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	12	546	713
Volume Left	3	0	2
Volume Right	9	1	0
cSH	337	1700	1023
Volume to Capacity	0.04	0.32	0.00
Queue Length 95th (m)	0.9	0.0	0.0
Control Delay (s)	16.1	0.0	0.1
Lane LOS	C		A
Approach Delay (s)	16.1	0.0	0.1
Approach LOS	C		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

3: Mississauga Rd & Eglinton Ave W



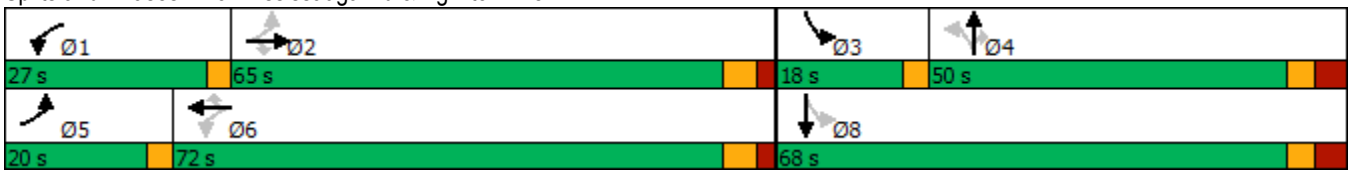
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	140	1193	135	217	1504	194	135	318	264	162	232	114
Future Volume (vph)	140	1193	135	217	1504	194	135	318	264	162	232	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	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	1771	0
Flt Permitted	0.079			0.086			0.538			0.324		
Satd. Flow (perm)	149	5136	1599	163	5136	1583	1022	1881	1615	598	1771	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			121			148			137		18	
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	147	236	1635	211	147	346	287	176	376	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)	68.1	50.8	50.8	75.3	55.2	55.2	44.8	44.8	44.8	65.4	60.9	
Actuated g/C Ratio	0.46	0.35	0.35	0.51	0.38	0.38	0.30	0.30	0.30	0.45	0.41	
v/c Ratio	0.68	0.73	0.23	0.83	0.85	0.31	0.47	0.60	0.49	0.48	0.51	
Control Delay	47.2	44.9	9.3	58.5	46.8	11.0	51.3	51.6	26.3	32.0	35.1	
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	47.2	44.9	9.3	58.5	46.8	11.0	51.3	51.6	26.3	32.0	35.1	

3: Mississauga Rd & Eglinton Ave W

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D	A	E	D	B	D	D	C	C	D	
Approach Delay		41.8			44.5			42.2			34.1	
Approach LOS		D			D			D			C	
Queue Length 50th (m)	27.0	127.2	5.3	50.2	168.1	12.6	38.1	94.1	38.2	33.7	82.5	
Queue Length 95th (m)	54.1	152.5	22.0	83.7	192.1	32.4	68.7	143.2	75.2	58.3	129.0	
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)	262	2057	713	353	2304	791	311	573	587	384	744	
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	0.21	0.67	0.71	0.27	0.47	0.60	0.49	0.46	0.51	

Intersection Summary			
Area Type:	Other		
Cycle Length: 160			
Actuated Cycle Length: 146.9			
Natural Cycle: 115			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay: 42.2		Intersection LOS: D	
Intersection Capacity Utilization 126.6%		ICU Level of Service H	
Analysis Period (min) 15			

