Edenshaw Elizabeth Developments Limited

TRANSPORTATION IMPACT STUDY UPDATE

Proposed Residential Development

42-46 Park Street East &
23 Elizabeth Street North,
City of Mississauga

May 2025

20248

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May 27, 2025

Reference Number: 20248/280

Connor Ferris
Edenshaw Elizabeth Developments Limited
201-129 Lakeshore Road East
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Dear Mr. Ferris:

RE: Transportation Impact Study Update (May 2025)
Proposed Residential Development
42-46 Park Street East & 23 Elizabeth Street North, City of Mississauga

LEA Consulting Ltd. (LEA) is pleased to present the findings of our Transportation Impact Study (TIS) Update in support of the Official Plan Amendment (OPA), Zoning By-Law Amendment (ZBA), and Site Plan Approval (SPA) submissions for the proposed residential development located at 42-46 Park Street East & 23 Elizabeth Street North in the City of Mississauga (herein referred to as the "subject site").

By way of background, LEA previously completed the following submissions in support of the OPA, ZBA, and SPA applications for the proposed development:

- Transportation Impact Study dated May 2020;
- Response to City Comments dated December 2021;
- Parking Study Update dated February 2023; and,
- TIS Addendum dated February 2023.

The following TIS Update has been prepared to analyze the transportation conditions based on the latest understanding of the subject site and the surrounding context in support of the present OPA, ZBA, and SPA submissions for the proposed development. As the site plan has changed since the most recent submissions, this letter reviews the updated site plan and compares the site statistics presented in the February 2023 submissions. The TIS Update also provides an updated review of the latest applicable standards for parking rates, loading requirements, and transportation demand management plan (TDM) measures.

The TIS Update concluded that the traffic associated with the proposed development will have an acceptable level of traffic impact on the surrounding road network. The report also found that the proposed development will meet all applicable parking and loading standards and vehicle traffic will be able to circulate the site in an acceptable manner.

Please do not hesitate to contact the undersigned should you have any additional questions or concerns.

Yours truly,

LEA CONSULTING LTD.

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Encl. Transportation Impact Study Update (May 2025), 42-46 Park Street East & 23 Elizabeth Street North, City of Mississauga, May 2025

DISCLAIMER

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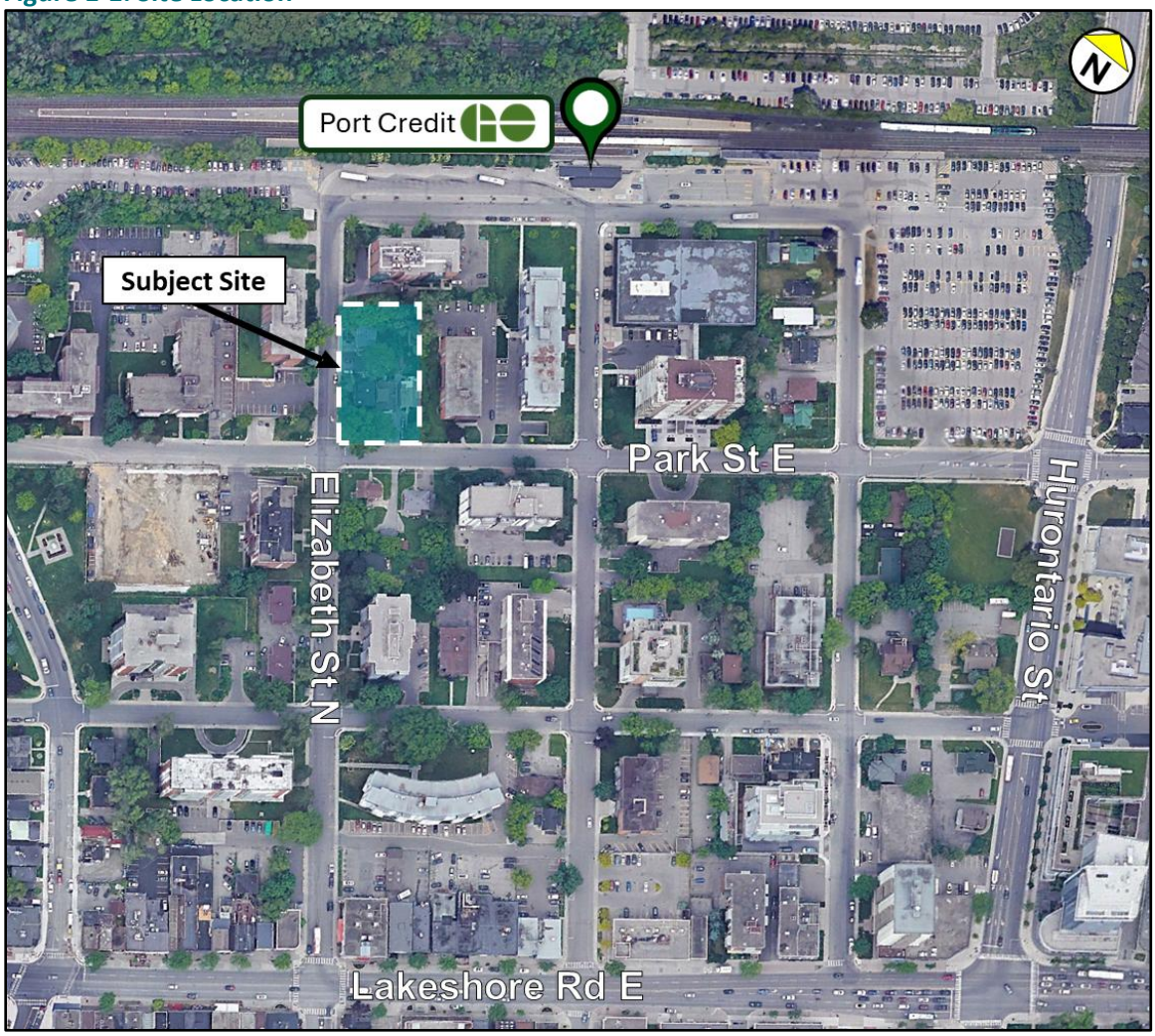
1 INTRODUCTION

LEA Consulting Ltd. (LEA) has been retained by Edenshaw Elizabeth Developments Limited to undertake a Transportation Impact Study (TIS) Update for the proposed residential development located at 42-46 Park Street East and 23 Elizabeth Street North (herein referred to as the "subject site") in the City of Mississauga. This TIS Update has been prepared in support of the Official Plan Amendment (OPA), Zoning By-law Amendment (ZBA), and Site Plan Approval (SPA) applications for the subject site.

The subject site is located on the northeast corner of Park Street East and Elizabeth Street North intersection and is currently occupied by four different single-family dwellings. **Figure 1-1** illustrates the site location.

Figure 1-1: Site Location



Source: Google Maps (Accessed May 2025)

The site is within the Port Credit Local Plan area, which encompasses the lands generally located south of the Canadian National Railways line, adjacent to Credit River, and along Lake Ontario. The subject site is also located within the Port Credit GO Protected Major Transit Station Area (PMTSA) given its location adjacent to the station.

1.1 STUDY BACKGROUND

By way of background, LEA previously completed the following submissions in support of prior Official Plan Amendment (OPA), Zoning By-law Amendment (ZBA), and Site Plan Approval (SPA) applications for the proposed development:

- Transportation Impact Study (TIS) dated May 2020;
- Response to City Comments dated December 2021;
- Parking Study Update dated February 2023; and,
- TIS Addendum dated February 2023.

As well, LEA provided evidence and attended a hearing for OLT Case No. OLT-21-002260, which occurred in July 2023. As per the OLT decision for Case No. OLT-21-002260, issued October 5, 2023, appeals for the development proposal for the subject site at the time were dismissed.

1.2 STUDY SCOPE

The purpose of this TIS Update is to analyze the transportation conditions based on the latest understanding of the subject site and the surrounding context in support of the present OPA, ZBA, and SPA submissions for the proposed development. This TIS Update will also review the latest development plans and statistics to demonstrate conformity to relevant applicable standards for parking rates, loading requirements, and Transportation Demand Management plan (TDM) measures.

The Terms of Reference provided for the previous TIS dated May 2020 were referenced for this study. The assumption of corridor growth rates, future transit improvements and future road network improvements remain unchanged. The background developments included have been updated accordingly and are detailed in **Section 3.4**. The Terms of Reference correspondence is enclosed in **Appendix A**.

1.3 DEVELOPMENT PROPOSAL

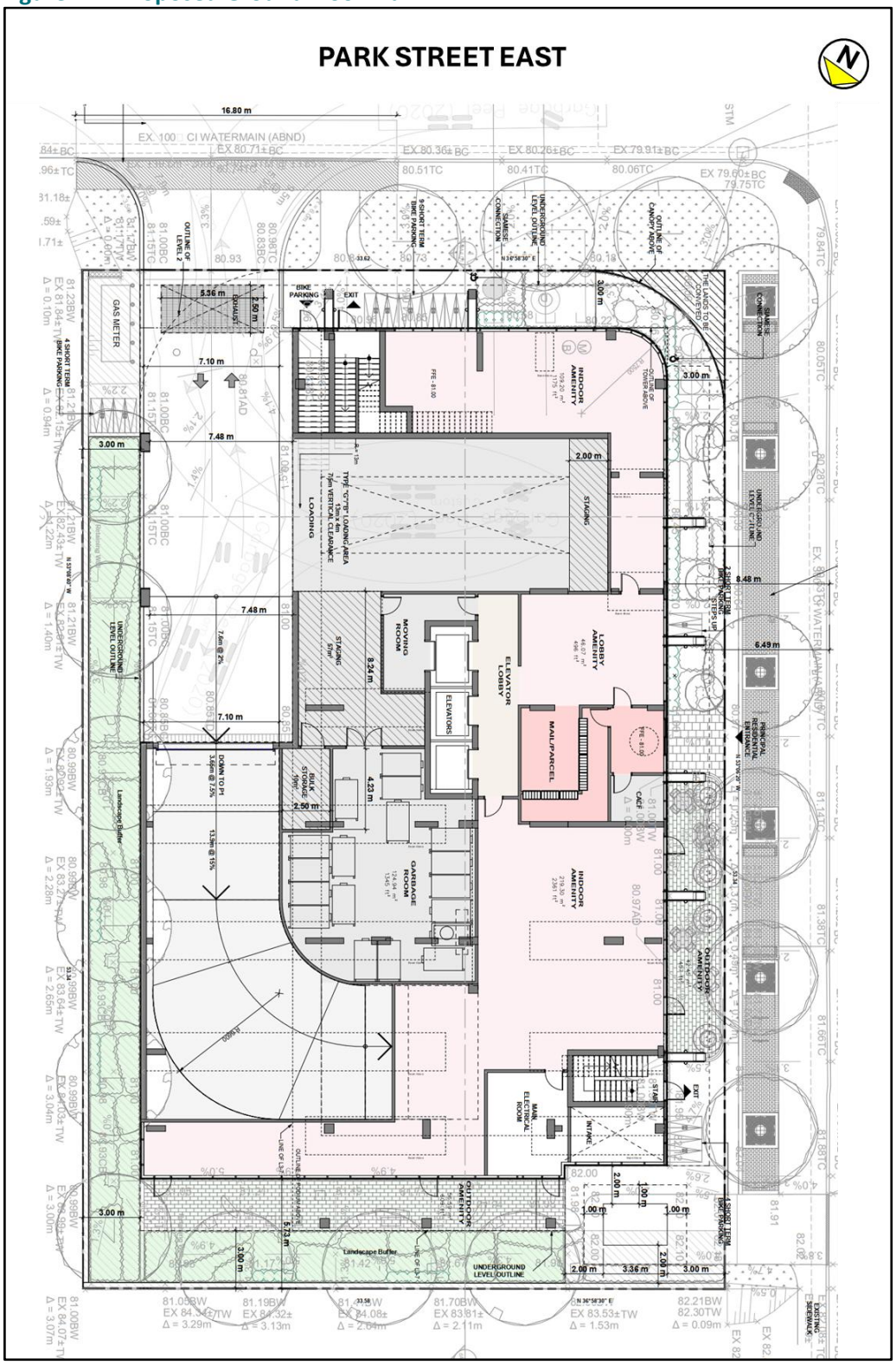
The proposed development consists of a single 30-storey residential building with 378 residential units. The site statistics from the most recent submission in February 2023 and the current proposal are presented below in **Table 1-1**.

Table 1-1: Proposed Site Statistics Comparison

Residential Unit Type	Previous Submission (February 2023)	Current Submission (May 2025)	Change
Studio	4 Units	6 Units	+2 Units
1 Bedroom	157 Units	253 Units	+96 Units
2 Bedroom	113 Units	119 Units	+6 Units
Total	274 Units	378 Units	+104 Units

Based on the revised site plan, as illustrated in **Figure 1-2**, one (1) unsignalized site access along Park Street East is proposed for the subject development. The proposed parking supply consists of 101 residential and 22 visitor parking spaces, which will be accommodated within four levels of underground parking. Additionally, the proposed bicycle parking supply shall consist of 250 long-term and 19 short-term residential bicycle parking spaces, which will be accommodated within the underground P1 level.

Figure 1-2: Proposed Ground Floor Plan



Source: Kirkor Architects, May 2025

2 EXISTING TRAFFIC CONDITIONS

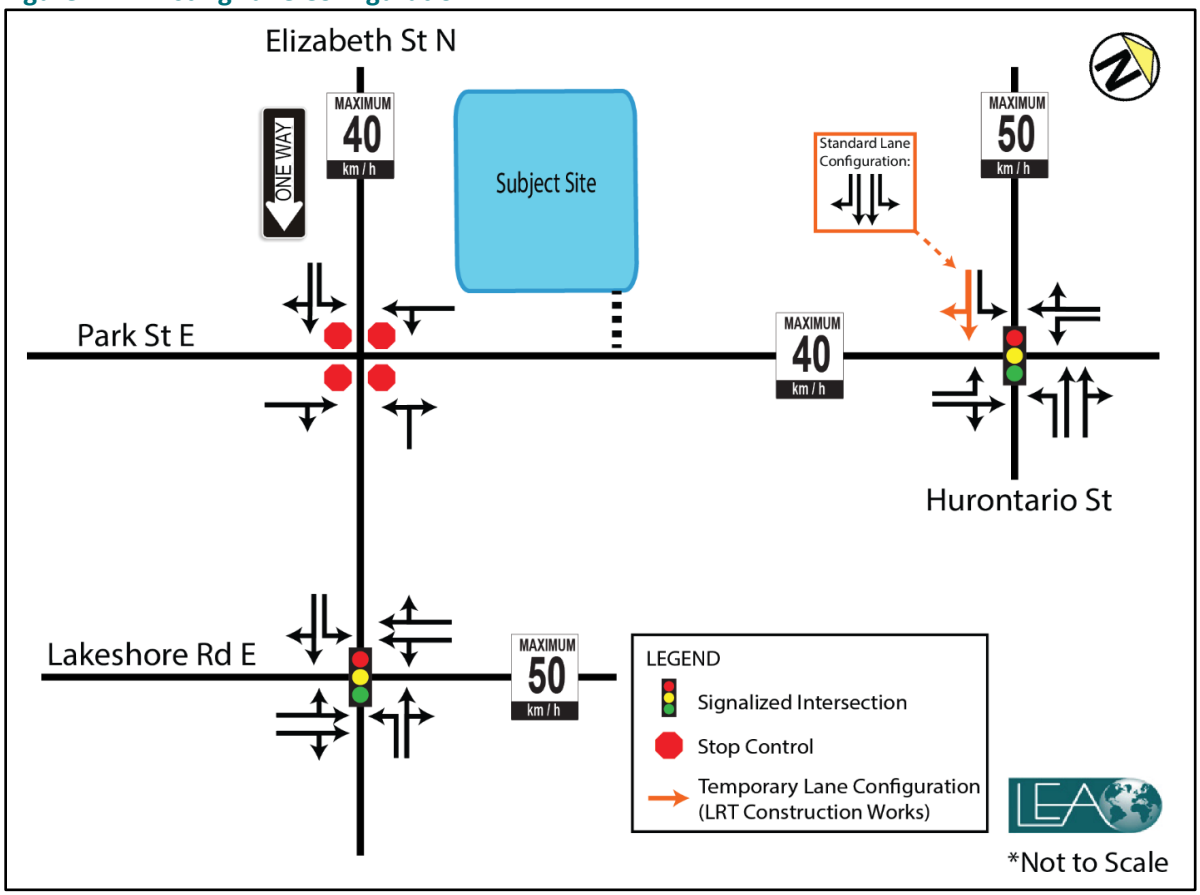
This section identifies and assesses the existing transportation conditions within the study area, including the road, transit, cyclist, and pedestrian networks. As noted in **Section 1.2**, the study area was determined based on correspondence with the City of Mississauga and Region of Peel for prior studies undertaken. The relevant Terms of Reference correspondence is enclosed in **Appendix A.** The study area includes the following intersections:

- Hurontario Street & Park Street East (Signalized);
- Lakeshore Road East & Elizabeth Street North (Signalized); and,
- Elizabeth Street North & Park Street East (Unsignalized).

2.1 ROAD NETWORK

Figure 2-1 illustrates the intersections and lane configurations contained within the study area. It is noted that at the time the updated Turning Movement Count (TMC) surveys were conducted, the southbound lane configuration at the Hurontario Street & Park Street East intersection was modified; both the original and temporary lane configurations are presented in the figure.

Figure 2-1: Existing Lane Configuration



The detailed description of the existing roadways is provided below. Please note that all roads are under the jurisdiction of City of Mississauga.

Hurontario Street is a north-south arterial road that operates with a four-lane cross-section (two lanes per direction) in the vicinity of the subject site. The roadway operates with a posted speed limit of 50 km/h in the study area. There are continuous sidewalks along both sites of the street as well as pedestrian crosswalks at all major intersections within the study area.

Lakeshore Road East is an east-west arterial road that operates mainly with a four-lane cross-section (two lanes per direction) in the vicinity of the subject site. The roadway operates with a posted speed limit of 50 km/h in the study area. There are continuous sidewalks along both sides of the street as well as pedestrian crosswalks at all major intersections within the study area.

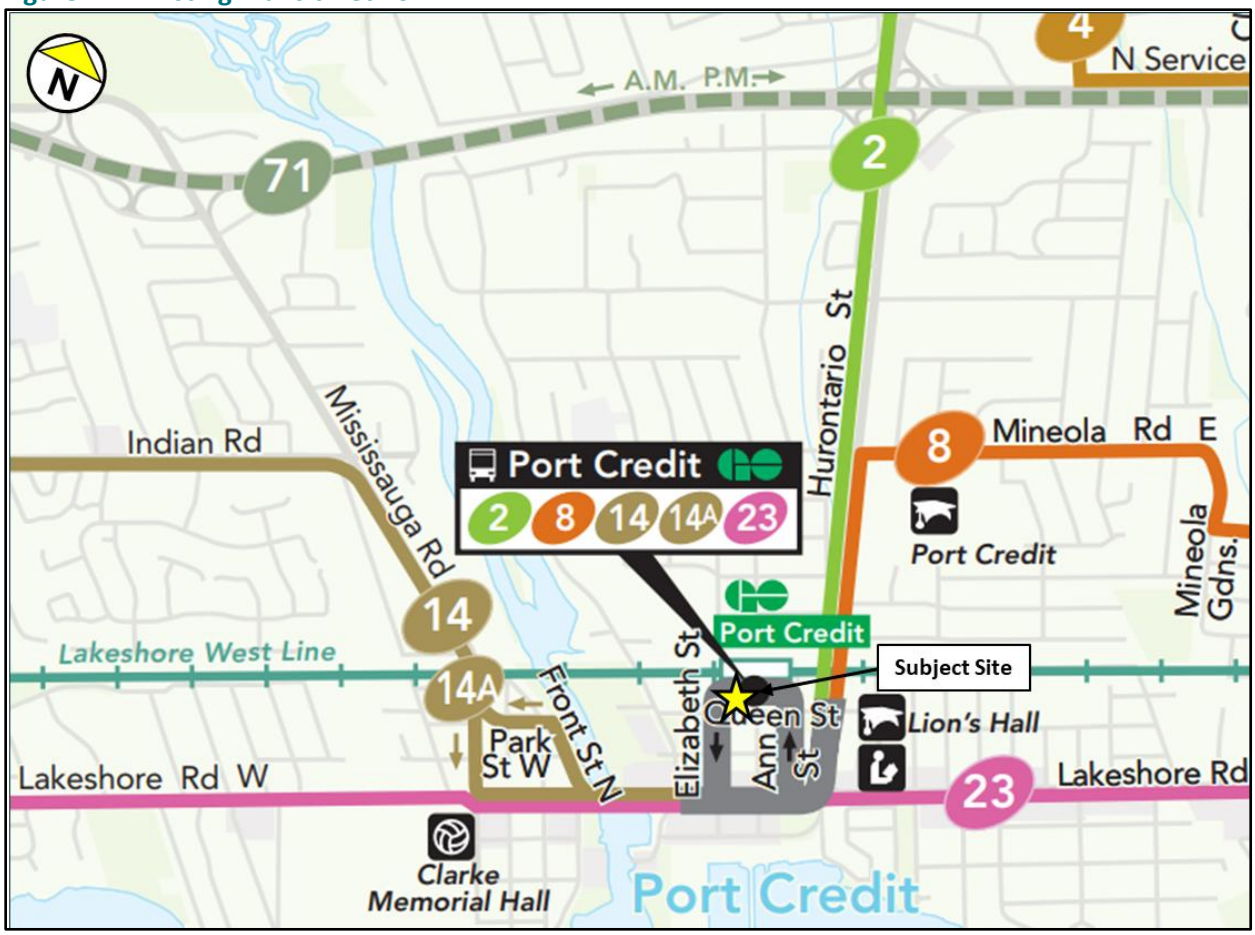
Elizabeth Street North is a north-south collector road that operates with two-lane cross section. It operates as one-way street (two southbound lanes) between Queen Street East and Park Street East, and two-way street (one lane per direction) south of Park Street East. The roadway has no posted speed limit, thus, it is assumed that the speed limit is 40 km/h in the study area. There are continuous sidewalks along both sites of the street as well as pedestrian crosswalks at all major intersections within the study area.

Park Street East is an east-west local road that operates with a two-lane cross section (one lane per direction) in the vicinity of the subject site. The roadway has no posted speed limit, thus it is assumed that the speed limit is 40 km/h in the study area. There are continuous sidewalks along both sites of the street as well as pedestrian crosswalks at all major intersections within the study area.

2.2 TRANSIT NETWORK

The proposed development is located within an area that is well served by multiple transit services including rail and bus service. The Port Credit GO Station is located about 200 m (approximate 2-minute walk) northeast of the proposed development. GO Transit and MiWay routes within the study area are described below and illustrated in **Figure 2-2**.

Figure 2-2: Existing Transit Network



Source: MiWay (Accessed May 2025)

GO Rail – Lakeshore West Line is an east-west GO rail line connecting various municipalities in the Greater Toronto Area (GTA) including Mississauga, Oakville, Burlington, Hamilton, and Niagara Falls to Union Station in Toronto. The line operates with 15-minute headways during weekday peak hours and 30-minute headways during the weekend. Service expansion works for the line are currently ongoing; when completed, the Lakeshore West line will provide 15-minute all-day two-way service throughout the week.

> *Access Location: The closest stop is located at the Port Credit GO station at the Queen Street East & Helene Street North intersection, located about 190 m (approximate 3-minute walk) from the subject site.*

MiWay Route 2 – Hurontario is a bus route that operates generally in north-south direction. It operates between Port Credit GO Station and the City Centre Transit Terminal at Square One. It operates all day, Monday to Sunday with 10-minute headways during the AM and PM peak periods.

> *Access Location: The closest stop is located at the Elizabeth Street North & Park Street East intersection, located about 60m (approximate 1-minute walk) from the subject site.*

MiWay Bus Route 8 – Cawthra is a bus route that operates generally in north-south direction between Port Credit GO Station and the City Centre Transit Terminal at Square One, traveling along Cawthra Road between Atwater Avenue and Bloor Street. It operates all day, Monday to Saturday with a 15 to 20-minute headways during the AM and PM peak periods.

> *Access Location: The closest stop is located at the Elizabeth Street North & Park Street East intersection, located about 60m (approximate 1-minute walk) from the subject site.*

MiWay Bus Route 14 – Lorne Park is a bus route that offers two services during the week (Route 14 and 14A), Route 14 operates during off peak periods Monday to Friday, while Route 14A only operates during peak periods on weekdays. It operates generally in east-west direction between Port Credit GO Station and Clarkson GO Station, with Route 14A extending south on Southdown Road to loop around Lakeshore Road West and Royal Windsor Drive back to Clarkson GO Station. It operates with approximately 35 to 40-minute headways during the AM and PM peak periods.

> *Access Location: The closest stop is located at the Elizabeth Street North & Park Street East intersection, located about 60m (approximate 1-minute walk) from the subject site.*

MiWay Bus Route 23 – Lakeshore is a bus route that operates generally in east-west direction between Clarkson GO Station, Port Credit GO Station and Long Branch GO Station. It operates all day, Monday to Sunday with 10 to 15-minute headways during the AM and PM peak periods.

> *Access Location: The closest stop is located at the Elizabeth Street North & Park Street East intersection, located about 60m (approximate 1-minute walk) from the subject site.*

In addition, the Hurontario Light Rail Transit (HLRT) project is expected to be completed by 2024. The Hurontario LRT will run along Hurontario Street between Port Credit GO Station and Brampton Gateway Terminal on Steeles Avenue. When it is completed, the Port Credit GO Station will serve as a transportation mobility hub of the area in the future.

2.3 PEDESTRIAN NETWORK

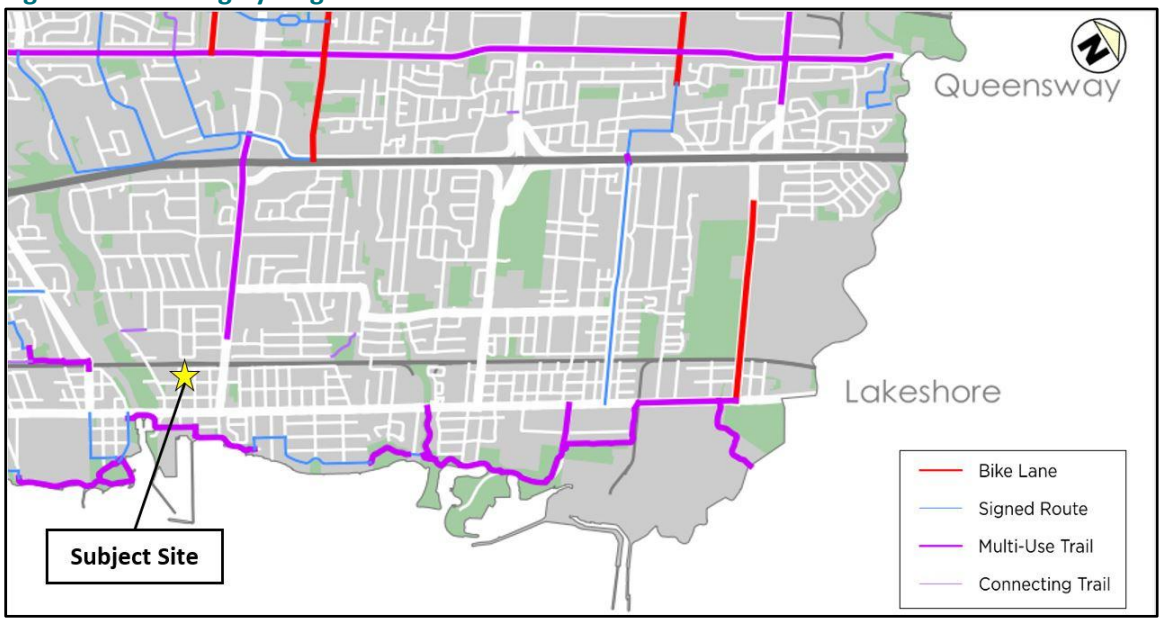
In the area immediately surrounding the subject site, continuous sidewalks are available along both sides of Hurontario Street, Lakeshore Road East, Elizabeth Street North and Park Street East. There are crosswalks available at all signalized intersections. The existing pedestrian network provides good connections between the residential, commercial and other amenities in the area as well as the nearby bus stops, and Port Credit GO Station.

To verify the land uses that support the area's walkability, the subject site was entered in the WalkScore™ application. The address of the subject site, 23 Elizabeth Street North, receives a Walk Score of 92/100, which indicates the area is a "Walker's Paradise" and that most errands can be accomplished on foot.

2.4 CYCLING NETWORK

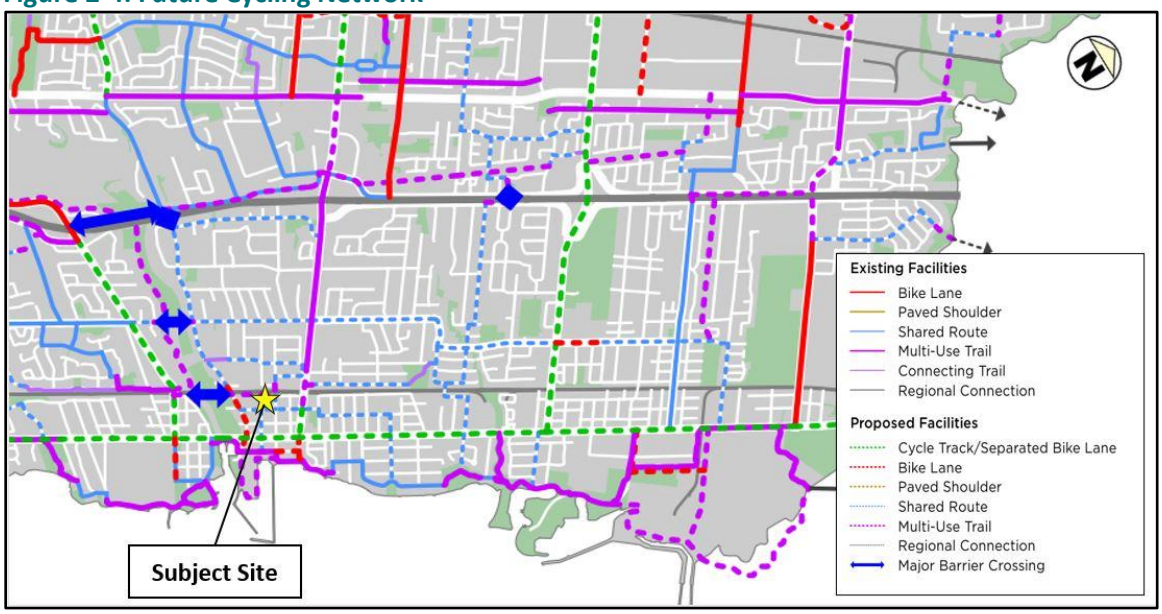
The existing cycling network in the vicinity of the subject site is the illustrated in **Figure 2-3**. Cycling infrastructure in the form of multi-use trails are available near the site along Hurontario Street and Port Street East; however, the network-wide connectivity is limited. The Mississauga Cycling Master Plan 2018 proposes an integrated cycling network as shown in **Figure 2-4**. The master plan does not specify an implementation timeline but contemplates overall completion within twenty years. When implemented, the site will have safer and better-connected bike access to surrounding neighbourhoods.

Figure 2-3: Existing Cycling Network



Source: City of Mississauga Cycling Master Plan 2018

Figure 2-4: Future Cycling Network



Source: City of Mississauga Cycling Master Plan 2018

2.5 TRAFFIC DATA COLLECTION

Traffic data was obtained through Turning Movement Count (TMC) surveys conducted by LEA. A summary of the TMC data collected is provided in **Table 2-1**. Detailed TMC counts collected by LEA and signal timing plans obtained from the City are available in **Appendix B**.

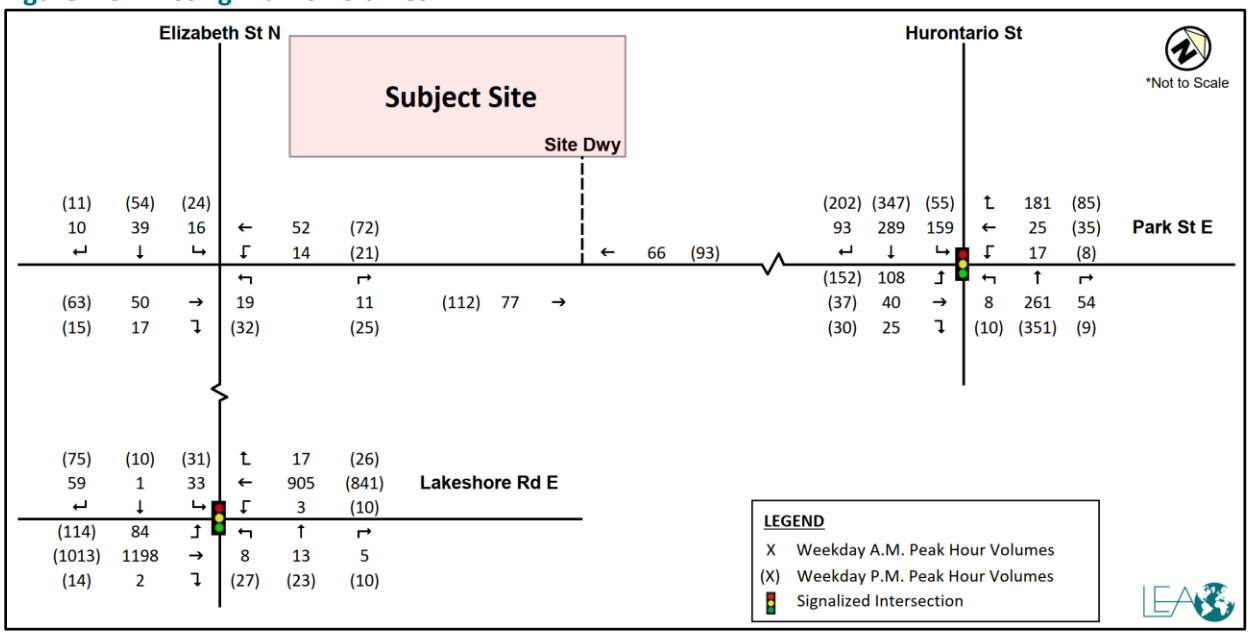
Table 2-1: Data Collection Summary

Location	Date	Source
Hurontario St N & Park St E	Tuesday February 4, 2025	LEA Consulting
Elizabeth St N & Park St E		
Elizabeth St N & Lakeshore Rd E		

2.6 EXISTING TRAFFIC VOLUMES

The existing traffic volumes for the weekday AM and PM peak hours are illustrated in **Figure 2-5.**

Figure 2-5: Existing Traffic Volumes



3 FUTURE BACKGROUND CONDITIONS

For the analysis of future background traffic conditions, this study considers a five-year horizon to the horizon year 2030. Other background assumptions were also confirmed with the City, as per the Terms of Reference included in **Appendix A**.

3.1 CORRIDOR GROWTH

Corridor growth rates applicable to Hurontario Street and Lakeshore Road East were maintained from previous submissions and are summarized in **Table 3-1**.

Table 3-1: Corridor Growth Rates

Corridors	Directions	Annual Growth Rate	
		AM Peak Hour	PM Peak Hour
Hurontario Street	Northbound	0.00%	0.50%
	Southbound	1.50%	1.00%
Lakeshore Road East	Eastbound	0.25%	1.25%
	Westbound	1.75%	0.50%

3.2 FUTURE TRANSIT IMPROVEMENTS

The following sections will provide a summary of planned and proposed transit improvements within the broader surrounding area that are expected to improve transit accessibility for the subject development.

3.2.1 Lakeshore West Line GO Expansion

As noted in **Section 2.2**, construction works for the Lakeshore West GO Line are currently ongoing as part of Metrolinx's GO Expansion project. As part of the improvement works, the corridor between Union Station and Burlington Station, including Port Credit station, will be electrified with the objective of offering two-way, all-day service with headways of 15 minutes or better.

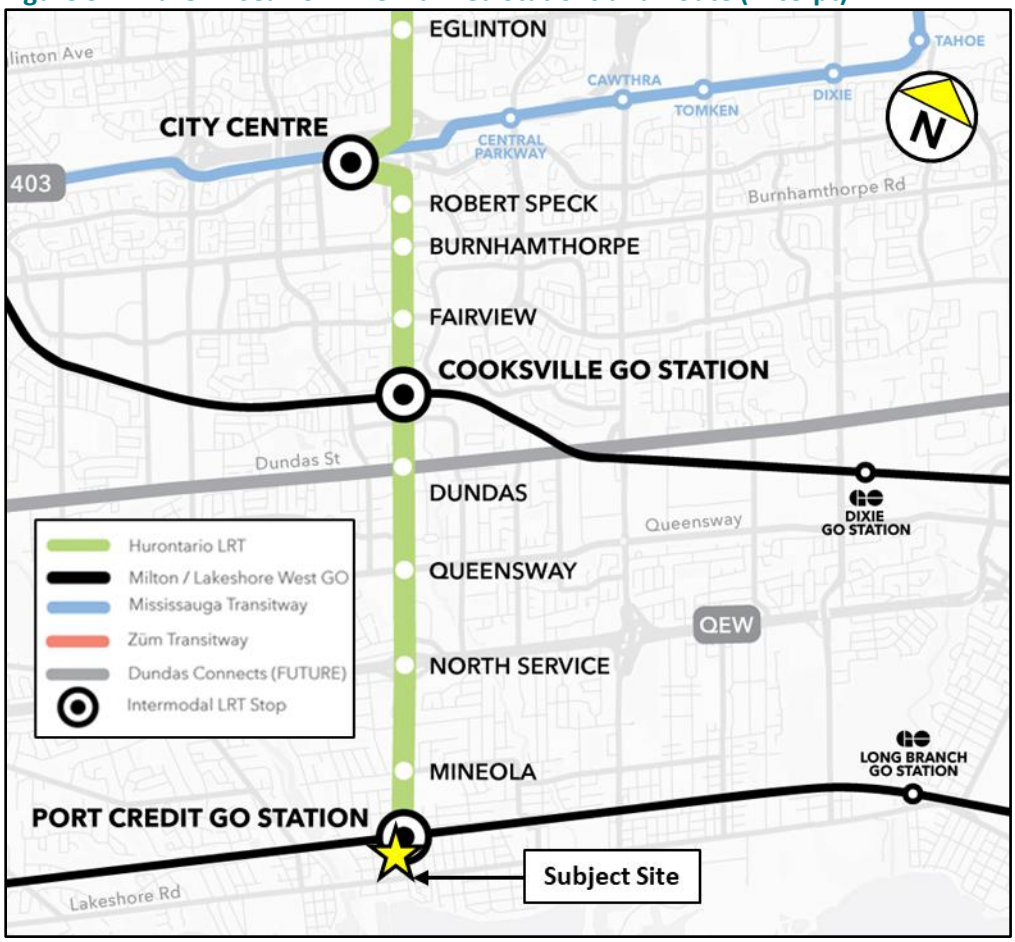
While the completion date is currently unavailable, it is anticipated that the project could be completed within the 5-year future horizon. The increased service hours and frequency on the Lakeshore West Line will greatly improve the viability of the GO Line as a regular travel mode that can accommodate travel throughout the day for prospective residents, as opposed to serving as a commuter-oriented service only.

3.2.2 Hazel McCallion Line (Hurontario LRT)

The Hazel McCallion Line is a new Light Rail Transit (LRT) line that is currently under construction. Starting from Port Credit GO Station and terminating at the Brampton Gateway Terminal, the line will travel in a north-south direction along Hurontario Street and connect to major destinations in Mississauga and Brampton including Cooksville GO Station and Mississauga City Centre.

While the completion date is currently unavailable, it is expected that the project will be completed within the 5-year future horizon; it is noted the initial TIS submission dated May 2020 anticipated a projected completion year of 2024. This will improve transit connections to and from the subject site and will allow users to reach more local and regional destinations using public transit, therefore increasing the viability of public transit as a primary mode of travel. The location of the planned LRT line in relation to the subject site is shown in **Figure 3-1**.

Figure 3-1: Hazel McCallion Line Planned Stations and Route (Excerpt)



Source: Metrolinx, February 2025

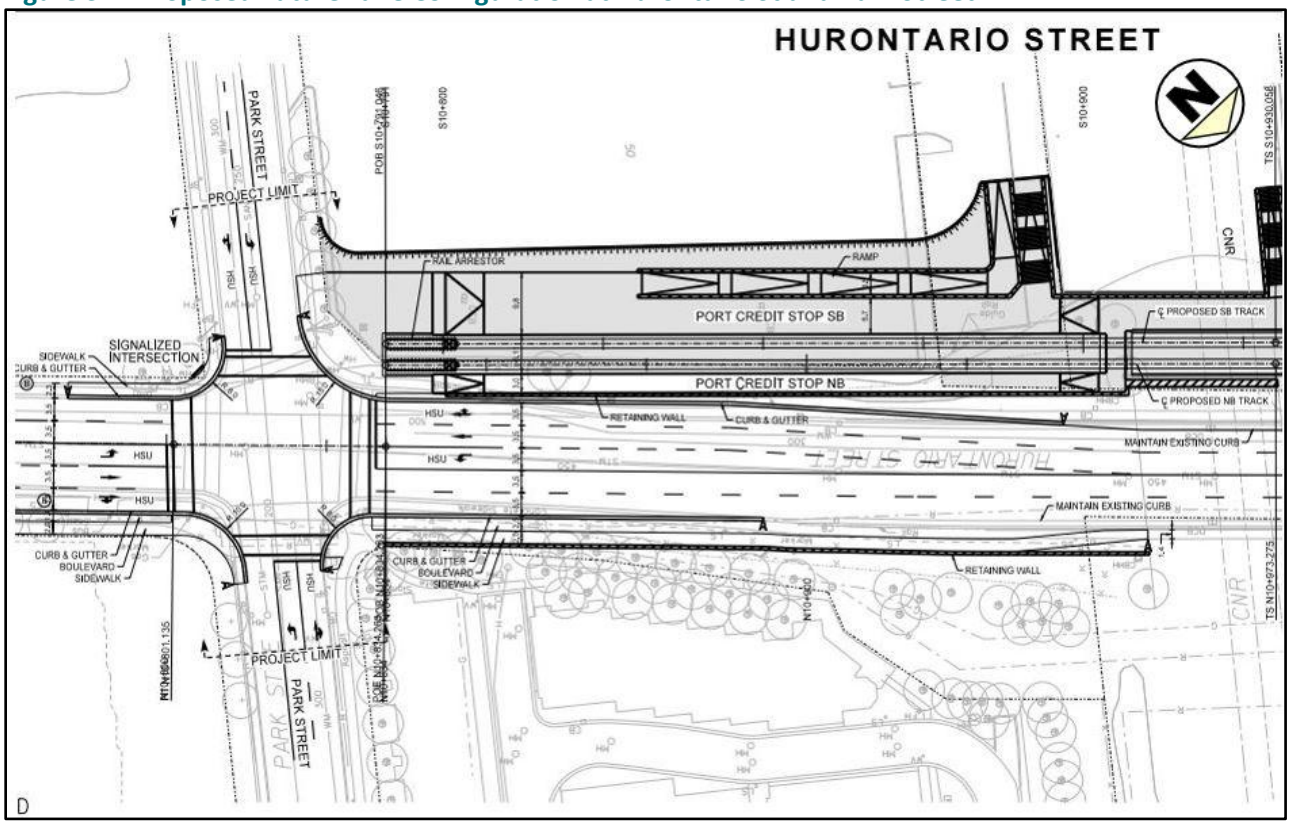
3.3 FUTURE ROAD NETWORK IMPROVEMENTS

As part of the Hazel McCallion Line construction works, lane configuration changes will be made to the southbound approach at the Hurontario Street & Park Street East intersection. The changes include the following:

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

It is assumed that the lane configuration changes will be made within the 5-year future horizon and were included in the analysis. The intersection layout is illustrated in **Figure 3-2**.

