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Transportation Impact Study

PROPOSED MIXED-USE DEVELOPMENT

170 Lakeshore Road E
MISSISSAUGA, ONTARIO

October 2021
Project No: NT-21-083

520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8

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NextEng Consulting Group Inc.

October 7, 2021

Mr. Deepak Dhawan

LightPoint (170 Lakeshore Road East Port Credit) Inc.
#600-3250 Bloor Street West
Toronto, ON M8X 2X9

Re: Transportation Impact Study
Proposed Mixed-use Development
420 Lakeshore Road E, City of Mississauga
Our Project No. NT-21-083

NexTrans Consulting Engineers (a Division of NextEng Consulting Group Inc.) is pleased to present the enclosed Transportation Impact Study for the above noted site in support of Official Plan Amendment, Zoning By-law Amendment Applications.

The subject property is located at 170 Lakeshore Road E, north-west corner of Lakeshore Road E and Elmwood Avenue North, in the City of Mississauga. The proposed development consists of a 15-storey+ mechanical penthouse mixed-use residential building with a total of 147 residential dwelling units and a ground related non-residential GFA of 625.4 m^2 (477.7 m^2+ 147.7 m^2 BOH). The proposed development will provide a total of 170 parking spaces and 160 bicycle parking spaces. A full moves access will be provided onto Elmwood Avenue North near the westernly limit of the proposed development to service the proposed development.

The Study Update concludes that the proposed development can adequately be accommodated by the existing transportation network, excellent existing Mississauga Transit Services, GO Transit Services, the future Hurontario LRT, as well as the Transportation Demand Management measures and incentives recommended in this report.

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

Yours truly,

Nextrans Consulting Engineers
A Division of NextEng Consulting Group Inc.

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Report Submission Record

Identification	Date	Description of issued and/or revision
Final Report	October 7, 2021	For Client Submission

EXECUTIVE SUMMARY

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by LightPoint (170 Lakeshore Road East Port Credit) Inc. (the 'Client') to undertake a Transportation Impact Study in support of Official Plan Amendment, Zoning By-law Amendment applications. The subject property is located at 170 Lakeshore Road E, north-west corner of Lakeshore Road E and Elmwood Avenue North, in the City of Mississauga.

Proposed Development

The proposed development consists of a 15-storey+ mechanical penthouse mixed-use residential building with a total of 147 residential dwelling units and a ground related non-residential GFA of 625.4 m^2 (477.7 m^2+ 147.7 m^2 BOH)

Proposed Development Access

Currently, the subject site has three full moves accesses, two onto Lakeshore Road E and one onto Elmwood Avenue North. With the proposed redevelopment, only one full moves access onto Elmwood Avenue North, located approximately at the same location as the existing access, will be provided to service the proposed development. The existing full moves accesses onto Lakeshore Road E will be closed. This will minimize the vehicular movements on Lakeshore Road E and therefore will improve the pedestrian and cyclist safety.

The analysis indicates that the site access is expected to operate at acceptable levels of service with minimum delay or queue. The access configuration includes: one inbound lane and one outbound lane, one shared northbound through/left and one shared southbound through/right on Elmwood Avenue North.

Capacity Analysis

The proposed development is expected to generate:

- 59 total two-way trips (17 inbound and 42 outbound) and 83 total two-way trips (48 inbound and 35 outbound) during the AM and PM peak hours, respectively;
- 39 two-way auto trips (12 inbound and 27 outbound) and 53 two-way auto trips (31 inbound and 22 outbound) during the AM and PM peak hours, respectively;
- 14 two-way transit trips (4 inbound and 10 outbound) and 17 two-way transit trips (9 inbound and 8 outbound) during the AM and PM peak hours, respectively;
- 2 two-way active transportation trips (0 inbound and 2 outbound) and 7 two-way active transportation trips (4 inbound and 3 outbound) during the AM and PM peak hours, respectively; and
- 4 two-way carpool/paid ride trips (1 inbound and 3 outbound) and 6 two-way carpool/paid ride trips (3 inbound and 3 outbound) during the AM and PM peak hours, respectively

A comparison between the proposed development and existing land use indicates that the proposed mixed-use development is expected to generate additional 23 auto trips during the morning peak hour but generates 16 less auto trips during the afternoon peak hour, as compared to the existing land use. Therefore, it is concluded that the incremental proposed development traffic is negligible.

Auto Mode Assessment

The intersection capacity analysis indicates that under existing, future background and future total conditions, all the intersections considered in the Study are expected to operate at acceptable levels of service. It is Nextrans' opinion that no additional improvements beyond the recommended improvements in the Lakeshore Connected Communities

Transportation Master Plan are required for this horizon year as the analysis indicates that this proposed improvement will significantly improve operation and safety along this section of Lakeshore Road E.

Active Transportation Mode Assessment

Walking

The area is currently well-serviced by a sufficient network of sidewalks, with sidewalks are available on the west side of Elmwood Avenue North, with sidewalks on both sides of Lakeshore Road E and Hurontario Street. In addition, sidewalks are reasonably maintained. It is NexTrans' understanding that the proposed development will meet the City of Mississauga requirement to provide a 2.0 m sidewalk along the frontage of the proposed development on Lakeshore Road E and wraps around along Elmwood Avenue North to the western edge of the site access. This will facilitate better walking and cycling in the future as per the recommendations from the Lakeshore Connected Communities Transportation Master Plan.

Cycling

Under the existing conditions, there are no dedicated bicycle lanes in the immediate area. However, there are multi-use trails on Hurontario Street north of the rail tracks and there are signed routes along Cumberland Drive and Ogden Avenue. The Lakeshore Connected Communities Transportation Master Plan recommended separated bicycle lanes on both sides of Lakeshore Road E through this area. In addition, the recent funding announcement also include the funding to implement sidewalks and bike lanes along Lakeshore Road through this area. It is NexTrans' opinion that this is a good recommendation as there are lack of east-west cycling network in the area. The proposed development supports this recommendation.

Transit Mode Assessment

The proposed development is expected to generate 14 two-way transit trips (4 inbound and 10 outbound) and 17 two-way transit trips (9 inbound and 8 outbound) during the AM and PM peak hours, respectively;

The proposed development is located adjacent to MiWay Bus Route 23, about 800 m walking distance to the existing Port Credit GO Train Station or about 10 minute-walk/5 minute-cycle. In addition, the site is located about 190m to Hurontario Street and Lakeshore Blvd E where is the access of Miway Route 2,8. The analysis indicates that the transit passenger demands generated by the proposed development per transit vehicle is low. Therefore, the proposed development impact on transit service is negligible and no improvements are required. In reality, some passengers could be bunched together during the peak 15 minutes, instead of spreading during the entire peak hour. Even if this is the case, our estimates indicate that the demand per vehicle can be accommodated without the need for additional transit vehicles or improvements during both the morning and afternoon peak periods.

Vehicle Parking Review

Based on the current Zoning By-law, the proposed development will require to provide approximately 239 vehicle parking spaces, inclusive of residential, visitor and non-residential uses. It is Nextrans' opinion that these rates are excessive and do not support the Hurontario LTR and Lakeshore BRT investment by Metrolinx, Federal Government, Provincial Government and the City of Mississauga. It is Nextrans' opinion that the parking rates should be reduced as parking management is the best Transportation Demand Management measure to reduce single-occupant-vehicle trips. At the minimum, the applicable parking rates for the proposed development should be similar to the approved rates for other background developments in the area.

Based on the comprehensive justifications provided in this Study, it is recommended that the proposed development provides a blended parking rate of 1.15 spaces/unit for the entire site, inclusive of 22 shared visitor and non-residential spaces. Based on this recommended rate, the proposed development is required to provide 170 vehicle parking spaces, inclusive of resident, visitor and non-residential parking spaces.

Bicycle Parking Review

It is Nextrans' understanding that the City of Mississauga currently does not have bicycle requirements in the current Zoning By-law. However, the City of Mississauga Cycling Master Plan recommends some parking rates to support active transportation. Based on the recommendations of this Study, the proposed development will need to provide a total of 118 bicycle parking spaces, including 14 short-term spaces and 104 long-term spaces. The proposed development provides 160 bicycle parking spaces (including 16 short-term and 144 long-term spaces), which meets these requirements.

Transportation Demand Management Measures and Incentives

The TDM measures and incentives related to the proposed development have been assessed and recommended in Section 9 of this report to support active transportation and transit, to meet the objectives and requirements of the City of Mississauga sustainable transportation objectives.

Loading Requirement

Under the City's By-Law Zoning By-law 0225-2007, one loading space is required for residential component and one for the non-residential component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length. Given that the proposed non-residential component is located within the same building, the loading space can be shared with the residential component. Therefore, it is NexTrans' opinion that only one loading space is required for the proposed development. It is Nextrans' understanding that the proposed development will meet this requirement.

AutoTURN software was used (Garbage truck TAC-HSU and passenger vehicle) to generate vehicular turning templates to confirm and demonstrate the accessibility for the proposed loading space and underground ramp.

Study Conclusions and Recommendations

Based on the Study assessment, the following recommendations are provided:

- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development;
- The proposed development implements the recommended parking rates (a blended rate of 1.15 spaces/unit for resident, visitor and non-residential) provided in this Study based on the comprehensive parking justifications to support TDM and minimize the numbers of single-occupant-vehicle trips;
- The proposed development provides direct shared pedestrian and cycling connections to Lakeshore Road E and Elmwood Avenue N, where appropriate;
- The proposed development access configuration includes: one inbound lane and one outbound lane, one shared northbound through/left and one shared southbound through/right on Elmwood Avenue N; and
- No additional physical improvements for the area road network and intersection for this horizon year beyond the proposed improvements recommended in the Lakeshore Connected Communities Transportation Master Plan.

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1.0 INTRODUCTION

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by LightPoint (170 Lakeshore Road East Port Credit) Inc. (the 'Client') to undertake a Transportation Impact Study in support of Official Plan Amendment, Zoning By-law Amendment applications. The subject property is located at 170 Lakeshore Road E, north-west corner of Lakeshore Road E and Elmwood Avenue North, in the City of Mississauga.

The location of the proposed development is illustrated in **Figure 1**.

Figure 1 – Proposed Development Location

Source: Google Map

The subject site is an existing retail plaza with parking lot in the front. The proposed redevelopment of the site consists of a 15-storey+ mechanical penthouse mixed-use residential building with:

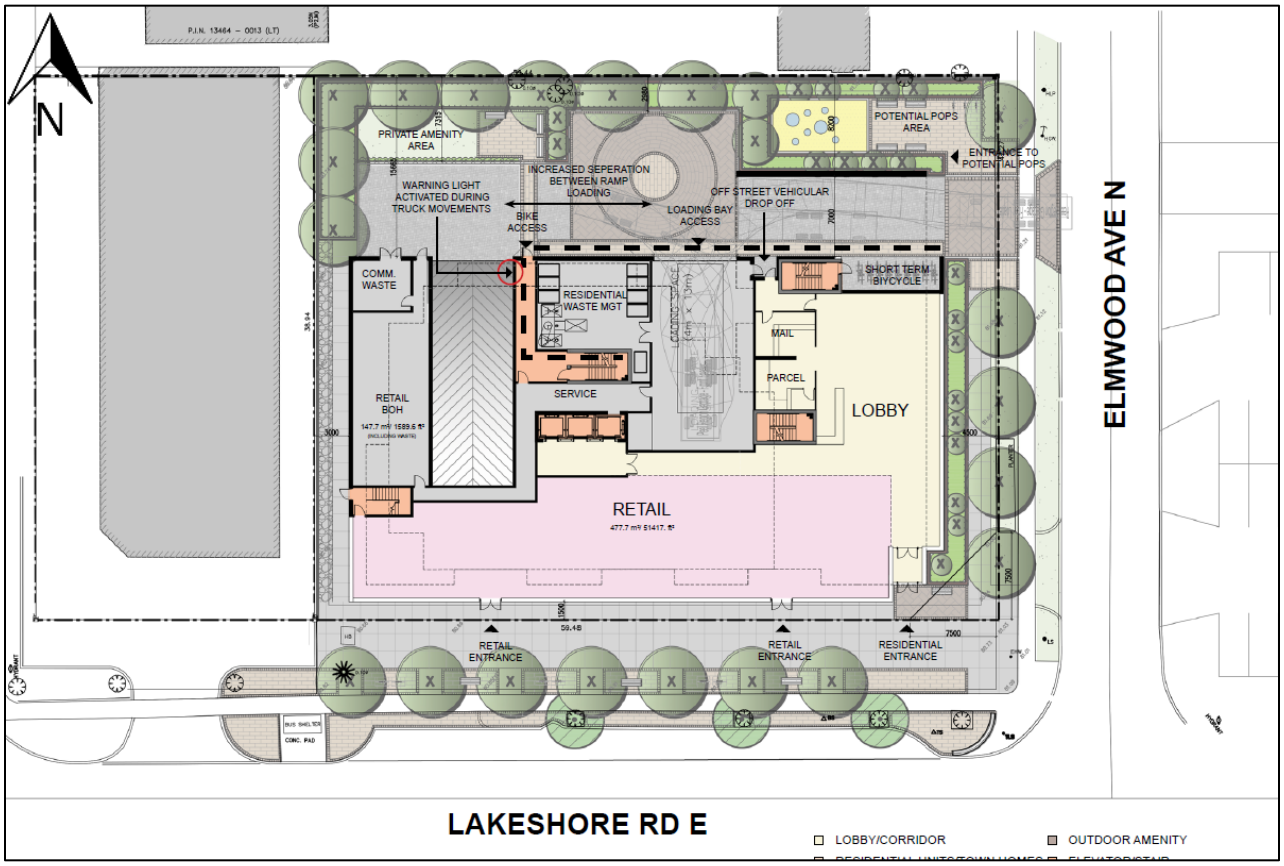
- 147 dwelling units
- A ground non-residential GFA of approximately 625.4 m^2 (477.7 m^2+ 147.7 m^2 BOH).

The proposed development will provide a total of 170 parking spaces and 160 bicycle parking spaces.

Currently, the subject site has three full moves accesses, two onto Lakeshore Road E and one onto Elmwood Avenue North. With the proposed redevelopment, only one full moves access onto Elmwood Avenue North, located approximately at the same location as the existing access, will be provided to service the proposed development. The existing full moves accesses onto Lakeshore Road E will be closed. This will minimize the vehicular movements on Lakeshore Road E and therefore will improve the pedestrian and cyclist safety.

Figure 2 illustrates the proposed development site plan.

Figure 2 – Proposed Concept Site Plan



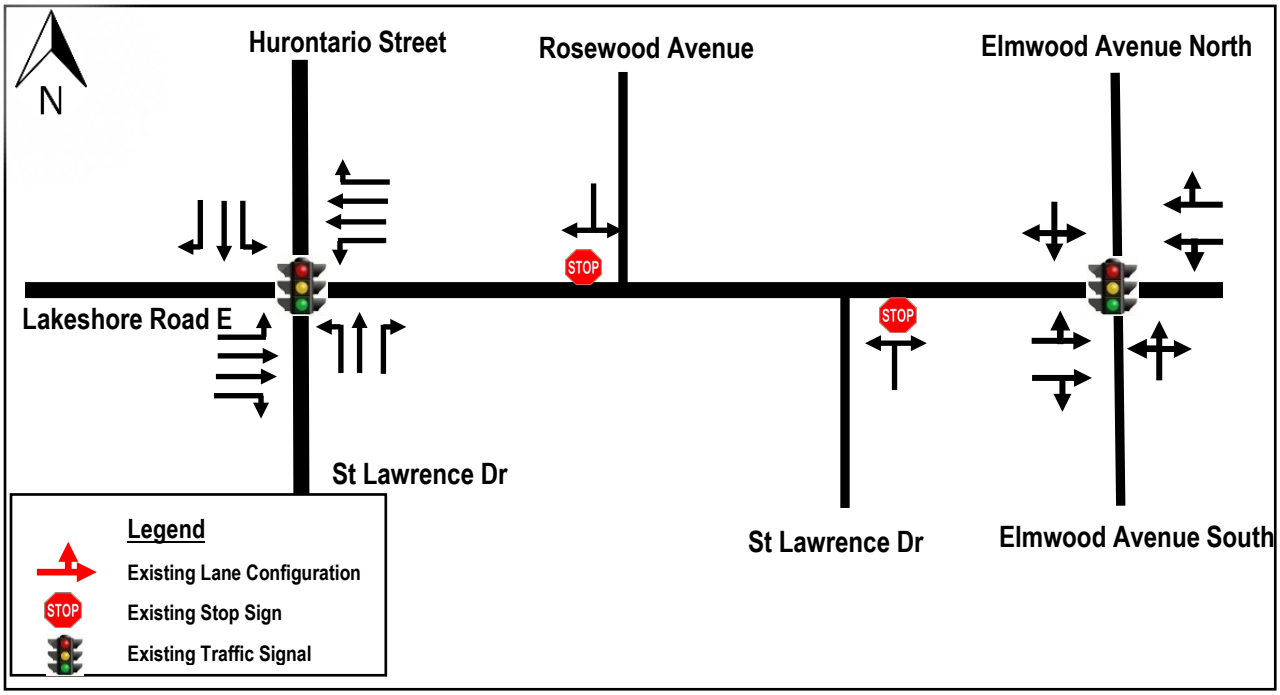
2.0 EXISTING TRAFFIC CONDITIONS

2.1. Existing Road Network

The existing road network, lane configuration and existing traffic control for the study area are shown in **Figure 3** (Existing Lane Configurations). The details area described below:

- **Lakeshore Road E:** is an east-west major arterial under the City of Mississauga jurisdiction. It generally has a four-lane cross-section with turning lanes at the major intersections. It maintains a posted speed limit of 60 km/h near the subject site.
- **Hurontario Street:** is a north-south major arterial under the City of Mississauga jurisdiction. It generally has a three-lane cross section with turning lanes at the major intersections. It maintains a posted speed limit of 50 km/h near the subject site.
- **Elmwood Avenue North**: is a north-south local road south of Lakeshore Road E and minor collector road north of Lakeshore Road E, under the City of Mississauga jurisdiction. It has two general purpose lanes and maintains a posted speed limit of 40 km/h near the subject site.

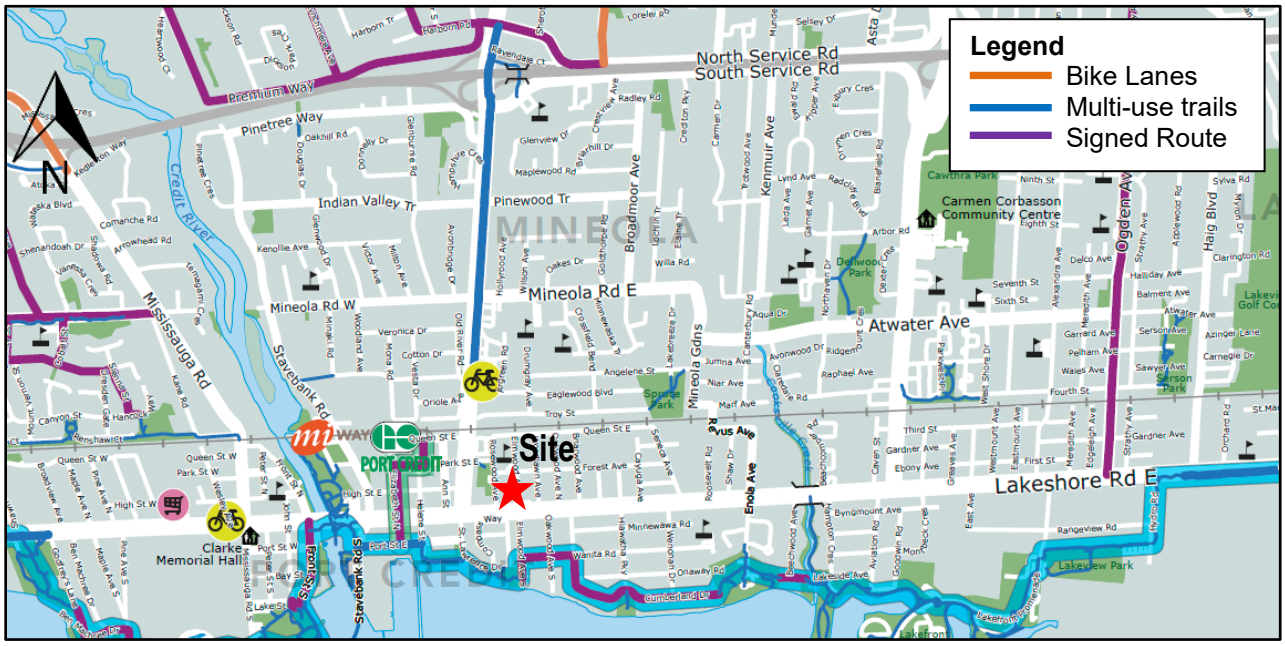
Figure 3 – Existing Lane Configuration and Traffic Control



2.2. Existing Active Transportation Network

Figure 4 illustrates the existing active transportation network in the study area.

Figure 4 – Existing Cycling Network in the Study Area (Mississauga Cycling Map 2018)



2.3. Existing Active Transportation Assessment

Walking

The area is currently well-serviced by a sufficient network of sidewalks, with sidewalks are available on the west side of Elmwood Avenue North, with sidewalks on both sides of Lakeshore Road E, and Hurontario Street. In addition, sidewalks are reasonably maintained.

Cycling

Under the existing conditions, there are no dedicated bicycle lanes in the immediate area. However, there are multi-use trails on Hurontario Street north of the rail tracks and there are signed routes along Cumberland Drive and Ogden Avenue.

It is Nextrans' opinion that the existing cycling network can be improved in the future as part of the City of Mississauga 2018 Cycling Master Plan and Lakeshore Connected Communities Transportation Master Plan recommendations. This will encourage existing and future residents to use these facilities instead of driving single-occupant-vehicles.

2.4. Existing Mississauga Transit Service

The proposed development is located adjacent to MiWay Bus Route 23, about 800 m walking distance to the existing Port Credit GO Train Station or about 10 minute-walk/5 minute-cycle (which also gives access to Miway Bus Route 2,8,14,23,103). In addition, the site is located about 190 m to Miway Bus Route 2, 8 at Lakeshore Road E and Hurontario Street intersection. The existing transit network in the area is illustrated in **Figure 5**.

Figure 5 – Existing Transit Network in the Study Area

Source: Mississauga Transit Website (www.web.mississauga.ca/miway-transit)

Mississauga Transit service descriptions are outlined below:

- **MiWay Route 23 Lakeshore** – 23 Lakeshore is running generally in an east-west direction along Lakeshore Road west and Lakeshore Road E. The route operates in the west from Clarkson GO Train Station, to Port Credit GO Train Station and then to the Long Branch GO Station to the east. The service frequency is approximately 11 minutes during both the weekday morning and afternoon peak periods.

- **MiWay Route 2 Hurontario** – This route is generally operating in the north-south direction from Port Credit GO Train Station area to the south to Square One to the north. The service frequency is approximately 10 minutes during both the weekday morning and afternoon peak periods.

- **MiWay Route 8 Cawthra** – This route is generally operating in the north-south direction from Port Credit GO Train Station area to the City Centre Transit Terminal Drop Off. The service frequency is 30 minutes during both the weekday morning and afternoon peak periods.

- **MiWay Route 14 Lorne Park** – This route is generally operating in the east-west direction from Port Credit GO Train Station to Clarkson GO Train Station. This service frequency is 30 minutes during both the weekday morning and afternoon peak periods.

- **Miway Route 103 Hurontario Express** – This route is generally operating in the north-south direction from Port Credit GO Train Station area to Brampton Gateway Terminal. The service frequency is approximately 11 minutes during both the weekday morning and afternoon peak periods.

- **Lakeshore West GO Transit** – The Lakeshore West GO Line services between Union Station and Hamilton GO Centre and Hamilton West Harbour. This is all-day two-way service with a service frequency of approximately 30 minutes.

2.3. Existing Transit Assessment

Based on Nextrans review of the existing Mississauga Transit/MiWay operating schedule, GO Transit operating schedule, as well as the context of the study area indicates that the area currently has excellent transit service. The existing Route 23 MiWay has excellent service frequency (11 minutes or less) that connect residents to three GO Train Stations (Long Branch, Port Credit and Clarkson), as well as Route 2 Hurontario and Route 103 Hurontario Express.

It is Nextrans' opinion that transit service is excellent in the area and there is no noticeable constrain in service at this time. In addition, with the future GO Service Expansion (formerly Regional Express Rail) all-day two-way and 15-minute service along Lakeshore West GO Line, as well as the future LRT on Hurontario Street, there will an increase in public ridership in the future.

2.4. Existing Traffic Volumes

Existing traffic volumes at the study area intersections were obtained from the City of Mississauga and Spectrum for the following two intersections in the study area:

- Lakeshore Road E/ Elmwood Avenue (signalized) – Count date Thursday, 28 March, 2019
- Lakeshore Road E/ Hurontario Street (signalized) – Count date Tuesday, 17 December, 2019
- Lakeshore Road E/ Rosewood Avenue (unsignalized) – Count date Wednesday, 29 September, 2021
- Lakeshore Road E/ St. Lawrence Drive (unsignalized) – Count date Wednesday, 29 September, 2021

The turning movement counts data provided by the City was conducted during the morning (7:00 a.m. to 10:00 a.m.) and afternoon (4:00 p.m. to 7:00 p.m.) peak periods for all area intersections.

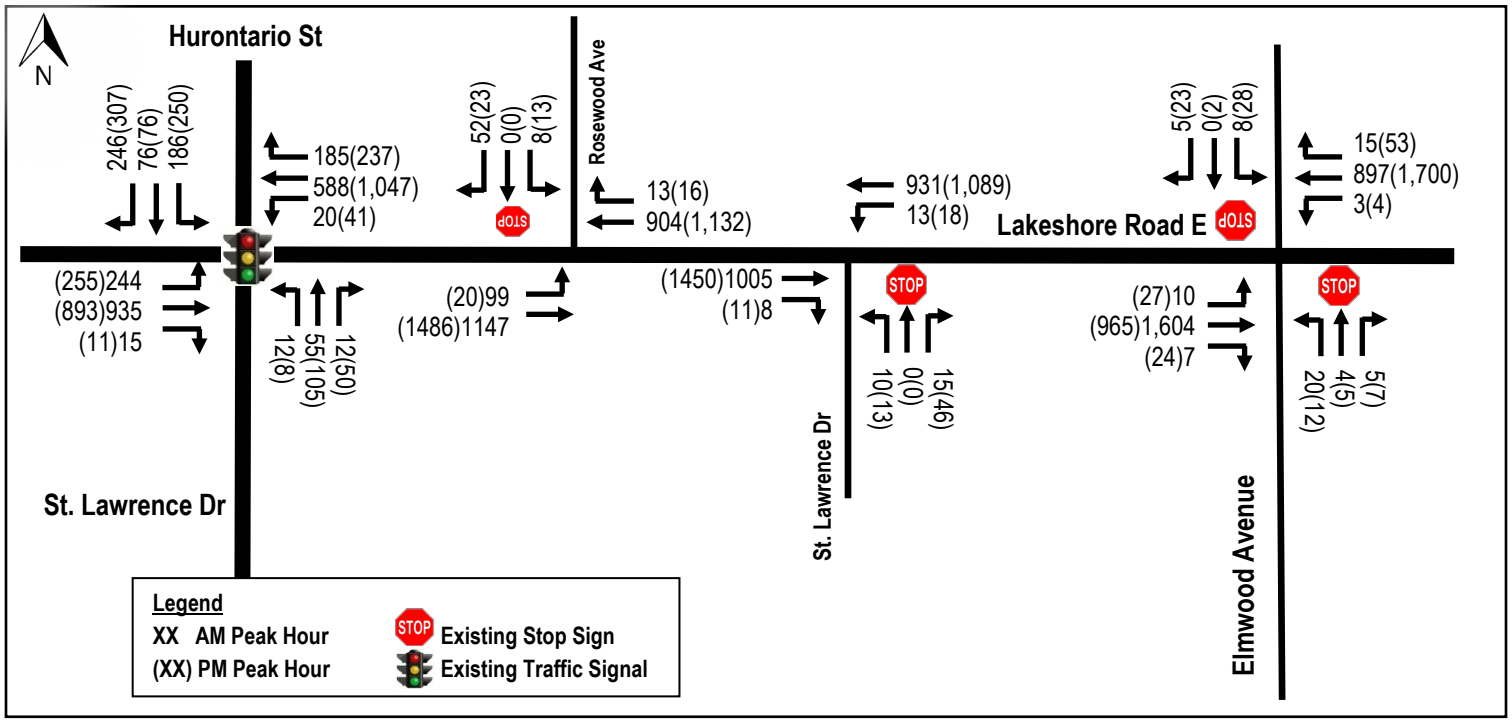
Typically, traffic turning movement counts will be undertaken by Nextrans at the study area intersections to capture the most up-to-date turning movement counts in the area. However, given the COVID-19 situation which requires business and school lockdown, any traffic turning movement counts to be undertaken at this time will not provide a meaningful assessment and snapshot of the existing conditions. These turning movement counts cannot be undertaken until schools and businesses are resumed to normal operation.

In consultation with the City staff, it is appropriate to use the older traffic turning movement counts and use the City provided growth rate to project it to the 2021 conditions. This approach is consistent with the industry best practices and requirement from other jurisdictions in the Greater Toronto and Hamilton Area. It should also be noted that the City provided growth rate is quite high (2% per annum and compounded). It is Nextrans' opinion that this approach is more conservative result since it will yield higher traffic volumes than actual existing conditions today. In addition, the existing

residential neighbourhood is relatively constant and there are no recent major infill developments in the area. As such, it is expected that the turning movements from the side street will remain unchanged.

It is NexTrans' opinion that this approach is reasonable and justified given the COVID-19 situation. Turning movement counts are summarized in **Appendix A,** using the methodology noted above. The existing volumes are illustrated in **Figure 6.**

Figure 6 – Existing Traffic Volumes (2021 Conditions)



2.5. Existing Traffic Assessment

The existing volumes in **Figure 6** were analyzed using Synchro Version 9 software. The methodology of the software follows the procedures described and outlined in the Highway Capacity Manual, HCM 2000, published by the Transportation Research Board. The detailed results are provided in **Appendix B** and summarized in **Table 1**. The analysis reflects the existing signal timing plans provided by the City of Mississauga.

Table 1 – Existing Levels of Service

Intersection	Key Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	Queue 95th (m)	LOS (v/c)	Delay (s)	Queue 95th (m)
Lakeshore Road E/ Hurontario Street (Signalized)	Overall	B (0.56)	14.9		C (0.77)	25.1	
	EB – L	A (0.46)	8.5	30.7	C (0.74)	29.6	87.2
	EB – T	A (0.50)	9.2	69.5	B (0.45)	11.8	90.9
	EB – R	A (0.01)	6.5	2.6	A (0.01)	8.5	2.7
	WB – L	B (0.13)	16.8	8.2	C (0.19)	20.0	16.3
	WB – T	B (0.56)	19.8	63.0	C (0.75)	28.5	156.7
	WB - R	B (0.13)	16.5	13.7	B (0.19)	19.8	21.6
	NB – L	B (0.04)	19.1	5.8	C (0.02)	28.8	6.0
	NB – T	B (0.13)	19.6	16.7	C (0.22)	30.6	38.3
	NB -R	B (0.01)	18.9	0.0	C (0.03)	28.8	8.2
	SB – L	C (0.59)	22.2	50.3	D (0.78)	47.0	98.9
	SB – T	B (0.18)	19.7	21.4	C (0.16)	30.0	29.2
	SB - R	B (0.17)	19.7	16.7	C (0.33)	31.8	41.5
Lakeshore Road E/ Rosewood Avenue (unsignalized)	EB – LT	B (0.14)	10.6	3.8	B (0.03)	10.6	0.8
	SB - LR	C (0.20)	18.3	5.4	C (0.10)	15.3	2.5
Lakeshore Road E/ St.Lawrence (unsignalized)	WB – LT	B (0.02)	10.3	0.5	B (0.05)	13.7	1.1
	NB - LR	C (0.08)	16.0	1.9	C (0.21)	20.1	6.0
Lakeshore Road E/ Elmwood Avenue (signalized)	Overall	A (0.68)	5.7		A (0.70)	6.9	
	EB – LTR	A (0.72)	6.2	94.7	A (0.50)	4.3	48.0
	WB – LTR	A (0.40)	3.6	36.5	A (0.75)	7.2	116.9
	NB – LTR	A (0.28)	31.2	13.2	D (0.16)	35.4	12.5
	SB – LTR	A (0.01)	29.1	1.9	D (0.25)	36.1	18.6

Based on the intersection capacity analysis, under the existing traffic conditions, the study intersections are currently operating at acceptable levels of service.

It should be noted that these findings are consistent with HDR Existing Conditions Report for Lakeshore Connection Communities dated October 25, 2016. NexTrans will review the Lakeshore Connecting Communities Transportation Master Plan Study recommendations and identify potential improvements if required.

3.0 TRANSPORTATION PLANNING CONTEXT IN THE AREA

3.1. Land Use Context

A comprehensive review of the area indicates that there are wide range of land uses and facilities available, which includes: medical centre, pharmacy, banks and restaurants, high school and elementary schools, as well as high-rise condominium buildings.

As the development proposal includes a 15-storey+ mechanical penthouse mixed-use building which consists of 147 dwelling units and approximately 625.4 m^2 (477.7 m^2+ 147.7 m^2 BOH) of non-residential GFA., it is NexTrans' opinion that the proposed development will have similar transportation characteristics as the existing developments.

3.2. Transportation Planning Context

As indicated in Section 2, the subject site is located about 190m to Hurontario Street and Lakeshore Road E intersection, and about 800m to Port Credit GO Train Station. Lakeshore Road E is currently serviced by MiWay Route 23, which connect Sheridan Centre on Erin Mills Parkway to the west and Long Branch GO Station to the east. MiWay Route 2 also services along Hurontario Street between Lakeshore Road E and Square One City Centre.

The proposed 18 km Hurontario LRT by Metrolinx is also under construction that will connect Port Credit GO Station with the City of Brampton.

A comprehensive review of the area indicates that there are wide range of land uses and facilities available, which includes: medical centre, pharmacy, banks and restaurants, high school and elementary schools, as well as high-rise condominium buildings.

It is NexTrans' opinion that the area is currently serviced by excellent existing land use, transportation network and transit network. This will encourage other modes of transportation such as walking, cycling and public transit. Future residents living in the proposed development will have other ways to travel around, with less dependence on private automobile and therefore will not require many parking spaces.

3.3. Lakeshore Connecting Communities Transportation Master Plan

The proposed development is located within the Lakeshore Connecting Communities Transportation Master Plan Study. Based on the information obtained from the project website (http://www.mississauga.ca/portal/residents/lakeshore-connecting-communities#lcc-main), the purpose of the Transportation Master Plan Study is to conduct a review how to best connect the communities of Clarkson, Port Credit and Lakeview while preserving and enhancing the unique character and sense of place of each community.

The study builds on recent planning studies to develop a design for the Lakeshore Road corridor from building face to building face that supports all modes of transportation, connects people to places, and moves goods to market. The study will also evaluate rapid transit alternatives east of Hurontario Street as well as extending rapid transit into the Port Credit area.

The City Council has endorsed the Lakeshore Connecting Communities Transportation Master Plan Study. Lakeshore Connecting Communities Transportation Master Plan will set out a long-term vision for transit and corridor improvements along Lakeshore Road from 2020 to 2041 that will support waterfront development.

The project will now move to its next steps, which is completing the Class Environmental Assessment process for the Lakeshore Corridor. This will involve further developing, evaluating and consulting on a number of different road designs for Lakeshore Road. Nextrans will review the final study and materials available on the website and address the questions or concerns related to this project from the proposed development perspective, where appropriate.

3.4. Hurontario LRT

Metrolinx is partnered with the municipality to build the new 18-km Hurontario LRT (with 19 stops) that services Mississauga and Brampton with better and more convenient way of travel. Based on the project website information (http://www.metrolinx.com/en/greaterregion/projects/hurontario-lrt.aspx), Metrolinx and Infrastructure Ontario (IO) have officially announced the winning bidder for the Hurontario Light Rail Transit project.

Mobilinx, the winning team, will design, build, finance, operate and maintain the new transit project for a 30-year term. The release of the winning bidder means Metrolinx and IO are moving forward with one of the largest infrastructure projects in Ontario. Peel Region has welcomed the project with open arms, eagerly awaiting its arrival. Design work will begin immediately with construction to follow. Mobilinx anticipates completion of the LRT in fall 2024.

Metrolinx and IO are delivering the Hurontario LRT via a public-private partnership (P3) contract which transfers the appropriate risks to the private sector. While the LRT will be operated and maintained by Mobilinx, it will remain publicly owned by Metrolinx. It is Nextrans' opinion that this project is critical and will encourage existing and future residents from taking more convenient and sustainable mode of transportation instead of driving single-occupant-vehicles.

3.5. New Bus Rapid Transit (BRT) Corridor on Lakeshore Road

In January, 2021, it was announced that the City of Mississauga will receive federal and provincial funding for transit infrastructure through the "Investing in Canada Infrastructure Program (ICIP)" to build the new Bus Rapid Transit (BRT) corridor on Lakeshore Road between East Avenue and Deta Road. Separated bike lanes and sidewalks will also be included in this project. The new bus rapid transit lanes will support a growing population along the Lakeshore Corridor.

There is a potential station in the vicinity of the proposed development, however, it will be confirmed through the Class Environmental Assessment Study and detailed design stage.

It is Nextrans' opinion that this is a significant transit infrastructure project that will support sustainable transportation and growth along this corridor. This major transit project will help reduce the numbers of single-occupant-vehicles, pollution, congestion and will encourage existing future residents along this corridor to take more sustainable mode of transportation moving forward.

4.0 FUTURE BACKGROUND CONDITIONS

4.1. Analysis Horizon

For the purposes of this assessment, a five-year horizon (2021 to 2026) has been carried out for the study analysis. This is consistent with the City of Mississauga Traffic Impact Study Guidelines and background studies conducted in the area.

4.2. Future Background Corridor Growth

Nextrans has received the growth rates from the City of Mississauga that will be applied to Lakeshore Road E and Hurontario Street. The Growth rate has been provided by City staff as following:

- Lakeshore Road East:
    - Eastbound: AM – 0%; PM – 1%
    - Westbound: AM – 0.5%; PM – 0.5%
- Hurontario Street:
    - Northbound: AM – 2%; PM – 1%
    - Southbound: AM – 2.5%; PM – 1.5%

4.3. Background Development Applications

A full review of active developments within the study area was conducted based on the information extracted from the City of Mississauga Development Portal.

Table 2 below summarizes the background developments in the area, which have been provided by City Staff.

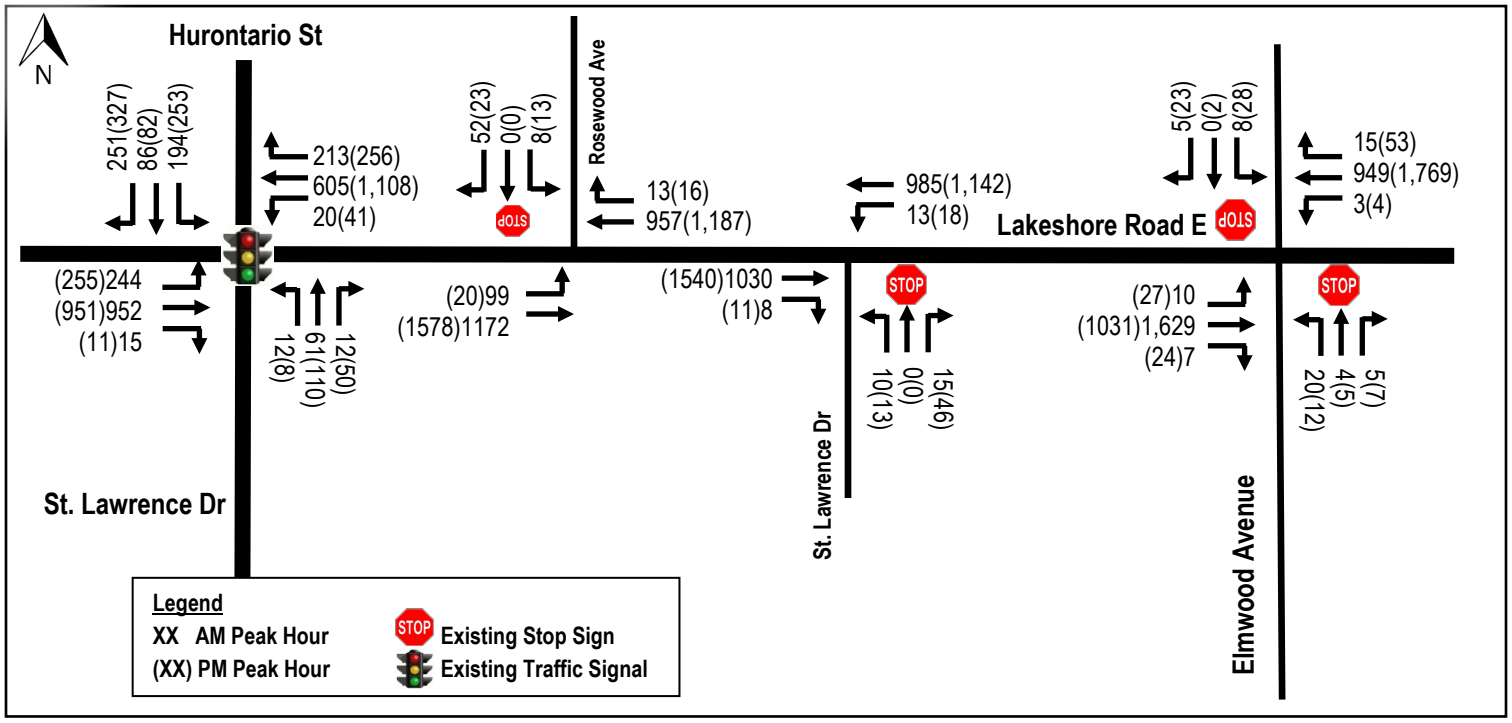
Table 2 – Background Developments in the Area

Proposed Development Location	Development Descriptions
42-46 Park St E	258 dwelling units
291 Lakeshore Rd E	541 m^2 office/ restaurant
55 Port Street	35 dwelling units
22-28 Ann Street & 78 Park Street East	351 dwelling units and 308 m^2 retail/office GFA

For the purposes of this assessment, the background development traffic volumes were extracted from the Transportation Impact Studies noted above (**Appendix C**).