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



7: Mississauga Rd & Site Access

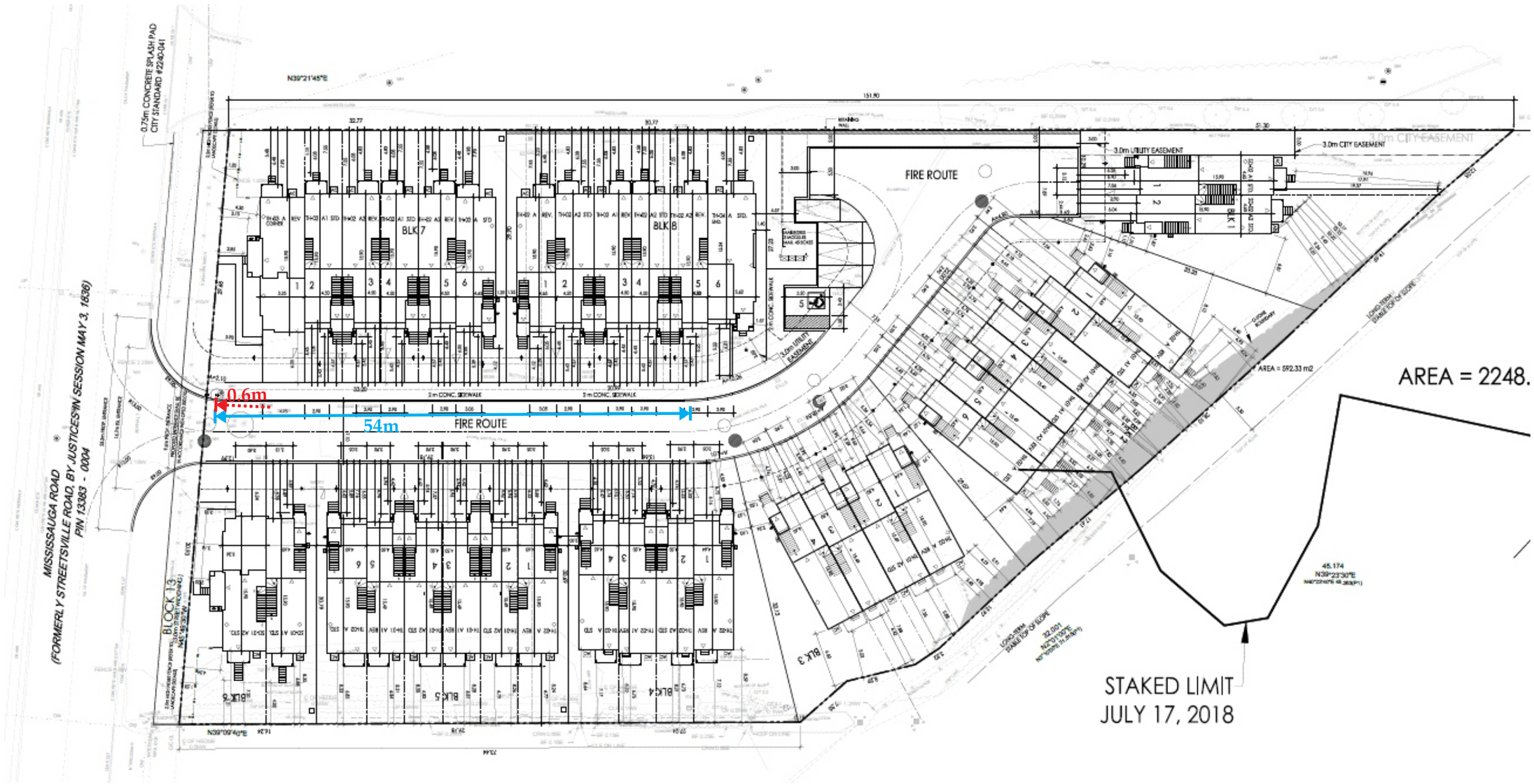
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	2	4	705	4	8	539
Future Volume (Veh/h)	2	4	705	4	8	539
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	4	766	4	9	586
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						230
pX, platoon unblocked	0.84					
vC, conflicting volume	1372	768			770	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1347	768			770	
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)	138	402			844	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	770	595
Volume Left	2	0	9
Volume Right	4	4	0
cSH	245	1700	844
Volume to Capacity	0.02	0.45	0.01
Queue Length 95th (m)	0.6	0.0	0.3
Control Delay (s)	20.0	0.0	0.3
Lane LOS	C		A
Approach Delay (s)	20.0	0.0	0.3
Approach LOS	C		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	47.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G
Site Circulation Impact

LEGEND	
⟷	Throat Length
⟷	95th queue (Future 2028 Total)



URBANTRANS
Engineering Solutions Inc.

Project Name:

PROPOSED RESIDENTIAL DEVELOPMENT
1786 Polaris Way, City of Mississauga

Drawing Title:	Site Circulation Impact		
Drawing No.:	Appendix G	Date:	March 23, 2024
Project No.:	UT-23-065	Drawn By:	AS
Scale:	NTS	Notes:	

Appendix H
Queue Storage Length

LEGEND
Storage Length
95th queue (Future 2028 Total)
95th queue (Future 2028 Background)

URBANTRANS Engineering Solutions Inc.	Project Name: PROPOSED RESIDENTIAL DEVELOPMENT 1786 Polaris Way, City of Mississauga	Drawing Title:	SynchroTraffic 95th Queue Length and Storage Length
		Drawing No.: Appendix H	Date: March 23, 2024
		Project No.: UT-23-065	Drawn By: AS
		Scale: NTS	Notes: