Memorandum

TO:
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11/07/2022
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FROM:
George J. Poulos

PROJECT:
7406-04
10 West GO GP Inc.

DATE:
November 7, 2022

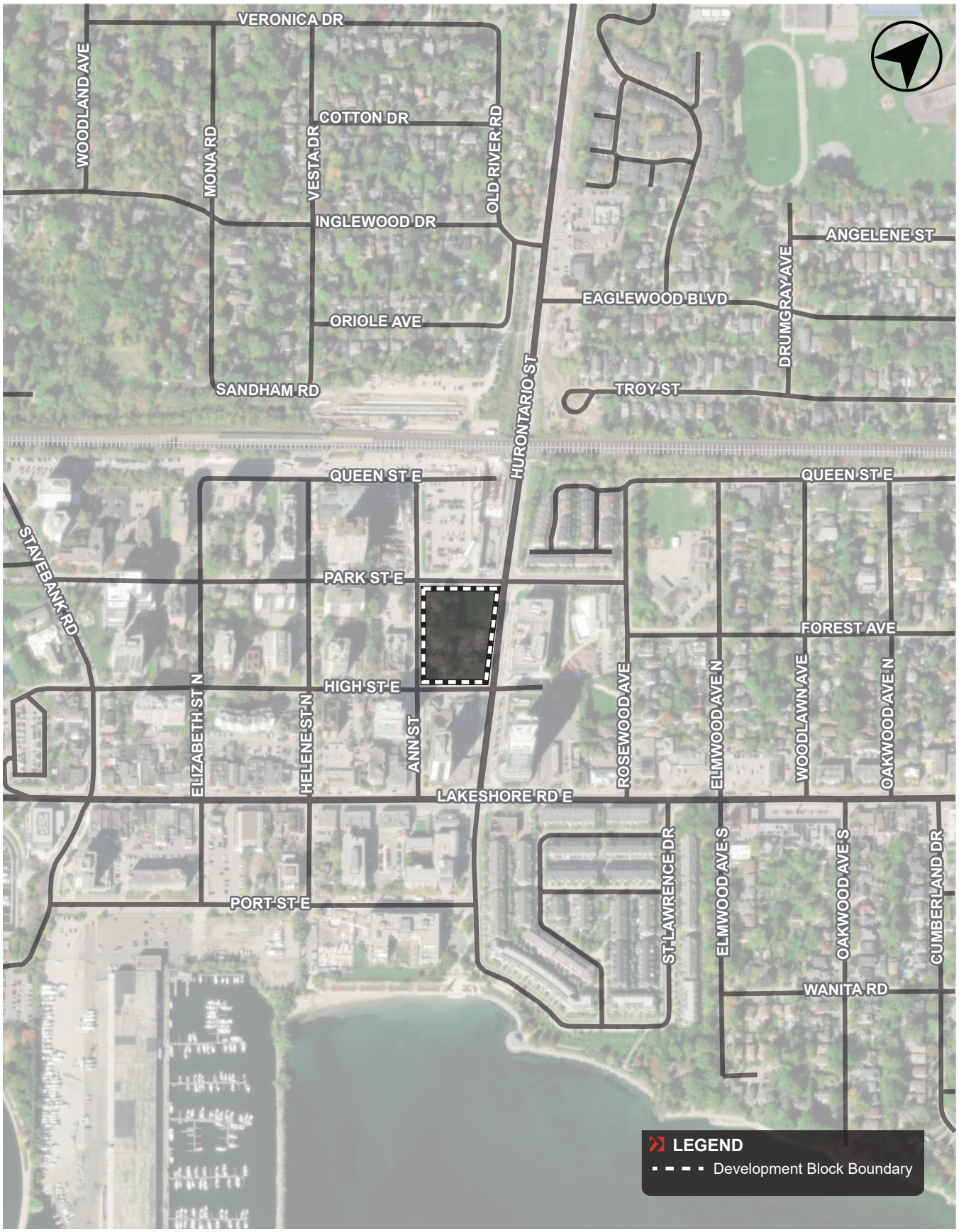
SUBJECT: URBAN TRANSPORTATION CONSIDERATIONS – RESPONSE TO COMMENTS

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 6,570.5 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 block consists of two residential detached dwelling units on the northwestern portion of the site, a 2,449.5 square metre public park on the northeastern portion of the block, and two heritage buildings (84 and 90 High Street) along the southern portion of the site. The existing vehicular access to each respective building is provided separately via dedicated driveways.

The proposed 23-storey tower will be situated within the northwest corner of the site (municipal address of 17 and 19 Ann Street) and will accommodate approximately 363 residential units and approximately 320 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 location and sire plan are illustrated in **Figure 1** and **Figure 2**, respectively.

BA Group has previously submitted an Urban Transportation Considerations Study in December 2021 (attached for reference in **Appendix A**), following which technical comments were provided by the City of Mississauga in March 2022 (attached in **Appendix B**). This Memorandum has been prepared as a response to agency comments as discussed below.



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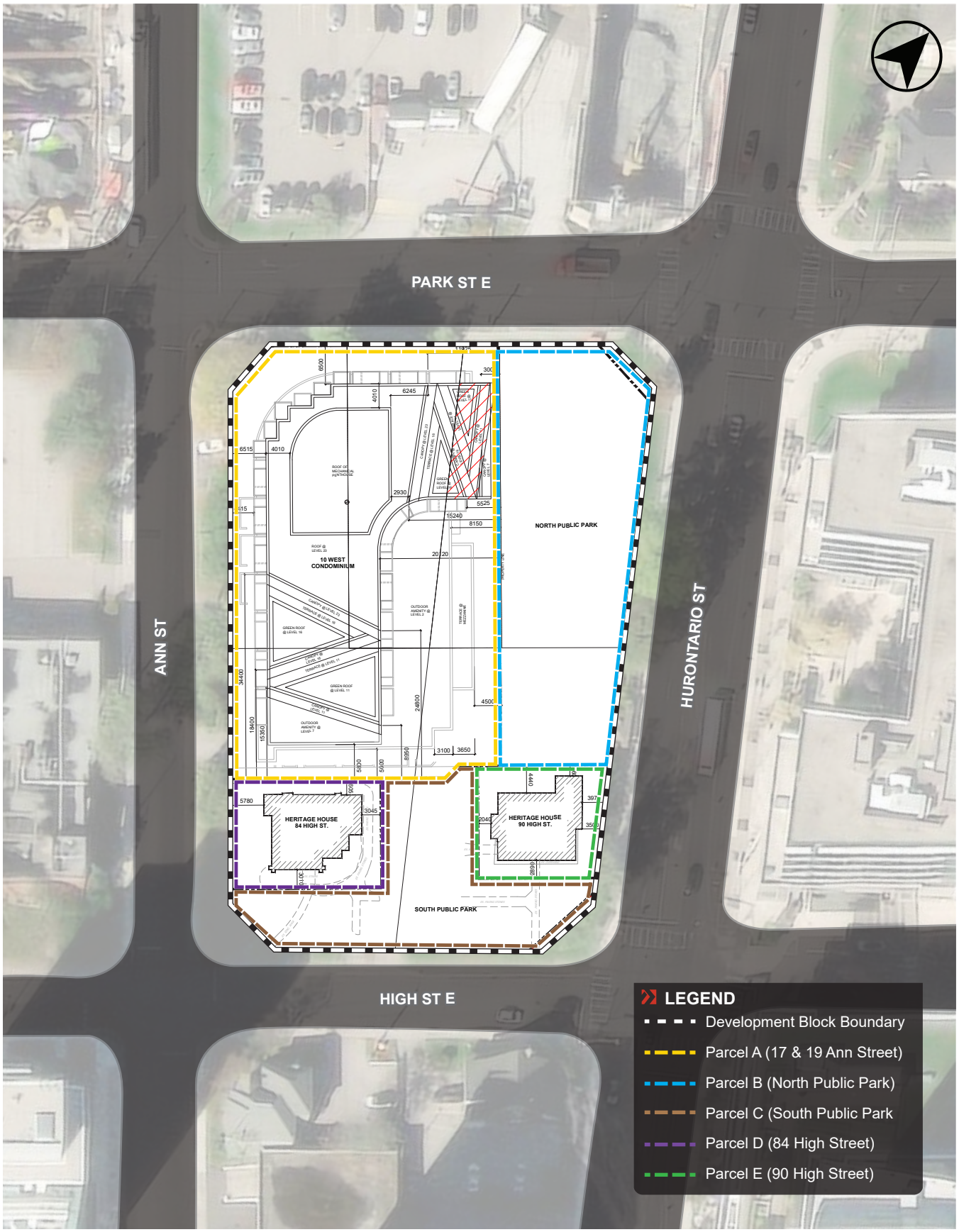
Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 1 SITE LOCATION



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Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 2 SITE PLAN

1.1 CITY OF MISSISSAUGA COMMENTS

Technical comments were received from the City of Mississauga in March and April of 2022. Responses to these comments (referencing relevant sections of this Memorandum) are discussed below.

Comment 1
A Traffic Impact Study prepared by BA Consulting Group Ltd. dated Dec 2021 was submitted in support of the proposed development. Based on the information provided to date, staff provide the following comments:

Comment 1A
"*The report should be stamped and signed by P. Eng, prior to final approval*."

Response to Comment 1A
Our stamped December 2021 Transportation Study is attached in **Appendix A** of this Memorandum, which is also stamped.

Comment 1B
"*Under Section 8. Provide figure for future lane configurations and stop controls used in the analysis*."

Response to Comment 1B
The future road network is illustrated in Figure 4 of this Memorandum.

Comment 1C
"*Existing Traffic Volumes. The traffic counts conducted during the ongoing pandemic will not be accepted. In order to grow traffic volumes to existing 2022 levels, please obtain historical traffic data counts and utilize regression analysis to determine appropriate growth rates. Note, there is HuLRT construction in this area."*

Response to Comment 1C
Historic traffic counts at study area intersections were considered in addition to traffic count surveys conducted in June and September 2022. Based upon information provided by the City of Mississauga and those collected on behalf of BA Group, a particular emphasis was placed on the Hurontario Street / Lakeshore Road East intersection, as traffic volumes on arterial roads is believed to be probative of historic traffic patterns affecting the study area. It was observed that traffic volumes collected during the years 2021 and 2022 are generally significantly lower at all study area intersections. Downwards trends are observed in the north-south direction on Hurontario Street, as well as in the east-west direction on Lakeshore Road East. With this in mind, traffic surveys at each intersection were conservatively selected from among pre-COVID traffic counts (if available). Adjustments made to existing traffic volumes in order to represent contemporary 2022 traffic volumes following the procedure discussed in Section 6.2 of this Memorandum. The assessment of historic traffic count surveys is discussed in Section 6.2 of this Memorandum and attached in **Appendix F**.

Comment 1D
"*Specific Development Allowances. The following rezoning application should be included in the analysis: 128 Lakeshore Rd (OZ 22-5 W1), 0 Park St E (OZ 22-10 W1*)."

Response to Comment 1D
Noted. Traffic allowances for the proposed developments at 128 Lakeshore Rd and 0 Park St E as discussed in in Section 6.3 of this Memorandum.

Comment 1E
"*Intersection Analysis. Include 95th Percentile Queue Lengths in the tables.*

Response to Comment 1E
Noted. All signalized intersections within the study area include tables summarizing 95th percentile Queue lengths as discussed in in Section 6.7.5of this Memorandum.

Comment 1F
"*Synhro Outputs. For the Lost Time Adjustment value of 0 should be used. Any deviation from Synchro Defaults should be justified."*

Response to Comment 1F
Noted. The lost time factor will be set to a value of zero for all traffic analyses included in this Memorandum. Note that based on the results of the updated capacity analysis this change does not change the conclusions from our Dec 2021 study and site traffic can be acceptably accommodated.

Comment 1G
"*(G) Include a section for the Community Impacts. Any traffic related impacts on the existing community and comments from the public shall be addressed in this section."*

Response to Comment 1G
Community traffic impacts are discussed in Section 6.7.6. Considering the modest site traffic generation and the negligeable impacts of site related traffic volumes to the study area road network, it may be concluded that the proposed development will not alter change the fundamental use of the local/collector streets.

Comment 2
"*Staff require the Applicant undertake a satisfactory Parking Utilization Study (PUS) with appropriate proxy sites in Mississauga, per the Citys Parking Terms of Reference, to justify the requested parking rates, including visitor parking, as the parking reduction is greater than 10% from the existing Zoning By-law 0225-2007, as amended. Staff advise there are appropriate condominium residence proxy sites to survey in Port Credit and there are no longer pandemic restrictions that would limit the undertaking of parking surveys by consultants. Before undertaking proxy surveys, please contact staff to discuss scope*."

Response to Comment 2
BA Group has conducted parking occupancy surveys at comparable residential developments in the vicinity of the site. These include residential parking surveys at: NOLA 6-8 Ann Street ("NOLA"), 1 Hurontario Street ("North Shore"), 12 Park Street East, 26 Park Street, and 7 Helen Street North; and, residential visitor surveys at: 26 Park Street East, 28 Elizabeth Street North, 49 Queen Street East,15 Elizabeth Street, and 66 High Street. A discussion of observed results in provided in Section 4.4.2 of this Memorandum.

With respect to the proposed non-residential parking requirement, the new proxy survey data suggests that the proposed site specific visitor parking rate of 0.15 spaces per unit is supportable and will accommodate existing visitor demands in the area. With respect to resident parking, the City of Mississauga has recently concluded the Parking Master Plan and Implementing Strategy (PMPIS) and had begun the process of enacting the recommendations entailed therein. Prevailing Zoning By-law 0225-2007 stipulates a harmonized residential parking requirement of 0.80 parking spaces per residential unit. It is noteworthy to mention that this revised parking rate was contemplated to be generally applicable for the entire precinct, and therefore these rates do not reflect the additional potential influence on parking demand of being immediately adjacent to the future Hurontario LRT. Moreover based on the new parking demand information collected by BA Group in the area, it was determined that the existing parking demand in the area, observed from proxy residential sites, are in the order of 0.67 to 1.05 spaces per unit, with average rates converging to 0.79-0.81. It is noteworthy that the average observed residential parking rate closely follow by-law rates for Precinct 1 (0.80), while also demonstrating the viability of existing residential developments located in proximity to transit with residential parking rates on the order to those proposed for the site.

Recognizing that the current resident parking demand in the area is already 0.80 / unit, it is appropriate to consider for sites immediately next to the LRT a parking requirement that takes into consideration the future mode change associated with the LRT. As a result, a blended site-specific residential parking rate of 0.68 spaces per unit is proposed. The proposed site specific requirement has been derived by applying the anticipated auto mode-share reduction forecast in *The Hurontario LRT Benefits Case Analysis* (15%) to the prevailing residential parking rate of 0.80 spaces per unit. In doing so it is being implied that the sites closest to the LRT will benefit from the expected future change in mode split from the LRT compared to the existing demand. See Section 4.4.2 of this memorandum for further details.

Comment 3

"*Staff agree that parking reductions are appropriate for the proposed development given its location in Port Credit that is well serviced by MiWay transit and has access to existing and planned higher order transit. Solely relying on the PDC approved Parking Regulations Study is premature because the Study is not in force and may be subject to further changes. However, staff will give consideration to the direction of this Study. Applications continue being evaluated against the Citys current Zoning By-law. Staff advise that parking is required for all uses and recommend a shared parking arrangement, per the PDC approved Parking Regulations Study, based on the 0.20 visitor parking rate for the residential component. Staff request the Applicant provide clarification if a shared parking arrangement is being requested.As parking for 84 High Street (Parcel D) and 90 High Street (Parcel E) will be provided off-site at 17/19 Ann Street (Parcel A), Staff require the Applicant to prepare an off-site parking agreement for the subject parcels in the event the parcels have different ownership*."

Response to Comment 3

See response to Comment 2. BA Group has conducted parking occupancy surveys at comparable residential developments in the vicinity of the site. Based upon this review, a residential rate of 0.68 and a residential visitor parking rate of 0.15 is justified as discussed in Section 4.4 of this Memorandum.

Comment 4

"*Staff advise the Applicant that each development application is reviewed based on its own merit. The reduced parking rates for the adjacent development were approved following both the rezoning and minor*

variance processes, and having received satisfactory proxy site data and sales data. Staff request that if parking sales data is available for the subject site that the Applicant provide it as supportive secondary justification per the requirements outlined in the Citys Parking Terms of Reference. If the Applicant wishes to reference precedent applications, please provide discussion regarding similarities."

Response to Comment 4

Noted. A discussion pertaining to the parking rationale for the proposed development is provided in Section 4.4 of this Memorandum.

Comment 5

"*Staff commend the Applicant for considering the provision of a range of TDM measures; however staff are not clear which TDM measures are committed to being provided on site. Staff request the Applicant provide clarification, specific details and commitments as to how these measures will be provided and implemented on site. For example: Transit passes: The value of the pre-loaded transit pass (value/duration) and to whom (first owner or occupant of the residential unit).Electric vehicle charging stations: The number of electric vehicle charging stations to be provided in the parking garage and whether they will be resident accessible only or publicly accessible. Car-Share service: An agreement with a car share provider for a minimum of 2 years, the number of parking spaces assigned to the service, and the location of the parking spaces on the site.*"

Response to Comment 5

The applicant is reviewing implementing TDM measures such as PRESTO cards to future residents in order to incentivize the utilization of area transit services, incorporating bike repair stations on site as well as exploring the feasibility of implementing car share spaces as part of the development. It is noteworthy to mention that reduced vehicle parking supply is a TDM strategy designed to passively work in tandem with proactive strategies and have been proposed in order to support the proposed reduced resident parking requirement considered in Section 4.4.1. To this end, TDM measures will be considered in review and discussion with Staff based on the propose reduced parking rates.

Comment 6

"*The Region of Peel will provide front-end collection of garbage and recyclable materials subject to the following conditions being met and labelled on a Waste Management Plan prior to the Official Plan Amendment approval: 1.The waste management plan only showed the waste storage room. Please include the waste collection point details. Please refer to WCDSM Appendix 4 for an illustration of this requirement:a.Please indicate the length/extent of the 7.5m clearance.b.Please show dimensions of the collection point.c.The Collection Point must show sufficient space for the staging of all bins of a single stream, whichever is larger (for 359 units, 8 3-cubic yard bins for Recyclable Materials must be shown staged on the staging area) and setting-out of Bulky Items (minimum 10 square meters). d.The number, size, and type of receptacles in the Collection Point must be clearly labelled.e.The Collection Point should not require the jockeying of front-end bins (i.e. manually positioning one front-end bin at a time for the waste collection vehicle to pick up) by property management staff. If jockeying of bins during collection is required, please indicate on the waste management plan that property management staff will be responsible for jockeying the bins during collection, subject to the following requirements and must be added to the plan as additional waste management note:1.The bins should be properly positioned in the collection area on the day of collection before 7 am.2.The driver is not required to exit the collection vehicle to facilitate*

collection.3.Property management is responsible for moving bins during collection.4.The Region will not be responsible for emptying bins that are inaccessible to the collection vehicle.5.Property management must be visible to waste collection vehicle on approach to site, otherwise the waste collection vehicle will not enter the site.6.Property management will be responsible for safely maneuvering waste collection vehicles into and/or out of, as well as around the site"

Response to Comment 6
Dimensions are provided for the waste collection point located on the ground floor as may be seen in in **Appendix C**. A provision of nine (9) 3-cubic yard recycling bins and eight (8) 3-cubic yard garbage bins are provided which meets and/or exceeds the Peel Region Waste Collection Guideline requirement of nine (9) recycling bins (based on one bin per 45 residential units), and seven (7) garbage bins (based on one bin per 54 residential units). Bins will have to be jockeyed by property management staff. Vehicle maneuvering diagrams illustrating the passage several design vehicles (Heavy Singe Unit Truck, Cube Van, Passenger Car) are illustrated in **Appendix D** of this Memorandum.

Comment 7
"*[SCHEDULE 'C' - ADDITIONAL TERMS, PROVISIONS, CONDITIONS AND NOTES] The Transportation Impact Study prepared by BA Consulting Group Ltd, dated Dec 2021, identifies several TDM measures to be implemented as part of the proposed development to reduce single occupancy vehicle (SOV) trips to the site. The following shall be included under Schedule 'C' of the Development Agreement: (i)the possibility of introducing car-share and bike share services on the site;(ii) Long-term and short-term bicycle parking spaces (and a bicycle repair station) on the site in accordance with rates recommended by City of Mississauga staff.(iii) Pre-loaded PRESTO cards to each first-time unit owner."*

Response to Comment 7
Noted.

2.0 DEVELOPMENT OVERVIEW

2.1 DEVELOPMENT PROGRAMME

The revised development programs contemplated the following:

- removal of the existing single family dwelling units located at 17 and 19 Ann Street to construct a new 23-storey mixed-use building comprised of 363 residential units and 320 m^2 of retail space ("10 West" development);
- retention of the existing heritage buildings 84 High Street (Parcel D) and 90 High Street (Parcel E);
- redevelopment of the surface parking lots adjacent to the existing 84 and 90 High Street to accommodate additional park space and the 10 West development (Parcel A); and
- The provision of 237 bicycle parking spaces, 2 loading spaces, and 319 parking spaces, of which 250 will be reserved for residents, 56 for residential visitors, and 13 reserved for 84 & 90 High Street.

A comparison of development statistics between the current proposal and previous development programme is summarized in **Table 1**. Reduced architectural plans are attached in **Appendix C**.

TABLE 1 DEVELOPMENT PROPOSAL SUMMARY

	Use		Development Proposal		
			Previous	Current	Difference
10 West (Parcel A)		One-bedroom	210 units	253 units	+43 units
		Two-bedroom	149 units	110 units	-39 units
		Total	**359 units**	**363 units**	+4 units
		Proposed Retail	**309 m² GFA**	**320 m² GFA**	**+11 m² GFA**
		Vehicular, Bicycle and Loading Supply (Minimum Zoning Proposed)			
		Resident	233 spaces	247 spaces	+14 spaces
		Non-Residential	36 spaces	55 spaces	+19 spaces
		Off-Site (84 & 90 High Street)	14 spaces	13 spaces	-1 spaces
		Residential Long Term	252 spaces	218 spaces	-34 spaces
		Non-Residential Short Term	35 spaces	19 spaces	-16 spaces
		Loading	1 Formal and 1 Informal Loading Space		--
84 High Street (Parcel D)		**Existing Residential Building**	6 units (to be retained)		--
		Resident	6 spaces	6 spaces	--
		Non-Residential	0 spaces	0 spaces	--
90 High Street (Parcel E)		**Existing Residential Building**	To be converted to commercial / office uses (~340 m² GFA)		
		Commercial	**7 parking spaces** (within the 10 West parking garage)		--

As can be seen in the Table, the current development proposal is much the same as that previously considered in our December 2021 Transportation Considerations Study. Of note is a modest increase in residential units to 363 (a difference of 4 additional units) and total parking spaces to 319 (a difference of 33 more spaces; 14 more residential, and 19 more visitor spaces).

2.2 SITE ACCESS

Vehicular access to the 10 West below-grade parking and at-grade loading facility is proposed within a consolidated driveway off of Ann Street. Pick-up, drop-off and front-door delivery activity for the building will be accommodated informally along Ann Street.

2.3 PARKING

A 5.5-level below-grade parking garage is proposed within the 10 West residential development. A total of 319 parking spaces are proposed including 250 resident spaces and 56 residential visitor spaces for the 10 West development, 6 spaces reserved for the existing 84 High Street, and 7 spaces for the 90 High Street heritage buildings.

2.4 LOADING

Two (2) loading spaces are proposed within a central consolidated loading facility, accessed from Ann Street, to accommodate the proposed 10 West retail and residential refuse, recycling and organic collection as well as delivery/moving activities. One (1) formal loading space, consistent with the requirements set out in the Mississauga Zoning By-law, and one (1) proposed smaller loading space (deficient by 1.0 m in length), that can accommodate a range of smaller delivery vehicles (i.e. step vans and cube vans). The proposed loading arrangement does not consider the retained heritage buildings at 84 and 90 High Street, as they do not form part of the proposed condominium and therefore will not share the loading spaces. Refuse / recycling collection for the existing 84 and 90 High Street buildings will continue to occur as curbside pickup.

2.5 BICYCLE PARKING

Short-term visitor bicycle parking for the 10 West development (residential and retail uses) will be provided at grade and long-term resident bicycle parking will be provided on the P1 level of the parking garage, accessed via the site driveway and parking ramp.

3.0 FUNCTIONAL DESIGN

3.1 WASTE MANAGEMENT CONSIDERATIONS

Refuse / recycling collection was discussed in Section 7.4.1 of our December 201 Study. As may be seen in **Appendix C**, dimensions are provided for the waste collection point located on the ground floor. A provision of nine (9) 3-cubic yard recycling bins and eight (8) 3-cubic yard garbage bins are provided which meets and/or exceeds the Peel Region Waste Collection Guideline requirement of nine (9) recycling bins (based on one bin per 45 residential units), and seven (7) garbage bins (based on one bin per 54 residential units). Bins will have to be jockeyed by property management staff. Vehicle maneuvering diagrams illustrating the passage several design vehicles (Heavy Singe Unit Truck, Cube Van, Passenger Car) are illustrated in **Appendix D**.

3.2 DAYLIGHT TRIANGLES

The current architectural plans for site show 7.5 metre x 7.5 metre daylight triangles in the northwest and southwest corners of the site (per request from the City), and 10 metre x 10 metre daylight triangles in the northeast and southeast corners. As stated in the Region of Peel 'Public Works Design, Specifications & Procedures Manual' (November 2009), a minimum 15 metre x 15 metre daylight triangle must be dedicated to the Region. However, smaller daylight triangles of 10 metre x 10 metre are used at existing sites with similar conditions (i.e. located on local roads with lower traffic volumes). Therefore, it is reasonable that daylight triangles of 10 metre x 10 metre be provided at the northeast and southeast corners of the site, similar to the daylight triangles already provided on the northeast and southeast corners. Diagrams are illustrated in **Appendix D**.

4.0 VEHICULAR PARKING CONSIDERATIONS

This section provides an update to BA Group's 2021 report in response to the comments received from City Staff with respect to the vehicular parking strategy proposed.

4.1 ZONING BY-LAW REQUIREMENTS

The proposed development is located within the City of Mississauga and is subject to Zoning By-Law 0225-2007. The parking requirements for the proposed development are outlined in **Table 2**.

TABLE 2 CITY OF MISSISSAUGA ZONING BY-LAW 0225-2007 PARKING REQUIREMENTS

	Use	Units / GFA (m^2)[1]	Rate (Minimum)[2]	Minimum Parking Requirement[3]
10 West	**Resident**			
	Studio	0 units	0.80 spaces / unit	0 spaces
	1-Bedroom	253 units		202 spaces
	2-Bedroom	110 units		88 spaces
	3-Bedroom	0 units		0 spaces
	Resident Subtotal	***363 units***		***290 spaces*** *(0.80 spaces per unit)*
	Non-Resident			
	Visitor	363 units	0.20 spaces / unit	73 spaces
	Retail	309 m^2	3.0 spaces / 100 m^2 GFA	9 spaces
	Non-Resident Subtotal			***82 spaces***
			Total	**372 spaces**
84 High Street	Resident (1-Bedroom)	6 units	0.80 spaces / unit	**5 spaces**
	Visitor		0.20 spaces / unit	**1 space**
90 High Street	Office	340 m^2	2.0 spaces / 100 m^2 GFA[4]	**7 spaces**
			Total Site Requirement	**385 spaces**

Notes:
1. Site stats provided by CORE Architects, dated October 19 2022. The floor area for the existing 90 High Street heritage building is approximate.
2. Resident Condominium parking rates as per City of Mississauga Zoning By-law 0225-2017, Precinct 1.
3. Where the number of non-residential parking spaces and/or loading spaces is calculated on the basis of a rate or ratio and results in a numeric fraction, fractions of less than 0.5 shall be rounded down to the nearest whole number and fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number (as per City of Mississauga Zoning By-law 0225-2017 section 3.1.1.1.4).
4. Office rate is based on Zoning By-Law 0225-2007, it is noted that the current building, 90 High Street, is zoned as a residential use, which has a rate of 1.25 spaces / unit.

Application of the minimum Zoning By-law parking standards result in a total requirement of 372 spaces for the 10 West development, comprising 290 resident spaces (0.8 space per unit) and 82 non-residential

spaces. Six (6) spaces are required for the existing 84 High Street residential building and 7 spaces are required for an office use within the existing 90 High Street building.

4.2 PROPOSED SITE-SPECIFIC VEHICULAR PARKING STANDARDS

Section 3.3.2 of our December 2021 Transportation Considerations Study discussed planned transit improvements that are poised to become operational and relevant within transportation context of the site. These include most notably the Hurontario-Main Light Rail Transit (LRT) system (with a stop proposed to be located approximately 150 metres from the site at Hurontario Street / Park Street intersection) and rapid transit bus services proposed on Lakeshore Road (with a planned stop at Hurontario Street approximately 200 metres or a 3-minute walk from the site). With this in mind, it is argued that the prevailing Zoning By-law parking standards outlined modestly overstate the parking supply needs of contemporary buildings in a transit accessible area of the city such as the site environs. As such, it is proposed to adopt the following reduced minimum parking standards for the 10 West, 84 and 90 High Street sites. The proposed site-specific parking requirements are listed below:

- **Residents**:
  - 1 Bedroom: 0.68 spaces / unit
  - 2 Bedroom: 0.68 spaces / unit

- **Non-Residential (Residential Visitors + Ground Floor Commercial/Retail):**
  - 0.15 spaces / unit

- **Ancillary Uses** (Includes: Retail Store, Service Establishment, Take-out Restaurant, Convenience Restaurant and Restaurant <220 m^2):
  - None

- **Office (90 High Street):**
  - 2 spaces / 100 m^2 GFA

4.3 PROPOSED VEHICULAR PARKING SUPPLY

Based on the foregoing, application of the proposed parking rates are described below and summarized in **Table 3**. The proposed parking supply was based on the recommended parking standards described in Section 4.2 which identifies a list of ancillary uses for which parking is not required. The proposed parking supply recognizes that the building includes some ancillary retail uses. It is noted that there is flexibility to provide other ancillary uses within the building, which would be confirmed through subsequent submissions. Retail is the proposed ancillary use in the current application.

The current concept plan illustrates the provision of 319 parking spaces including 250 resident spaces and 56 residential visitor spaces for the 10 West development, 6 spaces reserved for the existing 84 High Street property, and 7 spaces for the 90 High Street property. This proposed supply meets and slightly exceeds the minimum parking requirements of the proposed rates (as summarized in **Table 3**).

TABLE 3 CALCULATION OF PROPOSED PARKING SUPPLY REQUIREMENT

	Use	Units / GFA (m^2)[1]	Rate (Minimum)[2]	Minimum Parking Requirement[3]
10 West	**Resident**			
	Studio	0 units	0.68 spaces / unit	0 spaces
	1-Bedroom	253 units		174 spaces
	2-Bedroom	110 units		76 spaces
	3-Bedroom	0 units		0 spaces
	Resident Subtotal	***363 units***		***247 spaces*** *(0.68 spaces per unit)*
	Non-Resident			
	Visitor	363 units	0.15 spaces / unit	56 spaces
	Retail	309 m^2	-	0 spaces
	Non-Resident Subtotal			***55 spaces***
	Total			**303 spaces**
84 High Street	Resident (1-Bedroom)	6 units	1.0 spaces / unit	**6 spaces**
	Visitor		0.0 spaces / unit	**0 spaces**
90 High Street	Office	340 m^2	2.0 spaces / 100 m^2 GFA[4]	**7 spaces**
Total Site Requirement				**316 spaces**

Notes:
1. Proposed supply is based on the site stats provided by CORE Architects, dated October 19 2022.
2. The floor area for the existing 90 High Street heritage building is approximate.

4.4 APPROPRIATENESS OF PROPOSED PARKING REQUIREMENTS

A detailed parking justification was provided in Section 5.4 of our December 2021 Urban Transportation Considerations Study, which discussed contextual factors influencing parking needs for contemporary developments in urban areas well served by transit. The parking justification has been further updated to reflect additional parking demand surveys that were undertaken in the area to provide supplementary technical justification for the proposed site-specific parking requirement rates.

4.4.1 Resident Parking

As discussed in Section 5.4 of our December 2021 Urban Transportation Considerations Study, adoption of the proposed reduced parking standards is considered to be appropriate based upon the following considerations:

- Transportation planning principles supporting a reduced parking supply to change travel behaviour;
- The subject Site is in close proximity to significant existing and planned transit services and bicycle route facilities that provide non-automobile dependent travel connections across the City;
- A series of Transportation Demand Management measures proposed to be incorporated in the development to support the use of non-automobile travel modes;
- The existing area travel characteristics being supportive of low automobile use;
- A review of parking demands observed / recorded by BA Group at other residential condominiums in comparable areas; and
- Recent reduced residential parking approvals trends.

As mentioned in our Dec 2021 study, the Hurontario-Main Light Rail Transit (The Hurontario LRT) is expected to be opened by 2024 and is proposed to include a stop at the Port Credit GO Station, located approximately 100 metres from the site. The implementation of the Hurontario LRT is expected to significantly impact the transportation characteristics within the vicinity of the LRT corridor and the City of Mississauga at large. The proximity of the site to the future LRT station suggests that the 10 West site should have a parking supply that supports transit; one that is equal to or lower than prevailing market demand.

Due to the LRT's connections to several GO Stations and employment hubs along the span of the corridor, the *Hurontario LRT Benefits Case Analysis* forecasts that the future transit mode share along the Hurontario – Main corridor will be increased from 24% to 49% with the introduction of the LRT. Applying the same percentage shift in mode split to the Site's existing transit mode split results in an increase from 14% to 29%. This increase translates to an auto mode split reduction from 67 – 70%, down to 52 – 55% (a net decrease in the auto mode share by approximately 15%).

The City of Mississauga has recently concluded the Parking Master Plan and Implementing Strategy (PMPIS) and had begun the process of enacting the recommendations entailed therein. Of relevance to the study area, residential parking requirements have been categorized within "precincts", which stipulate a harmonized residential parking requirement of 0.80 parking spaces per residential unit. It is noteworthy to mention that this revised parking rate was contemplated to be generally applicable across the precinct, and therefore doesn't take into account the proximal impacts of being immediately next to higher order transit improvements such as the Hurontario LRT. With this in mind, a blended site-specific residential parking rate of 0.68 spaces per residential unit has been derived by applying the anticipate auto mode-share reduction (15%) to the prevailing residential parking rate of 0.80 spaces per unit.

As discussed in Section 5.4.1.6 of our December 2021 Study, there are examples of recently approved parking reductions in the Port Credit area that have granted residential parking rates on the order of those proposed for the site. For example, a minor variance (File: A413.20) was approved on March 25, 2021 for 28 Ann Street. The approved minimum resident parking rates were 0.57 parking spaces for each one-bedroom unit and 0.73 parking spaces for each two-bedroom units. It is noted that the proposed 10 West site is located diagonally opposite the approved 28 Ann Street development (the sites are located on the northwest and southeast corners of the Park Street and Ann Street intersections), and are therefore set within the same transportation and community context (i.e., amenities, on-street parking supply, walkability, household vehicle ownership).

In addition, Table 9 of our December 2021 Study reviewed a series of past parking reduction approvals for proxy sites situated in similar or less transit supportive contexts as the proposed development, including those within the near vicinity of a GO Station. Approved rates varied from 0.47-0.71 spaces per unit. In this context, the proposed resident parking supply ratios (overall rate of 0.68 spaces / unit for the 10 West development) is conservatively within the range of documented parking supply reduction approvals that are appropriate proxies for the site.

Finally, and per Comment 2 received from the City, additional parking surveys were undertaken in the area by BA Group in the area during September 2022 in order to provide additional justification for the proposed residential parking rate. These include the 26 Park Street, 12 Park Street, 1 Hurontario Street, 6-8 Ann Street, and 7 Helene Street residential developments. Residential proxy survey results are summarized in Table 4 and attached in **Appendix E**.

TABLE 4 BA GROUP DIRECTED RESIDENTIAL PARKING PROXY SURVEY RESULTS

Proxy Sites	28 Park Street E	12 Park Street	1 Hurontario Street	6-8 Ann Street	7 Helene Street	Average
	Observed Maximum Parking Rate (Spaces / Unit)[1]					
Friday, September 23, 2022	0.80	0.73	1.05	--	0.67	**0.81**
Wednesday, September 28, 2022	0.64	0.67	1.04	0.94	0.67	**0.79**

Notes:
1. Parking surveys were conducted at 2:00 AM.

As can be seen in the Table, observed proxy residential parking rates from the various sites are in the order of 0.67 to 1.05 spaces per unit, with average rates converging to 0.79-0.81. It is noteworthy that the average observed residential parking rate closely follow by-law rates for Precinct 1 (0.80), while also demonstrating the viability of existing residential developments located in proximity to transit with residential parking rates on the order to those proposed for the site.

On this basis BA Group continues to be of the opinion that the proposed site-specific resident parking requirement of 0.68 spaces / unit is appropriate based on the site proximity to the future LRT and recognizing that there are approved precedents in the vicinity of the site.

4.4.2 Residential Visitor Parking

It is proposed to adopt a residential visitor parking requirement of 0.15 spaces per unit for the proposed development. This rate is higher than the recently approved non-residential parking rate for the neighbouring residential development at 78 Park Street East and 22 – 28 Ann Street.

The proposed visitor parking requirement of 0.15 spaces per unit was first rationalized in Section 5.5.1.1 of our December 2021 Study. In that report it was noted that residential visitor parking supply standards outlined in the current Mississauga Zoning By-law are considered conservatively high relative to the parking approvals obtained for residential buildings within similar transportation contexts across the City. Generally, parking

demands across the GTA have been declining over recent years in response to the changing demographics, economic factors, policy and planning emphasis on transit and active modes of travel, and mobility choices of residents within newer buildings, in particular. Furthermore, the City of Mississauga's recently finalized Zoning By-law parking review recognizes that previously established parking standards are not supportive of the City's policy objectives of reducing single automobile use and promoting active modes of travel.

The December 2021 study also provided some data from prior reduced residential visitor parking approvals (between 0.0 – 0.15 spaces per unit) which had parking demand data from proxy sites in the Port Credit area and in areas within the cities of Pickering and Hamilton with less transit supportive contexts as summarized in Table 10 of our December 2021 Study. This parking data was supportive of the proposed visitor parking requirement of 0.15 spaces per unit.

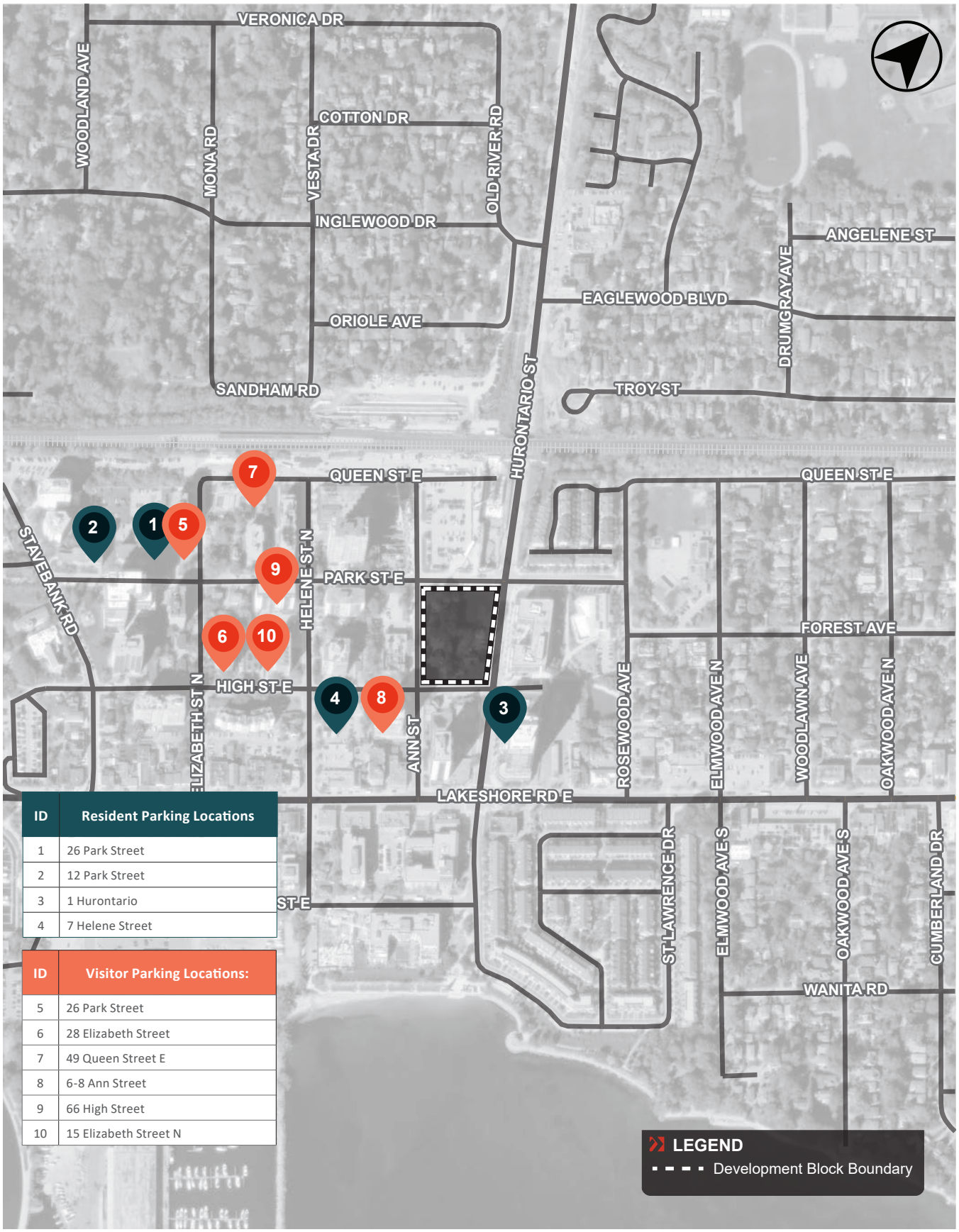
Supplementary Data Collection

Per Comment 2 received from the City, additional parking surveys were undertaken in the area by BA Group in the area during September 2022 in order to provide additional justification for the proposed visitor parking rate. These include the 26 Park Street E, 28 Elizabeth Street, and 49 Queen Street E, as well as 1 Hurontario Street, 6-8 Ann Street, 66 High Street E, and 15 Elizabeth Street N. Survey locations are illustrated in **Figure 3**, while results are summarized **in Table 5**. Visitor Proxy surveys are likewise attached in **Appendix E**.

TABLE 5 BA GROUP DIRECTED VISITOR PARKING PROXY SURVEY RESULTS

Proxy Sites	26 Park Street E	28 Elizabeth Street N	49 Queen Street E	1 Hurontario Street	6-8 Ann Street	66 High Street E	15 Elizabeth Street N
	Observed Maximum Parking Rate (Spaces / Unit)[1]						
Friday, September 23, 2022	0.04	0.01	0.08	0.11	0.11	0.15	0.11
Saturday, September 24, 2022	0.10	0.01	0.08	0.14	0.14	0.15	0.09
Friday, September 30, 2022	0.06	0.02	0.13	0.08	0.10	0.10	0.11
Saturday October 1, 2022	0.08	0.02	0.13	0.09	0.15	0.15	0.11

Notes:
1. Parking surveys were conducted on Fridays from 6:00 PM to 11:00 PM, and on Saturdays from 12:00 PM to 8:00 PM. Table values represent absolute maxi9mum observed parking rates over survey periods.



ID	Resident Parking Locations
1	26 Park Street
2	12 Park Street
3	1 Hurontario
4	7 Helene Street

ID	Visitor Parking Locations:
5	26 Park Street
6	28 Elizabeth Street
7	49 Queen Street E
8	6-8 Ann Street
9	66 High Street
10	15 Elizabeth Street N

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Aerial maps provided courtesy of: Esri, DigitalGlobe, GeoEye, Earthstar Geographies, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, the GIS User Community and/or Google Earth/Maps.

FIGURE 3 PARKING SURVEY LOCATIONS

As can be seen in the Table, maximum observed parking occupancy rates from the various sites are in the order of 0.10 to 0.15 spaces per unit, with the highest visitor parking demand observed at any site (during any time period) being approximately 0.15 spaces per unit. This new parking demand data from the area provides compelling, local, and relevant demand information that supports the proposed visitor parking requirement of 0.15 spaces per unit. With this in mind, the provision of a reduced visitor parking standard for the 10 West development is considered appropriate based upon the following considerations:

- Numerous transportation planning principles that support reduced parking supplies;
- The Site in proximity to significant existing and planned transit services (Port Credit GO Station and planned Hurontario LRT and Lakeshore Road Rapid Transit) and bicycle route facilities that provide non-automobile dependent travel connections across the City;
- Availability of public on-street parking within the near vicinity;
- The range of recent reduced residential visitor parking supply ratio approvals with less proximate access to a GO Station;
- Exceeding the recently approved parking rates for the neighbouring residential development at 78 Park Street East and 22 – 28 Ann Street; and,
- Consistency with observed parking rates for the neighbouring proxy residential developments.

5.0 TDM MEASURES

Potential transportation demand management (TDM) strategies were discussed in Section 4.0 of or December 2021 Transportation Study. As mentioned, these included 'hard' measures, such as pedestrian connections, bicycle parking, bicycle repair stations, transit information centres, and electric vehicle charging stations, as well as 'soft' measures, including travel mode information packages, unbundled vehicular parking, and pre-loaded PRESTO cards.

The applicant is reviewing implementing TDM measures such as PRESTO cards to future residents in order to incentivize the utilization of area transit services, incorporating bike repair stations on site as well as exploring the feasibility of implementing car share spaces as part of the development. It is noteworthy to mention that reduced vehicle parking supply is a TDM strategy designed to passively work in tandem with proactive strategies and have been proposed in order to support the proposed reduced resident parking requirement considered in Section 4.4.1. To this end, TDM measures will be considered in review and discussion with Staff based on the propose reduced parking rates.

6.0 TRAFFIC ANALYSIS

6.1 STUDY AREA ROAD NETWORK

Th existing study area road network was discussed in Section 3.2 and illustrated in Figure 4 of our December 2021 Transportation Study. As discussed in Section 9.2 of our December 2021 Study, the capacity analysis considered future lane configurations to account for the implementation of the Hurontario LRT. With this in mind, the future road network assumed for the traffic capacity analysis discussed in Section 5.3 of this Memorandum is illustrated in **Figure 4**.

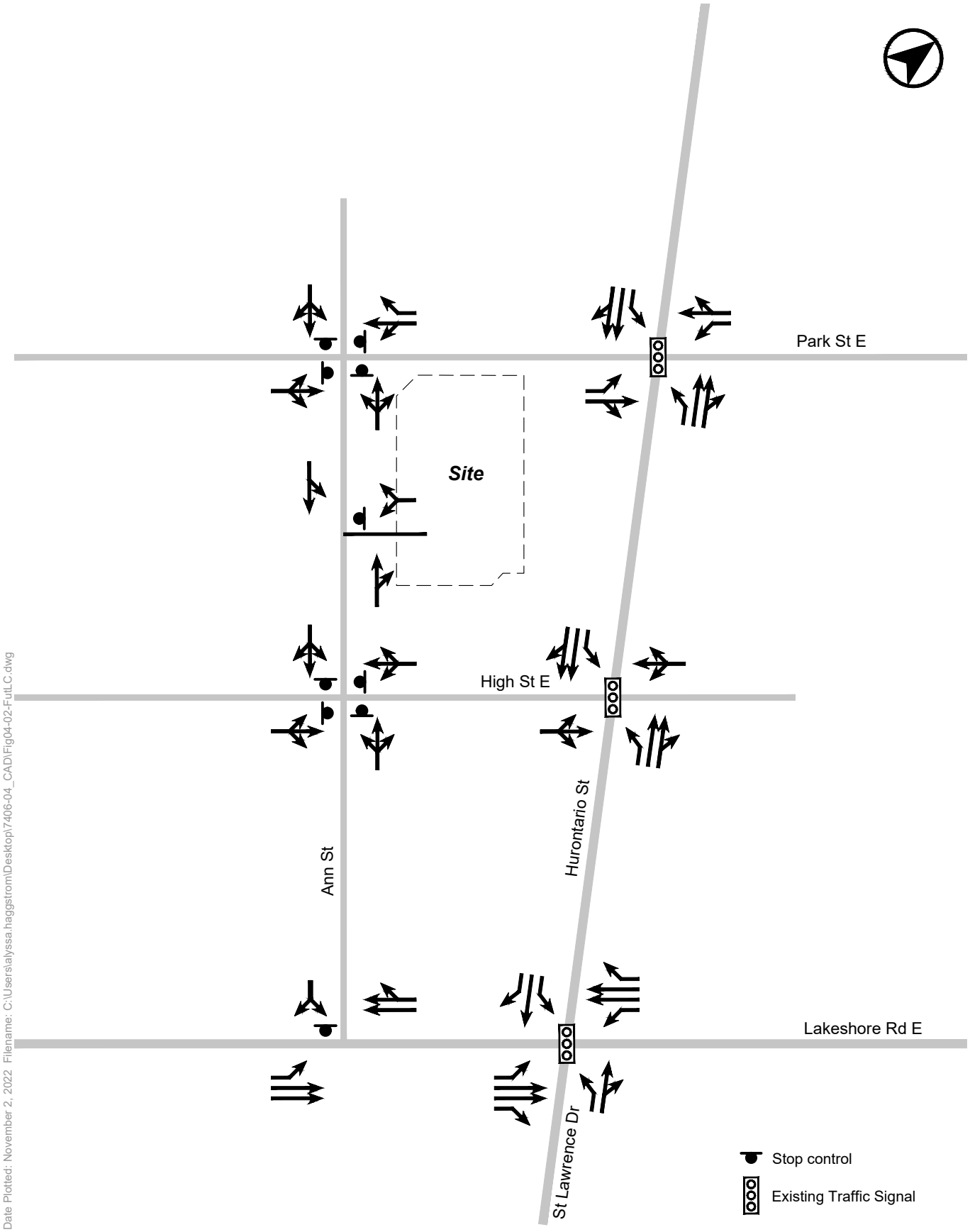

FIGURE 4 FUTURE LANE CONFIGURATION AND TRAFFIC CONTROL

6.2 EXISTING TRAFFIC VOLUMES

A review of existing traffic volumes was discussed in Section 8.1 of our December 2021 Transportation Study. As mentioned, baseline existing traffic volumes in the December 2021 study for intersections within the study area for vehicles, cyclists, and pedestrians were established for the weekday morning and afternoon peak hour periods on the area street network based on intersection traffic information collected by Spectrum Traffic Data Inc. on behalf of BA Group, and additional data provided by the City of Mississauga collected between 2014 and most recently in June and September of 2022. As may be seen in Table 13 of our December 2021 Transportation Study (attached in **Appendix A**), baseline traffic counts assumed in our December study ranged from 2014 to 2019. Due to the then-ongoing effects of the COVID-19 pandemic BA Group applied corridor-based growth on Lakeshore Road East and Hurontario Street in order to redress presumed decreases in traffic volumes.

In this light, due to the uncertain effects of the COVID-19 pandemic, and in response to comments provided by the City, BA Group has conducted a review of historic traffic counts available at study area intersections (including those newly conducted in 2022) in order to determine what, if any, traffic patterns would indicate a prevailing depression in traffic volumes owing to the lasting, yet presumably evanescent effects of the pandemic. A particular emphasis was placed on the Hurontario Street / Lakeshore Road East intersection as traffic volumes on arterial roads is believed to be probative of historic traffic patterns affecting the study area. The results of this assessment are attached in **Appendix F** of this memorandum.

As may be observed, traffic volumes collected during the years 2021 and 2022 are generally significantly lower at all study area intersections. Downwards trends are observed in the north-south direction on Hurontario Street, as well as in the east-west direction on Lakeshore Road East. Based on the review of historic trends, it was determined that the historic pre-COVID volumes continued to be the most conservative volumes to utilize for the purposes of this analysis. With this in mind, traffic surveys at each intersection were conservatively selected from among pre-COVID traffic counts (if available). As in our December 2021 Study, corridor-based growth was applied to baseline volumes consistent with assumptions provided City's Travel Demand Model (as discussed in Section 6.3).

Table 6 summarizes baseline traffic volumes surveys selected for each intersection. Count information is attached in **Appendix G**. Baseline existing traffic volumes are illustrated in **Figure 5.**

TABLE 6 EXISTING TRAFFIC COUNT INFORMATION

Intersection	Date	Source
Hurontario / Lakeshore Road East	December 17, 2019	TES Mississauga
Hurontario Street / High Street	June 24, 2021	Spectrum Traffic Counts
Hurontario Street / Park Street East	June 4, 2015	TES Mississauga
Ann Street / Lakeshore Road	June 24, 2021	Spectrum Traffic Counts
Ann Street / High Street East	June 24, 2021	Spectrum Traffic Counts
Ann Street / Park Street East	June 24, 2021	Spectrum Traffic Counts

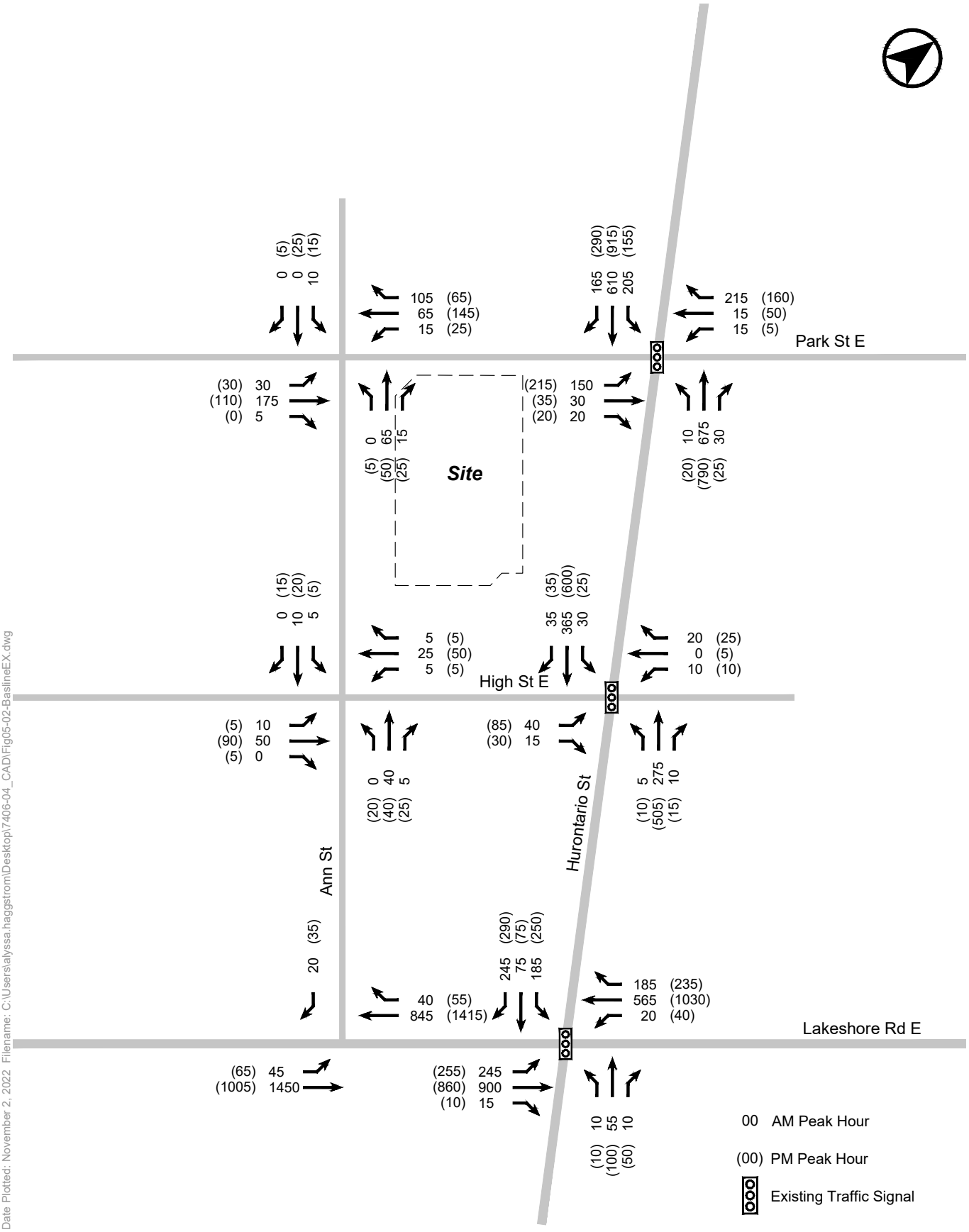

FIGURE 5 BASELINE EXISTING TRAFFIC VOLUMES

Considering the variability in the count dates, and given the trends observed on the study area arterial roads (i.e., Hurontario Street and Lakeshore Road East), the following balancing measures were applied:

- East-west traffic volumes on Park Street were balanced from the Hurontario Street / Park Steet intersection;
- East-west traffic volumes on High Street were balanced from the Hurontario Street / High Street intersection;
- North-south traffic volumes on Hurontario Street were balanced from the Hurontario Street / Park Steet;
- East-west traffic volumes on Lakeshore Road East were balanced from the Hurontario Street / Lakeshore Road Street East;
- North-south traffic volumes on Ann Street were balanced from the Lakeshore Road East / Ann Street intersection.

Adjustments made owing to balancing are illustrated in **Figure 6**, while balanced existing traffic volumes (which represent the addition of baseline existing traffic volumes illustrated in **Table 6** to adjustments made to existing traffic volumes illustrated in **Figure 6**) are illustrated in **Figure 7**.

6.3 BACKGROUND TRAFFIC VOLUMES

Background traffic volumes were discussed in Section 8.2 of our December 2021 Transportation Study. As discussed, corridor growth rates were applied based on the City's Travel Demand Model, as recommended by City of Mississauga staff. Allowances were also made to account for new traffic generated by other area development proposals in the vicinity of the site. These include traffic volumes from the at 128 Lakeshore Rd and 0 Park St E per Comment 1D from the City. The specific background developments included in the analysis are summarized in **Table 7**.

TABLE 7 SPECIFIC BACKGROUND DEVELOPMENTS

Site	Development Programme	Source of Traffic Assignment
28 Anne Street	359 residential units, 250 m^2 retail GFA	LEA, July 2019
42-46 Park Street East	258 residential units	LEA, May 2020
21, 25, 29 Park Street East	204 residential units	No report available[1]
128 Lakeshore Rd	42 residential units, 150 m^2 retail GFA	LEA, December 2021
0 Park St E	1,139 residential units, 1,765 m^2 retail GFA	GHD, March 2022
42 Port Street E	221 residential units, 850 m^2 retail GFA 771 m^2 office GFA	BA Group, December 2021

Notes:
1. Volumes and distribution generated based on trip generation rates observed at nearby developments of similar scale and distribution patterns determined by 2016 TTS data and observed traffic patterns.

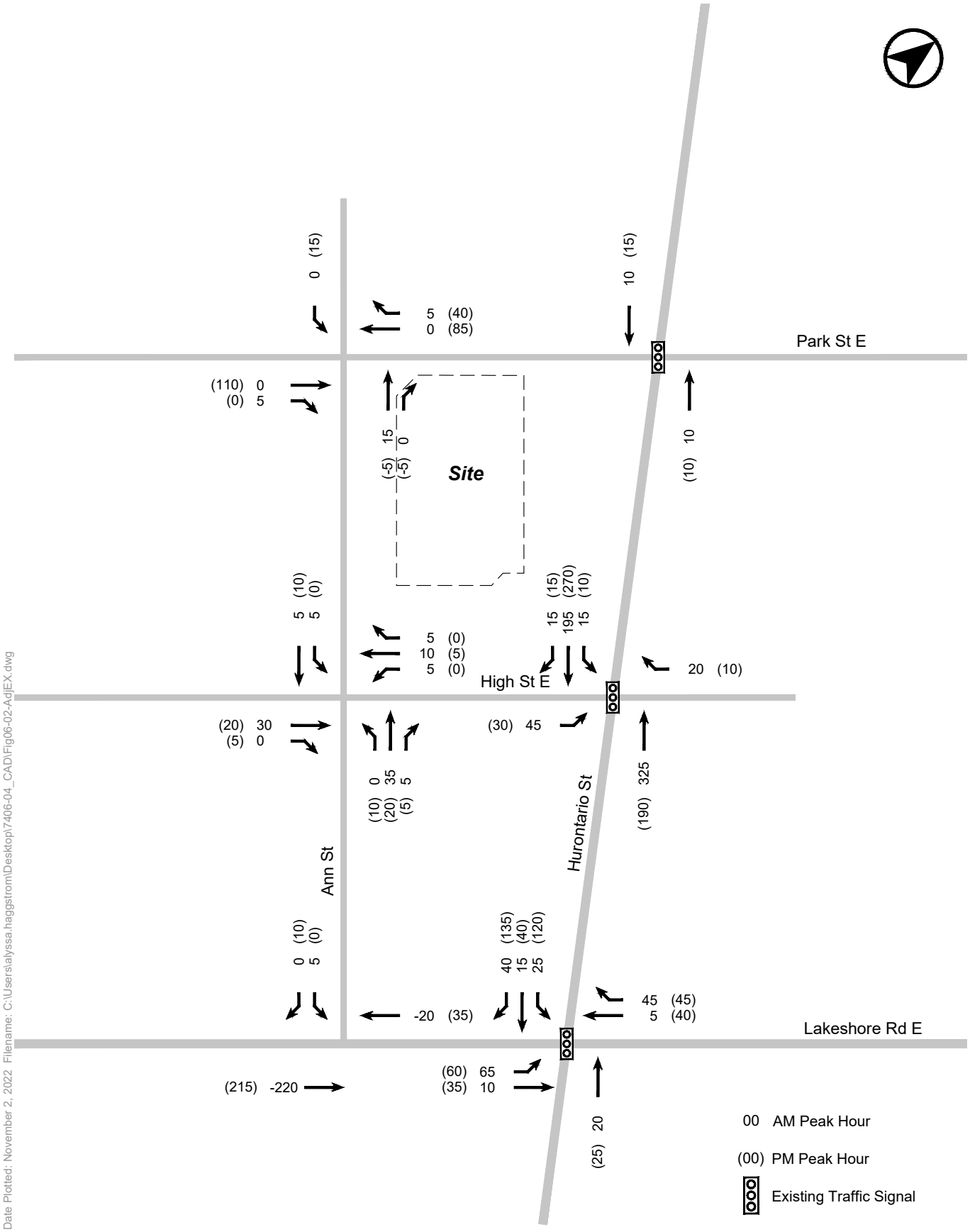

FIGURE 6 ADJUSTMENTS TO EXISTING TRAFFIC VOLUMES

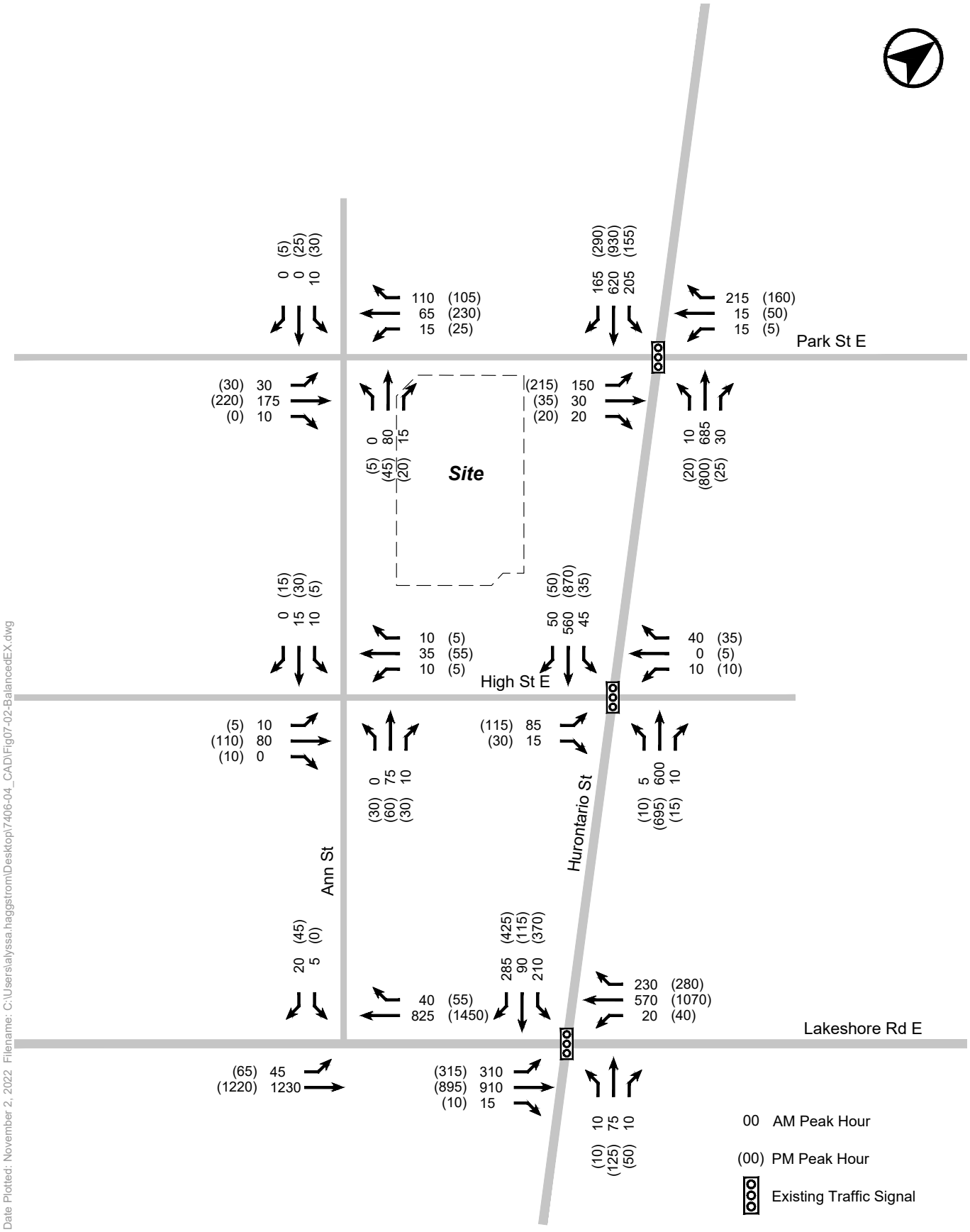

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FIGURE 7 BALANCED EXISTING TRAFFIC VOLUMES

As can be seen in the Table, allowances have been made for 2,223 residential units, 3,015 m^2 of retail GFA space, and 771 m^2 of office GFA space. With this in mind, background traffic volumes (i.e., corridor growth and background development traffic volumes) are illustrated in **Figure 8**.

6.4 FUTRE BACKGROUND TRAFFIC VOLUMES

Future background traffic volumes represent the addition of balanced existing traffic volumes (illustrated in **Figure 7**) to background traffic volumes (illustrated in **Figure 8**). Future background volumes are illustrated in **Figure 9**.

6.5 SITE TRAFFIC VOLUMES

Site-derived vehicle trip generation and assignment is discussed in Section 8.2 of our December 2021 Transportation Study. Considering the very modest change in residential units considered in this Memorandum, site generated traffic volumes remain unchanged. The Site is expected to generate on the order of approximately 80 and 100 vehicular trips in the weekday morning and afternoon peak hours, respectively. Site traffic volumes are illustrated in **Figure 10**.

6.6 FUTURE TOTAL TRAFFIC VOLUMES

Future total traffic volumes represent the addition of site traffic volumes (illustrated in **Figure 10**) to future background traffic volumes (illustrated in **Figure 9**). Future total volumes are illustrated in **Figure 11**.

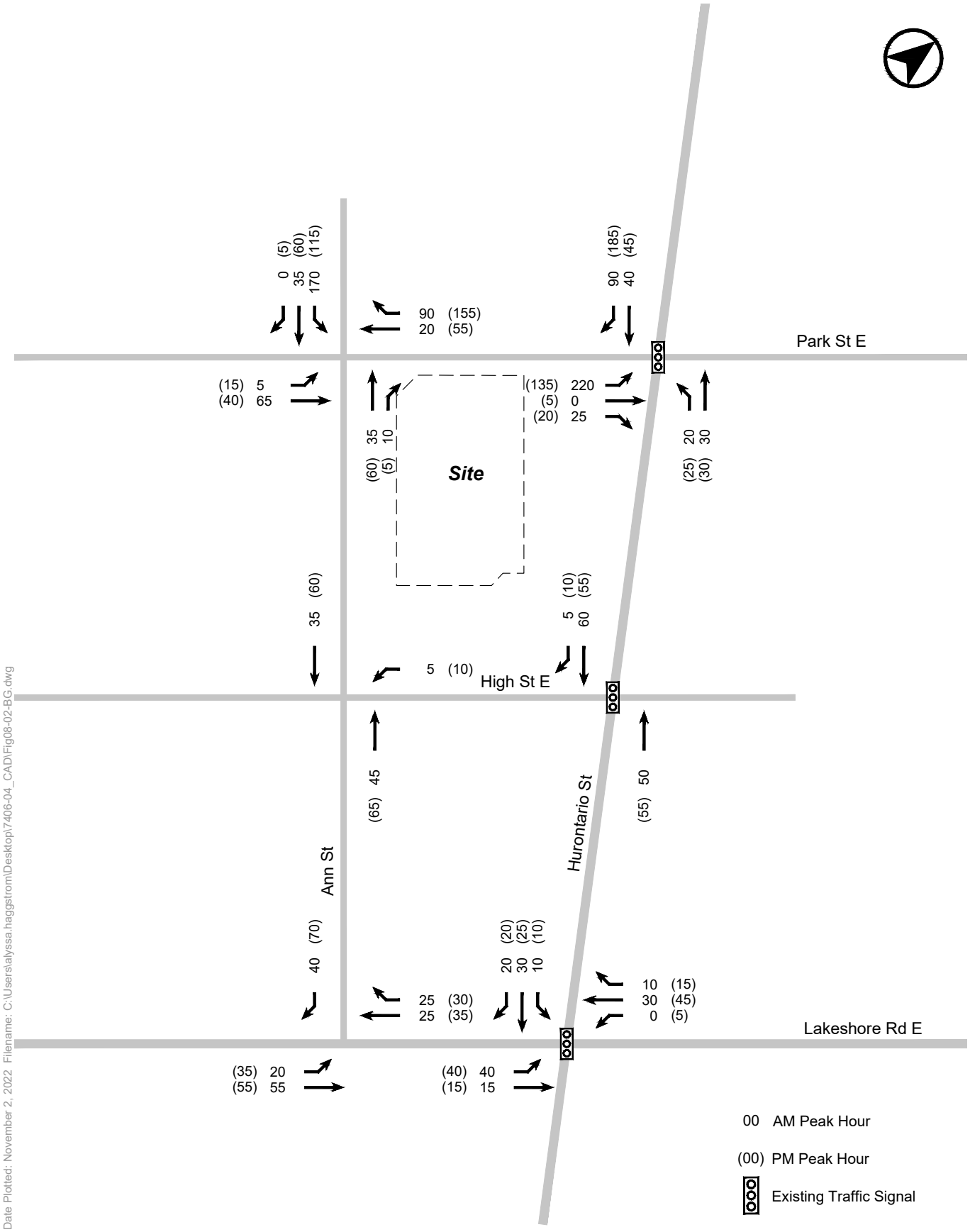

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FIGURE 8 BACKGROUND TRAFFIC VOLUMES

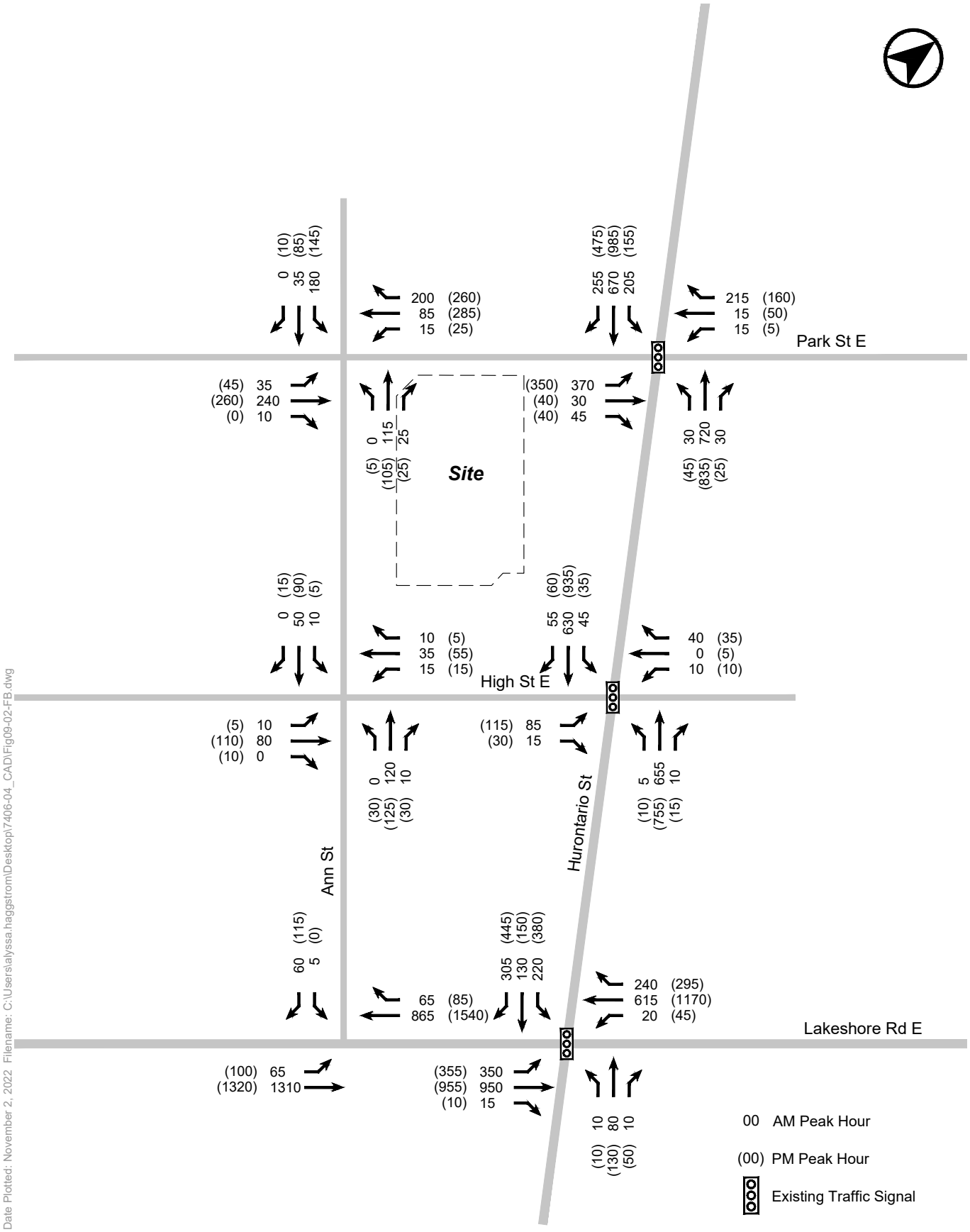

FIGURE 9 FUTURE BACKGROUND TRAFFIC VOLUMES

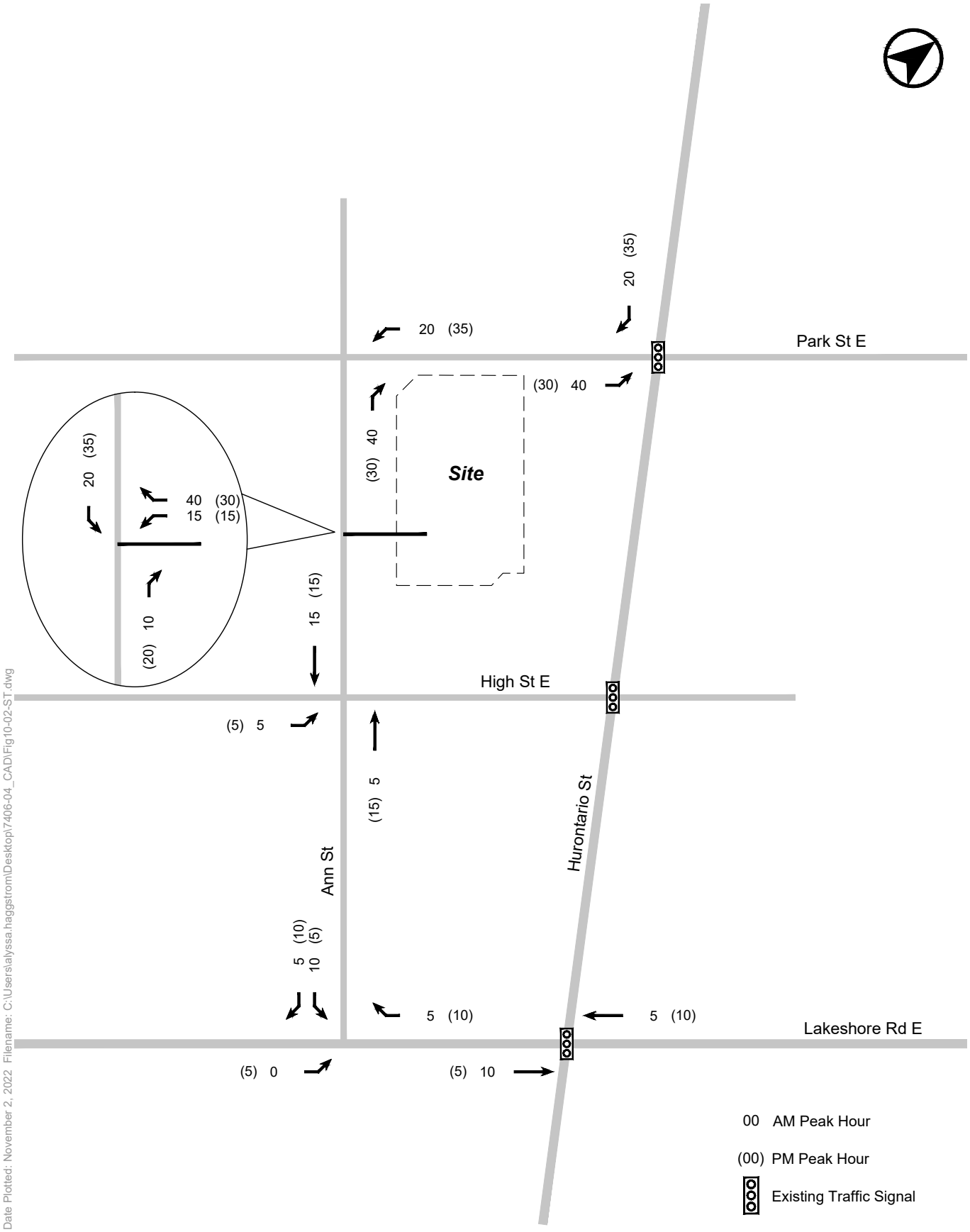

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FIGURE 10 SITE TRAFFIC VOLUMES

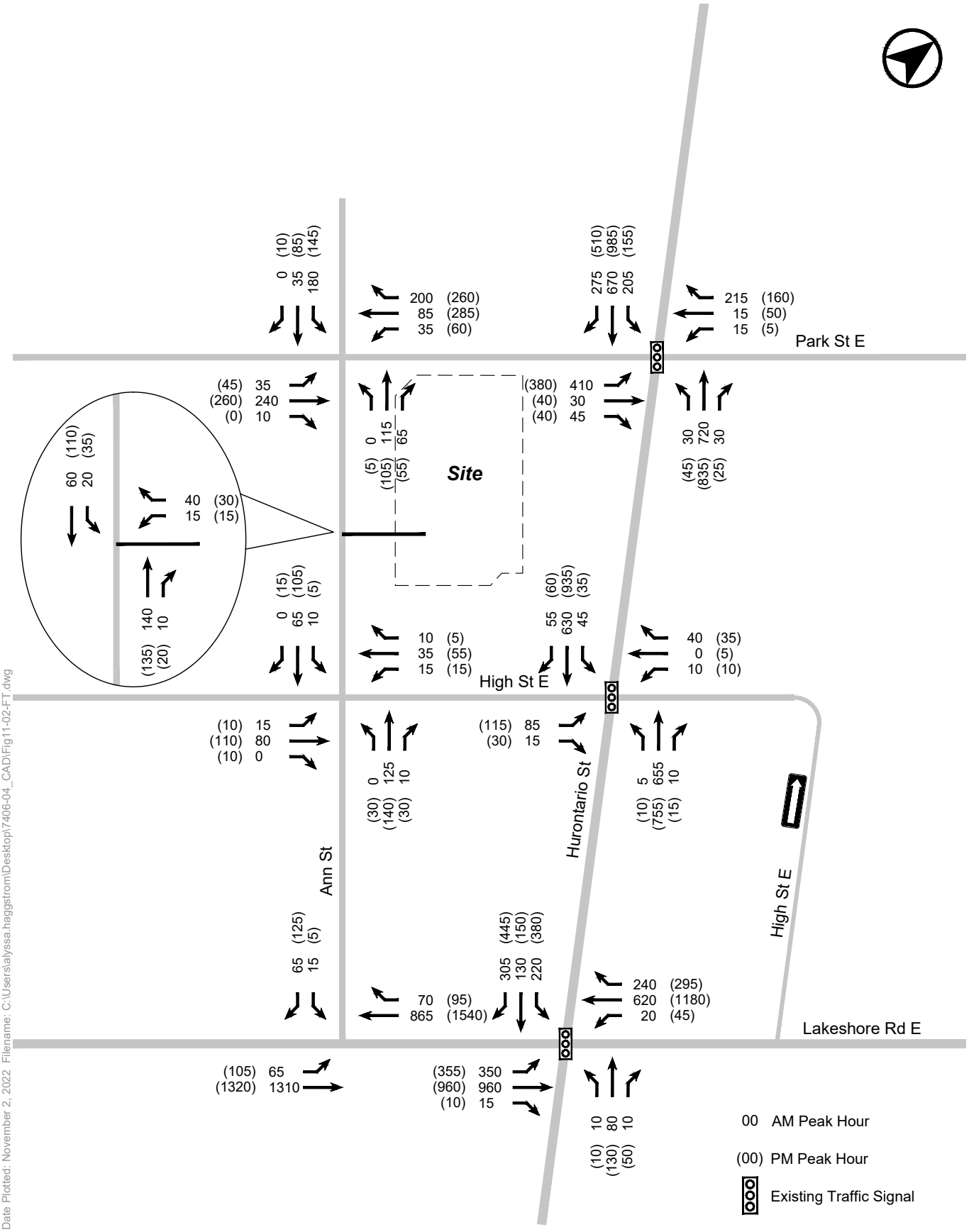

FIGURE 11 FUTURE TOTAL TRAFFIC VOLUMES

6.7 CAPACITY ANALYSIS

6.7.1 Basis of Analysis

The basis of analysis, analysis parameters, and operations scenarios were discussed in Section 9.1, 9.2, and 9.3 of our December Transportation Study, respectively. All parameters and assumptions considered in this Memorandum remain unchanged. The detailed Synchro output sheets are attached in **Appendix H** for reference.

6.7.2 Parameter Calibration

In the analysis of the afternoon peak hour existing conditions, default Synchro parameters produced unrealistically high v/c ratios for the eastbound left turn movement at the Lakeshore Road East / Hurontario Street – St. Lawrence Drive intersection (i.e. v/c ratios above 1.0). To better reflect existing conditions (i.e. an 'at-capacity' eastbound left turn movement that operates at, or just under, a v/c of 1.0), the 'Left Turn Permitted Factor' for this movement has been adjusted from a default of 1.32 to 1.9; resulting in a eastbound left turn v/c of 0.99. These adjustments reflect the reality of driver behaviour under near-capacity conditions, In addition, all 'Lost Time Adjustment' factors have been set to a value of zero for all signalized intersections.

6.7.3 Signalized Intersections

6.7.3.1 Hurontario Street – St. Lawrence Drive / Lakeshore Road

The Hurontario Street – St. Lawrence Drive / Lakeshore Road East intersection is a signalized intersection that currently operates with a cycle length of 140 seconds and 120 seconds during the morning and afternoon peak hours, respectively. Capacity analysis results are summarized in **Table 8**. Under existing traffic conditions, the intersection operates at an acceptable level of service during the weekday morning peak hour (overall v/c of 0.83), and under busy conditions during the afternoon peak hour period (overall v/c of 1.01). As discussed in Section 6.7.2., the eastbound left turn movement will operate at the limit of its theoretical capacity. Under future background traffic conditions, the signal timing plan was optimized during both peak hours resulting in operations improvements. The intersection will operate with a good level of service during the weekday morning peak hour (overall v/c of 0.70), and under busy yet acceptable conditions during the afternoon peak hour period (overall v/c of 0.97).

With the addition of site-related traffic under future 2027 traffic conditions, as the proposed development is fully developed, the intersection continues to operate under similar conditions during both the weekday morning and afternoon peak hours with overall v/c ratios of 0.71 and 0.97. Site related impacts on the intersection are negligible.

TABLE 8 SIGNALIZED INTERSECTION CAPACITY RESULTS – HURONTARIO STREET / LAKESHORE ROAD

Movement	Existing (2021)		Future Background (2026)		Future Total (2026)	
	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.82 (0.99)	C (E)	0.65 (0.94)	B (D)	0.65 (0.94)	B (D)
EBT	0.37 (0.46)	A (B)	0.39 (0.50)	B (C)	0.40 (0.50)	B (C)
EBR	0.01 (0.01)	A (B)	0.01 (0.01)	A (B)	0.01 (0.01)	A (B)
WBL	0.06 (0.16)	B (C)	0.07 (0.22)	B (C)	0.07 (0.22)	B (C)
WBT	0.30 (0.71)	B (C)	0.33 (0.87)	B (D)	0.33 (0.88)	B (D)
WBR	0.16 (0.25)	B (C)	0.16 (0.36)	B (C)	0.16 (0.36)	B (C)
NBL	0.04 (0.02)	D (C)	0.04 (0.02)	D (C)	0.04 (0.02)	D (C)
NBT	0.21 (0.27)	D (C)	0.22 (0.26)	D (C)	0.22 (0.26)	D (C)
SBL	0.81 (0.97)	F (E)	0.81 (0.97)	E (F)	0.81 (0.97)	E (F)
SBT	0.23 (0.18)	E (C)	0.31 (0.22)	D (C)	0.31 (0.22)	D (C)
SBR	0.21 (0.59)	F (C)	0.23 (0.46)	F (F)	0.23 (0.46)	F (F)
Overall	**0.83 (1.01)**	**E (D)**	**0.70 (0.97)**	**D (D)**	**0.71 (0.97)**	**D (D)**

Notes:
1. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).

6.7.3.2 Hurontario Street / High Street

The Hurontario Street / High Street intersection is a signalized intersection that currently operates with a cycle length of 140 seconds and 100 seconds during the morning and afternoon peak hours, respectively. Capacity analysis results are summarized in **Table 9**.Under existing traffic conditions, the intersection operates at an acceptable level of service during the weekday morning and afternoon peak hour periods, with overall v/c ratios of 0.28 and 0.39.

Under future background traffic conditions, with allowances of specific area developments and corridor growth, the intersection begins to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.31 and 0.41. With the addition of site-related traffic under future 2027 traffic conditions, as the proposed development is fully developed, the intersection continues to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.31 and 0.41. Site related impacts on the intersection are negligible.

TABLE 9 SIGNALIZED INTERSECTION CAPACITY RESULTS – HURONTARIO STREET / HIGH STREET EAST

Movement	Existing (2021)		Future Background (2026)		Future Total (2026)	
	V/C	LOS	V/C	LOS	V/C	LOS
EBLTR	0.59 (0.62)	E (D)	0.59 (0.67)	E (E)	0.59 (0.67)	E (E)
WBLTR	0.09 (0.09)	E (D)	0.09 (0.10)	E (D)	0.09 (0.10)	E (D)
NBL	0.01 (0.02)	A (A)	0.01 (0.03)	A (A)	0.01 (0.03)	A (A)
NBTR	0.24 (0.27)	A (A)	0.26 (0.28)	A (A)	0.26 (0.28)	A (A)
SBL	0.08 (0.07)	A (B)	0.08 (0.08)	A (A)	0.08 (0.08)	A (A)
SBTR	0.24 (0.35)	A (B)	0.27 (0.36)	A (A)	0.27 (0.36)	A (A)
Overall	**0.28 (0.39)**	**A (B)**	**0.31 (0.41)**	**A (A)**	**0.31 (0.41)**	**A (A)**

Notes:
1. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).

6.7.3.3 Hurontario Street / Park Street East

The Hurontario Street / Park Street East intersection is a signalized intersection that currently operates with a cycle length of 140 seconds and 100 seconds during the morning and afternoon peak hours, respectively. Capacity analysis results are summarized in **Table 10**.

TABLE 10 SIGNALIZED INTERSECTION CAPACITY RESULTS – HURONTARIO STREET / PARK STREET EAST

Movement	Existing (2021)		Future Background (2026)[2]		Future Total (2026)[2]	
	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.56 (0.60)	D (D)	0.72 (0.67)	C (C)	0.79 (0.72)	D (C)
EBTR	0.07 (0.07)	D (C)	0.07 (0.08)	C (C)	0.07 (0.08)	C (C)
WBL	0.04 (0.01)	C (C)	0.04 (0.02)	D (D)	0.05 (0.02)	D (D)
WBTR	0.18 (0.19)	D (C)	0.18 (0.32)	D (D)	0.18 (0.33)	D (D)
NBL	0.03 (0.09)	B (C)	0.19 (0.85)	D (F)	0.20 (0.85)	D (F)
NBTR	0.44 (0.59)	B (C)	0.74 (0.72)	D (D)	0.74 (0.72)	D (D)
SBL	0.48 (0.45)	B (B)	0.70 (0.62)	D (C)	0.70 (0.62)	D (C)
SBT	0.31 (0.50)	B (B)	-- (--)	-- (--)	-- (--)	-- (--)
SBR	0.11 (0.24)	B (B)	-- (--)	-- (--)	-- (--)	-- (--)
SBTR	-- (--)	-- (--)	0.64 (0.96)	C (D)	0.65 (0.98)	C (E)
Overall	**0.51 (0.58)**	**C (C)**	**0.75 (0.86)**	**D (D)**	**0.78 (0.90)**	**D (D)**

Notes:
1. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).
2. Protected-permissive left turn added to eastbound left movements.

Under existing traffic conditions, the intersection operates at an acceptable level of service during the weekday morning and afternoon peak hour periods, with overall v/c ratios of 0.51 and 0.58. Under future conditions, the signal was optimized to accommodate for overall corridor growth and area background development allowances. A protected-permissive left turn was added to the eastbound left movements. The

overall cycle length was unchanged. Under future background traffic conditions, with allowances of specific area developments and corridor growth, the intersection begins to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.75 and 0.86. With the addition of site-related traffic under future 2027 traffic conditions, as the proposed development is fully developed, the intersection continues to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.78 and 0.90. Site related impacts on the intersection are minimal.

Based on the foregoing, the net-new site traffic volumes can be appropriately accommodated at the network signalized intersections with the Hurontario LRT through signal timing adjustments and without the need for geometric improvements.

6.7.4 Unsignalized Intersections

The summarized results of the intersection traffic operations analyses undertaken the unsignalized intersections are summarized in **Table 11.** All unsignalized intersections will operate at acceptable levels of service (LOS C or better) under all scenario conditions.

TABLE 11 UNSIGNALIZED INTERSECTION CAPACITY RESULTS

Movement	Existing (2021)		Future Background (2026)		Future Total (2026)	
	Delay	V/C	Delay	V/C	Delay	V/C
Anne Street / Lakeshore Road[1]						
EBL	10.1 (14.1)	B (C)	10.6 (16.2)	B (C)	10.6 (16.2)	B (C)
SBLR	16.6 (10.2)	B (B)	10.4 (10.8)	B (B)	14.4 (10.8)	C (D)
Ann Street / High Street East[3]						
EBLTR	8.2 (8.1)	B (B)	8.5 (8.6)	A (A)	8.6 (8.8)	A (A)
WBLTR	7.8 (7.8)	A (A)	8.1 (8.3)	A (A)	8.1 (8.5)	A (A)
NBLTR	8.7 (8.6)	A (A)	9.3 (9.7)	A (B)	9.4 (10.0)	A (B)
SBLTR	8.1 (7.6)	A (A)	8.1 (8.3)	A (A)	8.1 (8.5)	A (A)
Ann Street / Park Street East[3]						
EBLTR	9.2 (10.2)	B (B)	13.0 (15.9)	B (C)	13.6 (17.0)	B (C)
WBLT	7.6 (9.9)	A (A)	9.3 (15.7)	A (B)	10.0 (19.1)	A (C)
WBR	6.7 (6.8)	A (A)	9.4 (11.2)	A (A)	9.7 (11.7)	A (A)
NBLTR	9.2 (9.1)	A (A)	11.5 (12.4)	B (B)	12.1 (13.2)	B (B)
SBLTR	8.2 (9.0)	A (A)	12.1 (14.7)	B (B)	12.5 (15.4)	B (C)
Ann Street / Proposed Site Driveway[2]						
WBLR	-- (--)	-- (--)	0.0 (0.0)	A (A)	9.5 (9.7)	A (A)
SBLT	-- (--)	-- (--)	-- (--)	-- (--)	2.0 (2.0)	A (A)

Notes:
1. One-way stop control.
2. Two-way stop control.
3. All-way stop control
4. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).

6.7.5 Queueing Analysis

A queueing analyses has been undertaken at all study area intersections. Queuing results at the Hurontario Street – St. Lawrence Drive / Lakeshore Road East, Hurontario Street / High Street, and Hurontario Street / Park Street intersections are summarized in **Table 12**. As can be seen in the Table, both average and 95th percentile queue lengths are well tolerated during both peak hours. An exception occurs at the southbound left turn and eastbound left turn movements at the Hurontario Street / Park Street intersection during future scenarios. With regards to the former, maximum 95th percentile queue lengths will exceed the storage capacity by a maximum approximately 3 car lengths, though are expected to clear any potentially blockage on Hurontario Street on ever cycle. Considering the addition of background traffic volumes on the study area road network, maximum queues along the eastbound left turn lane on Park Street may intermittently extent across Ann Street. Traffic volumes at this movement may be monitored considering proposed future development in the area, keeping in in the possibility of available capacity at the eastbound left turn movement at the nearby Hurontario Street / High Street intersection.

6.7.6 Community Impacts

Considering the modest site traffic generation and the negligeable impacts of site related traffic volumes to the study area road network, it may be concluded that the proposed development will not alter or change the fundamental use of the local/collector streets. On the basis of updated analysis results discussed in this Memorandum, the conclusions from our December 2021 Study remain valid, and vehicular traffic generated by the project can be adequately accommodated.

TABLE 12 QUEUEING ANALYSIS SUMMARY

Lane Group	Existing (2021)		Future Background (2026)		Future Total (2026)		Storage Length
	50th Percentile Queue	95th Percentile Queue	50th Percentile Queue	95th Percentile Queue	50th Percentile Queue	95th Percentile Queue	
Hurontario Street / Lakeshore Road East							
EBL	28.1 (38.9)	80.6 (92.1)	33.9 (56.9)	64.2 (116.3)	33.9 (56.9)	64.2 (116.3)	130
EBT	54.3 (69.7)	84.3 (86.7)	59.4 (91.4)	92.6 (110.3)	60.1 (92.0)	93.8 (110.9)	-
EBR	0.0 (0.0)	1.2 (0.0)	0.0 (0.0)	1.3 (0.1)	0.0 (0.0)	1.3 (0.1)	90
WBL	2.7 (6.1)	8.8 (14.5)	2.7 (9.1)	8.9 (20.3)	2.7 (9.2)	8.9 (20.4)	130
WBT	45.8 (113.8)	71.7 (139.5)	51.2 (170.0)	78.1 (206.6)	51.7 (172.1)	78.8 (214.7)	-
WBR	0.0 (9.4)	15.3 (29.2)	0.0 (28.2)	15.5 (56.3)	0.0 (28.5)	15.5 (56.5)	60
NBL	2.4 (1.7)	6.9 (5.7)	2.3 (1.9)	6.8 (6.1)	2.3 (1.9)	6.8 (6.1)	30
NBT	19.5 (27.9)	32.0 (46.6)	20.6 (33.4)	32.8 (53.0)	20.6 (33.4)	32.8 (53.0)	-
SBL	64.8 (88.9)	82.7 (152.0)	65.9 (114.8)	90.5 (179.1)	65.8 (114.5)	90.5 (179.0)	35
SBT	27.1 (19.8)	40.9 (34.4)	38.3 (39.6)	57.3 (64.1)	38.3 (38.4)	57.3 (64.2)	-
SBR	35.2 (44.1)	54.6 (83.4)	50.3 (89.6)	71.4 (125.4)	50.0 (89.0)	71.3 (124.8)	90
Hurontario Street / High Street East							
EBTLR	21.8 (21.9)	40.0 (40.0)	21.8 (34.6)	40.0 (55.6)	21.8 (34.6)	40.0 (55.6)	-
WBTLR	2.7 (2.7)	14.9 (12.5)	2.7 (3.9)	14.9 (15.7)	2.7 (3.9)	14.9 (15.7)	-
NBL	0.2 (0.5)	0.8 (2.4)	0.2 (0.5)	0.9 (0.8)	0.2 (0.5)	0.9 (0.8)	30
NBTR	22.1 (21.0)	27.0 (37.1)	26.1 (22.0)	28.7 (21.6)	26.1 (22.0)	28.7 (21.5)	-
SBL	0.1 (5.3)	0.3 (10.4)	0.5 (0.3)	1.0 (0.2)	0.5 (0.3)	1.0 (0.2)	30
SBTR	0.5 (92.8)	0.6 (100.6)	3.2 (4.1)	5.4 (3.4)	3.3 (4.3)	5.5 (3.6)	-
Hurontario Street / Park Street							
EBL	36.8 (36.3)	62.1 (62.6)	69.9 (66.5)	98.0 (93.3)	79.9 (73.8)	111.1 (103.0)	55
EBTR	6.3 (4.9)	16.7 (13.6)	4.7 (6.5)	14.1 (16.8)	4.7 (6.5)	14.1 (16.8)	-
WBL	3.1 (0.7)	8.9 (3.3)	3.3 (1.1)	9.9 (5.1)	3.4 (1.2)	9.9 (5.1)	60
WBTR	3.1 (7.0)	24.0 (24.0)	3.3 (24.8)	27.0 (52.1)	3.4 (25.3)	27.0 (52.1)	-
NBL	1.3 (2.2)	3.5 (10.1)	7.0 (12.7)	15.7 (37.4)	7.0 (12.6)	15.9 (37.4)	30
NBTR	68.5 (53.5)	77.2 (107.3)	107.9 (123.4)	135.3 (148.2)	107.9 (123.3)	135.2 (148.2)	0
SBL	23.8 (14.0)	36.0 (24.0)	35.7 (25.3)	54.0 (40.1)	35.7 (25.3)	54.0 (40.1)	30

Notes:
1. All values are in meters.

Appendix A December 2021 Transportation Study

17 and 19 Ann Street, 84 High Street and 90 High Street, City of Mississauga

Mixed Use Development

Urban Transportation Considerations

LICENSED PROFESSIONAL ENGINEER
11/07/2022
G. J. N. POULOS
100233764
PROVINCE OF ONTARIO

Prepared For: 10 West GO GP Inc.