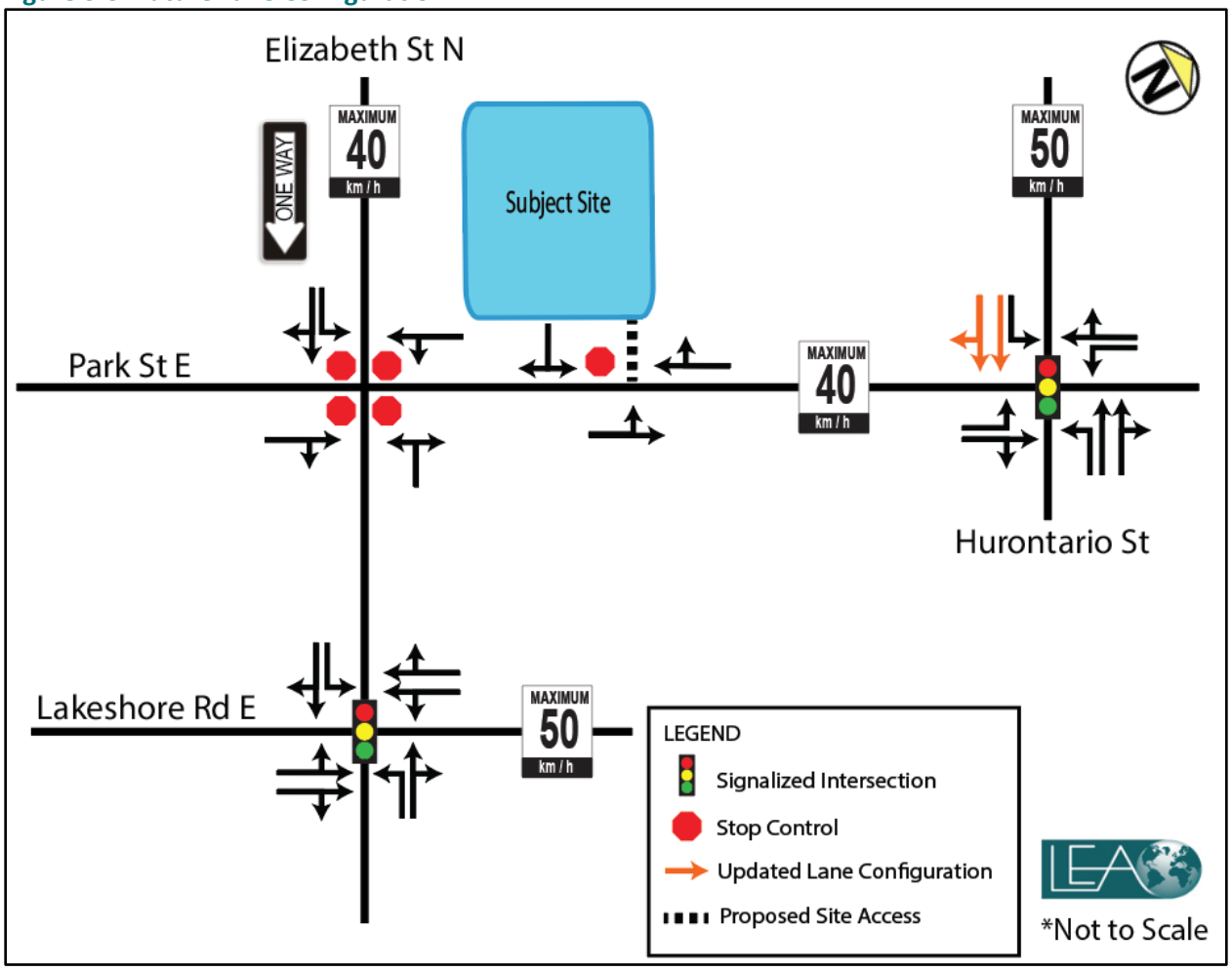
Figure 3-2: Proposed Future Lane Configuration at Hurontario St and Park Street E



Source: Hurontario/Main Street LRT Preliminary Engineering & TRAP – Preferred Alignment (June 2014)

Based on the above-noted improvements to the study area road network, the lane configuration for future background and future total conditions are shown in **Figure 3-3**.

Figure 3-3: Future Lane Configuration



3.4 BACKGROUND DEVELOPMENTS

The initial TIS submission dated May 2020 identified four (4) background developments within the study area. To account for changes since the May 2020 TIS, the list of future background developments has been updated. Three (3) active background developments were identified within the study area and are summarized in **Table 3-2**. Excerpts from the relevant traffic studies are provided in **Appendix C.**

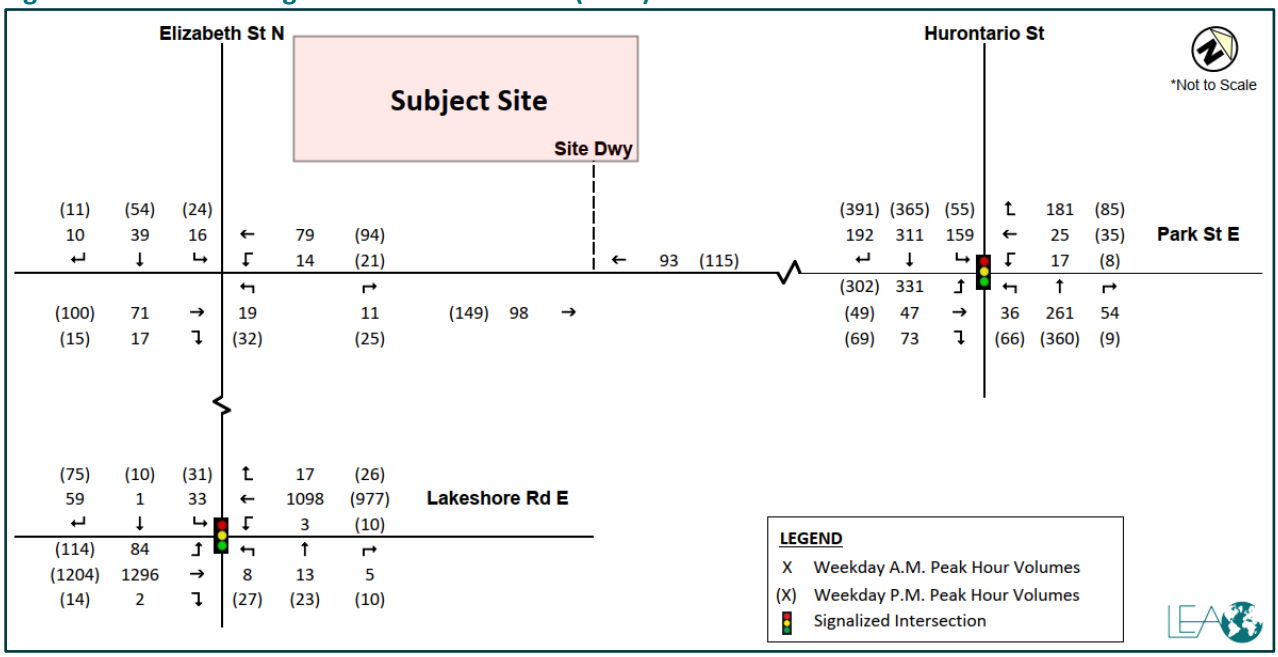
Table 3-2: Summary of Background Developments

#	Address of Development	Description	Source
1	17, 19 Ann St, 84, 90 High St E & 91 Park St E	410 Residential Units	BA Group (July 26, 2033) Figure 4
2	23, 25, 29, 31 Helene St N, 53 Queen St E & 70 Park St E	530 residential units 30 Children Day Care	BA Group (January 2023) Figure 10
3	88 Park St E	1,328 residential units Retail 18,083.37 ft^2 Office 21,710.81 ft^2 Day Care 9,762.87 ft^2	GHD (June 8, 2023) Figure 4

3.5 FUTURE BACKGROUND TRAFFIC VOLUMES

Future background traffic volumes were determined by adding the background development traffic, corridor growth rates, and existing traffic volumes. The future background traffic volumes are illustrated in **Figure 3-4.**

Figure 3-4: Future Background Traffic Volumes (2030)



4 SITE GENERATED TRAFFIC

The proposed development will consist of a 30-storey building with 378 residential units. Vehicle access to the subject site is to be provided via an all-movements access along Park Street. The following sections discuss in detail the calculation, distribution, and assignment of the site-generated auto vehicle trips on the study area road network.

4.1 MODAL SPLIT ASSUMPTIONS

The residential modal split of trips generated by the proposed development was determined using modal split data retrieved from the 2022 Transportation Tomorrow Survey (TTS) data for home-based trips originating from 2006 Traffic Zones surrounding the subject site. Although it is anticipated that the transit modal split will increase with the completion of the Lakeshore West Line GO Expansion and the Hazel McCallion Line as described in **Section 3.2**, the mode split was maintained for a conservative assumption of site-generated vehicle trips.

The subject site's modal split data is summarized in **Table 4-1**. Detailed TTS data is available in **Appendix D**.

Table 4-1: Modal Split

Travel Mode	Residential Trips	
	With Parking	Without Parking
Auto Driver	59%	0%
Auto Passenger	10%	7%
Taxi / Rideshare	0%	4%
Transit	13%	50%
Walk	17%	39%
Cycle	1%	0%
Total	100%	100%

4.2 AUTO TRIP GENERATION

Site-generated auto vehicle trips were calculated using trip generation rates based on the *ITE Trip Generation Manual, 11th Edition*. Residential auto trips were determined using baseline auto trip rates from Land Use Code (LUC) 222 – Multifamily Housing (High-Rise). The baseline auto trips were converted into person trips by adjusting for auto split and average vehicle occupancy, then multiplied by the auto driver mode split as shown in **Table 4-1**.The updated trip generation table is shown in **Table 4-2**.

Table 4-2: Proposed Site Auto Trip Generation

Land Use	Description	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Residential (With Parking) ITE LUC 222 – Multifamily Housing High-rise 101 Units	Person Trip Rate (/Unit)	0.08	0.30	0.38	0.24	0.17	0.41
	Total External Person Trips	8	30	38	24	17	41
	External Auto Driver Trips (A)	5	18	23	14	10	24
	Total External Person PUDO Trips	0	0	0	0	0	0
	External Vehicle PUDO Trips (B)	0	0	0	0	0	0
	1 Proposed External Auto Trips (A+B)	**5**	**18**	**23**	**14**	**10**	**24**
Residential (No Parking) ITE LUC 222 – Multifamily Housing High-rise 277 Units	Auto Trip Rate (/Unit)	0.08	0.30	0.38	0.24	0.17	0.41
	Total External Person Trips	22	83	105	66	58	114
	External Auto Driver Trips (C)	0	0	0	0	0	0
	Total External Person PUDO Trips	2	9	11	7	6	13
	External Vehicle PUDO Trips (D)	11	11	22	13	13	26
	2 Proposed External Auto Trips (C+D)	**11**	**11**	**22**	**13**	**13**	**26**
	Total Site Trips (1+2)	***16***	***29***	***45***	***27***	***23***	***50***

The proposed development is expected to generate 45 new auto vehicle trips (16 inbound, 19 outbound) during the weekday AM peak hour and 50 new auto vehicle trips (27 inbound, 23 outbound) during the weekday PM peak hour.

4.3 MULTI-MODAL TRIP GENERATION

Multi-modal trip generation for the proposed development was calculated by applying the TTS mode split for the subject development to the adjusted person trips calculated in **Table 4-2**. Multi-modal trip generation is summarized in **Table 4-3**.

Table 4-3: Proposed Site Multi-Modal Trip Generation

Land Use	Description	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
All	**External Person Trips**	**30**	**113**	**143**	**90**	**75**	**165**
	Auto Driver Trips	5	18	23	14	10	24
	Auto Passenger Trips	2	9	11	6	6	13
	Taxi / Rideshare Trips	1	3	4	3	2	5
	Transit Trips	12	46	58	37	31	68
	Pedestrian Trips	10	37	47	30	26	55
	Cycling Trips	0	0	0	0	0	0

The proposed development is projected to generate 143 person trips (30 inbound, 113 outbound) in the weekday AM peak hour and 165 person trips (90 inbound, 75 outbound) in the weekday PM peak hour. Of note, the proposed development is expected to generate the following transit, pedestrian, and cycling trips:

- **Transit Trips:** 58 AM peak hour trips (12 inbound, 46 outbound) and 68 PM peak hour trips (37 inbound, 31 outbound)
- **Pedestrian Trips:** 47 AM peak hour trips (10 inbound, 37 outbound) and 55 PM peak hour trips (30 inbound, 26 outbound)
- **Cycling Trips:** 0 AM peak hour trips (0 inbound, 0 outbound) and 0 PM peak hour trips (0 inbound, 0 outbound)

4.4 AUTO TRIP DISTRIBUTION AND ASSIGNMENT

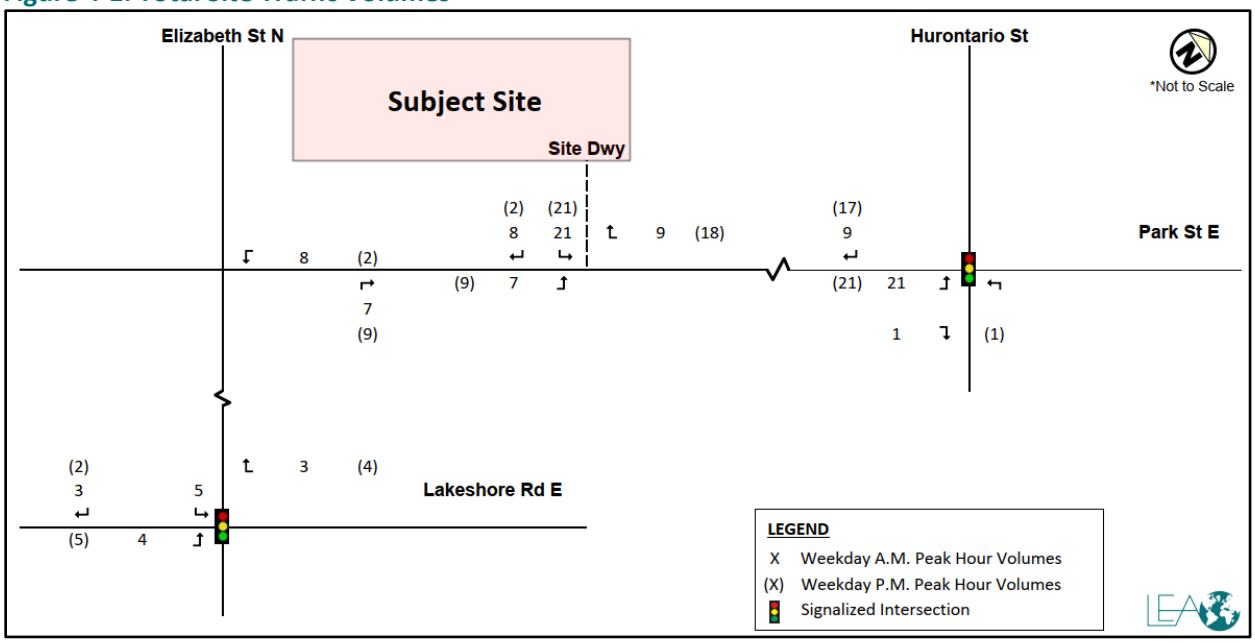
Directional trip distribution of site traffic was derived using Transportation Tomorrow Survey (TTS) 2022 data. The estimated trip distribution for this study is outlined in **Table 4-4**. The site traffic was assigned to the road network based on the trip patterns in the study area, location and configuration of the site access, and the route providing the shortest travel time.

Table 4-4: Subject Site Trip Distribution

Path (To/From)	AM Peak Hour		PM Peak Hour	
	In	Out	In	Out
Hurontario Street (North)	57%	77%	77%	57%
Hurontario Street (South)	2%	0%	0%	2%
Park Street East (West)	1%	0%	0%	1%
Park Street East (East)	1%	0%	0%	1%
Lakeshore Road East (West)	17%	8%	8%	17%
Lakeshore Road East (East)	22%	15%	15%	22%
Total	100%	100%	100%	100%

The total site-generated auto traffic volumes are illustrated in **Figure 4-1**. All trip generation includes both weekday AM and PM peak hours.

Figure 4-1: Total Site Traffic Volumes



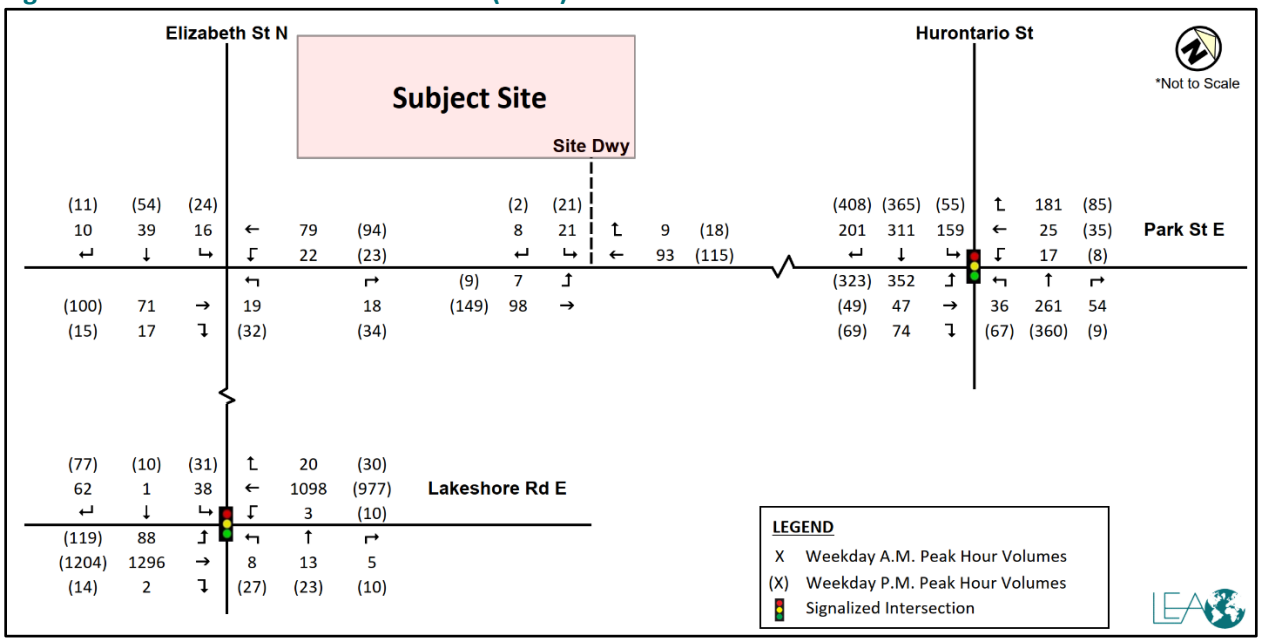
5 FUTURE TOTAL CONDITIONS

Future total traffic conditions include the addition of site trips to the 2030 future background traffic volumes. As previously mentioned, the proposed site access will be added in the future.

5.1 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic conditions include the addition of site-generated traffic volumes to 2030 future background traffic volumes. The future total traffic volumes for the weekday AM and PM peak hours are shown in **Figure 5-1**.

Figure 5-1: Future Total Traffic Volumes (2030)



6 INTERSECTION CAPACITY ANALYSIS

The following sections provide an analysis of the intersection operations under existing, future background, and future total conditions. The intersection capacity analysis for the study area was undertaken using Synchro Version 12.0, which is based on the Highway Capacity Manual (HCM) 2000 methodology for signalized intersections and HCM 6th Edition for unsignalized intersections. The analysis was prepared according to the *Mississauga Transportation Impact Studies Guidelines* (December 2022 – Version 5.1). Detailed intersection capacity analysis results for existing, future background, and future total conditions are provided in **Appendix E, F,** and **G**, respectively.

6.1 SYNCHRO MODEL ASSUMPTIONS

The following sections will provide details regarding the lane configuration and signal timing plan modifications undertaken for the study area intersections.

6.1.1 Lane Configuration Adjustments

As noted in **Section 2.1**, southbound lane configuration at the Hurontario Street & Park Street East intersection was modified under existing conditions due to ongoing Hazel McCallion Line construction works. Under future background and future total conditions, it was assumed that the intersection will be updated as described in **Section 3.3**.

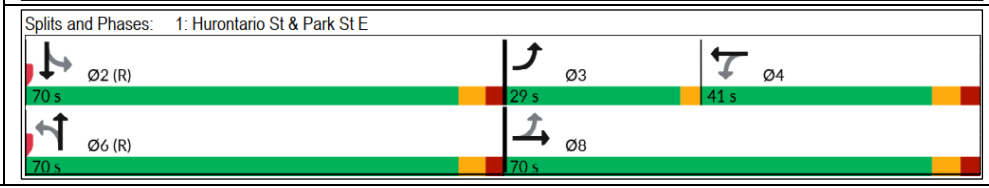
6.1.2 Signal Timing Plan Modifications

Signal timing optimization is recommended for the Hurontario Street & Park Street East intersection to help mitigate capacity constraints identified with the addition of background development traffic and corridor growth under future conditions. The net change in signal timings per movement is shown in **Table 6-1** with a visual summary of the modifications shown in **Table 6-2.**

Table 6-1: Summary of Net Change in Signal Timings per Movement

Timeframe	AM Peak Hour							
	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Existing	0	57	0	57	0	68	15	83
2030	29	70	0	41	0	70	0	70
Net change	***+29***	***+13***	***+0***	***-16***	***+0***	***+2***	***-15***	***-13***

Table 6-2: Proposed Signal Timing Plan at Hurontario Street & Park Street East

STP	Cycle Length	Splits
AM Peak Hour		
Existing	140 s	
Proposed		

6.2 SIGNALIZED INTERSECTIONS

6.2.1 Hurontario Street & Park Street East

The intersection capacity analysis and queue results of the Hurontario Street & Park Street East intersection are summarized in **Table 6-3** and **Table 6-4** respectively. Signal timing optimization is proposed for the weekday AM peak hour and the optimized intersection capacity analysis and queues are summarized in **Table 6-5** and **Table 6-6** respectively.

Table 6-3: Signalized Intersection Capacity Analysis – Hurontario St & Park St E

AM	Existing Traffic 2025				Future Background Traffic 2030				Future Total Traffic 2030			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	0.52	25	C	-	0.70	44	D	-	0.73	51	D
EBL	108	0.62	54	D	**331**	**1.10**	**125**	**F**	**352**	**1.17**	**150**	**F**
EBTR	65	0.16	44	D	120	0.19	33	C	121	0.19	33	C
WBL	17	0.08	43	D	17	0.05	32	C	17	0.05	32	C
WBTR	206	0.24	45	D	206	0.21	34	C	206	0.21	34	C
NBL	8	0.02	15	B	36	0.13	26	C	36	0.13	26	C
NBTR	315	0.20	17	B	315	0.26	27	C	315	0.26	27	C
SBL	159	0.31	11	B	159	0.37	19	B	159	0.37	19	B
SBTR	382	0.43	14	B	503	0.32	20	B	512	0.32	20	B
PM	Existing Traffic 2025				Future Background Traffic 2030				Future Total Traffic 2030			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	0.65	19	B	-	0.63	26	C	-	0.66	27	C
EBL	152	0.67	42	D	**302**	**0.95**	**68**	**E**	**323**	**0.97**	**72**	**E**
EBTR	67	0.15	33	C	118	0.17	27	C	118	0.16	26	C
WBL	8	0.04	32	C	8	0.03	25	C	8	0.03	25	C
WBTR	120	0.19	33	C	120	0.15	26	C	120	0.14	26	C
NBL	10	0.03	8	A	66	0.28	16	B	67	0.30	18	B
NBTR	360	0.20	9	A	369	0.24	14	B	369	0.24	14	B
SBL	55	0.11	9	A	55	0.14	13	B	55	0.14	14	B
SBTR	549	0.62	16	B	756	0.42	16	B	773	0.43	17	B

Table 6-4: Hurontario St & Park St E Queues

AM	Available Storage (m)	Existing 2025		Future Background 2030		Future Total 2030	
Mvmt		50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)
EBL	30	29	**52**	**113**	**174**	**126**	**188**
EBTR	72	10	24	14	30	14	29
WBL	70	4	11	3	9	3	9
WBTR	125	6	30	5	25	5	25
NBL	40	1	4	7	15	7	15
NBTR	120	23	34	30	42	30	42
SBL	35	17	26	24	**37**	24	**37**
SBTR	375	54	76	33	45	32	45
PM	Available Storage (m)	Existing 2025		Future Background 2030		Future Total 2030	
Mvmt		50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)
EBL	30	**31**	**44**	**60**	**110**	**66**	**120**
EBTR	72	7	16	8	21	8	21
WBL	70	2	5	1	5	1	5
WBTR	125	6	19	5	19	5	19
NBL	40	1	4	8	18	8	19
NBTR	120	15	31	22	32	22	32
SBL	35	4	13	6	13	6	13
SBTR	375	62	135	26	42	27	42

Existing Conditions: Under existing conditions, the intersection of Hurontario Street and Park Street East operates well during both weekday peak hours. All movements operate with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay. The eastbound left movement operates at practical capacity and near capacity for the AM and PM peak hours; respectively. The average eastbound vehicle queues are expected to extend past Ann Street. It is presumed motorist will not block the Ann Street & Park Street East intersection. It is noted that these eastbound left operations of likely a function of traffic heading north towards the QEW. If extreme conditions continue, the High Street signalized intersection can be used as an alternative option to travel north onto Hurontario Street.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations. The eastbound left movement is projected to operate in a similar manner as with future background conditions and should this condition materialize, motorist have the option to adjust their travel behavior by way of traveling outside of the peak hour or choosing an alternative route. No intersection modifications are recommended.

6.2.1.1 Signal Timing Optimization (Weekday AM Peak Hour)

Table 6-5: Signalized Intersection Capacity Analysis – Hurontario St & Park St E (Optimized AM Peak)

AM	Future Background Traffic 2030 (Optimized)				Future Total Traffic 2030 (Optimized)			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	0.64	35	C	-	0.66	38	D
EBL	**331**	**0.93**	**65**	**E**	**352**	**0.97**	**78**	**E**
EBTR	120	0.17	31	C	121	0.17	31	C
WBL	17	0.12	52	D	17	0.12	52	D
WBTR	206	0.29	54	D	206	0.29	54	D
NBL	36	0.11	19	B	36	0.11	19	B
NBTR	315	0.21	19	B	315	0.21	19	B
SBL	159	0.39	24	C	159	0.39	24	C
SBTR	503	0.34	21	C	512	0.34	21	C

Table 6-6: Hurontario St & Park St E Queues (Optimized AM Peak)

AM	Available Storage (m)	Future Background Traffic 2030 (Optimized)		Future Total Traffic 2030 (Optimized)	
Mvmt		50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)
EBL	55	**67**	**100**	**73**	**101**
EBTR	72	10	23	10	23
WBL	75	4	11	4	11
WBTR	125	6	30	6	30
NBL	40	6	15	6	15
NBTR	120	29	41	29	41
SBL	60	34	56	34	56
SBTR	375	42	58	42	57

Future Background Conditions: Under future background conditions, the weekday AM peak optimized timing plan presents some relief to the eastbound left movement which is projected to operate below capacity. The average eastbound vehicle queues are still forecasted to extend past Ann Street, at approximately 75 metres less when compared to operations without signal optimization. The average eastbound vehicle queues are expected to extend past Ann Street.

Future Total Conditions: Under future total conditions, the weekday AM peak optimized timing plan improves site traffic and is expected to have an acceptable impact on intersection operations. The eastbound left movement is projected to operate in a similar manner to future background conditions. Again, motorist's have the option to adjust their travel behavior by way of traveling outside of the peak hour or choosing an alternative route. No intersection modifications are recommended.

6.2.2 Elizabeth Street North & Lakeshore Road East

The intersection capacity analysis and queue results of the Elizabeth Street North & Lakeshore Road East intersection are summarized in **Table 6-7** and **Table 6-8**.

Table 6-7: Signalized Intersection Capacity Analysis – Elizabeth St N & Lakeshore Rd E

AM	Existing Traffic 2025				Future Background Traffic 2030				Future Total Traffic 2030			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	0.70	13	B	-	0.80	17	B	-	0.83	18	B
EBLTR	1284	0.75	13	B	1382	0.87	19	B	1386	0.89	22	C
WBLTR	925	0.42	8	A	1118	0.51	9	A	1121	0.51	9	A
NBL	8	0.05	52	D	8	0.05	52	D	8	0.05	52	D
NBTR	18	0.06	52	D	18	0.06	52	D	18	0.06	52	D
SBL	33	0.25	57	E	33	0.23	56	E	38	0.25	57	E
SBTR	60	0.05	52	D	60	0.05	52	D	63	0.05	52	D
PM	Existing Traffic 2025				Future Background Traffic 2030				Future Total Traffic 2030			
Mvmt	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS	Vol	V/C	Delay (s)	LOS
Overall	-	0.69	15	B	-	0.83	22	C	-	0.84	23	C
EBLTR	1141	0.77	15	B	1332	0.94	28	C	1337	0.95	30	C
WBLTR	877	0.42	9	A	1013	0.49	10	B	1017	0.49	10	B
NBL	27	0.14	44	D	27	0.14	44	D	27	0.14	44	D
NBTR	28	0.08	42	D	33	0.09	43	D	33	0.09	43	D
SBL	31	0.20	45	D	31	0.17	44	D	31	0.17	44	D
SBTR	85	0.10	43	D	85	0.10	43	D	87	0.10	43	D

Table 6-8: Elizabeth St N & Lakeshore Rd E Queues

AM	Available Storage (m)	Existing 2025		Future Background 2030		Future Total 2030	
Mvmt		50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)
EBLTR	126	111	**139**	**148**	**193**	**155**	**204**
WBLTR	312	53	64	70	84	70	84
NBL	12	2	8	2	8	2	8
NBTR	115	3	11	3	11	3	11
SBL	13	9	**20**	9	**20**	10	**22**
SBTR	245	0	14	0	14	0	14
PM	Available Storage (m)	Existing 2025		Future Background 2030		Future Total 2030	
Mvmt		50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)	50th Queue (m)	95th Queue (m)
EBLTR	126	95	124	**144**	**217**	**148**	**219**
WBLTR	312	49	61	60	74	60	74
NBL	12	6	**15**	6	**15**	6	**15**
NBTR	115	5	14	5	14	5	14
SBL	13	7	**17**	7	**17**	7	**17**
SBTR	245	2	17	2	17	2	17

Existing Conditions: Under existing conditions, this intersection operates well during both weekday peak hours. All movements operate with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection is expected to generally operate similar to existing conditions with acceptable increases in V/C ratios and delay times. The eastbound left-through-right movement is projected to operate with increasing delay yet still operate at below capacity. These conditions are a function of increasing eastbound through movements stemming from background developments. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. Site traffic introduces upwards of 5 vehicles at this intersection which is a minor amount. No intersection modifications are recommended.

6.3 UNSIGNALIZED INTERSECTIONS

The results for the studied unsignalized intersections under each traffic scenario during the weekday AM and PM peak hours are summarized in the sections below. The 95th queue percentile is represented in number of vehicles where the base vehicle is approximately 6.5 meters in length.

6.3.1 Elizabeth Street North & Park Street East

The intersection capacity analysis and queue results of the Elizabeth Street North & Park Street East intersection are summarized in **Table 6-9**.

Table 6-9: Unsignalized Intersection Capacity Analysis – Elizabeth St N & Park St E

AM	Existing Traffic 2025					Future Background Traffic 2030					Future Total Traffic 2030				
Mvmt	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Overall	-	-	8	A	-	-	-	8	A	-	-	-	8	A	-
NBLTR	30	0.04	8	A	0.1	30	0.04	8	A	0.1	37	0.05	8	A	0.1
EBTR	67	0.08	8	A	0.3	88	0.11	8	A	0.4	88	0.11	8	A	0.4
WBLT	66	0.09	8	A	0.3	93	0.12	8	A	0.4	101	0.13	8	A	0.5
SBL	16	0.03	8	A	0.1	16	0.03	8	A	0.1	16	0.03	9	A	0.1
SBTR	49	0.08	9	A	0.3	49	0.08	9	A	0.3	49	0.08	9	A	0.3
PM	Existing Traffic 2025					Future Background Traffic 2030					Future Total Traffic 2030				
Mvmt	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Overall	-	-	8	A	-	-	-	8	A	-	-	-	8	A	-
NBLTR	57	0.08	8	A	0.2	57	0.08	8	A	0.3	66	0.09	8	A	0.3
EBTR	78	0.10	8	A	0.3	115	0.15	8	A	0.5	115	0.15	8	A	0.5
WBLT	93	0.13	8	A	0.4	115	0.16	8	A	0.5	117	0.16	8	A	0.6
SBL	24	0.04	8	A	0.1	24	0.04	9	A	0.1	24	0.04	9	A	0.1
SBTR	65	0.11	9	A	0.4	65	0.11	9	A	0.4	65	0.11	9	A	0.4

Existing Conditions: Under existing conditions, the intersection of Elizabeth Street North and Park Street East operates well during both peak hours. All movements operate with residual capacity and acceptable delays. All existing 95th percentile queues can be accommodated by their available storage lanes. No critical movements have been identified.

Future Background Conditions: Under future background conditions, the intersection continues to operate similar to existing conditions with acceptable increases in V/C ratios and delay. No major constraints are noted.

Future Total Conditions: Under future total conditions, the addition of site traffic is expected to have an acceptable impact on intersection operations, with all movements operating similar to future background conditions. No intersection modifications are recommended.

6.4 SITE ACCESS

The results for the site access under each traffic scenario during the weekday AM and PM peak hours are summarized in the sections below. The proposed site access includes an unsignalized access under future total conditions.

6.4.1 Park Street East & Site Access

The intersection capacity analysis results of the Park Street East & Site Access intersection are summarized in **Table 6-10**. As the intersection does not exist under existing and future background conditions, only the future total conditions results are shown.

Table 6-10: Unsignalized Intersection Capacity Analysis – Park St E & Site Access

AM	Future Total Traffic (2030)				
Mvmt	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Overall	-	-	1	-	-
EBL	7	0.01	7	A	0.0
EBT	98	0.00	0	A	0.0
WBT	93	0.00	0	-	0.0
WBR	9	0.00	0	-	0.0
SBLR	29	0.04	10	A	0.1
PM	Future Total Traffic (2030)				
Mvmt	Vol	V/C	Delay (s)	LOS	95th Queue (veh)
Overall	-	-	1	-	-
EBL	9	0.01	8	A	0.0
EBT	149	0.00	0	A	0.0
WBT	115	0.00	0	-	0.0
WBR	18	0.00	0	-	0.0
SBLR	23	0.04	10	B	0.1

Future Total Conditions: Under future total conditions, site traffic is expected to encounter minimal delays when trying to access Park Street East. No critical movements were identified and no intersection modifications are recommended.

6.5 SUMMARY

The analysis results indicate that the proposed development is expected to have an acceptable impact on road network operations in the surrounding area. In addition, the proposed site access is expected to operate well with the addition of site traffic. It is recommended that the signal timing plan be implemented for the intersection of Hurontario Street and Park Street East to improve overall intersection operations.

7 PARKING AND LOADING REVIEW

This section reviews the applicable bicycle parking, vehicle parking, and loading standards for the proposed development based on the latest parking policy applicable to the subject site.

7.1 BICYCLE PARKING REVIEW

The subject site is governed by the City of Mississauga's Comprehensive Zoning By-law (CZBL) 0225-2007. The bicycle parking requirements have been reviewed and summarized in **Table 7-1**.

Table 7-1: Bicycle Parking Review – Mississauga CZBL 0225-2007

Land Use	Units	CZBL 0225-2007		Proposed Supply
		Bicycle Parking Rate	Req. Spaces	
Residential	378 units	Long Term (Class A): 0.60 spaces/unit	227	250
		Short Term (Class B): Greater of 0.05 spaces/unit or 6.0 spaces	19	19
		Total	246 spaces	269 spaces

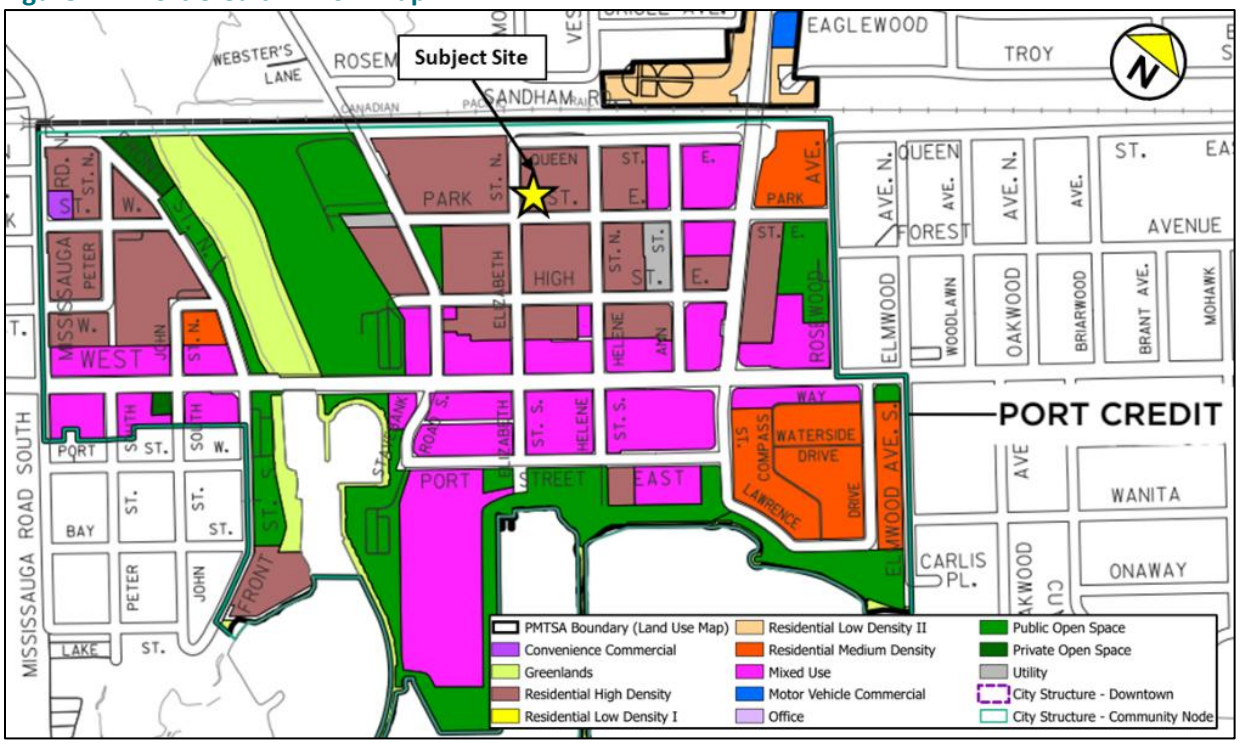
The proposed development will provide a total of 275 bicycle parking spaces consisting of 250 long-term ("Class A") and 19 short-term ("Class B") spaces, therefore meeting and exceeding the applicable by-law requirements.

7.2 VEHICLE PARKING REVIEW

On June 6, 2024, Bill 185 (Cutting Red Tape to Build More Homes Act, 2024) received Royal Assent, which amends Sections 16 and 34 of the Planning Act. Of note, Bill 185 prohibits official plans and zoning by-laws from mandating minimum vehicle parking requirements on private lands within a protected Major Transit Station Area (PMTSA). To reflect these legislative changes, the City of Mississauga passed By-law 0199-2024 on October 21, 2024, which amended CZBL 0225-2007 to remove all minimum parking requirements within PMTSAs.

It is noted that the subject site is located within the Port Credit PMTSA, as shown in **Figure 7-1**. Therefore, the vehicle parking standards under CZBL 2005-2007 as amended by By-law 0199-2024 have been reviewed and summarized in **Table 7-2**.

Figure 7-1: Port Credit PMTSA Map



Source: City of Mississauga, November 2022

Table 7-2: Vehicle Parking Review – Mississauga CZBL 0225-2007

Land Use	No. of Units	Minimum Parking Rate	Minimum Parking Spaces	Proposed Supply
Residential	378	N/A	0 spaces	101 spaces (0.27 spaces/unit)
Visitors		N/A	0 spaces	22 spaces (0.06 spaces/unit)
		Total	**0 spaces**	**123 spaces (0.33 spaces/unit)**

Based on the vehicle parking requirements listed under CZBL 0225-2007 as amended by By-law 0199-2024, the proposed development is not required to provide vehicle parking spaces given the site's location in a highly transit accessible location within the PMTSA for Port Credit GO Station.

The site plan for the proposed development includes a vehicle parking supply of 123 spaces consisting of 101 residential parking spaces and 22 visitor parking spaces. Therefore, the proposed development meets the vehicle parking requirements applicable to the subject site.

7.2.1 Electric Vehicle Parking Review

CZBL 0225-2007 requires a portion of total vehicle parking supply to be provided with Electric Vehicle Supply Equipment (EVSE) as an "electric vehicle (EV) ready parking space." The EV ready parking space requirements under the CZBL have been reviewed and are summarized in **Table 7-3**.

Table 7-3: Electric Vehicle Parking Review – Mississauga CZBL 0225-2007

Land Use	No. of Parking Spaces	EV Ready Parking Space Rate	Required EV Ready Parking Spaces	Proposed EV Ready Parking Supply
Residential	101	20% of total parking spaces	20 spaces	22 spaces
Visitors	22	10% of total parking spaces	2 spaces	2 spaces
		Total	22 spaces	24 spaces

The proposed development includes an EV ready parking supply of 24 parking spaces comprised of 22 residential and 2 visitor EV ready parking spaces. Therefore, the proposed development meets the applicable EV parking standards for the subject site.

7.2.2 Accessible Parking Review

CZBL 0225-2007 stipulates that accessible parking spaces for residential uses shall only apply to the total number of visitor parking spaces required for the proposed development. The proposed visitor parking supply was used to determine the minimum number of required accessible parking spaces under CZBL 0225-2007.

The accessible parking requirements under the CZBL have been reviewed and are summarized in **Table 7-4**.

Table 7-4: Accessible Parking Review – Mississauga CZBL 0225-2007

Land Use	No. of Parking Spaces	Accessible Parking Rate	Required Accessible Parking Spaces	Proposed Accessible Parking Supply
Residential	101	N/A	0 spaces	0 space
Visitors	22	4% of total parking spaces	1 space	1 space
		Total	1 space	1 space

The proposed development includes an accessible parking supply of 1 visitor accessible parking space. Therefore, the proposed development meets the applicable accessible parking standards for the subject site.

7.3 LOADING REVIEW

As per CZBL 0225-2007, one loading space is required per apartment building containing a minimum of 30 dwelling units. One loading space that meets the minimum dimensional requirements is proposed for the one residential building proposed at the subject site. The minimum loading requirement is met as a result.

A site circulation review was completed to ensure adequate maneuverability through the site for garbage trucks. The swept path diagrams are provided in **Appendix H**. Based on the swept path diagrams, the garbage and delivery trucks can effectively access, circulate and complete the required activities on-site.

8 TRANSPORTATION DEMAND MANAGEMENT (TDM) PLAN

Transportation Demand Management (referred to as TDM) is a set of initiatives and polices to reduce traffic demand by influencing travel behavior. Effective TDM measures can reduce vehicle usage and encourage people to engage in more sustainable transportation mode including public transit, shared rides as well as active transportation, such as walking and cycling. The TDM opportunities and proposed TDM measures are described in the following sections.

8.1 PEDESTRIAN AND CYCLING-BASED STRATEGIES

DIRECT PEDESTRIAN CONNECTIONS TO THE PUBLIC ROAD NETWORK

- The principal residential entrance is oriented towards Elizabeth Street and provide convenient access for pedestrians and transit users. A direct pedestrian connection between the existing sidewalks along the north and west edges of the subject site will also be provided as part of the proposed development. This connection will further help service the connection to the current MiWay bus stops and Port Credit GO Station.

WALKING DISTANCE TO NEARBY AMENITIES

- Major complementary uses to the proposed development have been identified along Lakeshore Road E, which includes ground floor retail stores, grocery stores and coffee shops. The Port Credit Memorial Park, Port Credit Library, and Port Credit Harbour Marina are also located within a 5-minute walking distance. This will greatly minimize the need for automobile travel in the area.

PROVIDE BICYCLE PARKING

- The proposed development will be providing bicycle parking facilities to support encourage active transportation. As mentioned in **Section 2.4**, the Mississauga Cycling Master Plan 2018 proposes an integrated cycling network which will enhance the network-wide connectivity in the area. A bicycle parking supply of 269 bicycle parking spaces are proposed for the subject development, which exceeds the minimum by-law requirements by 23 bicycle parking spaces.

8.2 TRANSIT-BASED STRATEGIES

CONNECTIONS TO THE EXISTING TRANSIT NETWORK

- A clear pedestrian pathway is provided to the nearby MiWay bus stop at Elizabeth Street N & Park Street E intersection and at the Port Credit GO Station. As mentioned in **Section 2.2**, The Port Credit GO Station is located about 200 m, or about a 2-minute walk, northeast of the proposed development.

FUTURE TRANSIT IMPROVEMENTS

- The Lakeshore West Line GO expansion is anticipated to be completed within the 5-year future horizon. The project will introduce two-way, all-day service along the Lakeshore West Line with headways of 15 minutes or better. The increased frequency and service hours will greatly improve the viability of the GO Line as a regular mode of travel for residents.

- The Hazel McCallion Line is expected to be completed within the 5-year future horizon. The LRT line will run along Hurontario Street between Port Credit GO Station and Brampton Gateway Terminal on Steeles Avenue. When it is completed, residents will have another public transit option for their travelling.

TRANSIT SCREENS TO BE PROVIDED AT THE LOBBY

- Transit screens in the lobby area will provide residents and visitors the ability to plan their transit route and transit vehicle timing from the lobby will allow them to wait inside until they know a rail/bus is about to arrive or make alternate arrangements if there is a significant delay. This enables transit to become less unattractive in the winter months and when there is poor weather.

COMMUNICATION STRATEGY AND INCENTIVE PROGRAMS

- It is recommended that the owner provide information packages and communications to increase cycling awareness and multi-modal transport by encouraging active transportation and different travel demand management programs. This should include educating residents on the health and environmental benefits of cycling, as well as providing pedestrian, cycling, and transit maps of the available infrastructure in the surrounding area. Information on Smart Commute, Emergency Ride Home, subsidized transit passes, or other incentives should be also included as part of this material. Identifying safe cycling routes can also facilitate students cycling to school and reduce automobile reliance for the younger generation.

  A designated Information Centre should be set up within the main building to provide updated information on TDM initiatives and to convey special event information or programs. The City should be responsible for making Smart Commute and transit information available to help commuters become aware of the various travel alternatives.

8.3 TDM MEASURES SUMMARY

A combination of TDM strategies detailed above is expected to reduce the auto-dependency of residents and visitors of the subject development and encourage more sustainable travel habits. **Table 8-1** provides an estimate of the effectiveness and cost to implement of the recommended TDM measures.

Table 8-1: Summary and Cost Estimate of TDM Strategies

TDM Measure	Responsibility	Resources and Details	Estimated Cost
Pedestrian and Cycling-Based Strategies			
Direct pedestrian connections to public road network	Applicant	Associated costs included in site plan agreement	N/A
Walking distance to nearby amenities	Applicant	N/A	N/A
Bicycle parking	Applicant	$250 per excess space (Subject site to provide an excess of 23 bicycle parking spaces)	$5,750
Transit-Based Strategies			
Connections to existing and future transit network	Applicant	Associated costs included in site plan agreement	N/A
Transit information screens	Applicant	Provide transit information display at lobby area	$5000 per digital screen
Communication strategy and incentive programs	Mississauga, Peel Region to consider	Provide information brochures; coordinate with City and Region to hold information sessions	~$1,110 ($2.50 per unit)
		Estimated Total	~$11,860

9 CONCLUSIONS

- The proposed residential development at 42-46 Park Street E & 23 Elizabeth St N consists of a single 30-storey building with 378 residential units and four (4) levels of underground parking. A parking supply of 123 spaces and one (1) loading space are proposed.
- The subject site is located in an area that is well served by multiple transit services including GO Transit rail and MiWay bus services. The Port Credit GO station is located about 200 m, or a 2-minute walk, northeast of the subject site. Additionally, the subject site is located in Port Credit PMTSA boundary. The Transit connectivity is expected to be improved within the 5-year horizon with the Lakeshore West Line GO Expansion and the Hazel McCallion Line.
- The subject site is located in a highly walkable location with the existing pedestrian network providing good connections between residential, commercial, and other amenities in the area as well as nearby bus stops and the Port Credit GO station. Cycling infrastructure is present in the form of multi-muse trails along Hurontario Street and Port Street East, but network-wide connectivity is limited.
- The proposed development is expected to generate a total of 45 new two-way auto trips (16 inbound, 19 outbound) during the weekday AM peak hour and 50 new two-way auto trips (27 inbound, 23 outbound) during the weekday PM peak hour.
- Under all conditions and peak hours, the study area intersections are expected operate within capacity. The addition of site-generated vehicle trips is projected to have an acceptable level of impact on the surrounding road network. No intersection modifications are recommended.
- The subject site will provide 269 bicycle spaces consisting of 250 long-term and 19 short-term bicycle spaces, which will meet and exceed the City's By-law requirements.
- A total of 123 parking spaces consisting of 101 residential and 22 visitor parking spaces are proposed for the subject development, which meets the parking standards listed under the City of Mississauga Comprehensive Zoning By-Law (CZBL) 0225-2007 as amended by by-law 0199-2024.
- The site proposes 24 electric vehicle (EV) ready parking spaces, with a split of 22 residential and 2 visitor spaces, as part of the vehicle parking supply. This meets the City's by-law requirements.
- One (1) visitor accessible parking space are proposed as part of the vehicle parking supply, which meets the City's by-law requirements.
- One (1) loading space is proposed for the subject development, which meets the City's by-law requirements.
- Transportation Demand Management (TDM) opportunities and measures have been recommended to reduce vehicle usage and encourage people to engage in more sustainable transportation mode. They consist of pedestrian-based, cycling-based, and transit-based strategies.

APPENDIX A

Terms of Reference

Timothy Chin

From: Tyler Xuereb <Tyler.Xuereb@mississauga.ca>
Sent: November 22, 2019 11:09 AM
To: Timothy Chin
Subject: RE: Terms of Reference for Proposed Residential Development at 23 Elizabeth Street N, City of Mississauga

Hi Timothy,

The rates provided for the previous TIS of 21-29 Park street are ok to use for the 23 Elizabeth Street.

Regards

Tyler

From: Timothy Chin [mailto:TChin@lea.ca]
Sent: 2019/11/21 10:13 AM
To: Tyler Xuereb
Cc: Nixon Chan
Subject: FW: Terms of Reference for Proposed Residential Development at 23 Elizabeth Street N, City of Mississauga

Hi Tyler,

I was forwarded your contact for confirming the growth rates for proposed residential development at 23 Elizabeth Street.

Please find below the Terms of Reference we sent to the City including our assumptions on growth rate for your review and comment.

Thanks

Timothy Chin, MSc(Eng), RSP, EIT
Intermediate Transportation Analyst
T: 905 470 0015, ext.322 **E:** tchin@lea.ca **W:** www.LEA.ca
LEA Consulting Ltd.

From: Greg Borys <Gregory.Borys@mississauga.ca>
Sent: November-20-19 2:57 PM
To: Timothy Chin <TChin@lea.ca>
Cc: Nixon Chan <NChan@lea.ca>
Subject: RE: Terms of Reference for Proposed Residential Development at 23 Elizabeth Street N, City of Mississauga

Good afternoon Timothy,

Thank you for your patience and providing the Terms of Reference for the proposed development at 23 Elizabeth Street, please find some additional comments below:

Timothy Chin

From: Greg Borys <Gregory.Borys@mississauga.ca>
Sent: November 20, 2019 2:57 PM
To: Timothy Chin
Cc: Nixon Chan
Subject: RE: Terms of Reference for Proposed Residential Development at 23 Elizabeth Street N, City of Mississauga

Good afternoon Timothy,

Thank you for your patience and providing the Terms of Reference for the proposed development at 23 Elizabeth Street, please find some additional comments below:

- Safety & Operational Analysis required under the TIS, site line analysis to be included;
  - pedestrian and vehicular sight line visibility with regard to ingress and egress;
  - detailed turning movements for the most constrained vehicles expected (e.g. access, dead end drive aisle, etc.);
  - gaps and queuing;
  - intersection capacity and level of service
- TIS to include a comprehensive Traffic Demand Management Plan (TDM);

- The historical AADT data and Turning Movement Count can be obtained from William Wright (William.Wright@mississauga.ca, Ext. 3221). If the data is older than 2 years, than consultant is responsible to conduct the latest counts;
- Please contact Tyler Xuereb tyler.xuereb@mississauga.ca Ext. 4783) to confirm growth rates;
- Please use the following link to gather information of any development proposed in the neighbouring lands for background traffic: http://www.mississauga.ca/portal/residents/developmentinformation ;
- The signal timing plan for signalized intersections can be obtained from Jim Kartsomaniz (Jim.Kartsomanis@mississauga.ca, Ext. 3964);

*This department does not review Parking Studies for parking reduction justification, the applicant is advised to contact the City of Mississauga Planner on file to confirm ToR for parking reduction study

---

From: Timothy Chin [mailto:TChin@lea.ca]
Sent: Wednesday, November 20, 2019 11:09 AM
To: Greg Borys
Cc: Nixon Chan
Subject: RE: Terms of Reference for Proposed Residential Development at 23 Elizabeth Street N, City of Mississauga

Hi Gregory,

I would like to follow up on my previous email regarding the Terms of Reference for proposed residential development at 23 Elizabeth Street N, City of Mississauga.

Should you have any comments with our assumptions or have any concern, please do not hesitate to contact me.

Thanks

Timothy Chin, MSc(Eng), RSP, EIT
Intermediate Transportation Analyst
T: 905 470 0015, ext.322 **E:** tchin@lea.ca **W:** www.LEA.ca
LEA Consulting Ltd.

From: Timothy Chin
Sent: October-30-19 10:52 AM
To: Gregory.Borys@mississauga.ca
Cc: Nixon Chan <NChan@lea.ca>
Subject: Terms of Reference for Proposed Residential Development at 23 Elizabeth Street N, City of Mississauga

Hi Gregory,

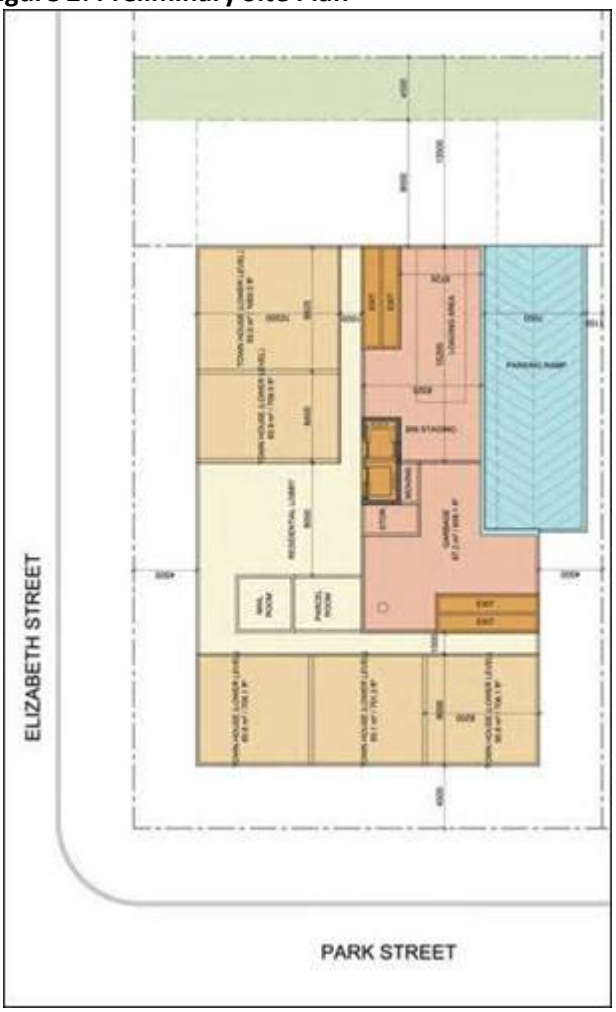
We wish to confirm the following work plan for a Traffic Impact Study (TIS) in support of the rezoning application for the proposed residential development located at 23 Elizabeth Street N in the City of Mississauga. The subject site is located on the northeast corner of Park Street E & Elizabeth Street N intersection and is currently occupied by 4 different properties. **Figure 1** below illustrates the subject site.

Figure 1: Subject Site

Proposed Development

The proposed residential development will consist of a 15-storey tower with about 180 residential units and multi-levels parking. Based on the preliminary site plan, the parking and loading spaces will be accessible from Elizabeth Street N.

Figure 2: Preliminary Site Plan



Study Area & Traffic Data

The TIS will assess weekday AM (7:00 to 9:00 a.m.) and PM (4:00 to 6:00 p.m.) peak hours. The proposed study area will include the analysis of the following intersections:

- Site Access at Elizbeth Street N (Unsignalized);
- Hurontario Street at Park Street E (Signalized);
- Park Street E at Elizabeth Street N (Unsignalized); and
- Lakeshore Road E at Elizabeth Street N (Unsignalized).

Turning movement counts at all intersections will be within the last 2 years.

Traffic Assessment and Study Horizon Year

The study will focus on weekday AM and PM peak hour traffic operations. Synchro version 9.0 will be used to assess intersection operations during the peak hours. A five-year horizon will be assessed in this study for the year 2024.

Background Traffic

General Corridor Growth Rate – LEA recently completed TIS for 21-29 Park Street East and 22-28 Ann Street & 78 Park Street E, which utilized following corridor growth rates based on the discussion with the City Staff. It is proposed to use the same rates for this study and summarized in **Table 1**.

Table 1: Proposed General Corridor Growth Rates

Corridors	Directions	Annual Growth Rate	
		AM Peak Hour	PM Peak Hour
Hurontario Street	Northbound	0.00%	0.50%
	Southbound	1.50%	1.00%
Lakeshore Road E	Eastbound	0.25%	1.25%
	Westbound	1.75%	0.50%

LEA will note any road network improvements (e.g. road widening) identified within the study area and account for any traffic diversions associated with these improvements within our analysis. The Hurontario LRT is expected to be completed in 2022, therefore, the road network alterations associated with this project will be included in the analysis.

Background Development Traffic – Upon initial review of the City of Mississauga Development Applications online database, the background developments in the study area was identified as summarized in **Table 2**.

Table 2: Identified Background Developments in the Study Area

#	Address of Development	Description
1	6,8,10 Ann Street	69 Residential Units
2	21-29 Park Street E	204 Residential Units
3	55 Port Street	35 Residential Units
4	22-28 Ann Street & 78 Park Street E	313 Residential Units with at-grade retail/commercial and office space

Trip Generation, Distribution and Assignment

The trip generation of the proposed development will be based on site trips calculated from the 10th Edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual or historical proxy trip rates applied at similar developments in the vicinity of the study area during the weekday AM and PM peak periods.

The general trip distribution utilized will be based on a review of the latest 2016 Transportation Tomorrow Survey (TTS) data in the vicinity of the subject site as well as observations of traffic patterns and existing turn permissions/prohibitions. Trip assignment will be revised accordingly to reflect the configuration of the site access, turning restrictions and logical routings.

Parking & Loading

The site is currently under the jurisdiction of the City of Mississauga Zoning By-Law 0225-2007, which will be reviewed for parking and loading requirements. If a parking reduction is proposed, appropriate analyses and justification will be provided to illustrate that the proposed parking supply will meet the projected parking demand.

Site Plan Review

Site plan review will also be undertaken to ensure the vehicular movements can be accommodated at the proposed loading bay, parking lots, drive aisles, garage ramps, etc.

Should you have any comments with our assumptions or have any concerns, please do not hesitate to contact me.

Thanks

Timothy Chin, MSc(Eng), RSP, EIT
Intermediate Traffic Analyst
LEA Consulting Ltd.
625 Cochrane Drive, 9th Floor | Markham, ON | L3R 9R9
T: 905-470-0015 ext. 322 **E:** tchin@lea.ca **W:** www.LEA.ca

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APPENDIX B

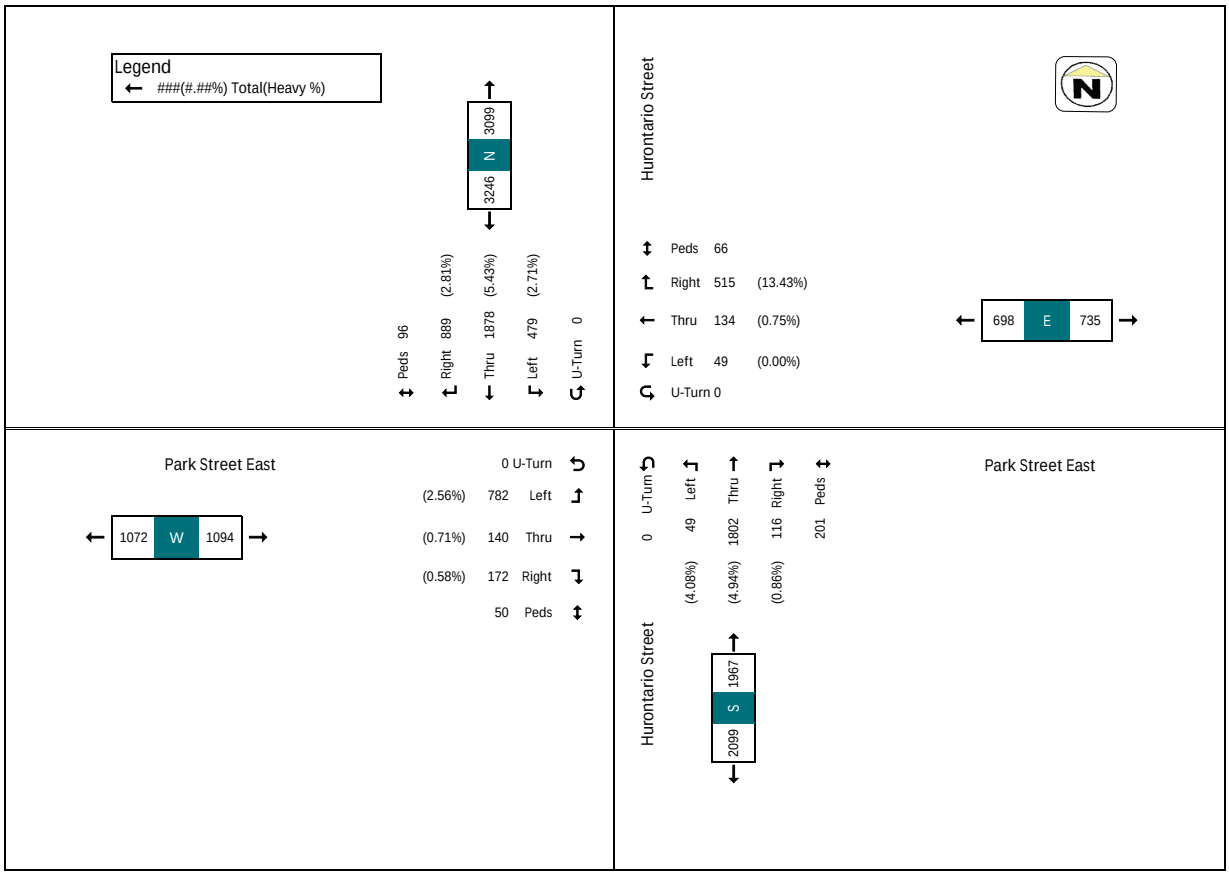
Turning Movement Counts (TMCs) and Signal Timing Plans

LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Hurontario Street & Park Street East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

Turning Movement Count - Hurontario Street & Park Street East

	Hurontario Street Southbound						Park Street East Westbound						Hurontario Street Northbound						Park Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	10	31	15	0	56	0	0	1	5	0	6	0	1	38	0	3	39	0	22	1	9	0	32	133
7:15	0	6	42	31	2	81	0	0	0	3	1	4	0	2	42	0	6	46	0	26	1	3	2	32	163
7:30	0	3	43	18	5	64	0	0	0	4	2	6	0	3	49	0	6	52	0	34	2	2	1	43	165
7:45	0	15	49	34	11	98	0	0	6	7	4	13	0	4	67	6	11	77	0	34	3	2	6	39	227
Hourly Total	0	34	165	100	21	299	0	0	12	21	6	33	0	11	196	7	26	214	0	116	7	21	9	144	690
8:00	0	28	52	22	4	102	0	1	4	16	6	21	0	1	63	8	17	72	0	43	3	4	0	50	245
8:15	0	42	65	25	16	132	0	2	3	29	5	34	0	2	71	12	9	85	0	22	12	7	5	41	292
8:30	0	64	75	19	2	158	0	11	8	80	2	99	0	3	64	19	15	86	0	29	19	7	4	55	398
8:45	0	25	97	27	4	149	0	3	10	56	1	69	0	2	63	15	37	80	0	14	6	7	2	27	325
Hourly Total	0	159	289	93	26	541	0	17	25	181	14	223	0	8	261	54	78	323	0	108	40	25	11	173	1260
9:00	0	12	70	23	11	105	0	1	5	20	7	26	0	0	58	5	16	63	0	26	8	6	1	40	234
9:15	0	14	62	25	1	101	0	2	3	13	3	18	0	0	58	4	6	60	0	25	3	4	2	32	211
9:30	0	13	62	33	2	108	0	1	3	8	1	12	0	0	58	1	3	59	0	25	1	5	0	31	210
9:45	0	18	89	27	0	134	0	0	1	8	4	9	0	0	67	2	0	69	0	20	1	3	0	24	236
Hourly Total	0	57	283	108	14	448	0	4	12	49	15	65	0	0	239	12	25	251	0	96	13	18	3	127	891
* Break *																									
16:00	0	15	82	31	3	129	0	1	4	19	3	24	0	2	97	10	3	109	0	25	4	10	1	39	300
16:15	0	24	72	40	2	138	0	4	3	20	2	27	0	1	81	2	6	85	0	24	6	5	0	35	263
16:30	0	24	73	48	5	145	0	6	8	38	6	52	0	2	66	2	11	70	0	26	7	6	6	39	306
16:45	0	18	86	41	0	145	0	4	8	27	1	39	0	3	85	7	9	95	0	28	1	9	2	38	317
Hourly Total	0	81	313	160	10	554	0	15	23	104	12	142	0	9	309	21	28	339	0	103	18	30	9	151	1186
17:00	0	10	93	41	7	144	0	4	8	36	2	48	0	1	98	1	5	100	0	39	12	7	5	58	350
17:15	0	13	100	61	0	174	0	4	12	22	0	38	0	2	73	2	6	77	0	24	3	0	2	27	316
17:30	0	11	73	47	3	131	0	0	10	9	2	19	0	3	88	2	9	95	0	53	14	16	4	83	328
17:45	0	21	81	53	1	155	0	0	5	18	0	23	0	2	92	4	4	98	0	36	8	7	0	51	327
Hourly Total	0	55	347	202	11	604	0	8	35	85	4	128	0	10	351	9	24	370	0	152	37	30	11	219	1321
18:00	0	15	84	45	8	144	0	1	12	13	2	26	0	3	89	10	9	102	0	52	9	15	3	76	348
18:15	0	10	84	37	1	131	0	0	5	17	0	22	0	0	83	0	3	89	0	38	1	7	1	46	288
18:30	0	13	78	48	1	139	0	2	2	10	1	22	0	2	79	0	0	81	0	34	5	8	0	47	289
18:45	0	23	85	35	2	143	0	1	4	11	1	16	0	0	70	0	5	70	0	41	8	12	3	61	290
Hourly Total	0	61	329	166	12	556	0	4	23	59	10	86	0	11	321	10	17	342	0	162	23	40	7	225	1209
Grand Total	0	479	1878	889	96	3246	0	49	134	515	66	698	0	49	1802	116	201	1967	0	782	140	172	50	1094	7005
Approach %	0.0%	14.8%	57.9%	27.4%	-	-	0.0%	7.0%	19.2%	73.8%	-	-	0.0%	2.5%	91.6%	5.9%	-	-	0.0%	71.5%	12.8%	15.7%	-	-	-
Total %	0.0%	6.8%	26.8%	12.7%	-	46.3%	0.0%	0.7%	1.9%	7.4%	-	10.0%	0.0%	0.7%	25.7%	1.7%	-	28.1%	0.0%	11.2%	2.0%	2.5%	-	15.6%	-
Lights	0	466	1776	864	-	3106	0	49	133	497	-	679	0	47	1713	115	-	1875	0	762	139	171	-	1072	6732
% Lights	-	97.3%	94.6%	97.2%	-	95.7%	-	100.0%	99.3%	96.5%	-	97.3%	-	95.9%	95.1%	99.1%	-	95.3%	-	97.4%	99.3%	99.4%	-	98.0%	96.1%
Buses	-	10	69	10	-	89	-	0	1	17	-	18	-	1	62	1	-	64	-	13	1	0	-	14	185
% Buses	-	2.1%	3.7%	1.1%	-	2.7%	-	0.0%	0.7%	3.3%	-	2.6%	-	2.0%	3.4%	0.9%	-	3.3%	-	1.7%	0.7%	0.0%	-	1.3%	2.6%
Trucks	-	3	33	15	-	51	-	0	0	1	-	1	-	1	27	0	-	28	-	7	0	1	-	8	80
% Trucks	-	0.6%	1.8%	-	-	1.6%	-	0.0%	0.0%	0.2%	-	0.1%	-	2.0%	1.5%	0.0%	-	1.4%	-	0.9%	0.0%	0.6%	-	0.7%	1.3%
Bicycles	-	-	-	-	3	3	-	-	-	-	3	3	-	-	-	-	2	2	-	-	-	-	0	0	8
Pedestrians	-	-	-	-	96	-	-	-	-	-	66	-	-	-	-	-	201	-	-	-	-	-	50	-	413

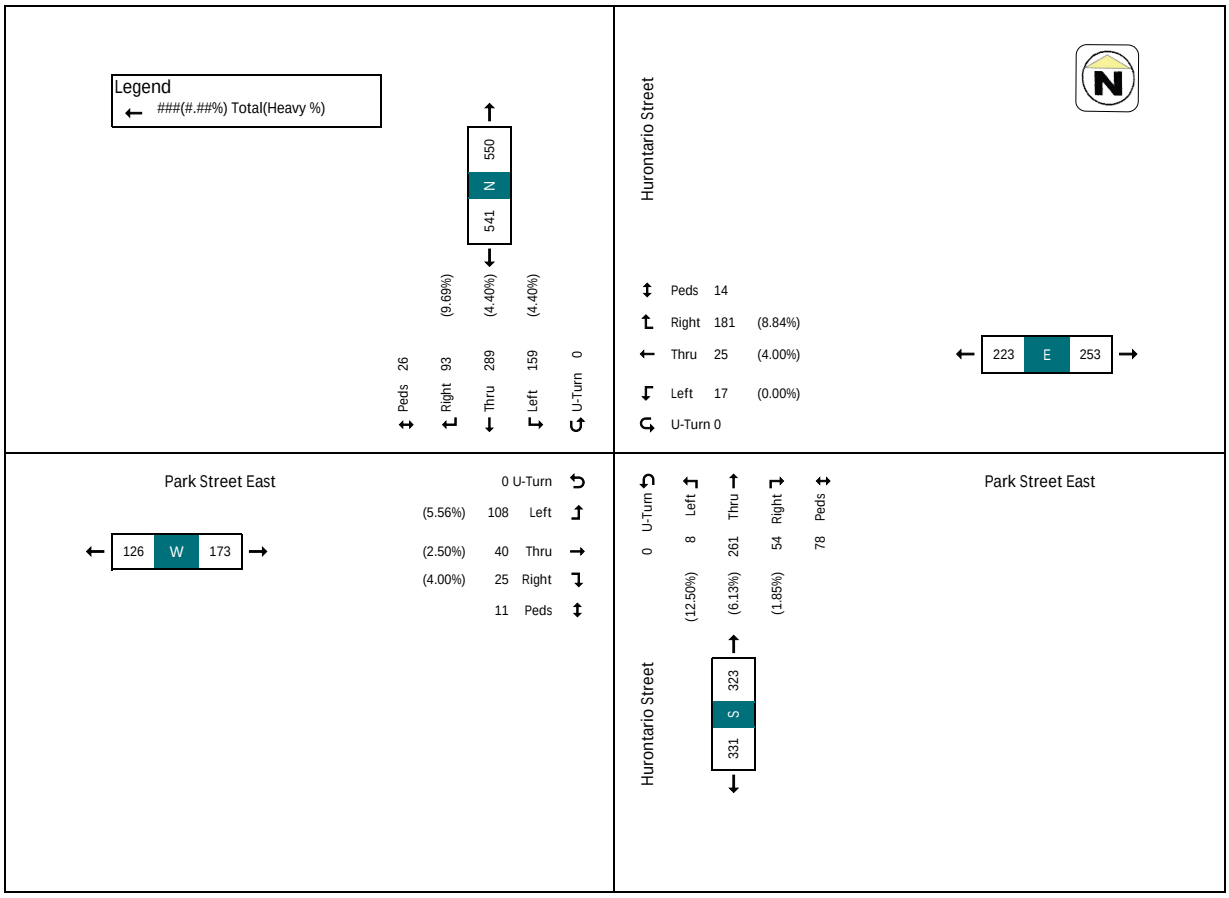


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Hurontario Street & Park Street East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

AM Peak Hour - Hurontario Street & Park Street East

	Hurontario Street Southbound						Park Street East Westbound						Hurontario Street Northbound						Park Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
8:00	0	28	52	22	4	102	0	1	4	16	6	21	0	1	63	8	17	72	0	43	3	4	0	50	245
8:15	0	42	65	25	16	132	0	2	9	29	5	34	0	2	74	12	9	85	0	22	12	7	3	41	292
8:30	0	64	75	19	2	158	0	11	8	80	2	99	0	2	64	19	15	86	0	29	19	7	4	55	398
8:45	0	25	97	27	4	149	0	3	10	56	1	69	0	2	63	15	37	80	0	14	6	7	2	27	325
Hourly Total	0	159	289	93	26	541	0	17	25	181	14	223	0	8	261	54	78	323	0	108	40	25	11	173	1260
Approach %	0.0%	29.4%	53.4%	17.2%	-	-	0.0%	7.6%	11.2%	81.2%	-	-	0.0%	2.5%	80.8%	16.7%	-	-	0.0%	62.4%	23.1%	14.5%	-	-	-
Total %	0.0%	12.6%	22.9%	7.4%	-	42.9%	0.0%	1.3%	2.0%	14.4%	-	17.7%	0.0%	0.6%	20.7%	4.3%	-	25.6%	0.0%	8.6%	3.2%	2.0%	-	13.7%	-
PHF	0	0.62	0.74	0.86	-	0.86	0	0.39	0.63	0.57	-	0.56	0	0.67	0.92	0.71	-	0.94	0	0.63	0.53	0.89	-	0.79	0.79
Lights	0	152	261	86	-	499	0	17	24	165	-	206	0	7	245	53	-	305	0	102	39	24	-	165	1175
% Lights	-	95.6%	90.3%	92.5%	-	92.2%	-	100.0%	96.0%	91.2%	-	92.4%	-	87.5%	93.9%	98.1%	-	94.4%	-	94.4%	97.5%	96.0%	-	95.4%	93.3%
Buses	-	6	18	5	-	29	-	0	1	16	-	17	-	0	13	1	-	14	-	3	1	0	-	4	64
% Buses	-	3.8%	6.2%	5.4%	-	5.4%	-	0.0%	4.0%	8.8%	-	7.6%	-	0.0%	5.0%	1.9%	-	4.3%	-	2.8%	2.5%	0.0%	-	2.3%	5.1%
Trucks	-	1	10	2	-	13	-	0	0	0	-	0	-	1	3	0	-	4	-	3	0	1	-	4	21
% Trucks	-	0.6%	3.5%	2.2%	-	2.4%	-	0.0%	0.0%	0.0%	-	0.0%	-	12.5%	1.1%	0.0%	-	1.2%	-	2.8%	0.0%	4.0%	-	2.3%	1.7%
Bicycles	-	-	-	-	1	1	-	-	-	-	2	2	-	-	-	-	0	0	-	-	-	-	0	0	3
Pedestrians	-	-	-	-	26	-	-	-	-	-	14	-	-	-	-	-	0	-	-	-	-	-	11	-	51

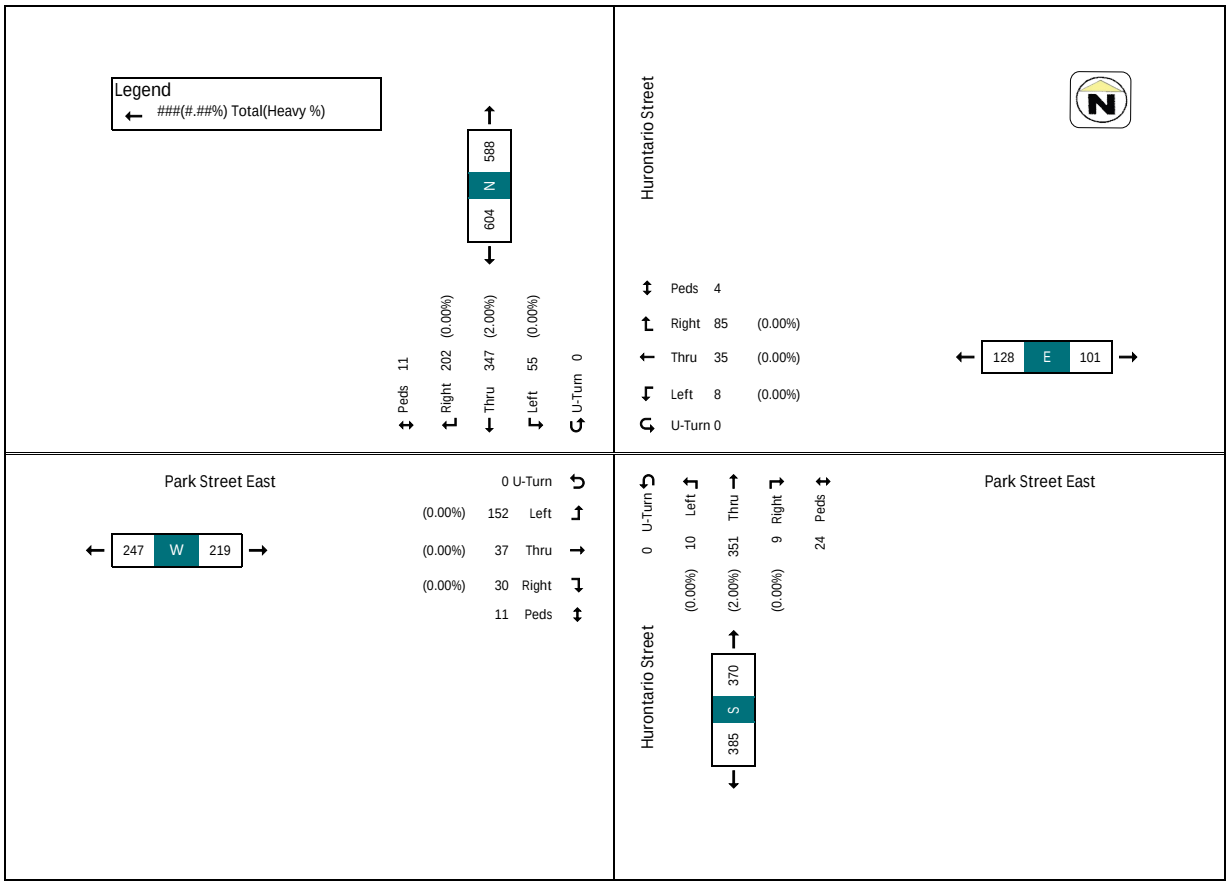


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Hurontario Street & Park Street East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

PM Peak Hour - Hurontario Street & Park Street East

	Hurontario Street Southbound						Park Street East Westbound						Hurontario Street Northbound						Park Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
17:00	0	10	93	41	7	144	0	4	8	36	2	48	0	1	88	1	5	100	0	39	12	7	5	58	350
17:15	0	13	100	61	4	174	0	4	12	22	0	38	0	2	73	2	6	77	0	24	3	0	2	27	316
17:30	0	11	73	47	3	131	0	0	10	9	2	19	0	5	88	2	9	95	0	53	14	16	4	83	328
17:45	0	21	81	53	1	155	0	0	5	18	0	23	0	2	92	4	4	98	0	36	8	7	0	51	327
Hourly Total	0	55	347	202	11	604	0	8	35	85	4	128	0	10	351	9	24	370	0	152	37	30	11	219	1321
Approach %	0.0%	9.1%	57.5%	33.4%	-	-	0.0%	6.3%	27.3%	66.4%	-	-	0.0%	2.7%	94.9%	2.4%	-	-	0.0%	69.4%	16.9%	13.7%	-	-	-
Total %	0.0%	4.2%	26.3%	15.3%	-	45.7%	0.0%	0.6%	2.8%	6.4%	-	9.7%	0.0%	0.8%	27.9%	0.7%	-	28.0%	0.0%	12.1%	2.9%	2.4%	-	16.6%	-
PHF	0	0.65	0.87	0.83	-	0.87	0	0.5	0.73	0.59	-	0.67	0	0.5	0.9	0.56	-	0.93	0	0.72	0.66	0.47	-	0.66	0.94
Lights	0	55	341	202	-	598	0	8	35	85	-	128	0	10	343	9	-	362	0	152	37	30	-	219	1307
% Lights	-	100.0%	98.3%	100.0%	-	99.0%	-	100.0%	100.0%	100.0%	-	100.0%	-	100.0%	97.7%	100.0%	-	97.8%	-	100.0%	100.0%	100.0%	-	100.0%	98.9%
Buses	-	0	18	0	-	18	-	0	0	0	-	0	-	0	6	0	-	6	-	0	0	0	-	0	24
% Buses	-	0.0%	5.2%	0.0%	-	3.0%	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	1.7%	0.0%	-	1.6%	-	0.0%	0.0%	0.0%	-	0.0%	1.8%
Trucks	-	0	0	0	-	0	-	0	0	0	-	0	-	0	2	0	-	2	-	0	0	0	-	0	2
% Trucks	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	0.6%	0.0%	-	0.5%	-	0.0%	0.0%	0.0%	-	0.0%	0.2%
Bicycles	-	-	-	-	1	1	-	-	-	-	0	0	-	-	-	-	1	1	-	-	-	-	0	0	2
Pedestrians	-	-	-	-	11	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	11

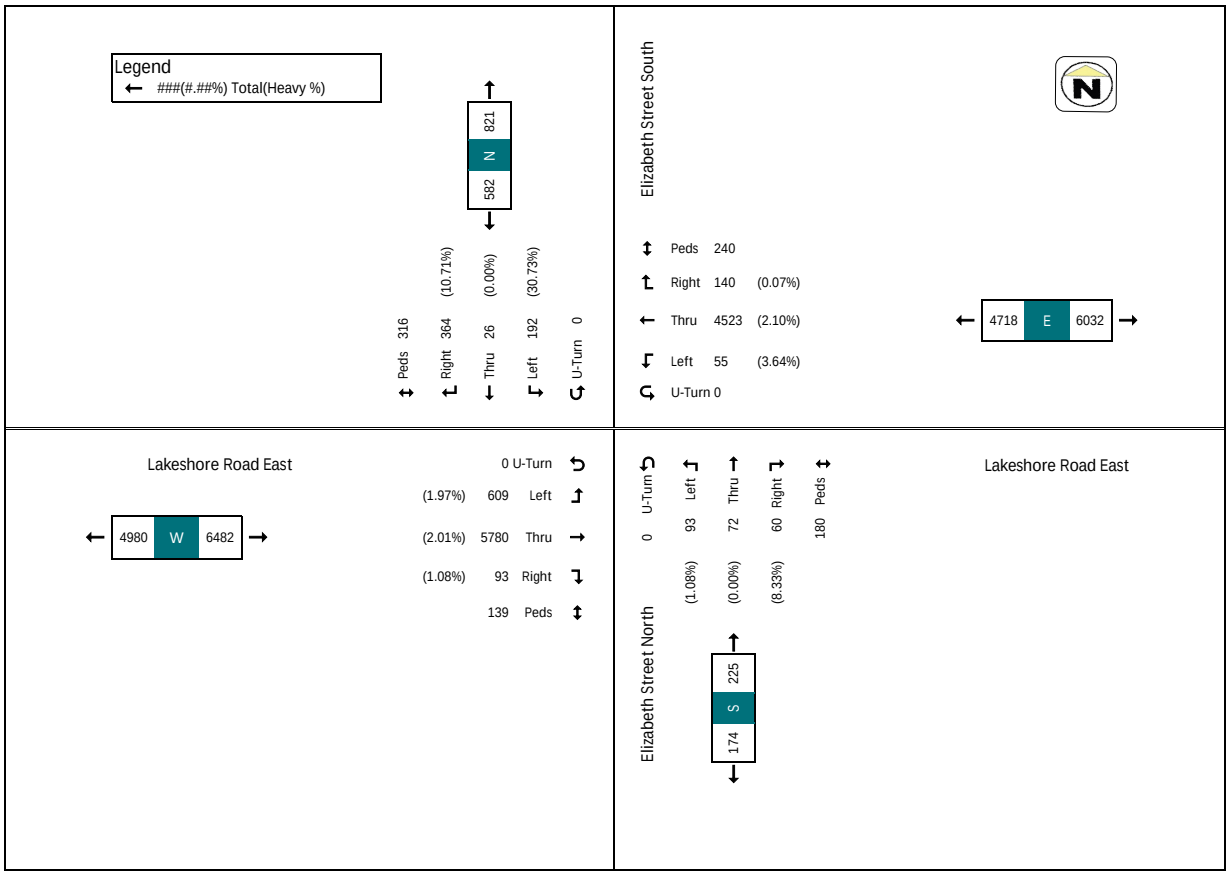


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Elizabeth Street South & Lakeshore Road East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

Turning Movement Count - Elizabeth Street South & Lakeshore Road East

	Elizabeth Street South Southbound						Lakeshore Road East Westbound						Elizabeth Street North Northbound						Lakeshore Road East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	6	1	9	6	16	0	1	75	0	3	76	0	0	0	1	2	1	0	11	124	0	1	135	228
7:15	0	4	0	12	2	16	0	0	86	3	4	91	0	2	0	2	3	2	0	17	162	2	0	181	301
7:30	0	8	0	13	8	21	0	0	112	1	4	117	0	2	0	2	3	3	0	11	203	1	3	215	356
7:45	0	12	2	11	6	25	0	1	153	1	5	155	0	4	0	0	2	4	0	28	270	1	1	299	483
Hourly Total	0	30	3	45	24	78	0	2	426	11	21	439	0	7	0	4	8	11	0	77	759	4	5	840	1368
8:00	0	12	0	15	8	27	0	1	173	2	24	176	0	0	2	1	2	3	0	14	278	1	2	293	499
8:15	0	5	0	10	7	15	0	0	188	5	8	193	0	0	3	4	7	7	0	29	334	1	2	364	579
8:30	0	11	0	22	14	33	0	1	264	5	9	270	0	5	3	0	3	8	0	19	368	0	0	387	698
8:45	0	5	1	12	9	18	0	1	280	5	2	286	0	3	5	0	0	8	0	22	218	0	6	240	552
Hourly Total	0	33	1	59	38	93	0	3	905	17	43	925	0	8	13	5	12	26	0	84	1198	2	10	1284	2328
9:00	0	5	0	14	11	19	0	5	189	3	7	197	0	3	1	1	4	5	0	28	217	5	8	250	471
9:15	0	6	3	9	10	18	0	0	141	5	8	146	0	3	1	2	7	6	0	24	230	1	4	255	425
9:30	0	2	1	11	10	14	0	1	128	2	2	131	0	4	0	1	5	5	0	20	171	5	8	196	346
9:45	0	6	0	10	10	16	0	2	144	0	5	146	0	2	2	4	2	8	0	19	189	4	4	212	382
Hourly Total	0	19	4	44	41	67	0	8	602	10	22	620	0	12	4	8	18	24	0	91	807	15	24	913	1624
* Break *																									
16:00	0	11	1	10	19	22	0	2	194	10	12	206	0	6	6	3	13	14	0	18	218	8	5	244	486
16:15	0	12	1	12	15	25	0	0	195	11	11	206	0	5	3	4	10	11	0	28	218	7	7	253	495
16:30	0	5	0	10	17	15	0	3	193	9	7	205	0	6	5	4	10	14	0	25	208	1	10	234	468
16:45	0	7	2	11	12	20	0	2	210	10	23	222	0	4	3	3	9	10	0	33	263	4	5	300	552
Hourly Total	0	35	4	43	63	82	0	7	792	40	53	839	0	18	17	14	42	49	0	104	907	20	27	1031	2001
17:00	0	6	5	20	15	31	0	2	198	6	17	206	0	8	9	3	28	21	0	26	243	4	4	273	531
17:15	0	9	1	20	19	30	0	0	213	6	4	219	0	10	7	2	5	19	0	30	269	4	5	303	571
17:30	0	10	2	21	18	33	0	1	201	3	18	205	0	3	4	2	11	11	0	31	249	0	5	280	529
17:45	0	6	2	14	17	22	0	7	229	11	9	247	0	3	3	3	6	9	0	27	252	6	7	285	563
Hourly Total	0	31	10	75	69	116	0	10	841	26	48	877	0	27	23	10	50	60	0	114	1013	14	21	1141	2194
18:00	0	9	0	26	12	35	0	11	190	9	18	210	0	4	4	2	19	10	0	20	223	7	9	250	505
18:15	0	6	1	21	22	29	0	5	202	12	11	219	0	2	4	3	8	9	0	32	190	7	17	229	485
18:30	0	11	2	7	16	20	0	1	154	10	7	165	0	4	2	0	8	10	0	24	181	7	7	212	412
18:45	0	10	0	23	11	33	0	5	139	3	8	147	0	5	2	1	8	8	0	24	142	8	11	174	362
Hourly Total	0	36	3	77	61	116	0	22	685	34	46	741	0	15	13	14	43	42	0	100	736	29	40	865	1764
Grand Total	0	192	26	364	316	582	0	55	4523	140	240	4718	0	93	72	60	180	225	0	609	5780	93	139	6482	12007
Approach %	0.0%	33.0%	4.5%	62.5%	-	-	0.0%	1.2%	95.9%	3.0%	-	-	0.0%	41.3%	32.0%	26.7%	-	-	0.0%	9.4%	89.2%	1.4%	-	-	-
Total %	0.0%	1.6%	0.2%	3.0%	-	4.8%	0.0%	0.5%	37.7%	1.2%	-	39.3%	0.0%	0.8%	0.6%	0.5%	-	1.9%	0.0%	5.1%	48.1%	0.8%	-	54.0%	-
Lights	0	133	26	325	-	484	0	53	4428	137	-	4618	0	92	72	55	-	219	0	597	5664	92	-	6353	11674
% Lights	-	69.3%	100.0%	89.3%	-	83.2%	-	96.4%	97.9%	97.9%	-	97.9%	-	98.9%	100.0%	91.7%	-	97.3%	-	98.0%	98.0%	98.9%	-	98.0%	97.2%
Buses	-	59	0	37	-	96	-	1	43	1	-	45	-	0	0	0	-	0	-	9	69	1	-	79	220
% Buses	-	30.7%	0.0%	10.2%	-	16.5%	-	1.8%	1.0%	0.7%	-	1.0%	-	0.0%	0.0%	0.0%	-	0.0%	-	1.5%	1.2%	1.1%	-	1.2%	1.8%
Trucks	-	0	0	2	-	2	-	1	52	2	-	55	-	1	0	5	-	6	-	3	47	0	-	50	113
% Trucks	-	0.0%	0.0%	-	-	0.3%	-	1.8%	1.1%	1.4%	-	1.2%	-	1.1%	0.0%	8.3%	-	2.7%	-	0.5%	0.8%	0.0%	-	0.8%	0.9%
Bicycles	-	-	-	-	2	2	-	-	-	-	2	2	-	-	-	-	5	5	-	-	-	-	0	0	9
Pedestrians	-	-	-	-	316	-	-	-	-	-	240	-	-	-	-	-	180	-	-	-	-	-	139	-	875

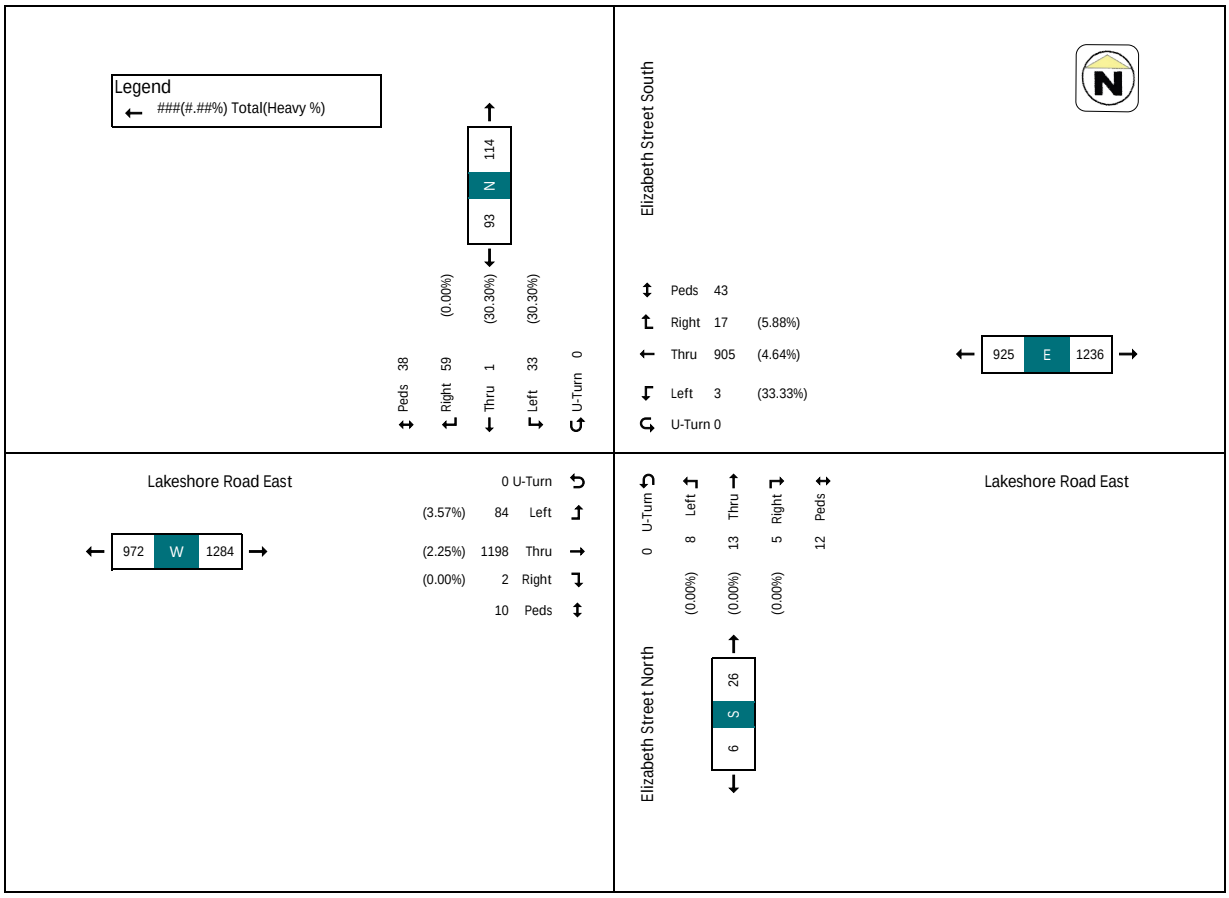


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Elizabeth Street South & Lakeshore Road East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

AM Peak Hour - Elizabeth Street South & Lakeshore Road East

	Elizabeth Street South Southbound						Lakeshore Road East Westbound						Elizabeth Street North Northbound						Lakeshore Road East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
8:00	0	12	0	15	8	27	0	1	173	2	24	176	0	0	2	1	2	3	0	14	278	1	2	293	499
8:15	0	5	0	10	-	15	0	0	188	5	8	193	0	0	3	4	-	7	0	29	334	1	2	364	579
8:30	0	11	0	22	14	33	0	1	264	5	9	270	0	3	3	0	3	8	0	19	368	0	0	387	698
8:45	0	5	1	12	9	18	0	1	280	5	2	286	0	3	5	0	0	8	0	22	218	0	6	240	552
Hourly Total	0	33	1	59	38	93	0	3	905	17	43	925	0	8	13	5	12	26	0	84	1198	2	10	1284	2328
Approach %	0.0%	35.5%	1.1%	63.4%	-	-	0.0%	0.3%	97.8%	1.8%	-	-	0.0%	30.8%	50.0%	19.2%	-	-	0.0%	6.5%	93.3%	0.2%	-	-	-
Total %	0.0%	1.4%	0.0%	2.5%	-	4.0%	0.0%	0.1%	38.9%	0.7%	-	39.7%	0.0%	0.3%	0.6%	0.2%	-	1.1%	0.0%	3.6%	51.5%	0.1%	-	55.2%	-
PHF	0	0.69	0.25	0.67	-	0.7	0	0.75	0.81	0.85	-	0.81	0	0.4	0.65	0.31	-	0.81	0	0.72	0.81	0.5	-	0.83	0.83
Lights	0	23	1	49	-	73	0	2	863	16	-	881	0	8	13	5	-	26	0	81	1171	2	-	1254	2234
% Lights	-	69.7%	100.0%	83.1%	-	78.5%	-	66.7%	95.4%	94.1%	-	95.2%	-	100.0%	100.0%	100.0%	-	100.0%	-	96.4%	97.7%	100.0%	-	97.7%	96.0%
Buses	-	10	-	10	-	20	-	-	22	-	-	22	-	-	-	-	-	-	-	-	16	-	-	16	58
% Buses	-	30.3%	0.0%	16.9%	-	21.5%	-	0.0%	2.5%	0.0%	-	2.5%	-	0.0%	0.0%	0.0%	-	0.0%	-	3.6%	1.6%	0.0%	-	1.7%	2.6%
Trucks	-	0	0	0	-	0	-	1	19	1	-	21	-	0	0	0	-	0	-	0	8	0	-	8	29
% Trucks	-	0.0%	0.0%	0.0%	-	0.0%	-	33.3%	2.1%	5.9%	-	2.3%	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	0.7%	0.0%	-	0.6%	1.2%
Bicycles	-	-	-	-	1	1	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	0	0	1
Pedestrians	-	-	-	-	38	-	-	-	-	-	43	-	-	-	-	-	0	-	-	-	-	-	10	-	91

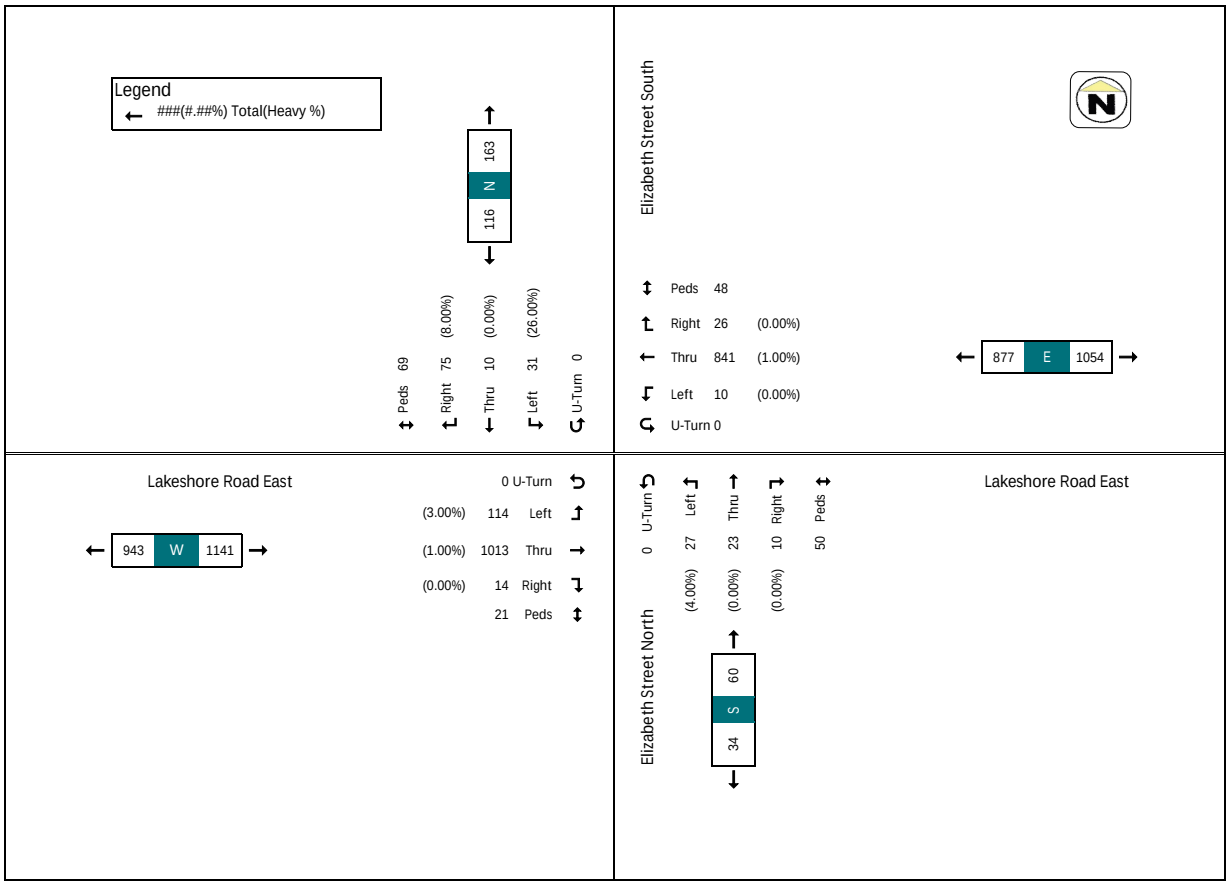


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Elizabeth Street South & Lakeshore Road East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

PM Peak Hour - Elizabeth Street South & Lakeshore Road East

	Elizabeth Street South Southbound						Lakeshore Road East Westbound						Elizabeth Street North Northbound						Lakeshore Road East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
17:00	0	6	5	20	15	31	0	2	198	6	17	206	0	9	9	3	28	21	0	26	243	4	4	273	531
17:15	0	9	1	20	19	30	0	0	213	6	4	219	0	10	7	2	5	19	0	30	269	4	5	303	571
17:30	0	10	2	21	18	33	0	1	201	3	18	205	0	5	4	2	11	11	0	31	249	0	5	280	529
17:45	0	6	2	14	17	22	0	7	229	11	9	247	0	3	3	3	6	9	0	27	252	6	7	285	563
Hourly Total	0	31	10	75	69	116	0	10	841	26	48	877	0	27	23	10	50	60	0	114	1013	14	21	1141	2194
Approach %	0.0%	26.7%	8.6%	64.7%	-	-	0.0%	1.1%	95.9%	3.0%	-	-	0.0%	45.0%	38.3%	16.7%	-	-	0.0%	10.0%	88.8%	1.2%	-	-	-
Total %	0.0%	1.4%	0.5%	3.4%	-	5.3%	0.0%	0.4%	36.1%	1.2%	-	40.0%	0.0%	1.2%	1.0%	0.4%	-	2.7%	0.0%	4.9%	43.5%	0.6%	-	52.0%	-
PHF	0	0.78	0.5	0.89	-	0.88	0	0.36	0.92	0.59	-	0.89	0	0.68	0.64	0.83	-	0.71	0	0.92	0.94	0.58	-	0.94	0.96
Lights	0	23	10	69	-	102	0	10	836	26	-	872	0	25	23	10	-	58	0	111	1003	14	-	1128	2161
% Lights	-	74.2%	100.0%	92.0%	-	87.9%	-	100.0%	99.4%	100.0%	-	99.4%	-	96.3%	100.0%	100.0%	-	96.7%	-	97.4%	99.0%	100.0%	-	98.9%	98.5%
Buses	-	8	0	6	-	14	-	0	0	0	-	0	-	0	0	0	-	0	-	0	5	0	-	5	19
% Buses	-	25.8%	0.0%	8.0%	-	12.1%	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	0.5%	0.0%	-	0.4%	0.9%
Trucks	-	0	0	0	-	0	-	0	5	0	-	5	-	1	0	0	-	1	-	3	5	0	-	8	14
% Trucks	-	0.0%	0.0%	0.0%	-	0.0%	-	0.0%	0.6%	0.0%	-	0.6%	-	3.7%	0.0%	0.0%	-	1.7%	-	2.6%	0.5%	0.0%	-	0.7%	0.6%
Bicycles	-	-	-	-	0	0	-	-	-	-	0	0	-	-	-	-	1	1	-	-	-	-	0	0	1
Pedestrians	-	-	-	-	69	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	69

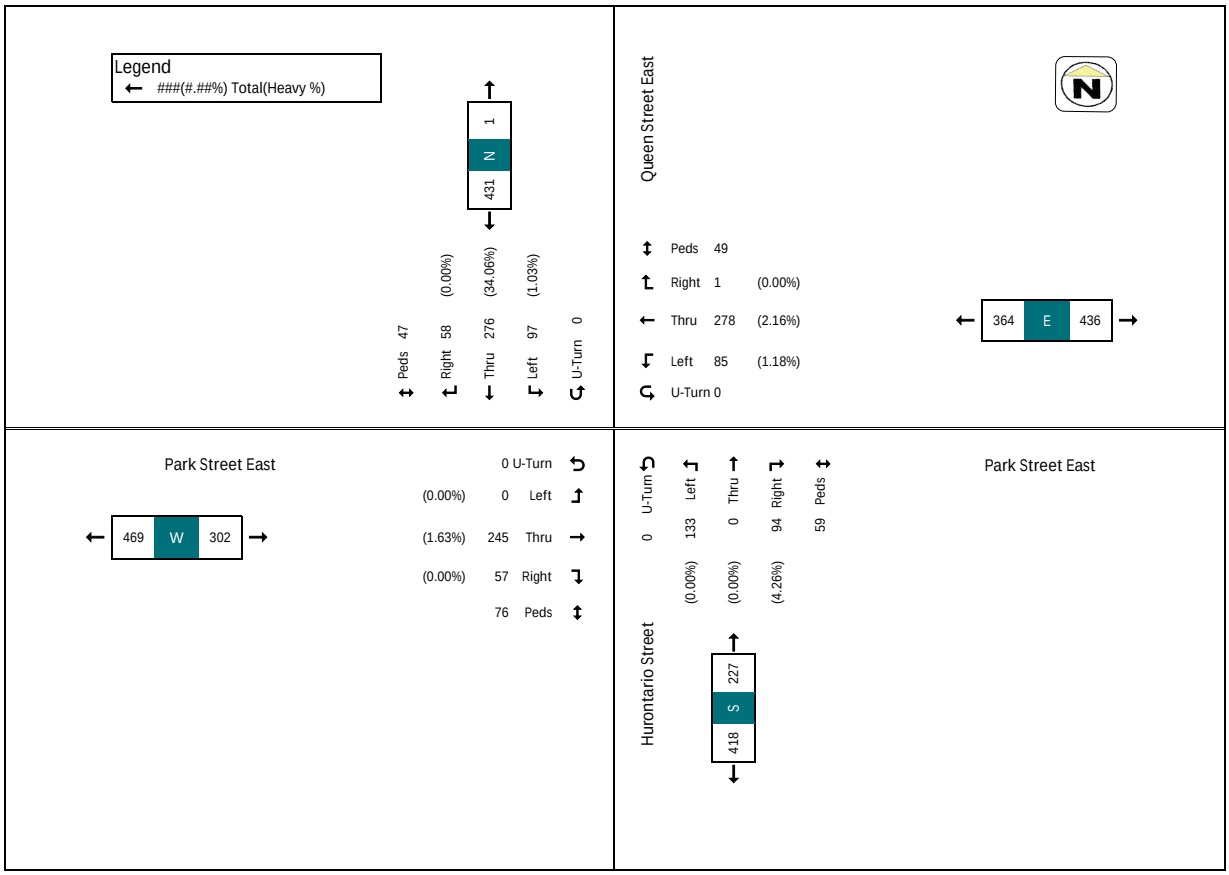


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Queen Street East & Park Street East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

Turning Movement Count - Queen Street East & Park Street East

	Queen Street East Southbound						Park Street East Westbound						Hurontario Street Northbound						Park Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
7:00	0	3	14	1	1	18	0	0	2	0	1	2	0	0	0	2	1	2	0	0	6	4	1	10	32
7:15	0	2	10	2	1	13	0	1	6	0	2	7	0	2	0	0	0	0	0	0	8	2	3	13	33
7:30	0	2	10	1	0	13	0	2	4	0	0	6	0	2	0	4	0	6	0	0	12	1	4	13	38
7:45	0	4	12	4	0	20	0	1	3	0	1	4	0	2	0	6	1	8	0	0	12	1	9	13	45
Hourly Total	0	11	44	8	2	63	0	7	15	0	7	22	0	4	0	12	3	16	0	0	38	8	17	46	147
8:00	0	2	13	2	3	17	0	3	3	0	5	6	0	3	0	4	2	7	0	0	5	4	0	9	39
8:15	0	4	14	6	2	24	0	2	12	0	3	14	0	2	0	3	5	5	0	0	9	4	1	13	56
8:30	0	4	14	1	3	19	0	4	11	0	1	15	0	4	0	4	4	8	0	0	20	5	5	25	67
8:45	0	5	5	1	7	11	0	4	19	0	2	23	0	5	0	2	3	7	0	0	11	5	2	16	57
Hourly Total	0	15	46	10	15	71	0	13	45	0	11	58	0	14	0	13	14	27	0	0	45	18	8	63	219
9:00	0	3	6	2	1	11	0	4	10	0	3	14	0	8	0	2	4	10	0	0	10	3	4	13	48
9:15	0	1	10	2	3	13	0	2	7	0	2	9	0	5	0	4	3	9	0	0	4	1	2	5	36
9:30	0	5	11	0	1	16	0	2	6	0	1	8	0	6	0	3	1	9	0	0	2	1	1	3	36
9:45	0	1	5	2	1	8	0	3	7	0	1	10	0	6	0	0	1	6	0	0	3	2	1	5	29
Hourly Total	0	10	32	6	6	48	0	11	30	0	7	41	0	25	0	9	9	34	0	0	19	7	8	26	149
* Break *																									
16:00	0	2	10	1	1	13	0	6	16	0	0	22	0	7	0	4	5	11	0	0	2	1	7	3	49
16:15	0	2	8	4	3	9	0	4	12	0	1	15	0	10	0	6	5	16	0	0	11	2	4	13	53
16:30	0	5	11	5	2	21	0	4	21	0	1	25	0	8	0	3	0	8	0	0	6	1	8	7	61
16:45	0	6	7	3	3	16	0	4	15	0	1	19	0	7	0	3	2	10	0	0	8	1	0	9	54
Hourly Total	0	15	34	10	9	59	0	17	64	0	5	81	0	29	0	16	12	45	0	0	27	5	19	32	217
17:00	0	10	14	8	1	32	0	8	18	0	6	26	0	9	0	4	1	13	0	0	11	1	0	12	83
17:15	0	5	8	4	3	17	0	8	28	0	0	36	0	8	0	11	0	19	0	0	5	5	4	10	82
17:30	0	10	16	2	2	28	0	4	18	0	2	22	0	13	0	3	4	20	0	0	17	6	7	23	93
17:45	0	4	5	1	0	10	0	2	13	0	1	15	0	5	0	4	2	9	0	0	23	1	2	24	58
Hourly Total	0	29	43	15	6	87	0	22	77	0	9	99	0	35	0	26	7	61	0	0	56	13	13	69	316
18:00	0	5	25	4	3	34	0	7	13	0	3	20	0	6	0	3	3	9	0	0	18	3	4	21	84
18:15	0	5	14	3	3	22	0	4	11	0	0	15	0	5	0	4	5	9	0	0	8	0	0	8	54
18:30	0	2	9	0	2	11	0	3	11	0	2	15	0	11	0	4	1	16	0	0	24	3	1	27	69
18:45	0	5	29	2	3	36	0	1	12	0	5	13	0	4	0	4	5	8	0	0	10	0	6	10	67
Hourly Total	0	17	77	9	9	103	0	15	47	1	10	63	0	26	0	18	14	44	0	0	60	6	11	66	276
Grand Total	0	97	276	58	47	431	0	85	278	1	49	364	0	133	0	94	59	227	0	0	245	57	76	302	1324
Approach %	0.0%	22.5%	64.0%	13.5%	-	-	0.0%	23.4%	76.4%	0.3%	-	-	0.0%	58.6%	0.0%	41.4%	-	-	0.0%	0.0%	81.1%	18.9%	-	-	-
Total %	0.0%	7.3%	20.8%	4.4%	-	32.6%	0.0%	6.4%	21.0%	0.1%	-	27.5%	0.0%	10.0%	0.0%	7.1%	-	17.1%	0.0%	0.0%	18.5%	4.3%	-	22.8%	-
Lights	0	96	182	58	-	336	0	84	272	1	-	357	0	133	0	90	-	223	0	0	241	57	-	298	1214
% Lights	-	99.0%	65.9%	100.0%	-	78.0%	-	98.8%	97.8%	100.0%	-	98.1%	-	100.0%	-	95.7%	-	98.2%	-	-	98.4%	100.0%	-	98.7%	91.7%
Buses	-	0	82	0	-	82	-	1	3	0	-	4	-	0	0	3	-	3	-	0	3	0	-	3	92
% Buses	-	0.0%	29.7%	0.0%	-	19.0%	-	1.2%	1.1%	0.0%	-	1.1%	-	0.0%	-	3.2%	-	1.3%	-	-	1.2%	0.0%	-	1.0%	6.9%
Trucks	-	1	12	0	-	13	-	0	3	0	-	3	-	0	0	1	-	1	-	0	1	0	-	1	18
% Trucks	-	1.0%	4.3%	-	-	3.0%	-	0.0%	1.1%	0.0%	-	0.8%	-	0.0%	-	1.1%	-	0.4%	-	-	0.4%	0.0%	-	0.3%	1.4%
Bicycles	-	-	-	-	0	0	-	-	-	-	1	1	-	-	-	-	2	2	-	-	-	-	0	0	3
Pedestrians	-	-	-	-	47	-	-	-	-	-	49	-	-	-	-	-	59	-	-	-	-	-	76	-	231

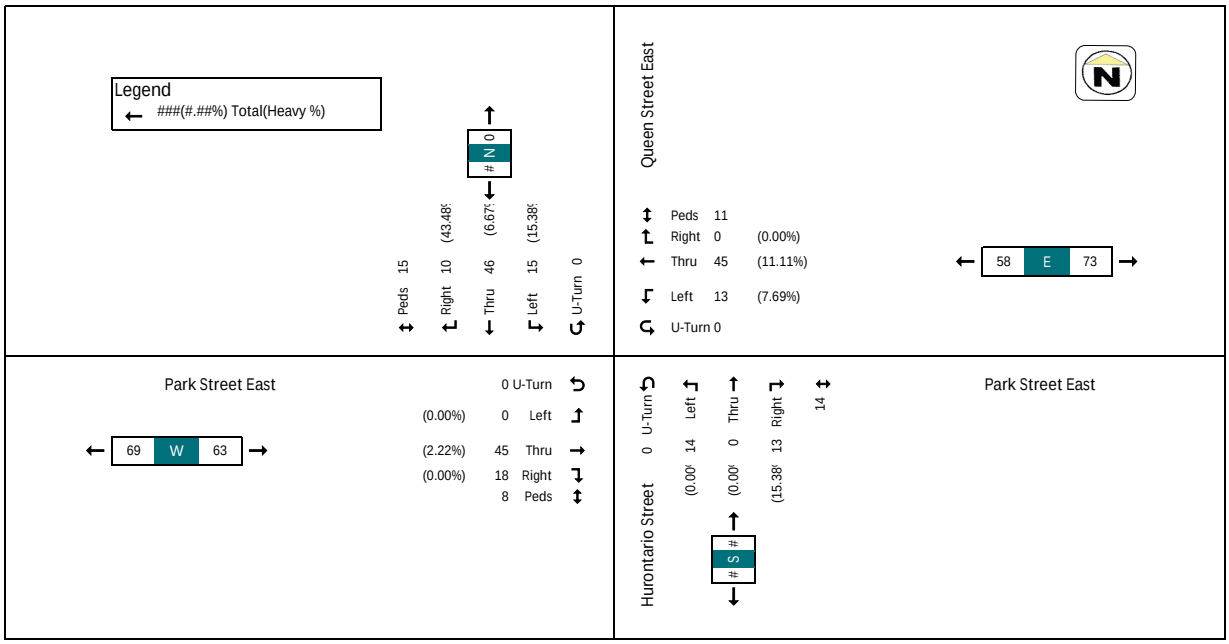


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Queen Street East & Park Street East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

Common AM Peak Hour - Queen Street East & Park Street East

	Queen Street East Southbound						Park Street East Westbound						Hurontario Street Northbound						Park Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
8:00	0	2	13	2	3	17	0	3	3	0	5	6	0	3	0	4	2	7	0	0	5	4	0	9	39
8:15	0	4	14	6	2	24	0	2	12	0	3	14	0	2	0	3	5	5	0	0	9	4	1	13	56
8:30	0	4	14	1	3	19	0	4	11	0	1	15	0	4	0	4	4	8	0	0	20	5	5	25	67
8:45	0	5	5	1	7	11	0	4	19	0	2	23	0	5	0	2	3	7	0	0	11	5	2	16	57
Hourly Total	0	15	46	10	15	71	0	13	45	0	11	58	0	14	0	13	14	27	0	0	45	18	8	63	219
Approach %	0.0%	21.1%	64.8%	14.1%	-	-	0.0%	22.4%	77.6%	0.0%	-	-	0.0%	51.9%	0.0%	48.1%	-	-	0.0%	0.0%	71.4%	28.6%	-	-	-
Total %	0.0%	6.8%	21.0%	4.6%	-	32.4%	0.0%	5.7%	19.7%	0.0%	-	26.5%	0.0%	6.1%	0.0%	5.7%	-	12.3%	0.0%	0.0%	19.7%	7.9%	-	28.8%	-
PHF	0	0.75	0.82	0.42	-	0.74	0	0.81	0.59	0	-	0.63	0	0.7	0	0.81	-	0.84	0	0	0.56	0.9	-	0.63	0.82
Lights	0	14	26	10	-	50	0	12	40	0	-	52	0	14	0	11	-	25	0	0	44	18	-	62	189

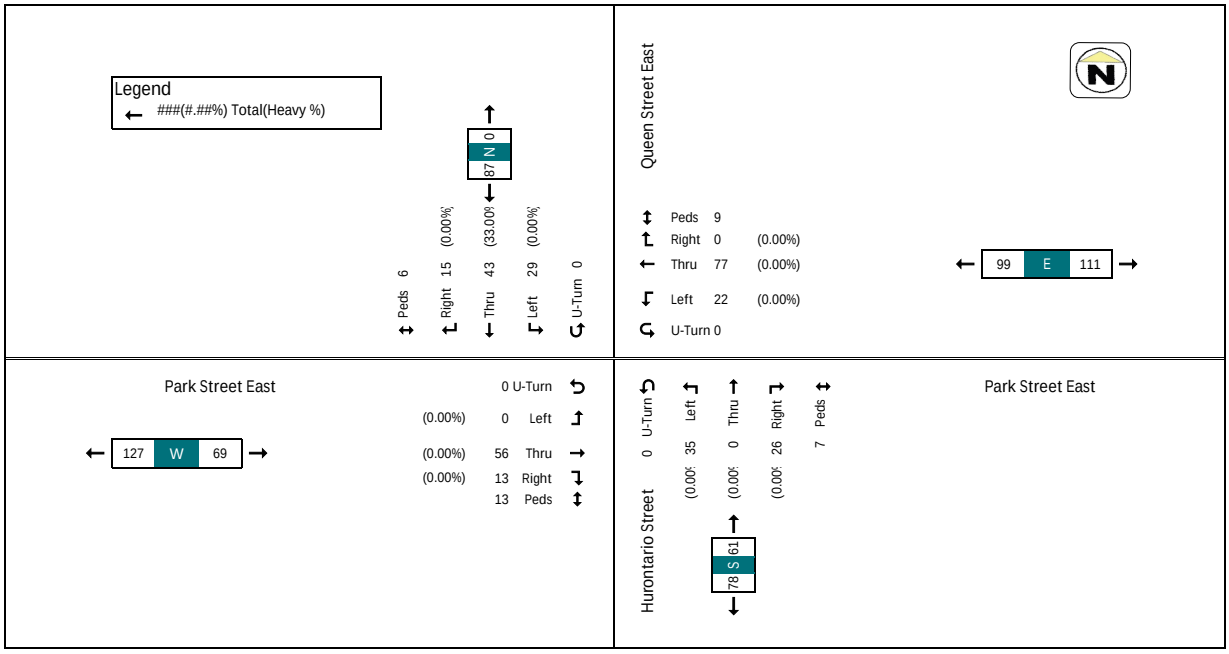


LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor
Markham, ON L3R 9R9

Intersection : Queen Street East & Park Street East
Survey Date : February 4, 2025
Project No. : 20248
Count ID : 25026

Common PM Peak Hour - Queen Street East & Park Street East

	Queen Street East Southbound						Park Street East Westbound						Hurontario Street Northbound						Park Street East Eastbound						
Start Time	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Grand Total
17:00	0	10	14	8	1	32	0	8	18	0	6	26	0	9	0	4	1	13	0	0	11	1	0	12	83
17:15	0	5	8	4	3	17	0	8	28	0	0	36	0	8	0	11	0	19	0	0	5	5	4	10	82
17:30	0	10	16	2	2	28	0	4	18	0	2	22	0	13	0	7	4	20	0	0	17	6	7	23	93
17:45	0	4	5	1	0	10	0	2	13	0	1	15	0	5	0	4	2	9	0	0	23	1	2	24	58
Hourly Total	0	29	43	15	6	87	0	22	77	0	9	99	0	35	0	26	7	61	0	0	56	13	13	69	316
Approach %	0.0%	33.3%	49.4%	17.2%	-	-	0.0%	22.2%	77.8%	0.0%	-	-	0.0%	57.4%	0.0%	42.6%	-	-	0.0%	0.0%	81.2%	18.8%	-	-	-



MISSISSAUGA

File: CA.13.SIG
Signal Timing Request
RT.07.0704
RT.07.0808

December 2, 2019

LEA Consulting Ltd.
625 Cochrane Drive, 9th floor
Markham, ON L3R 9R9

Dear Timothy Chin:

Re: Traffic Signal Timing

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

Hurontario Street at Park Street
Lakeshore Road at Elizabeth Street

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. Similarly, phase (5) is also actuated. Pedestrian "Walk" and flashing "Don't Walk" time on the side street, as noted, would be used in the event that the pedestrian push button is activated. During the side street pedestrian indications, the side street vehicle green is concurrently displayed. Should there be no demand on the actuated phases, the signals would result in a green indication on the major street (2, 6).

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

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

Should you require further information, please contact 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

Signal Timing Report

Runtime: 2019-11-28 13:42:19

Device: 0704

Region: Mississauga **Signal ID:** 0704 **Location:** HURONTARIO STREET N at Park Street

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	9	0	10	0	9	0	10
Ped Clear	Sec	0	17	0	21	0	17	0	21
Min Green	Sec	0	8	0	8	5	8	0	8
Passage	Sec	0.0	3.0	0.0	3.0	2.0	3.0	0.0	3.0
Maximum 1	Sec	0	30	0	30	15	30	0	30
Maximum 2	Sec	0	30	0	30	15	30	0	30
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	phaseNotOn	redClear	other	phaseNotOn
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	0	Enabled Non Lock Det Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	0	Enabled Non Lock Det Dual Entry
[P2] Ring	Ring	0	1	0	1	2	2	0	2
[P2] Concurrency	Phase (,)	()	(5,6)	()	(8)	(2)	(2)	()	(4)

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	105	100	100	140	100	0	0	0
Offset	Sec	2	16	96	97	19	0	0	0
Split	Split	1	2	3	4	5	0	0	0
Sequence	Sequence	1	1	1	1	1	0	0	0

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	phaseOmitted	none	none	none
Split 1 - Time	Sec	0	63	0	42	0	63	0	42
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	phaseOmitted	none	none	none
Split 2 - Time	Sec	0	62	0	38	0	62	0	38
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	none	phaseOmitted	none	none	none
Split 3 - Time	Sec	0	57	0	43	0	57	0	43
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
Split 4 - Mode	Enum	none	none	none	pedRecall	none	none	none	none
Split 4 - Time	Sec	0	91	0	49	25	66	0	49
Split 4 - Coord	Enum	false	true	false	false	false	true	false	false
Split 5 - Mode	Enum	none	none	none	pedRecall	none	none	none	none
Split 5 - Time	Sec	0	60	0	40	23	37	0	40
Split 5 - Coord	Enum	false	true	false	false	false	true	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F----------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234 56789012345678 901	12345678901234 56789012345678 901	12345678901234 56789012345678 901	1---------- -------	----------8------ -------	----------9--- ---------	----------0---- -------	1---------- -------
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	--------S---	---------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----5---------- -------	-2---------- -------	----------4---------- -------	---------- 5------	---------- -6-----	---------- 4-------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	7	9	15	16	19	3
Plan 1 Minute	Min	0	0	0	30	0	30	30	0
Plan 1 Action	Number	8	1	4	2	5	3	2	7
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

Anatole Kung

From: Ian Dinsmore
Sent: February 13, 2025 11:39 AM
To: Anatole Kung
Subject: Fw: Signal Timing Plan request - 2025-02-05

Ian Dinsmore
LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor | Markham, ON | L3R 9R9
D : (289) 971-1656 C: (365) 275-5477 E: idinsmore@lea.ca
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From: Ken Moore <Ken.Moore@mississauga.ca>
Sent: Wednesday, February 5, 2025 2:02 PM
To: Ian Dinsmore <IDinsmore@lea.ca>
Cc: Yelena Klimenko <Yelena.Klimenko@mississauga.ca>; Jim Kartsomanis <Jim.Kartsomanis@mississauga.ca>; ATMS ATMS <ATMS@mississauga.ca>; Amir Koda <amir.koda@mississauga.ca>; Steve MacRae <Steve.MacRae@mississauga.ca>; Kalen Psaila <Kalen.Psaila@mobilinx.ca>; Josef Caspi <Josef.Caspi@mobilinx.ca>; Alex Liya <Alex.Liya@mississauga.ca>
Subject: RE: Signal Timing Plan request - 2025-02-05

External Sender
Hi Ian,

Please contact Kalen Psaila (cc'd) regarding your request for the current signal timing plans at the intersection of Hurontario at Park.

Thanks

Ken Moore, ***C.E.T.***
Coordinator, Traffic Systems
Traffic Management – Hurontario LRT Project Office
T 905-615-3200 ext.4054
ken.moore@mississauga.ca

City of Mississauga | Transportation and Works Department,
Rapid Transit Program Office Division
Hurontario LRT Project Office

From: Amir Koda <amir.koda@mississauga.ca>
Sent: Wednesday, February 5, 2025 1:47 PM

To: Ian Dinsmore <IDinsmore@lea.ca>
Cc: Yelena Klimenko <Yelena.Klimenko@mississauga.ca>; Jim Kartsomanis <Jim.Kartsomanis@mississauga.ca>; ATMS ATMS <ATMS@mississauga.ca>; Ken Moore <Ken.Moore@mississauga.ca>
Subject: RE: Signal Timing Plan request - 2025-02-05

Hi Ian,

Thank you for your confirmation.

For the LRT-related intersection (Hurontario Street and Park Street), I've CC'd Ken Moore, who can assist with the relevant signal timing plan.

Please feel free to reach out if you need any further assistance.

Best regards,

Amir Koda
ITS Technologist, Traffic Systems & ITS
M 437-249-5232
amir.koda@mississauga.ca

City of Mississauga | Transportation and Works Department,
Traffic Management and Municipal Parking Division

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From: Ian Dinsmore <IDinsmore@lea.ca>
Sent: Wednesday, February 5, 2025 1:43 PM
To: Amir Koda <amir.koda@mississauga.ca>
Cc: Yelena Klimenko <Yelena.Klimenko@mississauga.ca>; Jim Kartsomanis <Jim.Kartsomanis@mississauga.ca>; ATMS ATMS <ATMS@mississauga.ca>
Subject: [EXTERNAL] Re: Signal Timing Plan request - 2025-02-05

[CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.]

Hi Amir,

Thanks for the heads up, we would like to purchase the current timing plans under Mobilinx.

Thanks

Ian Dinsmore
LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor | Markham, ON | L3R 9R9
D : (289) 971-1656 C: (365) 275-5477 E: idinsmore@lea.ca
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From: Amir Koda <amir.koda@mississauga.ca>
Sent: Wednesday, February 5, 2025 1:26 PM
To: Ian Dinsmore <IDinsmore@lea.ca>
Cc: Yelena Klimenko <Yelena.Klimenko@mississauga.ca>; Jim Kartsomanis <Jim.Kartsomanis@mississauga.ca>; ATMS ATMS <ATMS@mississauga.ca>
Subject: RE: Signal Timing Plan request - 2025-02-05

External Sender

Hello Ian,

The intersection at Hurontario Street and Park Street, is currently operating under temporary signal timing conditions due to the ongoing LRT construction within Mobilinx's jurisdiction. Could you kindly confirm whether you require the signal timing plan from before the LRT construction began, or the current timing plans in place under Mobilinx's management?

Thank you!
Best regards,

Amir Koda
ITS Technologist, Traffic Systems & ITS
M 437-249-5232
amir.koda@mississauga.ca

City of Mississauga | Transportation and Works Department,
Traffic Management and Municipal Parking Division

Please consider the environment before printing.

From: Ian Dinsmore <IDinsmore@lea.ca>
Sent: Wednesday, February 5, 2025 10:40 AM
To: ATMS ATMS <ATMS@mississauga.ca>
Subject: [EXTERNAL] Signal Timing Plan request - 2025-02-05

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Hello,

We would like to purchase the following timing plans:

Hurontario St & Park St E
Elizabeth St N & Lakeshore Rd E

Thank you,

Ian Dinsmore
LEA Consulting Ltd.
625 Cochrane Drive, 5th Floor | Markham, ON | L3R 9R9
D : (289) 971-1656 C: (365) 275-5477 E: idinsmore@lea.ca
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File: CA.13.SIG
Signal Timing Request
RT.07.0808

February 10, 2025

To Ian Dinsmore:

Re: Traffic Signal Timing

LAKESHORE ROAD E @ Elizabeth Street

The side street phases (4,8) are actuated, unless noted in the timing plan, this means a vehicle or pedestrian must be present on the side street before the side street is given a green indication. Vehicle presence on the side street would result in a possible green time of between the minimum and maximum time noted, depending on demand. Also phases 1 and 5 are also actuated. Pedestrian "Walk" and flashing "Don't Walk" time on the side street, as noted, would be used in the event that the pedestrian push button is activated. During the side street pedestrian indications, the side street vehicle green is concurrently displayed. Should there be no demand on the actuated phase, the signals would result in a green indication on the major street (2,6).

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

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

The phases for each intersection are included in the "Phasing Info" tab of the attached spreadsheet. If the Leading Pedestrian Interval (LPI) is programmed at the intersection for phase 2 and/or 6, the pedestrian 'Walk' indication will be displayed 5 seconds in advance of the green signal indication. However, in order for the Leading Pedestrian Interval to be displayed 5 seconds in advance of the green signal indication for phase 4 or 8, the pedestrian push button must be pressed, unless noted in the timing plan. Should an LPI be programmed at the intersection, it will be noted in the "Phasing Info" tab on the attached spreadsheet.

Should you require further information, please contact Amir Koda, at 437-249-5232.

Thank you,

Amir Koda
ITS Technologist
Traffic Systems and ITS
Transportation and Works Department
City of Mississauga
437-249-5232
amir.koda@mississauga.ca

Signal Timing Report

Runtime: 2019-11-28 13:42:19

Device: 0704

Region: Mississauga **Signal ID:** 0704 **Location:** HURONTARIO STREET N at Park Street

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	9	0	10	0	9	0	10
Ped Clear	Sec	0	17	0	21	0	17	0	21
Min Green	Sec	0	8	0	8	5	8	0	8
Passage	Sec	0.0	3.0	0.0	3.0	2.0	3.0	0.0	3.0
Maximum 1	Sec	0	30	0	30	15	30	0	30
Maximum 2	Sec	0	30	0	30	15	30	0	30
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
Red Revert	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Added Initial	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	Sec	0	0	0	0	0	0	0	0
Time Before	Sec	0	0	0	0	0	0	0	0
Cars Before	Veh	0	0	0	0	0	0	0	0
Time To Reduce	Sec	0	0	0	0	0	0	0	0
Reduce By	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Min Gap	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Dynamic Max Limit	Sec	0	0	0	0	0	0	0	0
Dynamic Max Step	Sec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[P2] Start Up	Enum	other	redClear	other	phaseNotOn	phaseNotOn	redClear	other	phaseNotOn
[P2] Options	Bit	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	0	Enabled Non Lock Det Dual Entry	Enabled Non Lock Det	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In Walk	0	Enabled Non Lock Det Dual Entry
[P2] Ring	Ring	0	1	0	1	2	2	0	2
[P2] Concurrency	Phase (,)	()	(5,6)	()	(8)	(2)	(2)	()	(4)

Coord Pattern	Units	1	2	3	4	5	6	7	8
Cycle Time	Sec	105	100	100	140	100	0	0	0
Offset	Sec	2	16	96	97	19	0	0	0
Split	Split	1	2	3	4	5	0	0	0
Sequence	Sequence	1	1	1	1	1	0	0	0

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	none	phaseOmitted	none	none	none
Split 1 - Time	Sec	0	63	0	42	0	63	0	42
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	phaseOmitted	none	none	none
Split 2 - Time	Sec	0	62	0	38	0	62	0	38
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	none	phaseOmitted	none	none	none
Split 3 - Time	Sec	0	57	0	43	0	57	0	43
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
Split 4 - Mode	Enum	none	none	none	pedRecall	none	none	none	none
Split 4 - Time	Sec	0	91	0	49	25	66	0	49
Split 4 - Coord	Enum	false	true	false	false	false	true	false	false
Split 5 - Mode	Enum	none	none	none	pedRecall	none	none	none	none
Split 5 - Time	Sec	0	60	0	40	23	37	0	40
Split 5 - Coord	Enum	false	true	false	false	false	true	false	false

TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	123456789012345678901234567890 1	123456789012345678901234567890 1	123456789012345678901234567890 1	1---------- ----	----------8-------- ----	----------9------ ------	----------0------- ----	1---------- ----
Day Plan	Number	1	3	2	3	3	3	3	3

TB Schedule	Units	9	10	11	12	13	14	15	16
Month	Bit	-------A----	-------S---	--------O--	----------D	----------D	----------D	0	0
Day of Week	Bit	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	----5---------- ----	-2---------- ----	----------4---------- ----	----------5-- ----	----------6- ----	----------4- ------	0	0
Day Plan	Number	3	3	3	3	3	3	0	0

TB Dayplan	Units	1	2	3	4	5	6	7	8
Plan 1 Hour	Hour	0	6	7	9	15	16	19	3
Plan 1 Minute	Min	0	0	0	30	0	30	30	0
Plan 1 Action	Number	8	1	4	2	5	3	2	7
Plan 2 Hour	Hour	0	7	3	0	0	0	0	0
Plan 2 Minute	Min	0	0	0	0	0	0	0	0
Plan 2 Action	Number	8	2	7	0	0	0	0	0
Plan 3 Hour	Hour	0	8	23	3	0	0	0	0
Plan 3 Minute	Min	0	0	0	0	0	0	0	0
Plan 3 Action	Number	8	2	8	7	0	0	0	0

TB Action	Units	1	2	3	4	5	6	7	8
Pattern	Enum	Pattern 1	Pattern 2	Pattern 3	Pattern 4	Pattern 5	Pattern 6	Free	Free
Aux. Functions	Bit	0	0	0	0	0	0	0	0
Spec. Functions	Bit	0	0	0	0	0	0	0	0

APPENDIX C

Background Developments Data

MEMORANDUM

TO:

Anthony Di Santo, Development Manager
10 West GO GP Inc.
141 Lakeshore Rd East,
Mississauga, Ontario L5G 1E8
Phone: 416-747-9661 (ext. 241)

FROM:	**PROJECT:**	**DATE:**
George J. Poulos, P. Eng	7406-04	July 26, 2023
Mark D. Jamieson, P. Eng., MBA	10 West	

RE: 17 AND 19 ANN STREET, 84 HIGH STREET AND 90 HIGH STREET LANDS – TRANSPORTATION CONSDERATIONS ADDENDUM

1.0 INTRODUCTION

BA Group has been retained by 10 West GO GP Inc. to provide transportation advisory services in support of an Official Plan Amendment and Rezoning application to permit the redevelopment of the 17 and 19 Ann Street, 84 High Street and 90 High Street lands (herein referred to as "the site") in the City of Mississauga. The site is 3,273.96 square metres in size and located approximately 150 metres from the Port Credit GO Station and less than 100 metres from the future Hurontario LRT stop at the northwest corner of Hurontario Street and Park Street East. The existing development block consists of two residential detached dwelling units on the northwestern portion of the site, 2,449.5 square metres of vacated City-owned lands on the northeastern portion of the block, and two heritage buildings (84 and 90 High Street) along the southern portion of the site. The site location is illustrated in **Figure 1**.

The proposed development includes a 26-storey tower which will be situated within the northwest corner of the site (municipal address of 17 and 19 Ann Street) and will contain 410 residential units and approximately 312 square metres of commercial space at grade. A total of 2,449 square metres of public parkland will be created through the redevelopment, including a 1,536 square metre park along Hurontario Street and a 913 square metre park oriented along High Street East. The site area also contains two existing structures, both of which will be retained at full build-out. These consist of six (6) residential units at 84 High Street and approximately 340 square metres of commercial GFA at 90 High Stret. Reduced scale architectural plans are attached in **Appendix A**.

In December of 2021, BA Group submitted an Urban Transportation Considerations Study in support of a development proposal which at that time supported the provision of 283 parking spaces; including 233 resident spaces and 36 residential visitor spaces for the 10 West development, and 7 spaces reserved for each of the existing 84 and 90 High Street heritage buildings. Considering a proposal of [then] 359 residential units, resulting effective parking requirements of 0.64 spaces per unit and 0.10 spaces per unit were proposed for residential and visitor components, respectively.

5.0 TRAFFIC VOUMES

5.1 Existing Traffic Volumes

Existing traffic volumes were last considered in Section 6.2 of our November 2022 Memorandum. For the purposes of this addendum, the same existing traffic volumes have been adopted as illustrated in **Figure 2**. It should be noted that existing traffic volumes used in our November 2022 Memorandum were based on modifications to, and/or difference counts used in our December 2021 Study. This was discussed in detail in Section 6.2 of our November 2022 Memorandum.

5.2 Background Traffic Volumes

Background traffic volumes were last considered in Section 6.3 of our November 2022 Memorandum. These consisted of both corridor volumes (following direction from the City of Mississauga) and background developments. For the purposes of this addendum, the same background traffic volumes have been adopted. Future background traffic volumes are reproduced in **Figure 3**.

5.3 Site Traffic Volumes

5.3.1 Site Trip Generation

Site-derived vehicle trip generation and assignment were last discussed in Section 8.3 of our December 2021 Transportation Study. Following this methodology, and considering the current development programme, site vehicle trips are summarized in **Table 6**.

Table 6 Site Trip Generation

Rate / Mode of Transport			AM Peak Hour			PM Peak Hour		
			In	Out	2-Way	In	Out	2-Way
Proposed Site Traffic	LUC 222 (Multi-Family Housing – High Rise)[1]	410 units[1]	0.09	0.19	0.27	0.19	0.14	0.33
	Number of Trips	**410 units**	**35**	**75**	**110**	**75**	**55**	**130**
	15% Volume Shift to Transit		**-5**	**-10**	**-15**	**-15**	**-5**	**-20**
	Net-New Site Vehicular Trip Generation		**30**	**65**	**95**	**60**	**50**	**110**

Notes:

1. Rounded to the nearest 5 vehicles / persons.
2. 15% of Driver mode share shifted to transit mode share.
3. Fitted Curve Equation Effective Rates - AM Peak: T = 0.22(X)+18.85, PM Peak: T = 0.26(x)+23.12

As can be seen in the Table, the site will generate on the order of approximately 95 and 110 two-way vehicle trips during the morning and afternoon peak hours, respectively.

5.3.2 Site Traffic Distribution

Site traffic distribution assumptions were last considered in Section 8.3.2 of our November 2022 Memorandum. For the purposes of this addendum, the same distribution assumptions have been adopted. Site traffic volumes are illustrated in **Figure 4**.

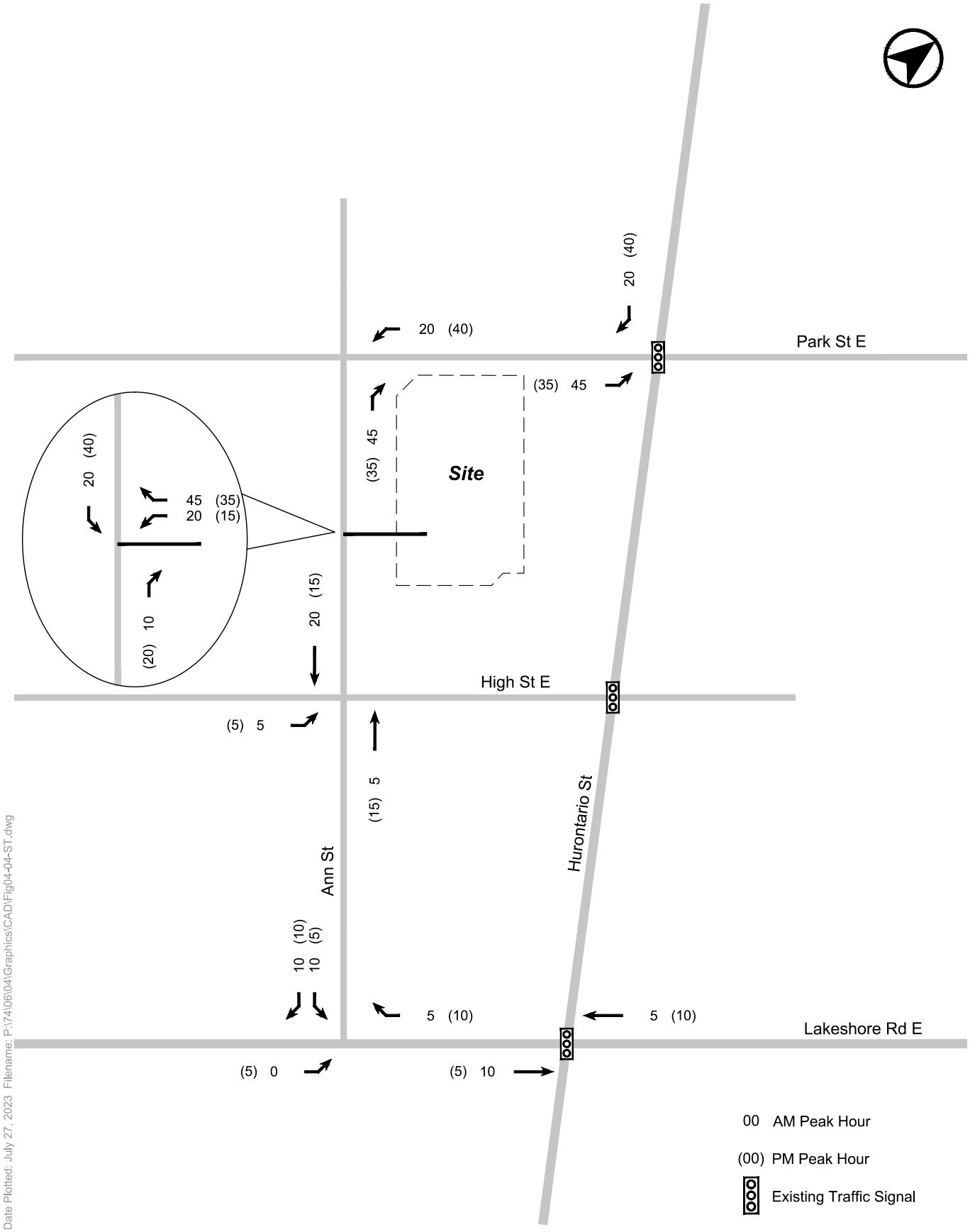


FIGURE 4 SITE TRAFFIC VOLUMES

BA Group

70 Park Street East
Proposed Mixed-Use Development

Urban Transportation Considerations
Official Plan Amendment & Zoning By-law Amendment
City of Mississauga

Prepared For: MPCT DIF 70 PARK STREET EAST LP

January 2023

8.3 SITE TRAFFIC

8.3.1 Vehicle Trip Generation

Vehicular trip generation adopted for the proposed residential component of the development was based upon existing site trip generation characteristics for the residential component of the site. For the planned daycare use, trip generation is based on proxy sites from the Toronto area – given the advantageous transit context of the development lands. New retail use on the site is considered to be ancillary in nature (no external vehicle trips generated), given its relatively small floor area and the mixed-use nature of the site. The adopted site trip generation is summarized in **Table 22**.

Proxy trip generation data is attached in **Appendix I**.

TABLE 22 SITE TRIP GENERATION

	AM Peak Hour			PM Peak Hour		
	In	Out	2-Way	In	Out	2-Way
ITE Rates (11th Edition)						
Multifamily Housing (High-Rise) - LUC 222, per unit	*0.09*	*0.18*	*0.27*	*0.18*	*0.14*	*0.32*
Day Care Center - LUC 565, per child	*0.41*	*0.37*	*0.78*	*0.37*	*0.42*	*0.79*
70 Park Street East Traffic Counts (Includes 3 Driveways)						
70 Park Street East (all 3 existing driveways)	***0.05***	***0.16***	***0.21***	***0.15***	***0.08***	***0.22***
Daycare Proxy Sites (per child)						
108 Strathmore Boulevard	*0.09*	*0.16*	*0.25*	*0.18*	*0.23*	*0.41*
High Park Early Learning Centre (17 High Park Avenue)	*0.23*	*0.24*	*0.47*	*0.16*	*0.23*	*0.39*
Metamorphosis Early Learning Child Care Centre (53 Strathmore Boulevard)	*0.21*	*0.21*	*0.42*	*0.18*	*0.21*	*0.39*
Average Rate	*0.18*	*0.20*	*0.38*	*0.17*	*0.22*	*0.40*
85th Percentile Rate (selected)	***0.22***	***0.23***	***0.46***	***0.18***	***0.23***	***0.41***
Trips Generated						
Resident (530 units)	30	85	115	80	40	120
Day Care (30 children)	5	5	10	5	5	10
Total	**35**	**90**	**125**	**85**	**45**	**130**

The site is expected to generate a total of **125** and **130** new vehicular trips in the weekday morning and afternoon peak hours, respectively.

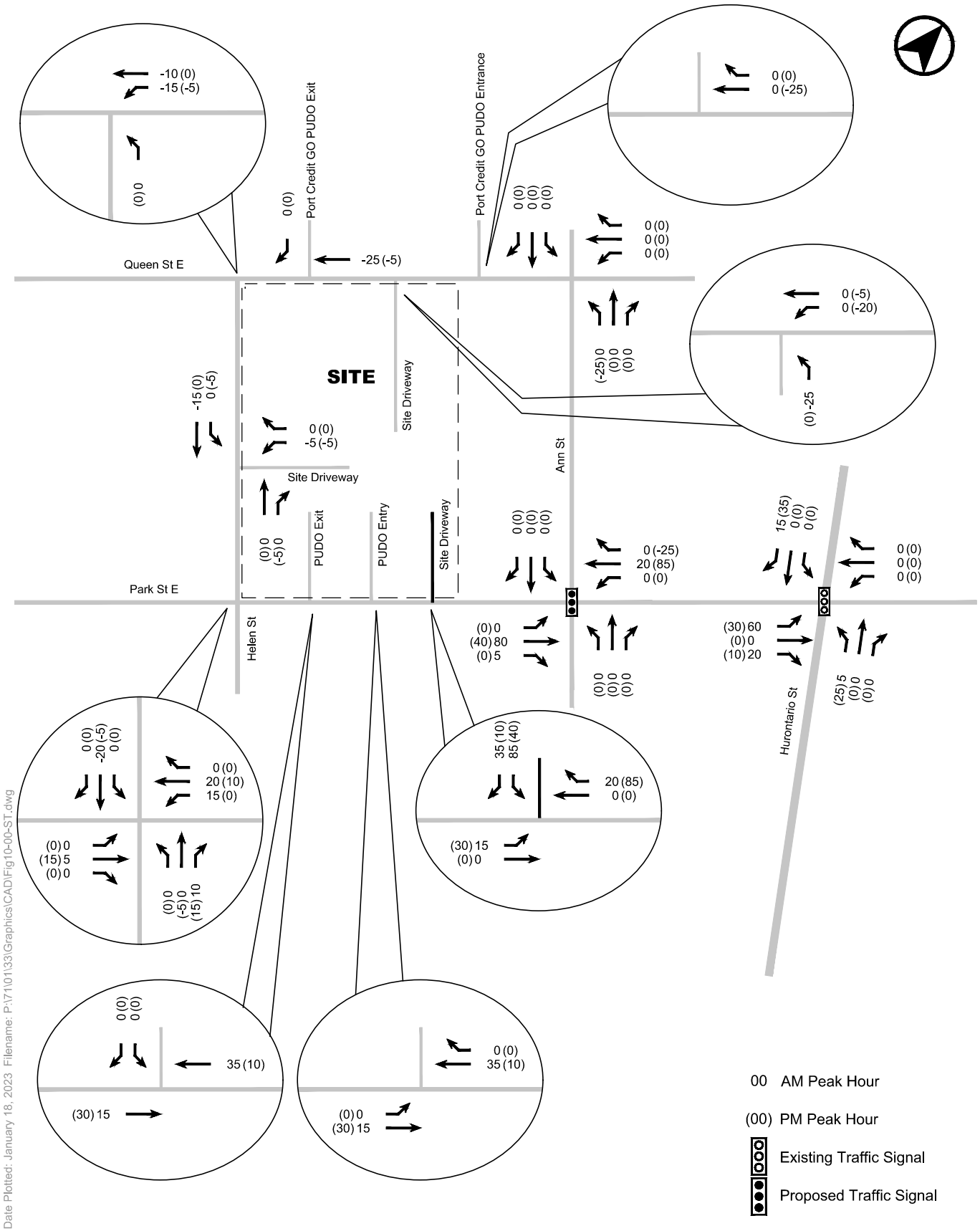


FIGURE 10 NEW SITE TRAFFIC VOLUMES

Updated Traffic Impact Study

88 Park Street East

Edenshaw Queen Developments Limited

June 8, 2023

The Power of Commitment

Table 8 below summarizes the estimated trip generation for the proposed development.

Table 8 Estimated Site Trips

Land Uses	GFA (Dwelling Units)	Parameters	Peak Hour					
			Weekday AM			Weekday PM		
			In	Out	Total	In	Out	Total
Multifamily Housing (High-Rise) (LUC 222)	1,328 units	Trip Rate (per unit)	0.06	0.17	0.23	0.17	0.11	0.28
		Gross Trips	81	230	311	228	140	368
		Modal Split	17%	31%	-	35%	28%	-
		Modal Split Reduction	-14	-72	-86	-77	-40	-117
		Total New Trips	**67**	**158**	**225**	**151**	**100**	**251**
Strip Retail Plaza (<40k) (LUC 822)	18,083.37 ft^2	Trip Rate (per 1,000 ft^2 of GFA)	1.38	0.99	2.37	3.32	3.27	6.59
		Total New Trips	**25**	**18**	**43**	**60**	**59**	**119**
General Office Building (LUC 710)	21,710.81 ft^2	Trip Rate (per 1,000 ft^2 of GFA)	1.79	0.28	2.07	0.38	1.79	2.17
		Gross Trips	39	6	45	8	39	47
		Modal Split	20%	N/A	-	N/A	29%	-
		Modal Split Reduction	-8	0	-8	0	-11	-111
		Total New Trips	**31**	**6**	**37**	**8**	**28**	**36**
Daycare Center (LUC 565)	9,762.87 ft^2	Trip Rate (per 1,000 ft^2 of GFA)	5.75	5.26	11.01	5.26	5.85	11.11
		Total New Trips	**56**	**51**	**107**	**51**	**58**	**109**
		Total Primary Trips	***179***	***233***	***412***	***270***	***245***	***515***

The mixed-used development is expected to generate a total of 412 new two-way trips consisting of 179 inbound and 233 outbound trips during weekday a.m. peak hour and 515 new two-way trips consisting of 270 inbound and 245 outbound trips during the weekday p.m. peak hour.

6.2 Site Traffic Distribution and Assignment

The site generated traffic for the residential development was primarily distributed based on a review of the 2016 Transportation Tomorrow Survey (TTS) and the existing traffic patterns. Trips were assigned to the study area intersections based on reasonable routes for vehicles to minimize the travel time and distance under the existing road network.

The site generated traffic for the commercial and daycare components within the subject site was assumed to have a more local trip distribution, with trips assigned more evenly throughout the study area roads.

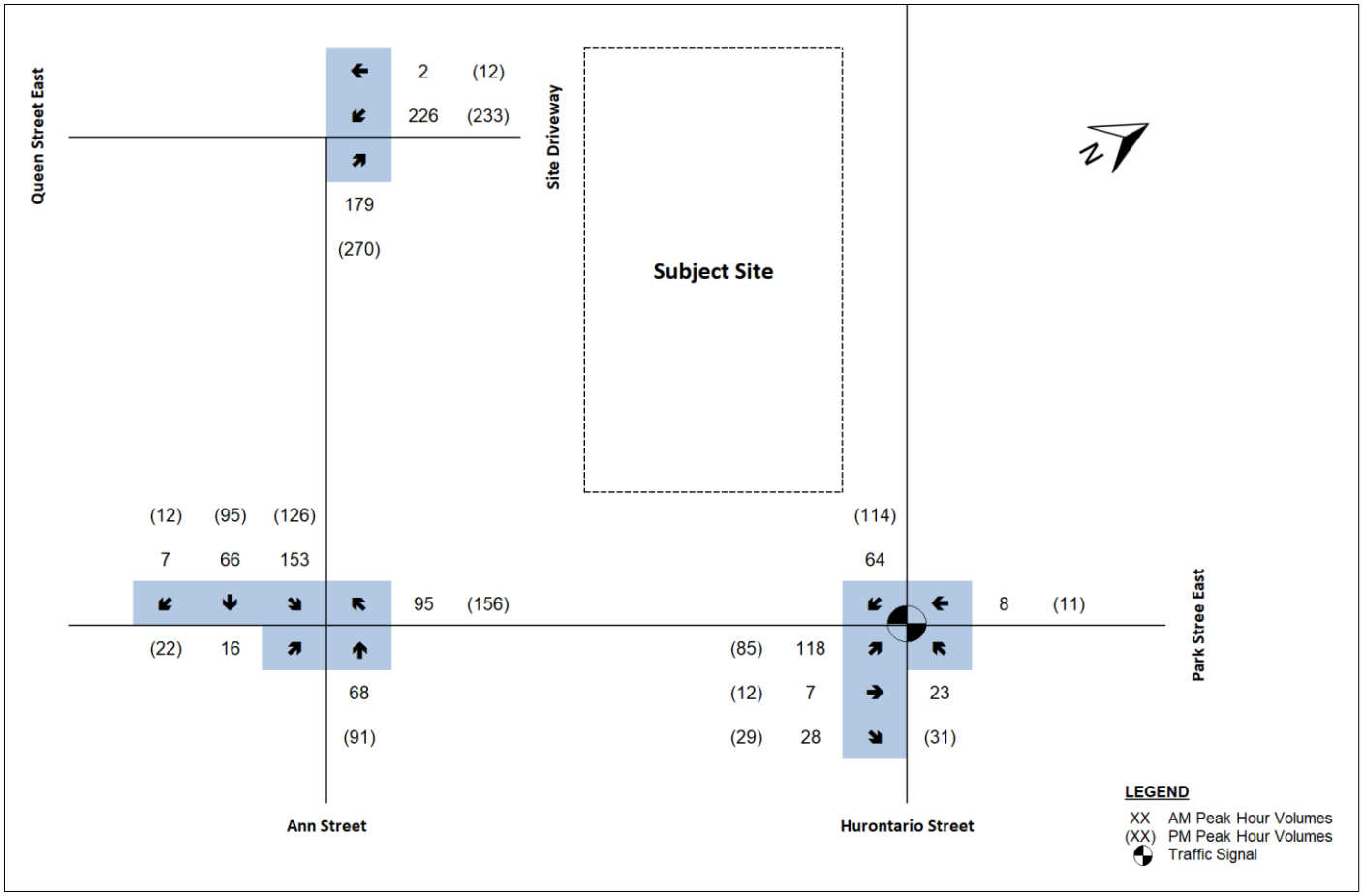


Figure 21 Total Overall Site Trips

7. Future Total Traffic

The future total traffic conditions in the weekday a.m. and p.m. peak hours for the 2028 planning horizon was derived by combining the projected future background traffic with the corresponding estimated site generated traffic. The resulting traffic volumes are presented in **Figure 22**

APPENDIX D

Detailed TTS Data

MODAL SPLIT CALCULATIONS

Subject Site is situated in TTS2022 Zone 3877.

RESIDENTIAL (With Parking)

Mon May 05 2025 15:04:39 GMT-0400 (Eastern Daylight Time) - Run Time: 3828ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of origin - gta06_orig
Column: Primary travel mode of trip - mode_prime

Filters:
2006 GTA zone of origin - gta06_orig In 3642, 3877-3878, and
Start time of trip - start_time In 600-900, and
Primary travel mode of trip - mode_prime In B,C,D,E,G,J,M,O,P,S,T,U,W, and
Trip Purpose of Origin - purp_orig In H, and
No. of vehicles in household - n_vehicle In 1-99

Trip 2022
ROW : gta06_orig
COLUMN : mode_prime

gta06_orig	mode_prime	
3642	C	26
3642	D	1566
3642	G	100
3642	O	27
3642	P	390
3642	S	297
3642	W	747
3877	B	50
3877	D	860
3877	G	46
3877	J	89
3877	P	32
3877	S	7
3877	W	4
3878	D	169

Raw Data

Zone of Origin	Mode	Total
3642	C	26
3642	D	1,566
3642	G	100
3642	O	27
3642	P	390
3642	S	297
3642	W	747
3642	B	50
3642	D	860
3642	G	46
3642	J	89
3642	P	32
3642	S	7
3642	W	4
3642	D	169
	Total	4,410

Sorted

Zone of Origin	Mode	Total
3642	B	50
3642	C	26
3642	D	1,566
3642	D	860
3642	D	169
3642	G	100
3642	G	46
3642	J	89
3642	O	27
3642	P	390
3642	P	32
3642	S	297
3642	S	7
3642	W	747
3642	W	4
	Total	4,410

Summary

Travel Mode	TTS Code	Value	Percent
Auto Driver	D+M	2,595	59%
Auto Passenger	P	422	10%
Taxi / Rideshare	T+U	0	0%
Transit	B+G+J+S	589	13%
Walk	W	751	17%
Cycle + E-scooter	C+E	26	1%
Other	O	27	0%
	Total	4,410	100%

RESIDENTIAL (No Parking)

Mon May 05 2025 16:55:27 GMT-0400 (Eastern Daylight Time) - Run Time: 3263ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of origin - gta06_orig
Column: Primary travel mode of trip - mode_prime

Filters:
(2006 GTA zone of origin - gta06_orig In 3641-3642, 3647-3648, 3652-3653, 3876-3878, and
Start time of trip - start_time In 600-900, and
Primary travel mode of trip - mode_prime In B,C,D,E,G,J,M,O,P,S,T,U,W, and
Trip Purpose of Origin - purp_orig In H, and
No. of vehicles in household - n_vehicle In 0)

Trip 2022
ROW : gta06_orig
COLUMN : mode_prime

gta06_orig	mode_prime	
3641	B	117
3641	J	5
3641	W	74
3642	B	37
3647	W	291
3653	B	147
3653	P	63
3653	S	158
3653	T	45
3653	W	75
3877	B	87
3877	J	5
3877	P	11

Raw Data

Zone of Origin	Mode	Total
3641	B	117
3641	J	5
3641	W	74
3642	B	37
3647	W	291
3653	B	147
3653	P	63
3653	S	158
3653	T	45
3653	W	75
3877	B	87
3877	J	5
3877	P	11
	Total	1,115

Sorted

Zone of Origin	Mode	Total
3641	B	117
3642	B	37
3653	B	147
3877	B	87
3641	J	5
3877	J	5
3653	P	63
3877	P	11
3653	S	158
3653	T	45
3641	W	74
3647	W	291
3653	W	75
	Total	1,115

Summary

Travel Mode	TTS Code	Value	Percent
Auto Driver	D+M	0	0%
Auto Passenger	P	74	7%
Taxi / Rideshare	T+U	45	4%
Transit	B+G+J+S	556	50%
Walk	W	440	39%
Cycle + E-scooter	C+E	0	0%
Other	O	0	0%
	Total	1,115	100%

RESIDENTIAL DISTRIBUTION CALCULATIONS

AM OUTBOUND

Subject Site is in TTS2022 Zone 3877

Wed Apr 30 2025 11:36:36 GMT-0400 (Eastern Daylight Time) - Run Time: 3731ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 3641-3642, 3646-3648, 3877-3878, and
Start time of trip - start_time In 600-900, and
Primary travel mode of trip - mode_prime In D, M, T, P, and
Trip Purpose of Origin - purp_orig In H, and
2006 GTA zone of destination - gta06_dest In 1-9016, and
Type of dwelling unit - dwell_type In 2)

Trip 2022

ROW : gta06_orig							Path						Value					
COLUMN : gta06_dest			Zone			Value	General	Hurontario St		Park St E		Lakeshore Rd E		Hurontario St		Park St E		Lakeshore Rd E	
gta06_orig	gta06_dest	total	From	To	Muncipality		Direction	North	South	West	East	West	East	North	South	West	East	West	East
3641	135	11	3641	135	Toronto	11	East	100%						11	0	0	0	0	0
3641	3632	21	3641	3632		21	North	100%						21	0	0	0	0	0
3641	3649	16	3641	3649	Peel	16	East	30%					70%	5	0	0	0	0	11
3641	3835	83	3641	3835		83	North	100%						83	0	0	0	0	0
3641	5036	69	3641	5036	Hamilton	69	West	100%						69	0	0	0	0	0
3642	2269	125	3642	2269	York	125	Northwest	100%						125	0	0	0	0	0
3642	3480	37	3642	3480		37	North	100%						37	0	0	0	0	0
3642	3621	40	3642	3621		40	North	25%					75%	10	0	0	0	0	30
3642	3626	26	3642	3626		26	North	25%					75%	6	0	0	0	0	20
3642	3642	41	3642	3642		41	East						100%	0	0	0	0	0	41
3642	3648	116	3642	3648	Peel	116	Northeast	65%					35%	75	0	0	0	0	41
3642	3660	89	3642	3660		89	Northeast	100%						89	0	0	0	0	0
3642	3690	89	3642	3690		89	North	100%						89	0	0	0	0	0
3642	3699	115	3642	3699		115	North	100%						115	0	0	0	0	0
3642	3877	27	3642	3877		27	S, W & E		20%	10%	5%	60%	5%	0	5	3	2	16	1
3642	4011	15	3642	4011	Halton	15	West	100%						15	0	0	0	0	0
3642	4180	27	3642	4180		27	Northwest	100%						27	0	0	0	0	0
3647	231	12	3647	231	Toronto	12	East	100%						12	0	0	0	0	0
3647	3330	22	3647	3330	Peel	22	Northeast	40%					60%	9	0	0	0	0	13
3648	3631	39	3648	3631	Peel	39	Northwest	75%				25%		29	0	0	0	10	0
3648	3646	40	3648	3464		40	North	100%						40	0	0	0	0	0
3877	112	12	3877	112		12	East	100%						12	0	0	0	0	0
3877	309	11	3877	309		11	East	50%					50%	5	0	0	0	0	6
3877	395	18	3877	395	Toronto	18	Northeast	100%						18	0	0	0	0	0
3877	465	52	3877	465		52	Northeast	100%						52	0	0	0	0	0
3877	484	78	3877	484		78	Northeast	100%						78	0	0	0	0	0
3877	2095	35	3877	2095	York	35	Northeast	100%						35	0	0	0	0	0
3877	3351	39	3877	3351		39	North	30%					70%	12	0	0	0	0	27
3877	3424	22	3877	3424		22	North	30%					70%	7	0	0	0	0	15
3877	3487	24	3877	3487		24	North	30%					70%	7	0	0	0	0	17
3877	3612	29	3877	3612		29	Northwest	75%				25%		22	0	0	0	7	0
3877	3634	33	3877	3634		33	East						100%	0	0	0	0	0	33
3877	3641	15	3877	3641	Peel	15	West					100%		0	0	0	0	15	0
3877	3705	20	3877	3705		20	North	25%					75%	5	0	0	0	0	15
3877	3816	30	3877	3816		30	North	25%					75%	7	0	0	0	0	23
3877	3835	34	3877	3835		34	North	100%						34	0	0	0	0	0
3877	3836	70	3877	3836		70	Northwest	75%				25%		53	0	0	0	17	0
3877	3853	35	3877	3853		35	North	100%						35	0	0	0	0	0
3877	3864	70	3877	3864		70	North	100%						70	0	0	0	0	0
3877	4024	39	3877	4024		39	West	33%				67%		13	0	0	0	26	0
3877	4077	40	3877	4077	Halton	40	West	100%						40	0	0	0	0	0
3877	4185	118	3877	4185		118	West	60%				40%		71	0	0	0	47	0
3878	371	32	3878	371	Toronto	32	Northeast	100%						32	0	0	0	0	0
3878	528	32	3878	528		32	Northeast	100%						32	0	0	0	0	0
3878	3653	18	3878	3653	Peel	18	North	100%						18	0	0	0	0	0
3878	3660	18	3878	3660		18	Northeast	100%						18	0	0	0	0	0
3878	3877	21	3878	3877		21	S, W & E	0%	20%	10%	5%	60%	5%	0	4	2	1	13	1
						2,005								1,543	9	5	3	151	294
														77%	0%	0%	0%	8%	15%

PM OUTBOUND

Subject Site is in TTS2022 Zone 3877

Wed Apr 30 2025 11:43:55 GMT-0400 (Eastern Daylight Time) - Run Time: 3434ms

Cross Tabulation Query Form - Trip - 2022

Row: 2006 GTA zone of origin - gta06_orig
Column: 2006 GTA zone of destination - gta06_dest

Filters:
(2006 GTA zone of origin - gta06_orig In 3641-3642, 3646-3648, 3877-3878, and
Start time of trip - start_time In 1500-1900, and
Primary travel mode of trip - mode_prime In D,M,T,P, and
Trip Purpose of Destination - purp_dest In H, and
2006 GTA zone of destination - gta06_dest In 1-9016, and
Type of dwelling unit - dwell_type In 2,)

Trip 2022

ROW : gta06_orig							Path						Value					
COLUMN : gta06_dest			Zone			Value	General	Hurontario St		Park St E		Lakeshore Rd E		Hurontario St		Park St E		Lakeshore Rd E	
gta06_orig	gta06_dest	total	From	To	Muncipality		Direction	North	South	West	East	West	East	North	South	West	East	West	East
3641	295	19	3641	295		19	East						100%	0	0	0	0	0	19
3641	327	76	3641	327	Toronto	76	Northeast	100%						76	0	0	0	0	0
3641	351	174	3641	351		174	Northeast	100%						174	0	0	0	0	0
3641	2124	40	3641	2124	York	40	Northeast	100%						40	0	0	0	0	0
3641	3644	30	3641	3644		30	West					100%		0	0	0	0	30	0
3641	3657	45	3641	3657		45	North	100%						45	0	0	0	0	0
3641	3663	18	3641	3663	Peel	18	Northwest	50%				50%		9	0	0	0	9	0
3641	3877	178	3641	3877		178	S, W & E		20%	10%	5%	60%	5%	0	36	18	8	107	9
3641	3878	104	3641	3878		104	West					100%		0	0	0	0	104	0
3641	4005	36	3641	4005	Halton	36	West	100%						36	0	0	0	0	0
3642	285	25	3642	285		25	East	65%					35%	16	0	0	0	0	9
3642	288	123	3642	288	Toronto	123	East						100%	0	0	0	0	0	123
3642	295	20	3642	295		20	East						100%	0	0	0	0	0	20
3642	415	22	3642	415		22	Northeast	100%						22	0	0	0	0	0
3642	3643	54	3642	3643		54	East						100%	0	0	0	0	0	54
3642	3649	43	3642	3649	Peel	43	East	30%					70%	13	0	0	0	0	30
3642	3674	19	3642	3674		19	North	100%						19	0	0	0	0	0
3642	3877	64	3642	3877		64	S, W & E		20%	10%	5%	60%	5%	0	13	6	4	38	3
3642	4014	7	3642	4014	Halton	7	West	100%						7	0	0	0	0	0
3646	64	48	3646	64	Toronto	48	East	100%						48	0	0	0	0	0
3646	3664	47	3646	3664		47	Northwest	90%				10%		42	0	0	0	5	0
3646	3878	32	3646	3878	Peel	32	West					100%		0	0	0	0	32	0
3646	3879	20	3646	3879		20	West					100%		0	0	0	0	20	0
3647	285	29	3647	285	Toronto	29	East						100%	0	0	0	0	0	29
3648	3642	116	3648	3642		116	East						100%	0	0	0	0	0	116
3648	3643	26	3648	3643	Peel	26	East						100%	0	0	0	0	0	26
3648	3653	317	3648	3653		317	North	100%						317	0	0	0	0	0
3877	285	16	3877	285	Toronto	16	East						100%	0	0	0	0	0	16
3877	319	214	3877	319		214	Northeast	100%						214	0	0	0	0	0
3877	3515	29	3877	3515		29	North	100%						29	0	0	0	0	0
3877	3643	14	3877	3643		14	East						100%	0	0	0	0	0	14
3877	3649	34	3877	3649		34	East	30%					70%	10	0	0	0	0	24
3877	3663	23	3877	3663		23	Northwest	50%				50%		12	0	0	0	11	0
3877	3689	99	3877	3689	Peel	99	North	100%						99	0	0	0	0	0
3877	3865	11	3877	3865		11	North	100%						11	0	0	0	0	0
3877	3877	11	3877	3877		11	S, W & E		20%	10%	5%	60%	5%	0	2	1	0	7	1
3878	3878	18	3877	3878		18	West					100%		0	0	0	0	18	0
3878	3863	16	3878	3863		16	North	100%						16	0	0	0	0	0
3878	4076	17	3878	4076	Halton	17	West	100%						17	0	0	0	0	0
						2234								1,272	51	25	12	381	493
														57%	2%	1%	1%	17%	22%

Path (to/from)	AM In	AM Out	PM In	PM Out
Hurontario St North	57%	77%	77%	57%
hrontario St South	2%	0%	0%	2%
Park St E West	1%	0%	0%	1%
Park St E East	1%	0%	0%	1%
Lakeshore Rd E West	17%	8%	8%	17%
Lakeshore Rd E East	22%	15%	15%	22%

APPENDIX E

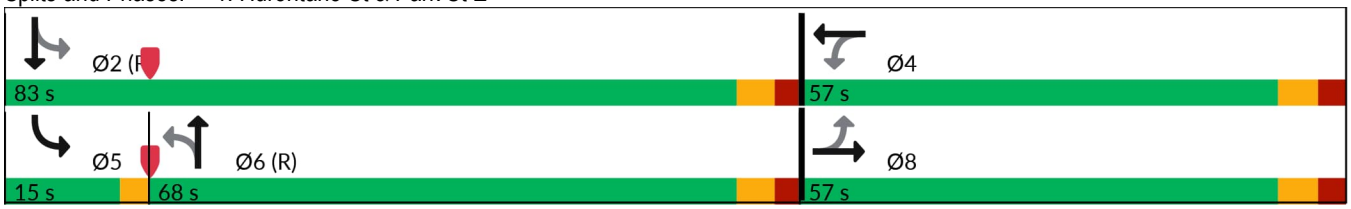
Intersection Capacity Analysis – Existing Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	108	40	17	25	8	261	159	289
Future Volume (vph)	108	40	17	25	8	261	159	289
Lane Group Flow (vph)	117	70	18	224	9	343	173	415
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases		8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	41.0	41.0	41.0	41.0	33.0	33.0	15.0	33.0
Total Split (s)	57.0	57.0	57.0	57.0	68.0	68.0	15.0	83.0
Total Split (%)	40.7%	40.7%	40.7%	40.7%	48.6%	48.6%	10.7%	59.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5	0.0	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	8.0	10.0	10.0	10.0	9.5	9.5	6.0	9.5
Lead/Lag					Lag	Lag	Lead	
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	0.62	0.20	0.08	0.50	0.02	0.21	0.30	0.43
Control Delay (s/veh)	63.7	31.7	44.5	13.0	16.1	16.1	10.4	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.7	31.7	44.5	13.0	16.1	16.1	10.4	14.3
Queue Length 50th (m)	29.2	10.3	4.0	6.0	1.1	23.2	16.9	53.8
Queue Length 95th (m)	51.6	23.9	11.0	30.1	4.2	34.0	26.4	76.3
Internal Link Dist (m)		316.8		101.7		96.3		351.1
Turn Bay Length (m)	30.0		70.0		40.0		35.0	
Base Capacity (vph)	281	508	344	577	414	1643	584	960
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.14	0.05	0.39	0.02	0.21	0.30	0.43

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 96 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	108	40	25	17	25	181	8	261	54	159	289	93
Future Volume (vph)	108	40	25	17	25	181	8	261	54	159	289	93
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	8.0	10.0		10.0	10.0		9.5	9.5		6.0	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.93		1.00	0.96		1.00	0.99		1.00	0.99	
Flpb, ped/bikes	0.98	1.00		0.85	1.00		0.98	1.00		0.99	1.00	
Frt	1.00	0.94		1.00	0.87		1.00	0.97		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1483	1468		1372	1329		1398	3009		1529	1503	
Flt Permitted	0.52	1.00		0.71	1.00		0.52	1.00		0.51	1.00	
Satd. Flow (perm)	805	1468		1028	1329		764	3009		814	1503	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	43	27	18	27	197	9	284	59	173	314	101
RTOR Reduction (vph)	0	19	0	0	153	0	0	10	0	0	0	0
Lane Group Flow (vph)	117	51	0	18	71	0	9	333	0	173	415	0
Confl. Peds. (#/hr)	26		78	78		26	11		14	14		11
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	6%	3%	4%	0%	4%	9%	13%	6%	2%	4%	10%	8%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	34.0	34.0		34.0	34.0		79.0	79.0		92.5	92.5	
Effective Green, g (s)	33.0	31.0		31.0	31.0		76.0	76.0		89.5	89.5	
Actuated g/C Ratio	0.24	0.22		0.22	0.22		0.54	0.54		0.64	0.64	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.5	6.5		3.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		2.0	3.0	
Lane Grp Cap (vph)	189	325		227	294		414	1633		558	960	
v/s Ratio Prot		0.03			0.05			0.11		0.02	c0.28	
v/s Ratio Perm	c0.15			0.02			0.01			0.18		
v/c Ratio	0.62	0.16		0.08	0.24		0.02	0.20		0.31	0.43	
Uniform Delay, d1	47.9	44.0		43.2	44.8		14.8	16.5		10.4	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.9	0.2		0.2	0.4		0.1	0.3		0.1	1.4	
Delay (s)	53.8	44.2		43.3	45.2		14.9	16.7		10.5	14.0	
Level of Service	D	D		D	D		B	B		B	B	
Approach Delay (s/veh)		50.2			45.1			16.7			13.0	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	96.0%	ICU Level of Service	F
Analysis Period (min)	15		

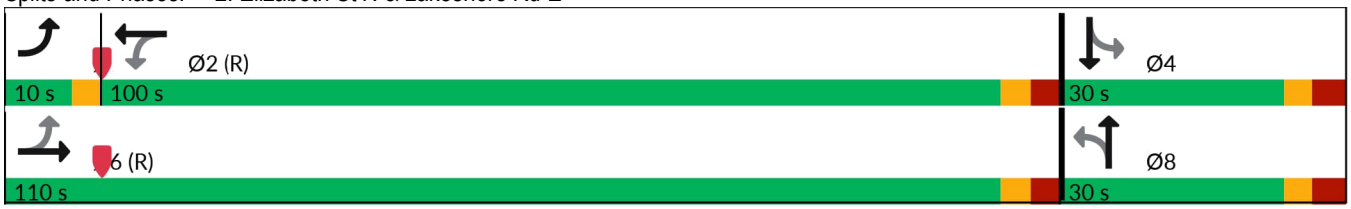
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	84	1198	3	905	8	13	33	1
Future Volume (vph)	84	1198	3	905	8	13	33	1
Lane Group Flow (vph)	0	1395	0	1005	9	19	36	65
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	33.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	110.0	100.0	100.0	30.0	30.0	30.0	30.0
Total Split (%)	7.1%	78.6%	71.4%	71.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.75		0.42	0.05	0.07	0.25	0.26
Control Delay (s/veh)		15.1		8.4	52.3	42.4	58.1	14.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		15.1		8.4	52.3	42.4	58.1	14.8
Queue Length 50th (m)		111.3		52.9	2.2	3.4	9.0	0.3
Queue Length 95th (m)		139.2		64.0	7.6	11.1	20.0	13.7
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1862		2371	192	267	144	253
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.75		0.42	0.05	0.07	0.25	0.26

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 110 (79%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1198	2	3	905	17	8	13	5	33	1	59
Future Volume (vph)	84	1198	2	3	905	17	8	13	5	33	1	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	0.97		1.00	0.97	
Flpb, ped/bikes		1.00			1.00		0.98	1.00		0.91	1.00	
Frt		1.00			1.00		1.00	0.96		1.00	0.85	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3557			3456		1752	1798		1255	1356	
Flt Permitted		0.72			0.95		0.71	1.00		0.75	1.00	
Satd. Flow (perm)		2580			3288		1318	1798		984	1356	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1302	2	3	984	18	9	14	5	36	1	64
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	55	0
Lane Group Flow (vph)	0	1395	0	0	1004	0	9	15	0	36	10	0
Confl. Peds. (#/hr)	38		12	12		38	10		43	43		10
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	2%	0%	33%	5%	6%	0%	0%	0%	30%	0%	17%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		104.0			104.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		101.0			101.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.72			0.72		0.15	0.15		0.15	0.15	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1861			2372		192	263		144	198	
v/s Ratio Prot								0.01			0.01	
v/s Ratio Perm		c0.54			0.31		0.01			c0.04		
v/c Ratio		0.75			0.42		0.05	0.06		0.25	0.05	
Uniform Delay, d1		11.8			7.8		51.4	51.4		52.9	51.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		1.5			0.6		0.5	0.4		4.1	0.5	
Delay (s)		13.3			8.4		51.8	51.8		57.1	51.9	
Level of Service		B			A		D	D		E	D	
Approach Delay (s/veh)		13.3			8.4			51.8			53.7	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	50	17	14	52	0	19	0	11	16	39	10
Future Vol, veh/h	0	50	17	14	52	0	19	0	11	16	39	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	2	0	0	10	0	0	0	0	6	46	0
Mvmt Flow	0	54	18	15	57	0	21	0	12	17	42	11
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	7.5	7.7	7.5	8.6
HCM LOS	A	A	A	A

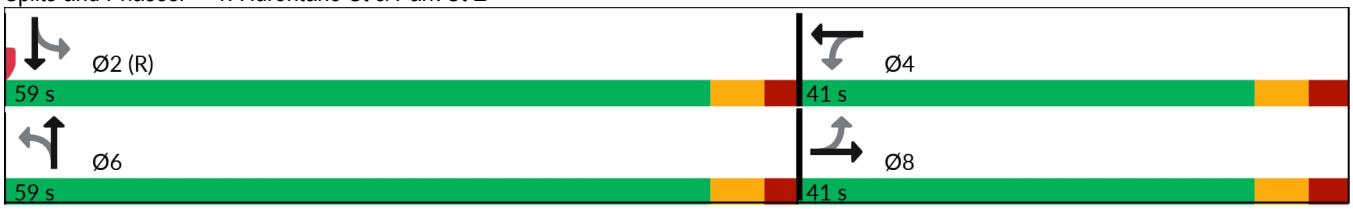
Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	63%	0%	21%	100%	0%
Vol Thru, %	0%	75%	79%	0%	80%
Vol Right, %	37%	25%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	67	66	16	49
LT Vol	19	0	14	16	0
Through Vol	0	50	52	0	39
RT Vol	11	17	0	0	10
Lane Flow Rate	33	73	72	17	53
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.039	0.084	0.085	0.026	0.08
Departure Headway (Hd)	4.319	4.128	4.288	5.373	5.41
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	832	872	840	660	656
Service Time	2.329	2.132	2.292	3.158	3.195
HCM Lane V/C Ratio	0.04	0.084	0.086	0.026	0.081
HCM Control Delay, s/veh	7.5	7.5	7.7	8.3	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.3	0.3	0.1	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	152	37	8	35	10	351	55	347
Future Volume (vph)	152	37	8	35	10	351	55	347
Lane Group Flow (vph)	165	73	9	130	11	392	60	597
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	41.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0
Total Split (s)	41.0	41.0	41.0	41.0	59.0	59.0	59.0	59.0
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	8.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	Max	Max	C-Max	C-Max
v/c Ratio	0.67	0.22	0.04	0.34	0.03	0.20	0.11	0.62
Control Delay (s/veh)	46.7	18.7	26.3	12.6	12.4	10.9	12.5	19.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	46.7	18.7	26.3	12.6	12.4	10.9	12.5	19.0
Queue Length 50th (m)	30.6	6.7	1.5	6.3	0.7	15.0	4.2	62.1
Queue Length 95th (m)	44.4	15.5	4.8	18.5	4.0	30.9	13.3	135.1
Internal Link Dist (m)		316.8		101.7		96.3		351.1
Turn Bay Length (m)	30.0		70.0		40.0		35.0	
Base Capacity (vph)	368	492	333	530	369	1933	522	957
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.15	0.03	0.25	0.03	0.20	0.11	0.62

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 76 (76%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	37	30	8	35	85	10	351	9	55	347	202
Future Volume (vph)	152	37	30	8	35	85	10	351	9	55	347	202
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	8.0	10.0		10.0	10.0		9.5	9.5		9.5	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	1.00	
Frpb, ped/bikes	1.00	0.94		1.00	0.98		1.00	1.00		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		0.90	1.00		0.99	1.00		0.98	1.00	
Frt	1.00	0.93		1.00	0.89		1.00	1.00		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1576	1515		1440	1508		1595	3206		1581	1588	
Flt Permitted	0.67	1.00		0.71	1.00		0.36	1.00		0.52	1.00	
Satd. Flow (perm)	1117	1515		1075	1508		612	3206		866	1588	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	165	40	33	9	38	92	11	382	10	60	377	220
RTOR Reduction (vph)	0	26	0	0	73	0	0	2	0	0	0	0
Lane Group Flow (vph)	165	47	0	9	57	0	11	390	0	60	597	0
Confl. Peds. (#/hr)	26		78	78		26	11		14	14		11
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	23.2	23.2		23.2	23.2		63.3	63.3		63.3	63.3	
Effective Green, g (s)	22.2	20.2		20.2	20.2		60.3	60.3		60.3	60.3	
Actuated g/C Ratio	0.22	0.20		0.20	0.20		0.60	0.60		0.60	0.60	
Clearance Time (s)	7.0	7.0		7.0	7.0		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	
Lane Grp Cap (vph)	247	306		217	304		369	1933		522	957	
v/s Ratio Prot		0.03			0.04			0.12			c0.38	
v/s Ratio Perm	c0.15			0.01			0.02			0.07		
v/c Ratio	0.67	0.15		0.04	0.19		0.03	0.20		0.11	0.62	
Uniform Delay, d1	35.5	32.9		32.1	33.1		8.0	9.0		8.5	12.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.7	0.2		0.1	0.3		0.1	0.2		0.4	3.1	
Delay (s)	42.2	33.1		32.2	33.4		8.2	9.2		8.9	15.7	
Level of Service	D	C		C	C		A	A		A	B	
Approach Delay (s/veh)		39.4			33.3			9.2			15.1	
Approach LOS		D			C			A			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	92.6%	ICU Level of Service	F
Analysis Period (min)	15		

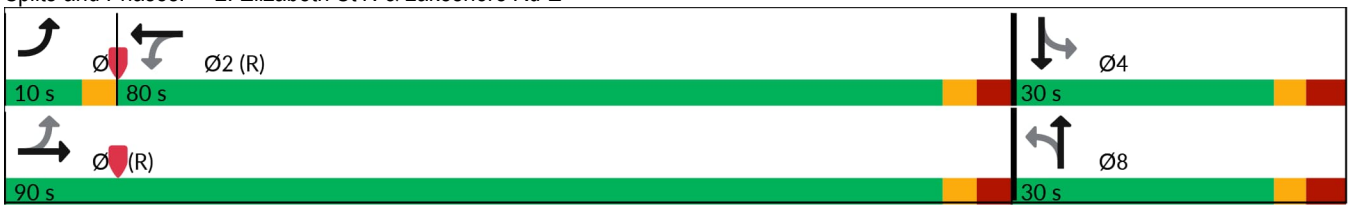
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	114	1013	10	841	27	23	31	10
Future Volume (vph)	114	1013	10	841	27	23	31	10
Lane Group Flow (vph)	0	1240	0	953	29	30	34	93
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	33.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	90.0	80.0	80.0	30.0	30.0	30.0	30.0
Total Split (%)	8.3%	75.0%	66.7%	66.7%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.77		0.42	0.14	0.09	0.20	0.29
Control Delay (s/veh)		17.3		9.5	44.3	37.5	46.2	14.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		17.3		9.5	44.3	37.5	46.2	14.2
Queue Length 50th (m)		94.5		48.5	5.9	5.0	7.0	2.2
Queue Length 95th (m)		124.2		60.5	14.7	13.5	16.7	16.7
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1611		2257	208	318	172	322
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.77		0.42	0.14	0.09	0.20	0.29

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	1013	14	10	841	26	27	23	5	31	10	75
Future Volume (vph)	114	1013	14	10	841	26	27	23	5	31	10	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	0.98		1.00	0.96	
Flpb, ped/bikes		1.00			1.00		0.97	1.00		0.92	1.00	
Frt		1.00			1.00		1.00	0.98		1.00	0.87	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3564			3579		1661	1843		1302	1491	
Flt Permitted		0.67			0.93		0.70	1.00		0.74	1.00	
Satd. Flow (perm)		2386			3341		1218	1843		1011	1491	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	1101	15	11	914	28	29	25	5	34	11	82
RTOR Reduction (vph)	0	1	0	0	1	0	0	4	0	0	68	0
Lane Group Flow (vph)	0	1239	0	0	952	0	29	26	0	34	25	0
Confl. Peds. (#/hr)	69		50	50		69	21		48	48		21
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	1%	0%	0%	1%	0%	4%	0%	0%	26%	0%	8%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		84.0			84.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		81.0			81.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.68			0.68		0.17	0.17		0.17	0.17	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1610			2255		208	314		172	254	
v/s Ratio Prot								0.01			0.02	
v/s Ratio Perm		c0.52			0.28		0.02			c0.03		
v/c Ratio		0.77			0.42		0.14	0.08		0.20	0.10	
Uniform Delay, d1		13.2			8.9		42.3	41.8		42.7	42.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		2.1			0.6		1.4	0.5		2.6	0.8	
Delay (s)		15.2			9.4		43.7	42.4		45.3	42.7	
Level of Service		B			A		D	D		D	D	
Approach Delay (s/veh)		15.2			9.4			43.0			43.4	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	87.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	63	15	21	72	0	32	0	25	24	54	11
Future Vol, veh/h	0	63	15	21	72	0	32	0	25	24	54	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	30	0
Mvmt Flow	0	68	16	23	78	0	35	0	27	26	59	12
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	7.8	8.1	7.8	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	56%	0%	23%	100%	0%
Vol Thru, %	0%	81%	77%	0%	83%
Vol Right, %	44%	19%	0%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	78	93	24	65
LT Vol	32	0	21	24	0
Through Vol	0	63	72	0	54
RT Vol	25	15	0	0	11
Lane Flow Rate	62	85	101	26	71
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.076	0.101	0.125	0.04	0.105
Departure Headway (Hd)	4.397	4.299	4.438	5.473	5.364
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	816	836	810	656	670
Service Time	2.417	2.314	2.453	3.193	3.084
HCM Lane V/C Ratio	0.076	0.102	0.125	0.04	0.106
HCM Control Delay, s/veh	7.8	7.8	8.1	8.4	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.4	0.1	0.4

APPENDIX F

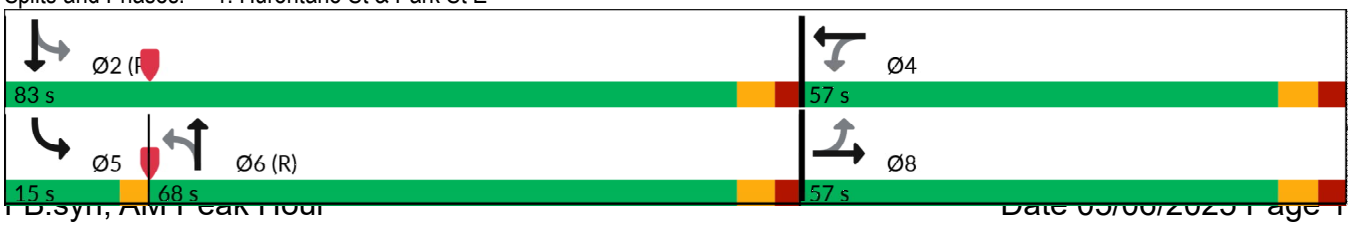
Intersection Capacity Analysis – Future Background Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	331	47	17	25	36	261	159	311
Future Volume (vph)	331	47	17	25	36	261	159	311
Lane Group Flow (vph)	360	130	18	224	39	343	173	547
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases		8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	41.0	41.0	41.0	41.0	33.0	33.0	15.0	33.0
Total Split (s)	57.0	57.0	57.0	57.0	68.0	68.0	15.0	83.0
Total Split (%)	40.7%	40.7%	40.7%	40.7%	48.6%	48.6%	10.7%	59.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5	0.0	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	8.0	10.0	10.0	10.0	9.5	9.5	6.0	9.5
Lead/Lag					Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	1.10	0.25	0.05	0.39	0.13	0.26	0.36	0.35
Control Delay (s/veh)	122.0	19.3	32.2	8.5	26.7	25.4	18.4	14.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	122.0	19.3	32.2	8.5	26.7	25.4	18.4	14.5
Queue Length 50th (m)	~112.6	13.5	3.4	5.1	6.6	30.2	23.5	32.5
Queue Length 95th (m)	#173.5	29.7	9.3	24.9	14.7	41.7	36.8	44.9
Internal Link Dist (m)		316.8		101.7		96.3		351.1
Turn Bay Length (m)	55.0		75.0		40.0		60.0	
Base Capacity (vph)	327	524	351	577	306	1303	482	1557
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.10	0.25	0.05	0.39	0.13	0.26	0.36	0.35

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 96 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	47	73	17	25	181	36	261	54	159	311	192
Future Volume (vph)	331	47	73	17	25	181	36	261	54	159	311	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	8.0	10.0		10.0	10.0		9.5	9.5		6.0	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.96		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		0.92	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1540	1444		1477	1330		1538	3057		1530	2837	
Flt Permitted	0.58	1.00		0.67	1.00		0.45	1.00		0.50	1.00	
Satd. Flow (perm)	937	1444		1048	1330		725	3057		798	2837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	51	79	18	27	197	39	284	59	173	338	209
RTOR Reduction (vph)	0	40	0	0	131	0	0	12	0	0	68	0
Lane Group Flow (vph)	360	90	0	18	93	0	39	331	0	173	479	0
Confl. Peds. (#/hr)	26		78	78		26	11		14	14		11
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	2%	3%	1%	0%	4%	9%	3%	4%	2%	4%	9%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	50.0	50.0		50.0	50.0		62.1	62.1		76.5	76.5	
Effective Green, g (s)	49.0	47.0		47.0	47.0		59.1	59.1		73.5	73.5	
Actuated g/C Ratio	0.35	0.34		0.34	0.34		0.42	0.42		0.53	0.53	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.5	6.5		3.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	327	484		351	446		306	1290		462	1489	
v/s Ratio Prot		0.06			0.07			0.11		0.02	c0.17	
v/s Ratio Perm	c0.38			0.02			0.05			c0.17		
v/c Ratio	1.10	0.19		0.05	0.21		0.13	0.26		0.37	0.32	
Uniform Delay, d1	45.5	32.9		31.4	33.2		24.7	26.2		18.0	19.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	79.7	0.2		0.1	0.2		0.9	0.5		0.5	0.6	
Delay (s)	125.2	33.1		31.5	33.5		25.6	26.7		18.5	19.6	
Level of Service	F	C		C	C		C	C		B	B	
Approach Delay (s/veh)		100.7			33.3			26.6			19.3	
Approach LOS		F			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	44.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	102.9%	ICU Level of Service	G
Analysis Period (min)	15		

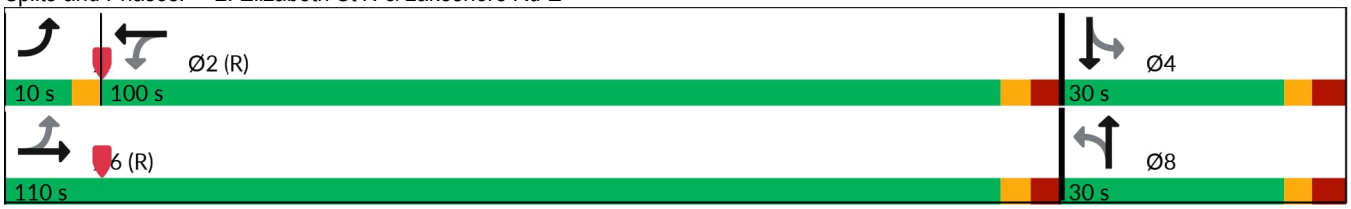
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	84	1296	3	1098	8	13	33	1
Future Volume (vph)	84	1296	3	1098	8	13	33	1
Lane Group Flow (vph)	0	1502	0	1214	9	19	36	65
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	33.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	110.0	100.0	100.0	30.0	30.0	30.0	30.0
Total Split (%)	7.1%	78.6%	71.4%	71.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.87		0.51	0.05	0.07	0.23	0.26
Control Delay (s/veh)		21.8		9.4	52.3	42.4	57.1	14.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		21.8		9.4	52.3	42.4	57.1	14.8
Queue Length 50th (m)		148.1		70.0	2.2	3.4	8.9	0.3
Queue Length 95th (m)		192.5		83.6	7.6	11.1	19.9	13.7
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1726		2400	192	267	158	253
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.87		0.51	0.05	0.07	0.23	0.26

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 110 (79%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1296	2	3	1098	17	8	13	5	33	1	59
Future Volume (vph)	84	1296	2	3	1098	17	8	13	5	33	1	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	0.97		1.00	0.97	
Flpb, ped/bikes		1.00			1.00		0.98	1.00		0.91	1.00	
Frt		1.00			1.00		1.00	0.96		1.00	0.85	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3560			3492		1752	1798		1383	1356	
Flt Permitted		0.67			0.95		0.71	1.00		0.75	1.00	
Satd. Flow (perm)		2394			3323		1318	1798		1084	1356	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1409	2	3	1193	18	9	14	5	36	1	64
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	55	0
Lane Group Flow (vph)	0	1502	0	0	1213	0	9	15	0	36	10	0
Confl. Peds. (#/hr)	38		12	12		38	10		43	43		10
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	2%	0%	33%	4%	6%	0%	0%	0%	18%	0%	17%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		104.0			104.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		101.0			101.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.72			0.72		0.15	0.15		0.15	0.15	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1727			2397		192	263		158	198	
v/s Ratio Prot								0.01			0.01	
v/s Ratio Perm		c0.63			0.37		0.01			c0.03		
v/c Ratio		0.87			0.51		0.05	0.06		0.23	0.05	
Uniform Delay, d1		14.6			8.6		51.4	51.4		52.8	51.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.8			0.8		0.5	0.4		3.3	0.5	
Delay (s)		19.4			9.3		51.8	51.8		56.1	51.9	
Level of Service		B			A		D	D		E	D	
Approach Delay (s/veh)		19.4			9.3			51.8			53.4	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	71	17	14	79	0	19	0	11	16	39	10
Future Vol, veh/h	0	71	17	14	79	0	19	0	11	16	39	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	1	0	0	7	0	0	0	0	6	36	0
Mvmt Flow	0	77	18	15	86	0	21	0	12	17	42	11
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	7.7	7.9	7.6	8.6
HCM LOS	A	A	A	A

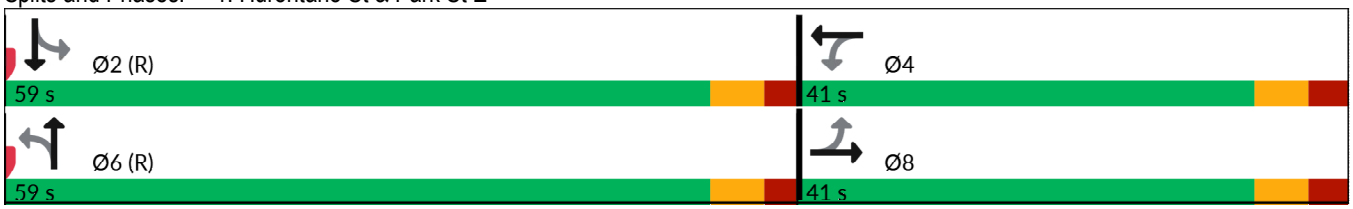
Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	63%	0%	15%	100%	0%
Vol Thru, %	0%	81%	85%	0%	80%
Vol Right, %	37%	19%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	88	93	16	49
LT Vol	19	0	14	16	0
Through Vol	0	71	79	0	39
RT Vol	11	17	0	0	10
Lane Flow Rate	33	96	101	17	53
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.04	0.111	0.121	0.027	0.08
Departure Headway (Hd)	4.438	4.178	4.3	5.567	5.433
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	809	861	837	645	661
Service Time	2.453	2.188	2.308	3.281	3.147
HCM Lane V/C Ratio	0.041	0.111	0.121	0.026	0.08
HCM Control Delay, s/veh	7.6	7.7	7.9	8.4	8.6
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.4	0.1	0.3

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	302	49	8	35	66	360	55	365
Future Volume (vph)	302	49	8	35	66	360	55	365
Lane Group Flow (vph)	328	128	9	130	72	401	60	822
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	41.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0
Total Split (s)	41.0	41.0	41.0	41.0	59.0	59.0	59.0	59.0
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	8.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.95	0.26	0.03	0.26	0.28	0.24	0.14	0.48
Control Delay (s/veh)	71.1	13.5	24.5	10.7	18.4	14.2	14.8	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.1	13.5	24.5	10.7	18.4	14.2	14.8	9.1
Queue Length 50th (m)	59.8	7.5	1.2	5.2	7.9	22.3	6.1	26.4
Queue Length 95th (m)	#110.1	21.0	4.8	18.5	18.1	31.7	13.4	41.7
Internal Link Dist (m)		316.8		101.7		96.3		351.1
Turn Bay Length (m)	55.0		75.0		40.0		60.0	
Base Capacity (vph)	368	516	333	530	261	1667	442	1704
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.25	0.03	0.25	0.28	0.24	0.14	0.48

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 76 (76%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	302	49	69	8	35	85	66	360	9	55	365	391
Future Volume (vph)	302	49	69	8	35	85	66	360	9	55	365	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	8.0	10.0		10.0	10.0		9.5	9.5		9.5	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.95		1.00	0.98		1.00	1.00		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		0.94	1.00		0.99	1.00		0.98	1.00	
Frt	1.00	0.91		1.00	0.89		1.00	1.00		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1576	1504		1514	1508		1597	3237		1582	2951	
Flt Permitted	0.67	1.00		0.67	1.00		0.30	1.00		0.52	1.00	
Satd. Flow (perm)	1117	1504		1076	1508		509	3237		859	2951	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	328	53	75	9	38	92	72	391	10	60	397	425
RTOR Reduction (vph)	0	52	0	0	65	0	0	2	0	0	187	0
Lane Group Flow (vph)	328	76	0	9	65	0	72	399	0	60	635	0
Confl. Peds. (#/hr)	26		78	78		26	11		14	14		11
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	32.1	32.1		32.1	32.1		54.4	54.4		54.4	54.4	
Effective Green, g (s)	31.1	29.1		29.1	29.1		51.4	51.4		51.4	51.4	
Actuated g/C Ratio	0.31	0.29		0.29	0.29		0.51	0.51		0.51	0.51	
Clearance Time (s)	7.0	7.0		7.0	7.0		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	
Lane Grp Cap (vph)	347	437		313	438		261	1663		441	1516	
v/s Ratio Prot		0.05			0.04			0.12			c0.22	
v/s Ratio Perm	c0.29			0.01			0.14			0.07		
v/c Ratio	0.95	0.17		0.03	0.15		0.28	0.24		0.14	0.42	
Uniform Delay, d1	33.6	26.5		25.3	26.3		13.8	13.5		12.7	15.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	34.0	0.2		0.0	0.2		2.6	0.3		0.6	0.9	
Delay (s)	67.6	26.7		25.4	26.4		16.4	13.8		13.3	15.9	
Level of Service	E	C		C	C		B	B		B	B	
Approach Delay (s/veh)		56.1			26.4			14.2			15.7	
Approach LOS		E			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

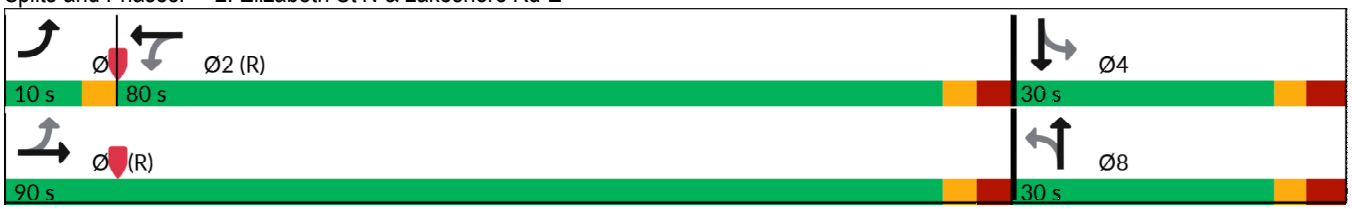
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	114	1204	10	977	27	23	31	10
Future Volume (vph)	114	1204	10	977	27	23	31	10
Lane Group Flow (vph)	0	1448	0	1101	29	36	34	93
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	27.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	90.0	80.0	80.0	30.0	30.0	30.0	30.0
Total Split (%)	8.3%	75.0%	66.7%	66.7%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.94		0.49	0.14	0.12	0.17	0.29
Control Delay (s/veh)		30.3		10.3	44.3	33.1	45.2	14.2
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		30.3		10.3	44.3	33.1	45.2	14.2
Queue Length 50th (m)		144.4		60.1	5.9	5.0	6.9	2.2
Queue Length 95th (m)		#216.6		73.9	14.7	14.4	16.5	16.7
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1545		2253	208	313	196	322
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.94		0.49	0.14	0.12	0.17	0.29

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	1204	14	10	977	26	27	23	10	31	10	75
Future Volume (vph)	114	1204	14	10	977	26	27	23	10	31	10	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	0.97		1.00	0.96	
Flpb, ped/bikes		1.00			1.00		0.97	1.00		0.92	1.00	
Frt		1.00			1.00		1.00	0.95		1.00	0.87	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3573			3584		1661	1779		1493	1491	
Flt Permitted		0.64			0.93		0.70	1.00		0.73	1.00	
Satd. Flow (perm)		2291			3337		1218	1779		1153	1491	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	1309	15	11	1062	28	29	25	11	34	11	82
RTOR Reduction (vph)	0	1	0	0	1	0	0	9	0	0	68	0
Lane Group Flow (vph)	0	1447	0	0	1100	0	29	27	0	34	25	0
Confl. Peds. (#/hr)	69		50	50		69	21		48	48		21
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	1%	0%	0%	1%	0%	4%	0%	0%	10%	0%	8%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		84.0			84.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		81.0			81.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.68			0.68		0.17	0.17		0.17	0.17	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1546			2252		208	303		196	254	
v/s Ratio Prot								0.02			0.02	
v/s Ratio Perm		c0.63			0.33		0.02			c0.03		
v/c Ratio		0.94			0.49		0.14	0.09		0.17	0.10	
Uniform Delay, d1		17.2			9.5		42.3	41.9		42.5	42.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		10.8			0.8		1.4	0.6		1.9	0.8	
Delay (s)		28.1			10.2		43.7	42.5		44.4	42.7	
Level of Service		C			B		D	D		D	D	
Approach Delay (s/veh)		28.1			10.2			43.0			43.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	100	15	21	94	0	32	0	25	24	54	11
Future Vol, veh/h	0	100	15	21	94	0	32	0	25	24	54	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	21	0
Mvmt Flow	0	109	16	23	102	0	35	0	27	26	59	12
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	8.2	8.3	8	8.7
HCM LOS	A	A	A	A

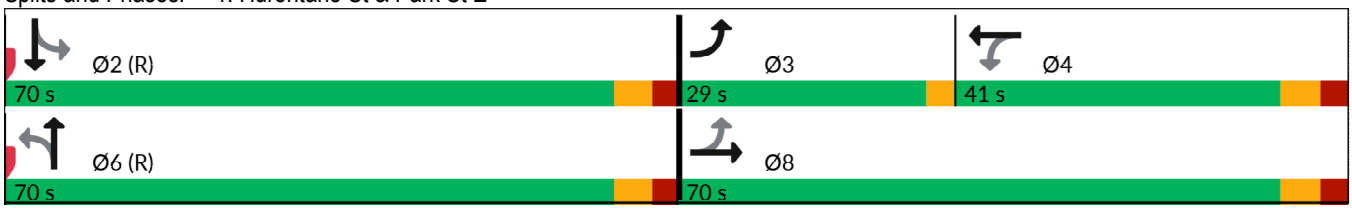
Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	56%	0%	18%	100%	0%
Vol Thru, %	0%	87%	82%	0%	83%
Vol Right, %	44%	13%	0%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	57	115	115	24	65
LT Vol	32	0	21	24	0
Through Vol	0	100	94	0	54
RT Vol	25	15	0	0	11
Lane Flow Rate	62	125	125	26	71
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.078	0.152	0.155	0.041	0.105
Departure Headway (Hd)	4.548	4.367	4.478	5.624	5.361
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	787	822	802	638	669
Service Time	2.577	2.386	2.498	3.351	3.088
HCM Lane V/C Ratio	0.079	0.152	0.156	0.041	0.106
HCM Control Delay, s/veh	8	8.2	8.3	8.6	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.5	0.1	0.4

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	331	47	17	25	36	261	159	311
Future Volume (vph)	331	47	17	25	36	261	159	311
Lane Group Flow (vph)	360	130	18	224	39	343	173	547
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	3	8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.5	41.0	41.0	41.0	33.0	33.0	33.0	33.0
Total Split (s)	29.0	70.0	41.0	41.0	70.0	70.0	70.0	70.0
Total Split (%)	20.7%	50.0%	29.3%	29.3%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	4.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.88	0.24	0.12	0.62	0.11	0.22	0.39	0.36
Control Delay (s/veh)	56.2	13.7	47.0	16.7	23.9	20.4	28.0	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.2	13.7	47.0	16.7	23.9	20.4	28.0	18.5
Queue Length 50th (m)	67.0	9.8	4.0	6.0	6.4	29.3	33.6	42.2
Queue Length 95th (m)	#99.7	23.1	11.0	30.1	14.5	40.5	56.1	57.5
Internal Link Dist (m)		316.8		101.7		96.3		351.1
Turn Bay Length (m)	55.0		75.0		40.0		60.0	
Base Capacity (vph)	409	658	232	447	350	1565	440	1502
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.20	0.08	0.50	0.11	0.22	0.39	0.36

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 96 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	331	47	73	17	25	181	36	261	54	159	311	192
Future Volume (vph)	331	47	73	17	25	181	36	261	54	159	311	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	10.0		10.0	10.0		9.5	9.5		9.5	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.96		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.92	1.00		0.99	1.00		0.98	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1565	1444		1477	1328		1540	3057		1509	2837	
Flt Permitted	0.36	1.00		0.67	1.00		0.43	1.00		0.55	1.00	
Satd. Flow (perm)	599	1444		1048	1328		689	3057		866	2837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	51	79	18	27	197	39	284	59	173	338	209
RTOR Reduction (vph)	0	45	0	0	168	0	0	11	0	0	59	0
Lane Group Flow (vph)	360	85	0	18	56	0	39	332	0	173	488	0
Confl. Peds. (#/hr)	26		78	78		26	11		14	14		11
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	2%	3%	1%	0%	4%	9%	3%	4%	2%	4%	9%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	52.3	52.3		23.6	23.6		74.2	74.2		74.2	74.2	
Effective Green, g (s)	51.3	49.3		20.6	20.6		71.2	71.2		71.2	71.2	
Actuated g/C Ratio	0.37	0.35		0.15	0.15		0.51	0.51		0.51	0.51	
Clearance Time (s)	3.0	7.0		7.0	7.0		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	
Lane Grp Cap (vph)	389	508		154	195		350	1554		440	1442	
v/s Ratio Prot	c0.16	0.06			0.04			0.11			0.17	
v/s Ratio Perm	c0.18			0.02			0.06			c0.20		
v/c Ratio	0.93	0.17		0.12	0.29		0.11	0.21		0.39	0.34	
Uniform Delay, d1	37.9	31.2		51.8	53.2		17.9	19.0		21.1	20.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	27.5	0.2		0.3	0.8		0.6	0.3		2.6	0.6	
Delay (s)	65.4	31.4		52.1	54.0		18.6	19.3		23.8	21.1	
Level of Service	E	C		D	D		B	B		C	C	
Approach Delay (s/veh)		56.4			53.8			19.2			21.7	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	34.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	102.5%	ICU Level of Service	G
Analysis Period (min)	15		

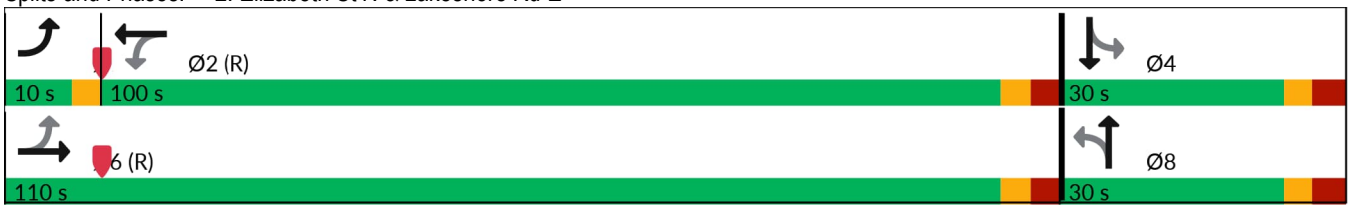
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	84	1296	3	1098	8	13	33	1
Future Volume (vph)	84	1296	3	1098	8	13	33	1
Lane Group Flow (vph)	0	1502	0	1214	9	19	36	65
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	33.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	110.0	100.0	100.0	30.0	30.0	30.0	30.0
Total Split (%)	7.1%	78.6%	71.4%	71.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.87		0.51	0.05	0.07	0.23	0.26
Control Delay (s/veh)		21.8		9.4	52.3	42.4	57.1	14.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		21.8		9.4	52.3	42.4	57.1	14.8
Queue Length 50th (m)		148.1		70.0	2.2	3.4	8.9	0.3
Queue Length 95th (m)		192.5		83.6	7.6	11.1	19.9	13.7
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1726		2400	192	267	158	253
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.87		0.51	0.05	0.07	0.23	0.26

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 110 (79%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	1296	2	3	1098	17	8	13	5	33	1	59
Future Volume (vph)	84	1296	2	3	1098	17	8	13	5	33	1	59
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	0.97		1.00	0.97	
Flpb, ped/bikes		1.00			1.00		0.98	1.00		0.91	1.00	
Frt		1.00			1.00		1.00	0.96		1.00	0.85	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3560			3492		1752	1798		1383	1356	
Flt Permitted		0.67			0.95		0.71	1.00		0.75	1.00	
Satd. Flow (perm)		2394			3323		1318	1798		1084	1356	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	1409	2	3	1193	18	9	14	5	36	1	64
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	55	0
Lane Group Flow (vph)	0	1502	0	0	1213	0	9	15	0	36	10	0
Confl. Peds. (#/hr)	38		12	12		38	10		43	43		10
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	2%	0%	33%	4%	6%	0%	0%	0%	18%	0%	17%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		104.0			104.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		101.0			101.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.72			0.72		0.15	0.15		0.15	0.15	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1727			2397		192	263		158	198	
v/s Ratio Prot								0.01			0.01	
v/s Ratio Perm		c0.63			0.37		0.01			c0.03		
v/c Ratio		0.87			0.51		0.05	0.06		0.23	0.05	
Uniform Delay, d1		14.6			8.6		51.4	51.4		52.8	51.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.8			0.8		0.5	0.4		3.3	0.5	
Delay (s)		19.4			9.3		51.8	51.8		56.1	51.9	
Level of Service		B			A		D	D		E	D	
Approach Delay (s/veh)		19.4			9.3			51.8			53.4	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	100.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	71	17	14	79	0	19	0	11	16	39	10
Future Vol, veh/h	0	71	17	14	79	0	19	0	11	16	39	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	1	0	0	7	0	0	0	0	6	36	0
Mvmt Flow	0	77	18	15	86	0	21	0	12	17	42	11
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	7.7	7.9	7.6	8.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	63%	0%	15%	100%	0%
Vol Thru, %	0%	81%	85%	0%	80%
Vol Right, %	37%	19%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	30	88	93	16	49
LT Vol	19	0	14	16	0
Through Vol	0	71	79	0	39
RT Vol	11	17	0	0	10
Lane Flow Rate	33	96	101	17	53
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.04	0.111	0.121	0.027	0.08
Departure Headway (Hd)	4.438	4.178	4.3	5.567	5.433
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	809	861	837	645	661
Service Time	2.453	2.188	2.308	3.281	3.147
HCM Lane V/C Ratio	0.041	0.111	0.121	0.026	0.08
HCM Control Delay, s/veh	7.6	7.7	7.9	8.4	8.6
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.1	0.4	0.4	0.1	0.3

APPENDIX G

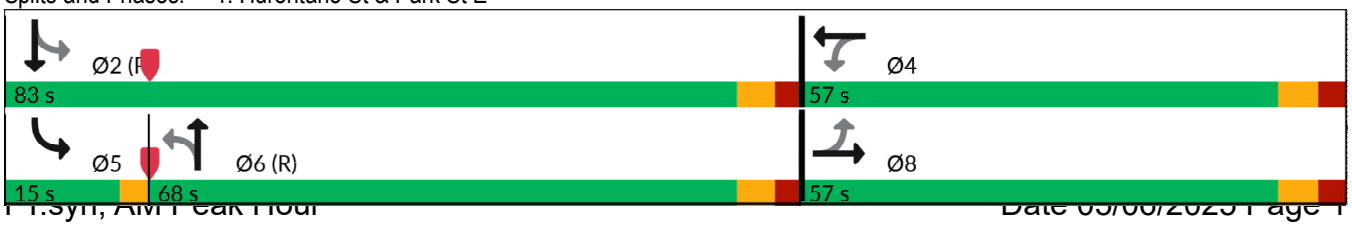
Intersection Capacity Analysis – Future Total Conditions

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	352	47	17	25	36	261	159	311
Future Volume (vph)	352	47	17	25	36	261	159	311
Lane Group Flow (vph)	383	131	18	224	39	343	173	556
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases		8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	41.0	41.0	41.0	41.0	33.0	33.0	9.5	33.0
Total Split (s)	57.0	57.0	57.0	57.0	68.0	68.0	15.0	83.0
Total Split (%)	40.7%	40.7%	40.7%	40.7%	48.6%	48.6%	10.7%	59.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5	0.0	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	8.0	10.0	10.0	10.0	9.5	9.5	6.0	9.5
Lead/Lag					Lag	Lag	Lead	
Lead-Lag Optimize?					Yes	Yes	Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	None	C-Max
v/c Ratio	1.17	0.25	0.05	0.39	0.13	0.26	0.36	0.36
Control Delay (s/veh)	145.3	19.2	32.2	8.5	26.7	25.4	18.4	14.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	145.3	19.2	32.2	8.5	26.7	25.4	18.4	14.1
Queue Length 50th (m)	~125.8	13.5	3.4	5.1	6.6	30.2	23.5	32.1
Queue Length 95th (m)	#187.9	29.4	9.3	24.9	14.7	41.7	36.8	44.6
Internal Link Dist (m)		280.2		101.7		96.3		351.1
Turn Bay Length (m)	55.0		75.0		40.0		60.0	
Base Capacity (vph)	327	524	351	577	303	1303	482	1561
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.17	0.25	0.05	0.39	0.13	0.26	0.36	0.36

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 96 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	47	74	17	25	181	36	261	54	159	311	201
Future Volume (vph)	352	47	74	17	25	181	36	261	54	159	311	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	8.0	10.0		10.0	10.0		9.5	9.5		6.0	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.96		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.98	1.00		0.92	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1540	1443		1477	1330		1538	3057		1530	2832	
Flt Permitted	0.58	1.00		0.67	1.00		0.44	1.00		0.50	1.00	
Satd. Flow (perm)	937	1443		1047	1330		719	3057		798	2832	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	383	51	80	18	27	197	39	284	59	173	338	218
RTOR Reduction (vph)	0	41	0	0	131	0	0	12	0	0	75	0
Lane Group Flow (vph)	383	90	0	18	93	0	39	331	0	173	481	0
Confl. Peds. (#/hr)	26		78	78		26	11		14	14		11
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	2%	3%	1%	0%	4%	9%	3%	4%	2%	4%	9%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	50.0	50.0		50.0	50.0		62.1	62.1		76.5	76.5	
Effective Green, g (s)	49.0	47.0		47.0	47.0		59.1	59.1		73.5	73.5	
Actuated g/C Ratio	0.35	0.34		0.34	0.34		0.42	0.42		0.53	0.53	
Clearance Time (s)	7.0	7.0		7.0	7.0		6.5	6.5		3.0	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	327	484		351	446		303	1290		462	1486	
v/s Ratio Prot		0.06			0.07			0.11		0.02	c0.17	
v/s Ratio Perm	c0.41			0.02			0.05			c0.17		
v/c Ratio	1.17	0.19		0.05	0.21		0.13	0.26		0.37	0.32	
Uniform Delay, d1	45.5	33.0		31.4	33.2		24.7	26.2		18.0	19.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	104.8	0.2		0.1	0.2		0.9	0.5		0.5	0.6	
Delay (s)	150.3	33.1		31.5	33.5		25.6	26.7		18.5	19.6	
Level of Service	F	C		C	C		C	C		B	B	
Approach Delay (s/veh)		120.4			33.3			26.6			19.3	
Approach LOS		F			C			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	50.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	25.5
Intersection Capacity Utilization	104.2%	ICU Level of Service	G
Analysis Period (min)	15		

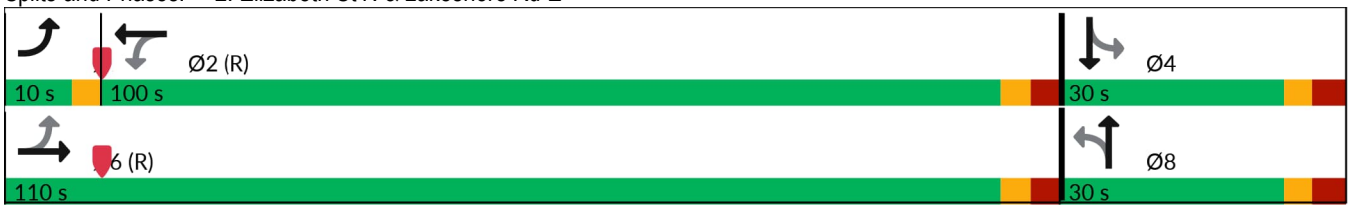
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	88	1296	3	1098	8	13	38	1
Future Volume (vph)	88	1296	3	1098	8	13	38	1
Lane Group Flow (vph)	0	1507	0	1218	9	19	41	68
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	33.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	110.0	100.0	100.0	30.0	30.0	30.0	30.0
Total Split (%)	7.1%	78.6%	71.4%	71.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.89		0.51	0.05	0.07	0.25	0.26
Control Delay (s/veh)		23.7		9.4	52.3	42.4	57.8	14.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		23.7		9.4	52.3	42.4	57.8	14.8
Queue Length 50th (m)		154.9		70.4	2.2	3.4	10.2	0.3
Queue Length 95th (m)		203.7		84.1	7.6	11.1	22.1	14.0
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1690		2396	192	267	161	257
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.89		0.51	0.05	0.07	0.25	0.26

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 110 (79%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	1296	2	3	1098	20	8	13	5	38	1	62
Future Volume (vph)	88	1296	2	3	1098	20	8	13	5	38	1	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	0.97		1.00	0.97	
Flpb, ped/bikes		1.00			1.00		0.98	1.00		0.91	1.00	
Frt		1.00			1.00		1.00	0.96		1.00	0.85	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3559			3489		1752	1798		1407	1367	
Flt Permitted		0.66			0.95		0.71	1.00		0.75	1.00	
Satd. Flow (perm)		2341			3321		1314	1798		1103	1367	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1409	2	3	1193	22	9	14	5	41	1	67
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	57	0
Lane Group Flow (vph)	0	1507	0	0	1217	0	9	15	0	41	11	0
Confl. Peds. (#/hr)	38		12	12		38	10		43	43		10
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	2%	0%	33%	4%	5%	0%	0%	0%	16%	0%	16%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		104.0			104.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		101.0			101.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.72			0.72		0.15	0.15		0.15	0.15	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1688			2395		192	263		161	200	
v/s Ratio Prot								0.01			0.01	
v/s Ratio Perm		c0.64			0.37		0.01			c0.04		
v/c Ratio		0.89			0.51		0.05	0.06		0.25	0.05	
Uniform Delay, d1		15.3			8.6		51.4	51.4		53.0	51.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.3			0.8		0.5	0.4		3.8	0.5	
Delay (s)		21.6			9.4		51.8	51.8		56.8	51.9	
Level of Service		C			A		D	D		E	D	
Approach Delay (s/veh)		21.6			9.4			51.8			53.7	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	71	17	22	79	0	19	0	18	16	39	10
Future Vol, veh/h	0	71	17	22	79	0	19	0	18	16	39	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	1	0	0	7	0	0	0	0	6	36	0
Mvmt Flow	0	77	18	24	86	0	21	0	20	17	42	11
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	7.7	8	7.6	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	51%	0%	22%	100%	0%
Vol Thru, %	0%	81%	78%	0%	80%
Vol Right, %	49%	19%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	88	101	16	49
LT Vol	19	0	22	16	0
Through Vol	0	71	79	0	39
RT Vol	18	17	0	0	10
Lane Flow Rate	40	96	110	17	53
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.049	0.112	0.132	0.027	0.081
Departure Headway (Hd)	4.363	4.204	4.329	5.594	5.46
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	822	855	831	642	658
Service Time	2.381	2.217	2.342	3.311	3.177
HCM Lane V/C Ratio	0.049	0.112	0.132	0.026	0.081
HCM Control Delay, s/veh	7.6	7.7	8	8.5	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0.5	0.1	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	98	93	9	21	8
Future Vol, veh/h	7	98	93	9	21	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	6	0	0	0
Mvmt Flow	8	107	101	10	23	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	229	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	123	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1492	-	-	-	764	954
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1492	-	-	-	759	954
Mov Cap-2 Maneuver	-	-	-	-	759	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.5	0	9.7
HCM LOS			A

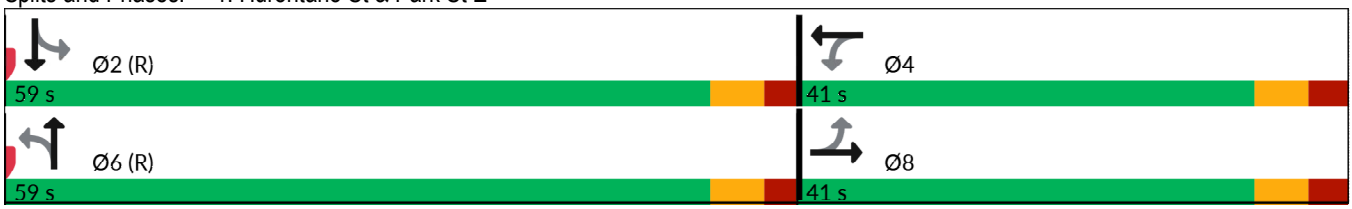
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1492	-	-	-	804
HCM Lane V/C Ratio	0.005	-	-	-	0.039
HCM Ctrl Dly (s/v)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q (veh)	0	-	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	323	49	8	35	67	360	55	365
Future Volume (vph)	323	49	8	35	67	360	55	365
Lane Group Flow (vph)	351	128	9	130	73	401	60	840
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	41.0	41.0	41.0	41.0	33.0	33.0	33.0	33.0
Total Split (s)	41.0	41.0	41.0	41.0	59.0	59.0	59.0	59.0
Total Split (%)	41.0%	41.0%	41.0%	41.0%	59.0%	59.0%	59.0%	59.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	8.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.97	0.25	0.03	0.25	0.30	0.25	0.14	0.50
Control Delay (s/veh)	74.9	13.3	24.5	10.6	19.1	14.6	14.9	9.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	74.9	13.3	24.5	10.6	19.1	14.6	14.9	9.3
Queue Length 50th (m)	65.6	7.5	1.2	5.2	8.1	22.3	6.1	26.6
Queue Length 95th (m)	#119.9	20.8	4.8	18.5	18.6	31.7	13.3	42.2
Internal Link Dist (m)		280.2		101.7		96.3		351.1
Turn Bay Length (m)	55.0		75.0		40.0		60.0	
Base Capacity (vph)	372	530	347	535	247	1632	437	1681
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.24	0.03	0.24	0.30	0.25	0.14	0.50