Figure 7 illustrating the 2026 future background traffic volumes.

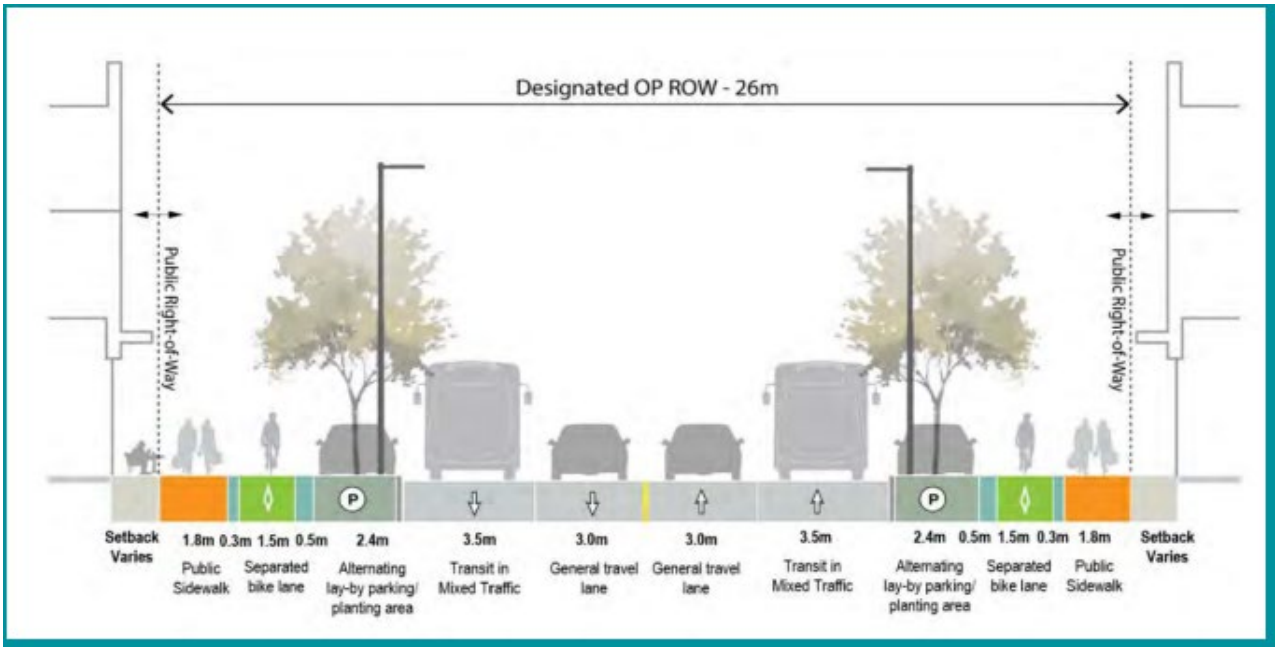
Figure 7 – 2026 Future Background Traffic Volumes



4.4. Lakeshore Connected Community Recommended Improvements

The City Council has endorsed the Lakeshore Connecting Communities Transportation Master Plan Study. Lakeshore Connecting Communities Transportation Master Plan will set out a long-term vision for transit and corridor improvements along Lakeshore Road from 2020 to 2041 that will support waterfront development. The project will now move to its next steps, which is completing the Class Environmental Assessment process for the Lakeshore Corridor. The proposed development and the study area are located within Segment 5 of the Lakeshore Connecting Communities Transportation Master Plan Study. **Figure 8** illustrates the improvements for this section of Lakeshore Road E (Exhibit 5-53 of the Lakeshore Connected Community Transportation Master Plan Draft Final Report).

Figure 8 – Recommended Improvement Based on Lakeshore Connected Community TMP



4.5. Future Background Traffic Assessment

The estimated 2026 future background traffic volumes are illustrated in **Figure 7**, and were analyzed using Synchro Version 10 software. The detailed calculations are provided in **Appendix D** and summarized in **Table 3**. It should be noted that the future lane configurations for Segment 6 of the Lakeshore Connected Community Transportation Master Plan Draft Final Report have been reflected in the analysis.

Table 3 – 2026 Future Background Levels of Service

Intersection	Key Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	Queue 95th (m)	LOS (v/c)	Delay (s)	Queue 95th (m)
Lakeshore Road E/ Hurontario Street (Signalized)	Overall	B (0.57)	15.5		C (0.81)	26.9	
	EB – L	A (0.47)	8.8	32.2	D (0.78)	37.8	96.8
	EB – T	A (0.51)	9.5	74.1	B (0.47)	12.4	98.7
	EB – R	A (0.01)	6.7	2.6	A (0.01)	8.8	2.7
	WB – L	B (0.13)	17.1	8.3	C (0.20)	20.4	16.5
	WB – T	C (0.57)	20.3	66.5	C (0.77)	29.9	169.8
	WB - R	B (0.14)	16.9	14.6	B (0.22)	20.3	25.5
	NB – L	B (0.04)	19.5	5.8	C (0.02)	30.1	6.0
	NB – T	C (0.14)	20.1	18.3	C (0.23)	32.2	39.9
	NB -R	B (0.01)	19.3	0.0	C (0.03)	30.2	8.2
	SB – L	C (0.61)	26.1	53.9	D (0.80)	51.2	101.0
	SB – T	C (0.19)	20.5	24.1	C (0.17)	31.5	31.0
	SB - R	C (0.17)	20.4	16.9	C (0.38)	34.0	50.2
Lakeshore Road E/ Rosewood Avenue (unsignalized)	EB – LT	B (0.15)	10.9	4.0	B (0.03)	10.9	0.8
	SB - LR	C (0.21)	19.1	5.8	C (0.11)	15.9	2.7
Lakeshore Road E/ St.Lawrence (unsignalized)	WB – LT	B (0.02)	10.4	0.5	B (0.05)	14.6	1.2
	NB - LR	C (0.08)	16.2	1.9	C (0.23)	21.7	6.6
Lakeshore Road E/ Elmwood Avenue (signalized)	Overall	A (0.69)	5.7		A (0.72)	7.0	
	EB – LTR	A (0.72)	6.2	98.2	A (0.52)	4.2	52.8
	WB – LTR	A (0.42)	3.6	39.5	A (0.77)	7.3	126.8
	NB – LTR	A (0.28)	32.1	13.5	D (0.17)	38.3	13.3
	SB – LTR	A (0.01)	29.9	2.0	D (0.27)	39.2	19.9

Under the 2026 future background traffic conditions, the analysis indicates that the study intersections are expected to operate with acceptable levels of service. It is Nextrans' opinion that no additional improvements beyond the recommended improvements in the Lakeshore Connected Communities Transportation Master Plan are required for this horizon year.

5.0 SITE TRAFFIC

5.1. Proposed Development

The proposed development consists of a 15-storey+ mechanical penthouse mixed-use residential building with a total of 147 residential dwelling units and a ground related non-residential GFA of 625.4 m^2 (477.7 m^2+ 147.7 m^2 BOH) (or 6,731 ft^2).

To be consistent with the previous assessment, the 2016 Transportation Tomorrow Survey (TTS), the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE) and information was reviewed to estimate the modal split, trip distribution and trip generation for the proposed development.

5.2. Modes of Travel Assessment in the Area

Table 4 summarizes the travel mode split information based on the review of the 2016 Transportation Tomorrow Survey data for Traffic Zones 3642, 3647, 3648 and 3877. The 2016 TTS data extraction is included in **Appendix E**.

Table 4 – Modal Split based on 2016 TTS Data for Traffic Zones

Time	Trips Made by Traffic Zones				
	Auto Driver	Auto Passenger	Transit	Cycle	Walk
AM Peak Period (6:00Am – 9:00AM)	67%	7%	23%	0%	3%
PM Peak Period (4:00PM – 7:00PM)	64%	7%	21%	0%	8%

Based on the information above, the non-auto mode of transportation (transit + walking + carpooling) accounts for 33% during the morning peak period and 36% during the afternoon peak period.

5.3. Site Trip Generation

The trip generation forecasts were undertaken using the information contained in the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). For the purposes of this assessment, the ITE Land Use Codes (LUC) 222 "Multifamily Housing High-Rise General Urban/Suburban" fitted curve equations have been utilized for the proposed development. It should be noted that the "Multifamily Housing High-Rise with First Floor Commercial" Land Use Category can also be used, however, the sample size is very small and may not representative.

The LUC 820 "Shopping Centre General Urban/Suburban" average rates have been utilized for the proposed development. The site trip generation is summarized in **Table 5**.

Table 5 – Site Trip Generation

ITE Land Use	Magnitude (units/GFA)	Parameters			Morning Peak Hour			Afternoon Peak Hour		
					In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) LUC 222 General Urban/Suburban	147	Trip Rates AM - T = 0.28(X) + 12.86 PM - T = 0.34(X) + 8.56			0.09	0.27	0.36	0.24	0.15	0.39
		Total Trips			**13**	**40**	**53**	**35**	**22**	**57**
		Mode	**AM**	**PM**						
		Transit	23%	21%	3	9	12	7	5	12
		Cycling	0%	0%	0	0	0	0	0	0
		Walking	3%	8%	0	2	2	3	2	5
		Carpooling	7%	7%	1	3	4	2	2	4
		Auto	**67%**	**64%**	**9**	**26**	**35**	**23**	**14**	**37**
Shopping Centre LUC 820 General Urban/Suburban	6,731	Trip Rates - Average Rates			0.58	0.36	0.94	1.83	1.98	3.81
		Total Trips			**4**	**2**	**6**	**12**	**13**	**25**
		Mode	**AM**	**PM**						
		Transit	23%	21%	1	1	2	2	3	5
		Cycling	0%	0%	0	0	0	0	0	0
		Walking	3%	8%	0	0	0	1	1	2
		Carpooling	7%	7%	0	0	0	1	1	2
		Auto	**67%**	**64%**	**3**	**1**	**4**	**8**	**8**	**16**
Summary		**Total Trips**			**17**	**42**	**59**	**48**	**35**	**83**
		Transit Trips			4	10	14	9	8	17
		Active Transportation Trips			0	2	2	4	3	7
		Carpool Trips			1	3	4	3	3	6
		New Auto Trips			**12**	**27**	**39**	**31**	**22**	**53**

Based on the analysis noted above, the proposed development is expected to generate:

- 59 total two-way trips (17 inbound and 42 outbound) and 83 total two-way trips (48 inbound and 35 outbound) during the AM and PM peak hours, respectively;
- 39 two-way auto trips (12 inbound and 27 outbound) and 53 two-way auto trips (31 inbound and 22 outbound) during the AM and PM peak hours, respectively;
- 14 two-way transit trips (4 inbound and 10 outbound) and 17 two-way transit trips (9 inbound and 8 outbound) during the AM and PM peak hours, respectively;
- 2 two-way active transportation trips (0 inbound and 2 outbound) and 7 two-way active transportation trips (4 inbound and 3 outbound) during the AM and PM peak hours, respectively; and
- 4 two-way carpool/paid ride trips (1 inbound and 3 outbound) and 6 two-way carpool/paid ride trips (3 inbound and 3 outbound) during the AM and PM peak hours, respectively

5.4. Existing Use Trip Generation

As indicated, the existing site is a retail plaza and a parking lot. Based on the existing survey information, the existing retail plaza is approximately 1,290.4 m^2 (or 13,890 ft^2). Typically, turning movement counts will be conducted at all existing site driveways to determine the existing auto trip generation from the existing use. However, given the COVID-19 situation, this task is not possible. For the purposes of this assessment, the trip generation estimates for the liquor store (beer store) were undertaken using the information contained in the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). Land Use Code 820 – Shopping Centre is the applicable land use for the existing retail. A trip generation comparison between the existing use and the proposed mixed-use development has

been provided to illustrate the difference in auto trip generation between the two land uses. **Table 6** summarizes the auto trip generation comparison.

Table 6 – Trip Generation Comparison (Auto Trip)

ITE Land Use	Magnitude (GFA/Unit)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Existing Land Use Trip Generation								
Shopping Centre (LUC 820) General Urban/Suburban	13,890 ft2	Trip Rates	0.58	0.36	0.94	1.83	1.98	3.81
		Auto Trips	**10**	**6**	**16**	**33**	**36**	**69**
Proposed Development Trip Generation								
Proposed Development	147 units+625.4 m2 (or 6,731 ft2)	**Auto Trips**	**12**	**27**	**39**	**31**	**22**	**53**
Proposed – Existing								
Difference			**+2**	**+21**	**+23**	**-2**	**-14**	**-16**

As indicated in the table above, the proposed mixed-use development is expected to generate additional 23 auto trips during the morning peak hour but generates 16 less auto trips during the afternoon peak hour, as compared to the existing land use. Therefore, it is concluded that the incremental proposed development traffic is negligible.

5.5. Site Trip Distribution and Assignment

The 2016 Transportation Tomorrow Survey (TTS) data was reviewed for Traffic Zones 3642, 3647, 3648 and 3877 in order to estimate the general trip distribution for the proposed development. **Table 6** summarizes the planning district/traffic zones distribution based on the 2016 TTS data, with **Table 7** summarizing the site trip assignment based on the 2016 TTS data detailed breakdown for the City of Mississauga Wards and existing transportation network in the area for the residential component of proposed development.

Table 7 – Trip Distribution for Residential Component

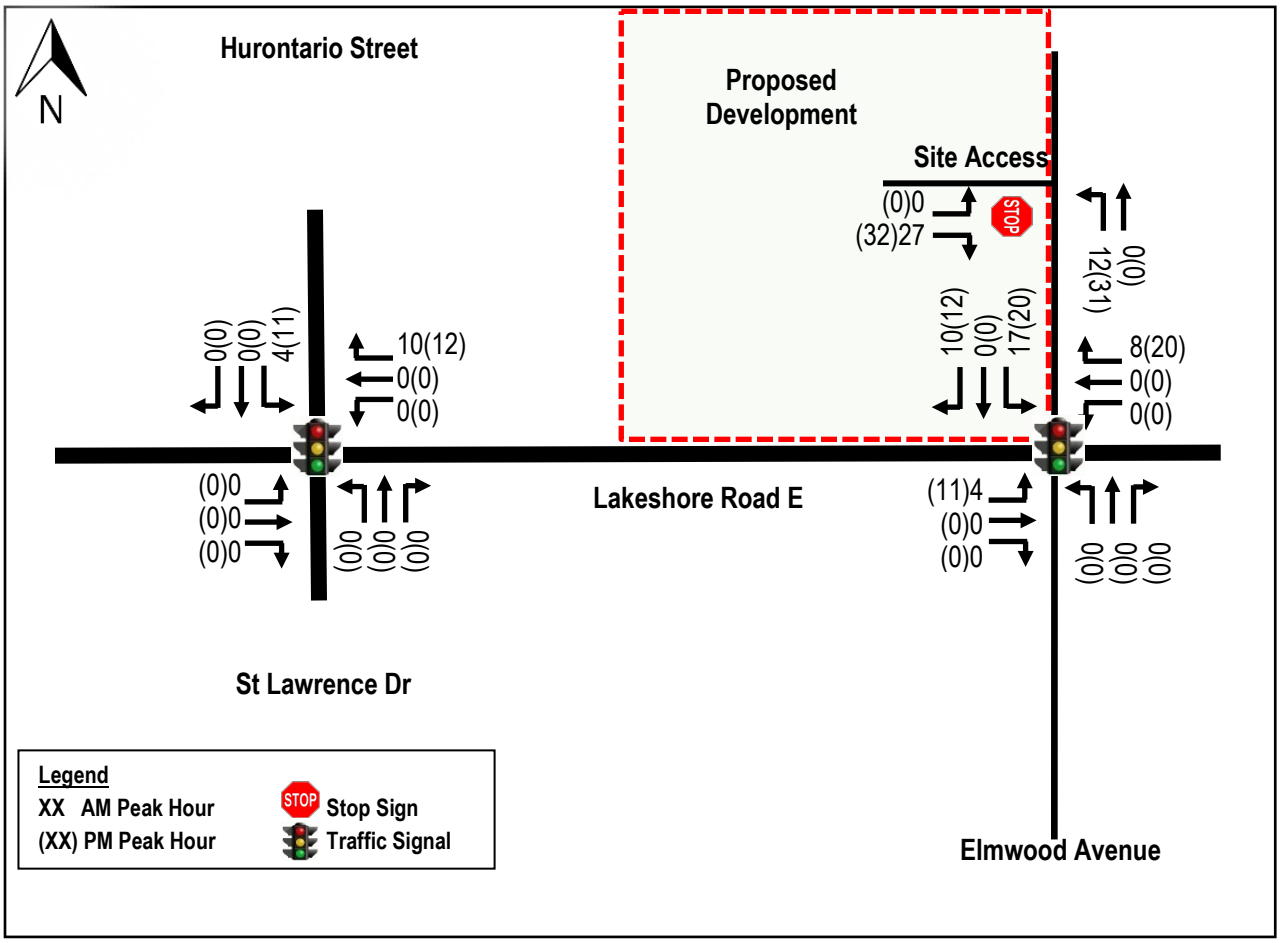
Mode	Mississauga	Toronto	Brampton	Oakville	York Region	Brantford	Hamilton	Total
Auto	57%	34%	3%	2%	3%	1%	0%	100%
Transit	46%	46%	0%	1%	2%	0%	5%	100%

Table 8 – Site Trip Distribution

General Direction (To/From)	Auto	Transit
North	41%	20%
South	0%	0%
East	42%	58%
West	17%	22%
Total	***100%***	***100%***

Figure 9 illustrates the proposed development generated traffic volumes. It should be noted that the auto site trip distribution and assignment have been taken into consideration the 2016 TTS information, existing turning restrictions (if any), existing intersection operations and capacity constraints.

Figure 9 – Site Traffic Volumes



6.0 FUTURE TOTAL TRAFFIC CONDITIONS

6.1. Future Total Traffic Assessment for Auto Mode

The estimated 2026 future total traffic volumes (future background traffic volumes plus site generated traffic volumes) are illustrated in **Figure 10**, and were analyzed using Synchro Version 9 software. The detailed calculations are provided in **Appendix F** and summarized in **Table 9**.

Figure 10 – 2026 Future Total Traffic Volumes

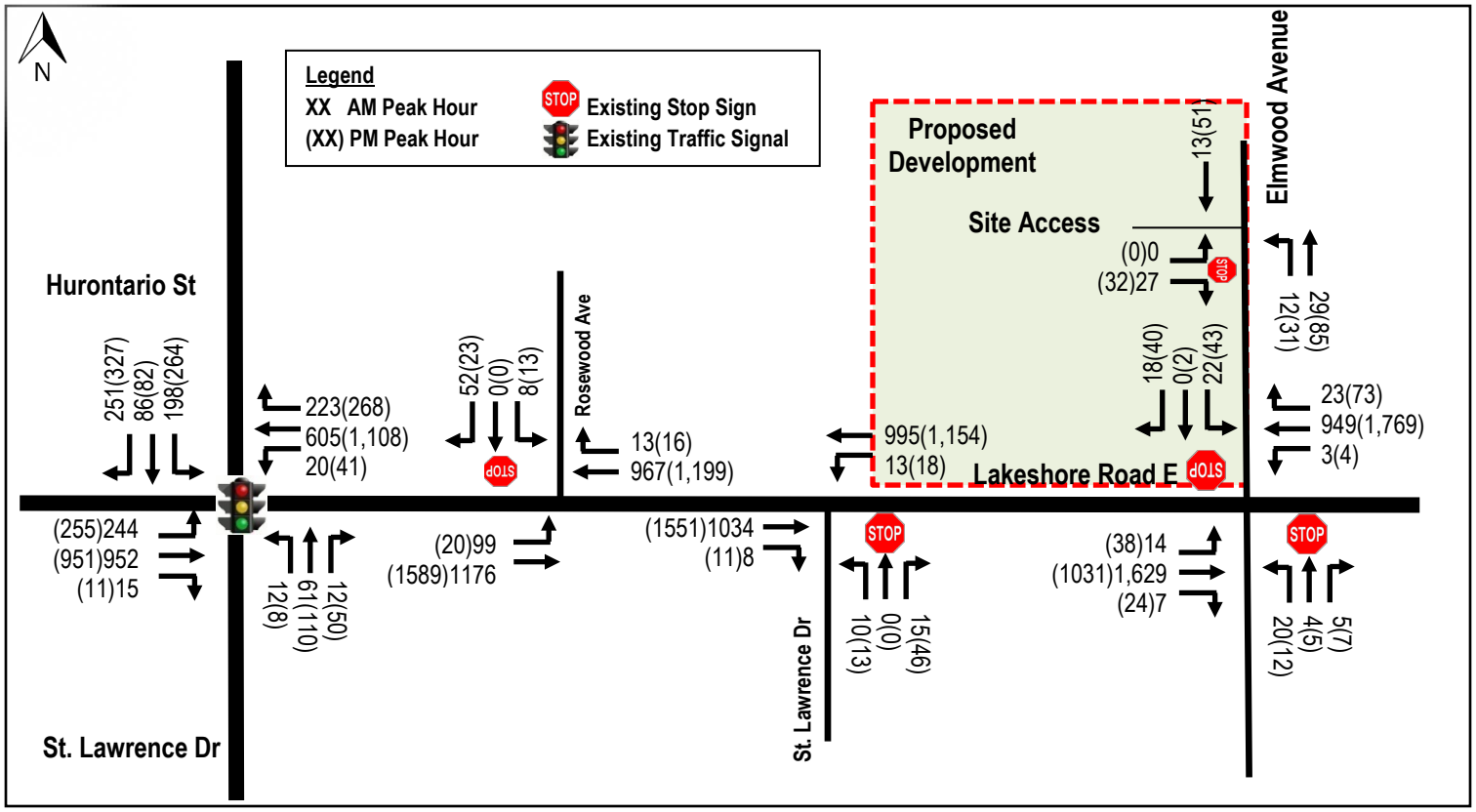


Table 9 – 2026 Future Total Levels of Service

Intersection	Key Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	Queue 95th (m)	LOS (v/c)	Delay (s)	Queue 95th (m)
Lakeshore Road E/ Hurontario Street (Signalized)	Overall	B (0.58)	15.6		C (0.81)	26.8	
	EB – L	A (0.47)	8.9	32.5	D (0.78)	37.8	96.8
	EB – T	A (0.51)	9.4	74.8	B (0.47)	12.4	98.7
	EB – R	A (0.01)	6.7	2.7	A (0.01)	8.8	2.7
	WB – L	B (0.13)	16.8	8.4	C (0.20)	20.4	16.5
	WB – T	C (0.57)	19.7	67.0	C (0.77)	29.9	169.8
	WB - R	B (0.15)	16.9	14.9	B (0.23)	20.5	26.6
	NB – L	B (0.04)	19.6	5.8	C (0.02)	30.1	6.0
	NB – T	C (0.14)	20.1	18.4	C (0.23)	32.2	39.9
	NB -R	B (0.01)	19.4	0.0	C (0.03)	30.2	8.2
	SB – L	C (0.62)	23.1	55.2	D (0.80)	51.2	101.0
	SB – T	C (0.19)	20.4	24.2	C (0.17)	31.5	31.0
	SB - R	C (0.17)	20.3	17.0	C (0.38)	34.0	50.2
Lakeshore Road E/ Rosewood Avenue (unsignalized)	EB – LT	B (0.15)	11.0	4.1	B (0.03)	10.9	0.8
	SB - LR	C (0.21)	19.4	5.9	C (0.11)	15.9	2.7
Lakeshore Road E/ St. Lawrence (unsignalized)	WB – LT	B (0.02)	10.4	0.5	B (0.05)	14.8	1.2
	NB - LR	C (0.08)	16.6	2.0	C (0.23)	22.1	6.7
Lakeshore Road E/ Elmwood Avenue (signalized)	Overall	A (0.68)	5.8		A (0.75)	8.3	
	EB – LTR	A (0.72)	6.0	99.6	A (0.58)	5.2	72.7
	WB – LTR	A (0.42)	3.5	40.2	A (0.77)	8.0	161.5
	NB – LTR	C (0.30)	34.1	13.7	D (0.14)	40.7	13.1
	SB – LTR	C (0.13)	32.5	11.9	D (0.51)	45.0	33.0
Site Access/ Elmwood Avenue	EB – LR	A (0.03)	8.5	0.6	A (0.03)	8.7	0.8
	NB - LT	A (0.01)	2.1	0.2	A (0.02)	2.1	0.0

Under the 2026 future total traffic conditions, the analysis indicates that the study intersections are expected to operate with acceptable levels of service.

It is Nextrans' opinion that no additional improvements beyond the recommended improvements in the Lakeshore Connected Communities Transportation Master Plan are required for this horizon year.

The proposed development access onto Elmwood Avenue North is expected to operate at excellent levels of service with minimum delay or queue. The recommended lane configure for the proposed development access are as follows:

- One inbound lane and one outbound lane for the proposed development access;
- One northbound shared through/left and one southbound shared through/right on Elmwood Avenue.

6.2. Active Transportation Assessment

In January, 2021, it was announced that the City of Mississauga will receive federal and provincial funding for transit infrastructure through the "Investing in Canada Infrastructure Program (ICIP)" to build the new Bus Rapid Transit (BRT) corridor on Lakeshore Road between East Avenue and Deta Road. Separated bike lanes and sidewalks will also be included in this project. The new bus rapid transit lanes will support a growing population along the Lakeshore Corridor.

Walking

The area is currently well-serviced by a sufficient network of sidewalks, with sidewalks are available on the west side of Elmwood Avenue, with sidewalks on both sides of Lakeshore Road E and Hurontario Street. In addition, sidewalks are reasonably maintained.

It is Nextrans' understanding that the proposed development will meet the City of Mississauga requirement to provide a 2.0 m sidewalk along the frontage of the proposed development on Lakeshore Road E. This will facilitate better walking and cycling in the future as per the recommendations from the Lakeshore Connected Communities Transportation Master Plan.

Cycling

Under the existing conditions, there are no dedicated bicycle lanes in the immediate area. However, there are multi-use trails on Hurontario Street north of the rail tracks and there are signed routes along Cumberland Drive and Odgen Avenue.

The Lakeshore Connected Communities Transportation Master Plan recommended separated bicycle lanes on both sides of Lakeshore Road E through this area. In addition, the recent funding announcement also include the funding to implement sidewalks and bike lanes along Lakeshore Road through this area. It is Nextrans' opinion that this is a good recommendation as there are lack of east-west cycling network in the area. The proposed development supports this recommendation.

6.3. Transit Mode Assessment

As indicated, the proposed development is expected to generate 14 two-way transit trips (4 inbound and 10 outbound) and 17 two-way transit trips (9 inbound and 8 outbound) during the AM and PM peak hours, respectively;

The proposed development is located adjacent to MiWay Bus Route 23, about 800 m walking distance to the existing Port Credit GO Train Station or about 10 minute-walk/5 minute-cycle (which also gives access to Miway Bus Route 2,8,14,23,103). In addition, the site is located about 190 m to Miway Bus Route 2, 8 at Lakeshore Road E and Hurontario Street intersection.

The transit passenger demands generated by the proposed development per transit vehicle is low. Therefore, the proposed development impact on transit service is negligible and no improvements are required.

In reality, some passengers could be bunched together during the peak 15 minutes, instead of spreading during the entire peak hour. Even if this is the case, our estimates indicate that the demand per vehicle can be accommodated without the need for additional transit vehicles or improvements during both the morning and afternoon peak periods.

6.4. New Bus Rapid Transit (BRT) Corridor on Lakeshore Road

As indicated, in January, 2021, it was announced that the City of Mississauga will receive federal and provincial funding for transit infrastructure through the "Investing in Canada Infrastructure Program (ICIP)" to build the new Bus Rapid Transit (BRT) corridor on Lakeshore Road between East Avenue and Deta Road. Separated bike lanes and sidewalks will also be included in this project. The new bus rapid transit lanes will support a growing population along the Lakeshore Corridor.

It is Nextrans' opinion that this project will significantly improve the pubic transit, as well as walking and cycling experience along Lakeshore Road. This proposed development will contribute healthy transit and active transportation users to the system and maximize the infrastructure investments from all levels of government.

7.0 SITE PLAN REVIEW

7.1. Loading Requirement

As indicated, the proposed development consists of a 15-storey+ mechanical penthouse mixed-use residential building with a total of 147 dwelling units and approximately 625.4 m^2 (477.7 m^2+ 147.7 m^2 BOH) of non-residential GFA. The City of Mississauga Zoning By-law 0225-2007 was reviewed to determine the loading requirement for the proposed development. **Table 10** summarizes the loading requirement based on the current Zoning By-law.

Table 10 – City of Mississauga Zoning By-law Loading Requirements

Land Use	Magnitude	Loading Rates	Spaces Required
Residential	147 units	Minimum of 30 dwelling units	1 space
Non-residential	625.4 m^2	250 m^2 to 2,350 m^2	1 space

Under the City's By-Law Zoning By-law 0225-2007, one loading space is required for residential component and one for the non-residential component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length. Given that the proposed non-residential component is located within the same building, the loading space can be shared with the residential component. Therefore, it is NexTrans' opinion that only one loading space is required for the proposed development. It is Nextrans' understanding that the proposed development will meet this requirement.

AutoTURN software was used (Garbage truck TAC-HSU and passenger vehicle) to generate vehicular turning templates to confirm and demonstrate the accessibility for the proposed loading space. **Figures 11** and **12** illustrate the turning movement templates for passenger vehicles and Garbage truck.

7.2. Proposed Development Access

Currently, the subject site has three full moves accesses, two onto Lakeshore Road E and one onto Elmwood Avenue North. With the proposed redevelopment, only one full moves access onto Elmwood Avenue North, located approximately at the same location as the existing access, will be provided to service the proposed development. The existing full moves accesses onto Lakeshore Road E will be closed. This will minimize the vehicular movements on Lakeshore Road E and therefore will improve the pedestrian and cyclist safety, as well as supporting the future separate cycling facilities on Lakeshore Road E as part of the Lakeshore Connected Communities Transportation Master Plan recommendation.

The analysis indicates that the site access is expected to operate at acceptable levels of service with minimum delay or queue. The access configuration includes: one inbound lane and one outbound lane, one shared northbound through/left and one shared southbound through/right on Elmwood Avenue North.

7.3. Safety Analysis

7.3.1. Sightlines

Based on Nextrans' review of the area context, site observation and review of the survey plan, Elmwood Avenue North is relatively flat and straight with no horizon curves or vertical curves. Therefore, it is Nextrans' opinion that there are no sightline issues for the proposed access onto Elmwood Avenue North. In fact, the proposed access onto Elmwood Avenue North is located approximately at the same location as the existing access from the retail plaza onto Elmwood Avenue North.

7.3.2. Pedestrian and Cycling Safety

As indicated, the existing land use has three accesses, two directly onto Lakeshore Road E and one only onto Elmwood Avenue North.

With the proposed redevelopment of the site, only one access will be provided onto Elmwood Avenue North and the existing accesses onto Lakeshore Road E will be closed. It is Nextrans' opinion that this provision will minimize the turning movement conflict between the vehicles and pedestrians/cyclists, which make it safer overall. This provision will also support the future separate cycling facilities on Lakeshore Road E as part of the Lakeshore Connected Communities Transportation Master Plan recommendation. As part of the proposed development, sidewalks along the frontage of the site on Lakeshore Road E and Elmwood Avenue North will be maintained and improved as required.

7.3.3. Community Concerns

Nextrans has reviewed Appendix A-4 of the Lakeshore Connected Communities Transportation Master Plan and the issues raised by the residents in the area. The review indicates that the resident concerns are mostly related to pedestrian and cyclist safety, as well as improve conditions for walking and cycling in the community. The residents also would like to see better neighbourhood design with complete street to accommodate all modes of transportation rather than widening road to promote speeding along Lakeshore Road E.

The resident also would like to see traffic signal be coordinated to improve through traffic and better configurated intersections to address turning movements during the peak periods.

It is Nextrans' opinion that the proposed development design and configuration addressed these concerns as the proposed development consolidated direct access onto Lakeshore Road E and Elmwood Avenue North to improve pedestrian and cyclist safety, as well as reducing turning movement conflicts on Lakeshore Road E.

8.0 PARKING ASSESSMENT

8.1. Vehicle Parking Requirement

It is Nextrans' understanding that the site is currently zoned for Mainstreet Commercial (C4) under the current City of Mississauga Zoning By-law 0225-2007 (in effect).

Table 11 below summarizes the vehicle parking requirements for the proposed development, based on the City of Mississauga Zoning By-law 0225-2007 (in effect), which reflects all amendments up to March 2020. The non-residential parking requirement will be based on C4 zone.

Table 11 – City of Mississauga Zoning By-law No. 0225-2007 Vehicle Parking Requirements

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential Rental	2 units (studio) 90 units (1bdr) 37 units (2br) 18 units (3br)	1.0 space/unit (studio) 1.18 space/unit (1br) 1.36 space/unit (2br) 1.50 space/unit (3br or more)	185
Visitor	147 units	0.20 spaces/unit for visitor	29
Non-residential	625.4 m^2	4.0 spaces per 100 m^2 GFA	25
Total			***239 spaces***

Based on the assessment noted above, the proposed development will require to provide approximately 239 vehicle parking spaces, inclusive of residential, visitor and non-residential uses. The proposed development will provide a total of 170 vehicle parking spaces, based on the recommendations of this Study. This represents 69 spaces shortfall or approximately 28.8% reduction.

NexTrans also reviewed the Mississauga Parking Master Plan and Implementation Strategy prepared by WSB, on May 2019. Table 12 below summarizes the vehicle parking requirements for the proposed development based on the parking requirement rate suggested by WSB study.

Table 12 - Mississauga Parking Master Plan and Implementation Strategy Vehicle Parking Requirements

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential Rental	147 units	0.8 spaces per unit for residential	117
Visitor	147 units	0.15 spaces/unit for visitor	22
Non-residential	625.4 m^2	To be shared with visitor	-
Total			***139***

Based on the assessment noted above, the proposed development will be required to provide approximately 139 vehicle parking space, inclusive of residential, visitor, and non-residential uses. The proposed development will provide a total of 170 parking spaces that meets the requirement.

It is NexTrans' opinion that these rates are excessive and do not support the Hurontario LTR investment by Metrolinx and the City of Mississauga, as well as the Lakeshore Road Bus Rapid Transit (BRT) Corridor recently announced by three levels of government. It is NexTrans' opinion that the parking rates should be reduced as parking management is the best Transportation Demand Management measure as it encourages residents to take more sustainable mode of transportation such as the major transit investments by all levels of government. At the minimum, the applicable parking rates for the proposed development should be similar to the approved rates for other background developments in the area.

NexTrans provide the following assessment in support of reduced parking rates for the proposed development.

8.2. Vehicle Parking Justifications

8.2.1. Approved Parking Rates in Other Developments in the City of Mississauga

NexTrans has reviewed the approved parking rates for various development in the City of Mississauga. **Table 13** below summarizes the proposed developments and associated approved parking rates. The detailed information is included in **Appendix H**.

Table 13 – Approved Parking Rates in Other Developments in the City of Mississauga

Proposed Development	Description	Residential Parking Rates	Visitor Parking Rate	Retail Parking Rate	Blended Rate
Endenshaw Apartments Ann Street and Park St E	Mixed-use development	0.75 space/unit (1b) 0.90 space/unit (2b) 1.10 space/unit (3b)	Shared 0.10 space per dwelling unit	Shared 1.0 space per dwelling unit	1.02 spaces/unit
Endenshaw Apartments Park St E Stavebank Rd	Residential development	0.8 space/unit (1b) 1.0 space/unit (2b) 1.3 space/unit (3b)	0.10 space per dwelling unit	NA	1.13 spaces/unit

Based on the information outlined in the table above, it is Nextrans' opinion that the Endenshaw Apartments (Ann Street and Park Street E) is applicable to the proposed development given the location and context of the proposed development (compact and efficient). The residents can connect to the future Hurontario LTR via existing MiWay Bus Routes. This is a viable and cheaper mode of transportation than to own a car.

8.2.2. Area Transportation Context

The subject site is located on Lakeshore Road E, about 190 m to Lakeshore Road E and Hurontario Street. Lakeshore Road E is currently serviced by MiWay Route 23, which connect Sheridan Centre on Erin Mills Parkway to the west and Long Branch GO Station to the east. MiWay Route 2 also services along Hurontario Street between Lakeshore Road E and Square One City Centre. The proposed development is also located about 800m to Port Credit GO Train Station, which gives access to MiWay Bus Route 2,8,14,23,103). The proposed 18 km Hurontario LRT by Metrolinx is also under construction that will connect Port Credit GO Station with the City of Brampton.

It is Nextrans' opinion that the area is currently servicing by excellent transit network and a complete network of sidewalk that will encourage other modes of transportation such as walking, cycling and public transit. Future residents living in the proposed development will have other ways to travel around, with less dependent on private automobile and therefore will not require many parking spaces.

There are also many existing amenities in the area that the residents can walk or cycle to, instead of driving. Existing commercial plazas and other community amenities are located along both the north and south sides of the Lakeshore Road E within 10-20 minute-walking/cycling distance:

- Metro grocery store;
- Medical centre and restaurants/pet smart;
- Mentor College Main Campus;
- Adamson Estate Park and Helen Molasy Memorial Park;
- Shoppers Drug Mart;
- Rental apartment buildings;
- High-rise condominium buildings;
- Retirement homes;
- Port Credit Secondary School;
- Forest Avenue Public School;
- Lions Club of Credit Valley Outdoor Pool; and
- Other land uses and amenities

8.2.3. Existing Mode Shared

Table 14 summarizes the travel mode split information based on the review of the 2016 Transportation Tomorrow Survey data for Traffic Zone 3877. The 2016 TTS data extraction is included in **Appendix E**.

Table 14 – Non-Auto Modal Split based on 2016 TTS Data for Traffic Zone 3877

Time	Trips Made by Traffic Zone 3877				
	Auto Driver	Auto Passenger	Transit	Cycle	Walk
AM Peak Period (6:00 – 9:00)	63%	6%	25%	0%	5%
PM Peak Period (4:00 – 7:00)	73%	8%	4%	0%	15%

Based on the information above, the non-auto mode of transportation (transit + walking + carpooling) accounts for 37% during the morning peak period and 27% during the afternoon peak period. This indicates that the non-driving mode of 37% and 27% are generally close to the proposed 28.8% reduction in parking supply. Therefore, the proposed 28.8% parking reduction can be supported with the future higher order transit along Lakeshore Road E and recommended TDM measures provided in this Study.

8.2.4. Existing Household Demographic and Car Ownership

Nextrans also reviewed the vehicle ownership for Traffic Zone 3877. **Table 15** summarizes the vehicle ownership based on the 2016 Transportation Tomorrow Survey data, while the 2016 TTS data extraction is included in **Appendix E**.

Table 15 – Vehicle Ownership for Traffic Zone 3877 Based on 2016 TTS Data

Household Type	Number of Available Vehicles				
Apartment	0	1	2	3	4+
1,287	14%	54%	25%	7%	0%

Based on the 2016 TTS demographic information, current, about 14% of the residents that are currently living in the apartment do not own a car and 54% own only one car. The total combine is 68% of residents that are living in apartment own one car or less. This indicates that the recommended blended rate of 1.15 spaces/unit is reasonable and justified.

8.2.5. City of Mississauga Official Plan

Based on the City of Mississauga Official Plan Chapter 4 (Vision), "the City will plan for a strong, diversified economy supported by a range of mobility options and a variety of housing and community infrastructure to create distinct, complete communities".

One of the Guiding Principles (Section 4.4) states that "Mississauga will provide a range of mobility options (e.g., walking, cycling, transit, vehicular) for people of all ages and abilities by connecting people with places through coordinated land use, urban design and transportation planning efforts".

Furthermore, Policies 8.1.1 and 8.1.8 state that "Through the creation of a multi-modal transportation system, Mississauga will provide transportation choices that encourage a shift in lifestyle toward more sustainable transportation modes, such as transit and active transportation" and "To better utilize existing infrastructure, Mississauga will encourage the application of transportation demand management (TDM) techniques, such as car-pooling, alternative work arrangements and shared parking". It is Nextrans' opinion that TDM techniques such as parking management is one of the best and most effective TDM measures that could help the City achieves those visions and policies.

8.3. New Bus Rapid Transit (BRT) Corridor on Lakeshore Road

As indicated, in January, 2021, it was announced that the City of Mississauga will receive federal and provincial funding for transit infrastructure through the "Investing in Canada Infrastructure Program (ICIP)" to build the new Bus Rapid Transit (BRT) corridor on Lakeshore Road between East Avenue and Deta Road. Separated bike lanes and sidewalks will also be included in this project. The new bus rapid transit lanes will support a growing population along the Lakeshore Corridor.

It is Nextrans' opinion that this project will significantly improve the pubic transit, as well as walking and cycling experience along Lakeshore Road. This proposed development will contribute healthy transit and active transportation users to the system and maximize the infrastructure investments from all levels of government.

8.3.1. Hurontario LRT and Lakeshore Road BRT

The proposed development is located at the intersection of two rapid transit projects in the City of Mississauga. The intend of rapid transit investment is to reduce the amount of congestion, encourage more sustainable mode of transportation, reduce pollution and support future growth in the City. It is NexTrans' opinion that the proposed development has done tremendous work to support this intent and vision and a reduced parking rate is one of the best ways to encourage residents to take sustainable modes of transportation and reconsider the need to own private cars.

8.3.2. Transportation Demand Management Measures

In order to encourage other modes of transportation for the proposed developments such as walking, cycling, carpooling and public transit, the recommended TDM measures are outlined in Section 9 of this report.

8.3.3. Recommended Parking Rates for the Proposed Development

Based on the information and justifications provided above, Nextrans recommended that the blended rate of 1.15 spaces/unit be applied to the proposed development.

It is anticipated that the small ground related non-residential floor area is intended to serve the future residents in the building along with other existing and future residents in the immediate area within walking distance. Given that this proposed non-residential is not a major destination, it is Nextrans' opinion that this small ground related non-residential will not generate any vehicular traffic to and from the proposed development and therefore it can be shared with visitor parking spaces.

Based on the assessment noted above, **Table 16** below summarizes the recommended parking rates for the proposed mixed-use development.

Table 16 – Recommended Parking Rates for the Proposed Mixed-Use Development

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential	147 units	1.15 space/unit	170 spaces (including 22 visitor spaces)
Non-residential	625.4 m^2	None required	To be shared with visitor
Total			***170 spaces***

Based on the recommended parking rates and comprehensive justifications provided in this Study, the proposed development is required to provide 170 vehicle parking spaces, inclusive of resident, visitor and non-residential parking spaces.

8.4. Bicycle Parking

It is Nextrans' understanding that the City of Mississauga currently does not have bicycle requirements in the current Zoning By-law. However, the City of Mississauga Cycling Master Plan recommends some parking rates to support active transportation. **Table 17** summarizes the recommended bicycle parking spaces for the proposed development to support TDM and active transportation.

Table 17 – Recommended Bicycle Parking Requirements

Land Use	No. of Unit / GFA	Short Term		Long Term		Total
		Rates	Spaces	Rates	Spaces	
Residential	147 units	0.08 spaces/unit	12	0.70 spaces/unit	103	115
Non-residential	625.4 m^2	0.25 space/100m^2	2	0.10 space/100m^2	1	3
Total			***14***		***104***	***118***

Based on the recommendations above, the proposed development will need to provide a total of 118 bicycle parking spaces, including 14 short-term spaces and 104 long-term spaces. The proposed development provides 160 bicycle parking spaces, inclusive of short-term and long-term, which meets these requirements.

9.0 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) is a co-ordinated series of actions aimed at maximizing the people moving capability of the transportation system. Intended to reduce single-occupant auto use, potential TDM measures include: TDM supportive land use, bicycle and pedestrian programs and facilities, public transit improvements, preferential treatments for buses and ridesharing, where appropriate.

The following TDM incentives are recommended for the proposed residential development, based on Nextrans' review of the City of Mississauga Cycling Master Plan, Moving Mississauga Report and the Region of Peel TDM Strategy:

- Given that parking management is the best TDM measures, the proposed development should implement the recommended parking rates provided in this Study based on the comprehensive parking justifications to support TDM and minimize the numbers of single-occupant-vehicle trips;
- Provide 160 bicycle parking spaces (with 16 short-term and 144 long-term spaces);
- The proposed development provides direct shared pedestrian and cycling connections to Lakeshore Road E and Elmwood Avenue North, where appropriate;
- Provide an information package for new residents. The information package includes GO Train schedules (Port Credit and Long Branch GO Train Stations), Mississauga MiWay bus route schedules, community and cycling maps, where appropriate. The Information Package can be distributed by the Landlord.

10.0 CONCLUSIONS / FINDINGS

10.1. Study Conclusions

The findings and conclusions of the analysis are as follows:

- The proposed development is expected to generate:

  - 59 total two-way trips (17 inbound and 42 outbound) and 83 total two-way trips (48 inbound and 35 outbound) during the AM and PM peak hours, respectively;
  - 39 two-way auto trips (12 inbound and 27 outbound) and 53 two-way auto trips (31 inbound and 22 outbound) during the AM and PM peak hours, respectively;
  - 14 two-way transit trips (4 inbound and 10 outbound) and 17 two-way transit trips (9 inbound and 8 outbound) during the AM and PM peak hours, respectively;
  - 2 two-way active transportation trips (0 inbound and 2 outbound) and 7 two-way active transportation trips (4 inbound and 3 outbound) during the AM and PM peak hours, respectively; and
  - 4 two-way carpool/paid ride trips (1 inbound and 3 outbound) and 6 two-way carpool/paid ride trips (3 inbound and 3 outbound) during the AM and PM peak hours, respectively

- A comparison between the proposed development and existing land use indicates that the proposed mixed-use development is expected to generate additional 23 auto trips during the morning peak hour but generates 16 less auto trips during the afternoon peak hour, as compared to the existing land use. Therefore, it is concluded that the incremental proposed development traffic is negligible.

- The intersection capacity analysis indicates that under existing, future background and future total conditions, all the intersections considered in the Study are expected to operate at acceptable levels of service. Therefore, it is Nextrans' opinion that no additional improvements beyond the recommended improvements in the Lakeshore Connected Communities Transportation Master Plan are required for this horizon year as the analysis indicates that this proposed improvement will significantly improve operation and safety along this section of Lakeshore Road E.

- The analysis indicates that the transit passenger demands generated by the proposed development per transit vehicle is low. Therefore, the proposed development impact on transit service is negligible and no improvements are required.

- Based on the current Zoning By-law, the proposed development will require to provide approximately 239 vehicle parking spaces, inclusive of residential, visitor and non-residential uses. It is Nextrans' opinion that these rates are excessive and do not support the Hurontario LTR and Lakeshore BRT investment by Metrolinx, Federal Government, Provincial Government and the City of Mississauga. It is Nextrans' opinion that the parking rates should be reduced as parking management is the best Transportation Demand Management measure to reduce single-occupant-vehicle trips. At the minimum, the applicable parking rates for the proposed development should be similar to the approved rates for other background developments in the area.

  Based on the comprehensive justifications provided in this Study, it is recommended that the proposed development provides a blended parking rate of 1.15 spaces/unit for the entire site, inclusive of 22 shared visitor and non-residential spaces. Based on this recommended rate, the proposed development is required to provide 170 vehicle parking spaces, inclusive of resident, visitor and non-residential parking spaces.

- Based on the recommendations of this Study, the proposed development will need to provide a total of 118 bicycle parking spaces, including 14 short-term spaces and 104 long-term spaces. The proposed development provides 160 bicycle parking spaces (including 16 short-term and 144 long-term spaces), which meets these requirements.

- Currently, the subject site has three full moves accesses, two onto Lakeshore Road E and one onto Elmwood Avenue North. With the proposed redevelopment, only one full moves access onto Elmwood Avenue North, located approximately at the same location as the existing access, will be provided to service the proposed development. The existing full moves access onto Lakeshore Road E will be closed. This will minimize the vehicular movements on Lakeshore Road E and therefore will improve the pedestrian and cyclist safety.

The analysis indicates that the site access is expected to operate at acceptable levels of service with minimum delay or queue. The access configuration includes: one inbound lane and one outbound lane, one shared northbound through/left and one shared southbound through/right on Elmwood Avenue North.

- Under the City's By-Law Zoning By-law 0225-2007, one loading space is required for residential component and one for the non-residential component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length. Given that the proposed non-residential component is located within the same building, the loading space can be shared with the residential component. Therefore, it is Nextrans' opinion that only loading space is required for the proposed development. It is Nextrans' understanding that the proposed development will meet this requirement.

  AutoTURN software was used (Garbage truck TAC-HSU and passenger vehicle) to generate vehicular turning templates to confirm and demonstrate the accessibility for the proposed loading space and underground parking ramp.

10.2. Study Recommendations

Based on the Study assessment, the following recommendations are provided:

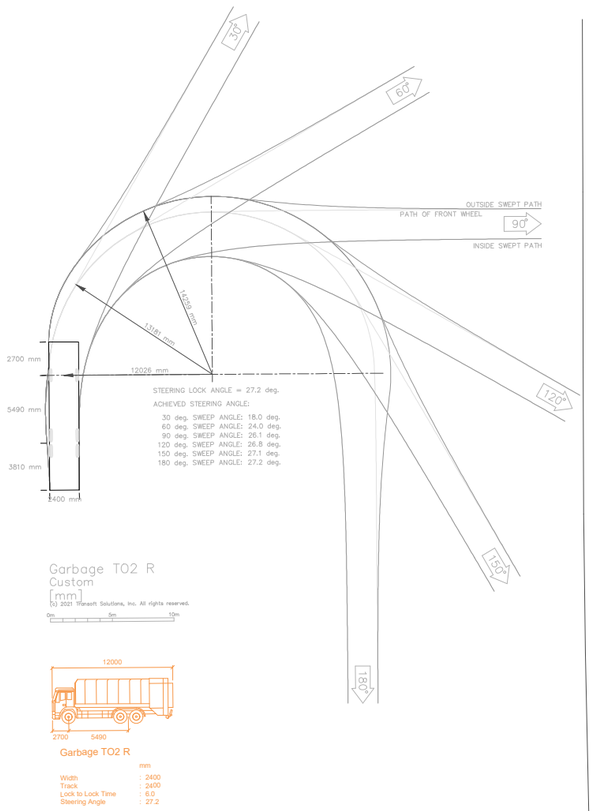
- The proposed development implements the TDM measures and incentives identified in this report to support active transportation and transit and to reduce the numbers of single-occupant-vehicle trips to and from the proposed development;

- The proposed development implements the recommended parking rates (a blended rate of 1.15 spaces/unit for resident, visitor and non-residential) provided in this Study based on the comprehensive parking justifications to support TDM and minimize the numbers of single-occupant-vehicle trips;

- The proposed development provides direct shared pedestrian and cycling connections to Lakeshore Road E and Elmwood Avenue North, where appropriate;

- The proposed development access configuration includes: one inbound lane and one outbound lane, one shared northbound through/left and one shared southbound through/right on Elmwood Avenue North; and

- No additional physical improvements for the area road network and intersection for this horizon year beyond the proposed improvements recommended in the Lakeshore Connected Communities Transportation Master Plan.



Garbage TO2 R
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(c) 2021 Transoft Solutions, Inc. All rights reserved.

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Garbage TO2 R

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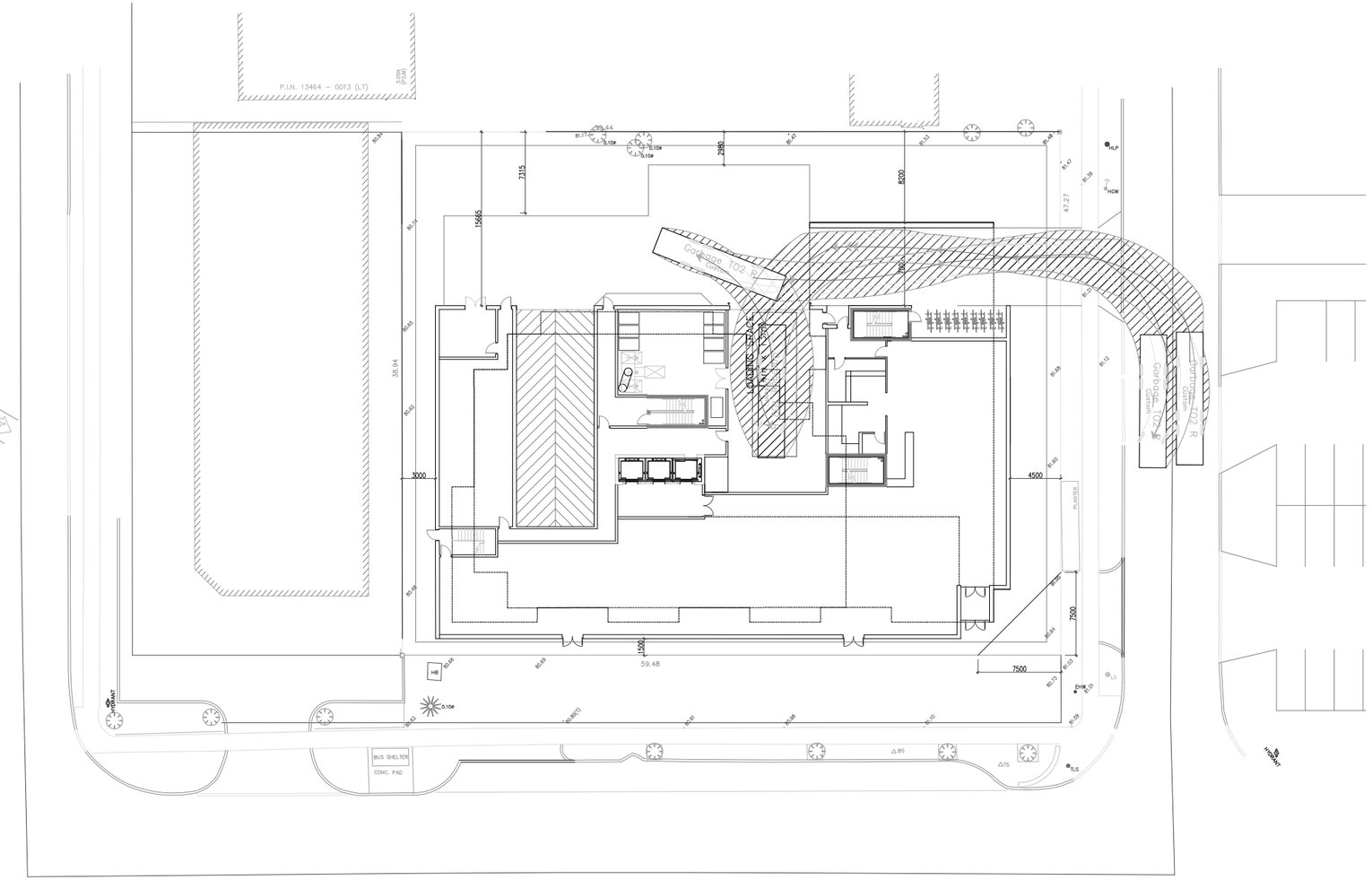
Steering Angle	: 27.2



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

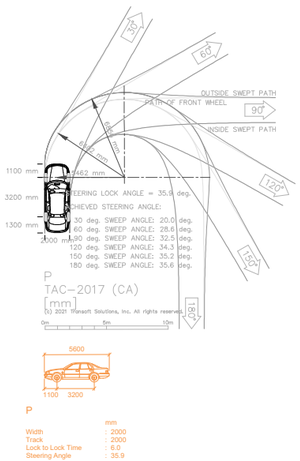
STAMP

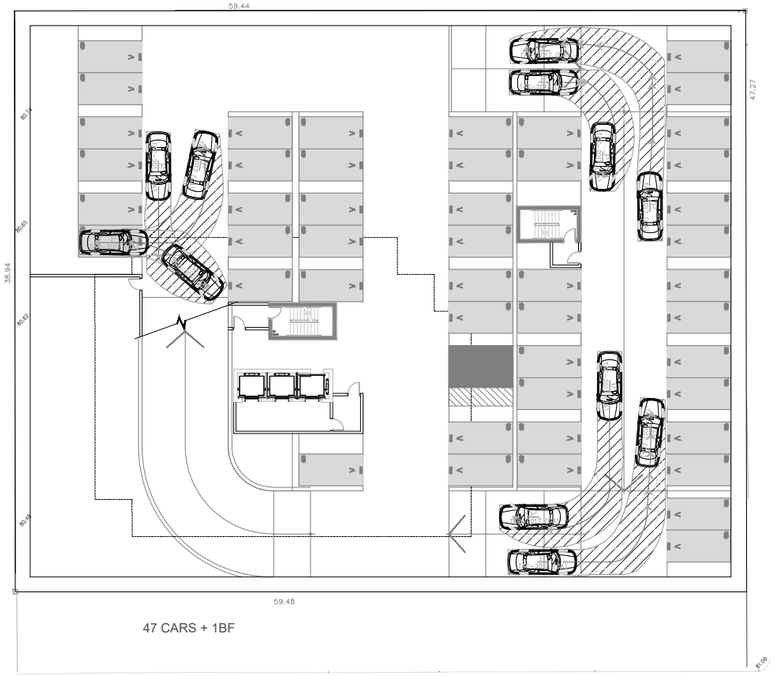
nexTrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
RESIDENTIAL DEVELOPMENT
170 Lakeshore Road East
(City of Mississauga)

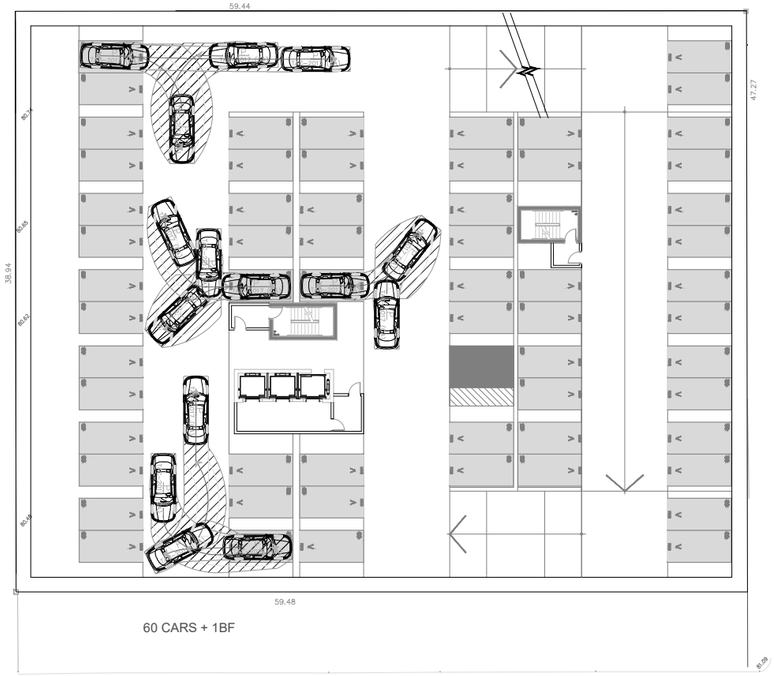
DRAWING TITLE:
AutoTURN Analysis
(City Garbage Truck)

DESIGN BY: K.A.	DATE: September 27, 2021
CHECKED BY: R.P.	PROJECT NO. NT-21-083
DRAWN BY: K.A.	DRAWING NO.
SCALE: NTS	





47 CARS + 1BF



60 CARS + 1BF

KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

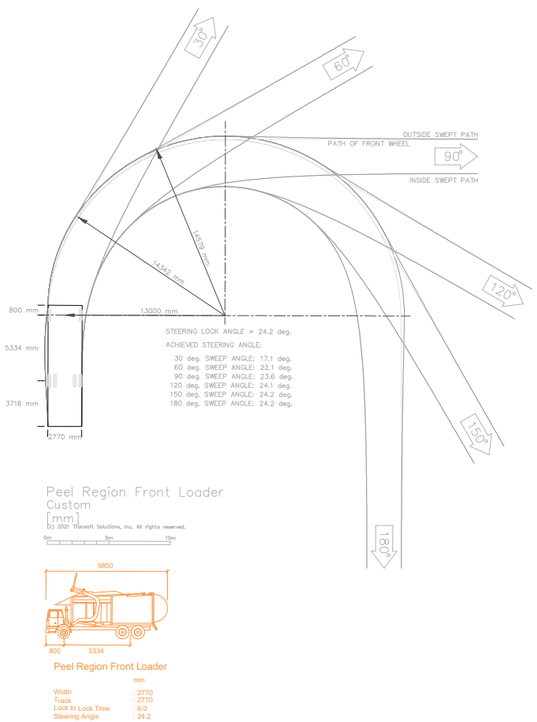
STAMP

nexTrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
RESIDENTIAL DEVELOPMENT
170 Lakeshore Road East
(City of Mississauga)

DRAWING TITLE:
AutoTURN Analysis
(P TAC-2017)

DESIGN BY: K.A.	DATE: September 27, 2021
CHECKED BY: R.P.	PROJECT NO. NT-21-083
DRAWN BY: K.A.	DRAWING NO.
SCALE: NTS	



Peel Region Front Loader
Custom
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Peel Region Front Loader

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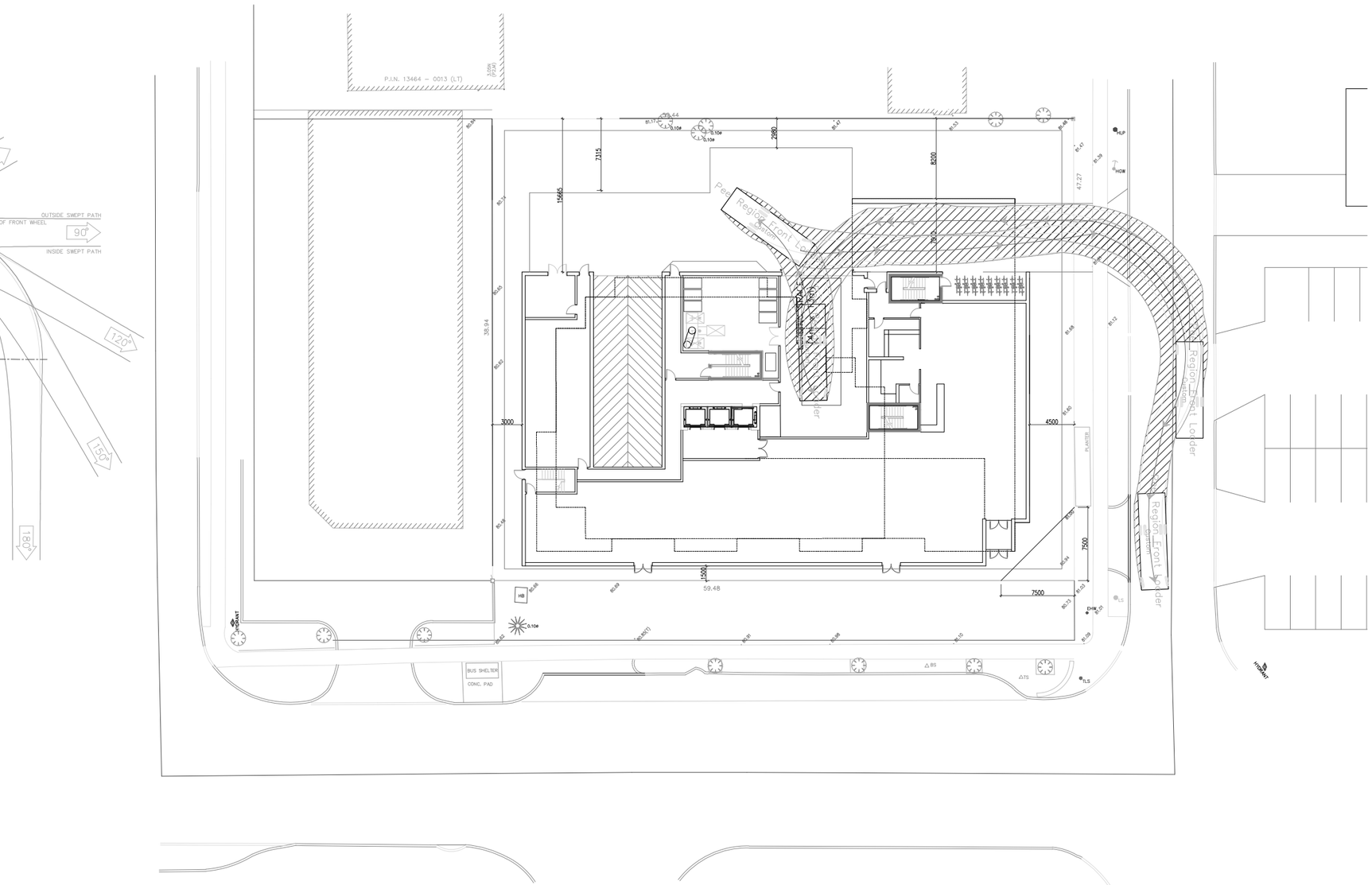
Track	: 2770
Lock to Lock Time	: 6.0
Steering Angle	: 24.2



KEY PLAN

BENCHMARK

REVISONS

NO	REVISION	DATE	BY

STAMP

nexTrans
CONSULTING ENGINEERS
Suite 201, 520 Industrial Parkway South
Aurora ON L4G 6W8
Tel: 905-503-2563
Web: www.nextrans.ca

PROJECT NAME:
RESIDENTIAL DEVELOPMENT
170 Lakeshore Road East
(City of Mississauga)

DRAWING TITLE:
AutoTURN Analysis
(Peel Region
Front Loader)

DESIGN BY: K.A.	DATE: September 27, 2021
CHECKED BY: R.P.	PROJECT NO. NT-21-083
DRAWN BY: K.A.	DRAWING NO.
SCALE: NTS	

Sam Nguyen

From: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Sent: Tuesday, September 28, 2021 12:10 PM
To: Sam Nguyen
Subject: RE: Term of Reference 170 Lakeshore Road East

Hi Sam,

Using the City's Travel Demand Model and supporting traffic count data, the City's Transportation Planning section has determined the projected growth along Hurontario Street and Lakeshore Road to be used as part of your study. The recommended projected growth is shown below.

Hurontario Street

	Compounded Annual Growth from Existing to 2026	
	NB	SB
AM Peak	2.0%	2.5%
PM Peak	1.0%	1.5%

Lakeshore Road

	Compounded Annual Growth from Existing to 2026	
	EB	WB
AM Peak	0.0%	0.5%
PM Peak	1.0%	0.5%

-This analysis assumes the lane reductions along Hurontario Street from 3 through lanes per direction to 2 through lanes per direction, as such your analysis should also include these assumptions.

-In regards to the traffic counts you requested, unfortunately we do not have any counts at these locations but we do have counts at the following intersections

-Lakeshore @ Elmwood Ave (2019)
-Lakeshore @Woodlawn Ave (2019)
-Lakeshore @ Helen Street (2016)

Regards,

MISSISSAUGA

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

From: Sam Nguyen <sam@nextrans.ca>
Sent: Tuesday, September 28, 2021 11:38 AM
To: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Subject: FW: Term of Reference 170 Lakeshore Road East

Hi Tyler,

Finally, the city got back with me on the TOR.

Can you advise the growth rate for Lakeshore and Hurontario period of 2021-2026

And can you advise if the city has the count for c. Rosewood Ave & Lakeshore Rd E
- d. St Lawrence Dr & Lakeshore Rd E

thanks,

Sam (Trang) Nguyen
Transportation Analyst

o: 905-503-2563 ext. 207
e: sam@nextrans.ca
w: www.nextrans.ca

NexTrans Consulting Engineers
A Division of NextEng Consulting Group Inc.
520 Industrial Parkway South, Suite 201
Aurora ON L4G 6W8
COVID UPDATE: Please be advised that we continue to service our clients to the fullest extent possible, albeit in a modified office environment, as such a reply may be slightly delayed.
Thank you and keep well!

From: Michael Turco <Michael.Turco@mississauga.ca>
Sent: Monday, September 27, 2021 3:40 PM
To: Sam Nguyen <sam@nextrans.ca>
Cc: Trans Projects <Trans.Projects@mississauga.ca>
Subject: RE: Term of Reference 170 Lakeshore Road East

Hi Sam,

I apologize for the delay. Please note for future reference that Kate is on leave until the end of January 2022.

Thank you for providing a TIS Terms of Reference for 170 Lakeshore Rd East. Staff have reviewed it and provide the following comments:

- The Study must adhere to the City of Mississauga's Traffic Impact Study Guidelines

- Study Area Intersection. Please also include the following additional study area intersections:
    - c. Rosewood Ave & Lakeshore Rd E
    - d. St Lawrence Dr & Lakeshore Rd E
    - e. Proposed site access

- The horizon year should be 5 years from the date of the report

- Due to the COVID-19 pandemic we are not accepting new traffic counts. Please contact Tyler Xuereb from Transportation Planning Section (tyler.xuereb@mississauga.ca, Ext. 4783) for growth rates, historical AADT data, and Turning Movement Counts. In order to grow traffic volumes to existing 2021 levels, please obtain historical traffic data counts and utilize regression analysis to determine appropriate growth rates. The report must thoroughly justify all proposed growth rates and the methodology utilized to calculate them. Furthermore, all background work to calculate the growth rates must be appended to the report in a format that is easily verifiable to the reviewer.

- Background Developments and Growth Rate. Please also include the following:
    - 3. 42-46 Park St E OZ 20-6
    - 4. 291 Lakeshore Rd E, SP 17-130

- Trip Generation shall be based on the latest edition of the ITE Trip Generation Manual (11th Edition)

- Trip Distribution/Assignment – In addition to 2016 TTS Data, existing (pre-pandemic) traffic flows, and sound engineering judgement should be utilized to determine appropriate trip distribution/assignment.

- Future Total Assessment. For Internal Site Circulation assessment please include turning movement template in separate Appendix. Truck Access and Circulation (AutoTurn Swept-Path Analysis) - ensure that truck traffic (garbage/loading/fire) can enter and exit the site in a forward motion and access to the garbage, loading, and fire route areas are functional. On separate plans, illustrate truck turning movements with one continuous path with AutoTURN and insert the design vehicles on the plan. The site must be able to accommodate the largest design vehicles which will be accessing the property. An evaluation of the parking areas and ramps using a PTAC design vehicle should also be included.

- Roadway/Transit Improvements. Please provide details of any planned roadway/transit improvement in the study area within the horizon years. Please follow the link to see all planned works around the City https://drive.google.com/openid=1v9_x7WAi5KK12mrbiiyjZT_ZhCt8pXoX&usp=sharing .

- Lakeshore Connecting Communities. Please note City Council has endorsed the Lakeshore Connecting Communities Transportation Master Plan which sets out a long-term vision for transit and corridor improvements along Lakeshore Road from 2020 to 2041 that will support waterfront development. For further information visit: http://www.mississauga.ca/portal/residents/lakeshore-connecting-communities

- Include a section for Community Impacts. Any traffic related impacts on the existing community and comments from the public through the planning approvals process shall be addressed in this section.

- Please be advised that this Section does not review Parking Studies. Please contact the Planning Section (ParkingStudy.Review@mississauga.ca) to confirm the terms of reference for the Parking Study.

- Regarding the TDM Section, a comprehensive Transportation Demand Management Plan, including hard and soft measures, is to be included within the report to demonstrate measures to be implemented to reduce single occupancy vehicle (SOV) trips to/from the site. All recommended/proposed TDM measures shall be included in the Recommendations section of the report and noted as the responsibility of the Owner. The Consultant is

responsible for justifying the effectiveness of the proposed TDM measures. The TDM Plan is not required to be in accordance to York Region's Mobility Plan Guidelines.

- Detailed Recommendations regarding the required future north/south public roadway, on-site/off-site roadway improvements, site access, site circulation, and TDM measures should be made.

- Please use the following link to gather information of any development proposed in the neighbouring lands for background traffic: http://www.mississauga.ca/portal/residents/developmentinformation.

- Signal timing plans for signalized intersections can be obtained from Jim Kartsomanis (Jim.Kartsomanis@mississauga.ca, Ext. 3964).

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

Regards,

Michael Turco, C.E.T., MITE
Traffic Planning Technologist
T 905-615-3200 ext. 3597
michael.turco@mississauga.ca

City of Mississauga | Transportation & Works Department
201 City Centre Drive, Suite 800 | Mississauga ON | L5B 2T4

From: Sam Nguyen <sam@nextrans.ca>
Sent: Wednesday, September 22, 2021 12:34 PM
To: Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Cc: Trans Projects <Trans.Projects@mississauga.ca>
Subject: RE: 170 Lakeshore Road East Term of Reference

Hi Kate,

I would like to following up with you on the TOR.

Thanks,

Sam (Trang) Nguyen
Transportation Analyst

o: 905-503-2563 ext. 207
e: sam@nextrans.ca
w: www.nextrans.ca

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

From: Ryan Au <Ryan.Au@mississauga.ca> **On Behalf Of** Trans Projects
Sent: Tuesday, August 31, 2021 3:26 PM
To: Sam Nguyen <sam@nextrans.ca>
Cc: Kate Vassilyev <Kate.Vassilyev@mississauga.ca>
Subject: RE: 170 Lakeshore Road East Term of Reference

Hi Sam,

Thanks for the email. Kate (copied) will provide a response on this ToR.

Kate – This is related to a pre-application (City File: DARC 21/030 W1 – 170 Lakeshore Road East)

If you have any further questions let me know.

Regards,

MISSISSAUGA

Ryan Au, P.Eng.
Traffic Planning Coordinator
T 905-615-3200 ext. 3713
ryan.au@mississauga.ca

City of Mississauga | Transportation & Works Department
201 City Centre Drive, Suite 800 | Mississauga ON | L5B 2T4

From: Sam Nguyen [mailto:sam@nextrans.ca]
Sent: Friday, August 27, 2021 11:42 AM
To: Ryan Au <Ryan.Au@mississauga.ca>
Subject: 170 Lakeshore Road East Term of Reference

Hi Ryan,

NexTrans undertake the TIS to support the proposed development located at 170 Lakeshore Road East which existing is the commercial building. The proposed development consists of highrise mixed use building which the ground floor will be retail.

Please find attached is the TOR, and provide comment so we can start the work.

Thanks,

Sam (Trang) Nguyen
Transportation Analyst

o: 905-503-2563 ext. 207
e: sam@nextrans.ca
w: www.nextrans.ca

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

COVID UPDATE: Please be advised that we continue to service our clients to the fullest extent possible, albeit in a modified office environment, as such a reply may be slightly delayed.
Thank you and keep well!

Appendix A
Existing Traffic Data and Signal Timing Plans

Signal Timing Report

Device: 0705

Region: Mississauga **Signal ID:** 0705 **Location:** LAKESHORE ROAD E at Hurontario S

Phase	Units	1	2	3	4	5	6
Walk	Sec	0	12	0	12	0	12
Ped Clear	Sec	0	26	0	26	0	26
Min Green	Sec	0	8	0	8	5	8
Passage	Sec	0.0	4.0	0.0	4.0	3.0	4.0
Maximum 1	Sec	0	20	0	30	13	20
Maximum 2	Sec	0	20	0	30	13	20
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	4.0	0.0	3.0	0.0	4.0
Red Revert	Sec	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
Max Initial	Sec	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0
Reduce By	Sec	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
Dynamic Max Limit	Sec	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	phaseNotOn	redClear
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	0	Enabled Non Lock Det Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk
[P2] Ring	Ring	0	1	0	1	2	2
[P2] Concurrency	Phase (,)	()	(5,6)	()	(8)	(2)	(2)

Coord Pattern	Units	1	2	3	4	5	6
Cycle Time	Sec	140	120	120	0	0	0
Offset	Sec	11	92	70	0	0	0
Split	Split	1	2	3	0	0	0
Sequence	Sequence	1	1	1	0	0	0

Coord Split	Units	1	2	3	4	5	6
Split 1 - Mode	Enum	none	none	none	pedRecall	none	none
Split 1 - Time	Sec	0	91	0	49	20	71
Split 1 - Coord	Enum	false	true	false	false	false	true
Split 2 - Mode	Enum	none	none	none	pedRecall	none	none
Split 2 - Time	Sec	0	72	0	48	17	55
Split 2 - Coord	Enum	false	true	false	false	false	true
Split 3 - Mode	Enum	none	none	none	pedRecall	none	none
Split 3 - Time	Sec	0	72	0	48	14	58
Split 3 - Coord	Enum	false	true	false	false	false	true

TB Schedule	Units	1	2	3	4	5	6
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	1------------------------------	-------------5---------	-2----------
Day Plan	Number	1	3	2	3	3	3

TB Schedule	Units	9	10	11	12	13	14
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	-2----------	-----6----------	----------1----------	----------	----------	----------
Day Plan	Number	3	3	3	3	3	3

TB Dayplan	Units	1	2	3	4	5	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

Runtime: 2021-09-24 08:15:36

Street

7	8
0	12
0	26
0	8
0.0	4.0
0	30
0	30
3.0	4.0
0.0	3.0
0.0	0.0
0.0	0.0
0	0
0	0
0	0
0	0
0.0	0.0
0.0	0.0
0	0
0.0	0.0
other	phaseNotOn
0	Enabled Non Lock Det Dual Entry

0	2
()	(4)

7	8
0	0
0	0
0	0
0	0

7	8
none	pedRecall
0	49
false	false
none	pedRecall
0	48
false	false
none	pedRecall
0	48
false	false

7	8
----M-------	------J-----
SMTWTFS	SMTWTFS
----------	1----------
4-------	-------
3	3

15	16
0	0
SMTWTFS	SMTWTFS
0	0
0	0

7	8
0	0
0	0
0	0

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
TB Action	**Units**	**1**	**2**	**3**	**4**	**5**	**6**
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6
Aux. Functions	Bit	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0

0	0
0	0
0	0
0	0
0	0
0	0
7	**8**
Free	Free
0	0
0	0

Signal Timing Report

Device: 0706

Region: Mississauga **Signal ID:** 0706 **Location:** LAKESHORE ROAD E at Elmwood A

Phase	Units	1	2	3	4	5	6
Walk	Sec	0	8	0	9	0	0
Ped Clear	Sec	0	2	0	13	0	0
Min Green	Sec	0	8	0	8	0	0
Passage	Sec	0.0	3.0	0.0	3.0	0.0	0.0
Maximum 1	Sec	0	68	0	20	0	0
Maximum 2	Sec	0	68	0	20	0	0
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.5	0.0	2.5	0.0	0.0
Red Revert	Sec	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
Max Initial	Sec	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0
Reduce By	Sec	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
Dynamic Max Limit	Sec	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	other	other
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Act Rest In Walk	0	Enabled Non Lock Det	0	0
[P2] Ring	Ring	0	1	0	1	0	0
[P2] Concurrency	Phase (,)	()	()	()	()	()	()

Coord Pattern	Units	1	2	3	4	5	6
Cycle Time	Sec	140	120	120	70	100	100
Offset	Sec	3	95	77	1	79	79
Split	Split	1	2	3	4	5	6
Sequence	Sequence	1	1	1	1	1	1

Coord Pattern	Units	9	10	11	12	13	14
Cycle Time	Sec	100	0	0	0	0	0
Offset	Sec	64	0	0	0	0	0
Split	Split	9	0	0	0	0	0
Sequence	Sequence	1	0	0	0	0	0

Coord Split	Units	1	2	3	4	5	6
Split 1 - Mode	Enum	none	none	none	none	none	none
Split 1 - Time	Sec	0	108	0	32	0	0
Split 1 - Coord	Enum	false	true	false	false	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none
Split 2 - Time	Sec	0	82	0	38	0	0
Split 2 - Coord	Enum	false	true	false	false	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none
Split 3 - Time	Sec	0	82	0	38	0	0
Split 3 - Coord	Enum	false	true	false	false	false	false
Split 4 - Mode	Enum	none	none	none	pedRecall	none	none
Split 4 - Time	Sec	0	38	0	32	0	0
Split 4 - Coord	Enum	false	true	false	false	false	false
Split 5 - Mode	Enum	none	none	none	pedRecall	none	none
Split 5 - Time	Sec	0	68	0	32	0	0
Split 5 - Coord	Enum	false	true	false	false	false	false
Split 6 - Mode	Enum	none	none	none	none	none	none
Split 6 - Time	Sec	0	68	0	32	0	0
Split 6 - Coord	Enum	false	true	false	false	false	false
Split 7 - Mode	Enum	none	none	none	pedRecall	none	none
Split 7 - Time	Sec	0	68	0	32	0	0
Split 7 - Coord	Enum	false	true	false	false	false	false

Runtime: 2021-09-23 15:16:42

venue

7	8
0	0
0	0
0	0
0.0	0.0
0	0
0	0
3.0	4.0
0.0	0.0
0.0	0.0
0.0	0.0
0	0
0	0
0	0
0	0
0.0	0.0
0.0	0.0
0	0
0.0	0.0
other	other
0	0

0	0
()	()

7	8
100	0
64	0
7	0
1	1

15	16
0	0
0	0
0	0
0	0

7	8
none	none
0	0
false	false
none	none
0	0
false	false
none	none
0	0
false	false
none	none
0	0
false	false
none	none
0	0
false	false
none	none
0	0
false	false

Split 9 - Mode	Enum	none	none	none	none	none	none
Split 9 - Time	Sec	0	68	0	32	0	0
Split 9 - Coord	Enum	false	true	false	false	false	false
TB Schedule	**Units**	**1**	**2**	**3**	**4**	**5**	**6**
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	12345678901234567890123456789012345678901	1----------	----------5----------	-2----------
Day Plan	Number	1	3	2	3	3	3
TB Schedule	**Units**	**9**	**10**	**11**	**12**	**13**	**14**
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	-2----------	-----6----------	---------1----------	----------	----------	----------
Day Plan	Number	3	3	3	3	3	3
TB Dayplan	**Units**	**1**	**2**	**3**	**4**	**5**	**6**
Plan 1 Hour	Hour	0	3	6	8	9	11
Plan 1 Minute	Min	0	0	0	30	30	45
Plan 1 Action	Number	8	7	1	4	2	5
Plan 2 Hour	Hour	0	6	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
TB Dayplan	**Units**	**9**	**10**	**11**	**12**	**13**	**14**
Plan 1 Hour	Hour	15	16	19	0	0	0
Plan 1 Minute	Min	30	0	30	0	0	0
Plan 1 Action	Number	7	9	2	0	0	0
TB Action	**Units**	**1**	**2**	**3**	**4**	**5**	**6**
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6
Aux. Functions	Bit	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0

none	none
0	0
false	false
7	**8**
----M-------	------J-----
SMTWTFS	SMTWTFS
----------	1----------
4-------	-------
3	3
15	**16**
0	0
SMTWTFS	SMTWTFS
0	0
0	0
7	**8**
12	15
45	0
6	3
0	0
0	0
0	0
0	0
0	0
0	0
15	**16**
0	0
0	0
0	0
7	**8**
Pattern 7	Free
0	0
0	0

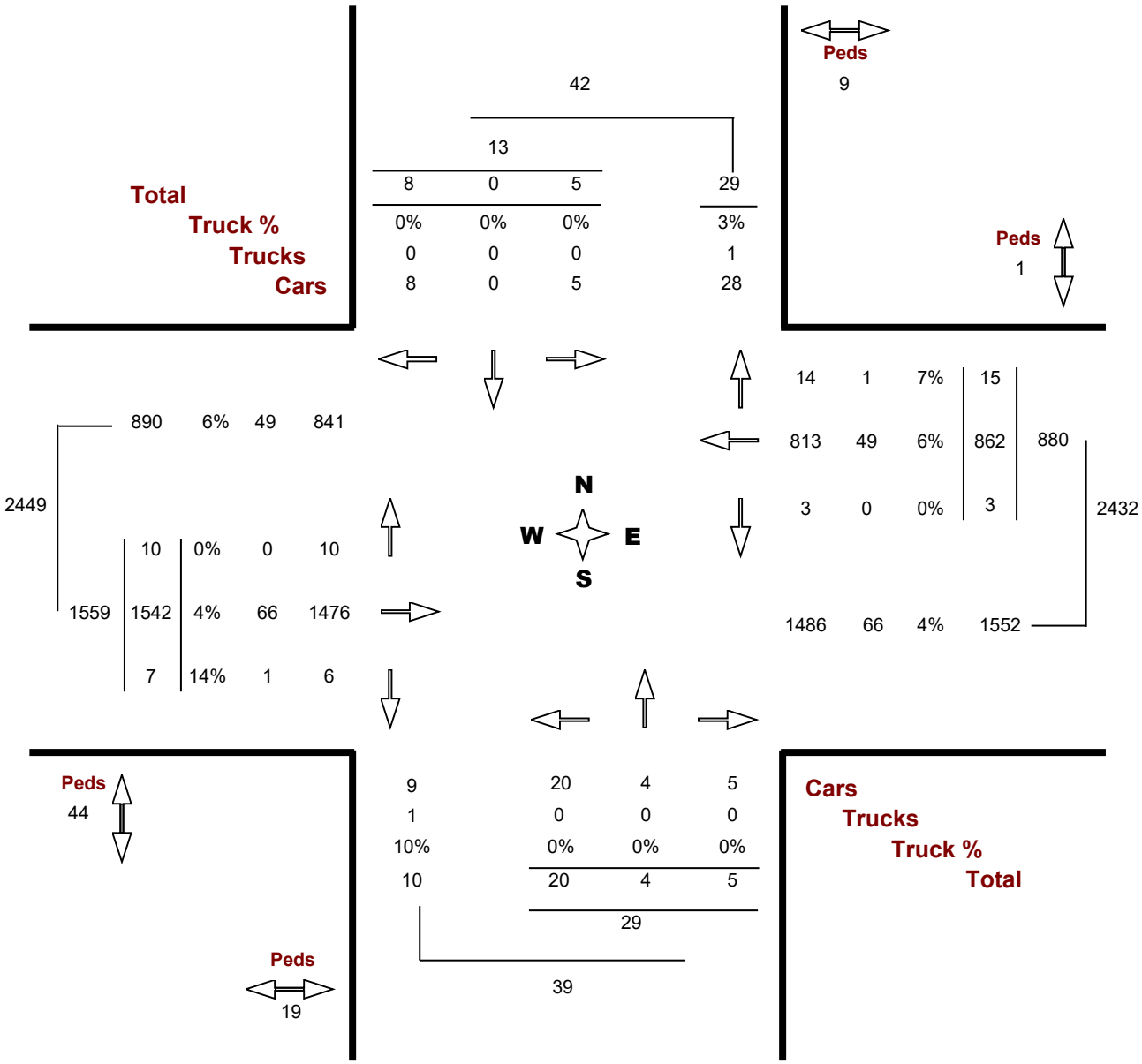
Turning Movements Report - AM Period

Location..... ELMWOOD AVE S @ LAKESHORE RD E / ELMWOOD AVE N

Municipality..... Mississauga **GeoID.....** 351285

Count Date..... Thursday, 28 March, 2019 **Peak Hour.....** 07:30 AM — 08:30 AM

Road 1 ELMWOOD AVE S **Road 2** LAKESHORE RD E / ELMWOOD AVE N



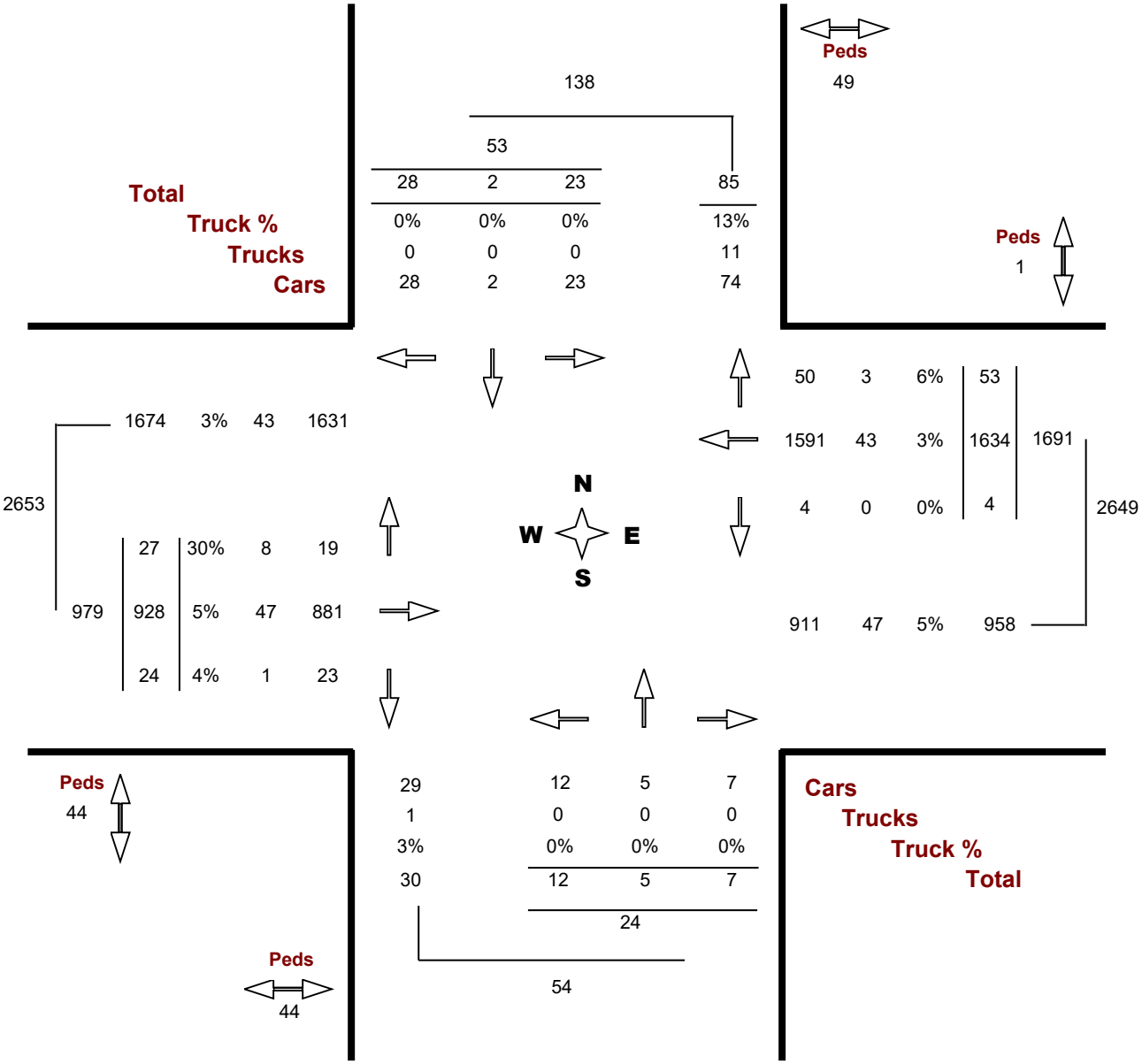
Turning Movements Report - PM Period

Location..... ELMWOOD AVE S @ LAKESHORE RD E / ELMWOOD AVE N

Municipality..... Mississauga **GeoID.....** 351285

Count Date..... Thursday, 28 March, 2019 **Peak Hour.....** 04:15 PM — 05:15 PM

Road 1 ELMWOOD AVE S **Road 2** LAKESHORE RD E / ELMWOOD AVE N



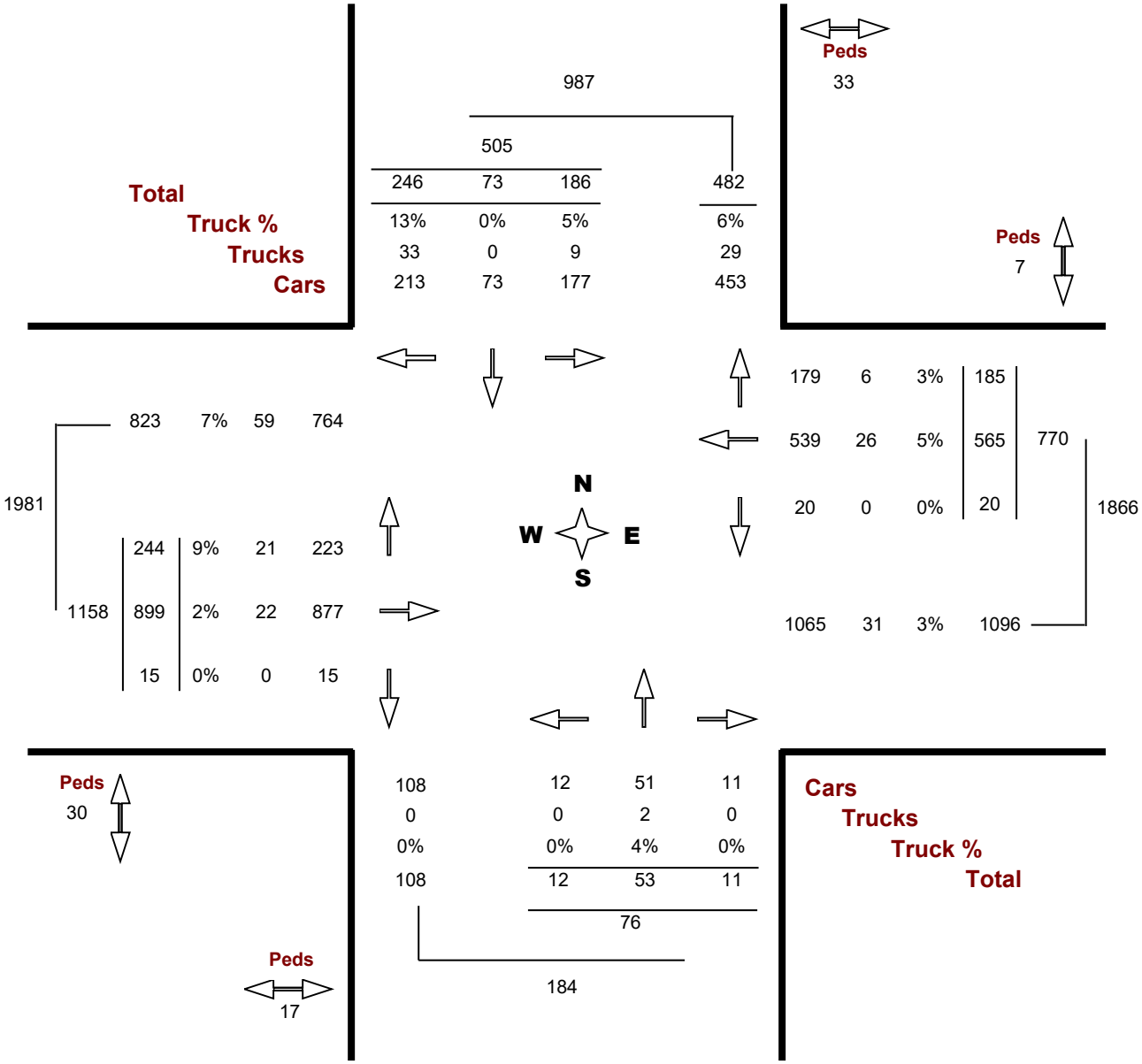
Turning Movements Report - AM Period

Location..... HURONTARIO ST @ LAKESHORE RD E / ST. LAWRENCE DR

Municipality..... Mississauga **GeoID.....** 351234

Count Date..... Tuesday, 17 December, 201 **Peak Hour.....** 08:00 AM — 09:00 AM

Road 1 HURONTARIO ST **Road 2** LAKESHORE RD E / ST. LAWRENCE DR



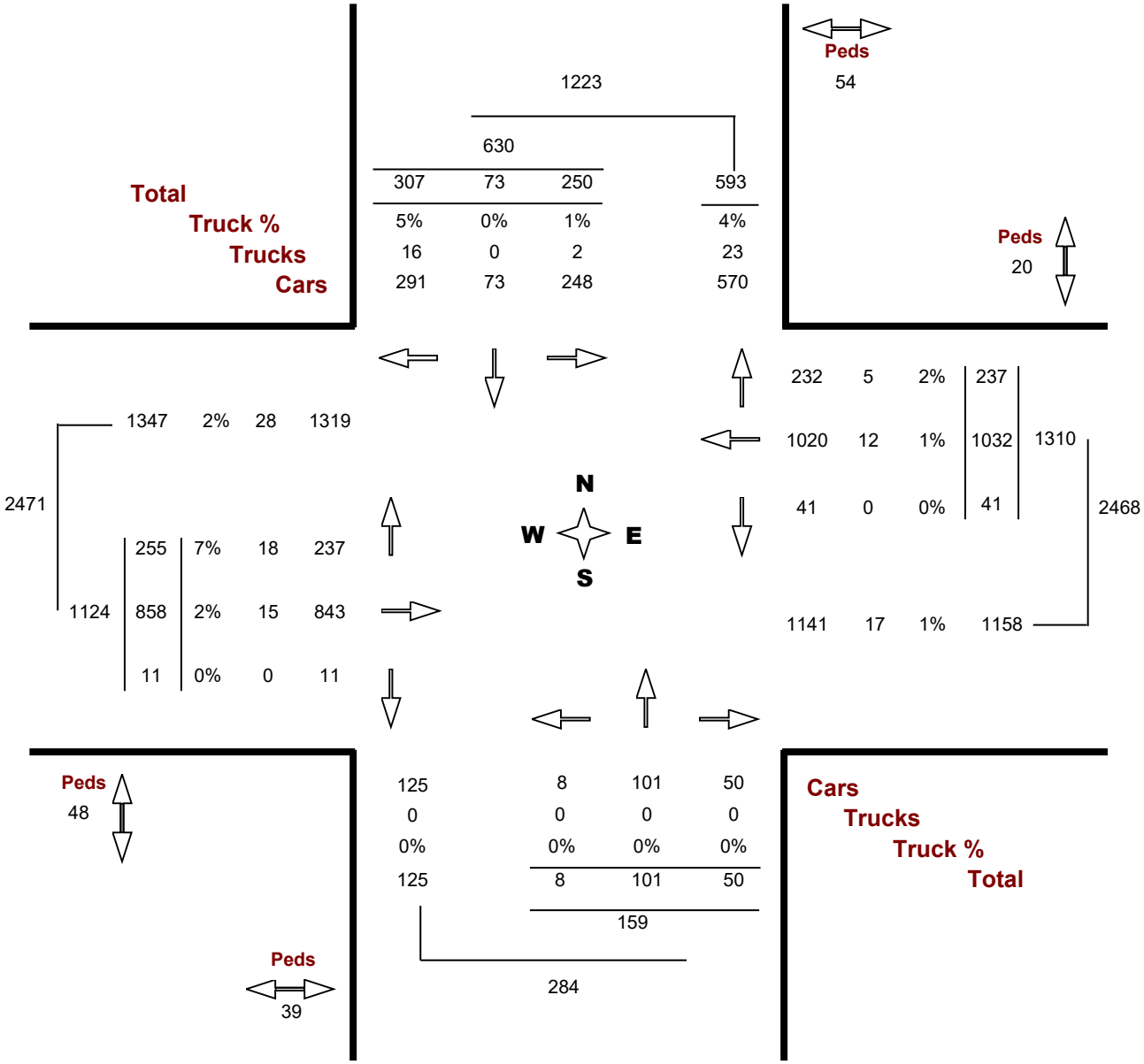
Turning Movements Report - PM Period

Location..... HURONTARIO ST @ LAKESHORE RD E / ST. LAWRENCE DR

Municipality..... Mississauga **GeoID.....** 351234

Count Date..... Tuesday, 17 December, 201 **Peak Hour.....** 04:45 PM — 05:45 PM

Road 1 HURONTARIO ST **Road 2** LAKESHORE RD E / ST. LAWRENCE DR



NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (1 . ROSEWOOD AVE & LAKESHORE RD E)

Start Time	N Approach ROSEWOOD AVE					E Approach LAKESHORE RD E					W Approach LAKESHORE RD E					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	1	0	7	3	0	65	0	1	65	108	3	0	0	111	179	
07:15:00	2	0	0	3	2	2	79	0	3	81	160	2	0	1	162	245	
07:30:00	6	4	0	15	10	0	117	0	0	117	164	2	0	0	166	293	
07:45:00	1	0	0	4	1	0	161	0	0	161	211	11	0	0	222	384	1101
08:00:00	0	3	0	5	3	0	145	0	0	145	273	10	0	0	283	431	1353
08:15:00	14	2	0	9	16	4	206	0	0	210	359	32	0	0	391	617	1725
08:30:00	21	1	0	12	22	3	301	0	1	304	306	43	0	0	349	675	2107
08:45:00	17	2	0	10	19	6	252	0	0	258	209	14	0	0	223	500	2223
09:00:00	5	0	0	18	5	0	112	0	1	112	188	1	0	1	189	306	2098
09:15:00	1	2	0	6	3	1	124	0	0	125	171	1	0	0	172	300	1781
09:30:00	7	1	0	12	8	7	115	0	0	122	163	4	0	0	167	297	1403
09:45:00	6	5	0	6	11	1	116	0	1	117	221	14	0	0	235	363	1266
BREAK																	
16:00:00	12	1	0	22	13	4	258	0	1	262	271	3	0	1	274	549	
16:15:00	8	0	0	33	8	3	279	0	0	282	297	9	0	0	306	596	
16:30:00	8	1	0	20	9	4	304	0	0	308	351	6	0	0	357	674	
16:45:00	8	3	0	19	11	7	280	0	1	287	362	10	0	0	372	670	2489
17:00:00	17	2	0	25	19	7	301	0	0	308	295	7	0	0	302	629	2569
17:15:00	13	5	0	18	18	4	288	0	0	292	383	5	0	0	388	698	2671
17:30:00	6	3	0	18	9	2	278	0	1	280	357	6	0	0	363	652	2649
17:45:00	2	2	0	17	4	7	284	0	0	291	400	7	0	0	407	702	2681
18:00:00	7	3	0	24	10	3	282	0	1	285	346	2	0	0	348	643	2695
18:15:00	6	1	0	16	7	4	277	0	0	281	267	6	0	0	273	561	2558
18:30:00	8	1	0	26	9	11	298	0	0	309	224	10	0	0	234	552	2458
18:45:00	1	2	0	5	3	6	253	0	0	259	253	5	0	0	258	520	2276
Grand Total	178	45	0	350	223	86	5175	0	11	5261	6339	213	0	3	6552	**12036**	-
Approach%	79.8%	20.2%	0%		-	1.6%	98.4%	0%		-	96.7%	3.3%	0%		-	**-**	-
Totals %	1.5%	0.4%	0%		1.9%	0.7%	43%	0%		43.7%	52.7%	1.8%	0%		54.4%	**-**	-
Heavy	1	0	0		-	0	0	0		-	155	5	0		-	**-**	-
Heavy %	0.6%	0%	0%		-	0%	0%	0%		-	2.4%	2.3%	0%		-	**-**	-
Bicycles	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-
Bicycle %	-	-	-		-	-	-	-		-	-	-	-		-	**-**	-

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (9.94 °C)

Start Time	N Approach ROSEWOOD AVE					E Approach LAKESHORE RD E					W Approach LAKESHORE RD E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	0	3	0	5	3	0	145	0	0	145	273	10	0	0	283	431
08:15:00	14	2	0	9	16	4	206	0	0	210	359	32	0	0	391	617
08:30:00	21	1	0	12	22	3	301	0	1	304	306	43	0	0	349	675
08:45:00	17	2	0	10	19	6	252	0	0	258	209	14	0	0	223	500
Grand Total	52	8	0	36	60	13	904	0	1	917	1147	99	0	0	1246	**2223**
Approach%	86.7%	13.3%	0%		-	1.4%	98.6%	0%		-	92.1%	7.9%	0%		-	**-**
Totals %	2.3%	0.4%	0%		2.7%	0.6%	40.7%	0%		41.3%	51.6%	4.5%	0%		56.1%	**-**
PHF	0.62	0.67	0		0.68	0.54	0.75	0		0.75	0.8	0.58	0		0.8	**-**
Heavy	1	0	0		1	0	0	0		0	30	3	0		33	**-**
Heavy %	1.9%	0%	0%		1.7%	0%	0%	0%		0%	2.6%	3%	0%		2.6%	**-**
Lights	51	8	0		59	13	904	0		917	1107	96	0		1203	**-**
Lights %	98.1%	100%	0%		98.3%	100%	100%	0%		100%	96.5%	97%	0%		96.5%	**-**
Single-Unit Trucks	0	0	0		0	0	0	0		0	14	0	0		14	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	1.2%	0%	0%		1.1%	**-**
Buses	1	0	0		1	0	0	0		0	15	2	0		17	**-**
Buses %	1.9%	0%	0%		1.7%	0%	0%	0%		0%	1.3%	2%	0%		1.4%	**-**
Articulated Trucks	0	0	0		0	0	0	0		0	1	1	0		2	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.1%	1%	0%		0.2%	**-**
Bicycles on Road	0	0	0		0	0	0	0		0	10	0	0		10	**-**
Bicycles on Road %	0%	0%	0%		0%	0%	0%	0%		0%	0.9%	0%	0%		0.8%	**-**
Pedestrians	-	-	-	33	-	-	-	-	1	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	89.2%		-	-	-	2.7%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	8.1%		-	-	-	0%		-	-	-	0%		**-**

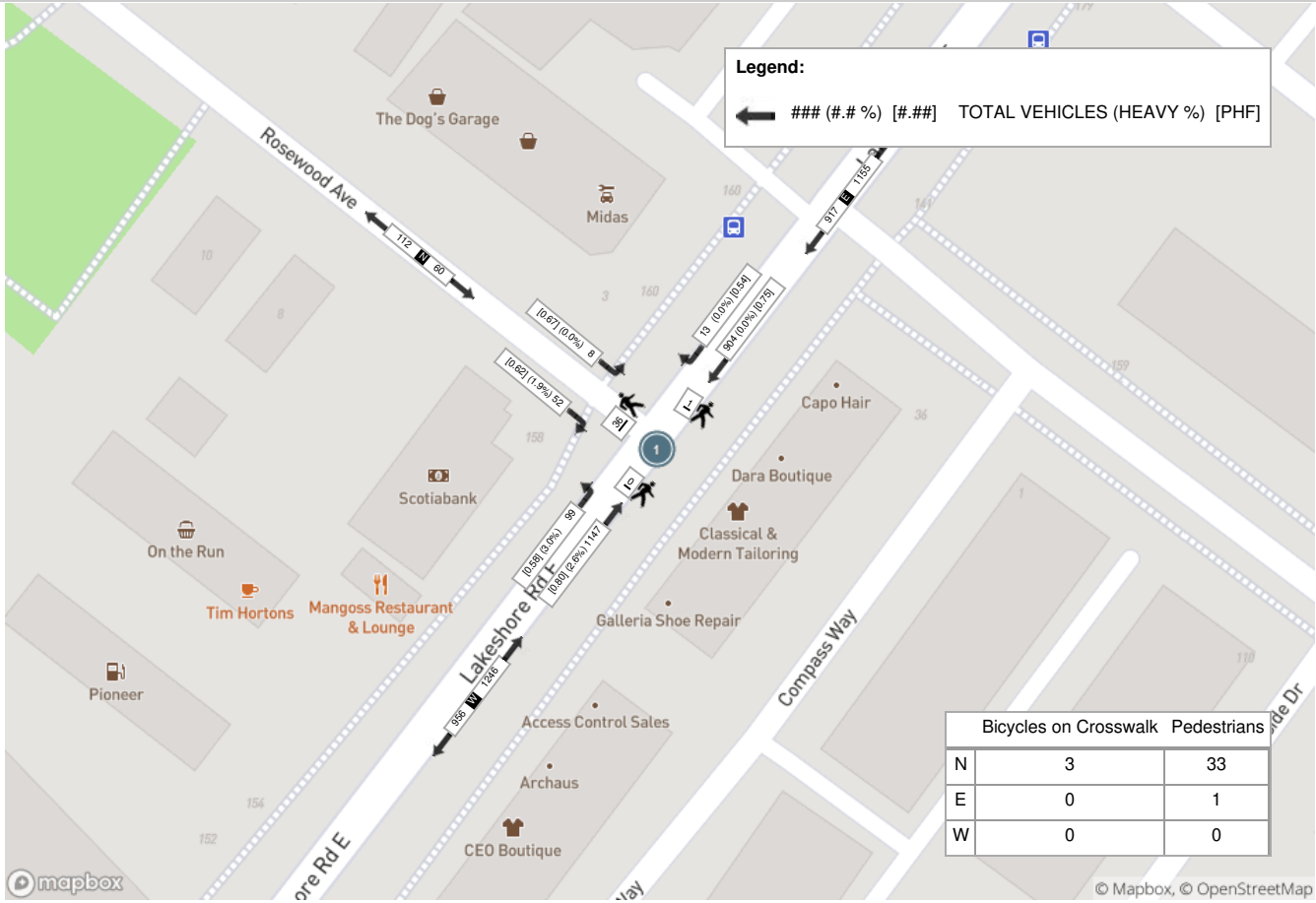
NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 05:15 PM - 06:15 PM Weather: Clear Sky (21.19 °C)

Start Time	N Approach ROSEWOOD AVE					E Approach LAKESHORE RD E					W Approach LAKESHORE RD E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
17:15:00	13	5	0	18	18	4	288	0	0	292	383	5	0	0	388	698
17:30:00	6	3	0	18	9	2	278	0	1	280	357	6	0	0	363	652
17:45:00	2	2	0	17	4	7	284	0	0	291	400	7	0	0	407	702
18:00:00	7	3	0	24	10	3	282	0	1	285	346	2	0	0	348	643
Grand Total	28	13	0	77	41	16	1132	0	2	1148	1486	20	0	0	1506	**2695**
Approach%	68.3%	31.7%	0%		-	1.4%	98.6%	0%		-	98.7%	1.3%	0%		-	**-**
Totals %	1%	0.5%	0%		1.5%	0.6%	42%	0%		42.6%	55.1%	0.7%	0%		55.9%	**-**
PHF	0.54	0.65	0		0.57	0.57	0.98	0		0.98	0.93	0.71	0		0.93	**-**
Heavy	0	0	0		0	0	0	0		0	20	0	0		20	**-**
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	1.3%	0%	0%		1.3%	**-**
Lights	27	13	0		40	16	1132	0		1148	1466	20	0		1486	**-**
Lights %	96.4%	100%	0%		97.6%	100%	100%	0%		100%	98.7%	100%	0%		98.7%	**-**
Single-Unit Trucks	0	0	0		0	0	0	0		0	11	0	0		11	**-**
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.7%	0%	0%		0.7%	**-**
Buses	0	0	0		0	0	0	0		0	4	0	0		4	**-**
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0.3%	0%	0%		0.3%	**-**
Articulated Trucks	0	0	0		0	0	0	0		0	5	0	0		5	**-**
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.3%	0%	0%		0.3%	**-**
Bicycles on Road	1	0	0		1	0	0	0		0	0	0	0		0	**-**
Bicycles on Road %	3.6%	0%	0%		2.4%	0%	0%	0%		0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	72	-	-	-	-	2	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	91.1%		-	-	-	2.5%		-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	5	-	-	-	-	0	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	6.3%		-	-	-	0%		-	-	-	0%		**-**

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

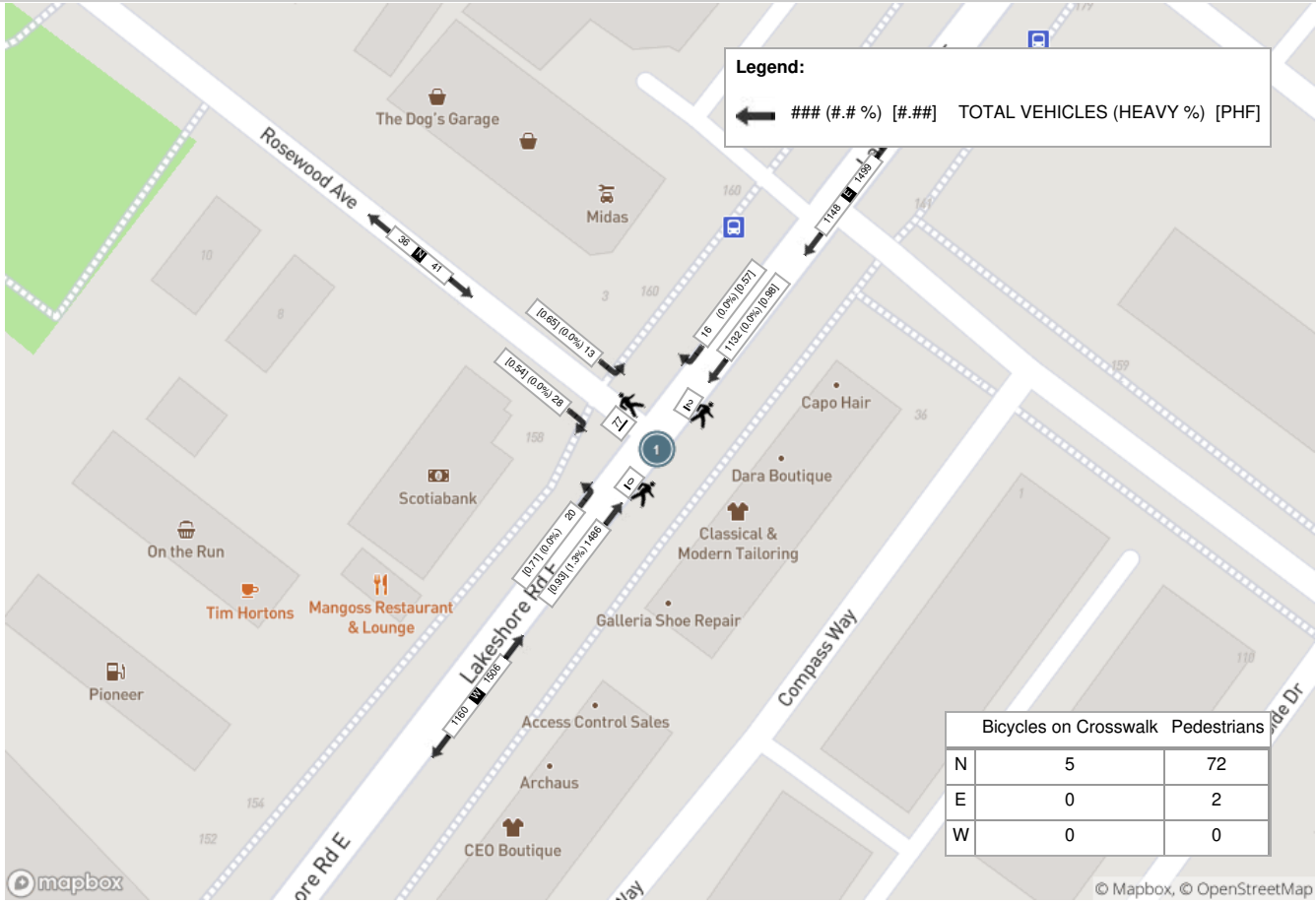
Peak Hour: 08:00 AM - 09:00 AM Weather: Few Clouds (9.94 °C)



	Bicycles on Crosswalk	Pedestrians
N	3	33
E	0	1
W	0	0

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Peak Hour: 05:15 PM - 06:15 PM Weather: Clear Sky (21.19 °C)



	Bicycles on Crosswalk	Pedestrians
N	5	72
E	0	2
W	0	0

Spectrum

Turning Movement Count
Location Name: ST LAWRENCE DR & LAKESHORE RD E
Date: Wed, Sep 29, 2021 Deployment Lead: Theo Daglis

NexTrans
SUITE 204 15260 YONGE ST
AURORA ONTARIO, L4G 1N4
CANADA

Turning Movement Count (2 . ST LAWRENCE DR & LAKESHORE RD E)

Start Time	N Approach ACCESS						E Approach LAKESHORE RD E						S Approach ST LAWRENCE DR						W Approach LAKESHORE RD E						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	0	0	0	0	10	0	0	68	0	0	0	68	1	0	1	0	1	2	0	102	1	0	0	103	173	
07:15:00	0	0	0	0	9	0	0	90	1	0	0	91	3	0	1	0	2	4	1	159	0	0	0	160	255	
07:30:00	0	0	0	0	10	0	0	130	3	0	1	133	1	0	6	0	7	7	1	160	0	0	1	161	301	
07:45:00	0	0	0	0	5	0	0	161	1	0	0	162	2	0	4	0	5	6	2	190	0	0	0	192	360	1089
08:00:00	0	0	0	0	6	0	0	142	4	0	0	146	3	0	4	0	6	7	4	271	0	0	0	275	428	1344
08:15:00	3	0	0	0	8	3	0	228	1	0	0	229	3	0	2	0	3	5	2	281	0	0	0	283	520	1609
08:30:00	0	0	0	0	13	0	0	300	5	0	0	305	2	0	4	0	6	6	2	258	1	0	0	261	572	1880
08:45:00	0	0	0	0	11	0	1	261	3	0	0	265	7	0	0	0	7	7	0	195	1	0	0	196	468	1988
09:00:00	0	0	0	0	17	0	0	108	1	0	0	109	5	0	1	0	9	6	0	185	0	0	0	185	300	1860
09:15:00	0	0	0	0	7	0	0	125	2	0	0	127	6	0	1	0	6	7	0	173	0	0	0	173	307	1647
09:30:00	0	0	0	0	14	0	0	125	1	0	0	126	9	0	1	0	5	10	5	134	1	0	0	140	276	1351
09:45:00	0	0	1	0	10	1	0	116	4	0	0	120	5	0	3	0	12	8	4	192	1	0	0	197	326	1209
BREAK																										
16:00:00	2	0	0	0	24	2	0	248	6	0	1	254	8	1	0	0	2	9	1	264	4	0	1	269	534	
16:15:00	2	0	0	0	28	2	0	277	6	0	0	283	3	0	0	0	7	3	2	335	3	0	1	340	628	
16:30:00	1	0	1	0	22	2	0	278	1	0	0	279	8	0	4	0	20	12	1	317	1	0	0	319	612	
16:45:00	1	0	0	0	18	1	0	282	7	0	0	289	3	0	2	0	8	5	4	343	1	0	0	348	643	2417
17:00:00	2	0	0	0	24	2	0	305	7	0	0	312	6	0	2	0	19	8	5	286	1	0	0	292	614	2497
17:15:00	1	0	0	0	18	1	0	267	4	0	0	271	14	0	8	0	16	22	3	372	1	0	0	376	670	2539
17:30:00	2	0	0	0	17	2	2	268	1	0	0	271	9	0	1	0	13	10	3	358	3	0	0	364	647	2574
17:45:00	1	0	0	0	20	1	1	281	4	0	0	286	9	0	1	0	10	10	1	387	1	0	0	389	686	2617
18:00:00	1	0	0	0	29	1	1	273	9	0	0	283	14	0	3	0	11	17	4	333	6	0	0	343	644	2647
18:15:00	1	0	0	0	10	1	0	278	3	0	0	281	13	0	2	0	12	15	1	241	4	0	1	246	543	2520
18:30:00	0	0	0	0	24	0	1	302	3	0	0	306	18	0	4	0	13	22	2	221	2	0	0	225	553	2426
18:45:00	1	0	0	0	10	1	0	265	3	0	0	268	18	0	2	0	11	20	1	239	1	0	0	241	530	2270
Grand Total	18	0	2	0	364	20	6	5178	80	0	2	5264	170	1	57	0	211	228	49	5996	33	0	4	6078	**11590**	-
Approach%	90%	0%	10%	0%		-	0.1%	98.4%	1.5%	0%		-	74.6%	0.4%	25%	0%		-	0.8%	98.7%	0.5%	0%		-	**-**	-
Totals %	0.2%	0%	0%	0%		0.2%	0.1%	44.7%	0.7%	0%		45.4%	1.5%	0%	0.5%	0%		2%	0.4%	51.7%	0.3%	0%		52.4%	**-**	-
Heavy	0	0	1	0		-	0	115	1	0		-	0	0	0	0		-	0	145	1	0		-	**-**	-
Heavy %	0%	0%	50%	0%		-	0%	2.2%	1.3%	0%		-	0%	0%	0%	0%		-	0%	2.4%	3%	0%		-	**-**	-
Bicycles	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-
Bicycle %	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	-	-	-	-		-	**-**	-

Peak Hour: 08:00 AM - 09:00 AM **Weather: Few Clouds (9.94 °C)**

Start Time	N Approach ACCESS						E Approach LAKESHORE RD E						S Approach ST LAWRENCE DR						W Approach LAKESHORE RD E						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	0	0	0	0	6	0	0	142	4	0	0	146	3	0	4	0	6	7	4	271	0	0	0	275	428
08:15:00	3	0	0	0	8	3	0	228	1	0	0	229	3	0	2	0	3	5	2	281	0	0	0	283	520
08:30:00	0	0	0	0	13	0	0	300	5	0	0	305	2	0	4	0	6	6	2	258	1	0	0	261	572
08:45:00	0	0	0	0	11	0	1	261	3	0	0	265	7	0	0	0	7	7	0	195	1	0	0	196	468
Grand Total	3	0	0	0	38	3	1	931	13	0	0	945	15	0	10	0	22	25	8	1005	2	0	0	1015	**1988**
Approach%	100%	0%	0%	0%		-	0.1%	98.5%	1.4%	0%		-	60%	0%	40%	0%		-	0.8%	99%	0.2%	0%		-	**-**
Totals %	0.2%	0%	0%	0%		0.2%	0.1%	46.8%	0.7%	0%		47.5%	0.8%	0%	0.5%	0%		1.3%	0.4%	50.6%	0.1%	0%		51.1%	**-**
PHF	0.25	0	0	0		0.25	0.25	0.78	0.65	0		0.77	0.54	0	0.63	0		0.89	0.5	0.89	0.5	0		0.9	**-**
Heavy	0	0	0	0		0	0	35	0	0		35	0	0	0	0		0	0	28	0	0		28	**-**
Heavy %	0%	0%	0%	0%		0%	0%	3.8%	0%	0%		3.7%	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		2.8%	**-**
Lights	3	0	0	0		3	1	895	13	0		909	14	0	10	0		24	8	965	2	0		975	**-**
Lights %	100%	0%	0%	0%		100%	100%	96.1%	100%	0%		96.2%	93.3%	0%	100%	0%		96%	100%	96%	100%	0%		96.1%	**-**
Single-Unit Trucks	0	0	0	0		0	0	19	0	0		19	0	0	0	0		0	0	11	0	0		11	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	2%	0%	0%		2%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1.1%	**-**
Buses	0	0	0	0		0	0	13	0	0		13	0	0	0	0		0	0	15	0	0		15	**-**
Buses %	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.4%	0%	0%	0%	0%		0%	0%	1.5%	0%	0%		1.5%	**-**
Articulated Trucks	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	2	0	0		2	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	**-**
Bicycles on Road	0	0	0	0		0	0	1	0	0		1	1	0	0	0		1	0	12	0	0		12	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0.1%	0%	0%		0.1%	6.7%	0%	0%	0%		4%	0%	1.2%	0%	0%		1.2%	**-**
Pedestrians	-	-	-	-	36	-	-	-	-	-	0	-	-	-	-	-	18	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	60%		-	-	-	-	0%		-	-	-	-	30%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	4	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	3.3%		-	-	-	-	0%		-	-	-	-	6.7%		-	-	-	-	0%		**-**

Peak Hour: 05:15 PM - 06:15 PM Weather: Clear Sky (21.19 °C)

Start Time	N Approach ACCESS						E Approach LAKESHORE RD E						S Approach ST LAWRENCE DR						W Approach LAKESHORE RD E						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	
17:15:00	1	0	0	0	18	1	0	267	4	0	0	271	14	0	8	0	16	22	3	372	1	0	0	376	670
17:30:00	2	0	0	0	17	2	2	268	1	0	0	271	9	0	1	0	13	10	3	358	3	0	0	364	647
17:45:00	1	0	0	0	20	1	1	281	4	0	0	286	9	0	1	0	10	10	1	387	1	0	0	389	686
18:00:00	1	0	0	0	29	1	1	273	9	0	0	283	14	0	3	0	11	17	4	333	6	0	0	343	644
Grand Total	5	0	0	0	84	5	4	1089	18	0	0	1111	46	0	13	0	50	59	11	1450	11	0	0	1472	**2647**
Approach%	100%	0%	0%	0%		-	0.4%	98%	1.6%	0%		-	78%	0%	22%	0%		-	0.7%	98.5%	0.7%	0%		-	**-**
Totals %	0.2%	0%	0%	0%		0.2%	0.2%	41.1%	0.7%	0%		42%	1.7%	0%	0.5%	0%		2.2%	0.4%	54.8%	0.4%	0%		55.6%	**-**
PHF	0.63	0	0	0		0.63	0.5	0.97	0.5	0		0.97	0.82	0	0.41	0		0.67	0.69	0.94	0.46	0		0.95	**-**
Heavy	0	0	0	0		0	0	9	0	0		9	0	0	0	0		0	0	20	0	0		20	**-**
Heavy %	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.8%	0%	0%	0%	0%		0%	0%	1.4%	0%	0%		1.4%	**-**
Lights	5	0	0	0		5	4	1078	17	0		1099	45	0	13	0		58	11	1430	11	0		1452	**-**
Lights %	100%	0%	0%	0%		100%	100%	99%	94.4%	0%		98.9%	97.8%	0%	100%	0%		98.3%	100%	98.6%	100%	0%		98.6%	**-**
Single-Unit Trucks	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	0	11	0	0		11	**-**
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	0%	0%	0%	0%		0%	0%	0.8%	0%	0%		0.7%	**-**
Buses	0	0	0	0		0	0	2	0	0		2	0	0	0	0		0	0	4	0	0		4	**-**
Buses %	0%	0%	0%	0%		0%	0%	0.2%	0%	0%		0.2%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	**-**
Articulated Trucks	0	0	0	0		0	0	4	0	0		4	0	0	0	0		0	0	5	0	0		5	**-**
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0.4%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.3%	0%	0%		0.3%	**-**
Bicycles on Road	0	0	0	0		0	0	2	1	0		3	1	0	0	0		1	0	0	0	0		0	**-**
Bicycles on Road %	0%	0%	0%	0%		0%	0%	0.2%	5.6%	0%		0.3%	2.2%	0%	0%	0%		1.7%	0%	0%	0%	0%		0%	**-**
Pedestrians	-	-	-	-	82	-	-	-	-	-	0	-	-	-	-	-	43	-	-	-	-	-	0	-	**-**
Pedestrians%	-	-	-	-	61.2%		-	-	-	-	0%		-	-	-	-	32.1%		-	-	-	-	0%		**-**
Bicycles on Crosswalk	-	-	-	-	2	-	-	-	-	-	0	-	-	-	-	-	7	-	-	-	-	-	0	-	**-**
Bicycles on Crosswalk%	-	-	-	-	1.5%		-	-	-	-	0%		-	-	-	-	5.2%		-	-	-	-	0%		**-**

Peak Hour: 08:00 AM - 09:00 AM **Weather: Few Clouds (9.94 °C)**

	Bicycles on Crosswalk	Pedestrians
N	2	36
S	4	18
E	0	0
W	0	0

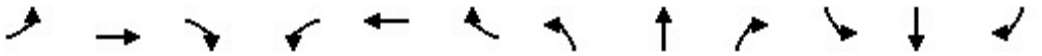
Peak Hour: 05:15 PM - 06:15 PM **Weather: Clear Sky (21.19 °C)**

	Bicycles on Crosswalk	Pedestrians
N	2	82
S	7	43
E	0	0
W	0	0

Appendix B
Existing Traffic Level of Service Calculations

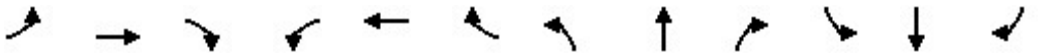
Queues
3: st.lawrence/hurontario & lakeshore rd e

10/6/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	265	1016	16	22	639	201	13	60	13	202	83	267
Act Effct Green (s)	43.2	37.9	37.9	21.1	21.1	21.1	17.1	17.1	17.1	17.1	17.1	17.1
Actuated g/C Ratio	0.63	0.56	0.56	0.31	0.31	0.31	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.43	0.51	0.02	0.13	0.58	0.32	0.04	0.13	0.03	0.60	0.18	0.45
Control Delay	8.5	10.8	4.1	21.9	22.9	4.9	22.1	22.4	0.1	32.3	22.9	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.5	10.8	4.1	21.9	22.9	4.9	22.1	22.4	0.1	32.3	22.9	5.9
LOS	A	B	A	C	C	A	C	C	A	C	C	A
Approach Delay		10.3			18.7			19.0			18.1	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	12.0	36.6	0.0	2.0	34.6	0.0	1.2	5.8	0.0	22.2	8.1	0.0
Queue Length 95th (m)	30.7	69.5	2.6	8.2	63.0	13.7	5.8	16.7	0.0	50.3	21.4	16.7
Internal Link Dist (m)		228.3			139.6			191.0			219.4	
Turn Bay Length (m)				70.0								
Base Capacity (vph)	691	3508	1570	471	3174	1442	912	1298	1123	932	1298	1186
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.29	0.01	0.05	0.20	0.14	0.01	0.05	0.01	0.22	0.06	0.23

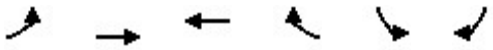
Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 68.2			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.60			
Intersection Signal Delay: 14.7		Intersection LOS: B	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	935	15	20	588	185	12	55	12	186	76	246
Future Volume (vph)	244	935	15	20	588	185	12	55	12	186	76	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.32	1.00	1.00	0.28	1.00	1.00	0.70	1.00	1.00	0.72	1.00	1.00
Satd. Flow (perm)	593	3579	1601	531	3579	1601	1324	1883	1601	1352	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	1016	16	22	639	201	13	60	13	202	83	267
RTOR Reduction (vph)	0	0	7	0	0	137	0	0	10	0	0	200
Lane Group Flow (vph)	265	1016	9	22	639	64	13	60	3	202	83	67
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	37.9	37.9	37.9	21.3	21.3	21.3	17.0	17.0	17.0	17.0	17.0	17.0
Effective Green, g (s)	37.9	37.9	37.9	21.3	21.3	21.3	17.0	17.0	17.0	17.0	17.0	17.0
Actuated g/C Ratio	0.56	0.56	0.56	0.32	0.32	0.32	0.25	0.25	0.25	0.25	0.25	0.25
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	574	2012	900	167	1131	505	333	474	403	341	474	403
v/s Ratio Prot	0.09	c0.28			c0.18			0.03			0.04	
v/s Ratio Perm	0.17		0.01	0.04		0.04	0.01		0.00	c0.15		0.04
v/c Ratio	0.46	0.50	0.01	0.13	0.56	0.13	0.04	0.13	0.01	0.59	0.18	0.17
Uniform Delay, d1	7.9	9.0	6.5	16.5	19.2	16.4	19.0	19.5	18.9	22.2	19.7	19.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.0	0.4	0.7	0.1	0.0	0.1	0.0	2.8	0.2	0.2
Delay (s)	8.5	9.2	6.5	16.8	19.8	16.5	19.1	19.6	18.9	24.9	19.9	19.9
Level of Service	A	A	A	B	B	B	B	B	B	C	B	B
Approach Delay (s)		9.0			19.0			19.4			21.7	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	14.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	67.4	Sum of lost time (s)	15.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	99	1147	904	13	52	8
Future Volume (Veh/h)	99	1147	904	13	52	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	108	1247	983	14	57	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (m)		164	108			
pX, platoon unblocked	0.90				0.89	0.90
vC, conflicting volume	997				1830	498
vC1, stage 1 conf vol					990	
vC2, stage 2 conf vol					840	
vCu, unblocked vol	776				1176	223
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	86				82	99
cM capacity (veh/h)	753				311	703

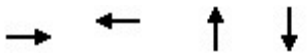
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	108	624	624	655	342	66
Volume Left	108	0	0	0	0	57
Volume Right	0	0	0	0	14	9
cSH	753	1700	1700	1700	1700	337
Volume to Capacity	0.14	0.37	0.37	0.39	0.20	0.20
Queue Length 95th (m)	3.8	0.0	0.0	0.0	0.0	5.4
Control Delay (s)	10.6	0.0	0.0	0.0	0.0	18.3
Lane LOS	B					C
Approach Delay (s)	0.8			0.0		18.3
Approach LOS						C

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	44.3%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1005	8	13	931	10	15
Future Volume (Veh/h)	1005	8	13	931	10	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1092	9	14	1012	11	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	210			61		
pX, platoon unblocked			0.89		0.94	0.89
vC, conflicting volume			1101		1630	550
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			857		1036	236
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		95	98
cM capacity (veh/h)			690		209	678

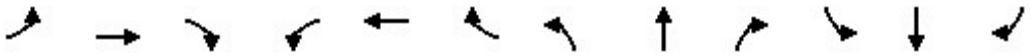
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	728	373	14	506	506	27
Volume Left	0	0	14	0	0	11
Volume Right	0	9	0	0	0	16
cSH	1700	1700	690	1700	1700	354
Volume to Capacity	0.43	0.22	0.02	0.30	0.30	0.08
Queue Length 95th (m)	0.0	0.0	0.5	0.0	0.0	1.9
Control Delay (s)	0.0	0.0	10.3	0.0	0.0	16.0
Lane LOS			B			C
Approach Delay (s)	0.0		0.1			16.0
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1762	994	31	14
Act Effct Green (s)	53.5	53.5	9.9	9.9
Actuated g/C Ratio	0.83	0.83	0.15	0.15
v/c Ratio	0.62	0.35	0.13	0.06
Control Delay	6.0	3.6	33.2	4.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.0	3.6	33.2	4.2
LOS	A	A	C	A
Approach Delay	6.0	3.6	33.2	4.2
Approach LOS	A	A	C	A
Queue Length 50th (m)	65.4	25.0	3.3	0.0
Queue Length 95th (m)	94.7	36.5	13.2	1.9
Internal Link Dist (m)	36.8	177.4	149.8	184.8
Turn Bay Length (m)				
Base Capacity (vph)	3385	3389	733	702
Starvation Cap Reductn	22	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.52	0.29	0.04	0.02

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 64.1			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 5.4		Intersection LOS: A	
Intersection Capacity Utilization 69.9%		ICU Level of Service C	
Analysis Period (min) 15			



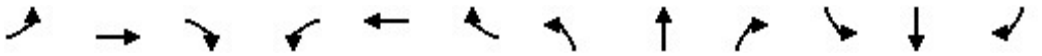
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1604	7	3	897	15	20	4	5	8	0	5
Future Volume (vph)	10	1604	7	3	897	15	20	4	5	8	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5			6.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			0.98			0.95	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		3575			3569			1779			1737	
Flt Permitted		0.95			0.95			0.83			0.80	
Satd. Flow (perm)		3387			3388			1537			1437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1743	8	3	975	16	22	4	5	9	0	5
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	13	0
Lane Group Flow (vph)	0	1762	0	0	993	0	0	26	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		48.0			48.0			4.1			4.1	
Effective Green, g (s)		48.0			48.0			4.1			4.1	
Actuated g/C Ratio		0.73			0.73			0.06			0.06	
Clearance Time (s)		7.5			7.5			6.5			6.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2459			2460			95			89	
v/s Ratio Prot												
v/s Ratio Perm		c0.52			0.29			c0.02			0.00	
v/c Ratio		0.72			0.40			0.28			0.01	
Uniform Delay, d1		5.2			3.5			29.6			29.1	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			0.1			1.6			0.0	
Delay (s)		6.2			3.6			31.2			29.1	
Level of Service		A			A			C			C	
Approach Delay (s)		6.2			3.6			31.2			29.1	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	66.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues
3: st.lawrence/hurontario & lakeshore rd e

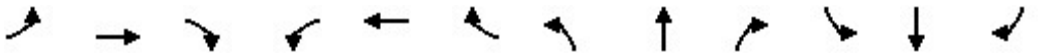
10/6/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	971	12	45	1138	258	9	114	54	272	83	334
Act Effct Green (s)	72.0	66.7	66.7	46.7	46.7	46.7	30.7	30.7	30.7	30.7	30.7	30.7
Actuated g/C Ratio	0.65	0.60	0.60	0.42	0.42	0.42	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.73	0.45	0.01	0.19	0.75	0.32	0.02	0.22	0.11	0.78	0.16	0.53
Control Delay	31.9	13.5	5.4	24.6	31.3	5.7	32.2	33.6	7.1	55.1	33.1	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.9	13.5	5.4	24.6	31.3	5.7	32.2	33.6	7.1	55.1	33.1	12.0
LOS	C	B	A	C	C	A	C	C	A	E	C	B
Approach Delay		17.5			26.5			25.5			31.6	
Approach LOS		B			C			C			C	
Queue Length 50th (m)	31.1	57.3	0.0	6.1	108.9	4.6	1.4	19.1	0.0	54.8	13.7	12.2
Queue Length 95th (m)	#87.2	90.9	2.7	16.3	156.7	21.6	6.0	38.3	8.2	98.9	29.2	41.5
Internal Link Dist (m)		228.3			139.6			191.0			219.4	
Turn Bay Length (m)				70.0								
Base Capacity (vph)	399	2736	1227	334	2155	1052	562	801	716	532	801	830
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.35	0.01	0.13	0.53	0.25	0.02	0.14	0.08	0.51	0.10	0.40

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 110.7			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 24.2		Intersection LOS: C	
Intersection Capacity Utilization 77.3%		ICU Level of Service D	
Analysis Period (min) 15			

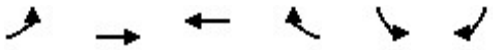
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	893	11	41	1047	237	8	105	50	250	76	307
Future Volume (vph)	255	893	11	41	1047	237	8	105	50	250	76	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.12	1.00	1.00	0.29	1.00	1.00	0.70	1.00	1.00	0.66	1.00	1.00
Satd. Flow (perm)	221	3579	1601	556	3579	1601	1324	1883	1601	1252	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	971	12	45	1138	258	9	114	54	272	83	334
RTOR Reduction (vph)	0	0	5	0	0	127	0	0	39	0	0	187
Lane Group Flow (vph)	277	971	7	45	1138	131	9	114	15	272	83	147
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	66.7	66.7	66.7	46.9	46.9	46.9	30.7	30.7	30.7	30.7	30.7	30.7
Effective Green, g (s)	66.7	66.7	66.7	46.9	46.9	46.9	30.7	30.7	30.7	30.7	30.7	30.7
Actuated g/C Ratio	0.61	0.61	0.61	0.43	0.43	0.43	0.28	0.28	0.28	0.28	0.28	0.28
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	373	2172	971	237	1527	683	369	526	447	349	526	447
v/s Ratio Prot	c0.11	0.27			0.32			0.06			0.04	
v/s Ratio Perm	c0.34		0.00	0.08		0.08	0.01		0.01	c0.22		0.09
v/c Ratio	0.74	0.45	0.01	0.19	0.75	0.19	0.02	0.22	0.03	0.78	0.16	0.33
Uniform Delay, d1	21.9	11.7	8.5	19.6	26.5	19.7	28.7	30.4	28.8	36.5	29.9	31.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.8	0.1	0.0	0.4	2.0	0.1	0.0	0.2	0.0	10.5	0.1	0.4
Delay (s)	29.6	11.8	8.5	20.0	28.5	19.8	28.8	30.6	28.8	47.0	30.0	31.8
Level of Service	C	B	A	C	C	B	C	C	C	D	C	C
Approach Delay (s)		15.7			26.7			30.0			37.6	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	109.9	Sum of lost time (s)	15.5
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	1486	1132	16	23	13
Future Volume (Veh/h)	20	1486	1132	16	23	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1615	1230	17	25	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (m)		164	108			
pX, platoon unblocked	0.78				0.86	0.78
vC, conflicting volume	1247				2090	624
vC1, stage 1 conf vol					1238	
vC2, stage 2 conf vol					852	
vCu, unblocked vol	763				1162	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				92	98
cM capacity (veh/h)	663				299	850

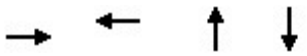
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	22	808	808	820	427	39
Volume Left	22	0	0	0	0	25
Volume Right	0	0	0	0	17	14
cSH	663	1700	1700	1700	1700	389
Volume to Capacity	0.03	0.47	0.47	0.48	0.25	0.10
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	2.5
Control Delay (s)	10.6	0.0	0.0	0.0	0.0	15.3
Lane LOS	B					C
Approach Delay (s)	0.1			0.0		15.3
Approach LOS						C

Intersection Summary				
Average Delay	0.3			
Intersection Capacity Utilization	51.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1450	11	18	1089	13	46
Future Volume (Veh/h)	1450	11	18	1089	13	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1576	12	20	1184	14	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	210			61		
pX, platoon unblocked			0.86		0.83	0.86
vC, conflicting volume			1588		2214	794
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1352		1271	425
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		89	90
cM capacity (veh/h)			433		126	495

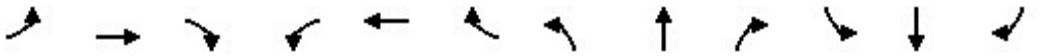
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1051	537	20	592	592	64
Volume Left	0	0	20	0	0	14
Volume Right	0	12	0	0	0	50
cSH	1700	1700	433	1700	1700	302
Volume to Capacity	0.62	0.32	0.05	0.35	0.35	0.21
Queue Length 95th (m)	0.0	0.0	1.1	0.0	0.0	6.0
Control Delay (s)	0.0	0.0	13.7	0.0	0.0	20.1
Lane LOS			B			C
Approach Delay (s)	0.0		0.2			20.1
Approach LOS						C

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1104	1910	26	57
Act Effct Green (s)	63.8	63.8	10.0	10.0
Actuated g/C Ratio	0.79	0.79	0.12	0.12
v/c Ratio	0.47	0.71	0.14	0.27
Control Delay	4.9	7.8	35.1	28.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.9	7.8	35.1	28.4
LOS	A	A	D	C
Approach Delay	4.9	7.8	35.1	28.4
Approach LOS	A	A	D	C
Queue Length 50th (m)	31.1	77.4	2.6	3.9
Queue Length 95th (m)	48.0	116.9	12.5	18.6
Internal Link Dist (m)	36.8	177.4	149.8	184.8
Turn Bay Length (m)				
Base Capacity (vph)	2889	3294	544	563
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.58	0.05	0.10

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 80.5			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.71			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 69.8%		ICU Level of Service C	
Analysis Period (min) 15			



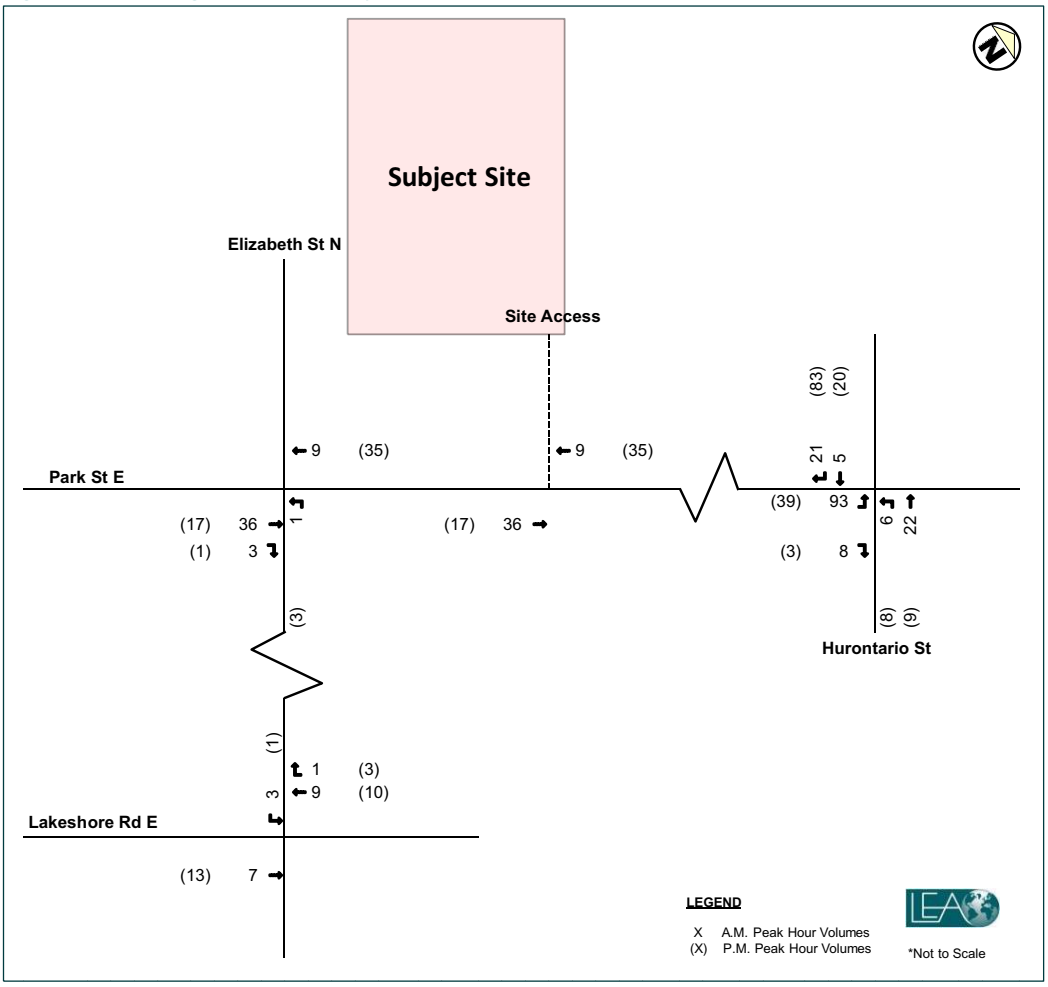
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	965	24	4	1700	53	12	5	7	23	2	28
Future Volume (vph)	27	965	24	4	1700	53	12	5	7	23	2	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5			6.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			0.96			0.93	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		3561			3562			1761			1712	
Flt Permitted		0.84			0.95			0.81			0.85	
Satd. Flow (perm)		2978			3395			1467			1481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1049	26	4	1848	58	13	5	8	25	2	30
RTOR Reduction (vph)	0	1	0	0	2	0	0	7	0	0	28	0
Lane Group Flow (vph)	0	1103	0	0	1908	0	0	19	0	0	29	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		60.6			60.6			6.5			6.5	
Effective Green, g (s)		60.6			60.6			6.5			6.5	
Actuated g/C Ratio		0.75			0.75			0.08			0.08	
Clearance Time (s)		7.5			7.5			6.5			6.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2225			2536			117			118	
v/s Ratio Prot												
v/s Ratio Perm		0.37			c0.56			0.01			c0.02	
v/c Ratio		0.50			0.75			0.16			0.25	
Uniform Delay, d1		4.1			5.9			34.8			35.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			1.3			0.6			1.1	
Delay (s)		4.3			7.2			35.4			36.1	
Level of Service		A			A			D			D	
Approach Delay (s)		4.3			7.2			35.4			36.1	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	81.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	69.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix C
Background Development Traffic Volumes

Figure 3.1: Background Development Traffic Volumes



3.3 FUTURE ROAD NETWORK CHANGES

The Hurontario Light Rail Transit (HLRT) project is expected to be completed by 2024. Lane configuration changes will be made to the southbound approach at the Hurontario Street and Park Street E intersection, including:

- The removal of the southbound right-turn lane;
- The conversion of the curbside southbound through lane to a shared through-right lane; and
- An increase in the amount of storage for the southbound left-turn lane from 20m to 60m.

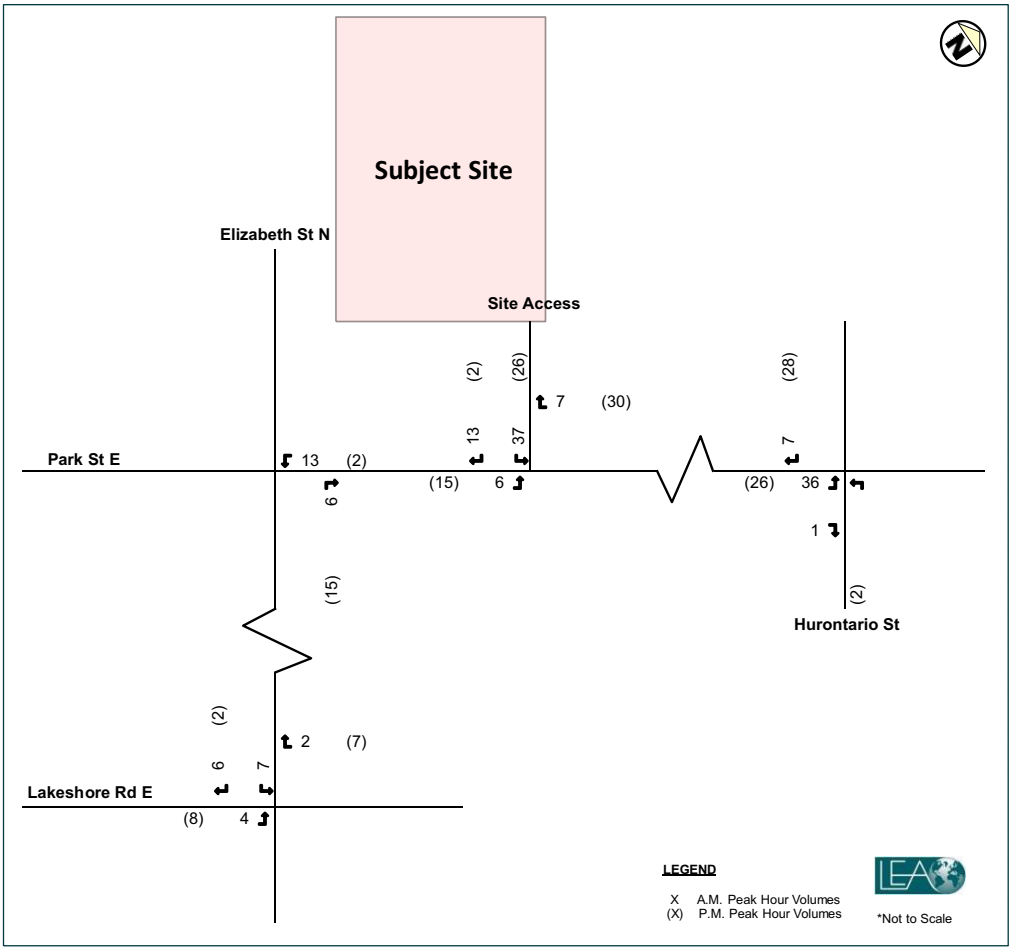
It is assumed that the lane configuration changes will be made by 2024 and were included in the analysis. The intersection layout is illustrated in **Figure 3.2**.

Table 4-3: Subject Site Trip Distribution

Gateway No.	Locations	AM Peak Hour		PM Peak Hour	
		In	Out	In	Out
1	Hurontario St (N of Park St E)	52%	72%	63%	92%
2	Hurontario St (S of Park St E)	3%	3%	4%	0%
3	Lakeshore Rd E (E of Elizabeth St N)	19%	13%	16%	2%
4	Lakeshore Rd E (W of Elizabeth St N)	27%	12%	17%	6%

**Total may not add up to 100% due to rounding*

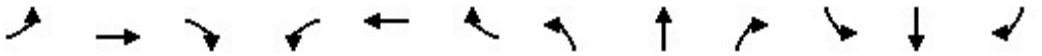
Figure 4.1: Site Traffic Volumes



Appendix D
Future Background Level of Service Calculations

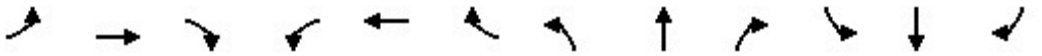
Queues
3: st.lawrence/hurontario & lakeshore rd e

10/6/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	265	1035	16	22	658	232	13	66	13	211	93	273
Act Effct Green (s)	44.7	39.4	39.4	22.4	22.4	22.4	17.9	17.9	17.9	17.9	17.9	17.9
Actuated g/C Ratio	0.63	0.56	0.56	0.32	0.32	0.32	0.25	0.25	0.25	0.25	0.25	0.25
v/c Ratio	0.44	0.52	0.02	0.13	0.58	0.35	0.04	0.14	0.03	0.62	0.19	0.45
Control Delay	8.9	11.2	4.3	22.1	23.3	4.7	22.7	23.0	0.1	33.6	23.6	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	8.9	11.2	4.3	22.1	23.3	4.7	22.7	23.0	0.1	33.6	23.6	5.9
LOS	A	B	A	C	C	A	C	C	A	C	C	A
Approach Delay		10.6			18.5			19.7			18.9	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	12.4	38.6	0.0	2.0	36.7	0.0	1.3	6.5	0.0	23.7	9.3	0.0
Queue Length 95th (m)	32.2	74.1	2.6	8.3	66.5	14.6	5.8	18.3	0.0	53.9	24.1	16.9
Internal Link Dist (m)		228.3			139.6			191.0			219.4	
Turn Bay Length (m)				70.0								
Base Capacity (vph)	672	3482	1558	454	3114	1423	877	1257	1089	898	1257	1160
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.30	0.01	0.05	0.21	0.16	0.01	0.05	0.01	0.23	0.07	0.24

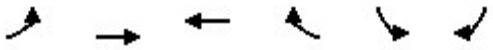
Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 70.6			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.62			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 67.5%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	952	15	20	605	213	12	61	12	194	86	251
Future Volume (vph)	244	952	15	20	605	213	12	61	12	194	86	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.30	1.00	1.00	0.28	1.00	1.00	0.70	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	571	3579	1601	521	3579	1601	1312	1883	1601	1345	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	1035	16	22	658	232	13	66	13	211	93	273
RTOR Reduction (vph)	0	0	7	0	0	157	0	0	10	0	0	203
Lane Group Flow (vph)	265	1035	9	22	658	75	13	66	3	211	93	70
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	39.4	39.4	39.4	22.5	22.5	22.5	17.9	17.9	17.9	17.9	17.9	17.9
Effective Green, g (s)	39.4	39.4	39.4	22.5	22.5	22.5	17.9	17.9	17.9	17.9	17.9	17.9
Actuated g/C Ratio	0.56	0.56	0.56	0.32	0.32	0.32	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	564	2020	903	167	1153	516	336	482	410	344	482	410
v/s Ratio Prot	0.09	c0.29			c0.18			0.04			0.05	
v/s Ratio Perm	0.17		0.01	0.04		0.05	0.01		0.00	c0.16		0.04
v/c Ratio	0.47	0.51	0.01	0.13	0.57	0.14	0.04	0.14	0.01	0.61	0.19	0.17
Uniform Delay, d1	8.2	9.3	6.7	16.7	19.6	16.8	19.5	20.0	19.3	22.9	20.3	20.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.0	0.4	0.7	0.1	0.0	0.1	0.0	3.2	0.2	0.2
Delay (s)	8.8	9.5	6.7	17.1	20.3	16.9	19.5	20.1	19.3	26.1	20.5	20.4
Level of Service	A	A	A	B	C	B	B	C	B	C	C	C
Approach Delay (s)		9.4			19.4			19.9			22.5	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	15.5
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	99	1172	957	13	52	8
Future Volume (Veh/h)	99	1172	957	13	52	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	108	1274	1040	14	57	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (m)		164	108			
pX, platoon unblocked	0.89				0.89	0.89
vC, conflicting volume	1054				1900	527
vC1, stage 1 conf vol					1047	
vC2, stage 2 conf vol					853	
vCu, unblocked vol	820				1213	230
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	85				81	99
cM capacity (veh/h)	718				296	690

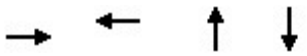
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	108	637	637	693	361	66
Volume Left	108	0	0	0	0	57
Volume Right	0	0	0	0	14	9
cSH	718	1700	1700	1700	1700	321
Volume to Capacity	0.15	0.37	0.37	0.41	0.21	0.21
Queue Length 95th (m)	4.0	0.0	0.0	0.0	0.0	5.8
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	19.1
Lane LOS	B					C
Approach Delay (s)	0.9			0.0		19.1
Approach LOS						C

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1030	8	13	985	10	15
Future Volume (Veh/h)	1030	8	13	985	10	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1120	9	14	1071	11	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	210			61		
pX, platoon unblocked			0.88		0.93	0.88
vC, conflicting volume			1129		1688	564
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			868		1053	224
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		95	98
cM capacity (veh/h)			677		203	683

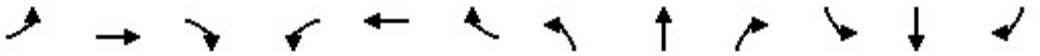
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	747	382	14	536	536	27
Volume Left	0	0	14	0	0	11
Volume Right	0	9	0	0	0	16
cSH	1700	1700	677	1700	1700	347
Volume to Capacity	0.44	0.22	0.02	0.32	0.32	0.08
Queue Length 95th (m)	0.0	0.0	0.5	0.0	0.0	1.9
Control Delay (s)	0.0	0.0	10.4	0.0	0.0	16.2
Lane LOS			B			C
Approach Delay (s)	0.0		0.1			16.2
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.7%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1790	1051	31	14
Act Effct Green (s)	55.1	55.1	9.9	9.9
Actuated g/C Ratio	0.84	0.84	0.15	0.15
v/c Ratio	0.63	0.37	0.13	0.06
Control Delay	6.0	3.6	34.3	4.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.0	3.6	34.3	4.3
LOS	A	A	C	A
Approach Delay	6.0	3.6	34.3	4.3
Approach LOS	A	A	C	A
Queue Length 50th (m)	67.5	27.1	3.3	0.0
Queue Length 95th (m)	98.2	39.5	13.5	2.0
Internal Link Dist (m)	36.8	177.4	149.8	184.8
Turn Bay Length (m)				
Base Capacity (vph)	3381	3385	715	685
Starvation Cap Reductn	36	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.31	0.04	0.02

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 65.8			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 5.4		Intersection LOS: A	
Intersection Capacity Utilization 70.6%		ICU Level of Service C	
Analysis Period (min) 15			



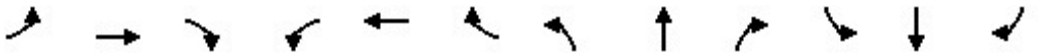
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	1629	7	3	949	15	20	4	5	8	0	5
Future Volume (vph)	10	1629	7	3	949	15	20	4	5	8	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5			6.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			0.98			0.95	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		3575			3570			1779			1737	
Flt Permitted		0.95			0.95			0.83			0.80	
Satd. Flow (perm)		3385			3389			1537			1437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	11	1771	8	3	1032	16	22	4	5	9	0	5
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	13	0
Lane Group Flow (vph)	0	1790	0	0	1050	0	0	26	0	0	1	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		49.6			49.6			4.1			4.1	
Effective Green, g (s)		49.6			49.6			4.1			4.1	
Actuated g/C Ratio		0.73			0.73			0.06			0.06	
Clearance Time (s)		7.5			7.5			6.5			6.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2480			2482			93			87	
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.31			c0.02			0.00	
v/c Ratio		0.72			0.42			0.28			0.01	
Uniform Delay, d1		5.1			3.5			30.4			29.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			0.1			1.7			0.0	
Delay (s)		6.2			3.6			32.1			29.9	
Level of Service		A			A			C			C	
Approach Delay (s)		6.2			3.6			32.1			29.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	67.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues
3: st.lawrence/hurontario & lakeshore rd e

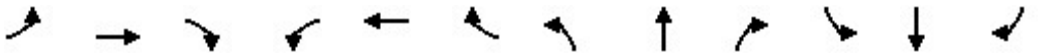
10/6/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	1034	12	45	1204	278	9	120	54	275	89	355
Act Effct Green (s)	75.9	70.6	70.6	50.4	50.4	50.4	32.4	32.4	32.4	32.4	32.4	32.4
Actuated g/C Ratio	0.65	0.61	0.61	0.43	0.43	0.43	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.77	0.47	0.01	0.20	0.78	0.34	0.02	0.23	0.11	0.81	0.17	0.56
Control Delay	40.0	14.2	5.5	25.1	32.6	6.3	33.0	34.8	7.1	59.1	34.2	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	14.2	5.5	25.1	32.6	6.3	33.0	34.8	7.1	59.1	34.2	14.5
LOS	D	B	A	C	C	A	C	C	A	E	C	B
Approach Delay		19.5			27.6			26.5			34.0	
Approach LOS		B			C			C			C	
Queue Length 50th (m)	38.4	66.5	0.0	6.4	123.4	7.0	1.5	21.7	0.0	59.9	15.8	18.0
Queue Length 95th (m)	#96.8	98.7	2.7	16.5	169.8	25.5	6.0	39.9	8.2	101.0	31.0	50.2
Internal Link Dist (m)		228.3			139.6			191.0			219.4	
Turn Bay Length (m)				70.0								
Base Capacity (vph)	369	2639	1184	296	2037	1008	529	757	680	492	757	796
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.39	0.01	0.15	0.59	0.28	0.02	0.16	0.08	0.56	0.12	0.45

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 116.1			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 25.9		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

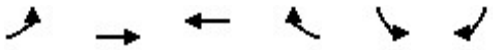
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	951	11	41	1108	256	8	110	50	253	82	327
Future Volume (vph)	255	951	11	41	1108	256	8	110	50	253	82	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.10	1.00	1.00	0.28	1.00	1.00	0.70	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	191	3579	1601	522	3579	1601	1317	1883	1601	1224	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1034	12	45	1204	278	9	120	54	275	89	355
RTOR Reduction (vph)	0	0	5	0	0	127	0	0	39	0	0	183
Lane Group Flow (vph)	277	1034	7	45	1204	151	9	120	15	275	89	172
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	70.6	70.6	70.6	50.5	50.5	50.5	32.4	32.4	32.4	32.4	32.4	32.4
Effective Green, g (s)	70.6	70.6	70.6	50.5	50.5	50.5	32.4	32.4	32.4	32.4	32.4	32.4
Actuated g/C Ratio	0.61	0.61	0.61	0.44	0.44	0.44	0.28	0.28	0.28	0.28	0.28	0.28
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	2187	978	228	1564	700	369	528	449	343	528	449
v/s Ratio Prot	c0.12	0.29			0.34			0.06			0.05	
v/s Ratio Perm	c0.36		0.00	0.09		0.09	0.01		0.01	c0.22		0.11
v/c Ratio	0.78	0.47	0.01	0.20	0.77	0.22	0.02	0.23	0.03	0.80	0.17	0.38
Uniform Delay, d1	26.9	12.3	8.8	20.0	27.6	20.2	30.1	31.9	30.2	38.6	31.4	33.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	0.2	0.0	0.4	2.3	0.2	0.0	0.2	0.0	12.6	0.2	0.5
Delay (s)	37.8	12.4	8.8	20.4	29.9	20.3	30.1	32.2	30.2	51.2	31.5	34.0
Level of Service	D	B	A	C	C	C	C	C	C	D	C	C
Approach Delay (s)		17.7			27.9			31.5			40.3	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	1578	1187	16	23	13
Future Volume (Veh/h)	20	1578	1187	16	23	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1715	1290	17	25	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (m)		164	108			
pX, platoon unblocked	0.77				0.85	0.77
vC, conflicting volume	1307				2200	654
vC1, stage 1 conf vol					1298	
vC2, stage 2 conf vol					902	
vCu, unblocked vol	797				1204	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				91	98
cM capacity (veh/h)	631				282	833

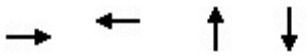
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	22	858	858	860	447	39
Volume Left	22	0	0	0	0	25
Volume Right	0	0	0	0	17	14
cSH	631	1700	1700	1700	1700	369
Volume to Capacity	0.03	0.50	0.50	0.51	0.26	0.11
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	2.7
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	15.9
Lane LOS	B					C
Approach Delay (s)	0.1			0.0		15.9
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1540	11	18	1142	13	46
Future Volume (Veh/h)	1540	11	18	1142	13	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1674	12	20	1241	14	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	210			61		
pX, platoon unblocked			0.84		0.82	0.84
vC, conflicting volume			1686		2340	843
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1441		1339	441
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		88	89
cM capacity (veh/h)			393		112	475

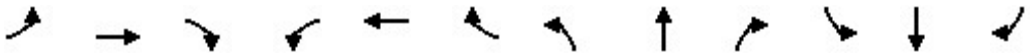
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1116	570	20	620	620	64
Volume Left	0	0	20	0	0	14
Volume Right	0	12	0	0	0	50
cSH	1700	1700	393	1700	1700	279
Volume to Capacity	0.66	0.34	0.05	0.36	0.36	0.23
Queue Length 95th (m)	0.0	0.0	1.2	0.0	0.0	6.6
Control Delay (s)	0.0	0.0	14.6	0.0	0.0	21.7
Lane LOS			B			C
Approach Delay (s)	0.0		0.2			21.7
Approach LOS						C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1176	1985	26	57
Act Effct Green (s)	69.6	69.6	10.0	10.0
Actuated g/C Ratio	0.81	0.81	0.12	0.12
v/c Ratio	0.49	0.72	0.15	0.29
Control Delay	4.9	7.8	37.8	31.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	4.9	7.8	37.8	31.4
LOS	A	A	D	C
Approach Delay	4.9	7.8	37.8	31.4
Approach LOS	A	A	D	C
Queue Length 50th (m)	34.5	84.6	2.8	4.4
Queue Length 95th (m)	52.8	126.8	13.3	19.9
Internal Link Dist (m)	36.8	177.4	149.8	184.8
Turn Bay Length (m)				
Base Capacity (vph)	2843	3258	507	526
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.41	0.61	0.05	0.11

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 86.4			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 7.4		Intersection LOS: A	
Intersection Capacity Utilization 71.7%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	1031	24	4	1769	53	12	5	7	23	2	28
Future Volume (vph)	27	1031	24	4	1769	53	12	5	7	23	2	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5			6.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			0.96			0.93	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		3562			3562			1761			1712	
Flt Permitted		0.83			0.95			0.81			0.85	
Satd. Flow (perm)		2964			3395			1467			1481	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	29	1121	26	4	1923	58	13	5	8	25	2	30
RTOR Reduction (vph)	0	1	0	0	1	0	0	7	0	0	27	0
Lane Group Flow (vph)	0	1175	0	0	1984	0	0	19	0	0	30	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		66.3			66.3			6.6			6.6	
Effective Green, g (s)		66.3			66.3			6.6			6.6	
Actuated g/C Ratio		0.76			0.76			0.08			0.08	
Clearance Time (s)		7.5			7.5			6.5			6.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2261			2590			111			112	
v/s Ratio Prot												
v/s Ratio Perm		0.40			c0.58			0.01			c0.02	
v/c Ratio		0.52			0.77			0.17			0.27	
Uniform Delay, d1		4.0			5.9			37.6			37.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			1.4			0.7			1.3	
Delay (s)		4.2			7.3			38.3			39.2	
Level of Service		A			A			D			D	
Approach Delay (s)		4.2			7.3			38.3			39.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	7.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	86.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix E

2016 Transportation Tomorrow Survey (TTS) Data Analysis

Mode of Transportation - AM Peak Period

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of household - gta06_hhld

Filters:
Primary travel mode of trip - mode_prime In B C D G J M P T U W
and
2006 GTA zone of household - gta06_hhld In 3642 3647 3648 3877
and
Start time of trip - start_time In 600-900
and
Type of dwelling unit - dwell_type In 2

Trip 2016
Table:

Mode of Transportation/Traffic Zones	3642	3877	Total	Percentage
Transit excluding GO rail	170	220	390	11.1%
Auto driver	902	1455	2357	66.9%
GO rail only	0	211	211	6.0%
Joint GO rail and local transit	35	163	198	5.6%
Auto passenger	77	164	241	6.8%
Walk	10	116	126	3.6%
Total	1194	2329	3523	100%

Mode of Transportation - PM Peak Period

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: Primary travel mode of trip - mode_prime
Column: 2006 GTA zone of household - gta06_hhld

Filters:
Primary travel mode of trip - mode_prime In B C D G J M P T U W
and
2006 GTA zone of household - gta06_hhld In 3642 3647 3648 3877
and
Start time of trip - start_time In 1600-1900
and
Type of dwelling unit - dwell_type In 2

Trip 2016
Table:

Mode of Transportation/Traffic Zones	3642	3877	Total	Percentage
Transit excluding GO rail	126	168	294	7.7%
Auto driver	698	1749	2447	63.8%
GO rail only	0	256	256	6.7%
Joint GO rail and local transit	35	187	222	5.8%
Auto passenger	65	206	271	7.1%
Paid rideshare	40	0	40	1.0%
Walk	0	303	303	7.9%
Total	964	2869	3833	100%

Auto Distribution

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Planning district of destination - pd_dest

Filters:
Primary travel mode of trip - mode_prime In D M P T U
and
2006 GTA zone of household - gta06_hhld In 3642 3647 3648 3877
and
Start time of trip - start_time In 600-900
and
Type of dwelling unit - dwell_type In 2

Trip 2016
Table:

	PD 1 of Toronto	PD 2 of Toronto	PD 3 of Toronto	PD 4 of Toronto	PD 6 of Toronto	PD 7 of Toronto	PD 8 of Toronto	PD 9 of Toronto	PD 10 of Toronto	Newmarket	Vaughan	Caledon	Brampton	Mississauga	Oakville	Brantford	
3642	31	0	68	43	0	0	84	43	44	0	0	0	0	422	53	0	
3645	0	0	0	0	0	0	0	0	0	0	0	0	0	43	0	0	
3646	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	
3660	0	0	0	0	0	0	0	0	0	0	0	0	0	34	0	0	
3877	153	39	0	0	33	73	183	0	0	27	0	41	74	824	0	22	
	184	39	68	43	33	73	267	43	44	27	0	41	74	1339	53	22	2350
	8%	2%	3%	2%	1%	3%	11%	2%	2%	1%	0%	2%	3%	57%	2%	1%	100%

Mississauga	57%
Toronto	34%
York Region	3%
Oakville	2%
Brampton	3%
Brantford	1%

Auto Distribution - Mississauga

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Ward number of destination - ward_dest

Filters:
Primary travel mode of trip - mode_prime In D M P T U
and
2006 GTA zone of origin - gta06_orig In 3642 3647 3648 3877
and
Start time of trip - start_time In 600-900
and
Ward number of destination - ward_dest In 136-146

Trip 2016
Table:

Mississauga Ward No.	1	2	3	4	5	6	7	8	9	10	11	
TTS Ward No.	136	137	138	139	140	141	142	143	144	145	146	
3642	531	95	84	176	234	0	196	22	56	0	15	
3647	275	50	0	0	37	25	93	11	0	0	57	
3648	797	200	45	62	265	54	145	15	0	32	109	
3877	313	139	0	73	108	14	248	25	23	0	88	
	1916	484	129	311	644	93	682	73	79	32	269	4712
	41%	10%	3%	7%	14%	2%	15%	2%	2%	1%	6%	100%

Mississauga	57%	
East	14%	8%
West	25%	14%
North	61%	35%
South	0%	0%
		57%

Transit Distribution

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Planning district of destination - pd_dest

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of household - gta06_hhld In 3642 3647 3648 3877
and
Start time of trip - start_time In 600-900
and
Type of dwelling unit - dwell_type In 2

Trip 2016
Table:

	PD 1 of Toronto	PD 2 of Toronto	PD 4 of Toronto	PD 8 of Toronto	Vaughan	Mississauga	Oakville	Hamilton	
3642	67	0	0	41	0	108	0	0	
3877	254	15	30	0	16	321	10	47	
3878	18	0	0	0	0	0	0	0	
	339	15	30	41	16	429	10	47	927
	37%	2%	3%	4%	2%	46%	1%	5%	100%

Mississauga	46%
Toronto	46%
York Region	2%
Oakville	1%
Hamilton	5%
	100%

Transit Distribution - Mississauga

Cross Tabulation Query Form - Trip - 2016 v1.1

Row: 2006 GTA zone of origin - gta06_orig
Column: Ward number of destination - ward_dest

Filters:
Primary travel mode of trip - mode_prime In B C G J W
and
2006 GTA zone of origin - gta06_orig In 3642 3647 3648 3877
and
Start time of trip - start_time In 600-900
and
Ward number of destination - ward_dest In 136-146

Trip 2016
Table:

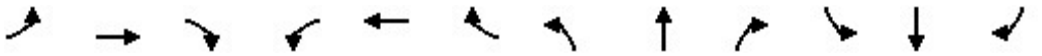
	1	2	3	4	5	7	8	
	136	137	138	139	140	142	143	
3642	164	0	13	0	0	14	0	
3647	153	0	0	15	0	0	0	
3648	469	0	0	0	22	0	0	
3877	140	27	0	40	14	45	72	
	926	27	13	55	36	59	72	1188
	78%	2%	1%	5%	3%	5%	6%	100%

Mississauga	46%	
East	26%	12%
West	34%	16%
North	40%	18%
South	0%	0%
		46%

Appendix F
Future Total Level of Service Calculations

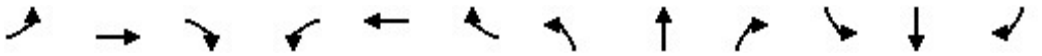
Queues
3: st.lawrence/hurontario & lakeshore rd e

10/6/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	265	1035	16	22	658	242	13	66	13	215	93	273
Act Effct Green (s)	45.1	39.8	39.8	22.7	22.7	22.7	18.2	18.2	18.2	18.2	18.2	18.2
Actuated g/C Ratio	0.63	0.56	0.56	0.32	0.32	0.32	0.26	0.26	0.26	0.26	0.26	0.26
v/c Ratio	0.44	0.52	0.02	0.13	0.58	0.36	0.04	0.14	0.03	0.63	0.19	0.45
Control Delay	9.0	11.3	4.3	22.2	23.3	4.7	22.8	23.1	0.1	34.0	23.7	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.0	11.3	4.3	22.2	23.3	4.7	22.8	23.1	0.1	34.0	23.7	5.9
LOS	A	B	A	C	C	A	C	C	A	C	C	A
Approach Delay		10.7			18.4			19.8			19.1	
Approach LOS		B			B			B			B	
Queue Length 50th (m)	12.7	39.3	0.0	2.0	37.3	0.0	1.3	6.7	0.0	25.0	9.6	0.0
Queue Length 95th (m)	32.5	74.8	2.7	8.4	67.0	14.9	5.8	18.4	0.0	55.2	24.2	17.0
Internal Link Dist (m)		228.3			139.6			191.0			219.4	
Turn Bay Length (m)				70.0								
Base Capacity (vph)	669	3478	1556	451	3092	1416	869	1246	1081	890	1246	1152
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.30	0.01	0.05	0.21	0.17	0.01	0.05	0.01	0.24	0.07	0.24

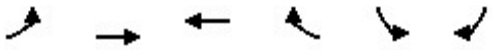
Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 71.3			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 15.1		Intersection LOS: B	
Intersection Capacity Utilization 67.7%		ICU Level of Service C	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	952	15	20	605	223	12	61	12	198	86	251
Future Volume (vph)	244	952	15	20	605	223	12	61	12	198	86	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.30	1.00	1.00	0.28	1.00	1.00	0.70	1.00	1.00	0.71	1.00	1.00
Satd. Flow (perm)	571	3579	1601	521	3579	1601	1312	1883	1601	1345	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	265	1035	16	22	658	242	13	66	13	215	93	273
RTOR Reduction (vph)	0	0	7	0	0	163	0	0	10	0	0	203
Lane Group Flow (vph)	265	1035	9	22	658	79	13	66	3	215	93	70
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	39.8	39.8	39.8	22.9	22.9	22.9	18.2	18.2	18.2	18.2	18.2	18.2
Effective Green, g (s)	39.8	39.8	39.8	22.9	22.9	22.9	18.2	18.2	18.2	18.2	18.2	18.2
Actuated g/C Ratio	0.56	0.56	0.56	0.32	0.32	0.32	0.26	0.26	0.26	0.26	0.26	0.26
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	562	2020	903	169	1162	520	338	486	413	347	486	413
v/s Ratio Prot	0.09	c0.29			0.18			0.04			0.05	
v/s Ratio Perm	0.17		0.01	0.04		0.05	0.01		0.00	c0.16		0.04
v/c Ratio	0.47	0.51	0.01	0.13	0.57	0.15	0.04	0.14	0.01	0.62	0.19	0.17
Uniform Delay, d1	8.3	9.4	6.7	16.8	19.7	16.9	19.6	20.1	19.4	23.1	20.4	20.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.0	0.4	0.6	0.1	0.0	0.1	0.0	3.3	0.2	0.2
Delay (s)	8.9	9.6	6.7	17.1	20.3	17.0	19.6	20.2	19.4	26.4	20.6	20.5
Level of Service	A	A	A	B	C	B	B	C	B	C	C	C
Approach Delay (s)		9.4			19.4			20.0			22.7	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	70.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	99	1176	967	13	52	8
Future Volume (Veh/h)	99	1176	967	13	52	8
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	108	1278	1051	14	57	9
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (m)		164	108			
pX, platoon unblocked	0.90				0.88	0.90
vC, conflicting volume	1065				1913	532
vC1, stage 1 conf vol					1058	
vC2, stage 2 conf vol					855	
vCu, unblocked vol	842				1242	248
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	85				80	99
cM capacity (veh/h)	708				290	675

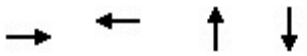
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	108	639	639	701	364	66
Volume Left	108	0	0	0	0	57
Volume Right	0	0	0	0	14	9
cSH	708	1700	1700	1700	1700	315
Volume to Capacity	0.15	0.38	0.38	0.41	0.21	0.21
Queue Length 95th (m)	4.1	0.0	0.0	0.0	0.0	5.9
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	19.4
Lane LOS	B					C
Approach Delay (s)	0.9			0.0		19.4
Approach LOS						C

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1034	8	13	995	10	15
Future Volume (Veh/h)	1034	8	13	995	10	15
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1124	9	14	1082	11	16
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	210			61		
pX, platoon unblocked			0.88		0.93	0.88
vC, conflicting volume			1133		1698	566
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			870		1076	224
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		94	98
cM capacity (veh/h)			675		195	683

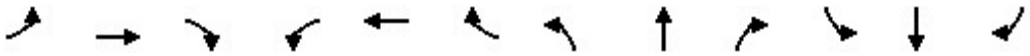
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	749	384	14	541	541	27
Volume Left	0	0	14	0	0	11
Volume Right	0	9	0	0	0	16
cSH	1700	1700	675	1700	1700	338
Volume to Capacity	0.44	0.23	0.02	0.32	0.32	0.08
Queue Length 95th (m)	0.0	0.0	0.5	0.0	0.0	2.0
Control Delay (s)	0.0	0.0	10.4	0.0	0.0	16.6
Lane LOS			B			C
Approach Delay (s)	0.0		0.1			16.6
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1794	1060	31	44
Act Effct Green (s)	58.3	58.3	9.7	9.7
Actuated g/C Ratio	0.84	0.84	0.14	0.14
v/c Ratio	0.63	0.37	0.15	0.19
Control Delay	6.0	3.6	34.6	19.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.0	3.6	34.6	19.6
LOS	A	A	C	B
Approach Delay	6.0	3.6	34.6	19.6
Approach LOS	A	A	C	B
Queue Length 50th (m)	68.2	27.4	3.4	1.2
Queue Length 95th (m)	99.6	40.2	13.7	11.9
Internal Link Dist (m)	36.8	177.4	149.8	94.5
Turn Bay Length (m)				
Base Capacity (vph)	3355	3369	626	632
Starvation Cap Reductn	38	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.54	0.31	0.05	0.07

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 69.4			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 5.6		Intersection LOS: A	
Intersection Capacity Utilization 73.4%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	1629	7	3	949	23	20	4	5	22	0	18
Future Volume (vph)	14	1629	7	3	949	23	20	4	5	22	0	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5			6.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			1.00			0.98			0.94	
Flt Protected		1.00			1.00			0.97			0.97	
Satd. Flow (prot)		3575			3565			1779			1721	
Flt Permitted		0.94			0.95			0.80			0.81	
Satd. Flow (perm)		3368			3385			1465			1437	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	1771	8	3	1032	25	22	4	5	24	0	20
RTOR Reduction (vph)	0	0	0	0	1	0	0	5	0	0	33	0
Lane Group Flow (vph)	0	1794	0	0	1059	0	0	26	0	0	11	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		53.2			53.2			4.3			4.3	
Effective Green, g (s)		53.2			53.2			4.3			4.3	
Actuated g/C Ratio		0.74			0.74			0.06			0.06	
Clearance Time (s)		7.5			7.5			6.5			6.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2505			2518			88			86	
v/s Ratio Prot												
v/s Ratio Perm		c0.53			0.31			c0.02			0.01	
v/c Ratio		0.72			0.42			0.30			0.13	
Uniform Delay, d1		5.0			3.4			32.2			31.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.0			0.1			1.9			0.7	
Delay (s)		6.0			3.5			34.1			32.5	
Level of Service		A			A			C			C	
Approach Delay (s)		6.0			3.5			34.1			32.5	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	5.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	71.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	73.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

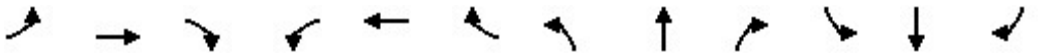
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	27	12	29	13	0
Future Volume (Veh/h)	0	27	12	29	13	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	29	13	32	14	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				119		
pX, platoon unblocked						
vC, conflicting volume	72	14	14			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72	14	14			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	99			
cM capacity (veh/h)	924	1066	1604			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	29	45	14
Volume Left	0	13	0
Volume Right	29	0	0
cSH	1066	1604	1700
Volume to Capacity	0.03	0.01	0.01
Queue Length 95th (m)	0.6	0.2	0.0
Control Delay (s)	8.5	2.1	0.0
Lane LOS	A	A	
Approach Delay (s)	8.5	2.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
3: st.lawrence/hurontario & lakeshore rd e

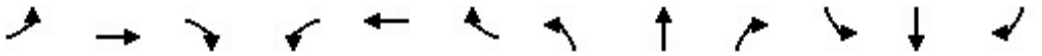
10/6/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	277	1034	12	45	1204	291	9	120	54	275	89	355
Act Effct Green (s)	75.9	70.6	70.6	50.4	50.4	50.4	32.4	32.4	32.4	32.4	32.4	32.4
Actuated g/C Ratio	0.65	0.61	0.61	0.43	0.43	0.43	0.28	0.28	0.28	0.28	0.28	0.28
v/c Ratio	0.77	0.47	0.01	0.20	0.78	0.35	0.02	0.23	0.11	0.81	0.17	0.56
Control Delay	40.0	14.2	5.5	25.1	32.6	6.4	33.0	34.8	7.1	59.1	34.2	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	14.2	5.5	25.1	32.6	6.4	33.0	34.8	7.1	59.1	34.2	14.5
LOS	D	B	A	C	C	A	C	C	A	E	C	B
Approach Delay		19.5			27.4			26.5			34.0	
Approach LOS		B			C			C			C	
Queue Length 50th (m)	38.4	66.5	0.0	6.4	123.4	7.4	1.5	21.7	0.0	59.9	15.8	18.0
Queue Length 95th (m)	#96.8	98.7	2.7	16.5	169.8	26.6	6.0	39.9	8.2	101.0	31.0	50.2
Internal Link Dist (m)		228.3			139.6			191.0			219.4	
Turn Bay Length (m)				70.0								
Base Capacity (vph)	369	2639	1184	296	2037	1012	529	757	680	492	757	796
Starvation Cap Reductn	0	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	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.39	0.01	0.15	0.59	0.29	0.02	0.16	0.08	0.56	0.12	0.45

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 116.1			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.81			
Intersection Signal Delay: 25.9		Intersection LOS: C	
Intersection Capacity Utilization 79.2%		ICU Level of Service D	
Analysis Period (min) 15			

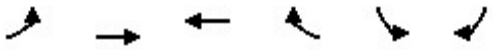
\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	255	951	11	41	1108	268	8	110	50	253	82	327
Future Volume (vph)	255	951	11	41	1108	268	8	110	50	253	82	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1789	3579	1601	1789	3579	1601	1789	1883	1601	1789	1883	1601
Flt Permitted	0.10	1.00	1.00	0.28	1.00	1.00	0.70	1.00	1.00	0.65	1.00	1.00
Satd. Flow (perm)	191	3579	1601	522	3579	1601	1317	1883	1601	1224	1883	1601
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	277	1034	12	45	1204	291	9	120	54	275	89	355
RTOR Reduction (vph)	0	0	5	0	0	133	0	0	39	0	0	183
Lane Group Flow (vph)	277	1034	7	45	1204	158	9	120	15	275	89	172
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4		4	8		8
Actuated Green, G (s)	70.6	70.6	70.6	50.5	50.5	50.5	32.4	32.4	32.4	32.4	32.4	32.4
Effective Green, g (s)	70.6	70.6	70.6	50.5	50.5	50.5	32.4	32.4	32.4	32.4	32.4	32.4
Actuated g/C Ratio	0.61	0.61	0.61	0.44	0.44	0.44	0.28	0.28	0.28	0.28	0.28	0.28
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	353	2187	978	228	1564	700	369	528	449	343	528	449
v/s Ratio Prot	c0.12	0.29			0.34			0.06			0.05	
v/s Ratio Perm	c0.36		0.00	0.09		0.10	0.01		0.01	c0.22		0.11
v/c Ratio	0.78	0.47	0.01	0.20	0.77	0.23	0.02	0.23	0.03	0.80	0.17	0.38
Uniform Delay, d1	26.9	12.3	8.8	20.0	27.6	20.3	30.1	31.9	30.2	38.6	31.4	33.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.9	0.2	0.0	0.4	2.3	0.2	0.0	0.2	0.0	12.6	0.2	0.5
Delay (s)	37.8	12.4	8.8	20.4	29.9	20.5	30.1	32.2	30.2	51.2	31.5	34.0
Level of Service	D	B	A	C	C	C	C	C	C	D	C	C
Approach Delay (s)		17.7			27.9			31.5			40.3	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	26.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	115.5	Sum of lost time (s)	15.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	20	1589	1199	16	23	13
Future Volume (Veh/h)	20	1589	1199	16	23	13
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	22	1727	1303	17	25	14
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		TWLTL	None			
Median storage veh)		2				
Upstream signal (m)		164	108			
pX, platoon unblocked	0.76				0.84	0.76
vC, conflicting volume	1320				2219	660
vC1, stage 1 conf vol					1312	
vC2, stage 2 conf vol					908	
vCu, unblocked vol	785				1205	0
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)					5.8	
tF (s)	2.2				3.5	3.3
p0 queue free %	97				91	98
cM capacity (veh/h)	629				281	822

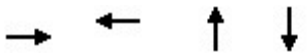
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	22	864	864	869	451	39
Volume Left	22	0	0	0	0	25
Volume Right	0	0	0	0	17	14
cSH	629	1700	1700	1700	1700	368
Volume to Capacity	0.03	0.51	0.51	0.51	0.27	0.11
Queue Length 95th (m)	0.8	0.0	0.0	0.0	0.0	2.7
Control Delay (s)	10.9	0.0	0.0	0.0	0.0	15.9
Lane LOS	B					C
Approach Delay (s)	0.1			0.0		15.9
Approach LOS						C

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1551	11	18	1154	13	46
Future Volume (Veh/h)	1551	11	18	1154	13	46
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1686	12	20	1254	14	50
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (m)	210			61		
pX, platoon unblocked			0.84		0.81	0.84
vC, conflicting volume			1698		2359	849
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1455		1344	448
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		87	89
cM capacity (veh/h)			388		110	470

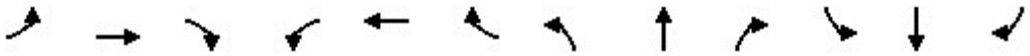
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	1124	574	20	627	627	64
Volume Left	0	0	20	0	0	14
Volume Right	0	12	0	0	0	50
cSH	1700	1700	388	1700	1700	275
Volume to Capacity	0.66	0.34	0.05	0.37	0.37	0.23
Queue Length 95th (m)	0.0	0.0	1.2	0.0	0.0	6.7
Control Delay (s)	0.0	0.0	14.8	0.0	0.0	22.1
Lane LOS			B			C
Approach Delay (s)	0.0		0.2			22.1
Approach LOS						C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	1188	2006	26	92
Act Effct Green (s)	75.9	75.9	11.5	11.5
Actuated g/C Ratio	0.80	0.80	0.12	0.12
v/c Ratio	0.55	0.74	0.14	0.46
Control Delay	6.3	9.2	37.6	42.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	6.3	9.2	37.6	42.5
LOS	A	A	D	D
Approach Delay	6.3	9.2	37.6	42.5
Approach LOS	A	A	D	D
Queue Length 50th (m)	43.6	100.8	3.1	11.2
Queue Length 95th (m)	72.7	161.5	13.1	33.0
Internal Link Dist (m)	36.8	177.4	149.8	82.5
Turn Bay Length (m)				
Base Capacity (vph)	2502	3153	450	449
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.47	0.64	0.06	0.20

Intersection Summary			
Cycle Length: 140			
Actuated Cycle Length: 95			
Control Type: Semi Act-Uncoord			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 9.3		Intersection LOS: A	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	1031	24	4	1769	73	12	5	7	43	2	40
Future Volume (vph)	38	1031	24	4	1769	73	12	5	7	43	2	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5			6.5	
Lane Util. Factor		0.95			0.95			1.00			1.00	
Frt		1.00			0.99			0.96			0.94	
Flt Protected		1.00			1.00			0.98			0.98	
Satd. Flow (prot)		3561			3557			1761			1721	
Flt Permitted		0.75			0.95			0.84			0.83	
Satd. Flow (perm)		2688			3390			1509			1457	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	1121	26	4	1923	79	13	5	8	47	2	43
RTOR Reduction (vph)	0	1	0	0	2	0	0	7	0	0	25	0
Lane Group Flow (vph)	0	1187	0	0	2004	0	0	19	0	0	67	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2			6			4			8		
Actuated Green, G (s)		73.3			73.3			8.6			8.6	
Effective Green, g (s)		73.3			73.3			8.6			8.6	
Actuated g/C Ratio		0.76			0.76			0.09			0.09	
Clearance Time (s)		7.5			7.5			6.5			6.5	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		2054			2591			135			130	
v/s Ratio Prot												
v/s Ratio Perm		0.44			c0.59			0.01			c0.05	
v/c Ratio		0.58			0.77			0.14			0.51	
Uniform Delay, d1		4.8			6.5			40.2			41.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.4			1.5			0.5			3.4	
Delay (s)		5.2			8.0			40.7			45.0	
Level of Service		A			A			D			D	
Approach Delay (s)		5.2			8.0			40.7			45.0	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	95.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	32	31	85	51	0
Future Volume (Veh/h)	0	32	31	85	51	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	35	34	92	55	0
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (m)				106		
pX, platoon unblocked						
vC, conflicting volume	215	55	55			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	215	55	55			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	97	98			
cM capacity (veh/h)	756	1012	1550			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	35	126	55
Volume Left	0	34	0
Volume Right	35	0	0
cSH	1012	1550	1700
Volume to Capacity	0.03	0.02	0.03
Queue Length 95th (m)	0.8	0.5	0.0
Control Delay (s)	8.7	2.1	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	2.1	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G

Background Development Approved Parking Rates in the City of Mississauga

6.2.5.59	Exception: C4-59	Map # 08	By-law: 0281-2015, 0174-2017, 0130-2018, 0181-2018/LPAT Order 2019 February 15

In a C4-59 zone the applicable regulations shall be as specified for a C4 zone except that the following **uses**/regulations shall apply:

Permitted Uses

6.2.5.59.1 Lands zoned C4-59 shall only be used for the following:

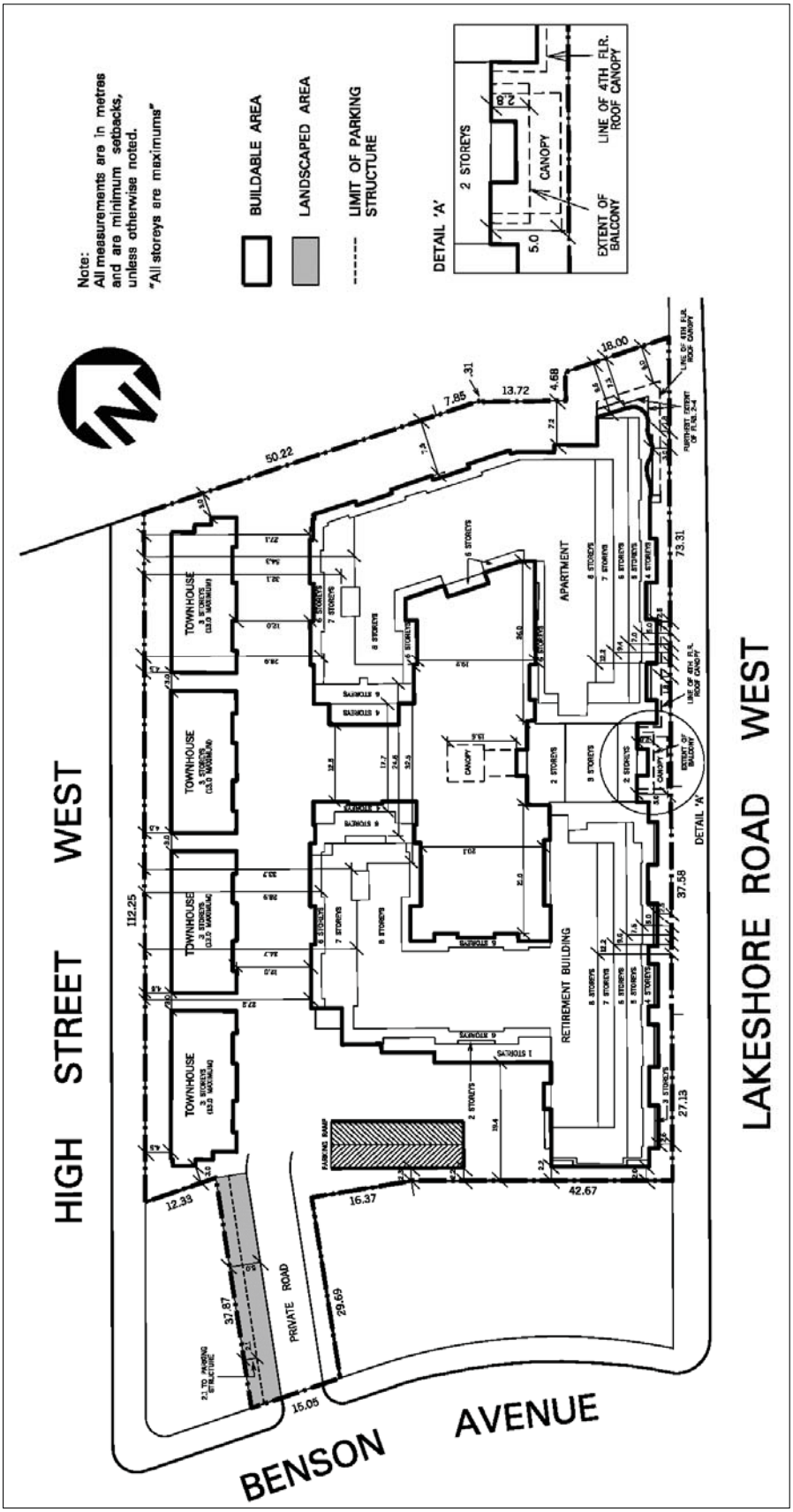
(1) **Apartment**
(2) **Retirement Building**
(3) Assisted Living Dwelling Unit
(4) **Townhouse**
(5) **Financial Institution**
(6) **Office**
(7) **Medical Office**
(8) **Personal Service Establishment**
(9) **Repair Establishment**
(10) **Retail Store**
(11) **Restaurant**
(12) **Take-out Restaurant**
(13) Outdoor patio accessory to a **restaurant** or **take-out restaurant**

Regulations

6.2.5.59.2	The provisions contained in Subsections 2.1.2, 2.1.25 and the regulations of Lines 12.3, 12.4, 14.0 and 16.0 contained in Table 6.2.1 of this By-law shall not apply	
6.2.5.59.3	Maximum number of **dwelling units**	325
6.2.5.59.4	Maximum number of townhouse **dwelling units**	16
6.2.5.59.5	For the purposes of this By-law, all lands zoned C4-59 shall be considered one **lot**	
6.2.5.59.6	Maximum **floor space index - apartment zone**	2.4
6.2.5.59.7	Maximum **gross floor area - non- residential** used for an **office**, **medical office**, **financial institution**, **personal service establishment**, **repair establishment**, **restaurant**, **take-out restaurant** or **retail store**, or any combination thereof	775 m^2
6.2.5.59.8	An **office**, **medical office**, **financial institution**, **personal service establishment**, **repair establishment**, **restaurant**, **take-out restaurant** or **retail store**, or any combination thereof, shall be located within the **first storey** of a **retirement building** and/or **apartment** along Lakeshore Road West	
6.2.5.59.9	Stairwells and elevator enclosures providing direct access to a roof top terrace shall not be included in the number of **storeys** for a **townhouse**	
6.2.5.59.10	Minimum **landscaped area**	35%
6.2.5.59.11	The **lot line** abutting Lakeshore Road West shall be deemed to be the **front lot line**	
6.2.5.59.12	Minimum number of resident **parking spaces** per one-bedroom or two-bedroom apartment **dwelling unit**	1.0
6.2.5.59.13	Minimum number of visitor **parking spaces** per apartment **dwelling unit**	0.19
6.2.5.59.14	Minimum number of **parking spaces** per **retirement dwelling unit**	0.40
6.2.5.59.15	Minimum number of **parking spaces** per assisted living dwelling unit	0.33

Exception C4-59 continued on next page

6.2.5.59	Exception: C4-59	Map # 08	By-law: 0281-2015, 0174-2017, 0130-2018, 0181-2018/LPAT Order 2019 February 15
Exception C4-59 continued from previous page			
6.2.5.59.16	Minimum number of **parking spaces** per 100 m^2 **gross floor area - non-residential** for an **office**, **medical office**, **financial institution**, **personal service establishment**, **repair establishment**, **take-out restaurant** or **retail store**		1.0
6.2.5.59.17	Minimum number of **parking spaces** per 100 m^2 **gross floor area - non-residential** for a **restaurant**		7.65
6.2.5.59.18	Minimum number of **loading spaces**		1
6.2.5.59.19	Minimum setback from a **parking structure** completely below or above finished grade to a **lot line** unless otherwise identified on Schedule C4-59 of this Exception		0.0 m
6.2.5.59.20	The maximum projections permitted beyond the buildable area shall be in compliance with the following:		
	(1) **porch**		1.5 m
	(2) awnings		1.5 m
	(3) window projections and other architectural elements, with or without a foundation, such as but not limited to fireplaces, pilasters and corbel		1.0 m
	(4) **balcony**		1.8 m
6.2.5.59.21	Stairs, walkways, planters and ventilation shafts are permitted to encroach into a required **landscaped area** and are permitted outside the buildable area identified on Schedule C4-59 of this Exception		
6.2.5.59.22	"Assisted Living Dwelling Unit" means a **retirement dwelling unit** within a **retirement building** occupied by persons with memory and/or cognitive impairment where a higher level of supervised support and care is provided compared to the rest of the **retirement building**, but whose residents do not require the services and support provided in a **long-term care building**		
6.2.5.59.23	All site development plans shall comply with Schedule C4-59 of this Exception		



Schedule C4-59
Map 08

THE CORPORATION OF THE CITY OF MISSISSAUGA

BY-LAW NUMBER 0054-2020

A by-law to amend By-law Number 0225-2007, as amended.

WHEREAS pursuant to sections 34 and 36 of the *Planning Act*, R.S.O. 1990, c.P.13, as amended, the council of a local municipality may, respectively, pass a zoning by-law and enact a by-law to impose a holding provision;

NOW THEREFORE the Council of The Corporation of the City of Mississauga ENACTS as follows:

1. By-law Number 0225-2007, as amended, being a City of Mississauga Zoning By-law, is amended by adding the following Exception Table:

4.15.6.53	Exception: RA5-53	Map # 08	By-law:
In a RA5-53 zone the permitted **uses** and applicable regulations shall be as specified for a RA5 zone except that the following **uses**/regulations shall apply:			
Additional Permitted Uses			
4.15.6.53.1	(1) **Uses** permitted in a C4 zone as contained in Table 6.2.1 of this By-law		
Regulations			
4.15.6.53.2	The provisions of Article 2.1.30.1 contained in Subsection 2.1.30 and Lines 11.1, 11.2, 13.3, 15.5 contained in Table 4.15.1 of this By-law shall not apply		
4.15.6.53.3	The **uses** contained in Sentence 4.15.6.53.1 of this Exception shall only be permitted on the **first storey** of an **apartment**		
4.15.6.53.4	Maximum **floor space index - apartment zone**		9.2
4.15.6.53.5	Minimum **gross floor area - non-residential**		250 m^2
4.15.6.53.6	Maximum **gross floor area - apartment zone** for each of the 13th and 14th **storeys**		1 150 m^2
4.15.6.53.7	Maximum projection of all **balconies** located above the **first storey** measured from the outermost faces of the **building**		2.0 m
4.15.6.53.8	Notwithstanding Sentence 4.15.6.53.7 of this Exception, maximum projection of a rooftop **balcony** on the second **storey** measured from the outermost face of the **building**		6.0 m
4.15.6.53.9	Notwithstanding Sentence 4.15.6.53.7 of this Exception, maximum projection of a rooftop **balcony** located on the seventh **storey** measured from the outermost face of the **building**		4.5 m

4.15.6.53	Exception: RA5-53	Map # 08	By-law:
4.15.6.53.10	Notwithstanding Sentence 4.15.6.53.7 of this Exception, maximum projection of a rooftop **balcony** located on the ninth **storey** measured from the outermost face of the **building**		6.0 m
4.15.6.53.11	Notwithstanding Sentence 4.15.6.53.7 of this Exception, maximum projection of a rooftop **balcony** located on the 15th **storey** measured from the outermost face of the **building**		29.5 m
4.15.6.53.12	Maximum projection of an architectural feature located above the sixth **storey** measured from the outermost face of the **building**		2.3 m
4.15.6.53.13	External access stairwell and ventilation shafts shall be permitted to extend beyond the limit of the completely below grade **parking structure**		
4.15.6.53.14	Notwithstanding Sentence 4.15.6.53.24 of this Exception, maximum projection of a canopy facing Park Street East from the building face		2.2 m
4.15.6.53.15	Notwithstanding Sentence 4.15.6.53.24 of this Exception, maximum projection of a canopy facing Ann Street from the building faces		2.2 m
4.15.6.53.16	Notwithstanding Sentence 4.15.6.53.24 of this Exception, stairs and ramps shall be permitted outside of the buildable area and encroachments into a required yard		
4.15.6.53.17	Minimum number of resident **parking spaces** per one-bedroom apartment **dwelling unit**		0.75
4.15.6.53.18	Minimum number of resident **parking spaces** per two-bedroom apartment **dwelling unit**		0.90
4.15.6.53.19	Minimum number of resident **parking spaces** per three-bedroom apartment **dwelling unit**		1.10
4.15.6.53.20	Minimum number of shared visitor and non-residential **parking spaces** per **dwelling unit**		0.10
4.15.6.53.21	Minimum **aisle** width		6.6 m
4.15.6.53.22	Minimum **landscaped area**		380 m^2
4.15.6.53.23	Minimum **amenity area**		1 300 m^2
4.15.6.53.24	All site development plans shall comply with Schedule RA5-53 of this Exception		

4.15.6.53	Exception: RA5-53	Map # 08	By-law:

Holding Provision

The holding symbol H is to be removed from the whole or any part of the lands zoned H-RA5-53 by further amendment to Map 08 of Schedule B contained in Part 13 of this By-law, as amended, upon satisfaction of the following requirements:

(1) delivery of an executed Development Agreement in a form and on terms satisfactory to the City of Mississauga (the City);
(2) submission of grading and servicing drawings to City standards and specifications satisfactory to the City;
(3) submission of an updated Functional Servicing Report and Traffic Impact Study satisfactory to the City;
(4) submission of a Phase II Environmental Site Assessment Reports and all supporting documents, including a Letter of Reliance, satisfactory to the City;
(5) submission of Final Remediation Report, Site Remediation Securities and a Dewatering Plan, including a Letter of Reliance, satisfactory to the Transportation and Works Department;
(6) Record of Site Condition for lands to be dedicated to the City and all supporting documents, including Letter of Reliance
(7) satisfactory arrangements with the Region of Peel for Waste Collection subject to the most recent Waste Collection Design Standards;
(8) confirmation by the Region of Peel that satisfactory arrangements have been made for water and waste water services to the site;
(9) a letter from the Planning and Building Department indicating satisfactory arrangements have been made with respect to addressing the City's Housing Strategy; and,
(10) delivery of an executed agreement for community benefits pursuant to section 37 of the *Planning Act,* as amended, in a form and on terms satisfactory to the City.