Date: December 22, 2021

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1.0 INTRODUCTION

1.1 OVERVIEW

This Urban Transportation Considerations report has been prepared by BA Group on behalf of 10 West GO GP Inc. in support of an Official Plan Amendment and Rezoning application to permit the redevelopment of the block bounded by Hurontario Street, High Street East, Ann Street and Park Street East. The site is 6,611.94 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 Proposed Development would transform the block with the addition of a high-rise residential building, new public parkland and landscaped open space, at-grade retail/commercial space, and the retention of the two existing heritage buildings. The proposed 22-storey tower will be situated within the northwest corner of the site (municipal address of 17 and 19 Ann Street) and will accommodate approximately 359 residential units and approximately 309 square metres of commercial space at grade (herein referred to as “10 West” development). A total of 2,492 square metres of public parkland will be created through the redevelopment, including a 1,559 square metre park along Hurontario Street and a 934 square metre park oriented along High Street East. The proposed 4.5 level below-grade parking garage will accommodate 283 parking spaces for residents and visitors.

The two existing heritage buildings along the south half of the site will be retained as part of the redevelopment in their original location. 84 High Street is proposed to continue functioning as a 6-unit rental apartment building, and 90 High Street is envisioned to be used a commercial or office building.

1.2 EXISTING CONDITIONS AND SURROUNDING USES

The existing block consists of two residential detached dwelling units on the northwestern portion of the site, a 2,471 m^2 public park on the northeastern portion of the block, and two heritage buildings (84 and 90 High Street) along the southern portion of the site. The existing vehicular access to each respective building is provided separately via dedicated driveways.

The Site is located approximately 150 metres away from the Port Credit GO Station, and is within the boundaries of the Port Credit GO Mobility Hub. Within a 500 metre radius from the Site, there are a number of residential buildings, a senior’s residential building, the Port Credit Harbour Marina, parks, retail stores, restaurants, banks, and other commercial buildings.

The site location and context illustrated is illustrated in **Figure 1** and **Figure 2,** respectively.

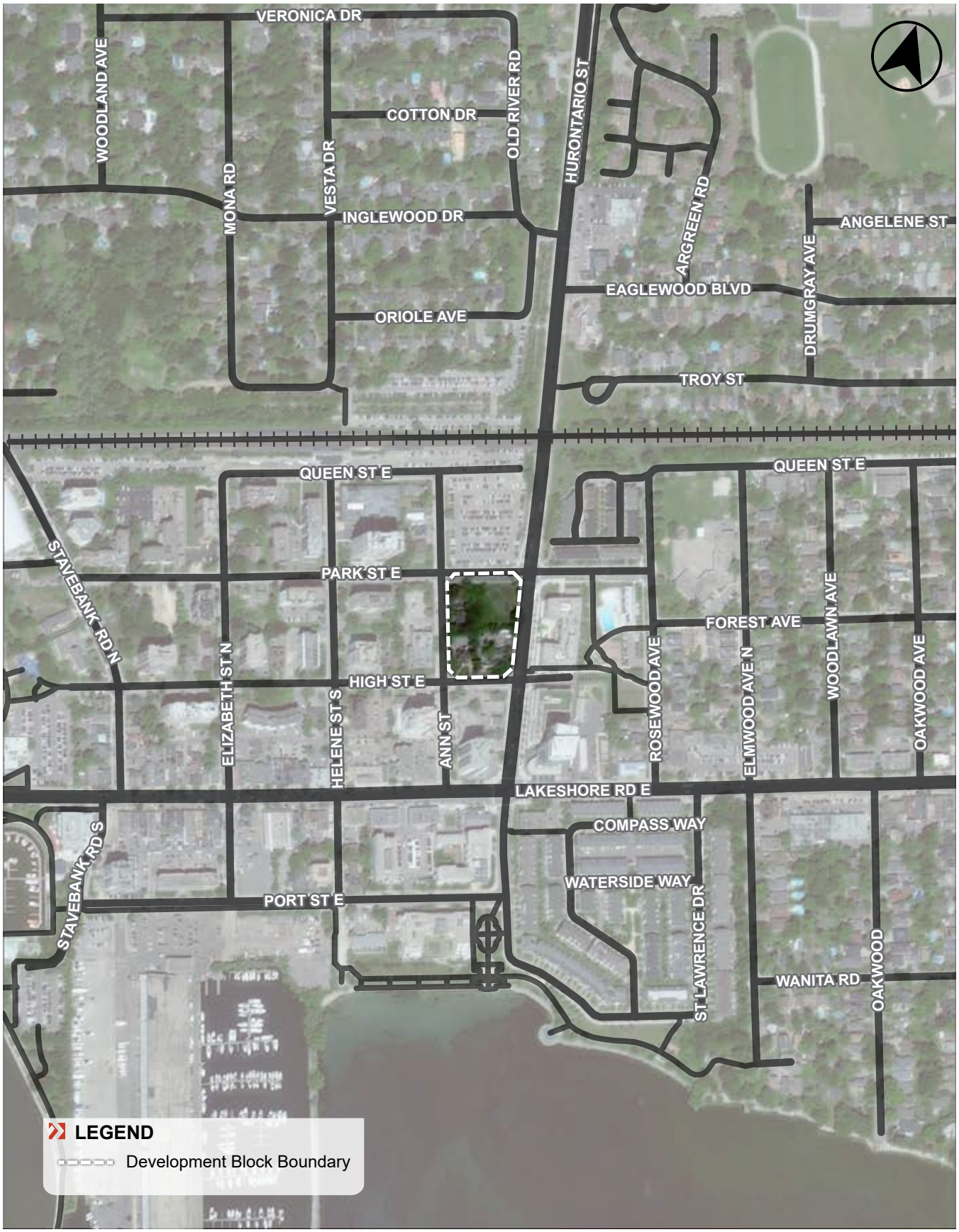

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FIGURE 1 SITE LOCATION

BA GROUP 7406-04 | 10 WEST, 84 HIGH STREET & 90 HIGH STREET | DECEMBER 2021

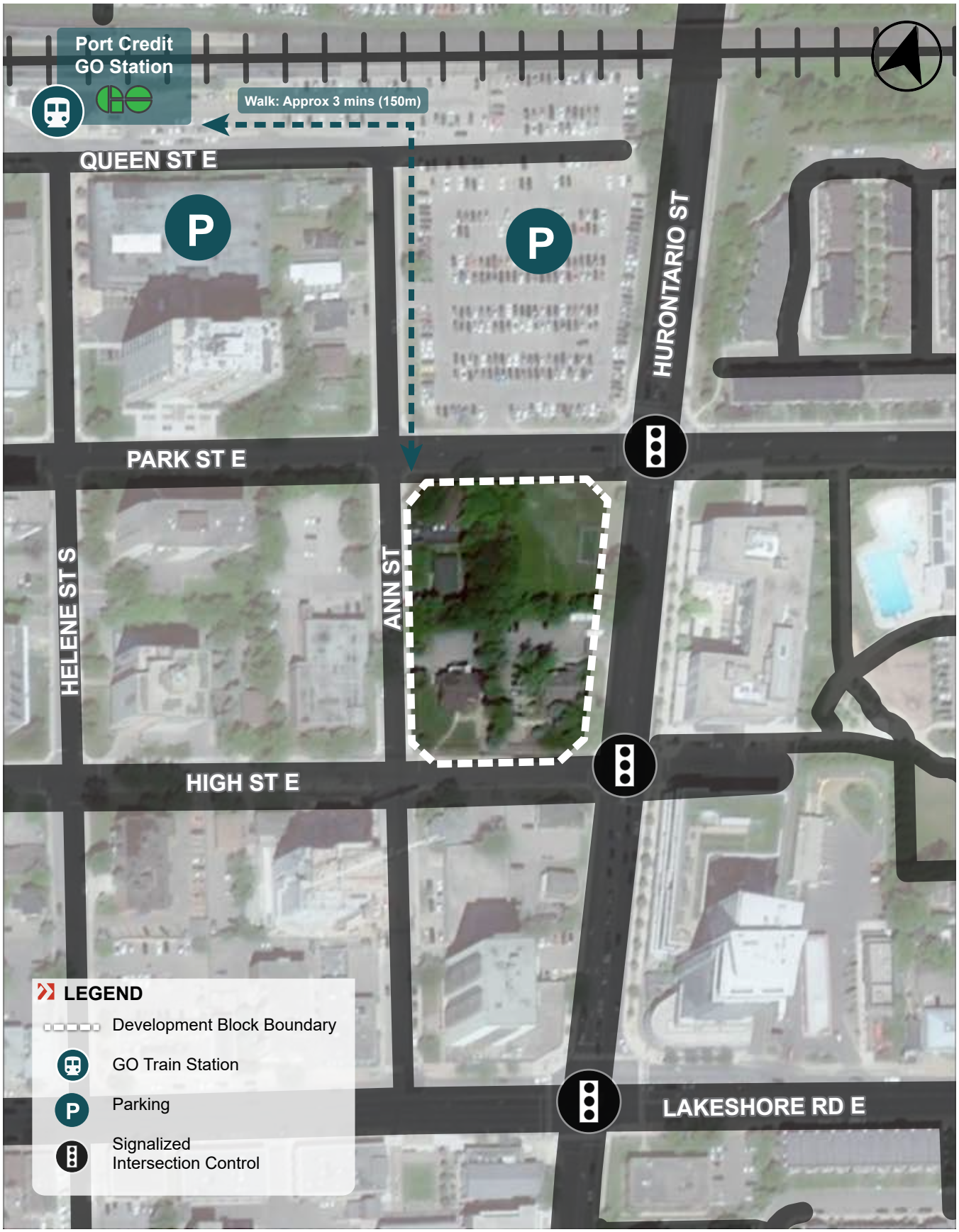

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FIGURE 2 SITE CONTEXT

BA GROUP 7406-04 | 10 WEST, 84 HIGH STREET & 90 HIGH STREET | DECEMBER 2021

1.3 PROPOSED DEVELOPMENT

The Proposed Development would transform the block with the addition of a high-rise residential building, new public parkland and landscaped open space, at-grade retail/commercial space, and the retention of the two existing heritage buildings. The proposed development plan contemplates the following:

- removal of the existing single family dwelling units located at 17 and 19 Ann Street to construct a new 22-storey mixed-use building comprised of 359 residential units and 309 m^2 of retail space ("10 West" development);
- retention of the existing heritage buildings 84 High Street (Parcel D) and 90 High Street (Parcel E);
- redevelopment of the surface parking lots adjacent to the existing 84 and 90 High Street to accommodate additional park space and the 10 West development (Parcel A); and
- reallocation of the existing City Parkland to form new north public park (Parcel B) that will extend from the northeastern end of the development block to the south end to form a new south public park (Parcel C) between the existing heritage homes.

Key elements of the development proposal are summarized in **Table 1**, the development block plan and parcels are illustrated in **Figure 3**. Reduced scale architectural plans are provided in **Appendix A**.

TABLE 1 DEVELOPMENT PROPOSAL SUMMARY

	Use		Development Proposal	
10 West (Parcel A)		Proposed Residential Units	One-bedroom	210 units
			Two-bedroom	149 units
			Total	**359 units**
		Proposed Retail	**309 m² GFA**	
		Vehicular, Bicycle and Loading Supply		
		283 parking spaces	Resident	233 spaces
			Non-Residential	36 spaces
			Off-Site (84 & 90 High Street)	14 spaces
		287 bicycle parking spaces	Residential Long Term	252 spaces
			Non-Residential Short Term	35 spaces
		2 loading spaces	1 Formal and 1 Informal Loading Space	
84 High Street (Parcel D)		Existing Residential Building	6 residential units (to be maintained)	
		7 parking spaces (within the 10 West parking garage)	Resident	6 spaces
			Non-Residential	1 space
90 High Street (Parcel E)		Existing Residential Building	To be converted to commercial / office uses (~340 m² GFA)	
		7 parking spaces (within the 10 West parking garage)		

Notes:
1. Site stats based on architectural plans provided by Core Architects Inc., dated December 17, 2021.
2. Floor area for 90 High Street is approximate.

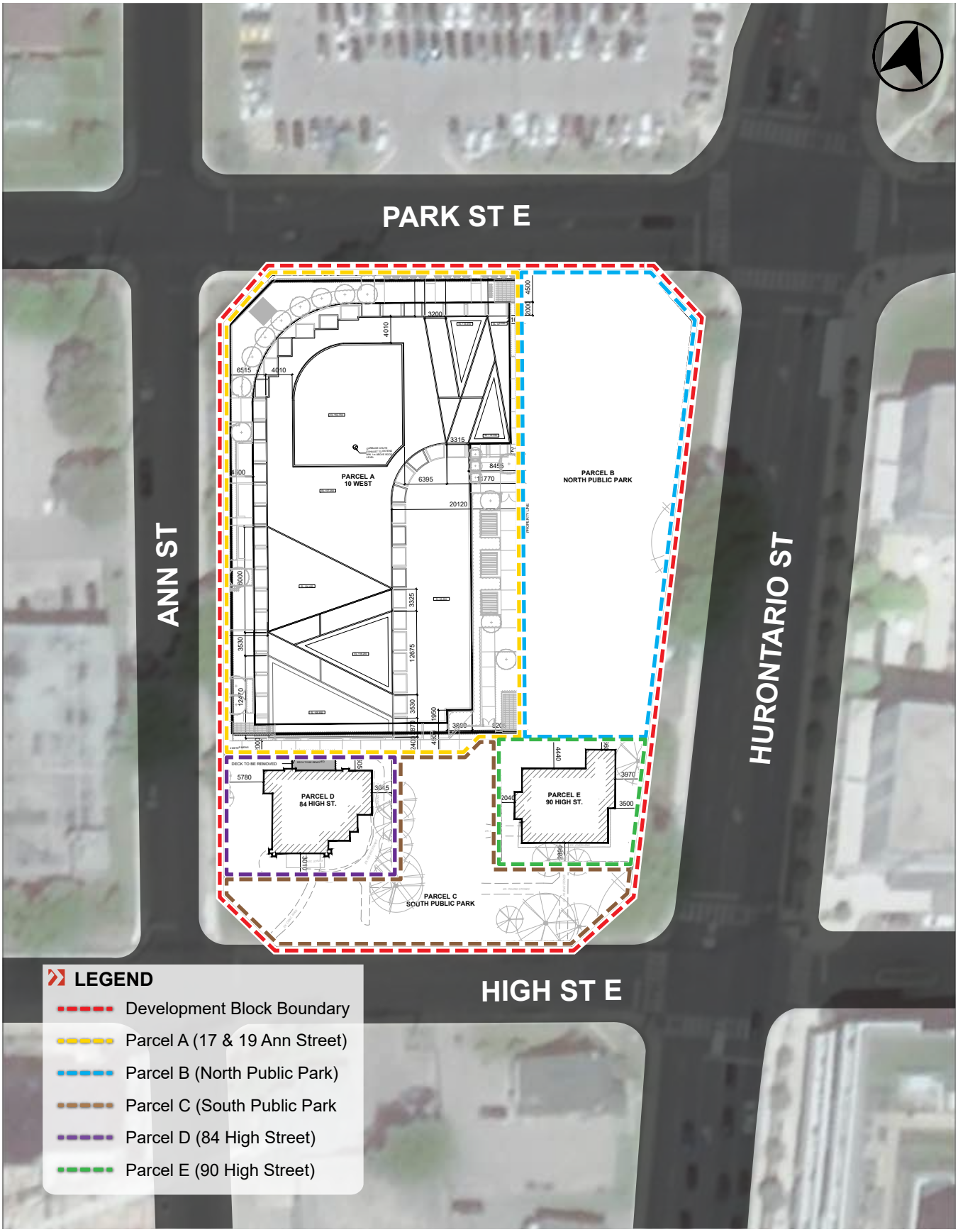

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FIGURE 3 DEVELOPMENT BLOCK PLAN

1.3.1 Vehicular Site Access

A 4.5-level below-grade parking garage is proposed within the 10 West residential development. A total of 283 parking spaces are proposed including 233 resident spaces and 36 residential visitor spaces for the 10 West development, 7 spaces reserved for each of the existing 84 and 90 High Street heritage buildings.

Vehicular access to the 10 West below-grade parking and at-grade loading facility is proposed within a consolidated driveway off of Ann Street.

Pick-up, drop-off and front-door delivery activity for the building will be accommodated informally along Ann Street.

Two (2) loading spaces are proposed within a central consolidated loading facility, accessed from Ann Street, to accommodate the proposed 10 West retail and residential refuse, recycling and organic collection as well as delivery/moving activities. One (1) formal loading space, consistent with the requirements set out in the Mississauga Zoning By-law, and one (1) proposed smaller loading space (deficient by 1.0 m in length), that can accommodate a range of smaller delivery vehicles (i.e. step vans and cube vans). The proposed loading arrangement does not consider the retained heritage buildings at 84 and 90 High Street, as they do not form part of the proposed condominium and therefore will not share the loading spaces. Refuse / recycling collection for the existing 84 and 90 High Street buildings will continue to occur as curbside pickup.

1.3.2 Bicycle Access

Short-term visitor bicycle parking for the 10 West development (residential and retail uses) will be provided at grade and long-term resident bicycle parking will be provided on the P1 level of the parking garage, accessed via the site driveway and parking ramp.

1.4 THIS STUDY

This report provides an assessment of the transportation related aspects of the proposed mixed-use development. The study includes the following:

- A description of the existing transportation context of the site including vehicular, transit, cycling and pedestrian accessibility;
- A description of future transportation related changes / improvements to the area context (i.e. transit improvements, other non-automobile dependent travel options, etc.);
- a review of vehicle parking, bicycle parking and loading requirements specified by the applicable Zoning By-law;
- a review of the functionality and suitability of the proposed vehicular facilities incorporated into the development block plan including loading operations;
- Assessment of the existing traffic activity patterns and volumes in the study area during the key weekday morning and afternoon peak periods;
- a review of potential traffic growth in the area including a number of background development projects and general corridor traffic growth;
- an assessment of the trip generation characteristics of the proposed development, and

- a review of weekday peak hour traffic operations under existing, future background and future total traffic conditions at the following intersections:
    - Hurontario Street / Lakeshore Road East;
    - Hurontario Street / High Street East;
    - Hurontario Street / Park Street East;
    - Ann Street / Lakeshore Road East;
    - Ann Street / High Street East;
    - Ann Street / Park Street East; and
    - Ann Street / Site Access.

2.0 PLANNING AND POLICY CONTEXT

Urban transportation policies from the provincial, regional, municipal, and local levels have been identified, and the key transportation-related elements are summarized below.

2.1.1 Provincial Policies

The **Provincial Policy Statement** (PPS) is issued under the authority of Section 3 of the Planning Act. With respect to transportation systems, Part V of the PPS, through the Policies in Section 1.6.7, promote maintaining and improving connectivity within and among transportation systems and modes (1.6.7.3) as well as a land use pattern, density and mix of uses that minimize the length and number of vehicle trips and support current and future use of transit and active transportation (1.6.7.4). The proposed density, integration of residential and retail uses and reduced parking standards for the Site support this policy direction.

The **Growth Plan for the Greater Golden Horseshoe** (2006, updated in 2017) provides a framework for implementing the Government of Ontario's vision for building stronger, prosperous communities within the Greater Golden Horseshoe area. The Plan supports a transportation system that exhibits connectivity amongst modes, a balance of modal choices for users of the system with priority given to walking, cycling, transit and, sustainability (i.e., economical and environmentally appropriate). Furthermore, the Growth Plan directs municipalities to adopt Transportation Demand Management policies aimed to reduce trip distance and time and increase modal share to alternatives other than the automobile.

The proposed development fulfills a number of transportation related policy directions, by intensifying land use along a major transit corridor and mixing commercial and residential land uses to permit and encourage the uptake of active transportation options and ensure the viability of planned transit.

The **Metrolinx 2041 Regional Transportation Plan** (RTP), an update to The Big Move (2008), specifies a series of planned higher order public transit projects, including the Hurontario LRT. A key strategy of the plan is the integration of transit and land use by focusing development at mobility hubs and major transit station areas. The RTP identifies the Port Credit GO Station (including the Site area) as a Mobility Hub and additional framework was developed to help guide development in these areas (see below for information on the Mobility Hub Guidelines). The RTP also speaks to embedding TDM strategies in land use planning and development to prioritize cycling, walking and transit use and encourages best practices in parking management, such as reducing minimum parking standards especially for developments near transit stations.

