

Transportation Impact Study

PROPOSED MIXED-USE DEVELOPMENT

420 Lakeshore Road E
MISSISSAUGA, ONTARIO

June 2020
Project No: NT-20-049

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June 15, 2020

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**Re: Transportation Impact Study
 Proposed Mixed-use Development
 420 Lakeshore Road E, City of Mississauga
 Our Project No. NT-20-049**

Nexttrans 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 and Site Plan Applications.

The subject property is located at 420 Lakeshore Road E, south-west corner of Lakeshore Road E and Enola Avenue, in the City of Mississauga. The proposed development consists of a 12-storey mixed-use residential building with approximately 195 dwelling units and a ground related retail GFA of 538 m². The proposed development will provide a total of 187 parking spaces and 155 bicycle parking spaces. A full moves access will be provided onto Enola Avenue near the southerly limit of the proposed development to service the proposed development.

The transportation study concludes that the proposed development can adequately be accommodated by the existing transportation network, excellent existing Mississauga 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,

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A Division of NextEng Consulting Group Inc.

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Issues and Revisions Registry

Identification	Date	Description of issued and/or revision
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EXECUTIVE SUMMARY

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by Plazacorp (the 'Client') to undertake a Transportation Impact Study in support of Official Plan Amendment, Zoning By-law Amendment and Site Plan applications. The subject property is located at 420 Lakeshore Road E, south-west corner of Lakeshore Road E and Enola Avenue, in the City of Mississauga.

It should be noted that a study terms of reference based on the City of Mississauga Traffic Impact Study Guidelines has been submitted to the City and staff has accepted the proposed study methodology for the technical analysis and traffic turning movement count estimates. The City staff has requested that the Study review the Lakeshore Connected Communities Transportation Master Plan Study as well as the community comments and concerns in this area. Nextrans has also obtained the anticipated growth rates and background developments for the study area.

Proposed Development

The subject site is an existing Beer Store with a large parking lot in the front. The proposed redevelopment of the site consists of a 12-storey mixed-use residential building with approximately 195 dwelling units and a ground related retail GFA of 538 m².

Proposed Development Access

Currently, the subject site has two full moves accesses, one onto Lakeshore Road E and one onto Enola Avenue. With the proposed redevelopment, only one full moves access onto Enola Avenue, 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 Enola Avenue.

Capacity Analysis

The proposed development is expected to generate:

- 72 total two-way trips (19 inbound and 53 outbound) and 97 total two-way trips (67 inbound and 30 outbound) during the AM and PM peak hours, respectively;
- 48 two-way auto trips (13 inbound and 35 outbound) and 63 two-way auto trips (43 inbound and 20 outbound) during the AM and PM peak hours, respectively;
- 17 two-way transit trips (5 inbound and 12 outbound) and 20 two-way transit trips (14 inbound and 6 outbound) during the AM and PM peak hours, respectively;
- 2 two-way active transportation trips (0 inbound and 2 outbound) and 8 two-way active transportation trips (6 inbound and 2 outbound) during the AM and PM peak hours, respectively; and
- 5 two-way carpool/paid ride trips (1 inbound and 4 outbound) and 6 two-way carpool/paid ride trips (4 inbound and 2 outbound) during the AM and PM peak hours, respectively

A comparison between the proposed development and existing land use (Beer Store) indicates that the proposed mixed-use development is expected to generate additional 48 auto trips during the morning peak hour but generates 40 less auto trips during the afternoon peak hour, as compared to the existing land use (Beer Store). 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. The Lakeshore Connected Communities Transportation Master Plan recommended a two-way centre left turn lane along this section of Lakeshore Road E (Segment 6). 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.

Active Transportation Mode Assessment

Walking

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

It is Nextrans' understanding that the proposed development will maintain and improve the existing sidewalk along the frontage of the proposed development on Lakeshore Road E and Enola Avenue, where appropriate. 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.

It is Nextrans' understanding that the Lakeshore Connected Communities Transportation Master Plan recommended separated bicycle lanes on both sides of Lakeshore Road E 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 17 two-way transit trips (5 inbound and 12 outbound) and 20 two-way transit trips (14 inbound and 6 outbound) during the AM and PM peak hours, respectively.

The proposed development is located adjacent to MiWay Bus Route 23, about 1.5 km to the existing Port Credit GO Train Station or about 20 minute-walk/10 minute-cycle. In addition, the site is located about 1.3 km to Hurontario Street and 3.6 km to the existing Long Branch GO Train Station.

The analysis indicates that the transit passenger demands generated by the proposed development per transit vehicle is very low (about one or two passengers per transit vehicle per hour). 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 334 vehicle parking spaces, inclusive of residential, visitor and retail uses. It is Nextrans' opinion that these rates are excessive and do not

support the Hurontario LTR investment by Metrolinx 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. 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.

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.

Based on the recommended parking rates and comprehensive justifications provided in this Study, the proposed development is required to provide 187 vehicle parking spaces, inclusive of resident, visitor and retail 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 these recommendations, the proposed development will require 155 bicycle parking spaces, including 17 short-term spaces and 138 long-term spaces. It is Nextrans' understanding that the proposed development provides 155 bicycle parking spaces, inclusive of short-term and long-term, 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 retail component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length. Given that the proposed retail 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) to generate vehicular turning templates to confirm and demonstrate the accessibility for the proposed loading space.

Study Conclusions and Recommendations

Based on the Study assessment, our report recommends that:

- 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 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 Enola Avenue, 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 Enola Avenue; 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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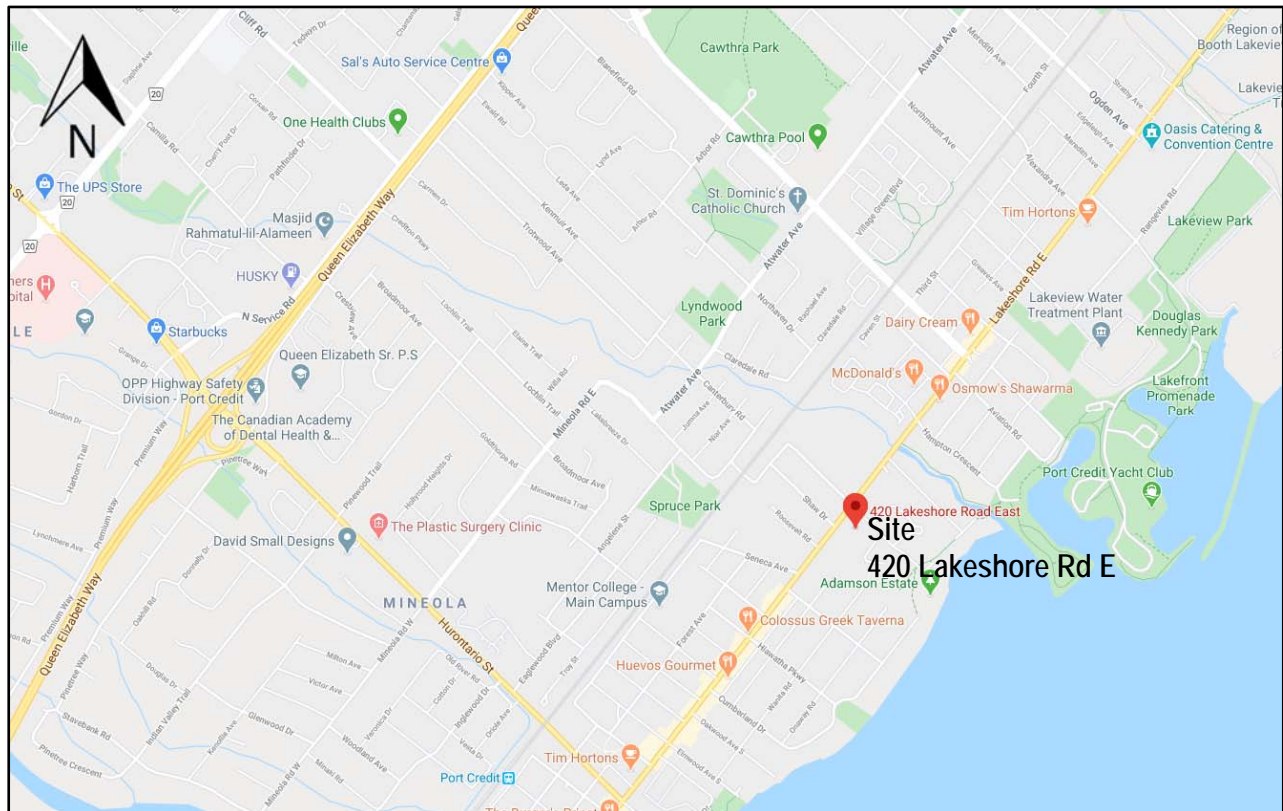
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1.0 INTRODUCTION

Nextrans Consulting Engineers (A Division of NextEng Consulting Group Inc.) was retained by Plazacorp (the 'Client') to undertake a Transportation Impact Study in support of Official Plan Amendment, Zoning By-law Amendment and Site Plan applications. The subject property is located at 420 Lakeshore Road E, south-west corner of Lakeshore Road E and Enola Avenue, 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 Beer Store with a large parking lot in the front. The proposed redevelopment of the site consists of a 12-storey mixed-use residential building with:

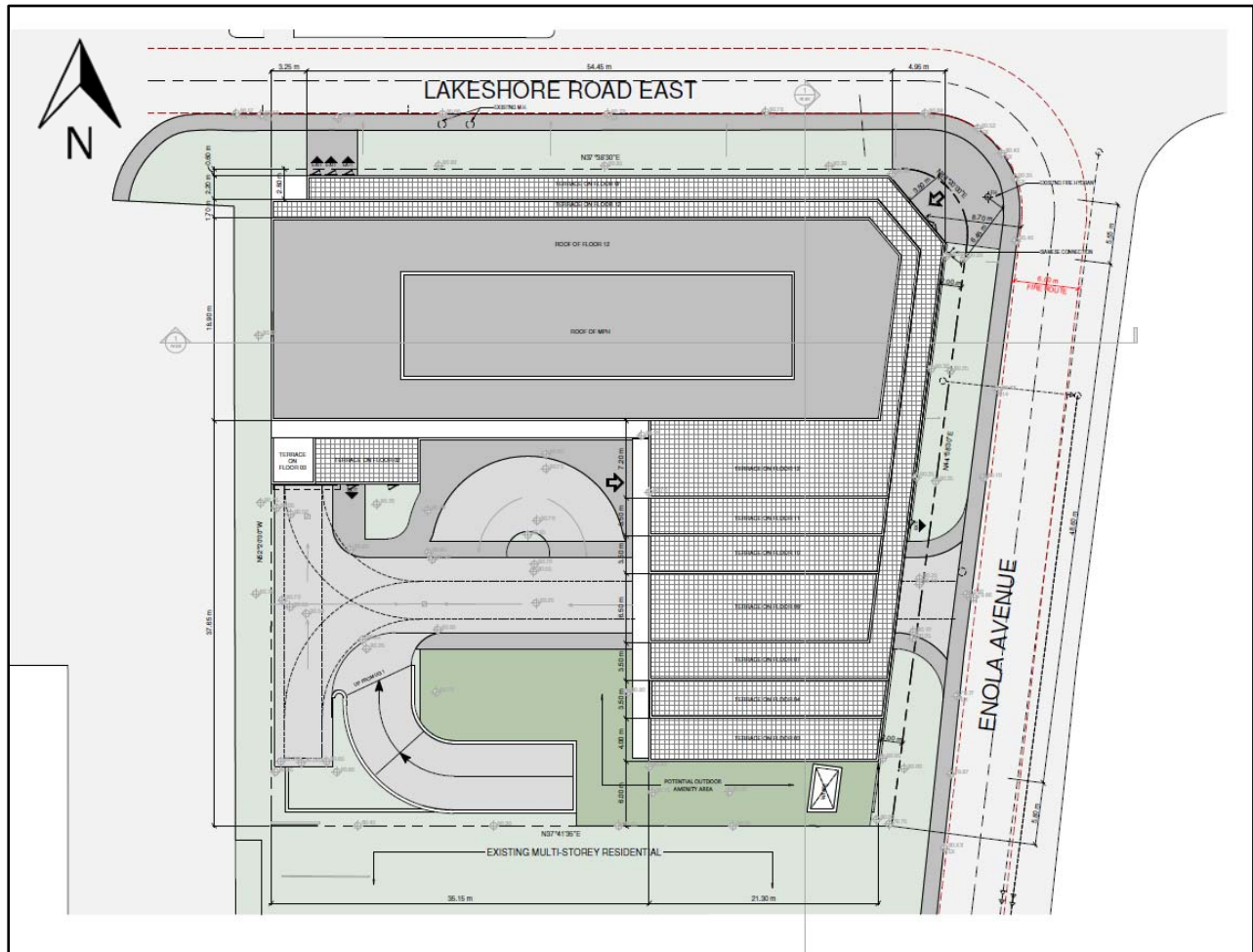
- 195 dwelling units
 - 2 townhouse dwelling units;
 - 4 live/work units; and
 - 189 residential dwelling units
- A ground related retail GFA of approximately 538 m².

The proposed development will provide a total of 187 parking spaces and 155 bicycle parking spaces.

Currently, the subject site has two full moves accesses, one onto Lakeshore Road E and one onto Enola Avenue. With the proposed redevelopment, only one full moves access onto Enola Avenue, 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.

Figure 2 illustrates the proposed development site plan.

Figure 2 – Proposed Concept Site Plan



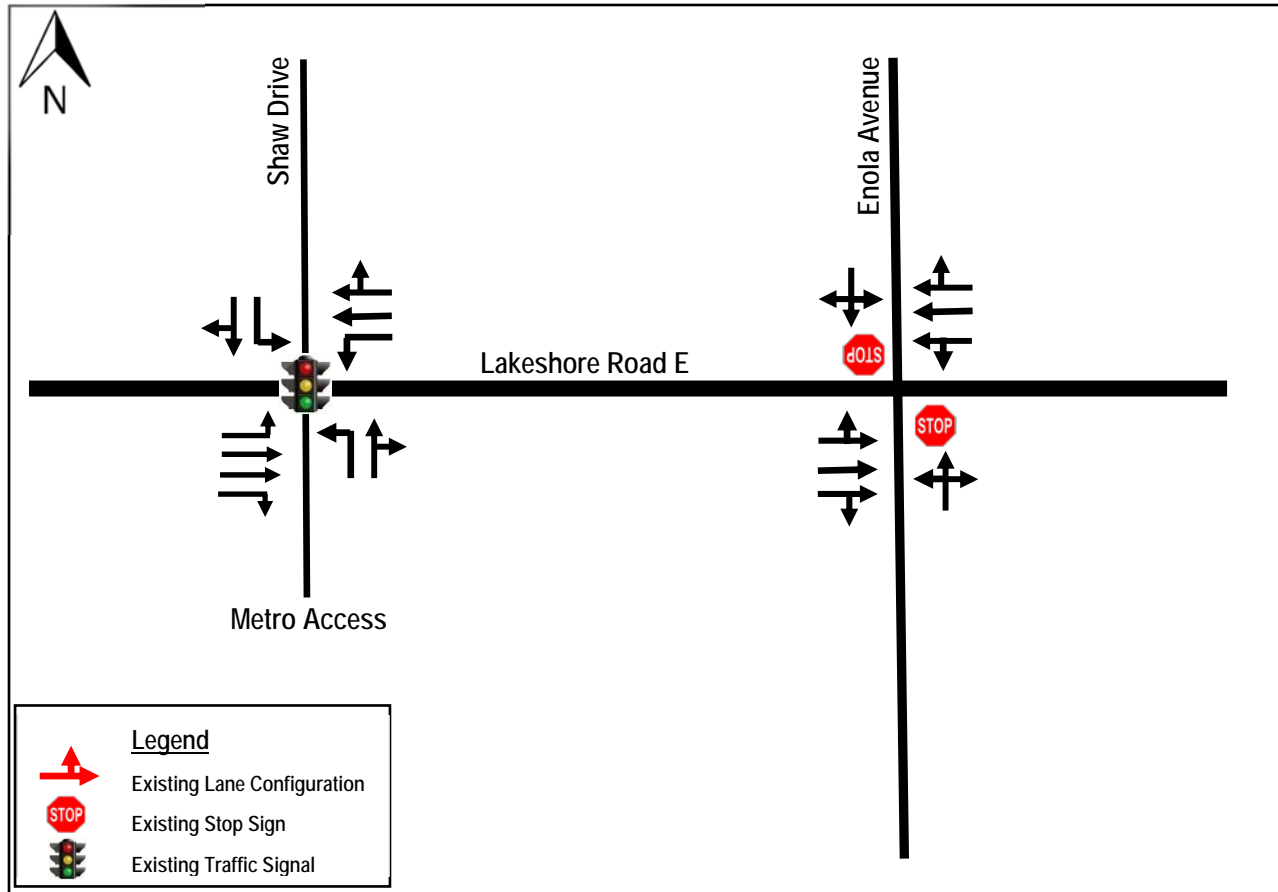
2.0 EXISTING TRAFFIC CONDITIONS

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.
- **Enola Avenue:** 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 50 km/h near the subject site.
- **Shaw Drive:** is a north-south local road under the City of Mississauga jurisdiction. It has two general purpose lanes with exclusive left turn lane at the Lakeshore Road E and maintains an unposted speed limit of 40 km/h near the subject site.

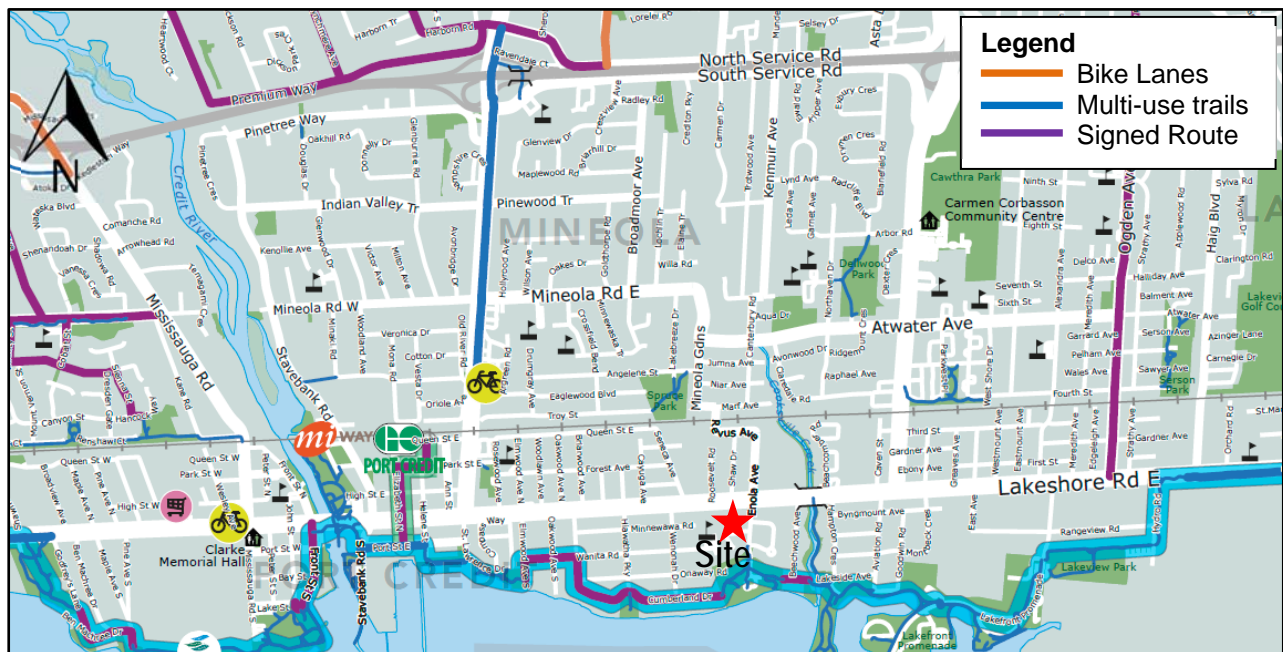
Figure 3 – Existing Lane Configuration and Traffic Control



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-served by a sufficient network of sidewalks, with sidewalks are available on the west side of Enola Avenue and Shaw Drive, with sidewalks on both sides of Lakeshore Road E. 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 Odgen 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 1.5 km to the existing Port Credit GO Train Station or about 20 minute-walk/10 minute-cycle. In addition, the site is located about 1.3 km to Hurontario Street and 3.6 km to the existing Long Branch GO Train Station. 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 – 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.

- **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.
- **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 is 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 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 for the following two intersections in the study area:

- Lakeshore Road E/Shaw Drive (signalized) – Count date Thursday April 28, 2016
- Lakeshore Road E/Enola Avenue (unsignalized) – Count date Wednesday March 7, 2012

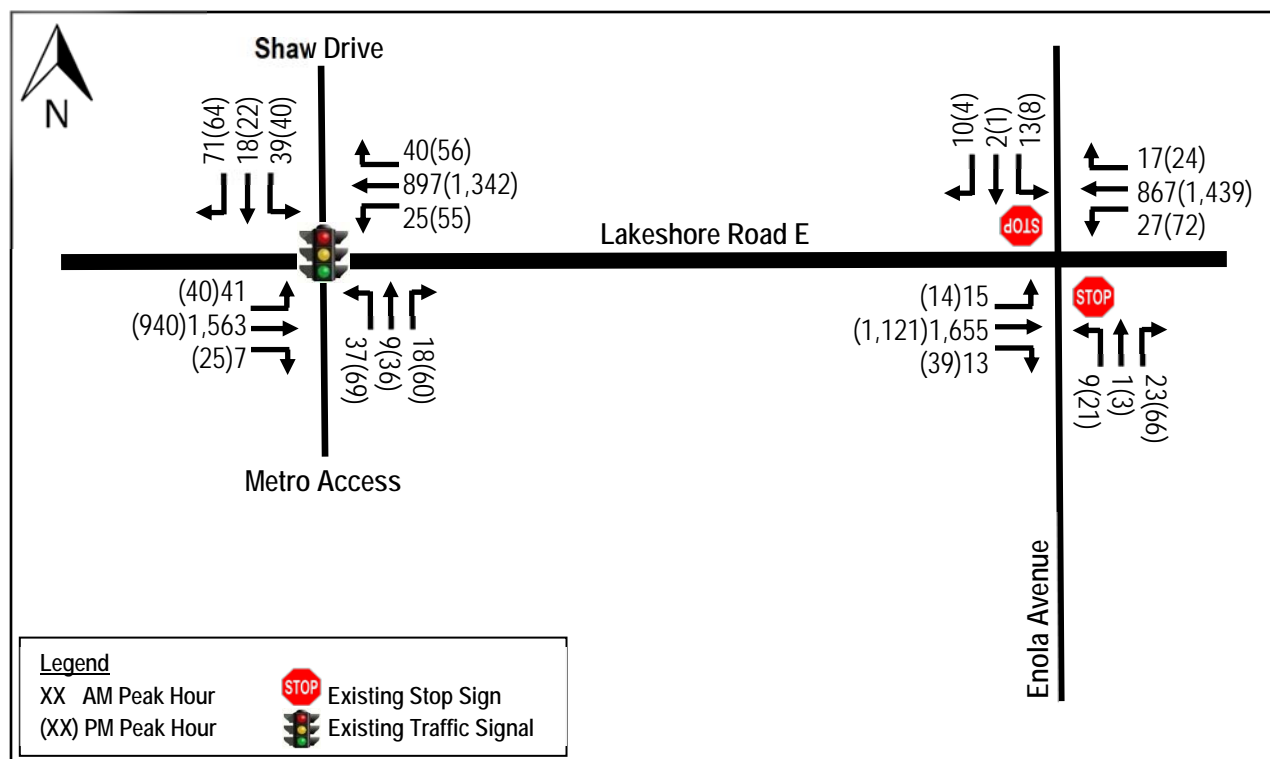
The turning movement counts data provided by the City was conducted during the morning (7:00 a.m. to 10:00 a.m.) and afternoon (4:00 p.m. to 7:00 p.m.) peak periods for all area intersections.

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 2020 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 likely result in more conservative, for example, it will yield higher traffic volumes than actual existing conditions today. In addition, the existing residential neighbourhood are relatively stable and there are no recent major infill developments in the area, 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 (2020 Conditions)



2.5. Existing Traffic Assessment

The existing volumes in **Figure 6** were analyzed using Synchro Version 10 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 95 th (m)	LOS (v/c)	Delay (s)	Queue 95 th (m)
Lakeshore Road E/ Shaw Drive (Signalized)	EB – L	A (0.10)	3	4	A (0.17)	5	7
	EB – T	A (0.57)	5	78	A (0.35)	4	42
	EB – R	A (0.01)	2	0	A (0.02)	3	2
	WB – L	A (0.12)	4	3	A (0.13)	4	7
	WB – TR	A (0.35)	3	36	A (0.52)	5	76
	NB – L	D (0.32)	52	23	D (0.49)	52	26
	NB – TR	D (0.06)	49	12	D (0.22)	49	21
	SB – L	D (0.30)	52	23	D (0.29)	50	17
Lakeshore Road E/ Enola Avenue (Unsignalized)	SB – TR	D (0.16)	50	22	D (0.16)	48	23
	EB – LTR	A (0.02)	1	1	A (0.04)	1	1
	WB – LTR	A (0.08)	2	2	A (0.11)	3	3
	NB – LTR	F (0.71)	186	22	F (1.35)	336	60
	SB – LTR	F (0.44)	110	13	F (1.06)	690	18

Based on the intersection capacity analysis, under the existing traffic conditions, the Lakeshore Road E/Shaw Drive intersection is currently operating at acceptable levels of service. For the Lakeshore Road E/Enola Avenue intersection, the eastbound and westbound on Lakeshore Road E are currently operating at acceptable levels of service, however, the northbound and southbound are currently operating at higher delay due to heavy through traffic on Lakeshore Road E. These conditions are typical for side street along major corridors with not traffic signal where drivers will have to wait for suitable gaps to make the turn. 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 Connected 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: medial centre, pharmacy, banks and restaurants, high school and elementary schools, as well as high-rise condominium buildings.

As the development proposal includes a 12-storey mixed-use building which consists of 195 dwelling units and approximately 538 m² of retail 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 on Lakeshore Road E, approximately between Hurontario Street and Cawthra Road. 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: medial 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 servicing 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 dependent on private automobile and therefore will not require many parking spaces.

3.3. Lakeshore Connecting Communities Transportation Master Plan

It is Nextrans' understanding that 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.

It is also Nextrans' understanding that 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

It is Nextrans' understanding that 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.

4.0 FUTURE BACKGROUND CONDITIONS

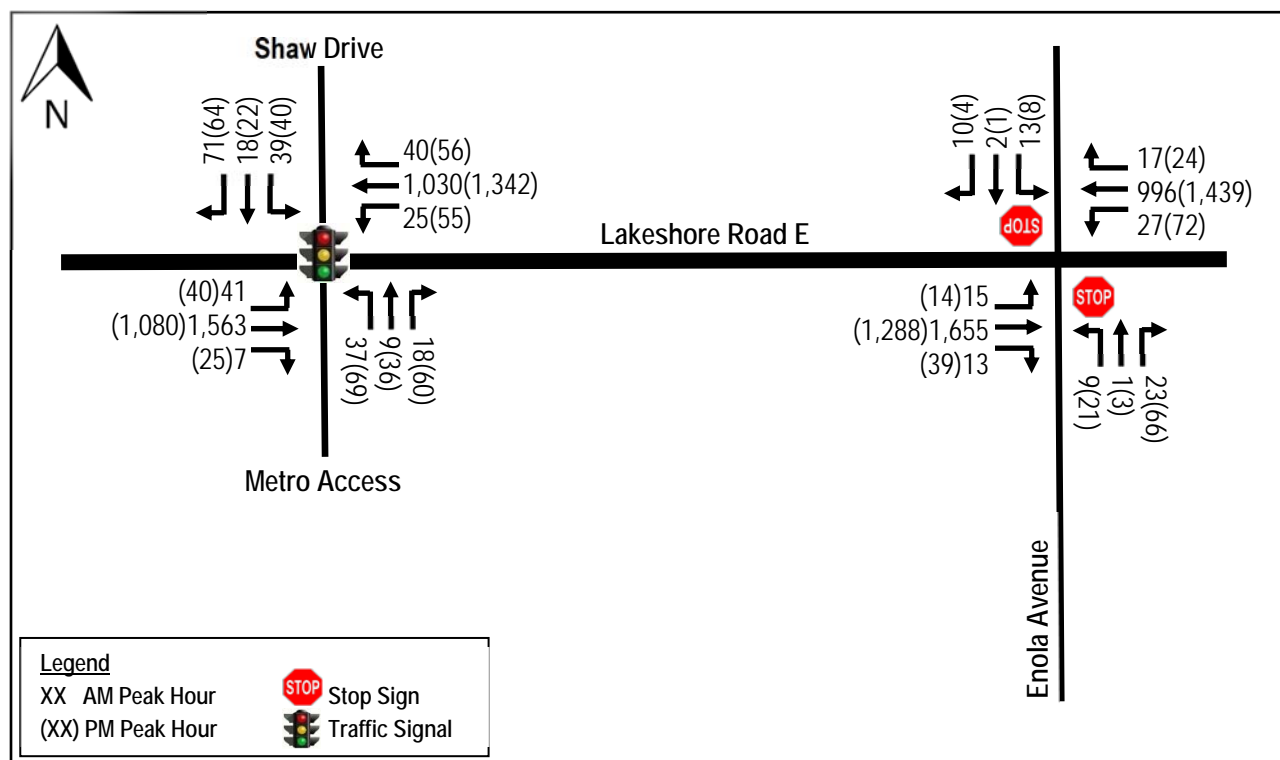
4.1. Analysis Horizon

For the purposes of this assessment, a five-year horizon (2022 to 2027) 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. The City indicates that 2% growth per annum (compounded) will be applied to the westbound direction during the AM peak hour and 2% growth per annum for the eastbound direction during the PM peak hour. **Figure 7** illustrates the 2026 corridor background through traffic growth.

Figure 7 – 2026 Corridor Background Through Traffic Growth



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 Nextrans has been consulted with the City staff.

Table 2 – Background Developments in the Area

Proposed Development Location	Development Descriptions	Trip Generation and Sources
958-960 East Avenue	151 residential dwelling units 7-storey building	Trans-Plan March, 2020
55 Port Street East	35 residential dwelling units 10-storey building	R.J. Burnside February, 2018

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

Figure 8 illustrates the background development site generated traffic volumes in the study area, where appropriate, with Figure 9 illustrating the 2026 future background traffic volumes.

Figure 8 – Background Development Traffic Volumes

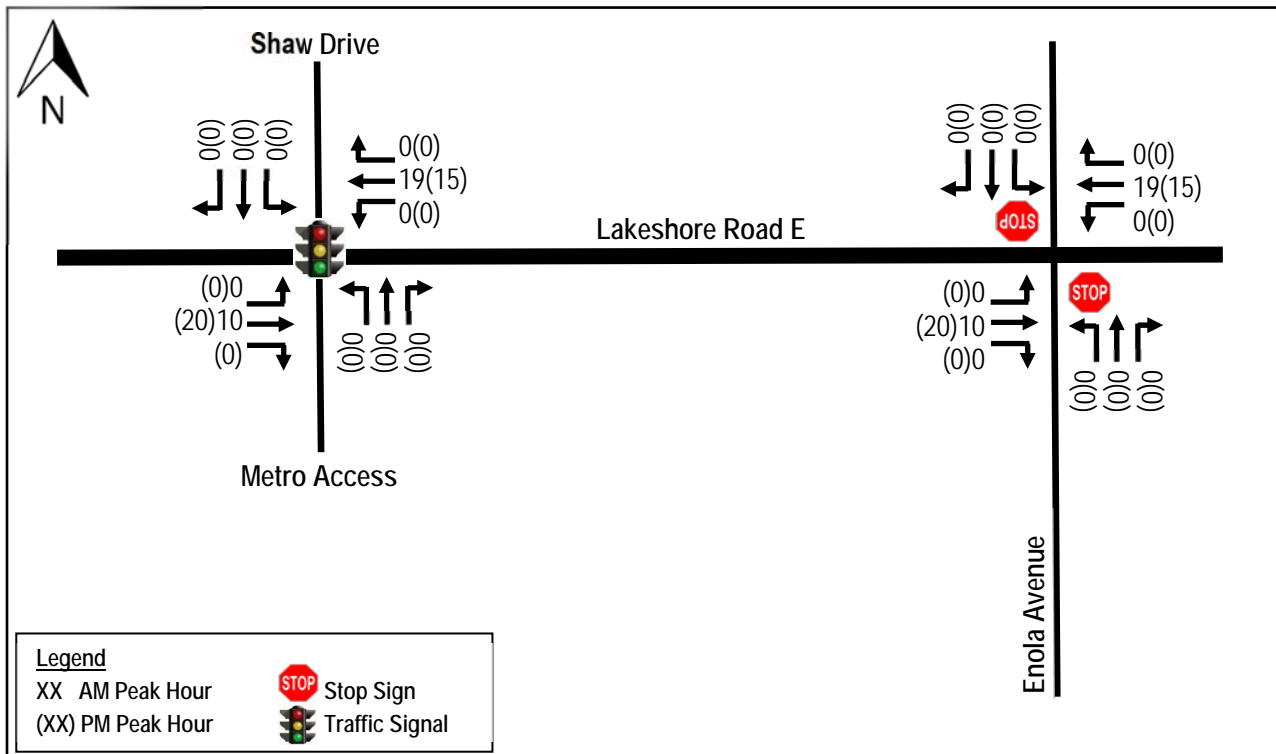
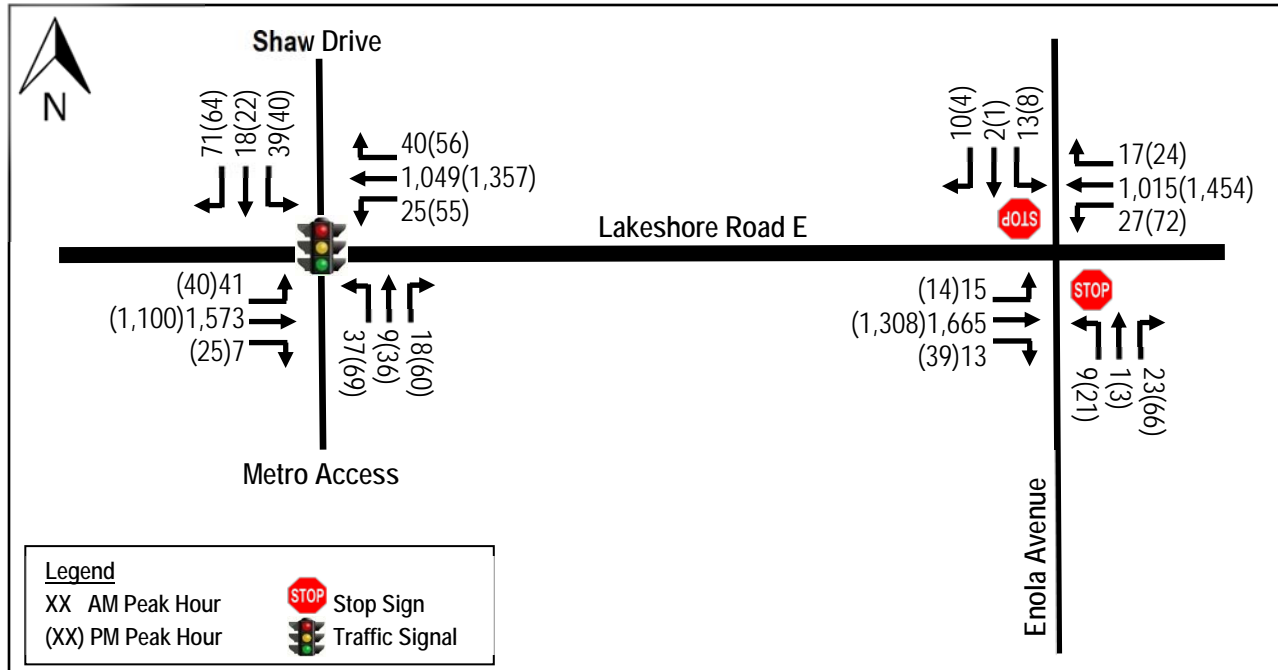


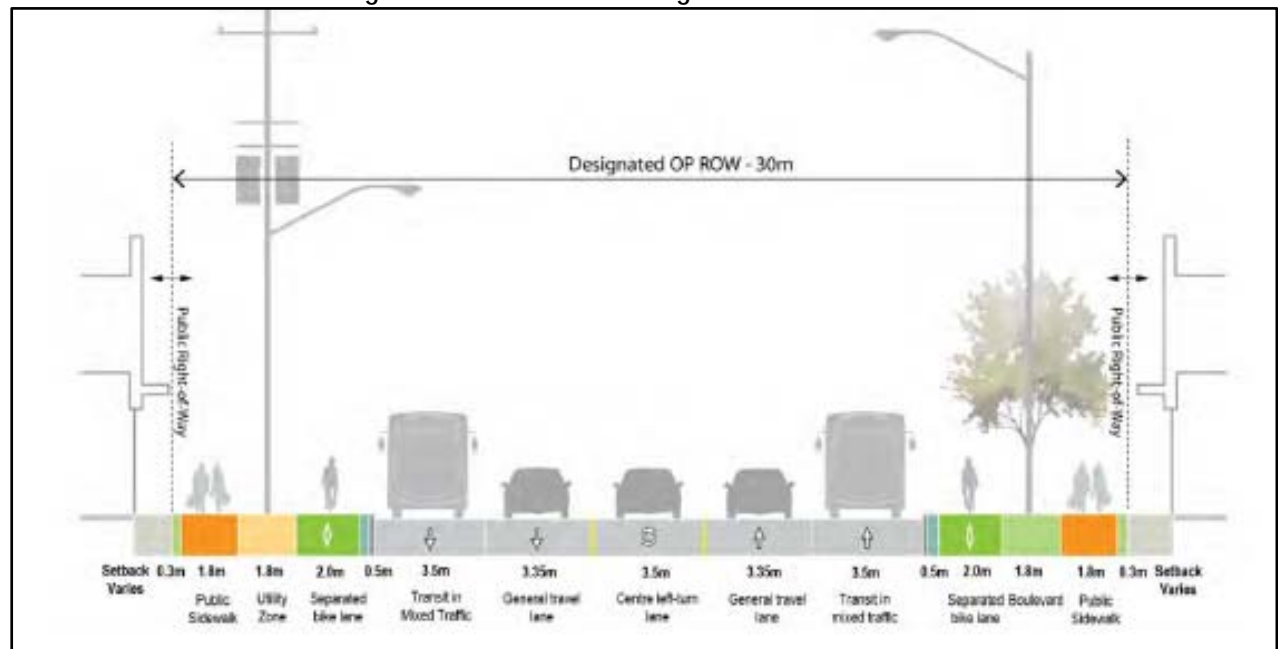
Figure 9 – 2027 Future Background Traffic Volumes



4.4. Lakeshore Connected Community Recommended Improvements

It is Nextrans' understanding that 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 6 of the Lakeshore Connecting Communities Transportation Master Plan Study. **Figure 10** illustrates the recommended cross-section and improvements for this section of Lakeshore Road E (Exhibit 5-53 of the Lakeshore Connected Community Transportation Master Plan Draft Final Report).

Figure 10 – 2027 Future Background Traffic Volumes



4.5. Future Background Traffic Assessment

The estimated 2027 future background traffic volumes are illustrated in **Figure 9**, 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 has been reflected in the analysis.

Table 3 – 2027 Future Background Levels of Service

Intersection	Key Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	Queue 95 th (m)	LOS (v/c)	Delay (s)	Queue 95 th (m)
Lakeshore Road E/ Shaw Drive (Signalized)	EB – L	A (0.12)	3	5	A (0.17)	4	7
	EB – T	A (0.57)	5	79	A (0.40)	4	52
	EB – R	A (0.01)	2	0	A (0.02)	2	2
	WB – L	A (0.12)	3	3	A (0.16)	4	8
	WB – TR	A (0.41)	3	45	A (0.52)	5	77
	NB – L	D (0.34)	52	23	D (0.50)	53	26
	NB – TR	D (0.06)	49	12	D (0.22)	49	21
	SB – L	D (0.30)	52	23	D (0.30)	50	17
	SB – TR	D (0.16)	50	22	D (0.16)	48	24
Lakeshore Road E/ Enola Avenue (Unsignalized)	EB – LTR	A (0.03)	1	1	A (0.04)	1	1
	WB – LTR	A (0.08)	3	2	A (0.14)	4	4
	NB – LTR	D (0.18)	28	5	C (0.34)	26	12
	SB – LTR	C (0.12)	24	3	F (0.15)	55	4

Under the 2027 future background traffic conditions, the analysis indicates that the Lakeshore Road E/Shaw Drive intersection is expected to operate with acceptable levels of service. For the Lakeshore Road E/Enola Avenue intersection, the eastbound and westbound on Lakeshore Road E, as well as the northbound on Enola Avenue are expected to operate at acceptable levels of service. However, the southbound is expected to operate at slightly higher delay due to heavy through traffic on Lakeshore Road E and background traffic growth/developments. It should be noted that the delay is expected to be less than a minute per vehicle and the v/c is only 0.15 (15% of the total capacity). These conditions are typical for side street along major corridors with not traffic signal where drivers will have to wait for suitable gaps to make the turn. 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.

5.0 SITE TRAFFIC

5.1. Proposed Development

The proposed development consists of a 12-storey mixed-use building with 195 dwelling units and approximately 538 m² of retail GFA. 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 be representative. In addition, since there are only 2 townhouse units, it has been included in the total 195 residential dwelling unit calculations.

It is anticipated that the small-scale ground related retail of 538 m² (or 5,791 ft²) gross floor area will only serve the new residents who live in the proposed buildings, or in the immediate area residents who can walk or bicycle to shop at the proposed development. It is not anticipated to serve larger catchment area and therefore is expected to generate minimal car trips to and from the proposed retail/commercial development. However, for the purposes of this assessment and to be conservative, the retail/commercial component has been included in the analysis. The LUC 820 “Shopping Centre General Urban/Suburban” average rates have been utilized for the proposed development. Given that the proposed retail/commercial component is quite small and located at the bottom of the fitted curb equation where the average rate is similar to the fitted curve. For this reason, the average rates were utilized in the analysis. In addition, the dense multi-use urban category only has two sample size, which is quite small and not very presentative. Therefore, the general urban/suburban category has been utilized. 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	195 units	Trip Rates AM - T = 0.28(X) + 12.86 PM - T = 0.34(X) + 8.56	0.08	0.26	0.34	0.23	0.15	0.38		
		Total Trips	16	51	67	46	29	75		
		Mode AM PM								
		Transit	23%	21%	4	12	16	10	6	16
		Cycling	0%	0%	0	0	0	0	0	0
		Walking	3%	8%	0	2	2	4	2	6
		Passenger	7%	7%	1	4	5	3	2	5
		Auto	67%	64%	11	33	44	29	19	48
Shopping Centre LUC 820 General Urban/Suburban	5,791 ft ²	Trip Rates - Average Rates	0.58	0.36	0.94	1.83	1.98	3.81		
		Total Trips	3	2	5	21	1	22		
		Mode AM PM								
		Transit	23%	21%	1	0	1	4	0	4
		Cycling	0%	0%	0	0	0	0	0	0
		Walking	3%	8%	0	0	0	2	0	2
		Passenger	7%	7%	0	0	0	1	0	1
		Auto	67%	64%	2	2	4	14	1	15
Summary		Total Trips	19	53	72	67	30	97		
		Transit Trips	5	12	17	14	6	20		
		Active Transportation Trips	0	2	2	6	2	8		
		Carpool Trips	1	4	5	4	2	6		
		Auto Trips	13	35	48	43	20	63		

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

- 72 total two-way trips (19 inbound and 53 outbound) and 97 total two-way trips (67 inbound and 30 outbound) during the AM and PM peak hours, respectively;
- 48 two-way auto trips (13 inbound and 35 outbound) and 63 two-way auto trips (43 inbound and 20 outbound) during the AM and PM peak hours, respectively;
- 17 two-way transit trips (5 inbound and 12 outbound) and 20 two-way transit trips (14 inbound and 6 outbound) during the AM and PM peak hours, respectively;
- 2 two-way active transportation trips (0 inbound and 2 outbound) and 8 two-way active transportation trips (6 inbound and 2 outbound) during the AM and PM peak hours, respectively; and
- 5 two-way carpool/paid ride trips (1 inbound and 4 outbound) and 6 two-way carpool/paid ride trips (4 inbound and 2 outbound) during the AM and PM peak hours, respectively

5.4. Existing Use Trip Generation

As indicated, the existing site is a beer store and a parking lot. Based on the existing survey information, the existing beer store is approximately 550 m² (or 5,920 ft²). 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 899 – Liquor Store is the applicable land use for the existing Beer Store. In addition, since the Beer Store does not open during the morning peak period, no trips were estimated for the morning peak period. 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)

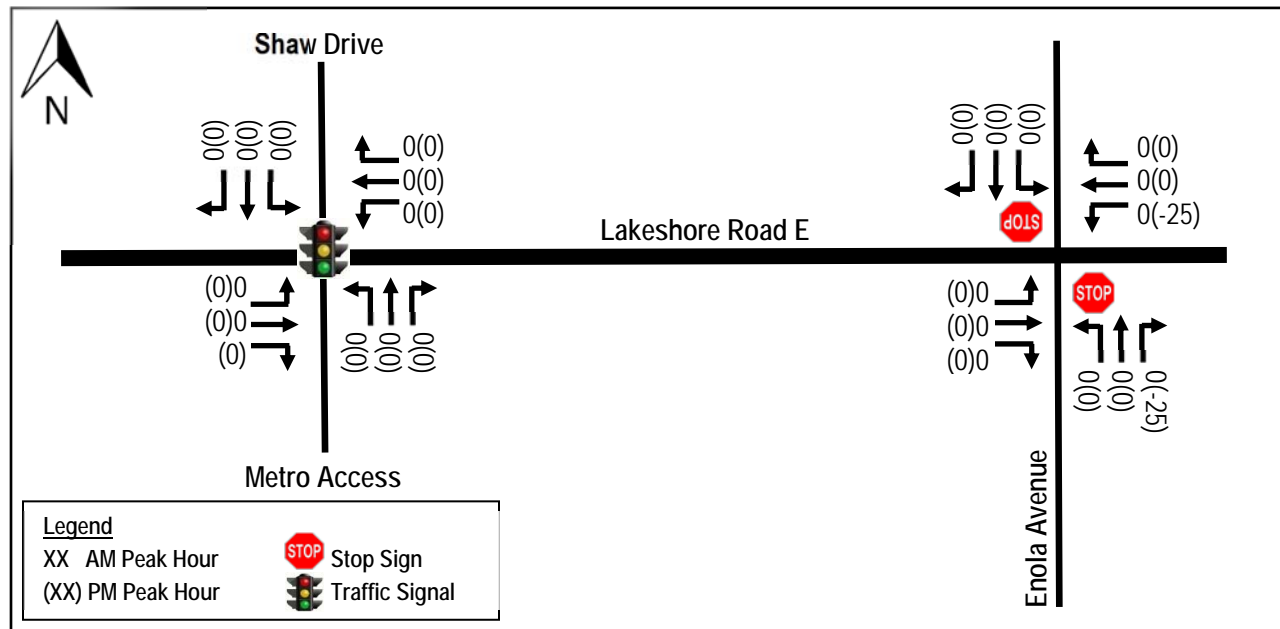
ITE Land Use	Magnitude (GFA/Unit)	Parameters	Morning Peak Hour			Afternoon Peak Hour		
			In	Out	Total	In	Out	Total
Existing Land Use Trip Generation								
Liquor Store (LUC 899) General Urban/Suburban	5,920	Trip Rates AM - None PM - $\ln(T) = 0.43\ln(X) + 3.87$	0.00	0.00	0.00	8.7	8.7	17.40
		Auto Trips	0	0	0	52	51	103
Proposed Development Trip Generation								
Proposed Development	195 units	Auto Trips	13	35	48	43	20	63
Proposed - Existing								
Difference			13	35	48	-9	-31	-40

As indicated in the table above, the proposed mixed-use development is expected to generate additional 48 auto trips during the morning peak hour but generates 40 less auto trips during the afternoon peak hour, as compared to the existing land use (Beer Store). Therefore, it is concluded that the incremental proposed development traffic is negligible.

For the purposes of this assessment, existing auto trips generated by the existing shopping centre will be removed from the road network. This provision is necessary in order to avoid double-count the numbers of auto trips to and from the proposed development. Given that the existing site has many access options, including an interconnection with the Metro parking lot and access to the existing Shaw Drive signal, it is assumed that only traffic to and from the east would use Enola Avenue Access. To be conservative, it is assumed that only 50% of the inbound and outbound traffic would use

the Enola Avenue access. Figure 11 illustrates the existing shopping centre site traffic volumes to be removed from the road network.

Figure 11 – Existing Site Traffic to be Removed



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

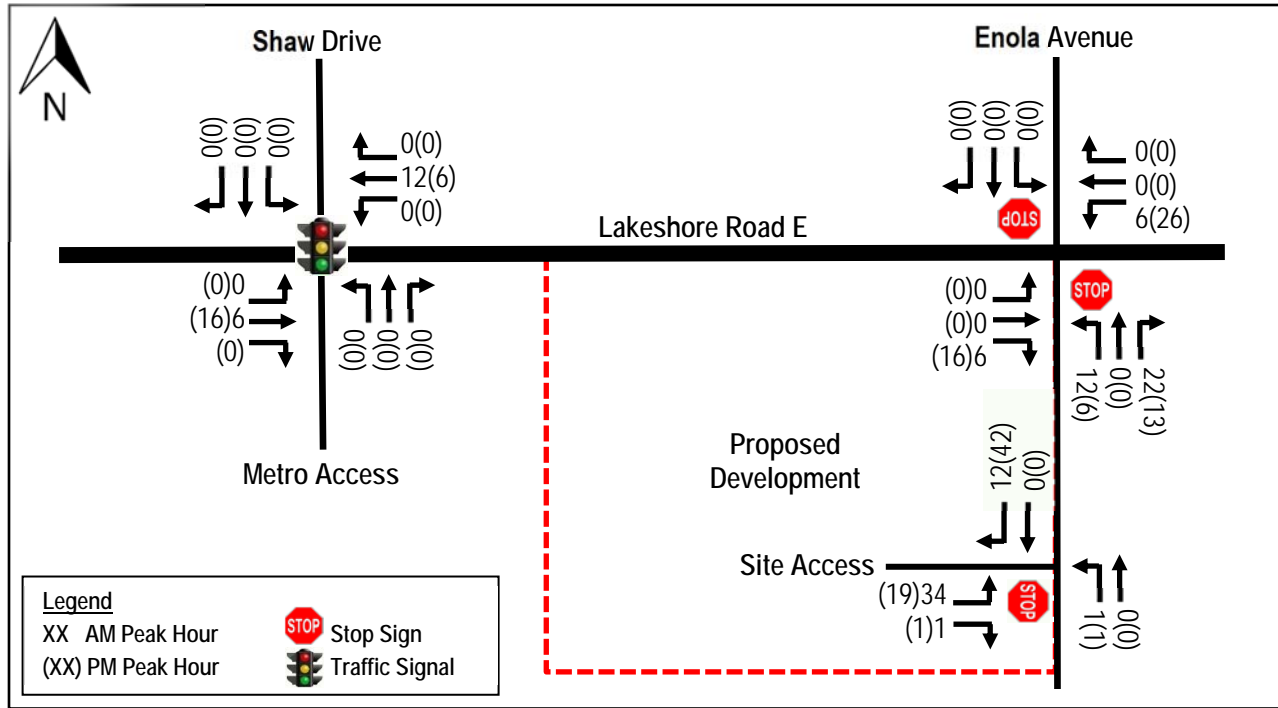
Mode	Mississauga	Toronto	Brampton	Oakville	York Region	Brantford	Hamilton	Total
Auto	57%	34%	3%	2%	3%	1%	0%	100%
Transit	46%	46%	0%	1%	2%	0%	5%	100%

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 12 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 12 – 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 13, and were analyzed using Synchro Version 10 software. The detailed calculations are provided in Appendix F and summarized in Table 11.

Figure 13 – 2027 Future Total Traffic Volumes

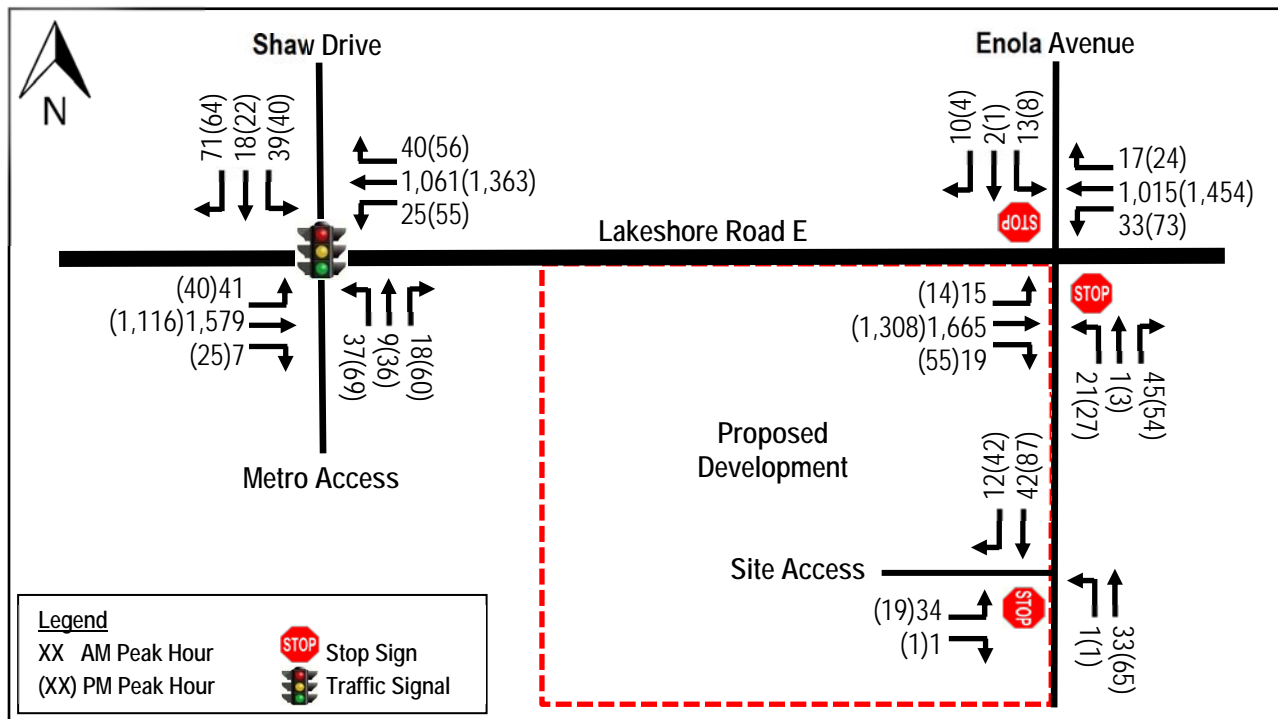


Table 9 – 2027 Future Total Levels of Service

Intersection	Key Movement	Weekday AM Peak Hour			Weekday PM Peak Hour		
		LOS (v/c)	Delay (s)	Queue 95 th (m)	LOS (v/c)	Delay (s)	Queue 95 th (m)
Lakeshore Road E/ Shaw Drive/Metro Access (Signalized)	EB – L	A (0.12)	3	5	A (0.17)	4	7
	EB – T	A (0.57)	5	80	A (0.41)	4	53
	EB – R	A (0.01)	2	0	A (0.02)	2	2
	WB – L	A (0.12)	3	3	A (0.16)	4	8
	WB – TR	A (0.41)	4	45	A (0.52)	5	78
	NB – L	D (0.34)	52	23	D (0.50)	53	26
	NB – TR	D (0.06)	49	12	D (0.22)	49	21
	SB – L	D (0.30)	52	23	D (0.30)	50	17
	SB – TR	D (0.16)	50	22	D (0.16)	48	24
Lakeshore Road E/ Enola Avenue (Unsignalized)	EB – LTR	A (0.03)	1	1	A (0.04)	1	1
	WB – LTR	A (0.09)	3	3	A (0.14)	4	4
	NB – LTR	E (0.38)	37	13	D (0.37)	30	13
	SB – LTR	C (0.12)	25	3	F (0.15)	55	4
Enola Avenue/ Site Access (Unsignalized)	EB – LR	A (0.04)	9	1	A (0.03)	10	1
	NB – TL	A (0.00)	0	0	A (0.00)	0	0
	SB – TR	A (0.03)	0	0	A (0.08)	0	0

Under the 2027 future total traffic conditions, the analysis indicates that the Lakeshore Road E/Shaw Drive intersection is expected to operate with acceptable levels of service.

For the Lakeshore Road E/Enola Avenue intersection, the eastbound and westbound on Lakeshore Road E, as well as the northbound on Enola Avenue are expected to operate at acceptable levels of service. However, the southbound is expected to operate at slightly higher delay due to heavy through traffic on Lakeshore Road E and background traffic growth/developments. It should be noted that the delay is expected to be less than a minute per vehicle and the v/c is only 0.15 (15% of the total capacity). These conditions are typical for side street along major corridors with not traffic signal where drivers will have to wait for suitable gaps to make the turn. It should also be noted that this movement is southbound on Enola Avenue, which is not contributed by the proposed development.

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.

The proposed development access onto Enola Avenue is expected to operate at excellent levels of service with minimum delay or queue. In addition, the northbound queue on Enola Avenue is not expected to spill back to block the proposed access. 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 Enola Avenue.

6.1.1. 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 configured 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 Enola Avenue to improve pedestrian and cyclist safety, as well as reducing turning movement conflicts on Lakeshore Road E.

6.2. 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 Enola Avenue and Shaw Drive, with sidewalks on both sides of Lakeshore Road E. In addition, sidewalks are reasonably maintained.

It is Nextrans’ understanding that the proposed development will maintain and improve the existing sidewalk along the frontage of the proposed development on Lakeshore Road E and Enola Avenue, where appropriate. 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.

It is Nextrans’ understanding that the Lakeshore Connected Communities Transportation Master Plan recommended separated bicycle lanes on both sides of Lakeshore Road E 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 17 two-way transit trips (5 inbound and 12 outbound) and 20 two-way transit trips (14 inbound and 6 outbound) during the AM and PM peak hours, respectively.

The proposed development is located adjacent to MiWay Bus Route 23, about 1.5 km to the existing Port Credit GO Train Station or about 20 minute-walk/10 minute-cycle. In addition, the site is located about 1.3 km to Hurontario Street and 3.6 km to the existing Long Branch GO Train Station.

For the purposes of this assessment, it is assumed that residents will take existing MiWay Bus Route 23 that are currently stopping at the Lakeshore Road E/Shaw Drive intersection.

Table 10 summarizes the transit trip assignments based on the transit trip generation and distribution estimated from the 2016 Transportation Tomorrow Survey data and existing MiWay service in the area.

Table 10 – Site Transit Trip Assignment

Transit Route	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
<i>Total Transit Trips</i>	<i>5</i>	<i>12</i>	<i>17</i>	<i>14</i>	<i>6</i>	<i>20</i>
MiWay Route 23 Eastbound	2	7	9	6	4	9
MiWay Route 23 Westbound	3	5	8	8	2	11

Nextrans has reviewed the existing transit schedules for the MiWay Route 23 service routes during the weekday morning and afternoon peak hours. **Table 11** summarizes the existing MiWay Route 23 service frequency. It should be noted that

the numbers of transit vehicles per hour were calculated using the 60 minutes divided by the vehicle headway based on the latest schedules available on Mississauga Transit website.

Table 11 – Transit Service Frequency

Transit Route	Weekday AM Peak Hour		Weekday PM Peak Hour	
	Headway	No. transit veh/hr	Headway	No. transit veh/hr
MiWay Route 23 Eastbound	~ 10 mins	6	~ 10 mins	6
MiWay Route 23 Westbound	~ 10 mins	6	~ 10 mins	6

Table 12 summarizes the future transit passenger demand from the proposed development per each transit vehicle during the morning and afternoon peak hours. The numbers of passenger demand per transit vehicle was calculated by using the total peak hour passenger demand generated by the proposed development divided by the numbers of transit vehicles per hour.

Table 12 – Future Transit Passenger Demand from the Proposed Development

Transit Route	Weekday AM Peak Hour		Weekday PM Peak Hour	
	Inbound (pass/veh)	Outbound (pass/veh)	Inbound (pass/veh)	Outbound (pass/veh)
MiWay Route 23 Eastbound	0.3	1.2	0.9	0.6
MiWay Route 23 Westbound	0.5	0.8	1.4	0.4

As indicated in the table above, the transit passenger demands generated by the proposed development per transit vehicle is very low (about one or two passengers per transit vehicle per hour). 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.

7.0 SITE PLAN REVIEW

7.1. Loading Requirement

As indicated, the proposed development is contemplated a 12-storey mixed-use residential building with approximately 195 dwelling units and a ground related retail GFA of 538 m². The City of Mississauga Zoning By-law 0225-2007 was reviewed to determine the loading requirement for the proposed development. Table 13 summarizes the loading requirement based on the current Zoning By-law.

Table 13 – City of Mississauga Zoning By-law Loading Requirements

Land Use	Magnitude	Loading Rates	Spaces Required
Residential	195 units	Minimum of 30 dwelling units	1 space
Retail	538 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 retail component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length. Given that the proposed retail component is located within the same building, the loading space can be shared with the residential component. Therefore, it is Nexttrans' opinion that only loading space is required for the proposed development. It is Nexttrans' understanding that the proposed development will meet this requirement.

AutoTURN software was used (Garbage Truck TAC HSU) to generate vehicular turning templates to confirm and demonstrate the accessibility for the proposed loading space. **Figure 14** illustrates the turning movement templates for passenger vehicles and Garbage truck.

7.2. Proposed Development Access

Currently, the subject site has two full moves accesses, one onto Lakeshore Road E and one onto Enola Avenue. With the proposed redevelopment, only one full moves access onto Enola Avenue, 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, 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 Enola Avenue.

7.3. Safety Analysis

7.3.1. Sightlines

Based on Nextrans' review of the area context, site observation and review of the survey plan, Enola Avenue 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 Enola Avenue. In fact, the proposed access onto Enola Avenue is located approximately at the same location as the existing access from the Beer Store onto Enola Avenue.

7.3.2. Weaving

The existing land use has three accesses, one directly onto Lakeshore Road E and two only Enola Avenue (one way in to the north and one way exit to the south).

With the proposed redevelopment of the site, only one access will be provided onto Enola Avenue and the existing access onto Lakeshore Road E and Enola Avenue will be closed. It is Nextrans' opinion that this provision will eliminate any potential weaving on Lakeshore Road E in the vicinity of the proposed development.

7.3.3. Pedestrian and Cycling Safety

As indicated, the existing land use has three accesses, one directly onto Lakeshore Road E and two only Enola Avenue (one way in to the north and one way exit to the south).

With the proposed redevelopment of the site, only one access will be provided onto Enola Avenue and the existing access onto Lakeshore Road E and Enola Avenue 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.

Based on Nextrans' review of the HDR Existing Conditions Report for Lakeshore Connection Communities dated October 25, 2016, there was only one collision involving vulnerable road user in 2012 at the Lakeshore Road E/Enola Avenue intersection. As part of the proposed development, sidewalks along the frontage of the site on Lakeshore Road E and Enola Avenue will be maintained and improved as required.

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 14 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 retail parking requirement will be based on C4 zone.

Table 14 – City of Mississauga Zoning By-law No. 0225-2007 Vehicle Parking Requirements

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential	2 townhouse units	2.00 space/unit	4
	4 live/work units	1.25 space/unit	5
	74 units (1bdr)	1.25 space/unit (1br)	93
	87 units (2br)	1.40 space/unit (2br)	122
	28 units (3br)	1.75 space/unit (3br or more)	49
Visitor	193 units	0.20 spaces/unit for visitor	39
	2 townhouse units	0.25 spaces/unit for visitor	1
Retail	538 m ²	4.0 spaces per 100 m ² GFA	21
Total			334 spaces

Based on the assessment noted above, the proposed development will require to provide approximately 334 vehicle parking spaces, inclusive of residential, visitor and retail uses. It is Nextrans' opinion that these rates are excessive and do not support the Hurontario LTR investment by Metrolinx 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. 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 17** below summarizes the proposed developments and associated approved parking rates. The detailed information is included in **Appendix G**.

Table 15 – Approved Parking Rates in Other Developments in the City of Mississauga

Proposed Development	Description	Residential Parking Rates	Visitor Parking Rate	Retail Parking 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
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

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, approximately between Hurontario Street and Cawthra Road. 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.

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 16 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 16 – Non-Auto 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 (6:00 – 9:00)	67%	7%	23%	0%	3%
PM Peak Period (4:00 – 7:00)	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. This indicates that the non-driving mode of

33% and 36% are generally similar to the proposed 35% reduction in parking supply. Therefore, the proposed 35% parking reduction can be supported.

8.2.4. Existing Household Demographic and Car Ownership

Nextrans also reviewed the vehicle ownership for Ward 1. Table 17 summarizes the vehicle ownership based on the 2016 Transportation Tomorrow Survey data, while the 2016 TTS data extraction is included in Appendix E.

Table 17 – Vehicle Ownership for Ward 1 Based on 2016 TTS Data

Household Type			Household Size					Number of Available Vehicles				
House	Townhouse	Apartment	1	2	3	4	5+	0	1	2	3	4+
49%	7%	44%	31%	33%	16%	14%	6%	9%	40%	38%	10%	3%

As indicated, there is a large percentage of apartment household in Ward 1 (44%), almost one-third of the household with a single person (31%), 9% of households do not own a car and 40% own only one car. The data above supports an average parking rate of 1.0 space/unit (about 49% own one car or less per household).

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.

8.2.6. 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.

8.2.7. Recommended Parking Rates for the Proposed Development

Based on the information and justifications provided above, Nextrans recommended that the Endenshaw Apartments (Ann Street and Park Street E) approved rates be applied to the proposed development.

It is anticipated that the small ground related retail 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 retail is not a major destination, it is Nextrans’ opinion that this small ground related retail will not generate any vehicular traffic to and from the proposed development and therefore it does not require any parking spaces.

Similarly, the proposed development includes 4 live/work units. Live/work unit means that the residents live and work within the same unit and is not required to travel outside of the unit. Therefore, it is Nextrans’ opinion that no parking spaces are required to accommodate the live/work units.

Based on the assessment noted above, **Table 18** below summarizes the recommended parking rates for the proposed mixed-use development.

Table 18 – Recommended Parking Rates for the Proposed Mixed-Use Development

Unit Type	No. of Unit	Parking Rates	Parking Requirement
Residential	74 units (1bdr)	0.75 space/unit (1br)*	56
	87 units (2br)	0.90 space/unit (2br)*	78
	28 units (3br)	1.1 space/unit (3br)*	31
	2 townhouse units (3br)	1.1 space/unit	2
	4 live/work units	None required	0
Visitor	195 units	0.10 spaces/unit for visitor*	20
Retail	538 m ²	None required	0
Total			187 spaces

Note: *Endenshaw Apartments (Ann Street and Park Street E) approved rates

Based on the recommended parking rates and comprehensive justifications provided in this Study, the proposed development is required to provide 187 vehicle parking spaces, inclusive of resident, visitor and retail parking spaces.

8.3. 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 19** summarizes the recommended bicycle parking spaces for the proposed development to support TDM and active transportation.

Table 19 – Recommended Bicycle Parking Requirements

Land Use	No. of Unit / GFA	Short Term		Long Term		Total
		Rates	Spaces	Rates	Spaces	
Residential	195 units	0.08 spaces/unit	16	0.70 spaces/unit	137	153
Retail	538 m ²	0.25 space/100m ²	1	0.10 space/100m ²	1	2
Total			17		138	155

The proposed development will require 155 bicycle parking spaces, including 17 short-term spaces and 138 long-term spaces. It is Nextrans' understanding that the proposed development provides 155 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 direct shared pedestrian/bicycle connections from the proposed development to Enola Avenue and Lakeshore Road E;
- Provide 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 at the sale office; and
- Provide pre-load PRESTO Cards with the starting value of \$100 (inclusive of the registration fee) to the residents on demand basis. This will help the future residents to consider taking GO Train and Mississauga MiWay Transit as an alternative mode of transportation. The pre-loaded PRESTO Cards can be distributed in conjunction with the Information Package at the time of purchase or at occupancy.

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:
 - 72 total two-way trips (19 inbound and 53 outbound) and 97 total two-way trips (67 inbound and 30 outbound) during the AM and PM peak hours, respectively;
 - 48 two-way auto trips (13 inbound and 35 outbound) and 63 two-way auto trips (43 inbound and 20 outbound) during the AM and PM peak hours, respectively;
 - 17 two-way transit trips (5 inbound and 12 outbound) and 20 two-way transit trips (14 inbound and 6 outbound) during the AM and PM peak hours, respectively;
 - 2 two-way active transportation trips (0 inbound and 2 outbound) and 8 two-way active transportation trips (6 inbound and 2 outbound) during the AM and PM peak hours, respectively; and
 - 5 two-way carpool/paid ride trips (1 inbound and 4 outbound) and 6 two-way carpool/paid ride trips (4 inbound and 2 outbound) during the AM and PM peak hours, respectively
- A comparison between the proposed development and existing land use (Beer Store) indicates that the proposed mixed-use development is expected to generate additional 48 auto trips during the morning peak hour but generates 40 less auto trips during the afternoon peak hour, as compared to the existing land use (Beer Store). 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. The Lakeshore Connected Communities Transportation Master Plan recommended a two-way centre left turn lane along this section of Lakeshore Road E (Segment 6). 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 very low (about one or two passengers per transit vehicle per hour). 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 334 vehicle parking spaces, inclusive of residential, visitor and retail uses. It is Nextrans' opinion that these rates are excessive and do not support the Hurontario LTR investment by Metrolinx 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. 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.

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.

Based on the recommended parking rates and comprehensive justifications provided in this Study, the proposed development is required to provide 187 vehicle parking spaces, inclusive of resident, visitor and retail parking spaces.

- The proposed development will require 155 bicycle parking spaces, including 17 short-term spaces and 138 long-term spaces. It is Nextrans' understanding that the proposed development provides 155 bicycle parking spaces, inclusive of short-term and long-term, which meets these requirements.
- Currently, the subject site has two full moves accesses, one onto Lakeshore Road E and one onto Enola Avenue. With the proposed redevelopment, only one full moves access onto Enola Avenue, 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 Enola Avenue.

- Under the City's By-Law Zoning By-law 0225-2007, one loading space is required for residential component and one for the retail component. The minimum loading space dimensions are: 3.5 m width and 9.0 m Length. Given that the proposed retail 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.

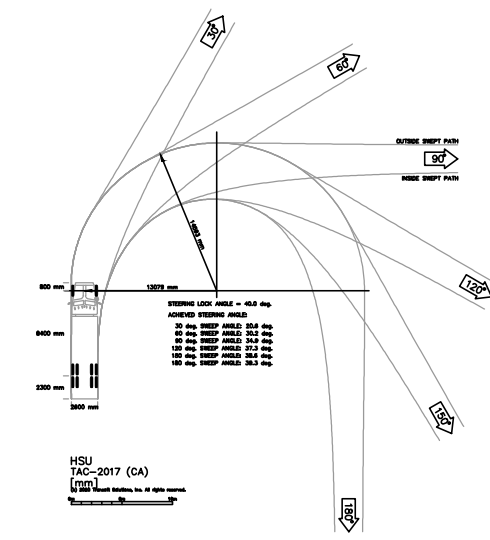
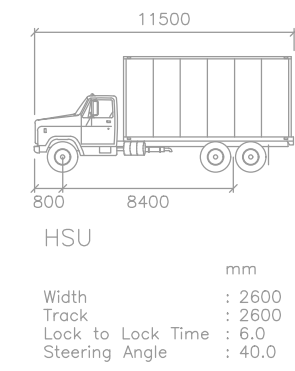
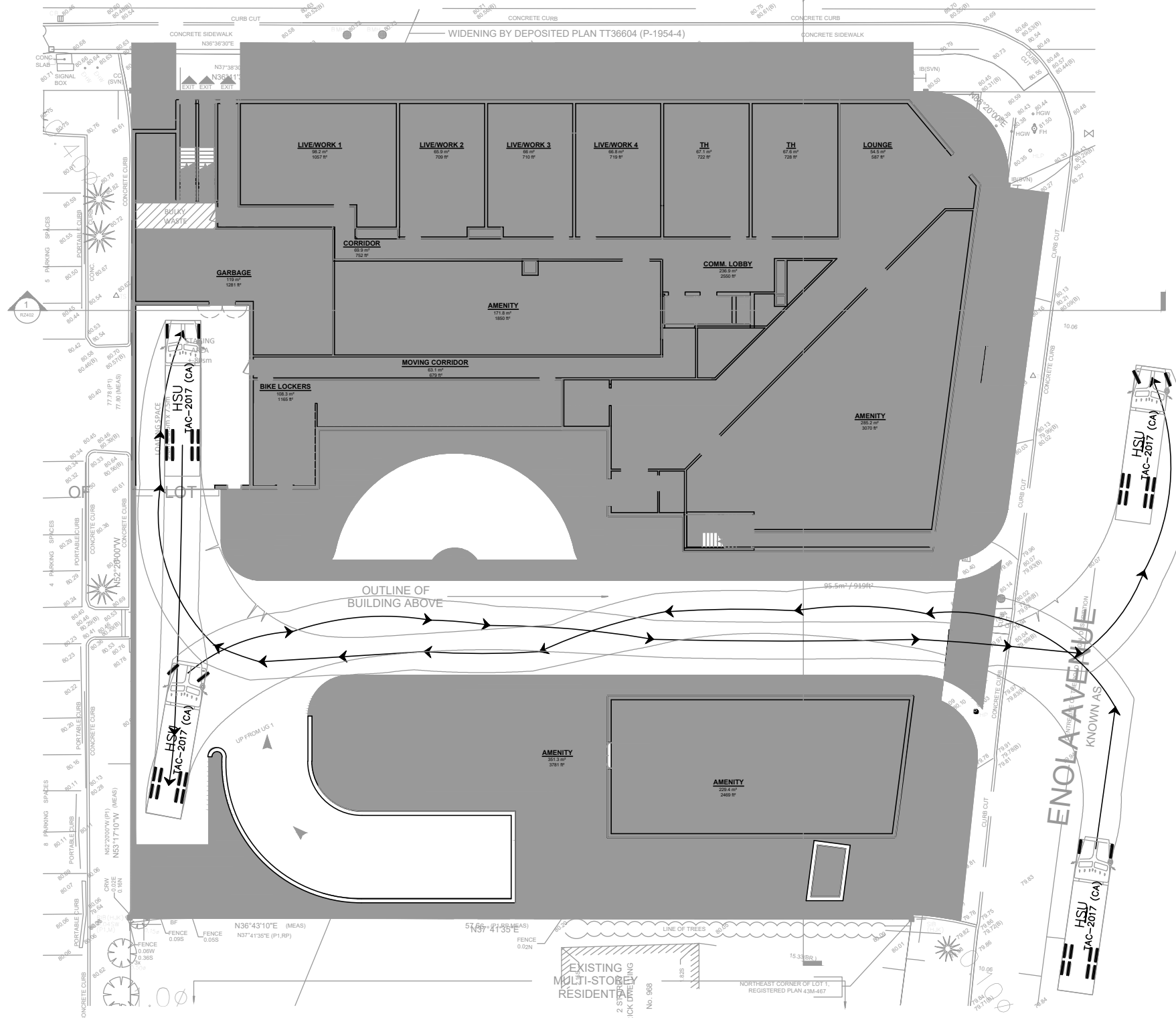
AutoTURN software was used (Garbage Truck TAC HSU) to generate vehicular turning templates to confirm and demonstrate the accessibility for the proposed loading space.

10.2. Study Recommendations

Based on the Study assessment, our report recommends that:

- 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 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 Enola Avenue, 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 Enola Avenue; 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.

LAKESHORE ROAD EAST



PART
CONCESSION

KEY PLAN

BENCHMARK

REVISIONS

NO	REVISION	DATE	BY

STAMP



PROJECT NAME:
Mixed-Use Development
420 Lakeshore Road E
(CITY OF MISSISSAUGA)

DRAWING TITLE:
AutoTURN Analysis
(HSU TAC-2017)

DESIGN BY: A.S.	DATE: June 11, 2020
CHECKED BY: R.P.	PROJECT NO:
DRAWN BY: A.S.	NT-20-049
SCALE: NTS	DRAWING NO: Figure 14

Appendix A

Existing Traffic Data and Signal Timing Plans



File: CA.13.SIG
Signal Timing Request
RT.07.0709

June 15, 2020

Sam Nguyen
NexTrans Consulting Engineers
520 Industrial Parkway South, Suite 201
Aurora, ON L4G 6W8

Dear Sam Nguyen:

Re: Traffic Signal Timing

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

Lakeshore Road East at Shaw Drive

The side street phases (4,8) are actuated; meaning a vehicle or pedestrian must be present on the side street before the side street is given a green indication. Vehicle presence on the side street would result in a possible green time of between the minimum and maximum time noted, depending on demand. Pedestrian “Walk” and flashing “Don’t Walk” time on the side street, as noted, would be used in the event that the pedestrian push button is activated. During the side street pedestrian indications, the side street vehicle green is concurrently displayed. Should there be no demand on the actuated phase, the signals would result in a green indication on the major street (2,6).

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

The time of day plan is used for system control operation. In the event that the coordination pattern has a cycle length, offset and split value identified, the cycle length split and offset values, as noted, would be used. However, when the time of day plan is programmed using ‘Action’ 8, the mode is ‘Free’, meaning no cycle length, split and offset

Sam Nguyen
Re: Traffic Signal Timing
June 15, 2020

2

values are given and the intersection operates using the phase timings provided in the report.

Should you require further information, please contact Ken Moore, at 905-615-3200 ext. 4054.

Sincerely,

Ken Moore
Coordinator, Traffic Systems and ITS
Traffic Signals and Street Lighting
Transportation and Works Department
City of Mississauga
905-615-3200 ext. 4054
ken.moore@mississauga.ca

c: Javed Khan, Manager, Traffic Signals and Street Lighting
Jim Kartsomanis, Supervisor, Traffic Systems and ITS



Turning Movements Report - MD Period

Location..... ENOLA AVE @ LAKESHORE RD E

Municipality..... Mississauga

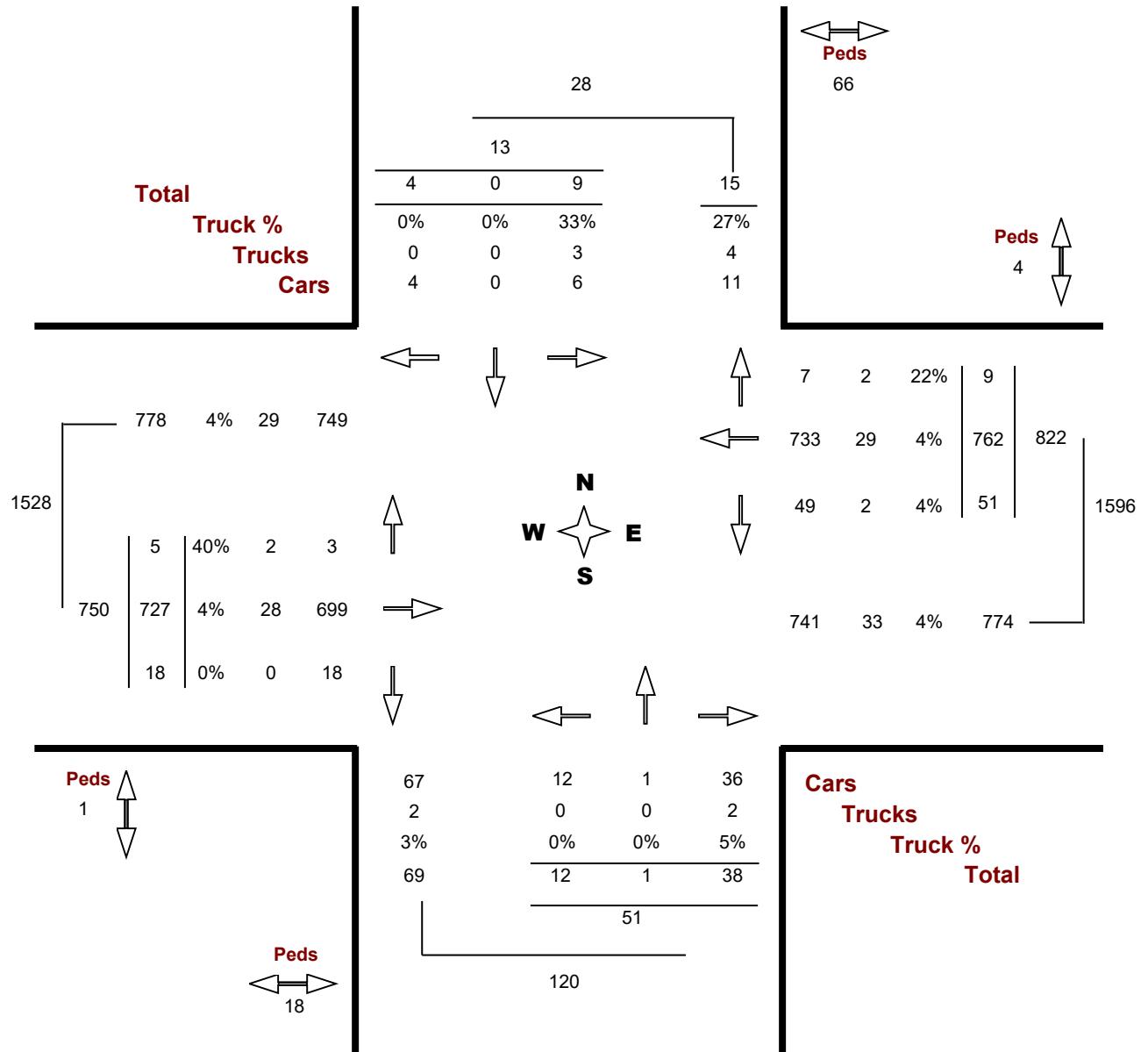
GeoID..... 351478

Count Date..... Wednesday, 07 March, 2012

Peak Hour..... 11:45 AM — 12:45 PM

Road 1 ENOLA AVE

Road 2 LAKESHORE RD E





Turning Movements Report - PM Period

Location..... ENOLA AVE @ LAKESHORE RD E

Municipality..... Mississauga

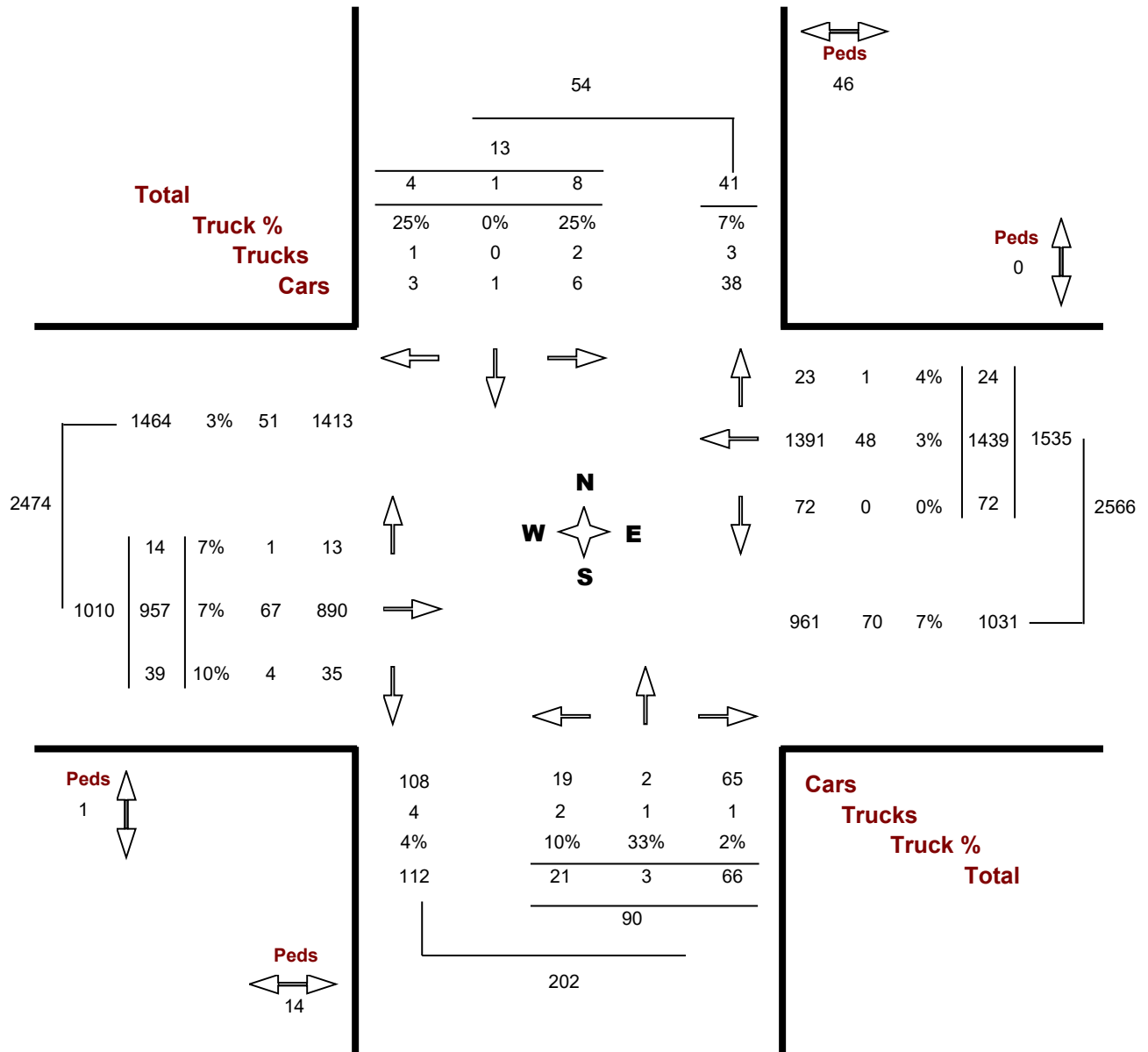
GeoID..... 351478

Count Date..... Wednesday, 07 March, 2012

Peak Hour..... 03:30 PM — 04:30 PM

Road 1 ENOLA AVE

Road 2 LAKESHORE RD E





Turning Movements Report - AM Period

Location..... ENOLA AVE @ LAKESHORE RD E

Municipality..... Mississauga

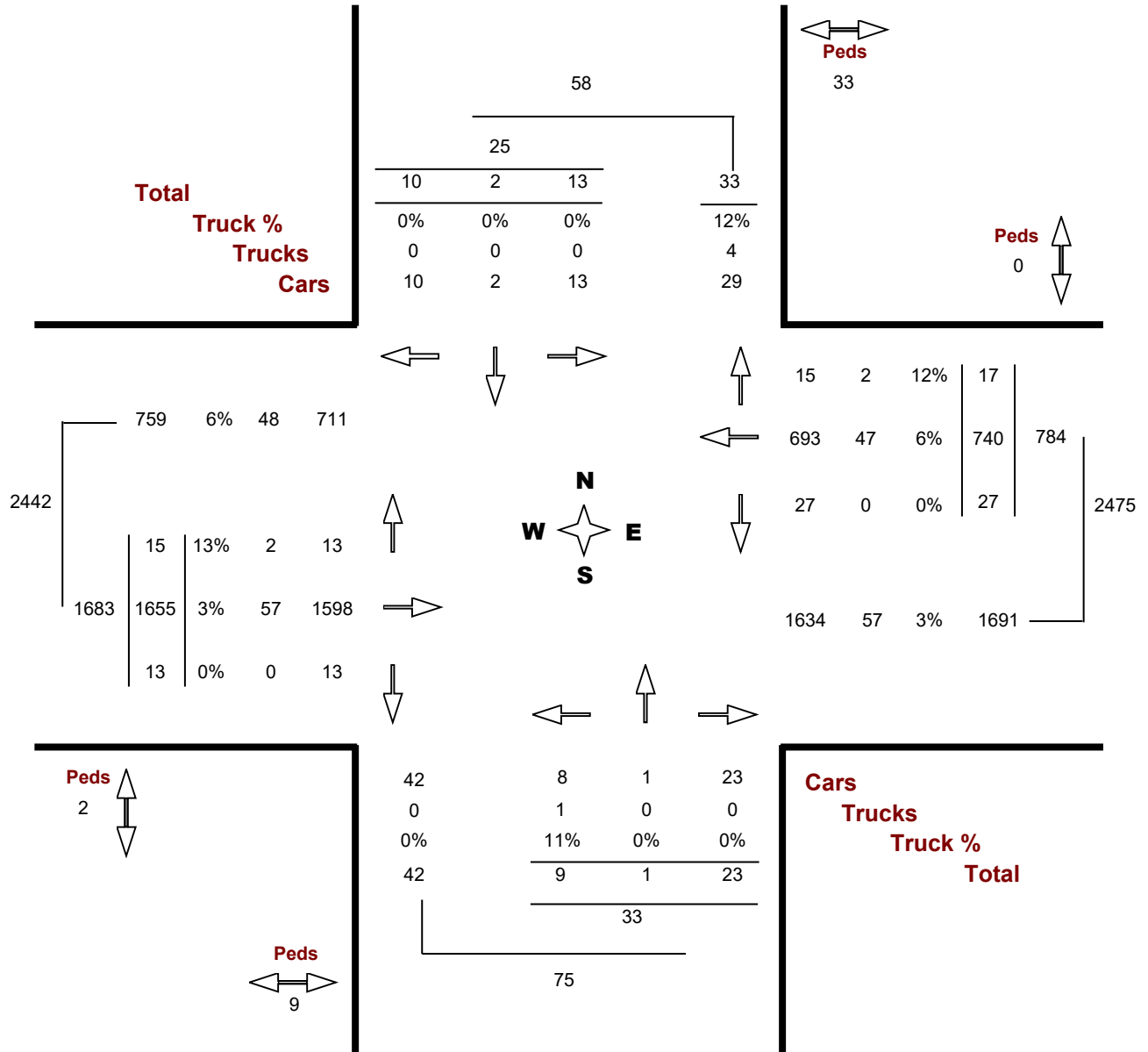
GeoID..... 351478

Count Date..... Wednesday, 07 March, 2012

Peak Hour..... 08:00 AM — 09:00 AM

Road 1 ENOLA AVE

Road 2 LAKESHORE RD E





Turning Movements Report - PM Period

Location..... LAKESHORE RD E @ SHAW DR

Municipality..... Mississauga

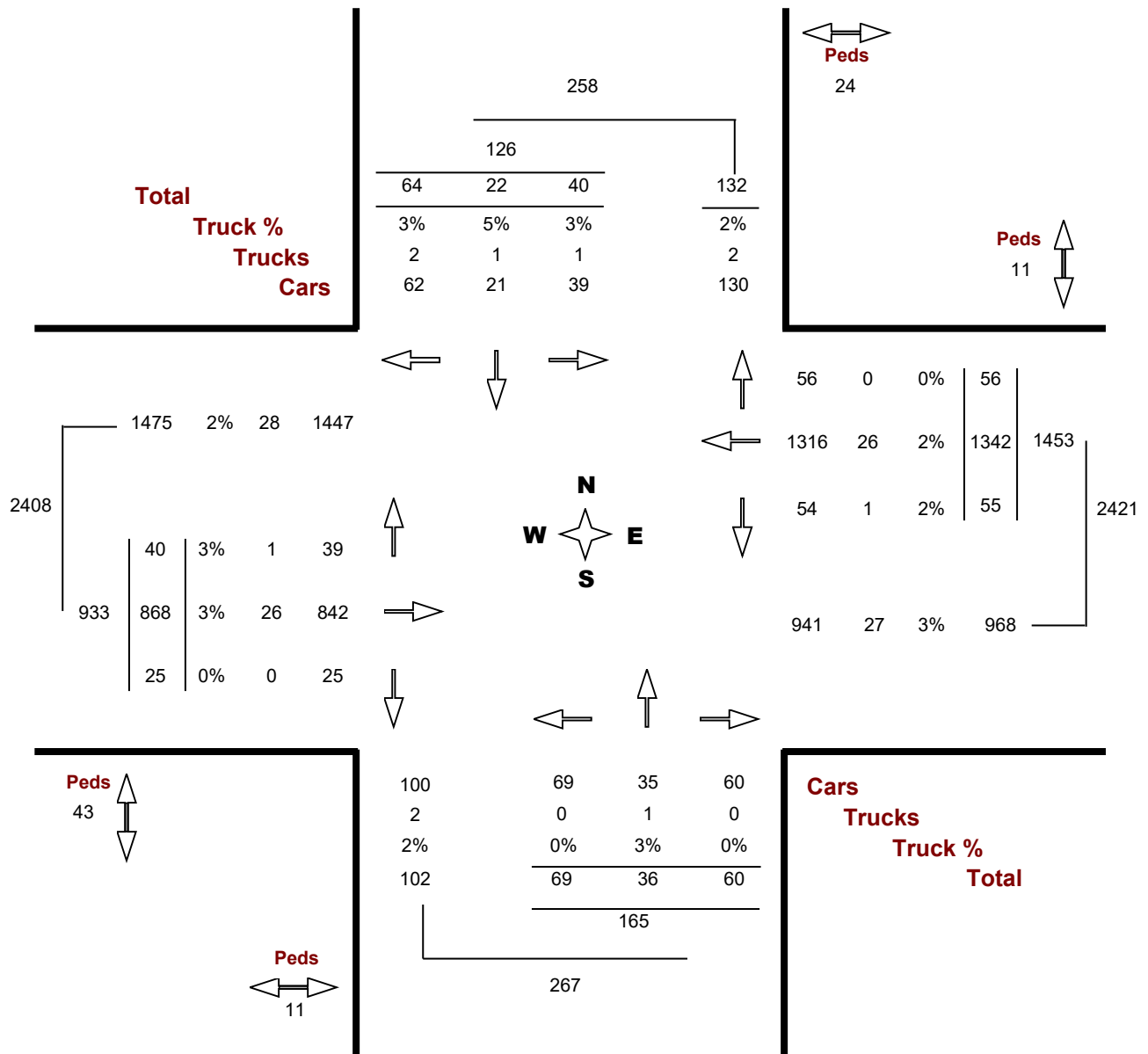
GeoID..... 351462

Count Date..... Thursday, 28 April, 2016

Peak Hour..... 04:45 PM — 05:45 PM

Road 1 SHAW DR

Road 2 LAKESHORE RD E





Turning Movements Report - MD Period

Location..... LAKESHORE RD E @ SHAW DR

Municipality..... Mississauga

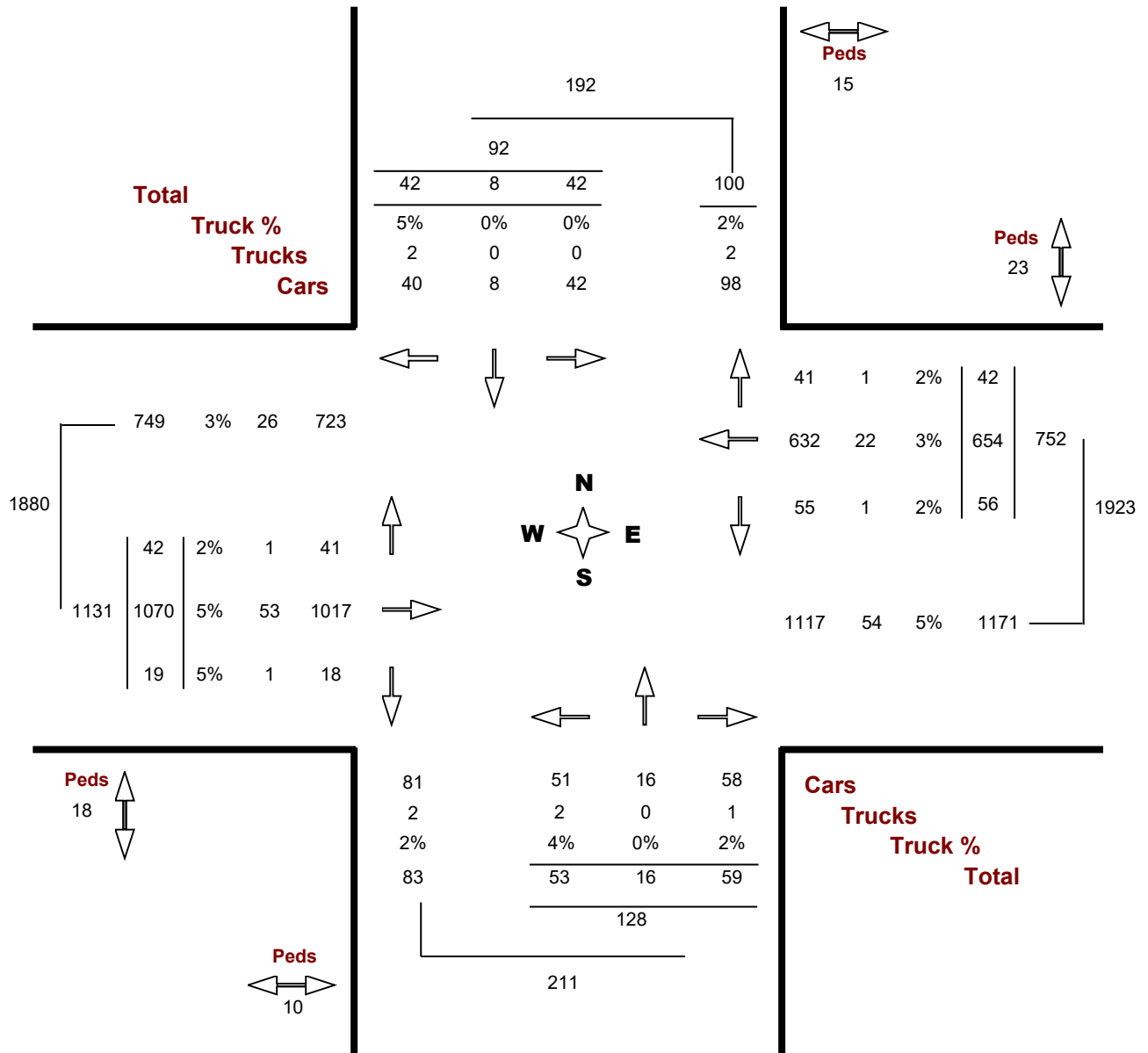
GeoID..... 351462

Count Date..... Thursday, 28 April, 2016

Peak Hour..... 12:15 PM — 01:15 PM

Road 1 SHAW DR

Road 2 LAKESHORE RD E





Turning Movements Report - AM Period

Location..... LAKESHORE RD E @ SHAW DR

Municipality..... Mississauga

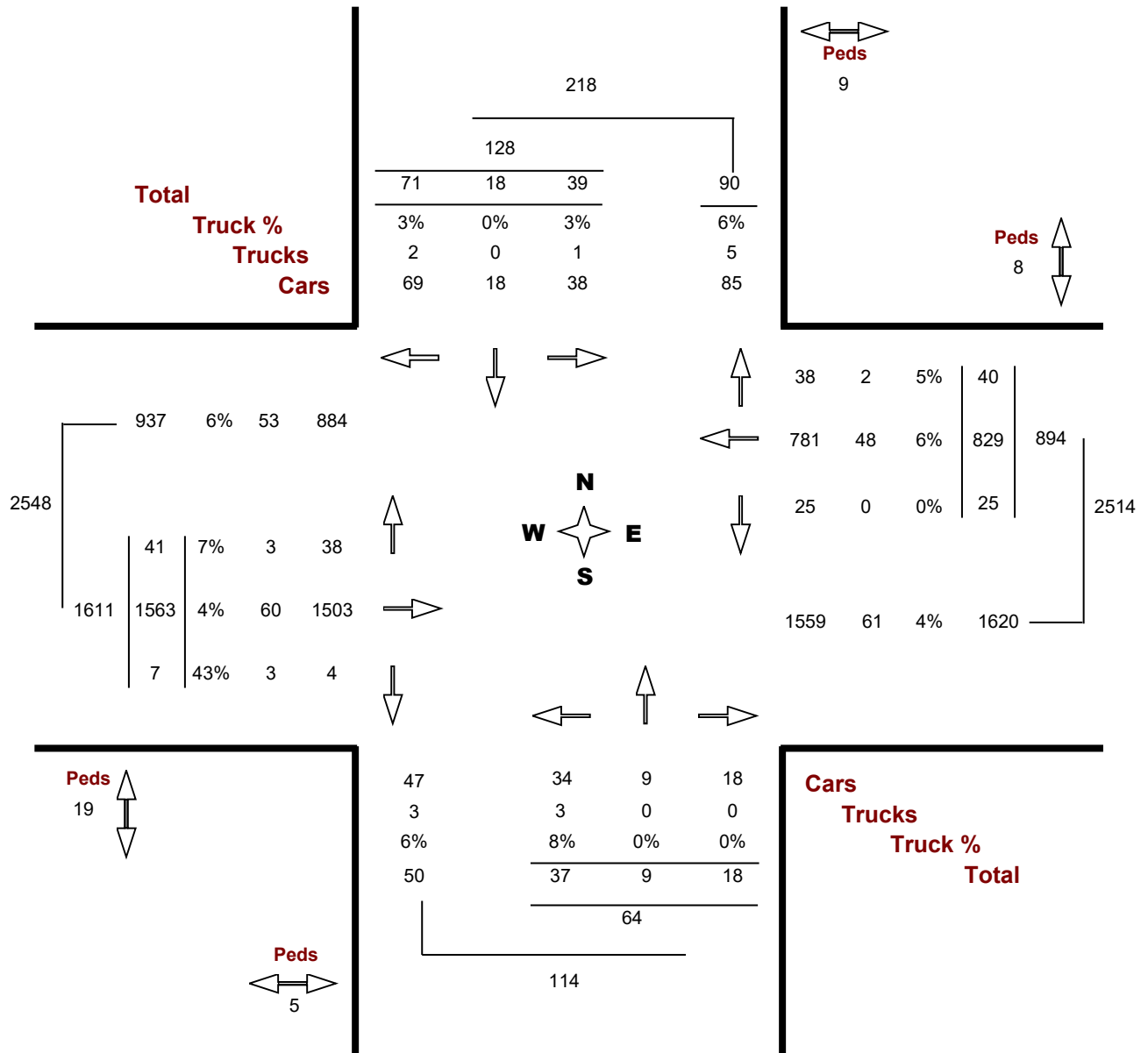
GeoID..... 351462

Count Date..... Thursday, 28 April, 2016

Peak Hour..... 08:00 AM — 09:00 AM

Road 1 SHAW DR

Road 2 LAKESHORE RD E



Appendix B

Existing Traffic Level of Service Calculations

HCM Signalized Intersection Capacity Analysis

6: Metro Access/Shaw Drive & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	1563	7	25	897	40	37	9	18	39	18	71
Future Volume (vph)	41	1563	7	25	897	40	37	9	18	39	18	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	0.99	1.00	1.00	1.00	1.00		0.97	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.90		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1621	3394	1030	1743	3264		1611	1702		1713	1599	
Flt Permitted	0.30	1.00	1.00	0.14	1.00		0.69	1.00		0.74	1.00	
Satd. Flow (perm)	504	3394	1030	256	3264		1173	1702		1334	1599	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	1563	7	25	897	40	37	9	18	39	18	71
RTOR Reduction (vph)	0	0	1	0	2	0	0	16	0	0	64	0
Lane Group Flow (vph)	41	1563	6	25	935	0	37	11	0	39	25	0
Confl. Peds. (#/hr)	9		5	5		9	19		8	8		19
Heavy Vehicles (%)	7%	4%	43%	0%	6%	5%	8%	0%	0%	3%	0%	3%
Bus Blockages (#/hr)	0	0	6	0	6	6	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	96.2	96.2	96.2	96.2	96.2		10.8	10.8		10.8	10.8	
Effective Green, g (s)	97.2	97.2	97.2	97.2	97.2		11.8	11.8		11.8	11.8	
Actuated g/C Ratio	0.81	0.81	0.81	0.81	0.81		0.10	0.10		0.10	0.10	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	408	2749	834	207	2643		115	167		131	157	
v/s Ratio Prot		c0.46			0.29			0.01			0.02	
v/s Ratio Perm	0.08		0.01	0.10			c0.03			0.03		
v/c Ratio	0.10	0.57	0.01	0.12	0.35		0.32	0.06		0.30	0.16	
Uniform Delay, d1	2.4	4.0	2.2	2.4	3.0		50.4	49.1		50.3	49.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.9	0.0	1.2	0.4		1.6	0.2		1.3	0.5	
Delay (s)	2.9	4.9	2.2	3.6	3.4		52.0	49.3		51.5	50.0	
Level of Service	A	A	A	A	A		D	D		D	D	
Approach Delay (s)		4.8			3.4			50.8			50.5	
Approach LOS		A			A			D			D	

Intersection Summary

















HCM 2000 Control Delay	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

3: Enola Avenue & Lakeshore Road E

06-15-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	1655	13	27	867	17	9	1	23	13	2	10
Future Volume (Veh/h)	15	1655	13	27	867	17	9	1	23	13	2	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	15	1655	13	27	867	17	9	1	23	13	2	10
Pedestrians		2						75			33	
Lane Width (m)		3.4						3.5			3.6	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						6			3	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		100										
pX, platoon unblocked				0.83			0.83	0.83	0.83	0.83	0.83	
vC, conflicting volume	917			1743			2267	2738	909	1844	2736	477
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	917			1481			2114	2683	472	1602	2680	477
tC, single (s)	4.4			4.1			7.7	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			92			41	93	95	71	87	98
cM capacity (veh/h)	656			358			15	15	422	45	15	524
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	842	840	460	450	33	25						
Volume Left	15	0	27	0	9	13						
Volume Right	0	13	0	17	23	10						
cSH	656	1700	358	1700	47	57						
Volume to Capacity	0.02	0.49	0.08	0.27	0.71	0.44						
Queue Length 95th (m)	0.6	0.0	1.9	0.0	22.1	13.2						
Control Delay (s)	0.7	0.0	2.4	0.0	186.0	110.2						
Lane LOS	A		A		F	F						
Approach Delay (s)	0.3		1.2		186.0	110.2						
Approach LOS					F	F						
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			67.4%	ICU Level of Service	C							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

6: Metro Access/Shaw Drive & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	40	940	25	55	1342	56	69	36	60	40	22	64
Future Volume (vph)	40	940	25	55	1342	56	69	36	60	40	22	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.5	5.5	5.5	5.5	5.5		5.5	5.5		5.5	5.5	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	0.98		1.00	0.94	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00		0.94	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.91		1.00	0.89	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1682	3427	1448	1698	3390		1683	1691		1708	1556	
Flt Permitted	0.17	1.00	1.00	0.29	1.00		0.70	1.00		0.67	1.00	
Satd. Flow (perm)	299	3427	1448	521	3390		1242	1691		1206	1556	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	940	25	55	1342	56	69	36	60	40	22	64
RTOR Reduction (vph)	0	0	5	0	2	0	0	53	0	0	57	0
Lane Group Flow (vph)	40	940	20	55	1396	0	69	43	0	40	29	0
Confl. Peds. (#/hr)	24		11	11		24	43		11	11		43
Heavy Vehicles (%)	3%	3%	0%	2%	2%	0%	0%	3%	0%	3%	5%	3%
Bus Blockages (#/hr)	0	0	6	0	6	6	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	94.2	94.2	94.2	94.2	94.2		12.8	12.8		12.8	12.8	
Effective Green, g (s)	95.2	95.2	95.2	95.2	95.2		13.8	13.8		13.8	13.8	
Actuated g/C Ratio	0.79	0.79	0.79	0.79	0.79		0.12	0.12		0.12	0.12	
Clearance Time (s)	6.5	6.5	6.5	6.5	6.5		6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	237	2718	1148	413	2689		142	194		138	178	
v/s Ratio Prot		0.27			c0.41			0.03			0.02	
v/s Ratio Perm	0.13		0.01	0.11			c0.06			0.03		
v/c Ratio	0.17	0.35	0.02	0.13	0.52		0.49	0.22		0.29	0.16	
Uniform Delay, d1	3.0	3.5	2.6	2.9	4.4		49.8	48.2		48.6	47.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.5	0.3	0.0	0.7	0.7		2.6	0.6		1.2	0.4	
Delay (s)	4.5	3.9	2.6	3.5	5.1		52.4	48.8		49.8	48.3	
Level of Service	A	A	A	A	A		D	D		D	D	
Approach Delay (s)		3.9			5.0			50.3			48.8	
Approach LOS		A			A			D			D	

















Intersection Summary		
HCM 2000 Control Delay	9.3	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.51	A
Actuated Cycle Length (s)	120.0	Sum of lost time (s)
Intersection Capacity Utilization	72.2%	11.0
Analysis Period (min)	15	ICU Level of Service
		C

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

3: Enola Avenue & Lakeshore Road E

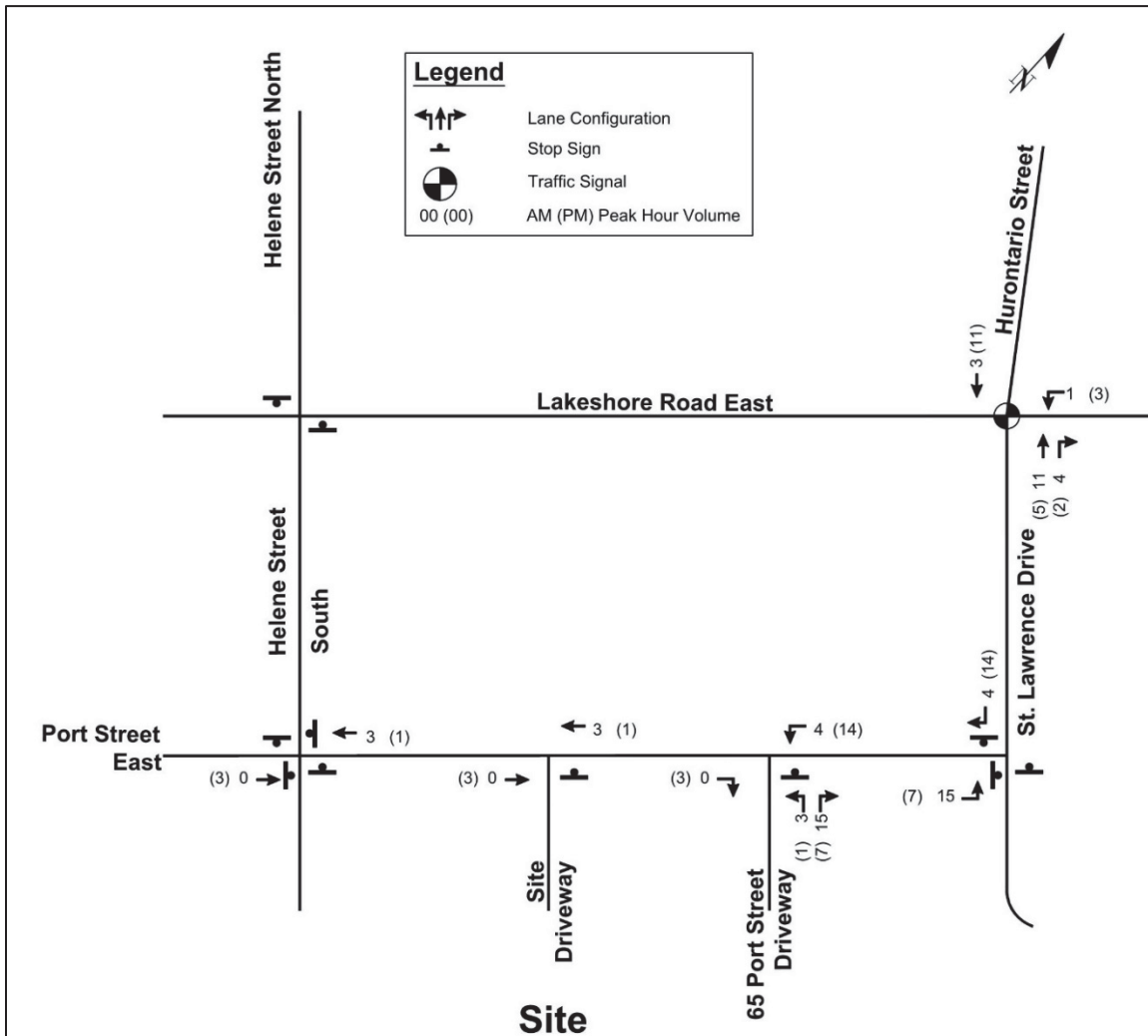
06-15-2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	1121	39	72	1439	24	21	3	66	8	1	4
Future Volume (Veh/h)	14	1121	39	72	1439	24	21	3	66	8	1	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	14	1121	39	72	1439	24	21	3	66	8	1	4
Pedestrians		1						14			46	
Lane Width (m)		3.4						3.5			3.6	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						1			4	
Right turn flare (veh)												
Median type		None			None							
Median storage (veh)												
Upstream signal (m)		100										
pX, platoon unblocked				0.92			0.92	0.92	0.92	0.92	0.92	
vC, conflicting volume	1509			1174			2052	2836	594	2297	2843	778
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1509			1021			1972	2822	393	2238	2830	778
tC, single (s)	4.2			4.1			7.7	7.2	6.9	8.0	6.5	7.4
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.3	3.3	3.8	4.0	3.5
p0 queue free %	96			89			14	62	88	3	93	99
cM capacity (veh/h)	400			627			25	8	553	8	13	282
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	574	600	792	744	90	13						
Volume Left	14	0	72	0	21	8						
Volume Right	0	39	0	24	66	4						
cSH	400	1700	627	1700	67	12						
Volume to Capacity	0.04	0.35	0.11	0.44	1.35	1.06						
Queue Length 95th (m)	0.9	0.0	3.1	0.0	59.6	18.1						
Control Delay (s)	1.1	0.0	3.1	0.0	336.0	689.5						
Lane LOS	A		A		F	F						
Approach Delay (s)	0.5		1.6		336.0	689.5						
Approach LOS					F	F						
Intersection Summary												
Average Delay			15.0									
Intersection Capacity Utilization			90.8%	ICU Level of Service	E							
Analysis Period (min)			15									

Appendix C

Background Development Traffic Volumes

Figure 8: Site Traffic Volumes



5.0 Total Traffic Conditions

5.1 Total Traffic Volumes

The existing site driveway and offsite parking lot will be removed with the full buildout of the proposed residential development. Access to the proposed below grade garage will be via the adjacent 65 Port Street driveway and below grade garage to the east.

The future total traffic volumes consist of the background traffic volumes in Figure 5 and Figure 6 plus the site trips generated from the proposed site shown in Figure 8, and minus the existing trips removed from the existing site driveway and offsite parking lot provided in Appendix C. The resulting 2022 and 2027 total traffic volumes are shown in Figure 9 and Figure 10.

Appendix D

Future Background Level of Service Calculations

HCM Signalized Intersection Capacity Analysis

6: Metro Access/Shaw Drive & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑↑	↗	↙	↑↑		↙	↗		↙	↗	
Traffic Volume (vph)	41	1573	7	25	1049	40	37	9	18	39	18	71
Future Volume (vph)	41	1573	7	25	1049	40	37	9	18	39	18	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.90		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1623	3394	1030	1743	3268		1612	1702		1713	1599	
Flt Permitted	0.25	1.00	1.00	0.14	1.00		0.66	1.00		0.74	1.00	
Satd. Flow (perm)	424	3394	1030	255	3268		1123	1702		1334	1599	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	1573	7	25	1049	40	37	9	18	39	18	71
RTOR Reduction (vph)	0	0	1	0	1	0	0	16	0	0	64	0
Lane Group Flow (vph)	41	1573	6	25	1088	0	37	11	0	39	25	0
Confl. Peds. (#/hr)	9		5	5		9	19		8	8		19
Heavy Vehicles (%)	7%	4%	43%	0%	6%	5%	8%	0%	0%	3%	0%	3%
Bus Blockages (#/hr)	0	0	6	0	6	6	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	97.2	97.2	97.2	97.2	97.2		10.8	10.8		10.8	10.8	
Effective Green, g (s)	98.2	98.2	98.2	98.2	98.2		11.8	11.8		11.8	11.8	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.82		0.10	0.10		0.10	0.10	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	346	2777	842	208	2674		110	167		131	157	
v/s Ratio Prot		c0.46			0.33			0.01			0.02	
v/s Ratio Perm	0.10		0.01	0.10			c0.03			0.03		
v/c Ratio	0.12	0.57	0.01	0.12	0.41		0.34	0.06		0.30	0.16	
Uniform Delay, d1	2.2	3.7	2.0	2.2	3.0		50.4	49.1		50.3	49.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.8	0.0	1.2	0.5		1.8	0.2		1.3	0.5	
Delay (s)	2.9	4.5	2.0	3.4	3.4		52.3	49.3		51.5	50.0	
Level of Service	A	A	A	A	A		D	D		D	D	
Approach Delay (s)		4.5			3.4			51.0			50.5	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

3: Enola Avenue & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	15	1665	13	27	1015	17	9	1	23	13	2	10
Future Volume (Veh/h)	15	1665	13	27	1015	17	9	1	23	13	2	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	15	1665	13	27	1015	17	9	1	23	13	2	10
Pedestrians		2						75			33	
Lane Width (m)		3.4						3.5			3.6	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						6			3	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh		2			2							
Upstream signal (m)		100										
pX, platoon unblocked				0.83			0.83	0.83	0.83	0.83	0.83	
vC, conflicting volume	1065			1753			2351	2896	914	1996	2894	551
vC1, stage 1 conf vol							1776	1776		1110	1110	
vC2, stage 2 conf vol							574	1119		886	1783	
vCu, unblocked vol	1065			1502			2220	2874	493	1794	2872	551
tC, single (s)	4.4			4.1			7.7	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.7	5.5		6.5	5.5	
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			92			89	99	94	93	98	98
cM capacity (veh/h)	573			353			81	114	412	177	97	469
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	848	846	534	524	33	25						
Volume Left	15	0	27	0	9	13						
Volume Right	0	13	0	17	23	10						
cSH	573	1700	353	1700	188	217						
Volume to Capacity	0.03	0.50	0.08	0.31	0.18	0.12						
Queue Length 95th (m)	0.6	0.0	2.0	0.0	4.9	3.1						
Control Delay (s)	0.8	0.0	2.5	0.0	28.2	23.8						
Lane LOS	A		A		D	C						
Approach Delay (s)	0.4		1.2		28.2	23.8						
Approach LOS					D	C						
Intersection Summary												
Average Delay			1.2									
Intersection Capacity Utilization			67.7%	ICU Level of Service	C							
Analysis Period (min)			15									

HCM Signalized Intersection Capacity Analysis

6: Metro Access/Shaw Drive & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗		↖	↗		↖	↗	
Traffic Volume (vph)	40	1100	25	55	1357	56	69	36	60	40	22	64
Future Volume (vph)	40	1100	25	55	1357	56	69	36	60	40	22	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	0.98		1.00	0.94	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00		0.94	1.00		0.99	1.00	
FrT	1.00	1.00	0.85	1.00	0.99		1.00	0.91		1.00	0.89	
FlT Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1683	3427	1448	1701	3390		1683	1691		1708	1556	
FlT Permitted	0.17	1.00	1.00	0.24	1.00		0.68	1.00		0.65	1.00	
Satd. Flow (perm)	294	3427	1448	434	3390		1213	1691		1161	1556	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	1100	25	55	1357	56	69	36	60	40	22	64
RTOR Reduction (vph)	0	0	5	0	2	0	0	53	0	0	57	0
Lane Group Flow (vph)	40	1100	20	55	1411	0	69	43	0	40	29	0
Confl. Peds. (#/hr)	24		11	11		24	43		11	11		43
Heavy Vehicles (%)	3%	3%	0%	2%	2%	0%	0%	3%	0%	3%	5%	3%
Bus Blockages (#/hr)	0	0	6	0	6	6	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	95.2	95.2	95.2	95.2	95.2		12.8	12.8		12.8	12.8	
Effective Green, g (s)	96.2	96.2	96.2	96.2	96.2		13.8	13.8		13.8	13.8	
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.80		0.12	0.12		0.12	0.12	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	235	2747	1160	347	2717		139	194		133	178	
v/s Ratio Prot		0.32			c0.42			0.03			0.02	
v/s Ratio Perm	0.14		0.01	0.13			c0.06			0.03		
v/c Ratio	0.17	0.40	0.02	0.16	0.52		0.50	0.22		0.30	0.16	
Uniform Delay, d1	2.7	3.5	2.4	2.7	4.0		49.8	48.2		48.7	47.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.4	0.0	1.0	0.7		2.8	0.6		1.3	0.4	
Delay (s)	4.3	3.9	2.4	3.7	4.8		52.6	48.8		50.0	48.3	
Level of Service	A	A	A	A	A		D	D		D	D	
Approach Delay (s)		3.9			4.7			50.4			48.9	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

3: Enola Avenue & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	14	1308	39	72	1454	24	21	3	66	8	1	4
Future Volume (Veh/h)	14	1308	39	72	1454	24	21	3	66	8	1	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	14	1308	39	72	1454	24	21	3	66	8	1	4
Pedestrians		1						14			46	
Lane Width (m)		3.4						3.5			3.6	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						1			4	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (m)		100										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	1524			1361			2246	3038	688	2406	3045	786
vC1, stage 1 conf vol							1370	1370		1656	1656	
vC2, stage 2 conf vol							876	1668		750	1389	
vCu, unblocked vol	1524			1189			2167	3041	445	2343	3050	786
tC, single (s)	4.2			4.1			7.7	7.2	6.9	8.0	6.5	7.4
tC, 2 stage (s)							6.7	6.2		7.0	5.5	
tF (s)	2.3			2.2			3.6	4.3	3.3	3.8	4.0	3.5
p0 queue free %	96			86			83	96	87	87	99	99
cM capacity (veh/h)	394			532			127	68	502	63	93	278
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	668	693	799	751	90	13						
Volume Left	14	0	72	0	21	8						
Volume Right	0	39	0	24	66	4						
cSH	394	1700	532	1700	264	86						
Volume to Capacity	0.04	0.41	0.14	0.44	0.34	0.15						
Queue Length 95th (m)	0.9	0.0	3.7	0.0	11.6	4.1						
Control Delay (s)	1.1	0.0	3.9	0.0	25.5	54.5						
Lane LOS	A		A		D	F						
Approach Delay (s)	0.5		2.0		25.5	54.5						
Approach LOS					D	F						
Intersection Summary												
Average Delay			2.3									
Intersection Capacity Utilization			96.4%		ICU Level of Service				F			
Analysis Period (min)			15									

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

and

2006 GTA zone of household - gta06_hhld In 3642

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%

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

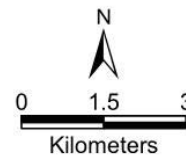
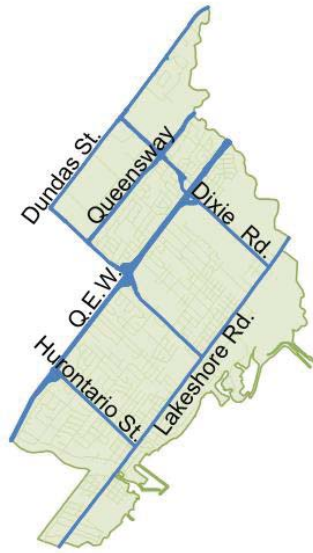
and

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%						

CITY OF MISSISSAUGA
 WARD 1

WARD 1
HOUSEHOLD CHARACTERISTICS

Households	Dwelling Type			Household Size					Number of Available Vehicles					Household Averages				
	House	Townhouse	Apartment	1	2	3	4	5+	0	1	2	3	4+	Persons	Workers	Drivers	Vehicles	Trips/Day
18,000	49%	7%	44%	31%	33%	16%	14%	6%	9%	40%	38%	10%	3%	2.3	1.4	1.8	1.6	5.1

POPULATION CHARACTERISTICS

Population	Age							Daily Trips per Person (age 11+)	Daily Work Trips per Worker	Population	Employment Type					
	0-10	11-15	16-25	26-45	46-64	65+	Median				Full Time	Part Time	At Home	Student	Licensed	Transit Pass
	42,100	10%	5%	11%	26%	31%	17%				44.9	2.4	0.77	21,300	40%	9%

TRIPS MADE BY RESIDENTS OF CITY OF MISSISSAUGA - WARD 1

Time Period	Trips	% 24hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			HB-W	HB-S	HB-D	N-HB	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	22,400	24.5%	52%	14%	22%	12%	68%	10%	6%	8%	7%	2%	8.9	3.7	10.4	18.9
24 Hrs	91,200		34%	8%	41%	17%	72%	11%	5%	5%	5%	1%	6.7	4.0	7.5	18.9

TRIPS MADE TO CITY OF MISSISSAUGA - WARD 1 - BY RESIDENTS OF THE TTS AREA

Time Period	Trips	% 24 hr	Trip Purpose				Mode of Travel						Median Trip Length (km)			
			Work	School	Home	Other	Driver	Pass.	Transit	GO Train	Walk & Cycle	Other	Driver	Pass.	Transit	GO Train
6-9 AM	24,600	24.2%	43%	28%	5%	24%	62%	17%	6%	*	7%	7%	7.9	5.0	5.9	*
24 Hrs	101,600		18%	7%	37%	38%	71%	15%	5%	2%	5%	2%	6.1	4.5	6.3	18.8

Appendix F

Future Total Level of Service Calculations

HCM Signalized Intersection Capacity Analysis

6: Metro Access/Shaw Drive & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	1579	7	25	1061	40	37	9	18	39	18	71
Future Volume (vph)	41	1579	7	25	1061	40	37	9	18	39	18	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00	0.97	1.00	1.00		1.00	0.98		1.00	0.97	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	1.00	0.85	1.00	0.99		1.00	0.90		1.00	0.88	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1623	3394	1030	1743	3268		1612	1702		1713	1599	
Flt Permitted	0.25	1.00	1.00	0.14	1.00		0.66	1.00		0.74	1.00	
Satd. Flow (perm)	419	3394	1030	253	3268		1123	1702		1334	1599	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	41	1579	7	25	1061	40	37	9	18	39	18	71
RTOR Reduction (vph)	0	0	1	0	1	0	0	16	0	0	64	0
Lane Group Flow (vph)	41	1579	6	25	1100	0	37	11	0	39	25	0
Confl. Peds. (#/hr)	9		5	5		9	19		8	8		19
Heavy Vehicles (%)	7%	4%	43%	0%	6%	5%	8%	0%	0%	3%	0%	3%
Bus Blockages (#/hr)	0	0	6	0	6	6	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	97.2	97.2	97.2	97.2	97.2		10.8	10.8		10.8	10.8	
Effective Green, g (s)	98.2	98.2	98.2	98.2	98.2		11.8	11.8		11.8	11.8	
Actuated g/C Ratio	0.82	0.82	0.82	0.82	0.82		0.10	0.10		0.10	0.10	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	342	2777	842	207	2674		110	167		131	157	
v/s Ratio Prot		c0.47			0.34			0.01			0.02	
v/s Ratio Perm	0.10		0.01	0.10			c0.03			0.03		
v/c Ratio	0.12	0.57	0.01	0.12	0.41		0.34	0.06		0.30	0.16	
Uniform Delay, d1	2.2	3.7	2.0	2.2	3.0		50.4	49.1		50.3	49.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.9	0.0	1.2	0.5		1.8	0.2		1.3	0.5	
Delay (s)	2.9	4.6	2.0	3.4	3.5		52.3	49.3		51.5	50.0	
Level of Service	A	A	A	A	A		D	D		D	D	
Approach Delay (s)		4.5			3.5			51.0			50.5	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

3: Enola Avenue & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	15	1665	19	33	1015	17	21	1	45	13	2	10
Future Volume (Veh/h)	15	1665	19	33	1015	17	21	1	45	13	2	10
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	15	1665	19	33	1015	17	21	1	45	13	2	10
Pedestrians		2						75			33	
Lane Width (m)		3.4						3.5			3.6	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						6			3	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage veh		2			2							
Upstream signal (m)		100										
pX, platoon unblocked				0.83			0.83	0.83	0.83	0.83	0.83	
vC, conflicting volume	1065			1759			2366	2910	917	2030	2912	551
vC1, stage 1 conf vol							1780	1780		1122	1122	
vC2, stage 2 conf vol							586	1131		908	1789	
vCu, unblocked vol	1065			1506			2237	2892	493	1833	2893	551
tC, single (s)	4.4			4.1			7.7	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)							6.7	5.5		6.5	5.5	
tF (s)	2.3			2.2			3.6	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			91			74	99	89	92	98	98
cM capacity (veh/h)	573			351			81	113	411	167	91	469
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	848	852	540	524	67	25						
Volume Left	15	0	33	0	21	13						
Volume Right	0	19	0	17	45	10						
cSH	573	1700	351	1700	177	207						
Volume to Capacity	0.03	0.50	0.09	0.31	0.38	0.12						
Queue Length 95th (m)	0.6	0.0	2.5	0.0	13.0	3.2						
Control Delay (s)	0.8	0.0	3.0	0.0	37.2	24.8						
Lane LOS	A		A		E	C						
Approach Delay (s)	0.4		1.5		37.2	24.8						
Approach LOS					E	C						
Intersection Summary												
Average Delay			1.9									
Intersection Capacity Utilization			68.2%		ICU Level of Service				C			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