2. Map Number 08 of Schedule "B" to By-law Number 0225-2007, as amended, being a City of Mississauga Zoning By-law, is amended by changing thereon from "H-RA2-48" to "H-RA5-53", the zoning of Part of the Town Plot of Port Credit, in the City of Mississauga, PROVIDED HOWEVER THAT the "H-RA5-53" zoning shall only apply to the lands which are shown on the attached Schedule "A", which is deemed to be an integral part of this By-law, outlined in the heaviest broken line with the "H-RA5-53" zoning indicated thereon.

ENACTED and PASSED this 25 day of March 2020.

Bonnie Crombie

MAYOR

CLERK

APPROVED
AS TO FORM
City Solicitor
MISSISSAUGA
MEM
Date 2020 03 13

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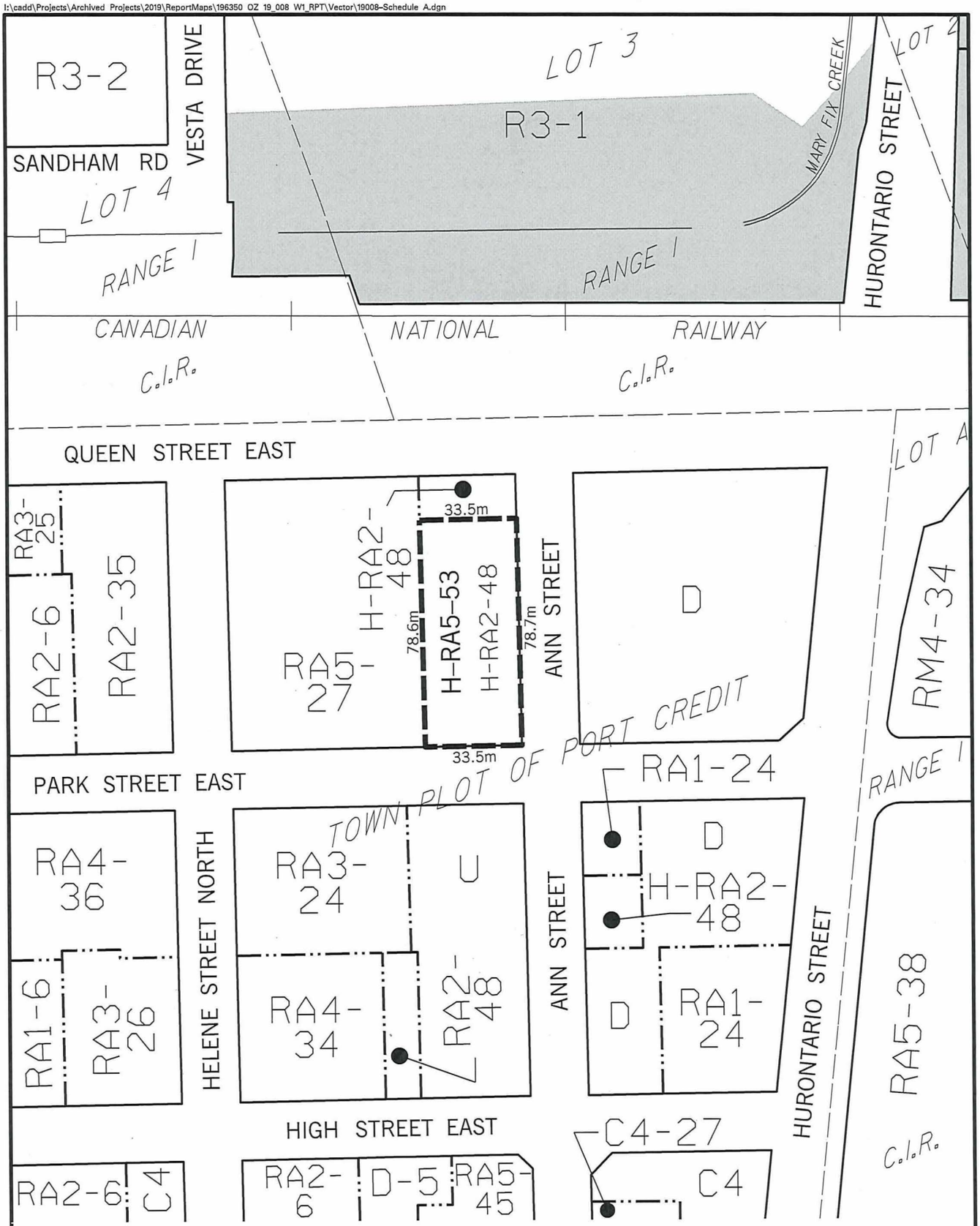

GREENLANDS OVERLAY

0 25 50 75 100
metres

This is not a Plan of Survey. Dimensions shown taken from Survey prepared by Tarasick McMillan Kubicki Limited dated December 5, 2018 (File No. A.010 – SURVEY PLAN.DWG)

THIS IS SCHEDULE "A" TO

BY-LAW 0054-2020

PASSED BY COUNCIL ON

March 25, 2020

CITY OF MISSISSAUGA

Z-8 M.P.

OZ 19008 W1

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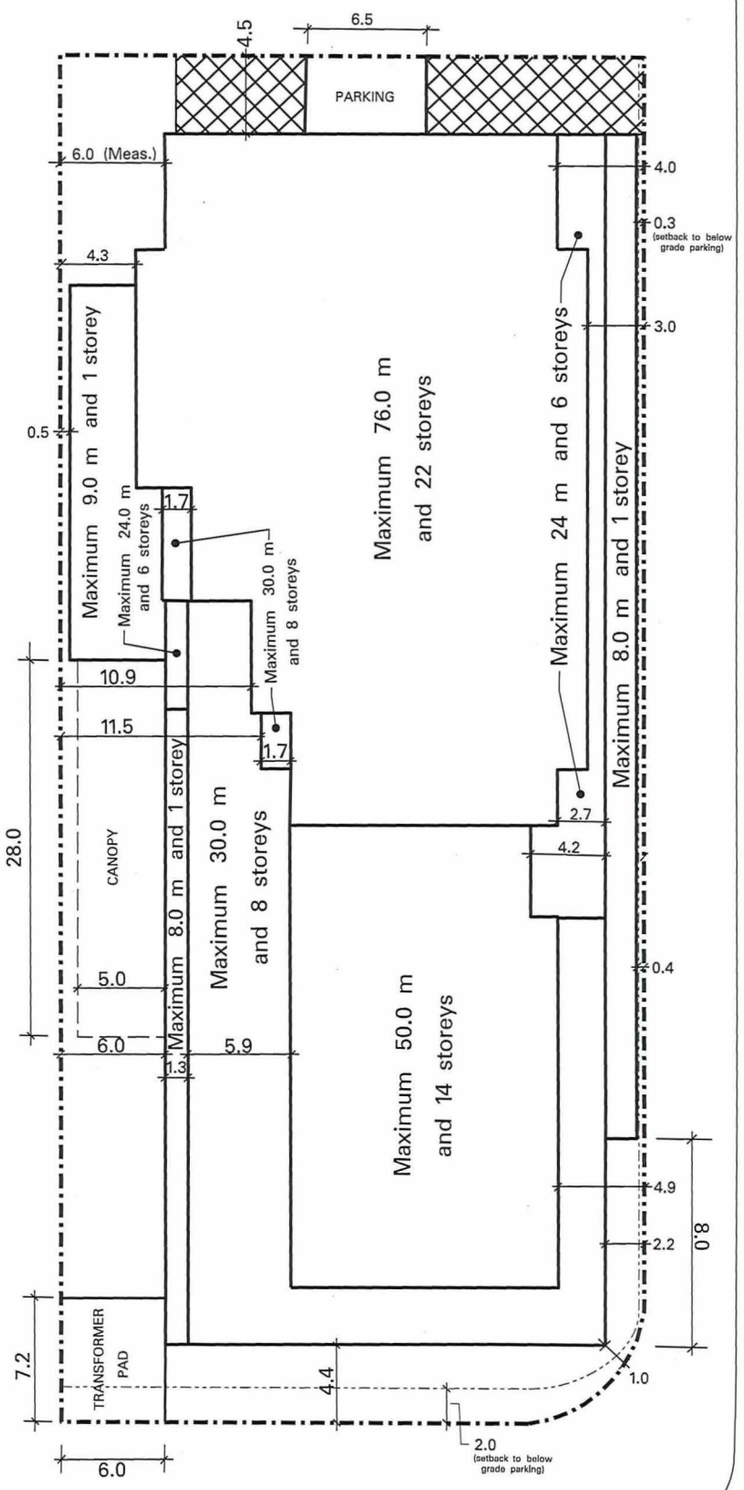


BUILDABLE AREA

UNDERGROUND PARKING LIMITS

LANDSCAPED BUFFER

Note:
All measurements are in metres and are minimum setbacks, unless otherwise noted.

This is not a Plan of Survey.

THIS IS SCHEDULE "RA5-53"

AS ATTACHED TO BY-LAW 0054-2020

PASSED BY COUNCIL ON March 25, 2020

Z-8 M.P.

OZ 19/008 W1

APPENDIX "A" TO BY-LAW NUMBER 0054-2020

Explanation of the Purpose and Effect of the By-law

The purpose of this By-law is to permit a 22 storey apartment building with ground floor commercial uses and a FSI of 9.2.

This By-law amends the zoning of the property outlined on the attached Schedule "A" from "H-RA2-48" (Apartment – Exception with a Holding Provision) to "H-RA5-53" (Apartment – Exception with a Holding Provision).

"H-RA2-48" permits an 8 storey apartment building with an FSI of 1.0.

Upon removal of the "H" provision, the "RA5-53" zone will permit a 22 storey apartment building with ground floor commercial uses and a FSI of 9.2

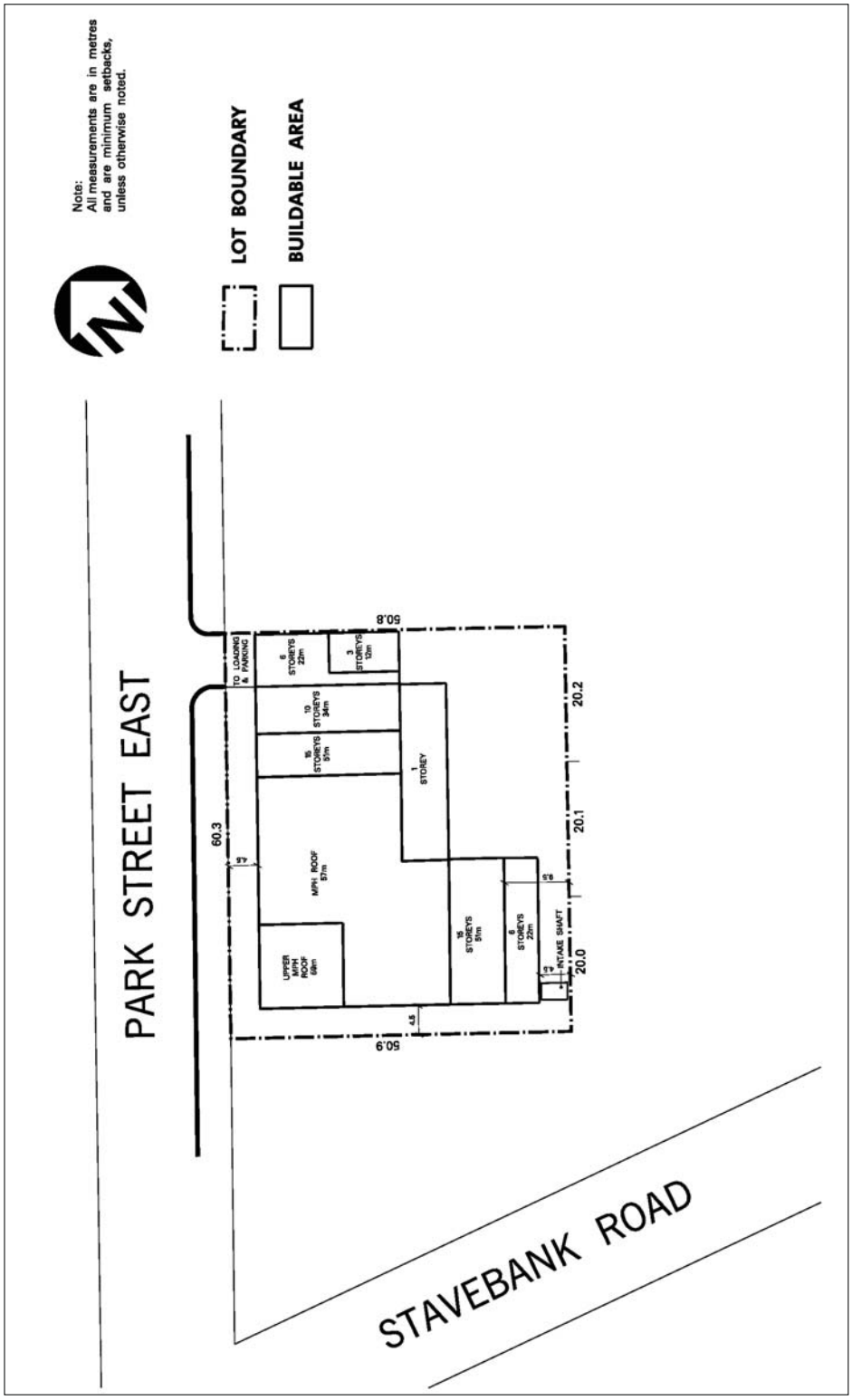
Location of Lands Affected

Northwest corner of Ann Street and Park Street East, in the City of Mississauga, as shown on the attached Map designated as Schedule "A".

Further information regarding this By-law may be obtained from David Ferro of the City Planning and Building Department at 905-615-3200 ext. 4554.

http://teamsites.mississauga.ca/sites/18/bylaws/oz 19 008 w1.by-law.df.fs.docx

4.15.5.48	Exception: RA4-48	Map # 08	By-law: 0174-2018, 0142-2019
In a RA4-48 zone the permitted **uses** and applicable regulations shall be as specified for a RA4 zone except that the following **uses**/regulations shall apply:			
Regulations			
4.15.5.48.1	The provisions of Article 4.1.15.3 and the regulations of Lines 11.2, 13.5, 15.1, 15.2, 15.3 and 15.5 contained in Table 4.15.1 of this By-law shall not apply		
4.15.5.48.2	Maximum **floor space index**		6.3
4.15.5.48.3	Maximum **gross floor area** - **apartment zone** per **storey** for each **storey** above 12 **storeys**		1 200 m^2
4.15.5.48.4	Minimum **front yard**		4.5 m
4.15.5.48.5	Stairs, ramps, planters, canopies and patios shall be permitted to encroach into a required **front yard**		
4.15.5.48.6	Minimum number of resident **parking spaces** per one-bedroom apartment **dwelling unit**		0.8
4.15.5.48.7	Minimum number of resident **parking spaces** per two-bedroom apartment **dwelling unit**		1.0
4.15.5.48.8	Minimum number of resident **parking spaces** per three-bedroom apartment **dwelling unit**		1.3
4.15.5.48.9	Minimum number of **parking spaces** per grade related apartment **dwelling unit**		1.3
4.15.5.48.10	Minimum number of visitor **parking spaces** per apartment **dwelling unit**		0.1
4.15.5.48.11	Minimum setback from a **parking structure** completely below finished grade, inclusive of external access stairwells, to an OS1 zone		4.5 m
4.15.5.48.12	Minimum **landscaped area**		780 m^2
4.15.5.48.13	Minimum depth of a **landscaped buffer** abutting an OS1 zone		4.5 m
4.15.5.48.14	Minimum central **amenity area**		930 m^2
4.15.5.48.15	All site development plans shall comply with Schedule RA4-48 of this Exception		



Schedule RA4-48
Map 08

4.15.6.45	Exception: RA5-45	Map # 08	By-law: 0103-2017, 0174-2017

In a RA5-45 zone the permitted **uses** and applicable regulations shall be as specified for a RA5 zone except that the following **uses**/regulations shall apply:

Additional Permitted Use		
4.15.6.45.1	(1) **Semi-Detached**	
Regulations		
4.15.6.45.2	Minimum **lot frontage**	25.0 m
4.15.6.45.3	Maximum **floor space index - apartment zone**	4.3
4.15.6.45.4	Maximum **height**	15 **storeys**
4.15.6.45.5	Maximum number of apartment **dwelling units**	69
4.15.6.45.6	Maximum number of semi-detached **dwelling units**	2
4.15.6.45.7	Minimum **front yard**	4.0 m
4.15.6.45.8	Minimum **exterior side yard**	2.9 m
4.15.6.45.9	Minimum **interior side yard** to a **semi-detached**	2.9 m
4.15.6.45.10	Minimum **interior side yard** to an **apartment**	3.2 m
4.15.6.45.11	Minimum **rear yard**	6.9 m
4.15.6.45.12	Maximum projection of a **balcony** located above the **first storey** measured from the outermost face or faces of the **building** from which the **balcony** projects	1.8 m
4.15.6.45.13	Maximum projection of a **balcony** located above the **first storey** measured from the outermost face or faces of the **building** from which the **balcony** projects into a required **rear yard**	1.8 m
4.15.6.45.14	Stairs, landings, planters, canopies, ventilation shafts and bicycle racks shall be permitted to encroach into a required **yard** and **landscaped buffer**	
4.15.6.45.15	Minimum separation between **buildings**	5.9 m
4.15.6.45.16	Minimum number of resident **parking spaces** per **dwelling unit**	1.0
4.15.6.45.17	Minimum number of visitor **parking spaces** per **dwelling unit**	0.15
4.15.6.45.18	Minimum setback from a **parking structure** completely below finished grade to any **lot line**	0.2 m
4.15.6.45.19	Minimum **landscaped area**	30%
4.15.6.45.20	Minimum depth of a **landscaped buffer** abutting High Street East	4.0 m
4.15.6.45.21	Minimum depth of a **landscaped buffer** abutting Ann Street	2.9 m
4.15.6.45.22	Minimum depth of a **landscaped buffer** along an **interior side lot line**	0.0 m
4.15.6.45.23	Minimum depth of a **landscaped buffer** along a **rear lot line**	0.5 m
4.15.6.45.24	Minimum **amenity area**	340 m^2

Exception RA5-45 continued on next page

4.15.6.45	Exception: RA5-45	Map # 08	By-law: 0103-2017, 0174-2017

Exception RA5-45 continued from previous page

Section 37 Public Benefits Contribution

Pursuant to section 37(3) of the *Planning Act* R.S.O, 1990, c.P13, as amended, the height and density of development provided by this Exception shall be permitted where:

(1) the owner of the lands zoned RA5-45 enters into an agreement with The Corporation of the City of Mississauga (the City) for the provision of certain facilities, services or matters in return for the increased height and density of the development;

(2) the agreement is registered on title to the lands zoned RA5-45;

(3) the owner pays the City the sum of $300,000 to be used toward the redevelopment of the Port Credit Cenotaph Park and/or renovations to the West Bank Totem Pole and/or the installation of a commemorative statue relating to the history of Port Credit at J.J. Plaus Park.

4.15.6.46	Exception: RA5-46	Map # 22	By-law: 0155-2016/ OMB Order 2017 January 11, 0174-2017, 0179-2018

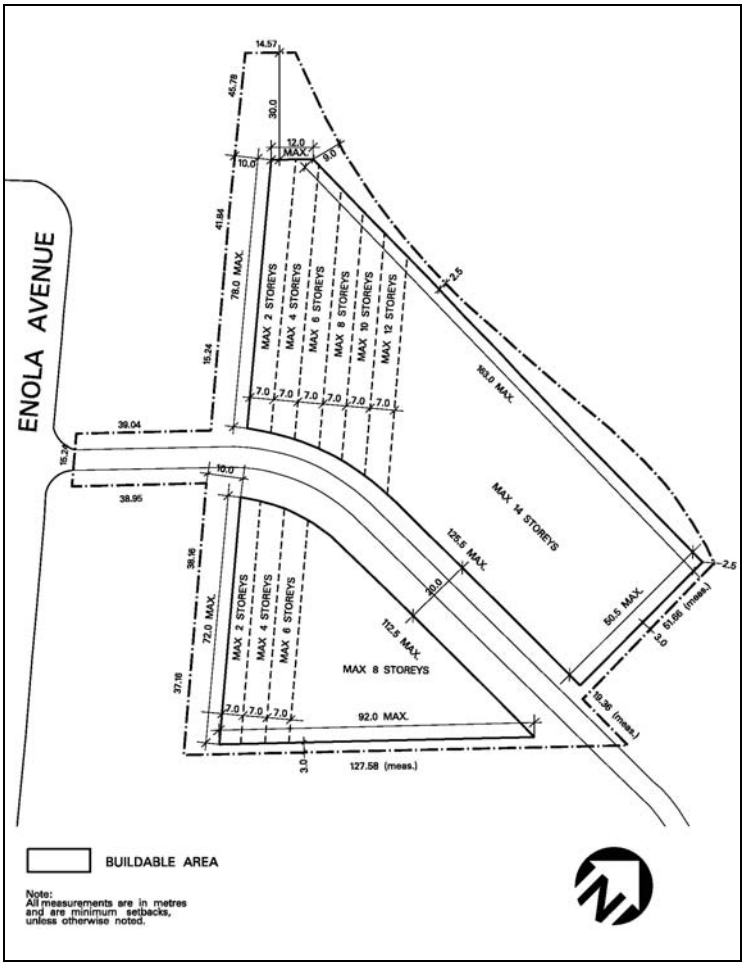
In a RA5-46 zone the permitted **uses** and applicable regulations shall be as specified for a RA5 zone except that the following **uses**/regulations shall apply:

Additional Permitted Uses

4.15.6.46.1	(1) **Day Care** (2) **Retail Store**	
Regulations		
4.15.6.46.2	The provisions contained in Subsection 2.1.14, Articles 2.1.9.4, 4.1.15.1 and Lines 11.1, 15.2 and 15.3 in Table 4.15.1 of this By-law shall not apply	
4.15.6.46.3	For the purposes of this By-law, all lands zoned RA5-46 shall be considered one **lot**	
4.15.6.46.4	The **uses** contained in Sentence 4.15.6.46.1 shall only be located within a **building**, **structure** or part thereof, used for an **apartment**, **long-term care building**, **retirement building**, or any combination thereof	
4.15.6.46.5	Maximum total number of **dwelling units** in Buildable Area 'A' identified on Schedule RA5-46 of this Exception	350
4.15.6.46.6	Maximum total number of **dwelling units** in Buildable Area 'B' identified on Schedule RA5-46 of this Exception	411
4.15.6.46.7	Maximum total number of **dwelling units** in Buildable Areas 'C1' and 'C2' identified on Schedule RA5-46 of this Exception	522
4.15.6.46.8	Maximum **floor space index - apartment zone**, measured over the **lot area** prior to road widening(s)	8.2
4.15.6.46.9	Maximum total **gross floor area - apartment zone** in Buildable Area 'A' identified on Schedule RA5-46 of this Exception	24 450 m^2
4.15.6.46.10	Maximum total **gross floor area - apartment zone** in Buildable Area 'B' identified on Schedule RA5-46 of this Exception	28 500 m^2

Exception RA5-46 continued on next page

4.15.5.31	Exception: RA4-31	Map # 07	By-law: *deleted by 0218-2010,* OMB Order 2013 November 13, 0049-2015, 0174-2017, 0181-2018/LPAT Order 2019 February 15
In a RA4-31 zone the permitted **uses** and applicable regulations shall be as specified for a RA4 zone except that the following **uses**/regulations shall apply:			
Additional Permitted Uses			
4.15.5.31.1	(1) **Townhouse** (2) **Back to Back** and **Stacked Townhouses**		
Regulations			
4.15.5.31.2	The regulations of Subsection 4.1.8 and Line 3.0 in Table 4.15.1 contained in Subsection 4.15.1 of this By-law shall not apply		
4.15.5.31.3	Maximum **floor space index - apartment zone**		1.4
4.15.5.31.4	Maximum **gross floor area - apartment zone**		28 000 m^2
4.15.5.31.5	Minimum **landscaped area**		35% of **lot area**
4.15.5.31.6	Minimum depth of **landscaped buffer** abutting lands zoned G1		2.5 m
4.15.5.31.7	For the purposes of this By-law, all lands zoned RA4-31 shall be considered one **lot**		
4.15.5.31.8	All site development plans shall comply with Schedule RA4-31 of this Exception		



Schedule RA4-31
Map 07

THE CORPORATION OF THE CITY OF MISSISSAUGA

BY-LAW NUMBER 0061-2020

A by-law to amend By-law Number 0225-2007, as amended.

WHEREAS pursuant to section 34 of the *Planning Act*, R.S.O. 1990, c.P.13, as amended, the council of a local municipality may pass a zoning by-law;

NOW THEREFORE the Council of The Corporation of the City of Mississauga ENACTS as follows:

1. By-law Number 0225-2007, being a City of Mississauga Zoning By-law, is amended by deleting Exception Table 4.15.3.33 and substituting the following therefor:

4.15.3.33	Exception: RA2-33	Map # 08	By-law: 0308-2011, 0174-2017
In a RA2-33 zone the permitted **uses** and applicable regulations shall be as specified for a RA2 zone except that the following **uses**/regulations shall apply:			
Additional Permitted Uses - Buildable Area 'B'			
4.15.3.33.1	(1) **Retail Store** (2) Art Gallery (3) Ice Cream Parlour (4) **Take-out Restaurant** (5) Sporting Goods Rental Establishment		
Regulations			
4.15.3.33.2	The provisions of Article 4.1.15.1 of this By-law shall not apply		
4.15.3.33.3	Maximum number of apartment **dwelling units** in Buildable Area 'A' identified on Schedule RA2-33 of this Exception		35
4.15.3.33.4	Maximum number of apartment **dwelling units** in Buildable Area 'B' identified on Schedule RA2-33 of this Exception		75
4.15.3.33.5	Minimum **landscaped area**		35% of the lot area
4.15.3.33.6	Minimum **floor space index - apartment zone**		1.9
4.15.3.33.7	Maximum **floor space index - apartment zone**		2.8
4.15.3.33.8	Maximum **gross floor area - apartment zone** permitted in Buildable Area 'A' identified on Schedule RA2-33 of this Exception		6 400 m^2

4.15.3.33	Exception: RA2-33	Map # 08	By-law: 0308-2011, 0174-2017
4.15.3.33.9	Maximum **gross floor area - apartment zone** permitted in Buildable Area 'B' identified on Schedule RA2-33 of this Exception		15 290 m^2
4.15.3.33.10	The **uses** contained in Sentence 4.15.3.33.1 of this Exception shall only be permitted on the **first storey** of an **apartment** in Buildable Area 'B' as identified on Schedule RA2-33 of this Exception		
4.15.3.33.11	Minimum **gross floor area - non-residential**		200 m^2
4.15.3.33.12	Maximum **gross floor area - non-residential**		460 m^2
4.15.3.33.13	The **uses** contained in Sentence 4.15.3.33.1 of this Exception shall have pedestrian access to abutting lands zoned OS2 and to Port Street East		
4.15.3.33.14	Maximum **height** above established grade where the distance from the **rear lot line** is 3.5 m to 7.5 m		13.0 m and 3 **storeys**
4.15.3.33.15	Maximum **height** above established grade where the distance from the **rear lot line** is 7.5 m to 11.5 m		16.0 m and 4 **storeys**
4.15.3.33.16	Maximum **height** above established grade where the distance from the **rear lot line** is 11.5 m to 15.5 m		19.0 m and 5 **storeys**
4.15.3.33.17	Maximum **height** above established grade where the distance from the **rear lot line** is 15.5 m or greater		22.0 m and 6 **storeys**
4.15.3.33.18	The maximum **height** of the finished floor level at the **main front entrance** shall be 0.5 m above the proposed or finished **first storey** level measured at the **lot line** abutting the **street line** for the length of the **building** or **structure**		
4.15.3.33.19	Required **parking spaces** for uses contained in Sentence 4.15.3.33.1 of this Exception may be located on lands zoned C4-3		
4.15.3.33.20	A **parking structure** or part thereof shall be located wholly below the ground level measured at the centreline of Port Street East		
4.15.3.33.21	Maximum **height** above grade of a **parking structure** or part thereof adjacent to lands zoned OS2		1.5 m
4.15.3.33.22	"Established Grade" means the average level of proposed or finished ground adjoining a **building** at the exterior wall containing the **main front entrance**		
4.15.3.33.23	All site development plans shall comply with Schedule RA2-33 of this Exception		

2. By-law Number 0225-2007, as amended, is further amended by deleting Schedule RA2-33 to Exception Table 4.15.3.33 and substituting the attached Schedule RA2-33 therefor.

3. The greyed-out text, identified in Section 1 of this By-law, is for information purposes only and does not form part of the amendments contained in this By-law.

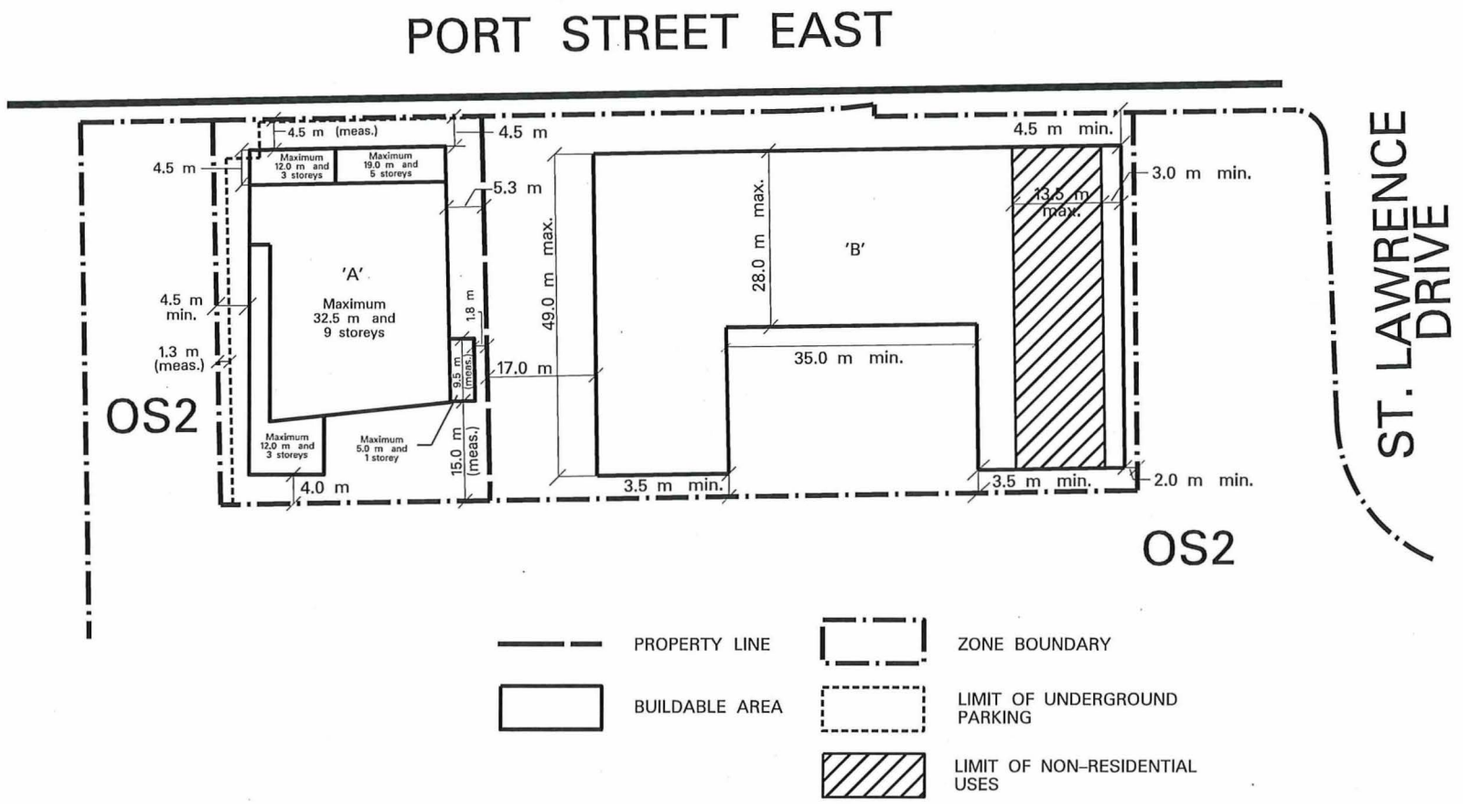
4. This By-law shall not come into force until Mississauga Official Plan Amendment Number 104 is in full force and effect.

ENACTED and PASSED this 25 day of March 2020.

Bonnie Crombie
MAYOR

CLERK

APPROVED
AS TO FORM
City Solicitor
MISSISSAUGA
MEM
Date 2020 03 20



PROPERTY LINE

BUILDABLE AREA

ZONE BOUNDARY

LIMIT OF UNDERGROUND PARKING

LIMIT OF NON-RESIDENTIAL USES

Note:
All measurements are in metres and are minimum setbacks, unless otherwise noted.

Note:
All measurements are in metres and are minimum setbacks, unless otherwise noted.

This is not a Plan of Survey

THIS IS SCHEDULE "RA2–33"

AS ATTACHED TO BY–LAW 0061–2020

PASSED BY COUNCIL ON March 25, 2020

20200220

Z–08 A.A.

OZ 18007 W1

APPENDIX "A" TO BY-LAW NUMBER 0061-2020

Explanation of the Purpose and Effect of the By-law

The purpose of this By-law is to permit a nine storey apartment building.

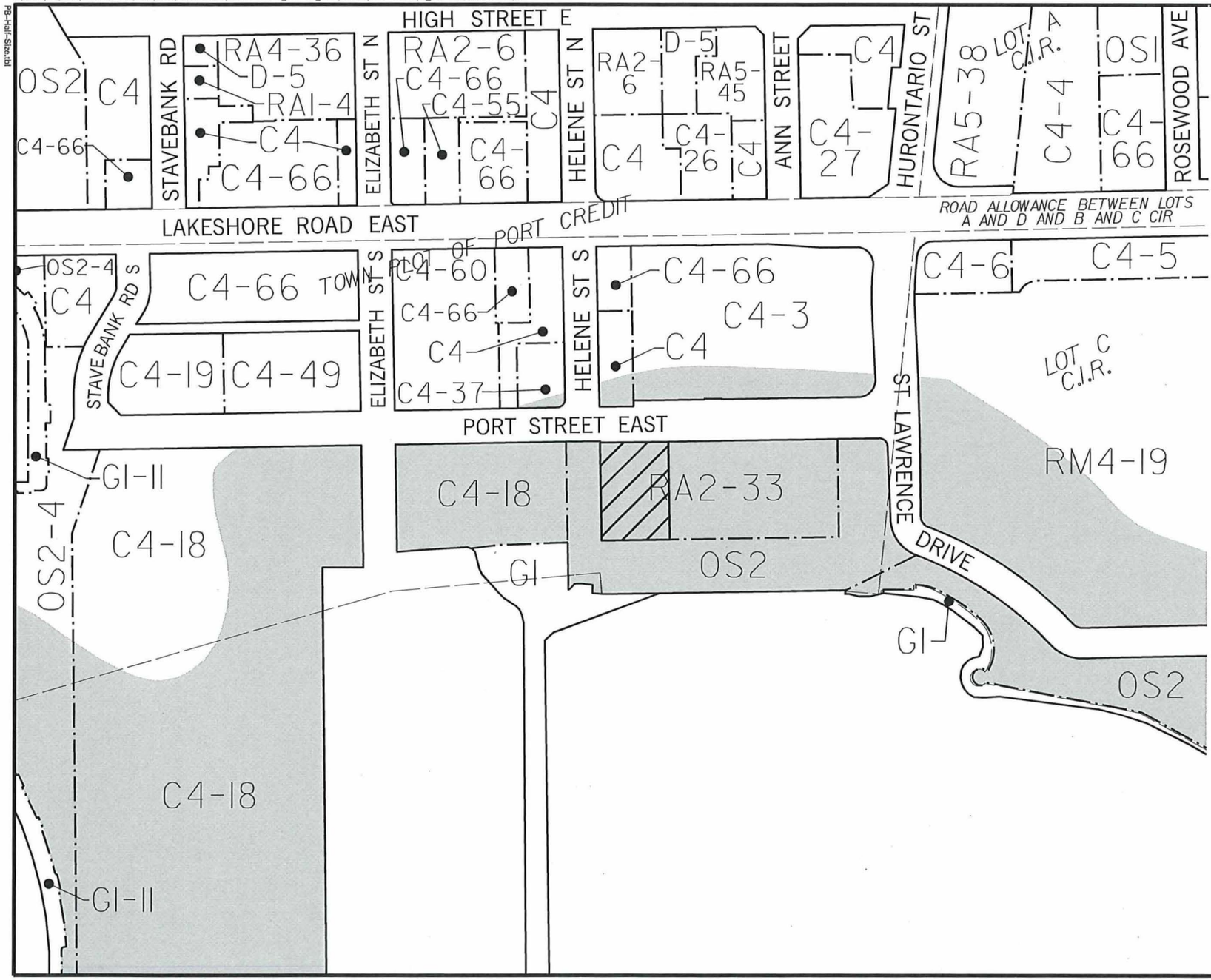
This By-law modifies the existing "RA2-33" (Apartment - Exception) zone to permit the second apartment building to higher than originally approved.

Location of Lands Affected

Southeast corner of Port Street East and Helene Street South, in the City of Mississauga shown on the attached Map designated as Appendix "B".

Further information regarding this By-law may be obtained from David Ferro of the City Planning and Building Department at 905-615-3200 ext. 4554.

http://teamsites.mississauga.ca/sites/18/Bylaws/OZ 18 007 W1.by-law.df.fs.docx



0 25 50 75 100
metres

This is not a Plan of Survey.