The **Metrolinx Mobility Hub Guidelines (2011 & currently under review)** built on the strategy of the RTP and provide a framework to help plan development at mobility hubs across the GTHA, ensuring that these areas surrounding key transit stations support more intense development and accommodate strong pedestrian, cycling, and transit facilities. In conjunction with improving non-vehicular transportation infrastructure, the Guideline recommends minimizing auto-use through the implementation of parking maximums to limit excess parking supply and suggests reviewing and possibly removing minimum parking standards in areas that have high accessibility to rapid transit stations.

The proposed parking reduction for the development is consistent with Metrolinx's policies for Site's located within a mobility hub and in close proximity to high order transit.

2.1.2 Region of Peel Official Plan

The **Region of Peel Official Plan (OP)** provides coordinated planning in the Peel region through long-term policies with an intention of promoting sustainable forms of transportation. Regional policies include Regional Intensification Corridors, which promote the development of urban areas within the region that support sustainable development through efficient use of land, densities supportive of transit and pedestrian mobility, and complete urban communities containing living, working and recreational opportunities. Regional Intensification Corridors are characterized by the following:

- Urban Growth Centres linked by public transit;
- High intensity, compact urban form with an appropriate mix of uses;
- Transit-supportive and pedestrian-oriented urban forms; and
- Opportunities for higher order transit.

The proposed development is in line with the type of corridor listed above.

2.1.3 Municipal Policies

The **City of Mississauga Official Plan (OP)** contains direction and policies which link land use and transportation stressing multi-modal accessibility to support the daily needs of residents and businesses. The Official Plan puts an emphasis on directing growth towards higher order transit such as Hurontario Street and also identifies Port Credit Community Node as an Intensification Area. Policies in the Official Plan set out development criteria for Intensification Areas. Among these are provisions for promoting multi-modal transportation and avoiding excessive car-traffic on the road system within the intensification area. The Site is located within the Intensification Area and adjacent to Hurontario Street and, as such, the policies related to transportation provide relevant guidance for the development of the site. The development proposes a reduced parking rate which is supportive of the City of Mississauga OP's vision.

The **Mississauga Transportation Master Plan (TMP)** is guided by the vision that everyone and everything will have the freedom to move safely, easily, and efficiently to anywhere at any time. The TMP outlines opportunities to re-think transportation priorities, manage public right-of-ways, smart management of traffic and parking, and invest in walking, cycling and transit infrastructure. Key actions of the plan include:

- The creation of Complete Street design guidelines;
- Updating engineering design standards to prioritize the safety of vulnerable road users and remove barriers to accessibility;
- Update City-wide parking provisions policies in line with the Parking Matters study recommendations (discussed below);
- Develop TDM requirements for new developments
- Identify and address gaps in the pedestrian network;
- Complete a comprehensive review of the City's long-term transit network;
- Expand the bicycle parking supply city-wide, in line with the Cycling Master Plan; and
- Establish implementation program for long term Cycling Network, following the Cycling Master Plan.

The site is located in a Community Node, which the TMP identifies as a focal point for more intense mixed use development, decreasing auto dependency and improving transit, cycling, and pedestrian networks. The

proposed development, which includes compact urban form, reduced parking rates, bicycle parking and other TDM measures is in line with the TMP's vision for a Community Node.

Parking Matters: Parking Master Plan and Implementation Strategy is an ongoing study to review and update the City's Zoning By-law parking requirements. Preliminary recommendations were presented to the Planning and Development Committee in September 2021, and feedback was consolidated to prepare additional recommendations which were presented on December 6, 2021. Staff will continue to consult and collect feedback on these directions, with the aim to bring a Recommendation Report with the final directions and two final draft ZBAs to Planning and Development Committee for consideration in early 2022.

The study recommends establishing parking precinct to ensure parking rates are tailored to the local context. The proposed development is located within Precinct 1, which has been identified to have the highest current and future level of transit service. As such, sites within Precinct 1 have a goal of establishing the lowest parking requirements (for residential and non-residential uses), highest level of parking management strategies, and consideration of parking maximums for most land uses. The recommended residential and non-residential parking rates for Precinct 1 identified at the December 6, 2021 community meeting were as follows:

Residential:

- Apartment Condominium — 0.80 spaces / unit
- Residential Visitor — 0.15 spaces / unit

Non-Residential:

- Medical Office — 3.8 spaces / 100 sm GFA
- Office — 2 spaces / 100 sm GFA
- Restaurant >220 sm — 6 spaces / 100 sm GFA
- Retail Store, Service Establishment, Take-out Restaurant, Convenience Restaurant and Restaurant <220 sm, Financial Institution — 3 spaces / 100 sm GFA

2.1.4 Local Area Planning Policy Update

The Port Credit Local Area Plan outlines a vision for the Port Credit area that includes a mix of uses and building densities, directing growth to support transit, supporting active modes of travel and a significant public realm. The Site is located within the Community Node Area which is intended to be the focal point for the surrounding neighbourhood and contain many of the attributes of a complete community (compact walkable urban form, range of housing options and land uses, access to community amenities). Emphasis is placed on the development of a multi-modal transportation system within Port Credit to serve all users, particularly to support the existing and planned public transit infrastructure in the area (see **Section 3.3**).

Site 12 as designated by Section 13.1.12 of the Mississauga OP – Local Area Plan

The Port Credit Local Area Plan designates the north portion of the Site as Special Site 12 and contains further development directives. Examples of transportation-related directives include:

- Demonstrating how transit use, pedestrian circulation, cycling, car and bike sharing, car-pooling, shared parking and other travel demand management measures will be achieved.
- Reduced, transit supportive parking standards are encouraged for future development within the Port Credit GO Station Southeast Area.

The proposed development is consistent with many of these transportation-related directives, including reduced transit supportive parking standards and the provision of a series of TDM measures to promote alternative modes of travel.

Port Credit GO Station Southeast Area Master Plan Study (2015) was prepared to support the City of Mississauga's OP and the Port Credit Local Area Plan policy requirements (Special Site 12) and provides direction on development (land use built form, transportation). The Master Plan supports a variety of non-vehicular transportation modes and encourages reduced transit-supportive parking standards for lands within the Port Credit GO Station Southeast Area.

3.0 AREA TRANSPORTATION CONTEXT

3.1 AREA TRAVEL CHARACTERISTICS

BA Group has reviewed prevailing travel characteristics within the vicinity of the proposed redevelopment using a query of the Transportation Tomorrow Survey (TTS) database. For this assessment, travel data pertaining to residential uses within 2006 TTS zones 3642, 3877, and 3878.

Table 2 summarizes existing mode split information within the study area.

TABLE 2 EXISTING AREA TRAVEL MODE SPLIT

Mode	Weekday Morning Peak Split	Weekday Afternoon Peak Split
Auto Driver	70%	67%
Auto Passenger	12%	10%
Transit	14%	15%
Cycle	0%	0%
Walk	4%	8%
Total	**100%**	**100%**

Notes:
1. Based upon 2016 TTS query of home-based trips to/from TTS 2006 Zones 3642, 3877, and 3878 during the weekday morning and afternoon peak periods (6:00 a.m. to 9:00 a.m. and 3:00 p.m. to 6:00 p.m.).
2. Weekday morning and afternoon peak splits are based on data collected for the peak direction of travel (i.e. outbound in the morning, inbound in the afternoon).

Based on an analysis of the TTS data, travel to/from residential neighborhoods in the vicinity of the site are undertaken via a balance of modes with automobile trips (i.e., auto driver and passenger) accounting for approximately 80%, transit trips for approximately 15%, and active modes (i.e. walking and cycling) for 4-8% of peak hour trips.

3.2 EXISTING ROAD NETWORK

The existing road classification system is illustrated in **Figure 4** and a description of the road network within the Site environs is provided in **Table 3**. The area road configuration and traffic control is illustrated in **Figure 5.**

TABLE 3 EXISTING ROAD NETWORK

Type		Road Name	Extents	Right-of-Way and Parking Restrictions	Speed Limit
Major Arterial	North-South	Hurontario Street	Lakeshore Road (Mississauga) in the south and Steeles Avenue East (Brampton) in the north.	In the vicinity of the site, a 4-lane cross section (2 lanes in each direction), with auxiliary lanes for left-turns and right-turns. There is no parking permitted at any time.	Posted: 50 km/h
Major Arterial	East-West	Lakeshore Road West	The border of Oakville in the west and the border of Toronto in the east.	In the vicinity of the site, a 4-lane cross section (2 lanes in each direction), with auxiliary lanes for left-turns and right-turns at major intersections. Street parking is provided on both sides of the street in the vicinity of the site.	Posted: 50 km/h
Minor Collector	North-South	Ann Street	Lakeshore Road in the south and Queen Street East in the north.	In the vicinity of the site, a 2-lane cross section (1 lane in each direction). There is no parking permitted at any time on the east side of the street, and paid parking is enforced with a 3 hour daily maximum along the west side of the street Monday-Saturday from 10am to 9pm and Sundays from 10am to 6pm.	Assumed: 40 km/h
Local	East-West	Park Street East	Stavebank Road in the west and Rosewood Avenue in the east.	In the vicinity of the site, a 2-lane cross section (1 lane in each direction). There is no parking permitted at any time.	Assumed: 40 km/h
Local	East-West	High Street East	Stavebank Road in the west and Lakeshore Road East in the east.	In the vicinity of the site, a 2-lane cross section (1 lane in each direction). Trucks are restricted from entering this street. There is no parking permitted at any time.	Assumed: 40 km/h

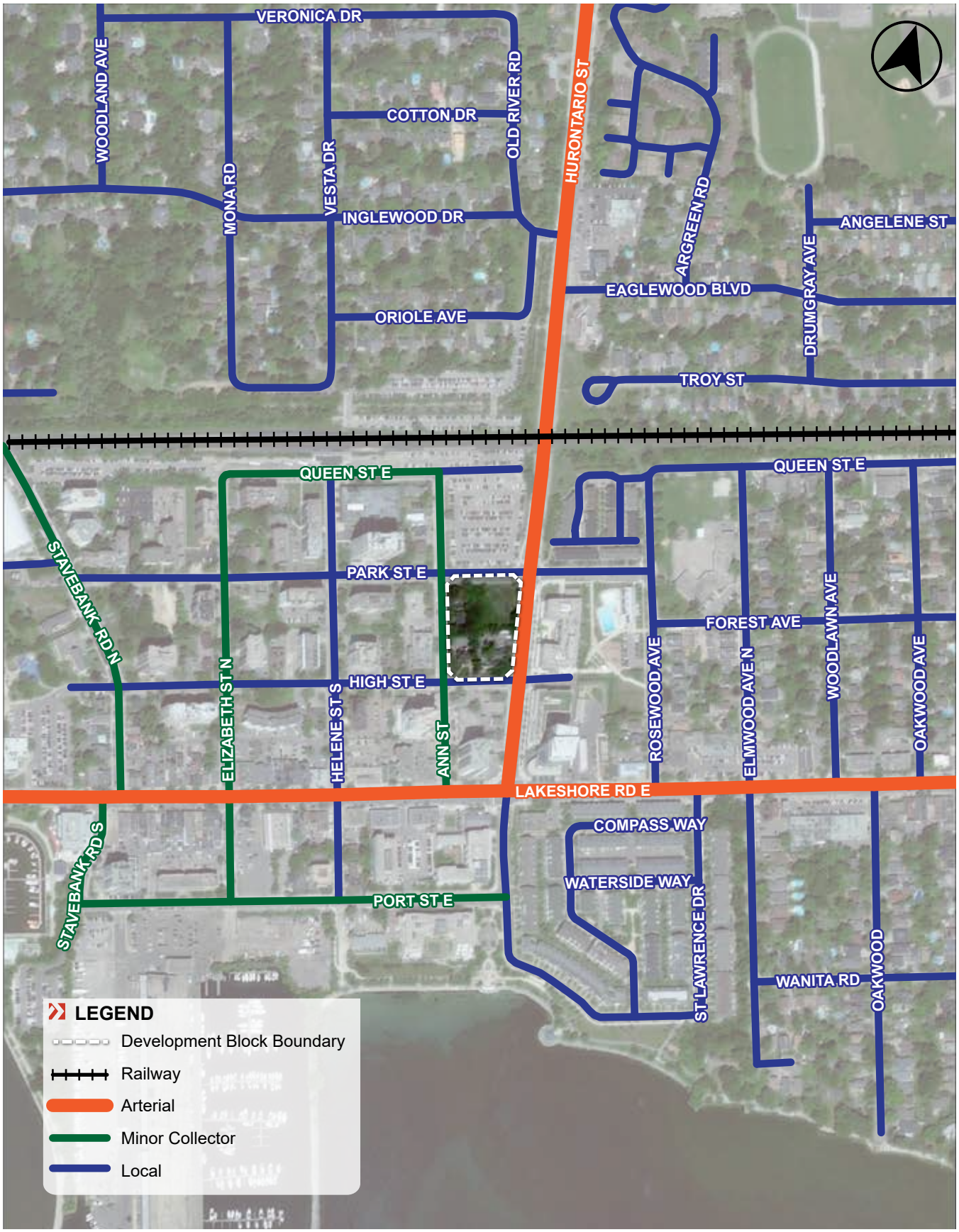

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FIGURE 4 EXISTING STREET NETWORK

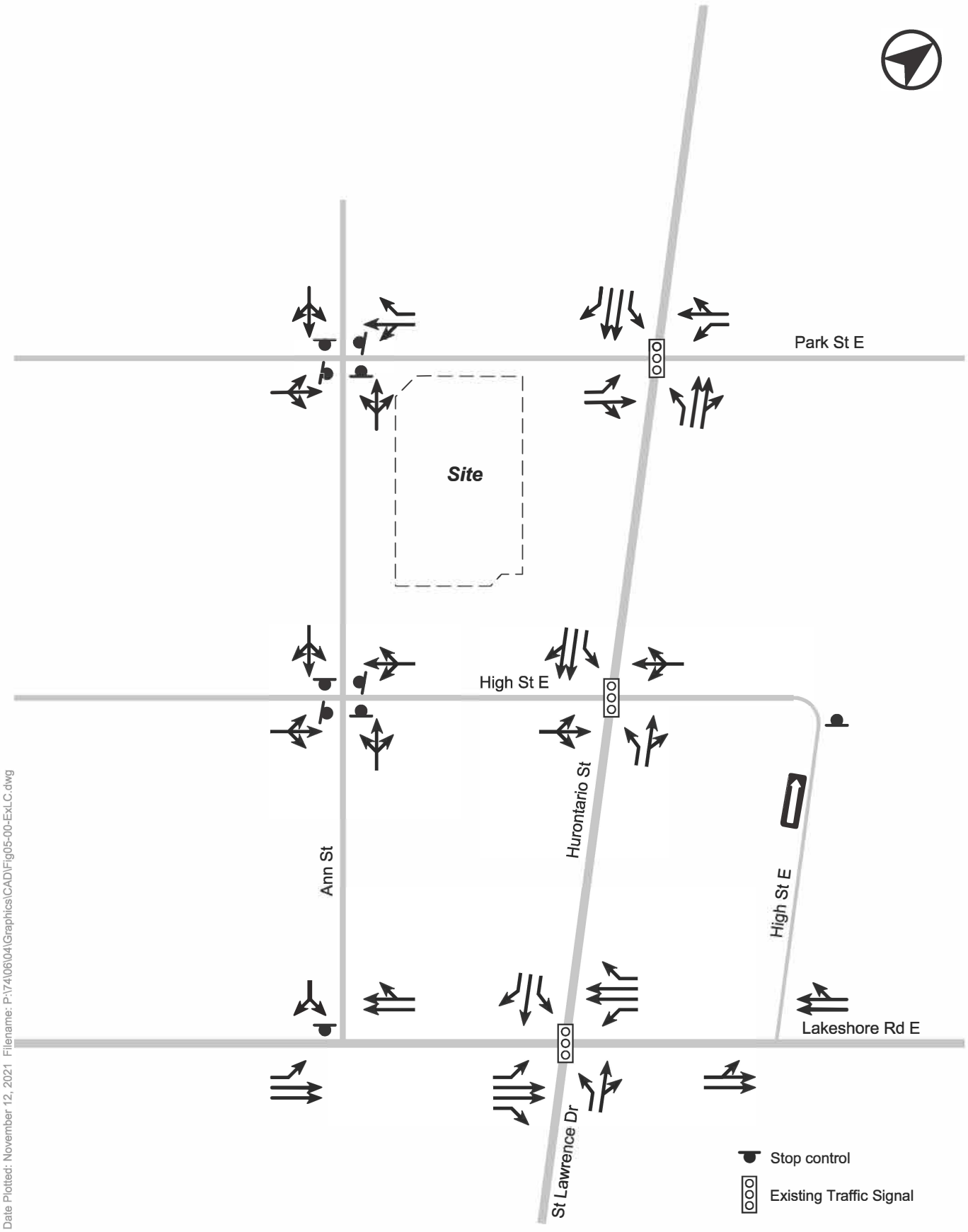


FIGURE 5 EXISTING LANE CONFIGURATION AND TRAFFIC CONTROL

3.3 AREA TRANSIT NETWORK

3.3.1 Existing Transit Context

The Site is located in close proximity to the Port Credit GO Station and is well served by a number of frequent bus routes that provide transit connections to various regional and local rapid transit lines, as well as retail, employment, and education areas within the GTHA.

3.3.1.1 GO Transit

Port Credit GO Transit station, on the Lakeshore West GO rail line, is located approximately 150 metres from the northern boundary of the site. The Lakeshore West GO line runs from Union Station in downtown Toronto to Hamilton with some routes extending further into St. Catharines and Niagara Falls (see **Figure 6**). This route includes key destinations across Hamilton, Burlington, Oakville, Mississauga, and Toronto and provides connections to major transit lines provided by HSR, Burlington Transit, Oakville Transit, TTC, and MiWay. As part of Metrolinx's GO Expansion Program, the Lakeshore West line offers 15-minute two-way all-day service.

Port Credit GO Station currently has 936 parking spaces comprising free, car-pool only and rented spaces. Metrolinx has been engaged in a master planning exercise for redevelopment plans for the southeast station area, through which the addition of residential and non-residential development is proposed.

FIGURE 6: METROLINX GO TRANSIT TRAIN SYSTEM MAP

3.3.1.2 MiWay

MiWay is the City of Mississauga's municipal transit provider. The site is well served today by several Mississauga Transit (MiWay) routes in the vicinity of the site, many of which connect to the Lakeshore West GO train line. A transit stop is located adjacent to the site (Ann Street at Park Street) which is serviced by multiple bus routes (2, 8, 14, and 23). Another transit stop, located on the eastern side of the development block, at Hurontario Street and Park Street, is serviced by bus routes 2,8, and 335.

The existing area transit context is illustrated in **Figure 8** and summarized in **Table 4**.

TABLE 4 AREA TRANSIT ROUTES

Transit Route	Nearest Transit Stop	Description
GO Transit		
Lakeshore West GO	Port Credit GO Station (150 m from Subject Site, 3 min. walk)	West Harbour GO Station and Hamilton GO Centre (Hamilton, Ontario) are the western terminals, with an eastern terminal at Union Station. Headways during weekday peak periods are 15 minutes, during off peak periods they are 30 minutes.
MiWay		
2 Hurontario	Ann Street / Park Street (adjacent to Subject Site)	This bus route primarily runs north-south along Hurontario Street, between Port Credit GO Station and the City Centre Transit Terminal at Square One. Headways during peak hours are 10 minutes.
8 Cawthra	Ann Street / Park Street (adjacent to Subject Site)	This bus route primarily runs north-south along Cawthra Road, between Port Credit GO Station and the City Centre Transit Terminal at Square One. Headways during peak hours are 15-20 minutes.
14 Lorne Park	Ann Street / Park Street (adjacent to Subject Site)	This bus route runs primarily east west between Clarkson GO Station and Port Credit GO Station predominantly via Mississauga Road and Indian Road with a peak period headway of 30-40 minutes.
23 Lakeshore	Ann Street / Park Street (adjacent to Subject Site)	This bus route runs primarily east-west extending between Clarkson GO Transit station to the west and Long Branch GO Transit Station to the east via Port Credit GO Transit Station with peak period headways of 11-17 minutes.
335 Glenforest South	Hurontario Street / Park Street (60 m from Subject Site, 1 min. walk)	This bus route operates on weekdays only during the school term time between several high schools to the east and Clarkson GO Transit station to the west. This service operates westbound only during the afternoon school run.