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 76 (76%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 75
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	323	49	69	8	35	85	67	360	9	55	365	408
Future Volume (vph)	323	49	69	8	35	85	67	360	9	55	365	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	8.0	10.0		10.0	10.0		9.5	9.5		9.5	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.98		1.00	0.98		1.00	1.00		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.99	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.89		1.00	1.00		1.00	0.92	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1593	1547		1578	1522		1597	3239		1599	2945	
Flt Permitted	0.67	1.00		0.67	1.00		0.29	1.00		0.52	1.00	
Satd. Flow (perm)	1130	1547		1121	1522		490	3239		869	2945	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	351	53	75	9	38	92	73	391	10	60	397	443
RTOR Reduction (vph)	0	52	0	0	64	0	0	2	0	0	198	0
Lane Group Flow (vph)	351	76	0	9	66	0	73	399	0	60	642	0
Confl. Peds. (#/hr)	11		24	24		11	11		4	4		11
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	33.1	33.1		33.1	33.1		53.4	53.4		53.4	53.4	
Effective Green, g (s)	32.1	30.1		30.1	30.1		50.4	50.4		50.4	50.4	
Actuated g/C Ratio	0.32	0.30		0.30	0.30		0.50	0.50		0.50	0.50	
Clearance Time (s)	7.0	7.0		7.0	7.0		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	
Lane Grp Cap (vph)	362	465		337	458		246	1632		437	1484	
v/s Ratio Prot		0.05			0.04			0.12			c0.22	
v/s Ratio Perm	c0.31			0.01			0.15			0.07		
v/c Ratio	0.97	0.16		0.03	0.14		0.30	0.24		0.14	0.43	
Uniform Delay, d1	33.5	25.7		24.6	25.5		14.5	14.0		13.2	15.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	38.7	0.2		0.0	0.1		3.1	0.4		0.7	0.9	
Delay (s)	72.2	25.9		24.7	25.7		17.5	14.4		13.9	16.6	
Level of Service	E	C		C	C		B	B		B	B	
Approach Delay (s/veh)		59.8			25.6			14.9			16.5	
Approach LOS		E			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	84.7%	ICU Level of Service	E
Analysis Period (min)	15		

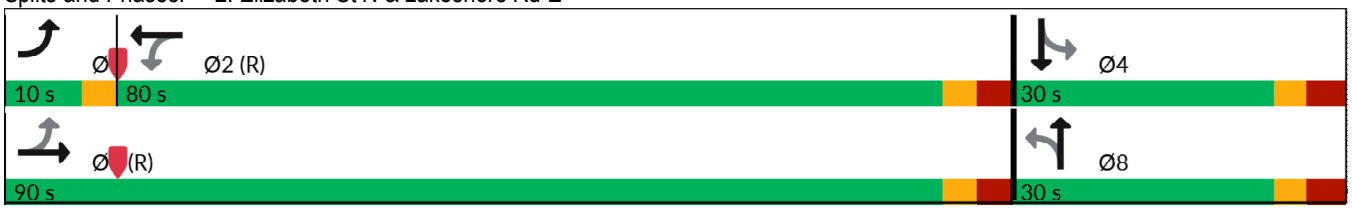
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	119	1204	10	977	27	23	31	10
Future Volume (vph)	119	1204	10	977	27	23	31	10
Lane Group Flow (vph)	0	1453	0	1106	29	36	34	95
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	27.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	90.0	80.0	80.0	30.0	30.0	30.0	30.0
Total Split (%)	8.3%	75.0%	66.7%	66.7%	25.0%	25.0%	25.0%	25.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.95		0.49	0.14	0.12	0.17	0.29
Control Delay (s/veh)		32.1		10.3	44.4	33.1	45.2	14.0
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		32.1		10.3	44.4	33.1	45.2	14.0
Queue Length 50th (m)		147.7		60.4	5.9	5.0	6.9	2.2
Queue Length 95th (m)		#219.2		74.4	14.7	14.4	16.5	16.9
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1533		2252	207	313	196	324
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.95		0.49	0.14	0.12	0.17	0.29

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 96 (80%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	1204	14	10	977	30	27	23	10	31	10	77
Future Volume (vph)	119	1204	14	10	977	30	27	23	10	31	10	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			0.99		1.00	0.97		1.00	0.96	
Flpb, ped/bikes		1.00			1.00		0.97	1.00		0.92	1.00	
Frt		1.00			1.00		1.00	0.95		1.00	0.87	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3572			3579		1661	1779		1493	1490	
Flt Permitted		0.63			0.93		0.70	1.00		0.73	1.00	
Satd. Flow (perm)		2272			3332		1216	1779		1153	1490	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	129	1309	15	11	1062	33	29	25	11	34	11	84
RTOR Reduction (vph)	0	1	0	0	1	0	0	9	0	0	70	0
Lane Group Flow (vph)	0	1452	0	0	1105	0	29	27	0	34	25	0
Confl. Peds. (#/hr)	69		50	50		69	21		48	48		21
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	3%	1%	0%	0%	1%	0%	4%	0%	0%	10%	0%	8%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		84.0			84.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		81.0			81.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.68			0.68		0.17	0.17		0.17	0.17	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1533			2249		207	303		196	254	
v/s Ratio Prot								0.02			0.02	
v/s Ratio Perm		c0.64			0.33		0.02			c0.03		
v/c Ratio		0.95			0.49		0.14	0.09		0.17	0.10	
Uniform Delay, d1		17.6			9.5		42.3	41.9		42.5	42.0	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		12.4			0.8		1.4	0.6		1.9	0.8	
Delay (s)		30.0			10.3		43.7	42.5		44.4	42.8	
Level of Service		C			B		D	D		D	D	
Approach Delay (s/veh)		30.0			10.3			43.0			43.2	
Approach LOS		C			B			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	100	15	23	94	0	32	0	34	24	54	11
Future Vol, veh/h	0	100	15	23	94	0	32	0	34	24	54	11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	21	0
Mvmt Flow	0	109	16	25	102	0	35	0	37	26	59	12
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	8.2	8.4	8	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	48%	0%	20%	100%	0%
Vol Thru, %	0%	87%	80%	0%	83%
Vol Right, %	52%	13%	0%	0%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	66	115	117	24	65
LT Vol	32	0	23	24	0
Through Vol	0	100	94	0	54
RT Vol	34	15	0	0	11
Lane Flow Rate	72	125	127	26	71
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.09	0.153	0.159	0.041	0.106
Departure Headway (Hd)	4.496	4.392	4.503	5.642	5.379
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	796	817	797	635	667
Service Time	2.526	2.415	2.527	3.37	3.107
HCM Lane V/C Ratio	0.09	0.153	0.159	0.041	0.106
HCM Control Delay, s/veh	8	8.2	8.4	8.6	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.6	0.1	0.4

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	9	149	115	18	21	2
Future Vol, veh/h	9	149	115	18	21	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	162	125	20	23	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	145	0	-	0	317	135
Stage 1	-	-	-	-	135	-
Stage 2	-	-	-	-	182	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1450	-	-	-	680	919
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1450	-	-	-	675	919
Mov Cap-2 Maneuver	-	-	-	-	675	-
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	854	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.4	0	10.4
HCM LOS			B

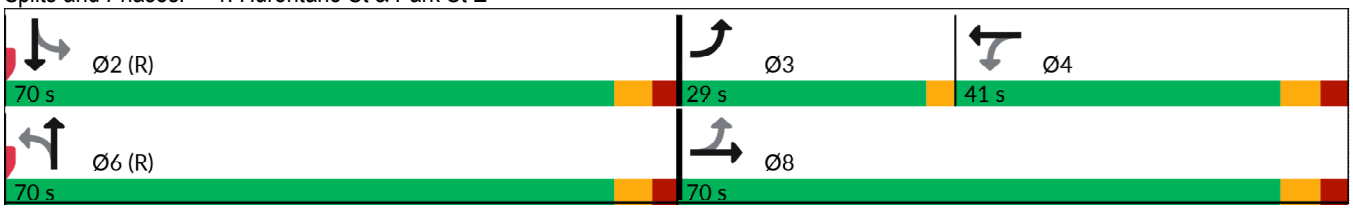
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1450	-	-	-	691
HCM Lane V/C Ratio	0.007	-	-	-	0.036
HCM Ctrl Dly (s/v)	7.5	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q (veh)	0	-	-	-	0.1

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	352	47	17	25	36	261	159	311
Future Volume (vph)	352	47	17	25	36	261	159	311
Lane Group Flow (vph)	383	131	18	224	39	343	173	556
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	3	8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	9.5	41.0	41.0	41.0	33.0	33.0	33.0	33.0
Total Split (s)	29.0	70.0	41.0	41.0	70.0	70.0	70.0	70.0
Total Split (%)	20.7%	50.0%	29.3%	29.3%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	3.0	3.0	3.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)	1.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)	4.0	10.0	10.0	10.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?	Yes		Yes	Yes				
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio	0.93	0.24	0.12	0.62	0.11	0.22	0.39	0.37
Control Delay (s/veh)	64.3	13.6	47.0	16.7	24.0	20.4	28.1	18.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	64.3	13.6	47.0	16.7	24.0	20.4	28.1	18.2
Queue Length 50th (m)	72.7	9.8	4.0	6.0	6.4	29.3	33.6	42.0
Queue Length 95th (m)	#100.8	23.0	11.0	30.1	14.5	40.5	56.1	57.4
Internal Link Dist (m)		280.2		101.7		96.3		351.1
Turn Bay Length (m)	55.0		75.0		40.0		60.0	
Base Capacity (vph)	410	658	231	447	344	1559	438	1499
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.20	0.08	0.50	0.11	0.22	0.39	0.37

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 96 (69%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 85
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Hurontario St & Park St E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	352	47	74	17	25	181	36	261	54	159	311	201
Future Volume (vph)	352	47	74	17	25	181	36	261	54	159	311	201
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)	4.0	10.0		10.0	10.0		9.5	9.5		9.5	9.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.94		1.00	0.96		1.00	0.99		1.00	0.98	
Flpb, ped/bikes	0.99	1.00		0.92	1.00		0.99	1.00		0.98	1.00	
Frt	1.00	0.91		1.00	0.87		1.00	0.97		1.00	0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1565	1443		1477	1328		1540	3057		1509	2832	
Flt Permitted	0.36	1.00		0.67	1.00		0.42	1.00		0.55	1.00	
Satd. Flow (perm)	599	1443		1047	1328		680	3057		866	2832	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	383	51	80	18	27	197	39	284	59	173	338	218
RTOR Reduction (vph)	0	46	0	0	168	0	0	11	0	0	65	0
Lane Group Flow (vph)	383	85	0	18	56	0	39	332	0	173	491	0
Confl. Peds. (#/hr)	26		78	78		26	11		14	14		11
Confl. Bikes (#/hr)						2						1
Heavy Vehicles (%)	2%	3%	1%	0%	4%	9%	3%	4%	2%	4%	9%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	3	8			4			6			2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	52.6	52.6		23.6	23.6		73.9	73.9		73.9	73.9	
Effective Green, g (s)	51.6	49.6		20.6	20.6		70.9	70.9		70.9	70.9	
Actuated g/C Ratio	0.37	0.35		0.15	0.15		0.51	0.51		0.51	0.51	
Clearance Time (s)	3.0	7.0		7.0	7.0		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	
Lane Grp Cap (vph)	393	511		154	195		344	1548		438	1434	
v/s Ratio Prot	c0.17	0.06			0.04			0.11			0.17	
v/s Ratio Perm	c0.19			0.02			0.06			c0.20		
v/c Ratio	0.97	0.17		0.12	0.29		0.11	0.21		0.39	0.34	
Uniform Delay, d1	39.2	31.0		51.8	53.2		18.1	19.1		21.3	20.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	38.4	0.2		0.3	0.8		0.7	0.3		2.7	0.7	
Delay (s)	77.6	31.2		52.1	54.0		18.8	19.4		24.0	21.3	
Level of Service	E	C		D	D		B	B		C	C	
Approach Delay (s/veh)		65.7			53.8			19.4			21.9	
Approach LOS		E			D			B			C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	37.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		

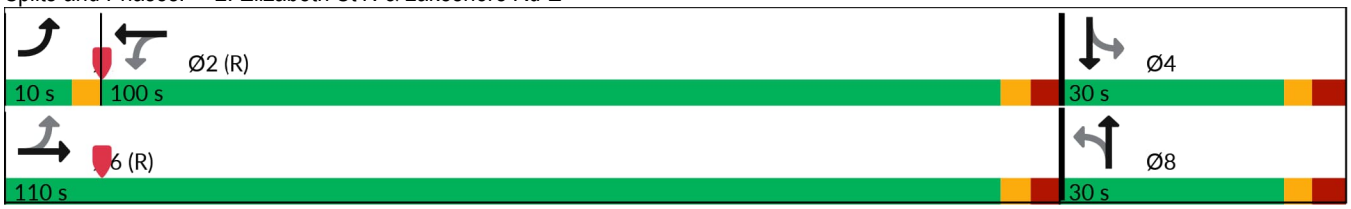
c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	88	1296	3	1098	8	13	38	1
Future Volume (vph)	88	1296	3	1098	8	13	38	1
Lane Group Flow (vph)	0	1507	0	1218	9	19	41	68
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases	1	6		2		8		4
Permitted Phases	6		2		8		4	
Detector Phase	1	6	2	2	8	8	4	4
Switch Phase								
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	33.0	33.0	33.0	16.5	16.5	16.5	16.5
Total Split (s)	10.0	110.0	100.0	100.0	30.0	30.0	30.0	30.0
Total Split (%)	7.1%	78.6%	71.4%	71.4%	21.4%	21.4%	21.4%	21.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	3.0	3.0	3.0	3.5	3.5	3.5	3.5
Lost Time Adjust (s)		3.0		3.0	3.0	3.0	3.0	3.0
Total Lost Time (s)		9.0		9.0	9.5	9.5	9.5	9.5
Lead/Lag	Lead		Lag	Lag				
Lead-Lag Optimize?								
Recall Mode	None	C-Max	C-Max	C-Max	Max	Max	Max	Max
v/c Ratio		0.89		0.51	0.05	0.07	0.25	0.26
Control Delay (s/veh)		23.7		9.4	52.3	42.4	57.8	14.8
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)		23.7		9.4	52.3	42.4	57.8	14.8
Queue Length 50th (m)		154.9		70.4	2.2	3.4	10.2	0.3
Queue Length 95th (m)		203.7		84.1	7.6	11.1	22.1	14.0
Internal Link Dist (m)		102.4		287.6		90.8		222.1
Turn Bay Length (m)					11.5		12.5	
Base Capacity (vph)		1690		2396	192	267	161	257
Starvation Cap Reductn		0		0	0	0	0	0
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.89		0.51	0.05	0.07	0.25	0.26

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 110 (79%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 2: Elizabeth St N & Lakeshore Rd E



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	1296	2	3	1098	20	8	13	5	38	1	62
Future Volume (vph)	88	1296	2	3	1098	20	8	13	5	38	1	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5	3.5	3.7	3.5
Total Lost time (s)		9.0			9.0		9.5	9.5		9.5	9.5	
Lane Util. Factor		0.95			0.95		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00		1.00	0.97		1.00	0.97	
Flpb, ped/bikes		1.00			1.00		0.98	1.00		0.91	1.00	
Frt		1.00			1.00		1.00	0.96		1.00	0.85	
Flt Protected		1.00			1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		3559			3489		1752	1798		1407	1367	
Flt Permitted		0.66			0.95		0.71	1.00		0.75	1.00	
Satd. Flow (perm)		2341			3321		1314	1798		1103	1367	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	1409	2	3	1193	22	9	14	5	41	1	67
RTOR Reduction (vph)	0	0	0	0	1	0	0	4	0	0	57	0
Lane Group Flow (vph)	0	1507	0	0	1217	0	9	15	0	41	11	0
Confl. Peds. (#/hr)	38		12	12		38	10		43	43		10
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	4%	2%	0%	33%	4%	5%	0%	0%	0%	16%	0%	16%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	1	6			2			8			4	
Permitted Phases	6			2			8			4		
Actuated Green, G (s)		104.0			104.0		23.5	23.5		23.5	23.5	
Effective Green, g (s)		101.0			101.0		20.5	20.5		20.5	20.5	
Actuated g/C Ratio		0.72			0.72		0.15	0.15		0.15	0.15	
Clearance Time (s)		6.0			6.0		6.5	6.5		6.5	6.5	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		1688			2395		192	263		161	200	
v/s Ratio Prot								0.01			0.01	
v/s Ratio Perm		c0.64			0.37		0.01			c0.04		
v/c Ratio		0.89			0.51		0.05	0.06		0.25	0.05	
Uniform Delay, d1		15.3			8.6		51.4	51.4		53.0	51.4	
Progression Factor		1.00			1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.3			0.8		0.5	0.4		3.8	0.5	
Delay (s)		21.6			9.4		51.8	51.8		56.8	51.9	
Level of Service		C			A		D	D		E	D	
Approach Delay (s/veh)		21.6			9.4			51.8			53.7	
Approach LOS		C			A			D			D	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	24.5
Intersection Capacity Utilization	101.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	71	17	22	79	0	19	0	18	16	39	10
Future Vol, veh/h	0	71	17	22	79	0	19	0	18	16	39	10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	0	1	0	0	7	0	0	0	0	6	36	0
Mvmt Flow	0	77	18	24	86	0	21	0	20	17	42	11
Number of Lanes	0	1	0	0	1	0	0	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	2	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	2	1	1
HCM Control Delay, s/veh	7.7	8	7.6	8.7
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1	SBLn2
Vol Left, %	51%	0%	22%	100%	0%
Vol Thru, %	0%	81%	78%	0%	80%
Vol Right, %	49%	19%	0%	0%	20%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	37	88	101	16	49
LT Vol	19	0	22	16	0
Through Vol	0	71	79	0	39
RT Vol	18	17	0	0	10
Lane Flow Rate	40	96	110	17	53
Geometry Grp	4a	2	2	5	5
Degree of Util (X)	0.049	0.112	0.132	0.027	0.081
Departure Headway (Hd)	4.363	4.204	4.329	5.594	5.46
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	822	855	831	642	658
Service Time	2.381	2.217	2.342	3.311	3.177
HCM Lane V/C Ratio	0.049	0.112	0.132	0.026	0.081
HCM Control Delay, s/veh	7.6	7.7	8	8.5	8.7
HCM Lane LOS	A	A	A	A	A
HCM 95th-tile Q	0.2	0.4	0.5	0.1	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	98	93	9	21	8
Future Vol, veh/h	7	98	93	9	21	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	6	0	0	0
Mvmt Flow	8	107	101	10	23	9

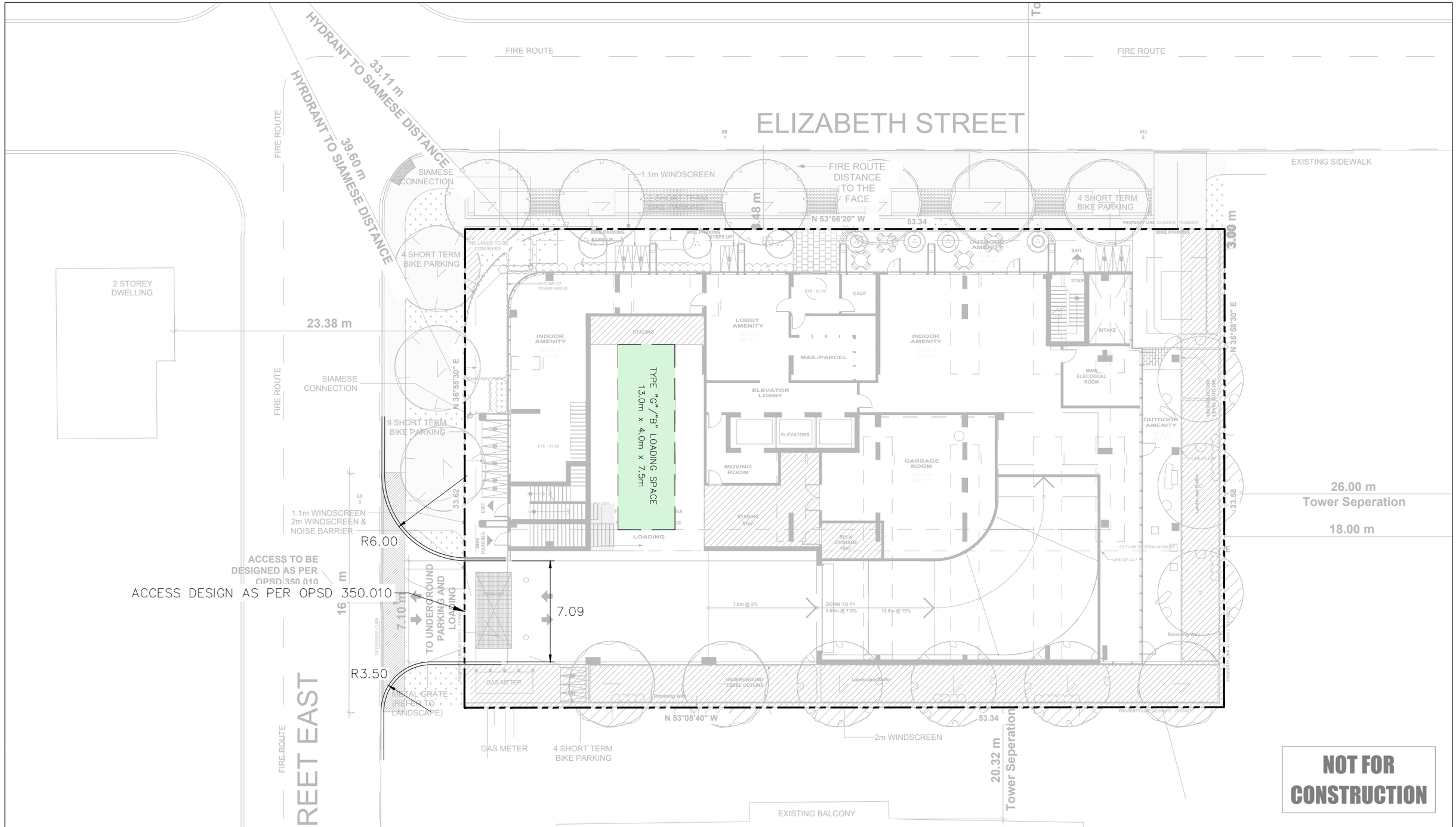
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	111	0	-	0	229	106
Stage 1	-	-	-	-	106	-
Stage 2	-	-	-	-	123	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1492	-	-	-	764	954
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1492	-	-	-	759	954
Mov Cap-2 Maneuver	-	-	-	-	759	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	907	-

Approach	EB	WB	SB
HCM Ctrl Dly, s/v	0.5	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1492	-	-	-	804
HCM Lane V/C Ratio	0.005	-	-	-	0.039
HCM Ctrl Dly (s/v)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q (veh)	0	-	-	-	0.1

APPENDIX H

Functional Design Review



NOT FOR CONSTRUCTION

PLOT DATE: May 22, 2025

DRAWN BY: X.C.

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Project No. 20248

Date MAY 23, 2025

23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

2.5 0 2.5 5 7.5m
1:250

ACCESS REVIEW

Drawing No. 001

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg

NOTES:

ONTARIO BUILDING CODE – FIRE ACCESS ROUTE:

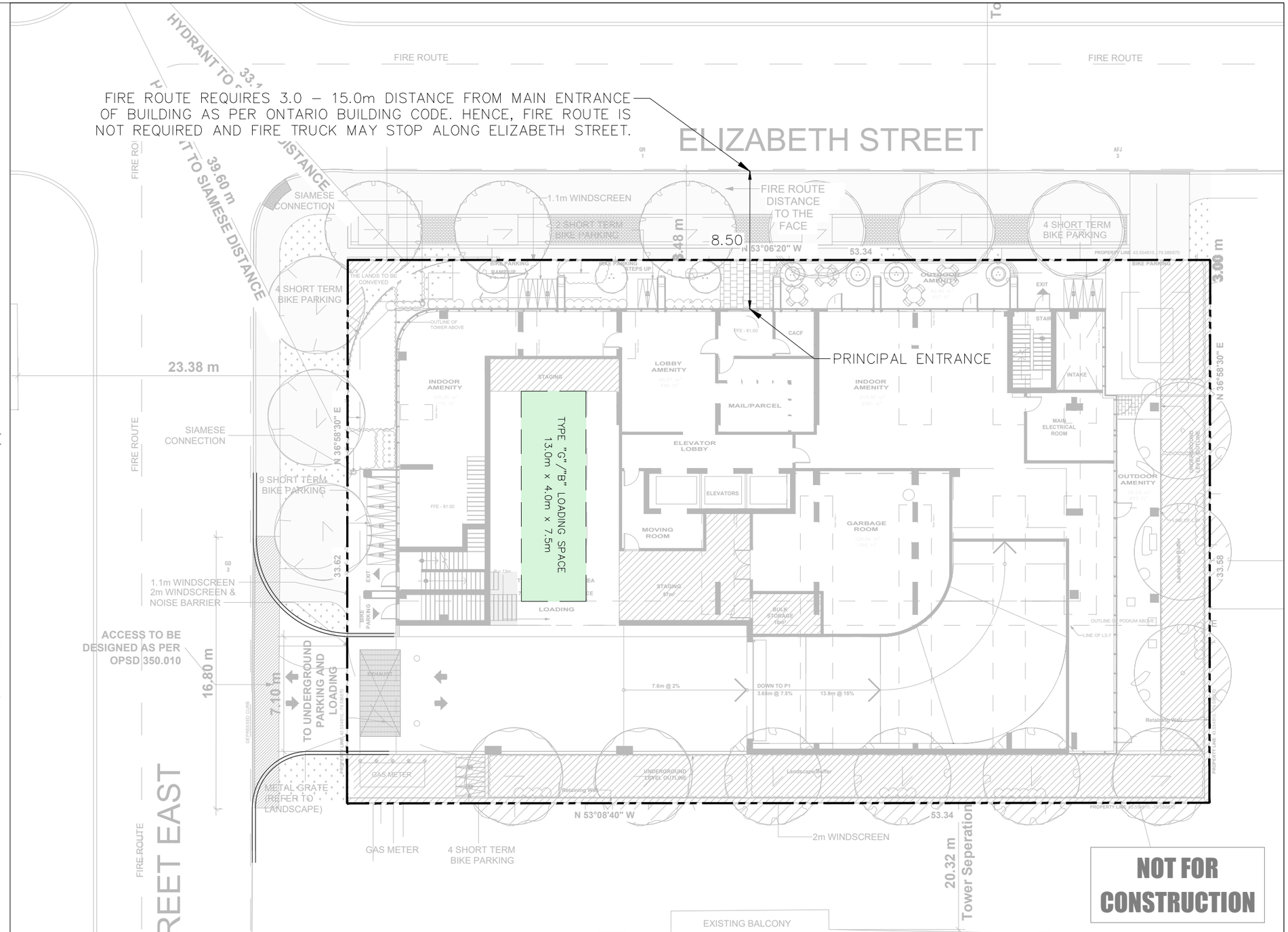
PER ONTARIO BUILDING CODE SECTION 3.2.5.5:

1. ACCESS ROUTES REQUIRE THAT THE PRINCIPAL ENTRANCES ARE LOCATED NOT LESS THAN 3m AND NOT MORE THAN 15m FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING. HENCE THE FIRE TRUCK MAY PARK ALONG ELIZABETH STREET.

2. FIRE HYDRANTS TO BE LOCATED AS SPECIFIED.

PER ONTARIO BUILDING CODE SECTION 3.2.5.6

3. A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL:
a. HAVE A CLEAR WIDTH NOT LESS THAN 6m, UNLESS IT CAN BE SHOWN THAT LESSER WIDTHS ARE SATISFACTORY;
b. HAVE A CENTRELINE RADIUS NOT LESS THAN 12m;
c. HAVE AN OVERHEAD CLEARANCE NOT LESS THAN 5m;
d. HAVE A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15m;
e. BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIREFIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE, ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS;
f. HAVE TURNAROUND FACILITIES FOR ANY DEAD–END PORTION OF THE ACCESS ROUTE MORE THAN 90m LONG AND;
g. BE CONNECTED WITH A PUBLIC THROUGHFARE.



PLOT DATE: May 22, 2025

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Date MAY 23, 2025

23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

2.5 0 2.5 5 7.5m
1:250

GROUND FLOOR – FIRE ROUTE REVIEW

Drawing No. 002

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg

NOTES:

1. A TRAINED ON-SITE STAFF MEMBER WILL BE AVAILABLE TO MANEUVER THE GARBAGE BINS FOR THE COLLECTION DRIVER AND ACT AS A FLAG MAN WHEN THE TRUCK IS REVERSING. IN THE EVENT AND ON-SITE STAFF MEMBER IS UNAVAILABLE AT THE TIME OF CITY COLLECTION VEHICLE ARRIVES AT THE SITE, THE COLLECTION VEHICLE WILL LEAVE THE SITE AND NOT RETURN UNTIL THE NEXT SCHEDULED COLLECTION DAY.
2. PER REGION OF PEEL WASTE COLLECTION DESIGN STANDARDS MANUAL (2020)

2.1. ACCESS ROAD

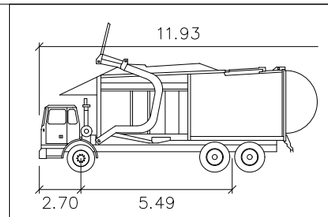
2.1.1. TURNS MUST HAVE A MIN. OF 13m TURNING RADIUS FOR WASTE COLLECTION VEHICLES.
2.1.2. ALL ACCESS ROADS MUST HAVE A MIN. 6m WIDTH AND MAX. 8% GRADING.
2.1.3. WASTE COLLECTION VEHICLES SHALL NOT REVERSE IN EXCESS OF 15m AND TURN WHILE REVERSING.
2.1.4. OUTSIDE THE COLLECTION POINT, A CLEARANCE HEIGHT OF 4.4m FROm TOP OF ACCESS ROAD MUST BE PROVIDED ALONG THE WASTE COLLECTION VEHICLE ACCESS.

2.2. COLLECTION POINT

2.2.1. MIN. 18m STRAIGHT HEAD-ON APPROACH TO THE COLLECTION POINT
2.2.2. A MIN. CLEARANCE HEIGHT OF 7.5m FROM THE CONCRETE PAD TO THE COLLECTION POINT.
2.2.3. MIN. 6m WIDTH AND MAX 2% SLOPE AT CONCRETE PAD AND 18m APPROACH.
2.2.4. MIN. 18m STRAIGHT HEAD-ON APPROACH TO THE COLLECTION POINT.
2.2.5. THE COLLECTION POINT MUST BE 2m DEEP FOR A 3YD^3 FRONT-END BIN.

2.3. COLLECTION BINS

2.3.1. – NUMBER OF RECYCLE BINS SHOWN IN STAGING AREA IS MEANT TO DENOTE THAT THE SPACE CAN ACCOMMODATE THE NECESSARY NUMBER OF RESIDENTIAL COLLECTION BINS AS PER SECTION 4.
2.3.2. – FOR 378 UNITS, $\frac{378}{45}$ = 9 3-YD^3 BINS ARE REQUIRED (REFER TO APPENDIX 7)
2.3.3. – EACH 3-YD^3 BIN RESERVES 2mx3m SPACE, TOTAL STAGING AREA = 54m^2.
2.3.4. GARBAGE STAGING AREA CONFIGURATION SUBJECTED TO THE APPROVAL OF REGION OF PEEL'S WASTE MANAGEMENT DEPARTMENT.



Garbage Peel (2020)

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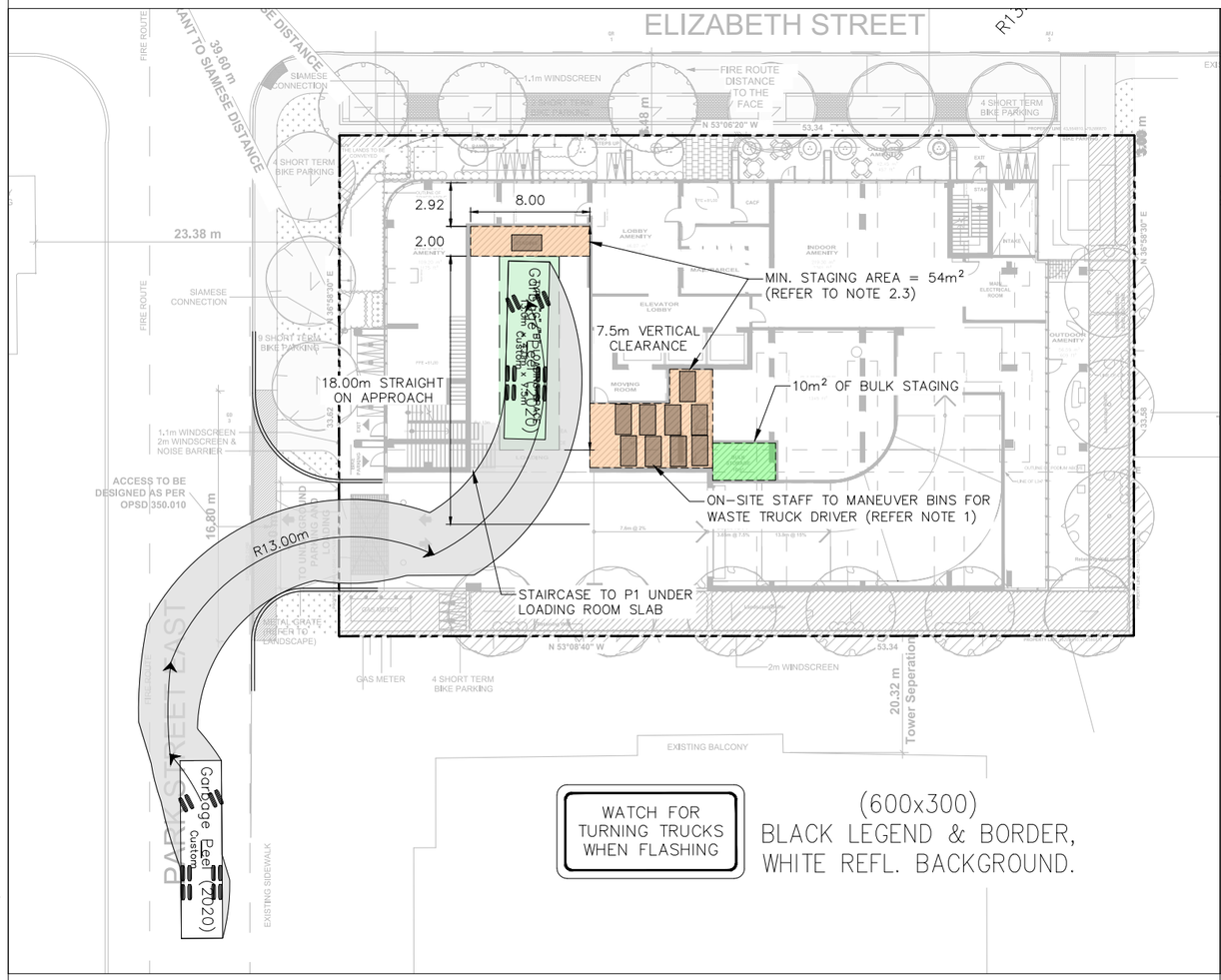
Steering Angle	: 25.0



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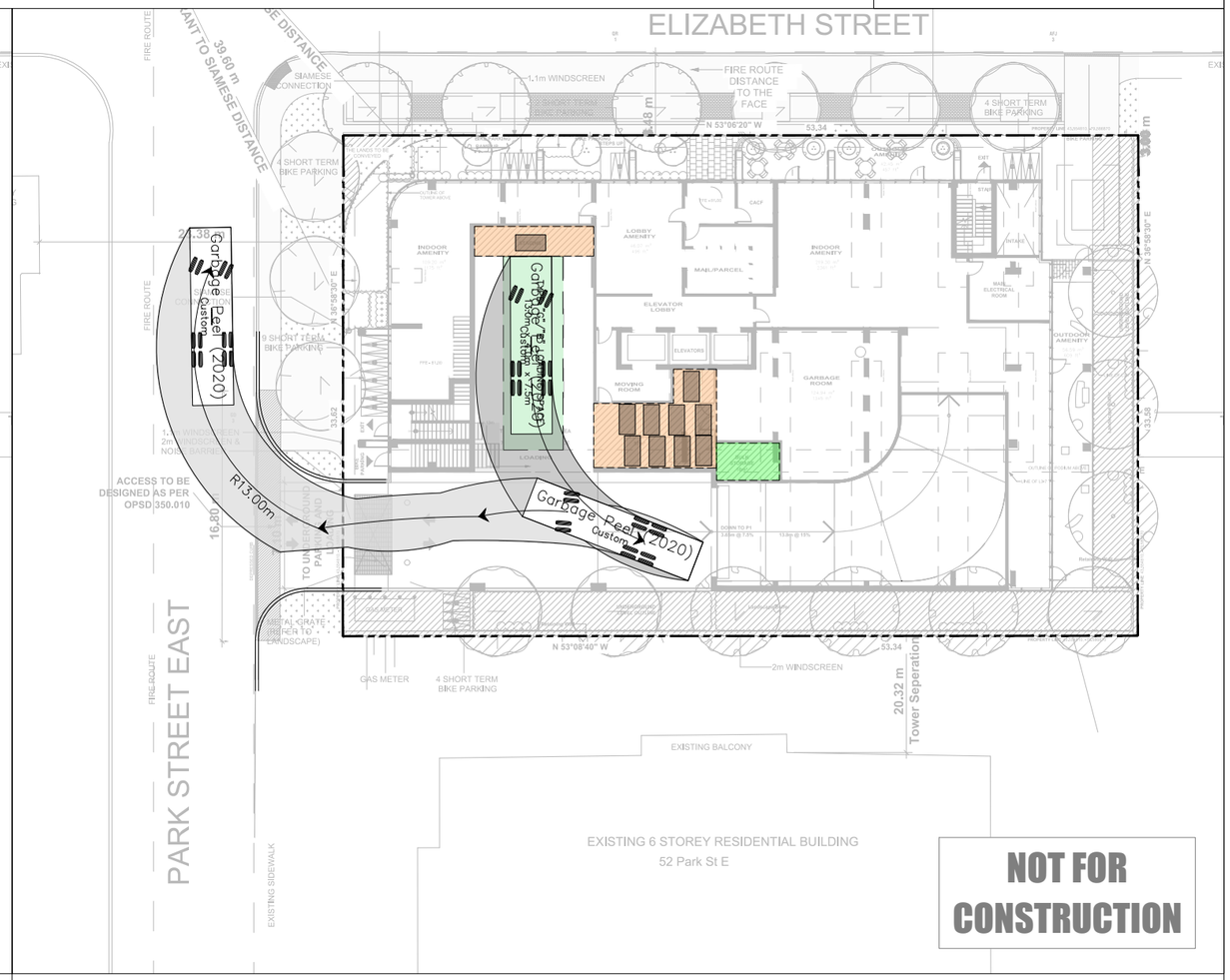

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Date MAY 23, 2025

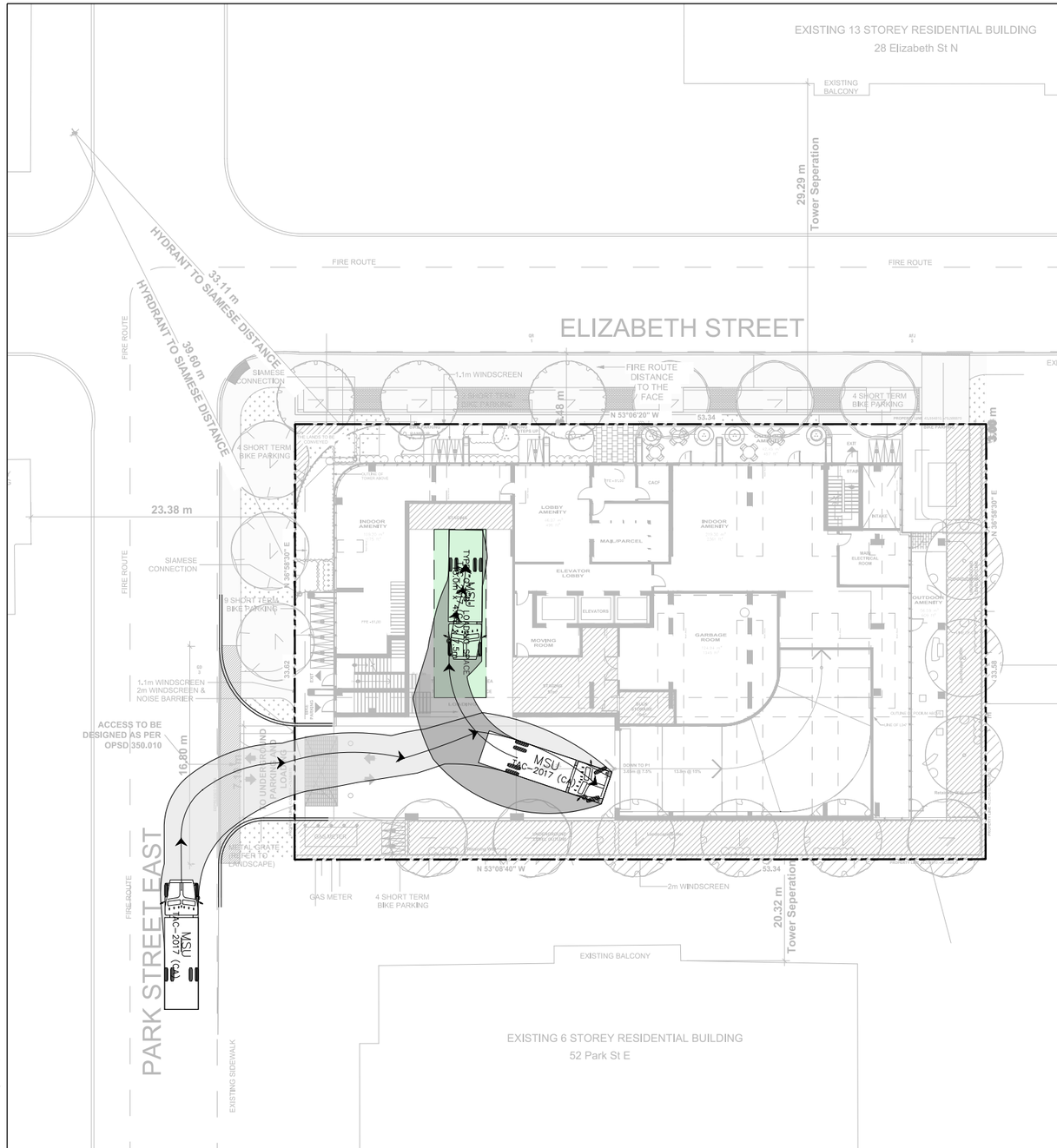
23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

4 0 4 8 12m
1:400

GROUND FLOOR – LOADING REVIEW
PEEL GARBAGE TRUCK SWEPT PATH
ENTRY & EXIT PATHS

Drawing No. 003

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg



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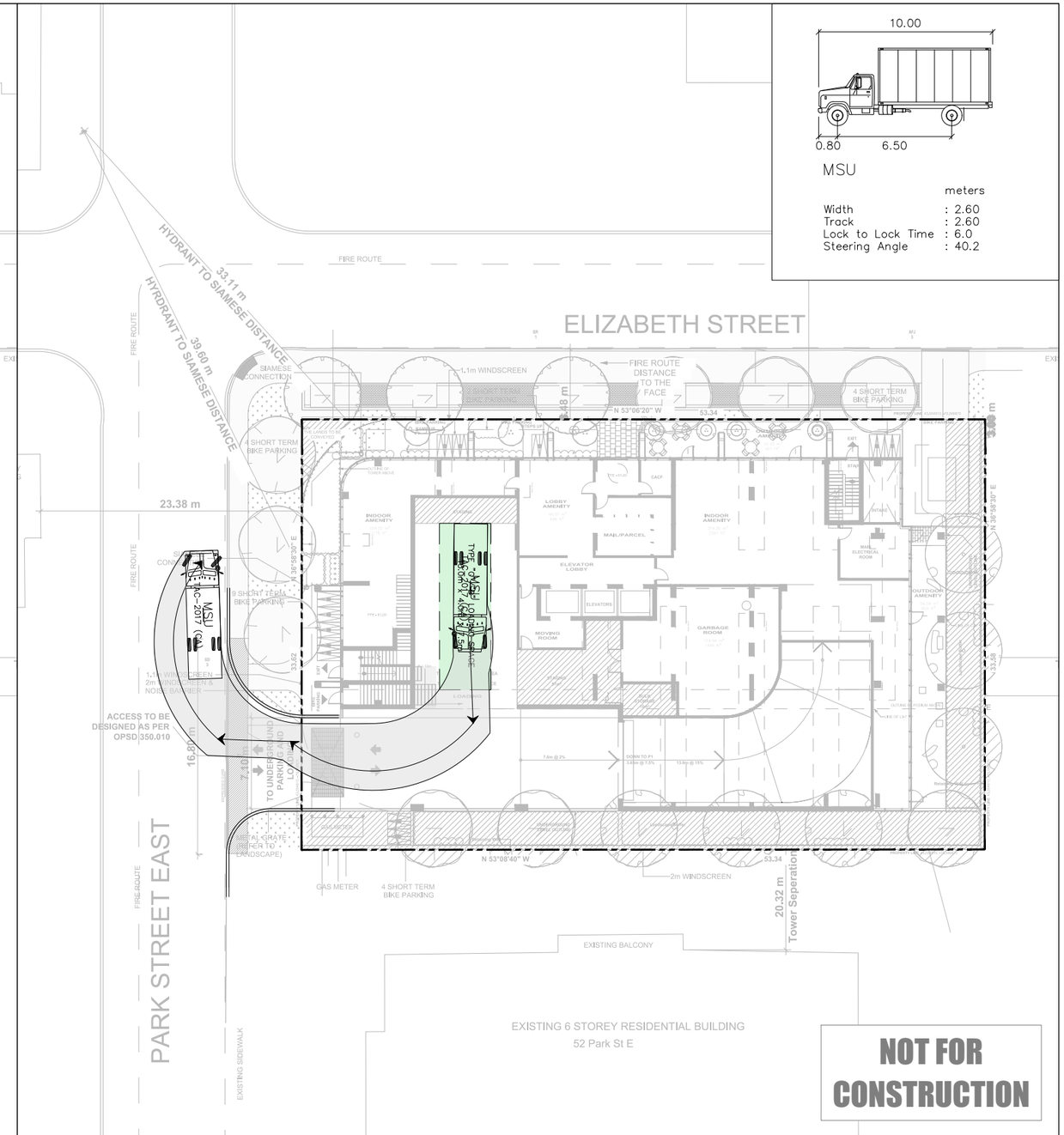

EXIT PATH

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Date MAY 23, 2025

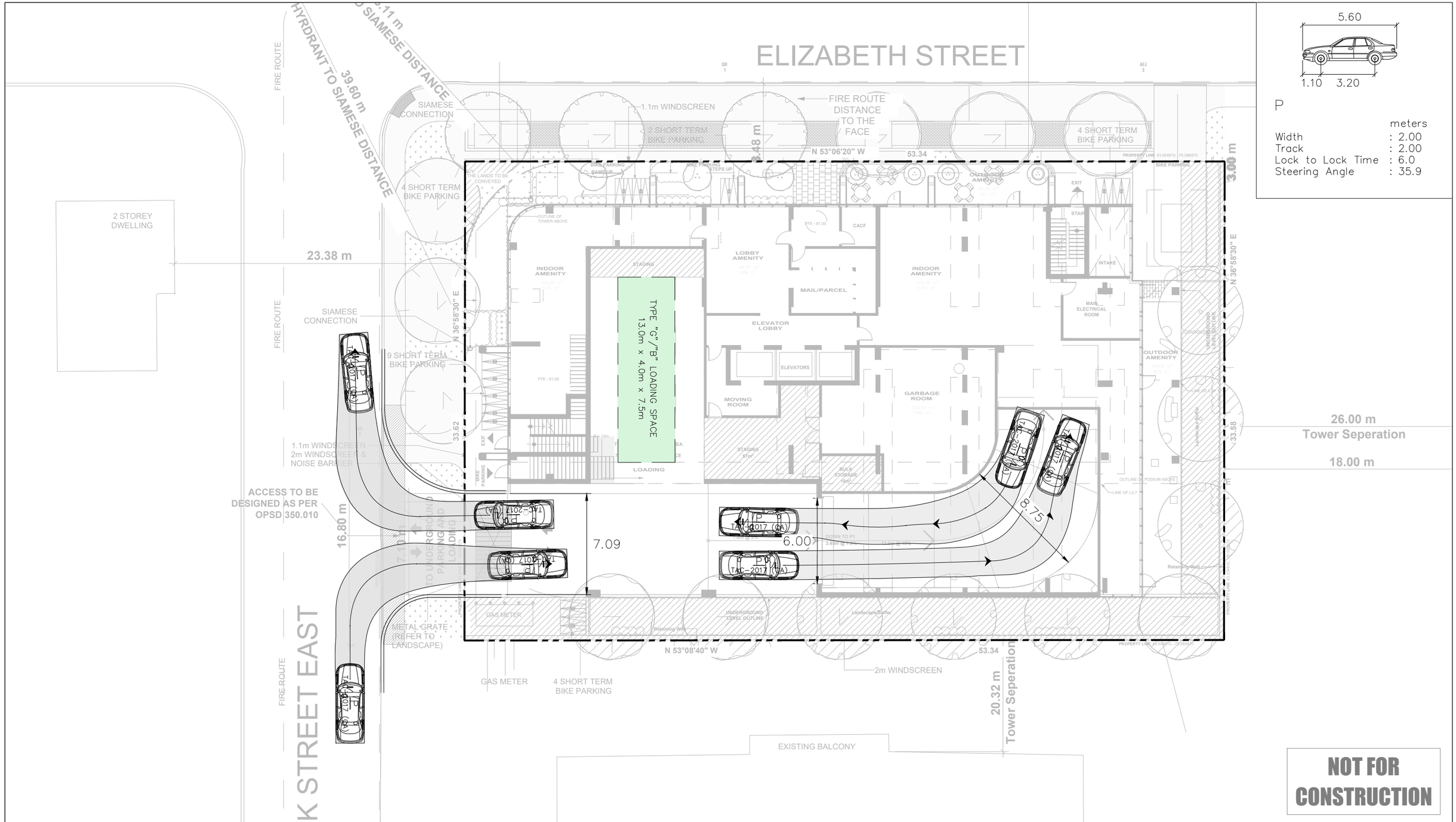
23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

4 0 4 8 12m
1:400

GROUND FLOOR – LOADING REVIEW
MSU DELIVERY TRUCK SWEPT PATH
ENTRY & EXIT PATHS

Drawing No. 004

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg



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PLOT DATE: May 22, 2025

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23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

2.5 0 2.5 5 7.5m
1:250

GROUND FLOOR PARKING REVIEW
PASSENGER VEHICLE (P-TAC)

Drawing No. 005

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg

NOTES:

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

3.1.14 PARKING SPACE DIMENSIONS

(A) PARKING SPACES WITH A PARKING ANGLE EXCEEDING 15 DEGREE, EXCEPT THOSE DESIGNATED FOR PERSONS WITH DISABILITIES, SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.6m AND A MIN LENGTH OF 5.2m, EXCLUSIVE OF ANY AISLE OR DRIVEWAY.