9: Enola Avenue & Site Access

06-15-2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	34	1	1	33	42	12
Future Volume (Veh/h)	34	1	1	33	42	12
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	34	1	1	33	42	12
Pedestrians	10			10	10	
Lane Width (m)	3.0			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	103	68	64			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	103	68	64			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	100	100			
cM capacity (veh/h)	886	986	1541			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	35	34	54			
Volume Left	34	1	0			
Volume Right	1	0	12			
cSH	889	1541	1700			
Volume to Capacity	0.04	0.00	0.03			
Queue Length 95th (m)	1.0	0.0	0.0			
Control Delay (s)	9.2	0.2	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	0.2	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization			19.0%	ICU Level of Service	A	
Analysis Period (min)			15			

HCM Signalized Intersection Capacity Analysis

6: Metro Access/Shaw Drive & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑		↖	↗		↖	↗	
Traffic Volume (vph)	40	1116	25	55	1363	56	69	36	60	40	22	64
Future Volume (vph)	40	1116	25	55	1363	56	69	36	60	40	22	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.3	3.4	3.3	3.3	3.4	3.3	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00		1.00	0.98		1.00	0.94	
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00		0.94	1.00		0.99	1.00	
Fr _t	1.00	1.00	0.85	1.00	0.99		1.00	0.91		1.00	0.89	
Fl _t Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1683	3427	1448	1701	3390		1683	1691		1708	1556	
Fl _t Permitted	0.16	1.00	1.00	0.24	1.00		0.68	1.00		0.65	1.00	
Satd. Flow (perm)	292	3427	1448	426	3390		1213	1691		1161	1556	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	1116	25	55	1363	56	69	36	60	40	22	64
RTOR Reduction (vph)	0	0	5	0	2	0	0	53	0	0	57	0
Lane Group Flow (vph)	40	1116	20	55	1417	0	69	43	0	40	29	0
Confl. Peds. (#/hr)	24		11	11		24	43		11	11		43
Heavy Vehicles (%)	3%	3%	0%	2%	2%	0%	0%	3%	0%	3%	5%	3%
Bus Blockages (#/hr)	0	0	6	0	6	6	0	0	0	0	0	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Actuated Green, G (s)	95.2	95.2	95.2	95.2	95.2		12.8	12.8		12.8	12.8	
Effective Green, g (s)	96.2	96.2	96.2	96.2	96.2		13.8	13.8		13.8	13.8	
Actuated g/C Ratio	0.80	0.80	0.80	0.80	0.80		0.12	0.12		0.12	0.12	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	234	2747	1160	341	2717		139	194		133	178	
v/s Ratio Prot		0.33			c0.42			0.03			0.02	
v/s Ratio Perm	0.14		0.01	0.13			c0.06			0.03		
v/c Ratio	0.17	0.41	0.02	0.16	0.52		0.50	0.22		0.30	0.16	
Uniform Delay, d1	2.7	3.5	2.4	2.7	4.1		49.8	48.2		48.7	47.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.6	0.4	0.0	1.0	0.7		2.8	0.6		1.3	0.4	
Delay (s)	4.3	3.9	2.4	3.7	4.8		52.6	48.8		50.0	48.3	
Level of Service	A	A	A	A	A		D	D		D	D	
Approach Delay (s)		3.9			4.7			50.4			48.9	
Approach LOS		A			A			D			D	

Intersection Summary

HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis

3: Enola Avenue & Lakeshore Road E

06-15-2020



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Volume (veh/h)	14	1308	55	73	1454	24	27	3	54	8	1	4
Future Volume (Veh/h)	14	1308	55	73	1454	24	27	3	54	8	1	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour 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
Hourly flow rate (vph)	14	1308	55	73	1454	24	27	3	54	8	1	4
Pedestrians		1						14			46	
Lane Width (m)		3.4						3.5			3.6	
Walking Speed (m/s)		1.2						1.2			1.2	
Percent Blockage		0						1			4	
Right turn flare (veh)												
Median type		TWLTL			TWLTL							
Median storage (veh)		2			2							
Upstream signal (m)		100										
pX, platoon unblocked				0.90			0.90	0.90	0.90	0.90	0.90	
vC, conflicting volume	1524			1377			2256	3048	696	2396	3063	786
vC1, stage 1 conf vol							1378	1378		1658	1658	
vC2, stage 2 conf vol							878	1670		738	1405	
vCu, unblocked vol	1524			1202			2176	3053	447	2330	3070	786
tC, single (s)	4.2			4.1			7.7	7.2	6.9	8.0	6.5	7.4
tC, 2 stage (s)							6.7	6.2		7.0	5.5	
tF (s)	2.3			2.2			3.6	4.3	3.3	3.8	4.0	3.5
p0 queue free %	96			86			79	96	89	87	99	99
cM capacity (veh/h)	394			524			126	68	499	63	91	278
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1						
Volume Total	668	709	800	751	84	13						
Volume Left	14	0	73	0	27	8						
Volume Right	0	55	0	24	54	4						
cSH	394	1700	524	1700	229	85						
Volume to Capacity	0.04	0.42	0.14	0.44	0.37	0.15						
Queue Length 95th (m)	0.9	0.0	3.8	0.0	12.8	4.1						
Control Delay (s)	1.1	0.0	4.1	0.0	29.6	54.7						
Lane LOS	A		A		D	F						
Approach Delay (s)	0.5		2.1		29.6	54.7						
Approach LOS					D	F						
Intersection Summary												
Average Delay			2.4									
Intersection Capacity Utilization			96.6%		ICU Level of Service				F			
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis

10: Enola Avenue & Site Access

06-15-2020



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	19	1	1	65	87	42
Future Volume (Veh/h)	19	1	1	65	87	42
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	19	1	1	65	87	42
Pedestrians	10			10	10	
Lane Width (m)	3.0			3.5	3.5	
Walking Speed (m/s)	1.2			1.2	1.2	
Percent Blockage	1			1	1	
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	195	128	139			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	195	128	139			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	786	914	1447			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	20	66	129			
Volume Left	19	1	0			
Volume Right	1	0	42			
cSH	791	1447	1700			
Volume to Capacity	0.03	0.00	0.08			
Queue Length 95th (m)	0.6	0.0	0.0			
Control Delay (s)	9.7	0.1	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.7	0.1	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			22.0%	ICU Level of Service	A	
Analysis Period (min)			15			

Appendix G

**Background Development Approved Parking
Rates in the City of Mississauga**



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 13 th and 14 th 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 15 th 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			
<p>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:</p> <ol style="list-style-type: none"> (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 <i>Planning Act</i>, 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.

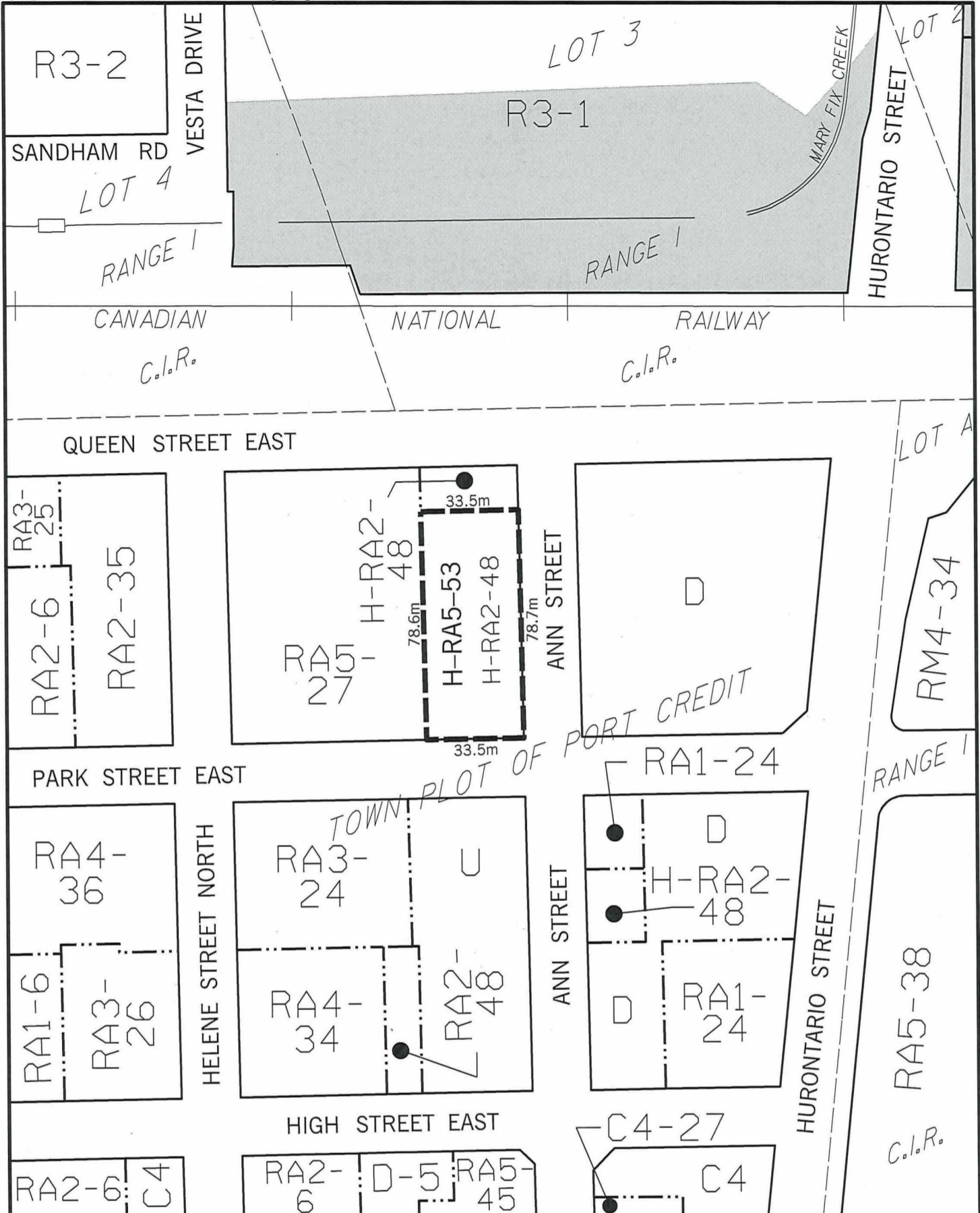
Bonnie Crombie

MAYOR

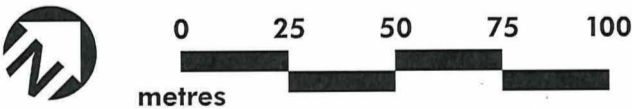
W. J. [Signature]

CLERK





 GREENLANDS OVERLAY

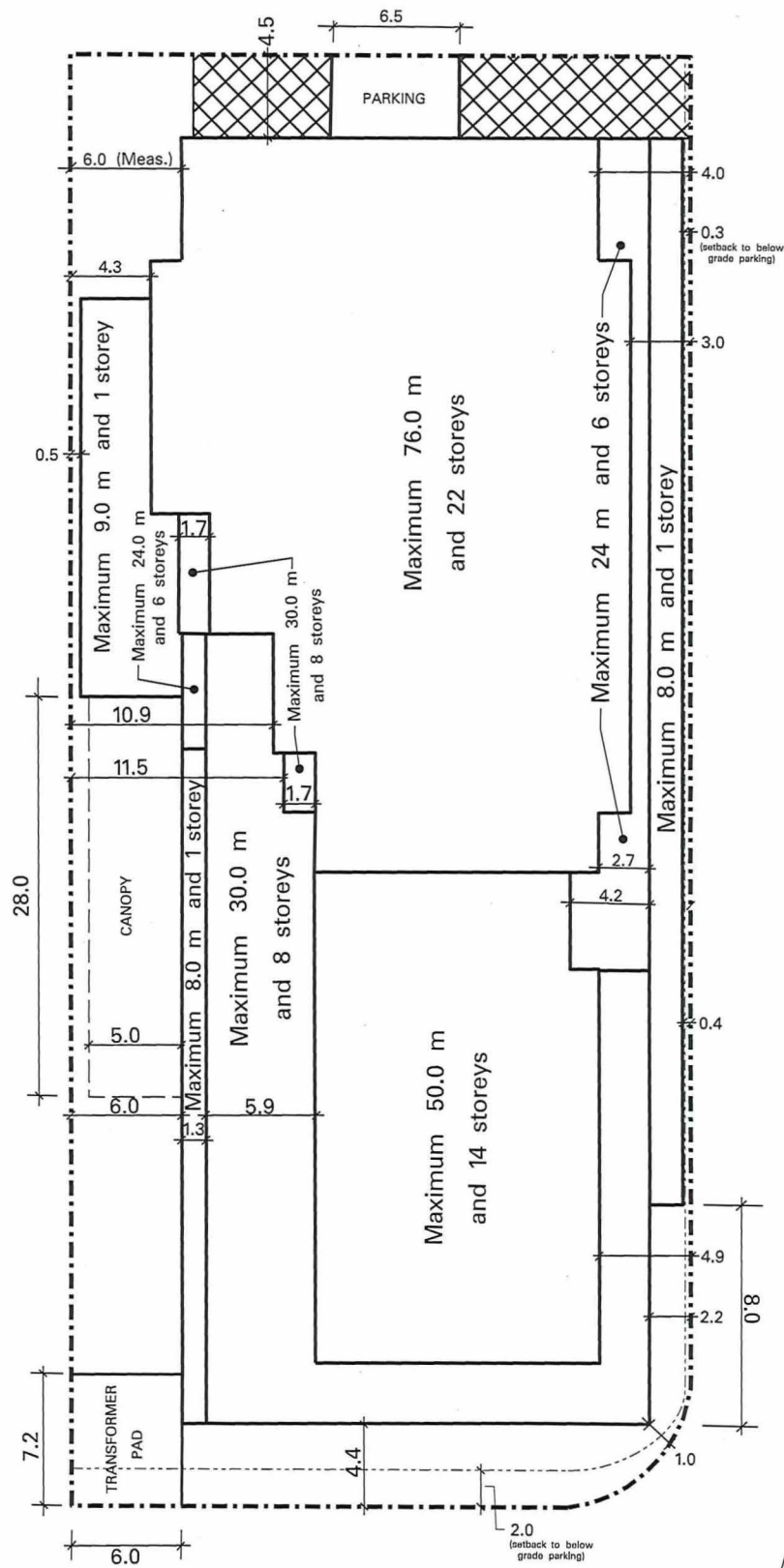


This is not a Plan of Survey. Dimensions shown taken from Survey prepared by Tarasick McMillan Kubicki Limited dated December 5, 2018 (File No. A.010 - SURVEY PLAN.DWG)

**THIS IS SCHEDULE "A" TO
BY-LAW 0054-2020**

**PASSED BY COUNCIL ON
March 25, 2020**

CITY OF MISSISSAUGA



ANN STREET

PARK STREET EAST



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

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

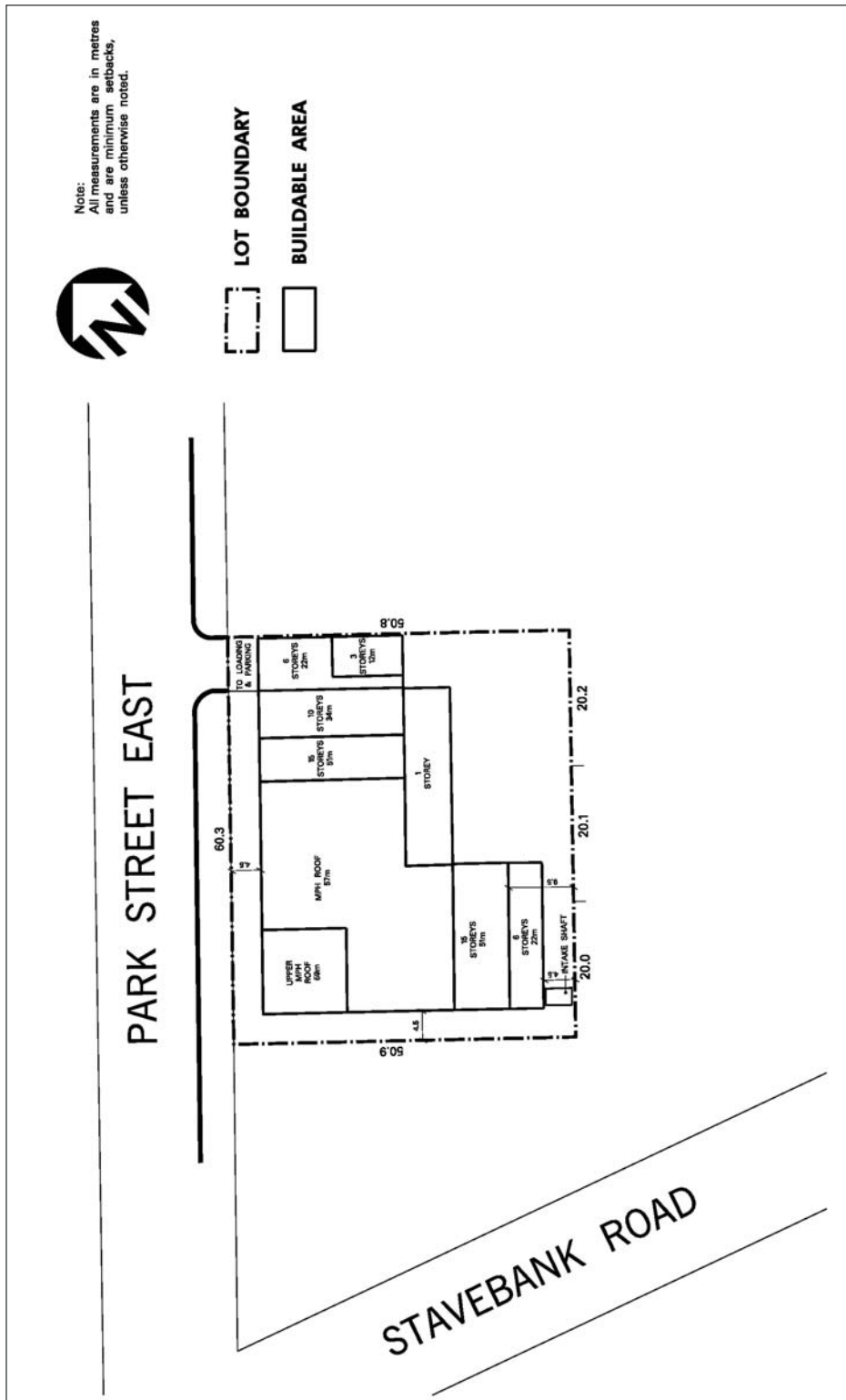
Northwest corner of Ann Street and Park Street East, in the City of Mississauga, as shown on the attached Map designated as Schedule "A".

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](http://teamsites.mississauga.ca/sites/18/bylaws/oz%2019%20008%20w1.by-law.df.fs.docx)

Part 4 - Residential Zones

4.15.5.48	Exception: RA4-48	Map # 08	By-law: 0174-2018, 0142-2019
<p>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:</p>			
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