GREENLANDS OVERLAY

CITY OF MISSISSAUGA

THIS IS APPENDIX "B" TO

BY-LAW 0061-2020

PASSED BY COUNCIL ON

March 25, 2020

breric

20200108

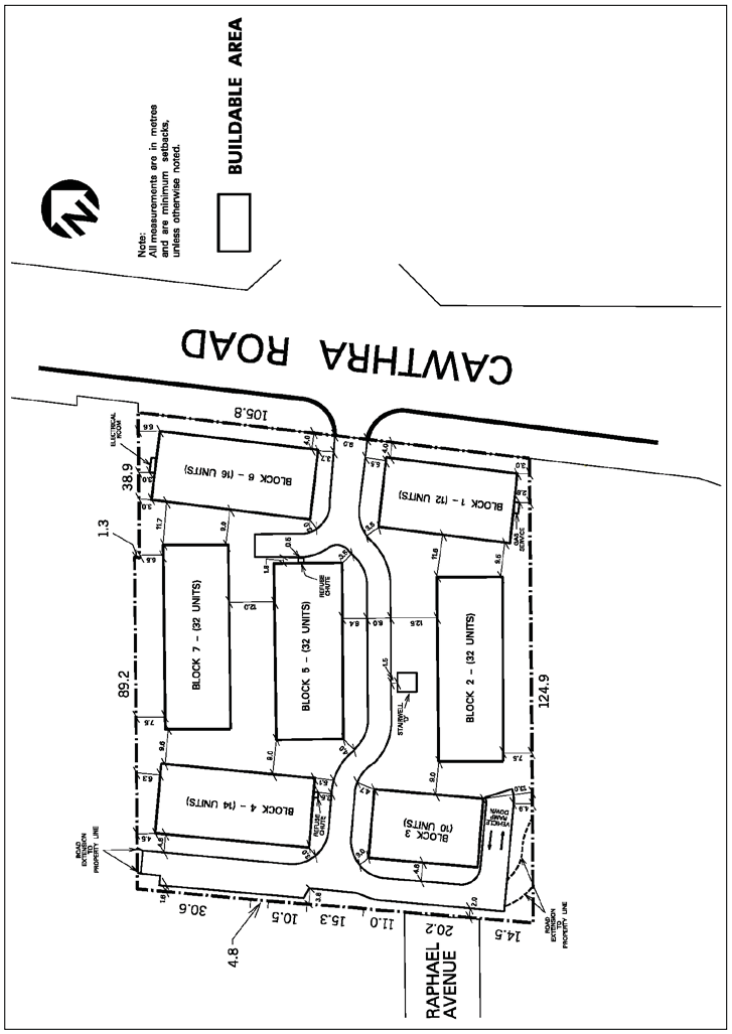
4.13A.2.10	Exception: RM8-10	Map # 07	By-law: 0010-2018, 0181-2018/LPAT Order 2019 February 15

In a RM8-10 zone the permitted **uses** and applicable regulations shall be as specified for a RM8-14 zone except that the following **uses**/regulations shall apply:

Regulations		
4.13A.2.10.1	The provisions of Line 13.0 contained in Table 2.1.14.1 and the regulations of Clauses 4.13A.2.14.11(3) and 4.13A.2.14.11(4) contained in Exception Table 4.13A.2.14 of this By-law shall not apply	
4.13A.2.10.2	Maximum **floor space index**	1.5
4.13A.2.10.3	Maximum number of **dwelling units**	148
4.13A.2.10.4	Maximum **height**: **flat roof**	14.8 m
4.13A.2.10.5	Maximum encroachment into a required **front yard** of a **porch**, inclusive of stairs, located at the **first storey** of a **back to back** and/or **stacked townhouse**	3.5 m
4.13A.2.10.6	A **porch**, inclusive of stairs, located at the **first storey** of a **back to back** and/or **stacked townhouse**, may project outside the buildable area identified on Schedule RM8-10 of this Exception	
4.13A.2.10.7	Maximum projection of a raised terrace, located at the **first storey** of Block 5 and outside the buildable area identified on Schedule RM8-10 of this Exception	3.5 m
4.13A.2.10.8	Maximum projection of a **porch** or patio, exclusive of stairs, located below the **first storey** and outside the buildable area identified on Schedule RM8-10 of this Exception	3.4 m
4.13A.2.10.9	Maximum projection of a **balcony**, attached to a **front wall**, outside the buildable area identified on Schedule RM8-10 of this Exception	1.5 m
4.13A.2.10.10	Maximum projection outside the buildable area of an awning, window, **chimney**, or architectural feature	0.6 m
4.13A.2.10.11	Minimum setback from a side wall of a **back to back** and/or **stacked townhouse** to a sidewalk or an internal walkway	1.4 m
4.13A.2.10.12	Minimum setback of a rooftop **balcony** from all exterior edges of Blocks 2 and 7	1.2 m
4.13A.2.10.13	Minimum setback between a surface **parking space** and a **lot line** that is not a **street**	1.0 m
4.13A.2.10.14	Minimum setback from a **parking structure** completely below finished grade to any **lot line**	2.9 m
4.13A.2.10.15	Minimum width of a **condominium road/aisle**	6.0 m
4.13A.2.10.16	Minimum width of a sidewalk	1.8 m
4.13A.2.10.17	Minimum width of an internal walkway	1.5 m
4.13A.2.10.18	Minimum **amenity area**	5.6 m^2 per **dwelling unit**
4.13A.2.10.19	Minimum number of resident **parking spaces** per two-bedroom **dwelling unit**	1.3
4.13A.2.10.20	Minimum number of resident **parking spaces** per three-bedroom **dwelling unit**	1.4
4.13A.2.10.21	Minimum number of visitor **parking spaces** per **dwelling unit**	0.2
4.13A.2.10.22	Transformers, ventilation shafts and external access stairwells to underground parking shall be permitted to encroach into a required **interior side yard**	

Exception RM8-10 continued on next page

4.13A.2.10	Exception: RM8-10	Map # 07	By-law: 0010-2018, 0181-2018/LPAT Order 2019 February 15
Exception RM8-10 continued from previous page			
4.13A.2.10.23	All site development plans shall comply with Schedule RM8-10 of this Exception		
Section 37 Public Benefits Contribution			
	Pursuant to section 37 of the *Planning* Act, R.S.O 1990, c.P.13, as amended, the height and density of development provided by this Exception shall be permitted where: (1) the owner of the lands zoned RM8-10 enters into an agreement with The Corporation of the City of Mississauga (the City) for the provision of certain facilities, services or matters in return for the increased in height and density of the development; (2) the agreement is registered on title to the lands zoned RM8-10; (3) the owner pays to the City the sum of $200,000 to be used toward the installation of bicycle lanes, fitness stations and compliance with all other terms and conditions of the agreement referred to in paragraphs (1) and (2) above.		



Schedule RM8-10
Map 07

Local Planning Appeal Tribunal
Tribunal d'appel de l'aménagement local

Ontario

ISSUE DATE: March 17, 2020 **CASE NO.:** PL171219

The Ontario Municipal Board (the "OMB") is continued under the name Local Planning Appeal Tribunal (the "Tribunal"), and any reference to the Ontario Municipal Board or Board in any publication of the Tribunal is deemed to be a reference to the Tribunal.

PROCEEDING COMMENCED UNDER subsection 34(11) of the *Planning Act*, R.S.O. 1990, c. P.13, as amended

Applicant and Appellant:	3355 The Collegeway G.P. Inc.
Subject:	Application to amend Zoning By-law No. 0225-2007 - Neglect of the City of Mississauga to make a decision
Existing Zoning:	C2-Neighbourhood Commercial
Proposed Zoning:	Site Specific (To be determined)
Purpose:	To permit 336 stacked townhouse units (horizontal multiple dwellings) within eleven (11) blocks with access from Colonial Drive as well as a two-storey convenience commercial building with access from Ridgeway Drive
Property Address/Description:	3355 The Collegeway
Municipality:	City of Mississauga
Municipality File No.:	OZ 16/005
OMB Case No.:	PL171219
OMB File No.:	PL171220

BEFORE:

SHARYN VINCENT VICE CHAIR	)))	Tuesday, the 17th day of March, 2020

THIS MATTER having come on for a public hearing and after the hearing, the Tribunal in its Decision issued on May 22, 2019 (the "Decision"), granted approval to the application, subject to the parties filling a final form of the Zoning By-law;

AND THE TRIBUNAL having received the final form of the Zoning By-law;

THEREFORE THE TRIBUNAL ORDERS that the appeal is allowed in part and Zoning By-law 0225-2007 is hereby amended as set out in "Schedule 1" attached hereto and forming part of this order. The municipality is hereby authorized to assign a By-law or other number to this document for record-keeping purposes.

"Evelyn Dawes"

EVELYN DAWES
DEPUTY REGISTRAR

If there is an attachment referred to in this document,
please visit www.elto.gov.on.ca to view the attachment in PDF format.

SCHEDULE "1" TO
LOCAL PLANNING APPEAL TRIBUNAL
ORDER DATED _____

LPAT Case No. PL171219
LPAT File No. PL171220
3355 The Collegeway G.P. Inc.

1. By-law Number 0225-2007, as amended, being a City of Mississauga Zoning By-law, is amended by adding the following Exception Table:

6.2.5.73	Exception: C4-73	Map # 59	By-law:
In a C4-73 zone the permitted **uses** and applicable regulations shall be as specified for a C4 zone except that the following **uses**/regulations shall apply:			
Additional Permitted Use			
6.2.5.73.1	(1) **Stacked Townhouse**		
Regulations			
6.2.5.73.2	The provisions of Lines 1.0 and 3.0 contained in Table 2.1.2.1.1 and Subsection 2.1.19 of this By-law shall not apply		
6.2.5.73.3	Residential **uses** shall not be located on the **first storey** in Area 'A1' identified on Schedule C4-73 of this Exception		
6.2.5.73.4	Non-residential **uses** shall only be located in Area 'A1' identified on Schedule C4-73 of this Exception		
6.2.5.73.5	Minimum **gross floor area - non-residential**		2 475 m^2
6.2.5.73.6	Maximum combined **floor space index**		1.65
6.2.5.73.7	Maximum **building height**: **flat roof**		16.5 m and 4 **storeys**
6.2.5.73.8	Maximum projection of a **porch** or patio, inclusive of stairs, facing The Collegeway, outside the buildable areas identified on Schedule C4-73 of this Exception		1.6 m
6.2.5.73.9	Maximum projection of a **porch** or patio, inclusive of stairs, facing Colonial Drive, outside the buildable areas identified on Schedule C4-73 of this Exception		3.5 m

6.2.5.73	Exception: C4-73	Map # 59	By-law:
6.2.5.73.10	Maximum projection of an awning, window or other architectural feature outside the buildable areas identified on Schedule C4-73 of this Exception		0.6 m
6.2.5.73.11	Maximum projection of a **balcony** located at or above the **first storey** of a **stacked townhouse** outside the buildable areas identified on Schedule C4-73 of this Exception		1.0 m
6.2.5.73.12	External access stairwells and ventilation shafts shall be permitted outside the buildable areas		
6.2.5.73.13	Minimum width of a **condominium road**		6.5 m
6.2.5.73.14	Minimum width of a sidewalk		1.5 m
6.2.5.73.15	Minimum number of resident **parking spaces** per stacked townhouse **dwelling unit**		1.2
6.2.5.73.16	Required number of **parking spaces** for combined visitor/non-residential **uses**		0.2 visitor/ non-residential spaces per **dwelling unit**
6.2.5.73.17	Required number of **accessible parking spaces**		3
6.2.5.73.18	Required number of **loading spaces**		1
6.2.5.73.19	Minimum **amenity area** in Area 'A' identified on Schedule C4-73 of this Exception		1 230 m^2
6.2.5.73.20	Minimum **amenity area** in Area 'B' identified on Schedule C4-73 of this Exception		1 186 m^2
6.2.5.73.21	Maximum **gross floor area - non-residential** of a utility or maintenance **structure**		20 m^2
6.2.5.73.22	Utility or maintenance **structures** shall not be located in a **landscaped buffer**		
6.2.5.73.23	All site development plans shall comply with Schedule C4-73 of this Exception		

2. Map Number 59 of Schedule "B" to By-law Number 0225-2007, as amended, being a City of Mississauga Zoning By-law, is amended by changing thereon from "C2" to "C4-73", the zoning of Part of Lots 3 and 4, Concession 1, North of Dundas Street, in the City of Mississauga, PROVIDED HOWEVER THAT the "C4-73" zoning shall only apply to the lands which are shown on the attached Schedule "A", which is deemed to be an integral part of this By-law, outlined in the heaviest broken line with the "C4-73" zoning indicated thereon.

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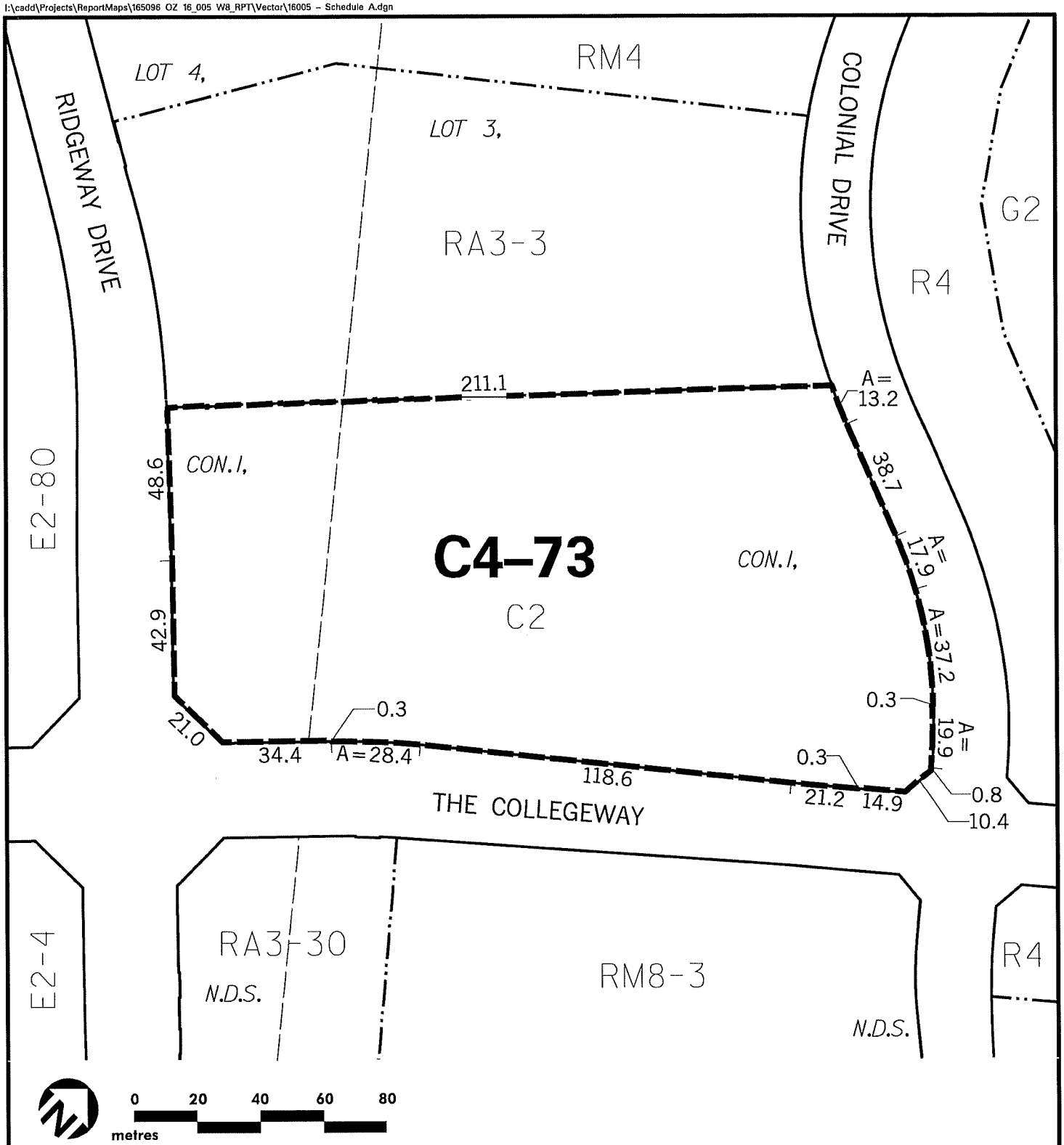

This is not a Plan of Survey. For accurate boundary information refer to Registered Plan 43M-695 and Plan 43R-16909.

THIS IS SCHEDULE "A" TO SCHEDULE "1" OF LPAT ORDER DATED _____

LPAT CASE NO. PL171219

LPAT FILE NO. PL171220

CITY OF MISSISSAUGA

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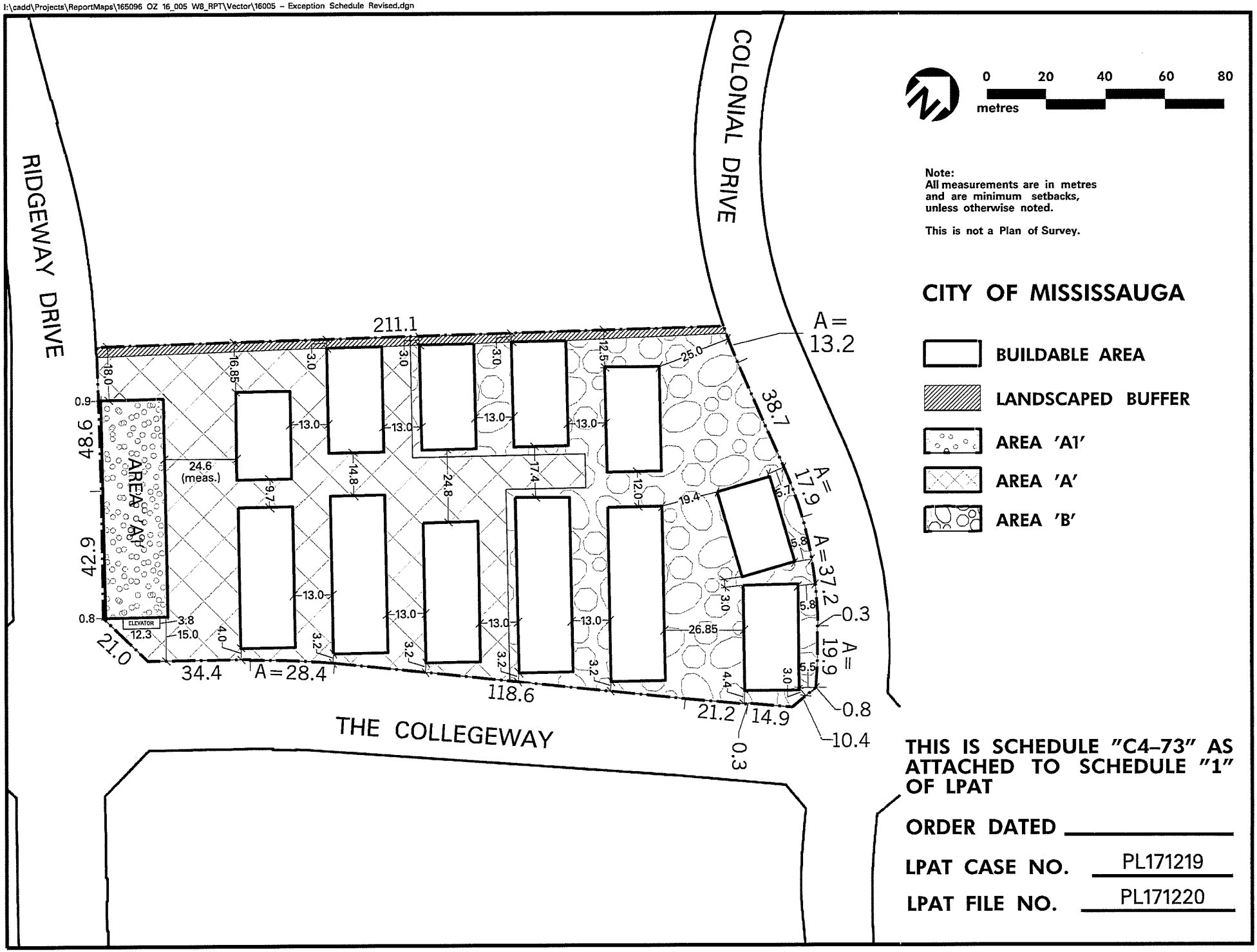


Note:
All measurements are in metres and are minimum setbacks, unless otherwise noted.

This is not a Plan of Survey.

CITY OF MISSISSAUGA

- **BUILDABLE AREA**
- **LANDSCAPED BUFFER**
- **AREA 'A1'**
- **AREA 'A'**
- **AREA 'B'**

THIS IS SCHEDULE "C4–73" AS ATTACHED TO SCHEDULE "1" OF LPAT

ORDER DATED _____

LPAT CASE NO. PL171219

LPAT FILE NO. PL171220

Z-59 A.A.

OZ 16005 W8

APPENDIX "A" TO SCHEDULE "1" OF

LPAT ORDER DATED _____

LPAT Case No. PL171219

LPAT File No. PL171220

Explanation of the Purpose and Effect of the By-law

The purpose of this By-law is to permit 364 stacked townhouses and two storeys of retail and commercial uses in one building.

This By-law amends the zoning of the property outlined on the attached Schedule "A" from "C2" (Neighbourhood Commercial) to "C4-73" (Mainstreet Commercial - Exception).

"C2" permits a variety of retail, service, office and other non-residential uses.

"C4-73" permits 364 stacked townhouses and two storeys of retail and commercial uses in one building.

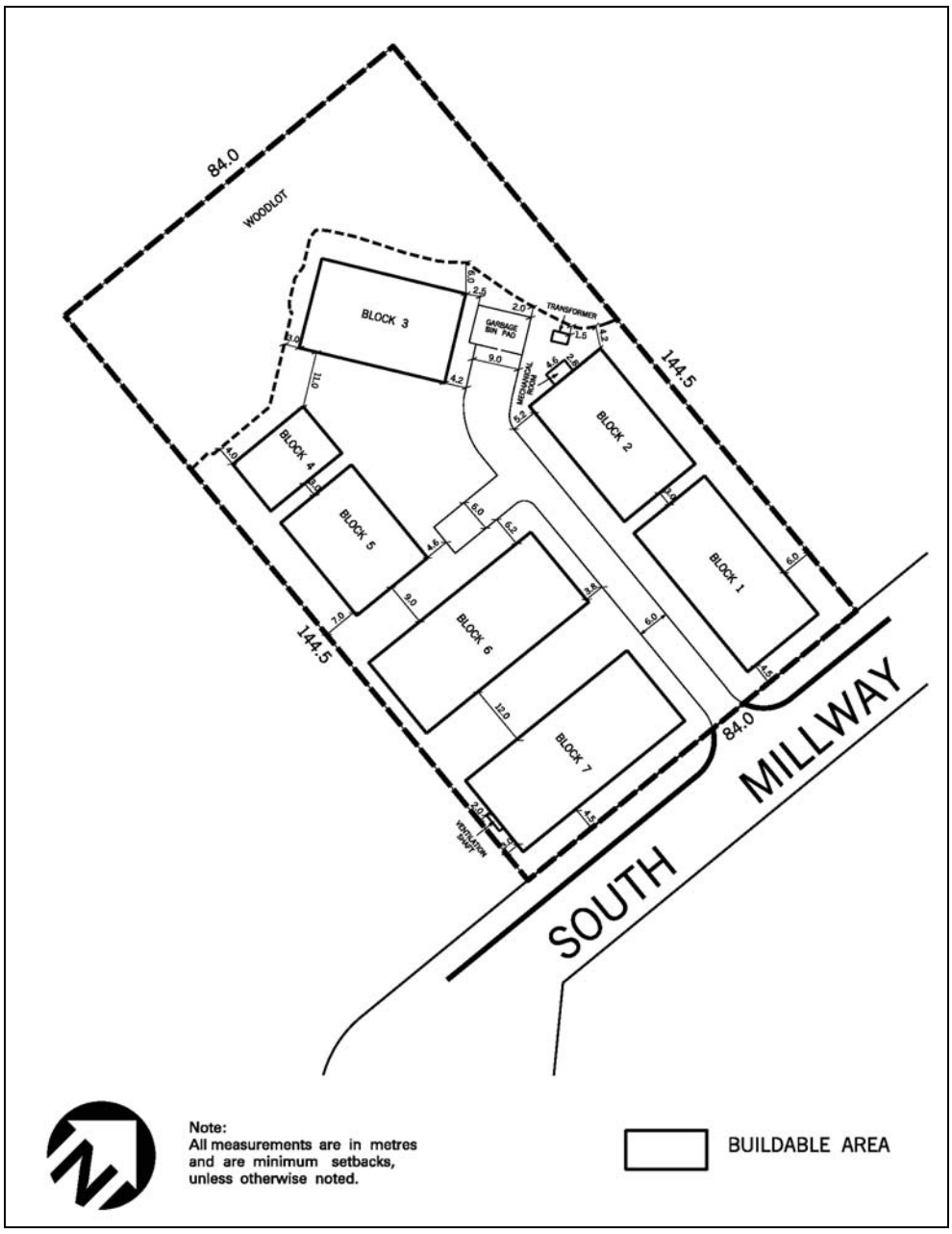
Location of Lands Affected

Northeast corner of The Collegeway and Ridgeway Drive, in the City of Mississauga, as shown on the attached Map designated as Schedule "A".

4.13A.2.11	Exception: RM8-11	Map # 25	By-law: 0031-2018, 0181-2018/LPAT Order 2019 February 15

In a RM8-11 zone the permitted **uses** and applicable regulations shall be as specified for a RM8-14 zone except that the following **uses**/regulations shall apply:

Regulations		
4.13A.2.11.1	The regulations of Clauses 4.13A.2.14.11(2), (3), (6), (9), and (10) contained in Exception Table 4.13A.2.14 of this By-law shall not apply	
4.13A.2.11.2	Maximum **floor space index**	1.8
4.13A.2.11.3	Maximum number of **dwelling units**	144
4.13A.2.11.4	Maximum **height**: **flat roof**, exclusive of any parapet, mechanical penthouse and/or access stairs	15.0 m and 4 **storeys**
4.13A.2.11.5	Maximum projection beyond the buildable area of a **porch**, exclusive of stairs, located at or below the **first storey** of a **back to back** and/or s**tacked townhouse**	1.8 m
4.13A.2.11.6	Maximum projection beyond the buildable area of an awning, window, **chimney** or other architectural feature	0.6 m
4.13A.2.11.7	Maximum projection beyond the buildable area of a **wing wall** attached to a **back to back** and/or **stacked townhouse**	1.0 m
4.13A.2.11.8	Maximum projection beyond the buildable area of a **balcony**, located at or above the **first storey** of a **back to back** and/or **stacked townhouse**	2.3 m
4.13A.2.11.9	Minimum setback of a **parking structure** constructed above or partially above finished grade to any **lot line**	3.0 m
4.13A.2.11.10	Minimum width of a **condominium road**	6.0 m
4.13A.2.11.11	Minimum width of a sidewalk	1.5 m
4.13A.2.11.12	Minimum **amenity area**	201 m^2
4.13A.2.11.13	Minimum number of resident **parking spaces** per unit	1.1
4.13A.2.11.14	Minimum number of visitor **parking spaces** per unit	0.15
4.13A.2.11.15	Stairwells and ventilation shafts shall be permitted outside of the buildable area, except for within the **rear yard**, and shall be set back a minimum of 3.0 m from an **interior side lot line**	
4.13A.2.11.16	All site development plans shall comply with Schedule RM8-11 of this Exception	



Schedule RM8-11
Map 25

THE CORPORATION OF THE CITY OF MISSISSAUGA

BY-LAW NUMBER 0007-2020

A by-law to amend By-law Number 0225-2007, as amended.

WHEREAS pursuant to sections 34 and 36 of the *Planning Act*, R.S.O. 1990, c.P.13, as amended, the council of a local municipality may, respectively, pass a zoning by-law and enact a by-law to impose a holding provision;

NOW THEREFORE the Council of The Corporation of the City of Mississauga ENACTS as follows:

1. By-law Number 0225-2007, as amended, being a City of Mississauga Zoning By-law, is amended by adding the following Exception Table:

4.15.3.57	Exception: RA2-57	Map # 06	By-law:
In a RA2-57 zone the permitted **uses** and applicable regulations shall be as specified for a RA2 zone except that the following **uses**/regulations shall apply:			
Additional Permitted Use			
4.15.3.57.1	(1)	**Uses** permitted in a C4 zone as contained in Table 6.2.1 of this By-law	
Regulations			
4.15.3.57.2	The provisions contained in Table 2.1.2.1.1 and the regulations of Lines 4.0, 5.0, 15.2, 15.3 and 15.6 in Table 4.15.1 of this By-law shall not apply		
4.15.3.57.3	Maximum **gross floor area - residential**		26 950 m^2
4.15.3.57.4	Minimum **gross floor area - non-residential**		735 m^2
4.15.3.57.5	The **uses** contained in Sentence 4.15.3.57.1 of this Exception shall not be permitted above the **first storey**		
4.15.3.57.6	Minimum setback to a **sight triangle**		0.0 m
4.15.3.57.7	Maximum encroachment into a required **front yard** of an awning or pier		3.0 m
4.15.3.57.8	Maximum number of resident **parking spaces** that may be **tandem parking spaces**		22
4.15.3.57.9	Required number of **loading spaces**		2
4.15.3.57.10	Minimum setback from a **parking structure** to all lands zoned G1		3.0 m
4.15.3.57.11	Minimum setback from a **parking structure** completely below finished grade, inclusive of external access stairwells and exclusive of any ventilation shafts, to a **lot line**		0.9 m

4.15.3.57	Exception: RA2-57	Map # 06	By-law:
4.15.3.57.12	Minimum **aisle** width		6.0 m
4.15.3.57.13	Minimum **landscaped area**		23%
4.15.3.57.14	All site development plans shall comply with Schedule RA2-57 of this Exception		

Holding Provision

The holding symbol H is to be removed from the whole or any part of the lands zoned H-RA2-57 by further amendment to Map 06 of Schedule B contained in Part 13 of this By-law, as amended, upon satisfaction of the following requirements:

(1) delivery of an executed Development Agreement in a form and on terms satisfactory to the City of Mississauga (the City);

(2) delivery of an executed agreement for community benefits pursuant to section 37 of the *Planning Act,* as amended, in a form and on terms satisfactory to the City;

(3) submission of satisfactory grading and servicing drawings to City standards and specifications;

(4) submission of an updated and satisfactory Environmental Impact Statement, Functional Servicing Report, Traffic Impact Study, Stormwater Management Report, Slope Stability Study, Channel Design Brief, Noise Report, Heritage Impact Assessment, Quantitative Wind Study and Tree Preservation Plan;

(5) issuance of a Credit Valley Conservation Permit for development of the site;

(6) submission of satisfactory Phase I and Phase II Environmental Site Assessment Reports and all supporting documents, with the associated Letters of Reliance and a Record of Site Condition, for the lands to be dedicated to the City;

(7) submission of a satisfactory Phase II Environmental Site Assessment and all supporting documents, associated Letter of Reliance and Record of Site Condition for all lands zoned RA2-57;

(8) a letter from the Transportation and Works Department indicating satisfactory arrangements have been made with respect to the outstanding environmental matters such as fill, dewatering/ground water management, underground storage tanks and the decommissioning of water wells and oil separators;

(9) the dedication of lands zoned Greenlands into public ownership;

(10) a letter from the Heritage Planning Division that satisfactory arrangements have been made with respect to heritage commemoration on site.

2. Map Number 06 of Schedule "B" to By-law Number 0225-2007, as amended, being a City of Mississauga Zoning By-law, is amended by changing thereon from "C4-13" to "H-RA2-57" and "G1", and deleting therefrom the Greenlands Overlay from the zoning of Part of Lot 6, Concession 2, South of Dundas Street, in the City of Mississauga, PROVIDED HOWEVER THAT the "H-RA2-57" and "G1" zoning shall only apply to the lands which are shown on the attached Schedule "A" and the Greenlands Overlay shall not apply to the lands which are shown on the attached Schedule "A", which is deemed to be an integral part of this By-law, outlined in the heaviest broken line with the "H-RA2-57" and "G1" zoning indicated thereon.

ENACTED and PASSED this 22nd day of January 2020.

APPROVED
AS TO FORM
City Solicitor
MISSISSAUGA
MEM
Date 2020 01 08

Bonnie Crombie

MAYOR

CLERK

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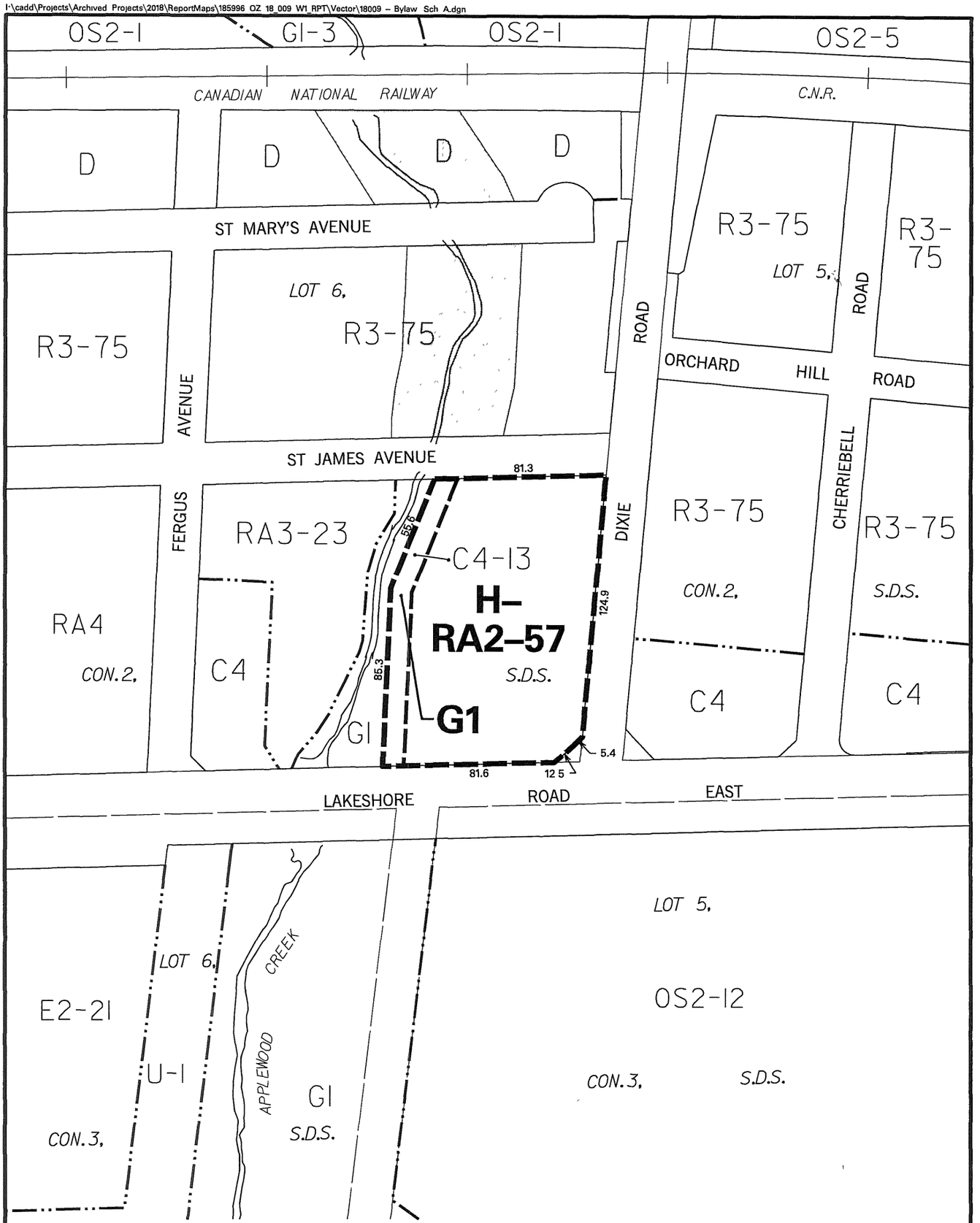

This is not a Plan of Survey. For accurate boundary information refer to Registered Plan H-23 and Plan of Survey by R. Avis Surveying Inc., dated April 4, 2018.

GREENLANDS OVERLAY

CITY OF MISSISSAUGA

THIS IS SCHEDULE "A" TO

BY-LAW 0007-2020

PASSED BY COUNCIL ON

JANUARY 22ND, 2020.

Z-6 N.P.

OZ 18/009 W1

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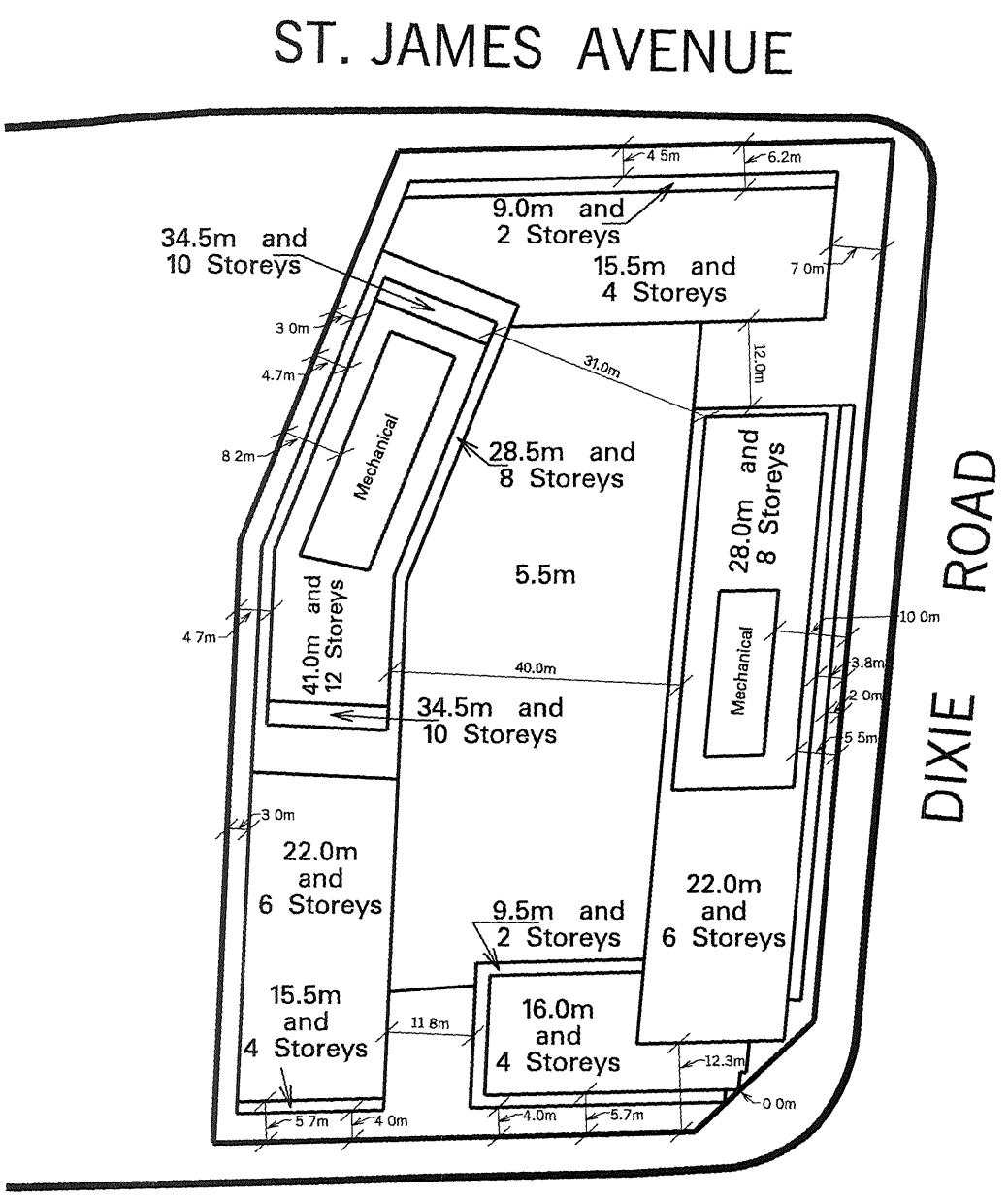

BUILDABLE AREA

Note:
All measurements are in metres and are minimum setbacks, unless otherwise noted.

This is not a Plan of Survey.

THIS IS SCHEDULE "RA2–57"

AS ATTACHED TO BY–LAW 0007-2020

PASSED BY COUNCIL ON January 22nd/2020

APPENDIX "A" TO BY-LAW NUMBER 0007-2020

Explanation of the Purpose and Effect of the By-law

The purpose of this By-law is to permit two apartments up to 12 storeys, commercial uses at grade facing Lakeshore Road East and Dixie Road and to protect the Applewood Creek buffer lands with a "G1" zone.

This By-law amends the zoning of the property outlined on the attached Schedule "A" from "C4-13" (Mainstreet Commercial - Exception) to "H-RA2-57" (Apartments - Exception with a Holding Provision) and "G1" (Greenlands - Natural Hazards).

"C4-13" permits a combination of commercial uses and residential above grade and a car dealership.

"G1" permits flood control, stormwater management, erosion management and natural heritage features and areas conservation.

Upon removal of the "H" provision, the "RA2-57" zone will permit two apartments up to 12 storeys with retail at grade on the Lakeshore Road East and Dixie Road frontages.

Location of Lands Affected

Northwest corner of Lakeshore Road East and Dixie Road, in the City of Mississauga, as shown on the attached Map designated as Schedule "A".

Further information regarding this By-law may be obtained from David Ferro of the City Planning and Building Department at 905-615-3200 ext. 4554.

http://teamsites.mississauga.ca/sites/18/Bylaws/OZ 18 009 W1.by-law.df.jmcc.docx