(B) THE MIN WIDTH OF A PARKING SPACE, OTHER THAN AN ACCESSIBLE PARKING PARKING SPACE OR PARALLEL PARKING SPACE, SHALL BE INCREASED TO 2.75m WHERE THE LENGTH OF ONE SIDE OF THE PARKING SPACE ABUTS A BUILDING, STRUCTURE OR PART THEREOF AND 2.9m WHERE THE OBSTRUCTION IS FROM BOTH SIDES OF THE PARKING SPACE, EXCEPT FOR A BUILDING, STRUCTURE OR PART THEROF, THAT EXTENDS 1.0m OR LESS INTO THE FRONT AND/OR REAR OF THE PARKING SPACE.

(C) ACCESSIBLE PARKING SOACES ARE TO BE PROVIDED IN TWO SIZES AND MAINTAIN A 1.5m WIDE ACCESS AISLE ABUTTING THE ENTIRE LENGTH OF EACH PARKING SPACE (0190-2014):

(1) TYPE A SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 3.4m AND A MIN LENGTH OF 5.2m.

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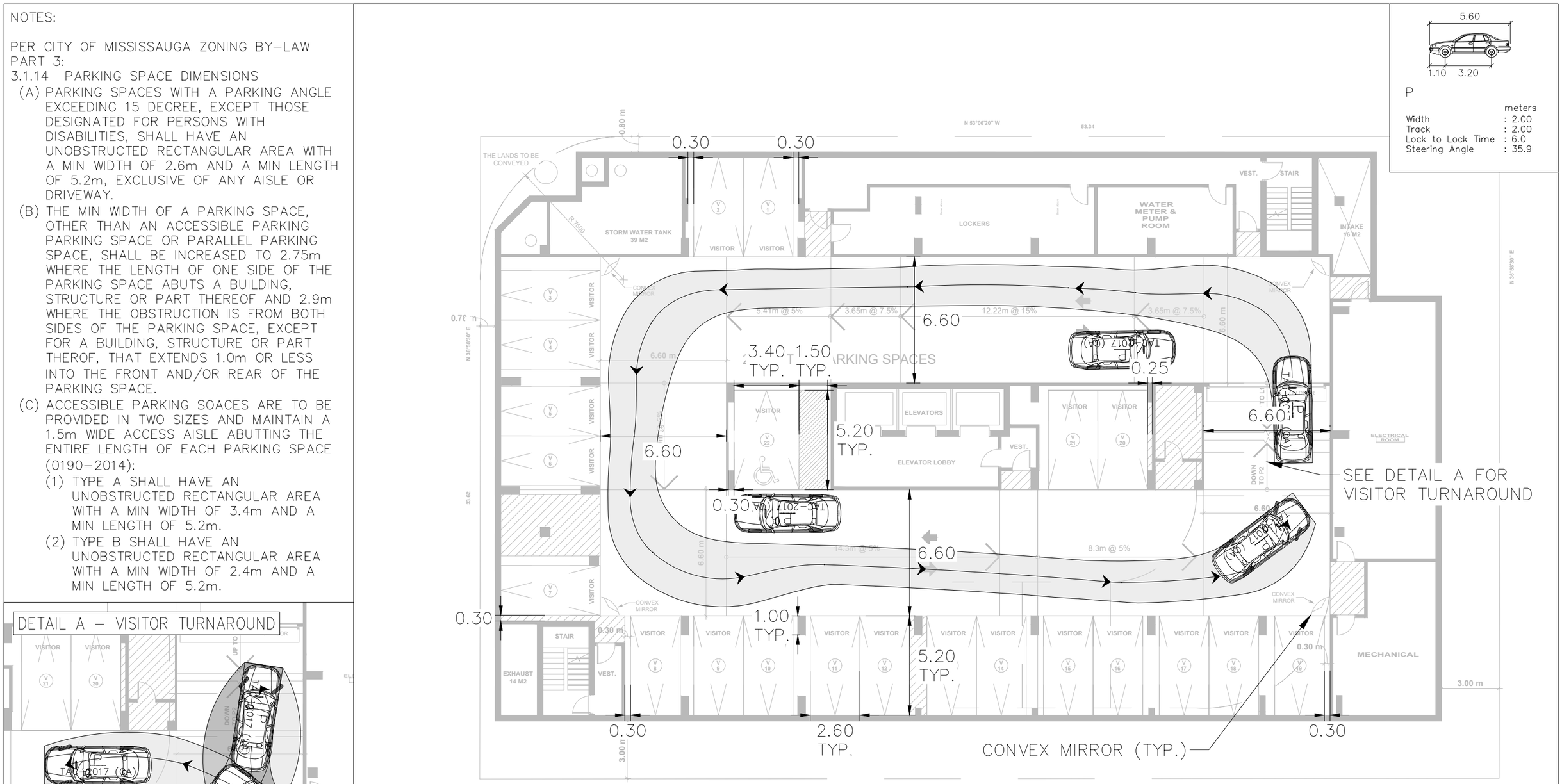

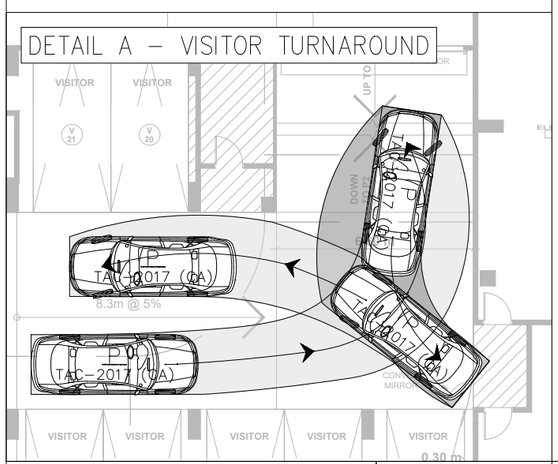

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Project No.	23 ELIZABETH STREET N	PARKING LEVEL 1 REVIEW	Drawing No.
20248	MISSISSAUGA ONTARIO		006
Date MAY 23, 2025	2 0 2 4 6m 1:200		

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg

NOTES:

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

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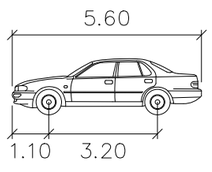

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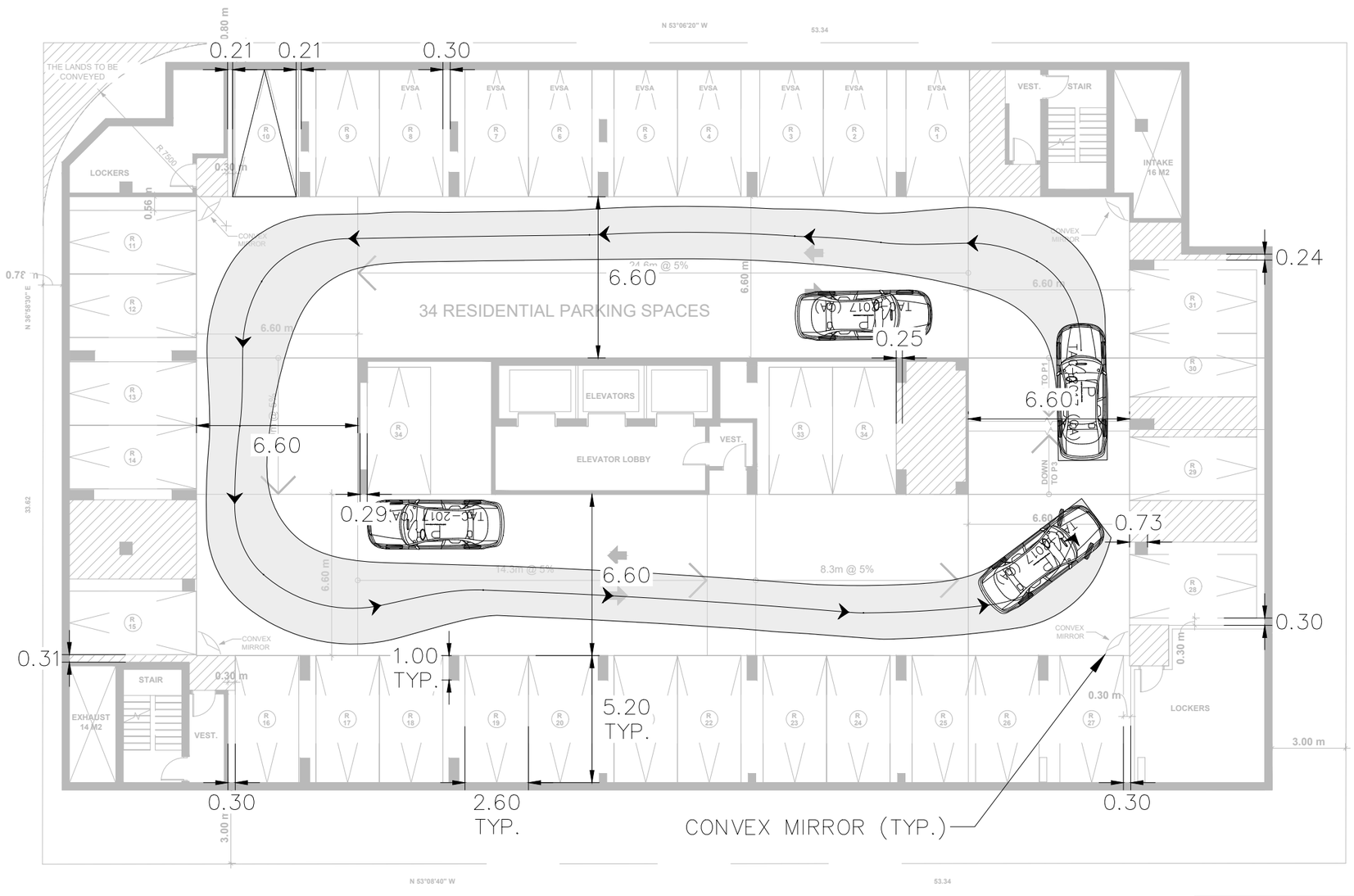

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Date MAY 23, 2025

23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

2 0 2 4 6m
1:200

PARKING LEVEL 2 REVIEW

Drawing No. 007

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg

NOTES:

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

3.1.14 PARKING SPACE DIMENSIONS

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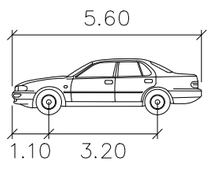

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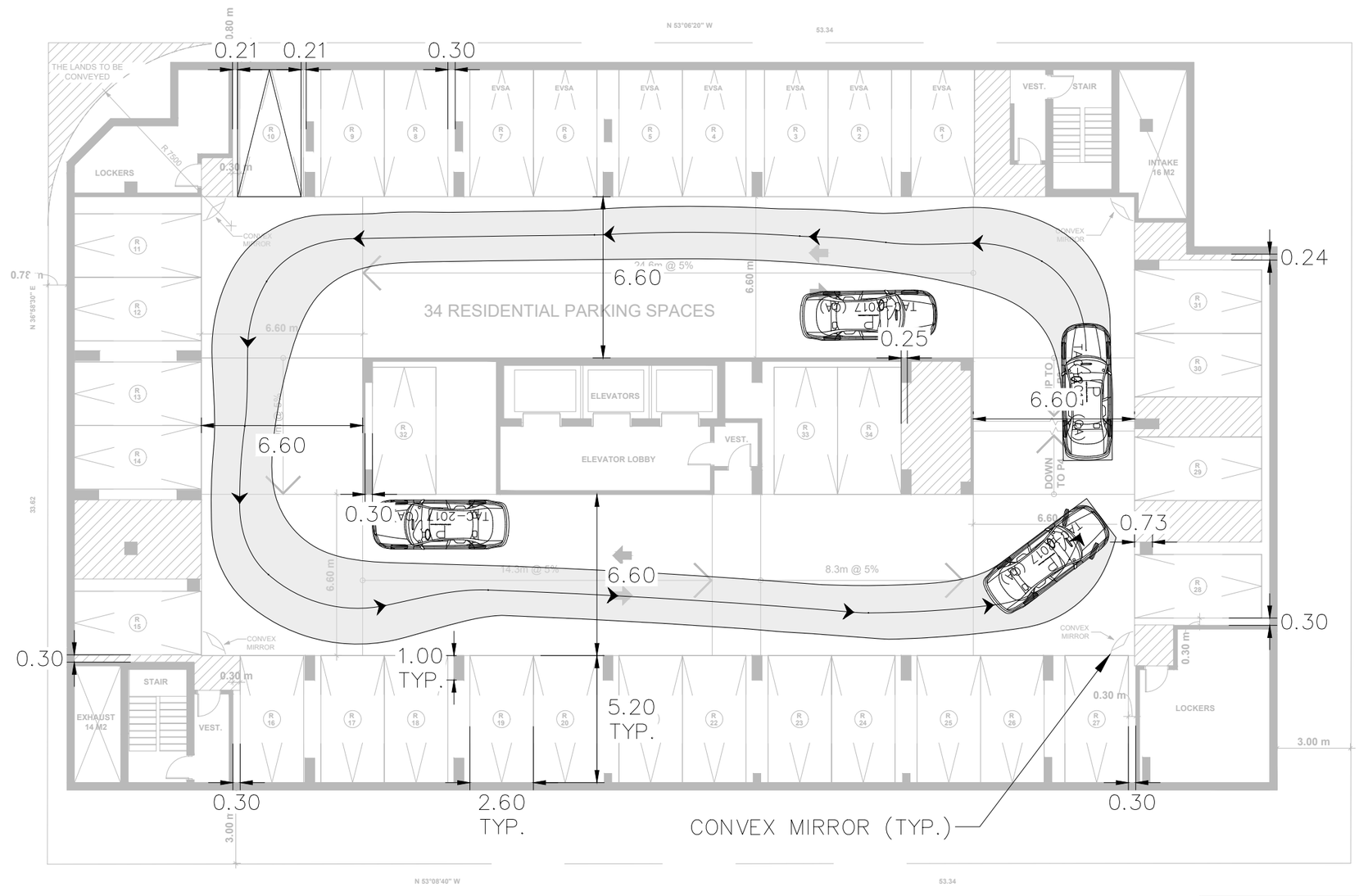

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Project No. 20248

Date MAY 23, 2025

23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

2 0 2 4 6m
1:200

PARKING LEVEL 3 REVIEW

Drawing No. 008

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg

NOTES:

PER CITY OF MISSISSAUGA ZONING BY-LAW PART 3:

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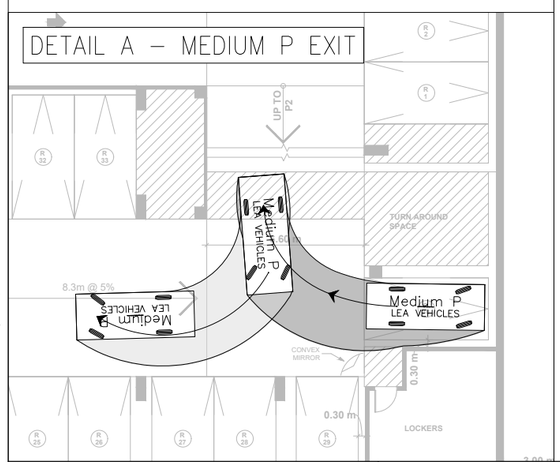
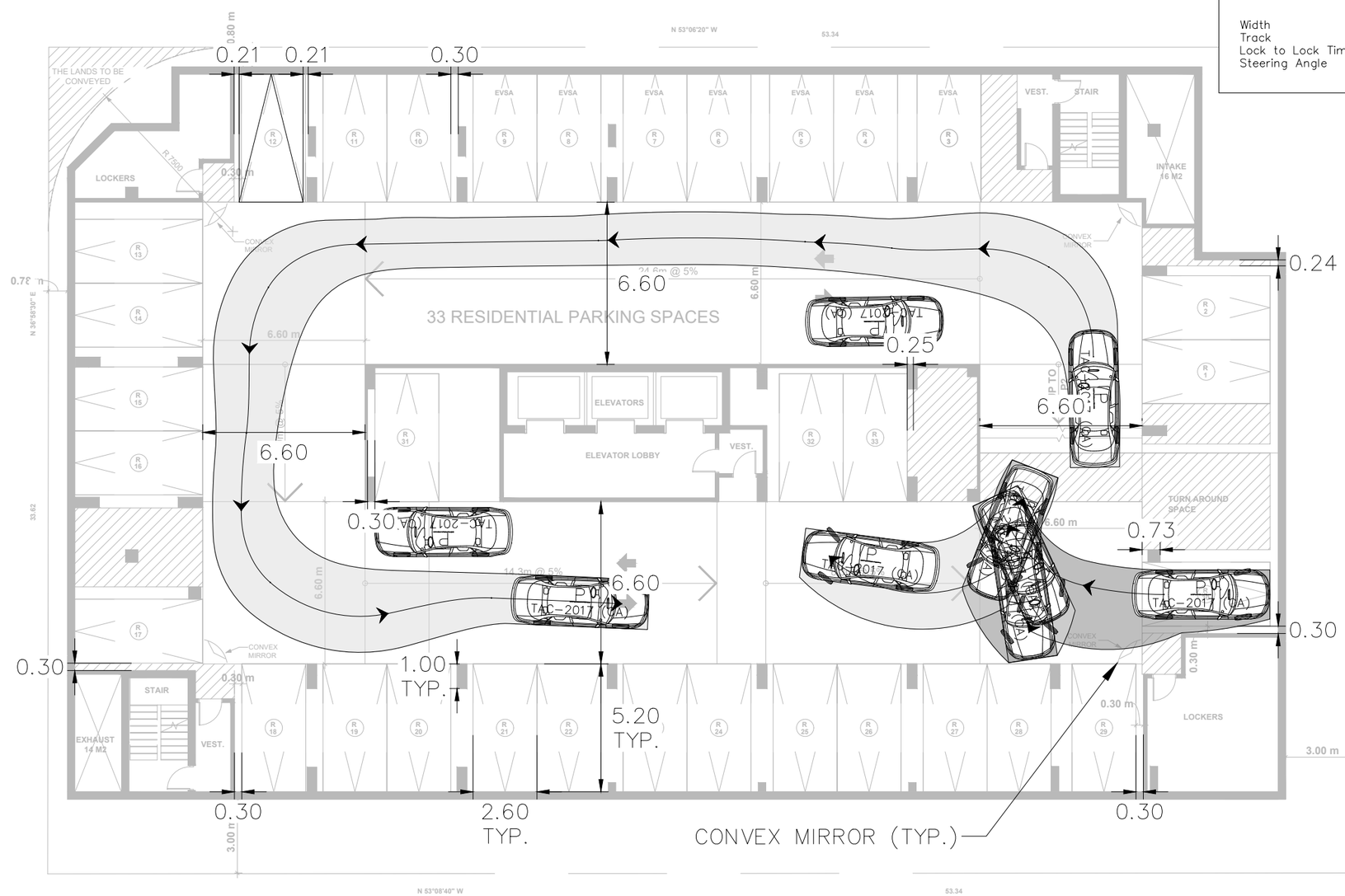
(2) TYPE B SHALL HAVE AN UNOBSTRUCTED RECTANGULAR AREA WITH A MIN WIDTH OF 2.4m AND A MIN LENGTH OF 5.2m.





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

NOT FOR CONSTRUCTION

PLOT DATE: May 22, 2025

DRAWN BY: X.C.

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Project No. 20248

Date MAY 23, 2025

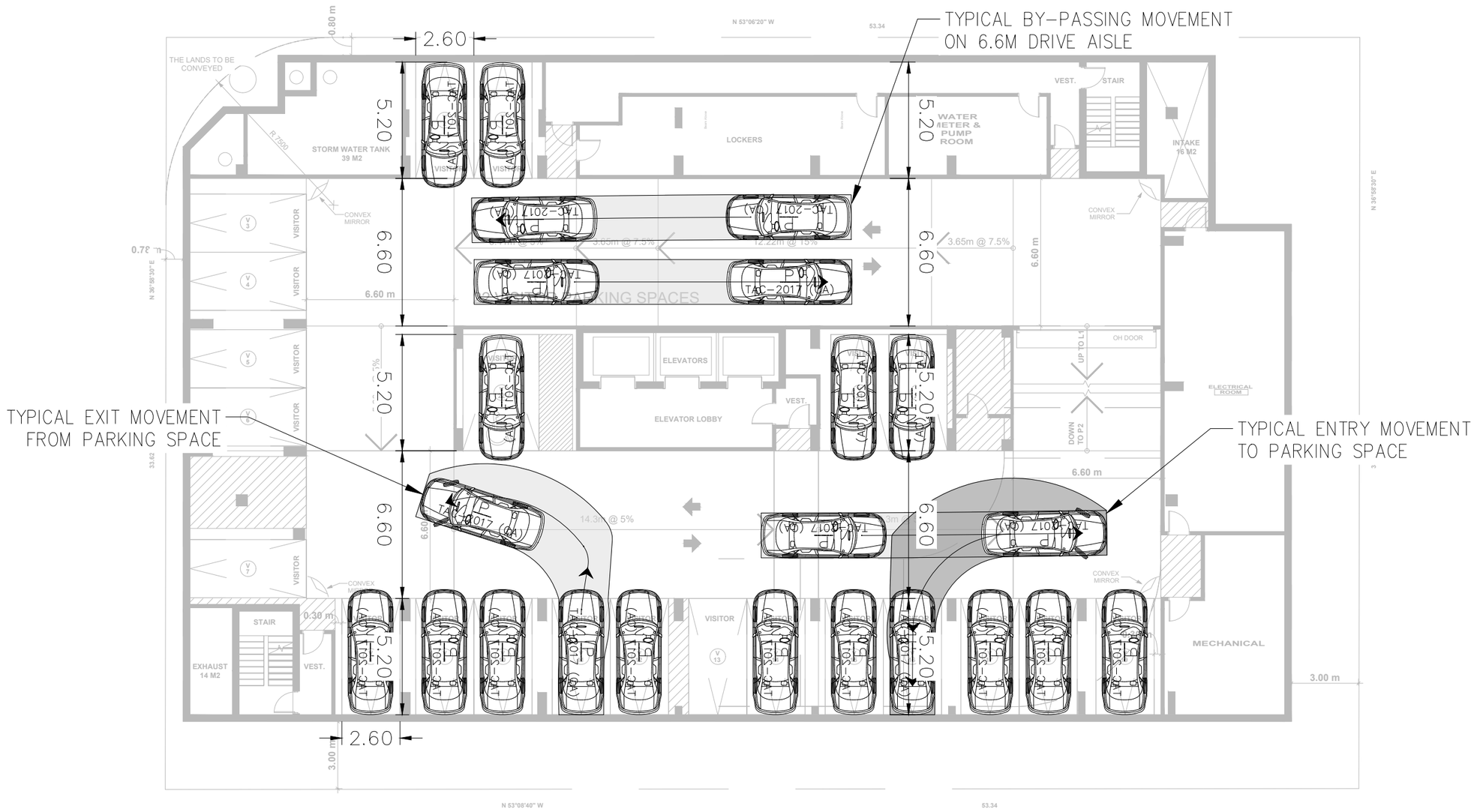
23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

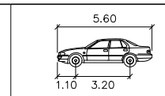
2 0 2 4 6m
1:200

PARKING LEVEL 4 REVIEW

Drawing No. 009

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg





P

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

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MISSISSAUGA ONTARIO

2 0 2 4 6m
1:200

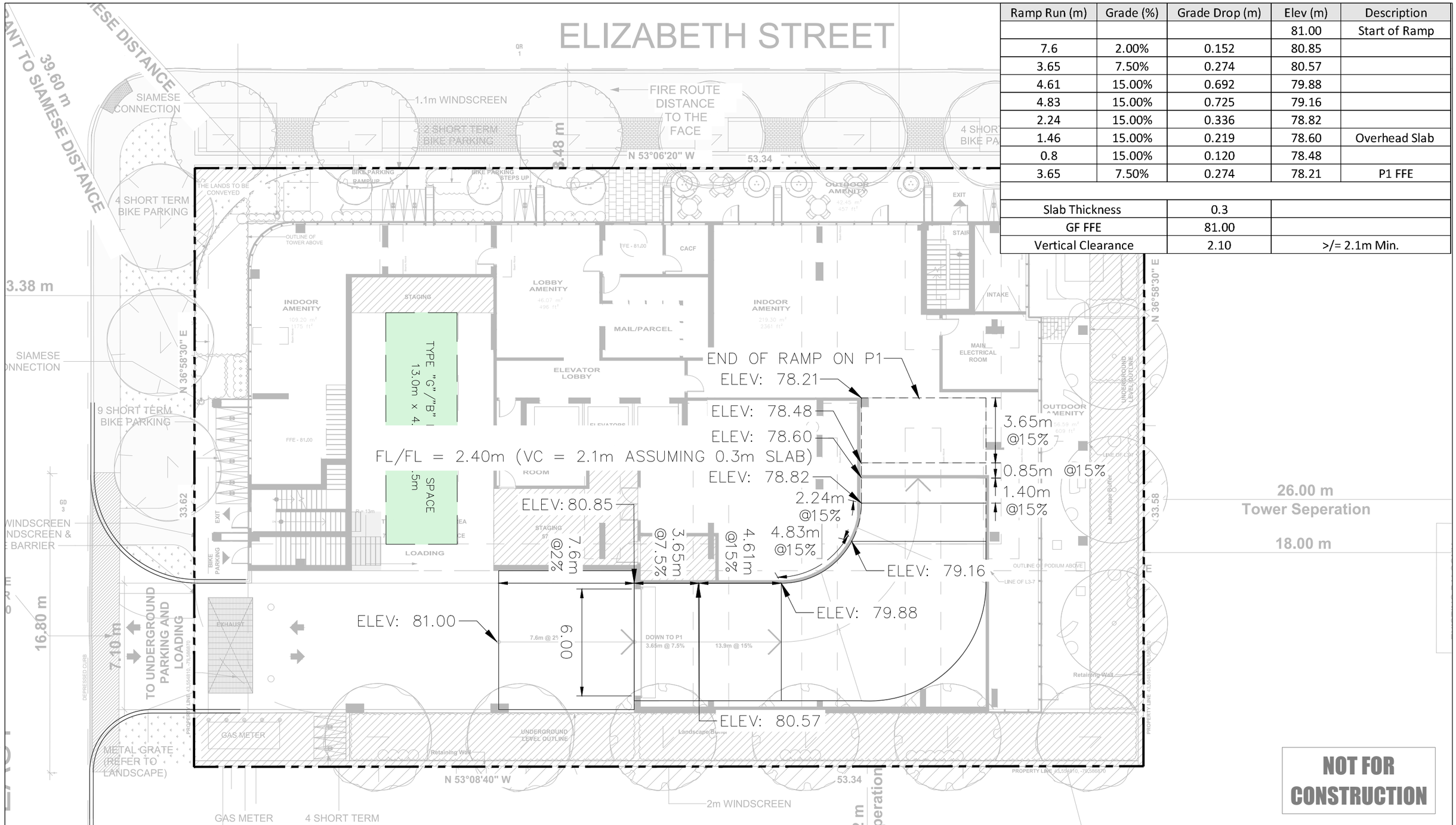
DRIVE AISLE WIDTH JUSTIFICATION
DESIGN VEHICLE MANEUVER DIAGRAMS

Drawing No. 010

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg

Ramp Run (m)	Grade (%)	Grade Drop (m)	Elev (m)	Description
			81.00	Start of Ramp
7.6	2.00%	0.152	80.85	
3.65	7.50%	0.274	80.57	
4.61	15.00%	0.692	79.88	
4.83	15.00%	0.725	79.16	
2.24	15.00%	0.336	78.82	
1.46	15.00%	0.219	78.60	Overhead Slab
0.8	15.00%	0.120	78.48	
3.65	7.50%	0.274	78.21	P1 FFE

Slab Thickness	0.3	
GF FFE	81.00	
Vertical Clearance	2.10	>/= 2.1m Min.



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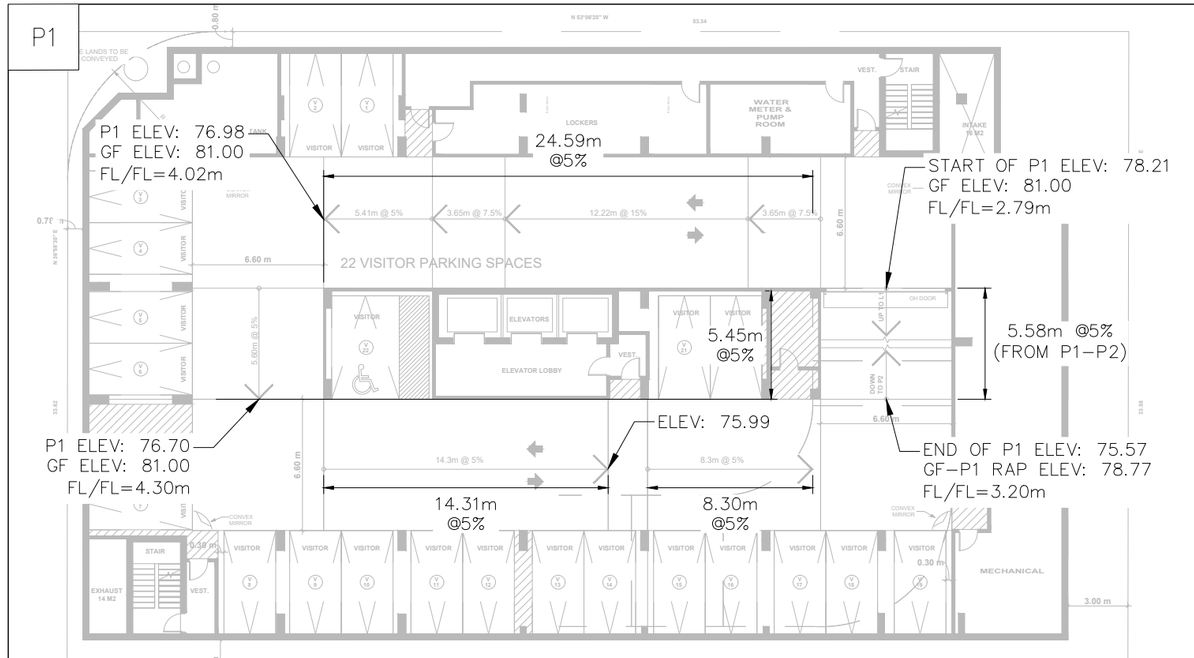
23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

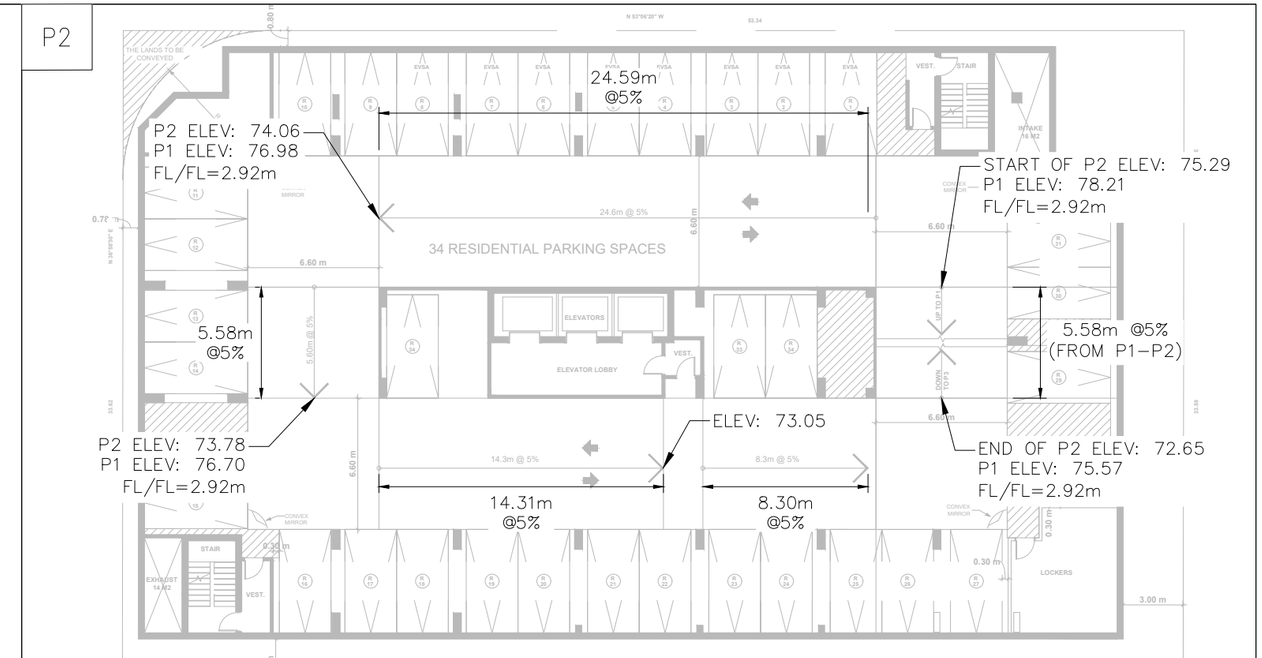
2 0 2 4 6m
1: 200

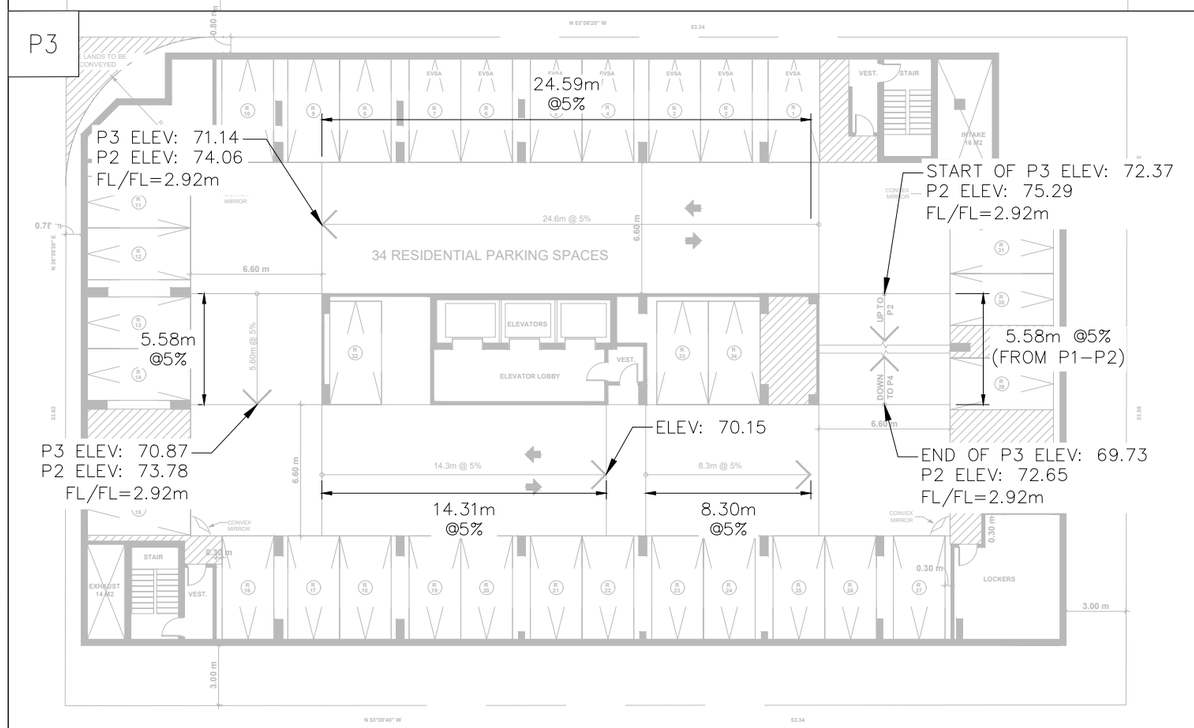
GROUND FLOOR
RAMP ACCESS & RAMP REVIEW

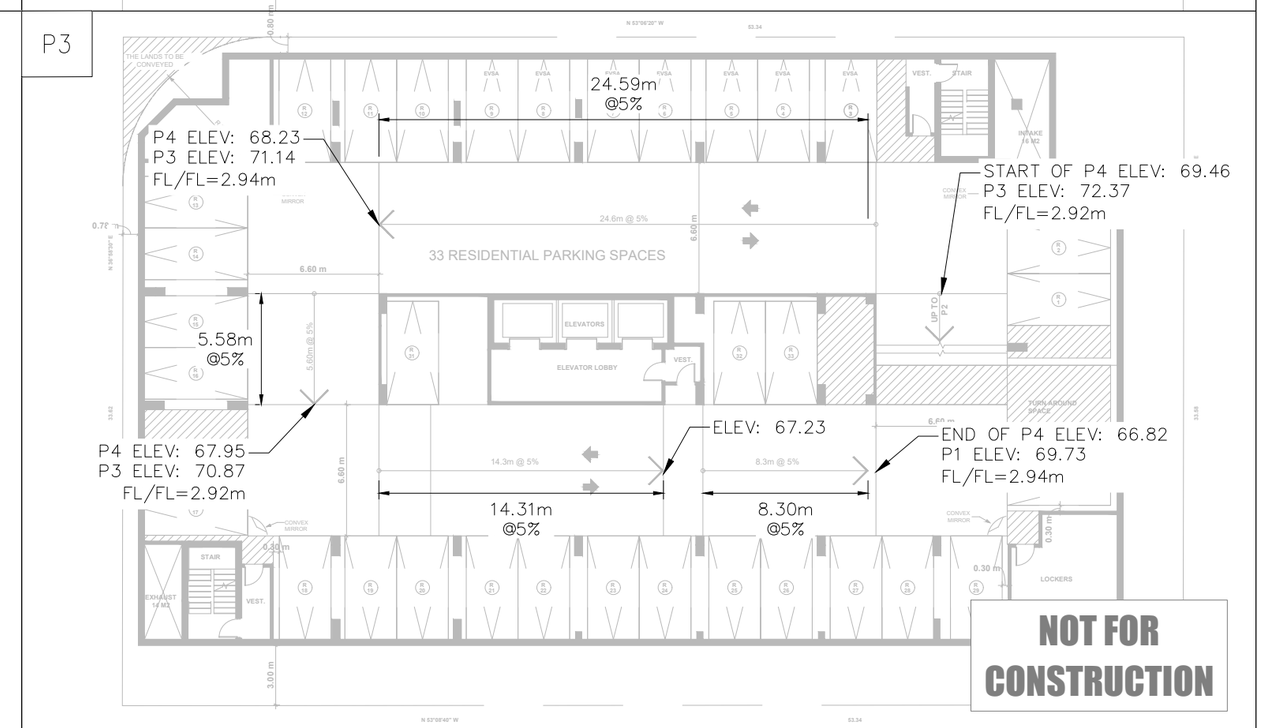
Drawing No. 011

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg









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23 ELIZABETH STREET N
MISSISSAUGA ONTARIO

2 0 2 4 6m
1:200

PARKING LEVELS 1–4
RAMP ACCESS & RAMP REVIEW

Drawing No. 012

DRAWING NAME: F:\20248\3. Submission Jan 2025\Drafting\20248 – WF009.dwg