3.3.2 Planned Transit Improvements

3.3.2.1 MiWay Five-Year Transit Service Plan

The **MiWay Five Year Transit Service Plan (2021-2025)** is intended to help refine and guide the expansion of the City's transit network by improving connectivity and delivering services that are fast, efficient and easy to use. While the MiWay Five Year Transit Service Plan is near completion, it was put on hold due to COVID-19 business impacts. While specific improvements have not been confirmed, the plan is guided by four key principles to build on the changes made over the previous 5 year service plan. The key principles are described below:

1. **Public Feedback:** integrating stakeholder and public input to help shape future transit services.

2. **Transportation Initiatives in the Community**: Respond to upcoming changes such as:
    - Opening of the new Kipling Bus Terminal,
    - Construction of the Hurontario LRT with anticipated completion in the fall of 2024,
    - GO Transit service improvements, and
    - The development of Pearson Airport as a major transit hub.

3. **Examination of New Transportation Options**: evaluating how new transportation services, such as private rideshare companies, can be integrated and how they will impact future transit services.

4. **Supporting Growth**: ensuring that future transit services effectively plan for and respond to new policy initiatives, such as the Housing Strategy, Dundas Connects Master Plan, Transportation Master Plan, and Climate Change Project.

These improvements are anticipated to increase the transit mode share and provide an alternative mode of transportation across the City of Mississauga as well as greater connectivity to neighbouring municipalities. Within the site vicinity, the construction of the Hurontario LRT (which terminates at the Port Credit GO Station) and GO Transit service improvements will significantly enhance the area's transit accessibility.

3.3.2.2 Metrolinx Regional Transit Plan

As discussed in **Section 2.1.1**, Metrolinx's RTP outlines several transit improvement programs within the site vicinity which will further enhance the area's transit access and will provide excellent and efficient access between Port Credit and Downtown Mississauga and other areas in the GTHA. Key improvements include the Hurontario-Main Light Rail Transit and higher-order transit along Lakeshore Road, discussed in detail below.

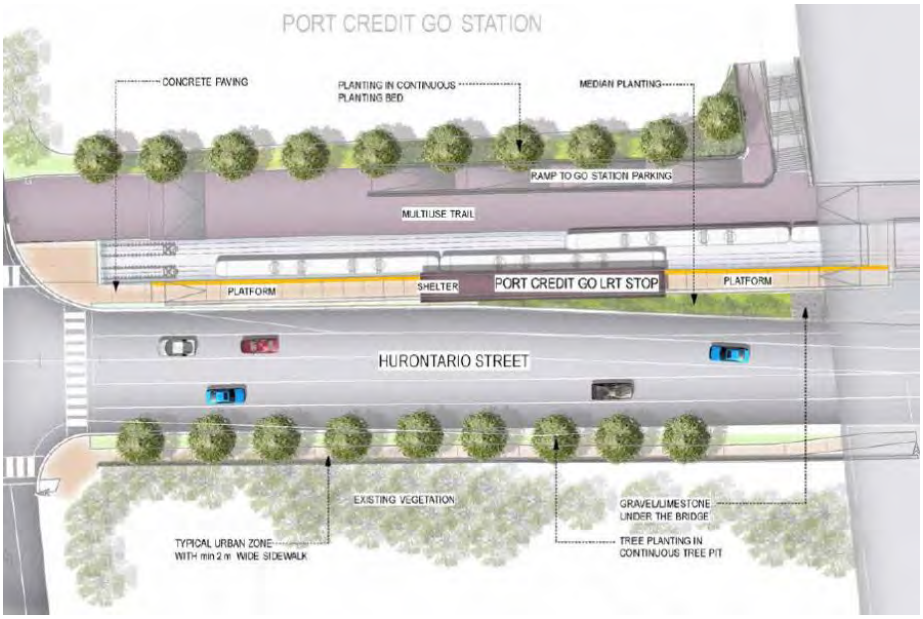
Hurontario-Main Light Rail Transit

The Hurontario-Main Light Rail Transit (The Hurontario LRT) will be the most significant transit improvement to the proposed development site area. A new LRT line will be provided along the Hurontario Street corridor connecting Brampton's Gateway Terminal in the north and Port Credit GO Station in the south. The Hurontario LRT will run generally at grade in a segregated lane, separate from other road traffic and will use grade-separated crossings at rail lines and highways as required.

The Hurontario LRT is planned to open in 2024, and will add 18 kilometres of higher-order transit and 19 stops along the Hurontario corridor, starting from Brampton Gateway Terminal extending southwards to the

Port Credit GO Station, with connections to the Milton GO Line at Cooksville GO Station and the Lakeshore West GO Line at Port Credit GO Station. The Hurontario LRT Port Credit Alignment and Stop at Hurontario Street and Park Street, as illustrated in Metrolinx's 2014 Environmental Project Report (Appendix A.2), is shown in **Figure 7**.

FIGURE 7: PLANNED HURONTARIO LRT ALIGNMENT AND PORT CREDIT LRT STOP



As the Site is located approximately 100 metres from the planned Port Credit LRT Stop, the Site is afforded rapid transit connections through Hurontario Street, connecting to a number of MiWay bus lines and providing convenient access to employment, school, and retail options throughout the City.

The *Hurontario LRT Benefits Case Analysis*, prepared by Steer Davies Gleave (March 2016), considers the impact of the LRT line from a travel mode share perspective. The forecast for future transit mode share along the Hurontario – Main corridor anticipates a substantial shift in mode share from 24% to 49% with the introduction of the LRT, approximately doubling the transit mode share along the corridor. Applying the same percentage shift in mode split to the site's existing transit mode split results in an increase from 14% to 29%.

Lakeshore Road Rapid Transit

Future rapid transit is being planned for Lakeshore Road between the Long Branch GO Station and Mississauga Road with a planned stop at Hurontario Street approximately 200 metres or a 3 minute walk from the Site. The planned rapid transit service along Lakeshore Road will provide frequent and reliable connections to TTC lines at Long Branch GO Station, providing additional transit options to / from the City of Toronto. While the redesign of Lakeshore road has not been finalized, the preferred ROW includes separated cycle tracks on either side of Lakeshore Road East, providing safe cycling connections to the future rapid transit route.

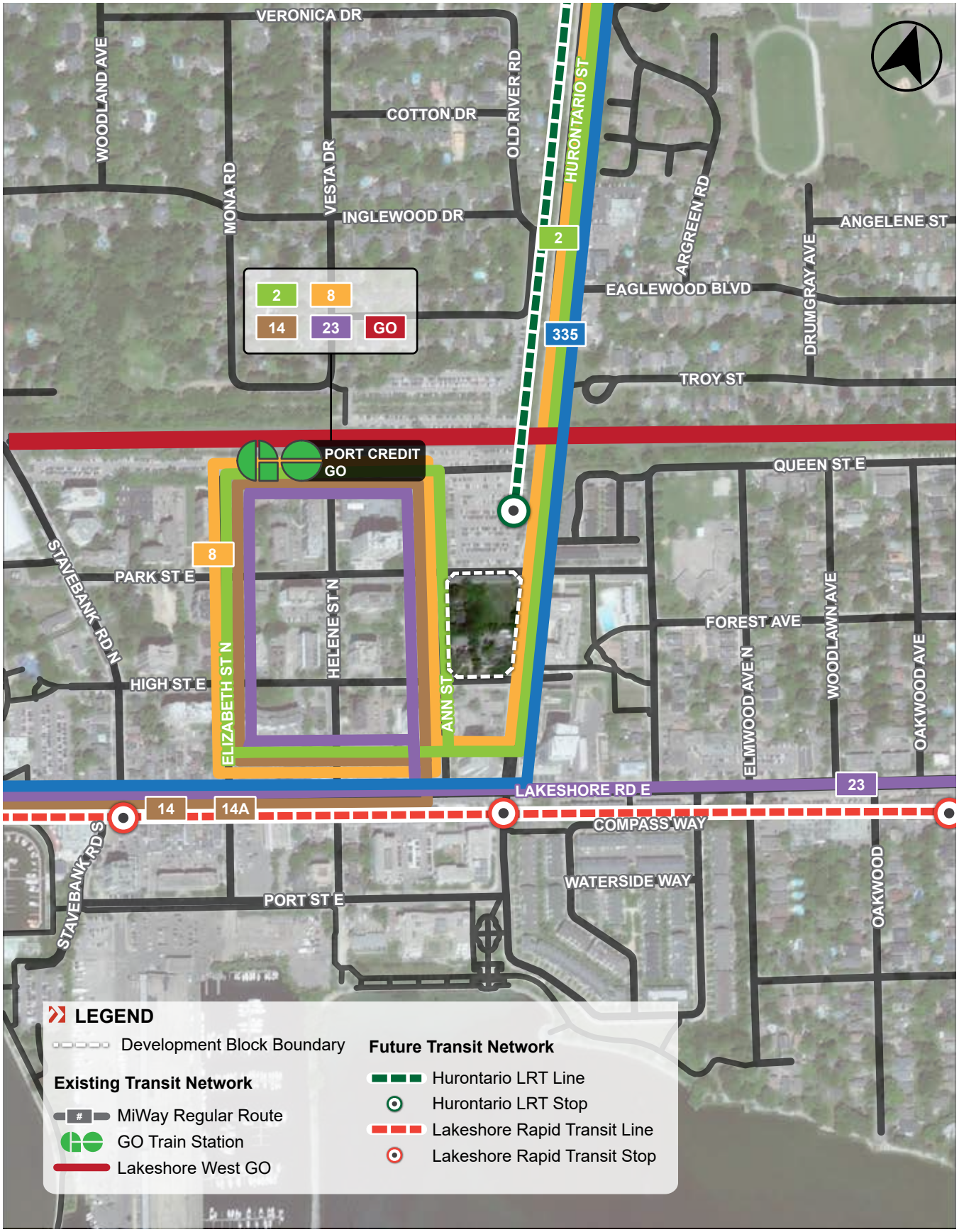


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FIGURE 8 EXISTING AND FUTURE TRANSIT CONTEXT

3.4 CYCLING CONTEXT

3.4.1 Existing Cycling Context

Under existing conditions, there is limited dedicated cycling infrastructure in place within Port Credit.

Existing cycling facilities run along the Mississauga Waterfront Trail and along a limited portion of Hurontario Street (north of the Port Credit GO Station), largely in the form of off-road multi-use paths. In the Port Credit area, the multi-use path and connecting links also make up part of the Great Lakes Waterfront Trail that (within its Mississauga section) runs along the north shore of Lake Ontario.

Cycling from the Site to Port Credit GO Station would take one minute or less, and approximately 2-3 minutes to travel southbound and connect to the waterfront trail.

3.4.2 Future Cycling Context

There are plans, both at the municipal level and as part of the Port Credit Mobility Hub strategy, to considerably improve and enhance the formal cycling facilities provided within Port Credit to provide safe and convenient linkages for cyclists and encourage non-automobile travel.

The City of Mississauga's Cycling Master Plan, supported by the City's recently released Transportation Master Plan and the Lakeshore Road Transportation Master Plan, includes a number of improvements to the area's cycling network including:

- A cycle track lane Lakeshore Road; and
- A cycle track / bike lane / multi-use trail along Hurontario Street.

These new north-south and east-west routes will substantially improve the area's cycling context and provide greater connections to the City's wider cycling network.

The area's existing and proposed cycling context is illustrated in **Figure 9.**

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FIGURE 9 ACTIVE TRANSPORTATION CONTEXT

3.5 PEDESTRIAN CONTEXT

The location of the site provides for a strong pedestrian-oriented environment that encourages the use of non-automobile modes of travel. The site vicinity is served by a combination of road types (arterial, collector, and local) where pedestrian sidewalks are provided.

Surrounding Area

The Site is located in Port Credit, a tourist destination in Mississauga, and as such the area is subject to high pedestrian activity. This is true at all times of the day and week given the presence of a variety of land uses including residential, office, retail, parks, entertainment venues, community centres, watersport clubs, and the Port Credit GO Station.

Pedestrian Crossings

In the immediate area surrounding the Subject Site, there are two signalized intersections with marked pedestrian crossings, adequately facilitating pedestrian movement in a safe manner. The other two intersections surrounding the Site are unsignalized without pedestrian crossings, however each corner is constructed with a depressed curb and tactile paving strips.

Sidewalks

All bordering streets – Park Street East, Hurontario Street, High Street East, and Ann Street – have continuous sidewalks on both sides of the roadway. The sidewalks bordering the site are approximately 1.8 to 2 metres wide.

Waterfront Trail

The Waterfront Trail provides a series of pedestrian connections along Lake Ontario. In the Mississauga segment of the Waterfront Trail, the surrounding area is accompanied by gazebos, benches, parks, restaurants, marinas, and even historic landmarks (such as the Port Credit Lighthouse). Overall, the trail offers a scenic pedestrian environment that connects visitors and residents of the Site to a wide variety of amenities in the surrounding area.

4.0 TRANSPORTATION DEMAND MANAGEMENT

A central element of the transportation strategy for the Master Plan will be the adoption of a sustainable transportation demand management (TDM) Plan for the project that will attempt to influence the way people travel to and from the site through a comprehensive suite of TDM strategies.

These measures will include the application of various site design elements, alternative transportation offerings, property management, and operational policies, each of which have the goal of redistributing and reducing the travel demand of the project. Specifically, the primary goal is to reduce the overall reliance on single-occupant vehicles (SOV) while promoting active and sustainable modes of transportation.

Generally, this TDM Plan has three primary objectives:

1. Reduce car dependence and the need for everyday SOV travel;
2. Improve pedestrian / cycling convenience to encourage non-automobile modes of transportation; and

Promote low-carbon modes of transportation, such as car-sharing and transit

4.1 TDM PLAN STRATEGIES AND IMPLEMENTATION

The TDM Plan will serve as an initial guide for the design, development and implementation of the site, as well as the ultimate operation of the facilities over time to maximize the travel demand sustainability of the project and allow the development to fully leverage its location relative to the growing range of employment, retail, recreation and residential uses in the vicinity of the site. Strategies have been developed to support the use of non-auto modes of travel, and to encourage a change in travel behaviour that reduces automobile travel. The proposed TDM strategies are outlined in **Table 5.**

Some of the potential measures being considered as part of the TDM Plan can be classified as ‘hard’ TDM measures; these are the physical infrastructure components and they include pedestrian connections, bicycle parking, bicycle repair stations, transit information centres, and electric vehicle charging stations. The implementation of a number of these elements and the costs associated with them are expected to be the responsibility of the applicant / land developer, as the measures may be constructed as part of the development.

Other measures can be classified as ‘soft’ measures, including travel mode information packages, unbundled vehicular parking, and pre-loaded PRESTO cards. Efforts to implement these measures should be the shared responsibility of property managers, City staff, and staff representing the relevant transit agencies. Developer credits for assisting in implementing some of these measures should be explored to encourage their realization.

The remainder of TDM initiatives involve connecting the site to other locations and are likely to be provided by third parties (i.e. car-share program). Obtaining these services for the site will require negotiations with service providers and in some cases, minor infrastructure additions may be required for implementation and it is anticipated that the City would be involved in implementing such measures.

TABLE 5 POTENTIAL AND RECOMMENDED SITE TDM MEASURES

TDM Measure	Overview	Impact
Pedestrian and Cycling Related		
Pedestrian Connections	Sidewalks are proposed to be widened to 2.0 m on Park Street East and Ann Street, adjacent to the 10 West proposed development.	2. Improve pedestrian and cycling convenience to encourage non-automobile modes of transportation.
Provision of Bicycle Parking	As outlined in **Section 6.0**, 287 bicycle parking spaces will be provided including 252 long-term bicycling parking spaces for residents, and 35 short-term bicycling parking spaces for visitors.	2. Improve pedestrian and cycling convenience to encourage non-automobile modes of transportation.
Bicycle Repair Station	Consider a bicycle repair / maintenance station on the site and/or smaller public facilities located where there is bicycle parking. This allows residents to change tires, inflate tires, adjust seat, etc.	2. Improve pedestrian and cycling convenience to encourage non-automobile modes of transportation.
Transit Related		
Transit Screen	An information screen, which is usually displayed in the building lobby. It provides real-time information on transit schedules, walking and cycling routes amongst other items.	3. Promote car-sharing and transit.
Provision of Transit Pass	Provide pre-loaded presto cards to each first-time unit owner. A suitable card value is to be determined.	3. Promote car-sharing and transit.
Travel Information Brochures	Provide a travel information brochure to residents providing an overview of transportation (walk, cycle, car-share, transit) in the area.	1. Reduce car dependence and the need for everyday travel. 2. Improve pedestrian and cycling convenience to encourage non-automobile modes of transportation. 3. Promote car-sharing and transit.
Automobile Infrastructure		
Lower Parking Rates	A reduced parking rate on-site is proposed.	1. Reduce car dependence and the need for everyday travel.
Electrical Vehicle Spaces	Provide electric vehicle charging stations within the proposed parking garage.	3. Promote low-carbon travel options.
Unbundled Vehicular Parking	Provide unbundled parking for all residential apartments on the site, allowing home purchasers to only pay for the amount of parking they require.	1. Reduce car dependence and the need for everyday travel.
Car-Share Program	Explore opportunities to offer car-share service on the site.	1. Reduce car dependence and the need for everyday travel. 3. Promote car-sharing and transit.

5.0 VEHICLE PARKING CONSIDERATIONS

5.1 VEHICULAR PARKING REQUIREMENTS

The proposed development is located within the City of Mississauga and is subject to Zoning By-Law 0225-2007. The parking requirements for the proposed development are outlined in **Table 6**.

TABLE 6 CITY OF MISSISSAUGA ZONING BY-LAW 0225-2007 PARKING REQUIREMENTS

	Use	Units / GFA (m^2)[1]	Rate (Minimum)[2]	Minimum Parking Requirement[3]
10 West	**Resident**			
	Studio	0 units	1.00 spaces / unit	0 spaces
	1-Bedroom	210 units	1.25 spaces / unit	263 spaces
	2-Bedroom	149 units	1.40 spaces / unit	209 spaces
	3-Bedroom	0 units	1.75 spaces / unit	0 spaces
	Resident Subtotal	***359 units***		***472 spaces*** *(1.31 spaces per unit)*
	Non-Resident			
	Visitor	359 units	0.20 spaces / unit	72 spaces
	Retail	309 m^2	5.40 spaces / 100 m^2 GFA	17 spaces
	Non-Resident Subtotal			***89 spaces***
			Total	**561 spaces**
84 High Street	Resident (1-Bedroom)	6 units	1.25 spaces / unit	**8 spaces**
	Visitor		0.20 spaces / unit	**1 space**
90 High Street	Office	340 m^2	3.2 spaces / 100 m^2 GFA[4]	**11 spaces**
			Total Site Requirement	**581 spaces**

Notes:
1. Site stats provided by CORE Architects, dated December 17, 2021. The floor area for the existing 90 High Street heritage building is approximate.
2. Resident Condominium parking rates as per City of Mississauga Zoning By-law 0225-2017
3. Where the number of non-residential parking spaces and/or loading spaces is calculated on the basis of a rate or ratio and results in a numeric fraction, fractions of less than 0.5 shall be rounded down to the nearest whole number and fractions equal to or greater than 0.5 shall be rounded up to the nearest whole number (as per City of Mississauga Zoning By-law 0225-2017 section 3.1.1.1.4).
4. Office rate is based on Zoning By-Law 0225-2007, it is noted that the current building, 90 High Street, is zoned as a residential use, which has a rate of 1.25 spaces / unit.

Application of the minimum Zoning By-law parking standards result in a total requirement of 581 spaces for the 10 West development, comprising 472 resident spaces (1.31 space per unit) and 89 non-residential spaces. Nine (9) spaces are required for the existing 84 High Street residential building and 11 spaces are required for an office use within the existing 90 High Street building.

5.2 PROPOSED SITE SPECIFIC VEHICULAR PARKING STANDARDS

The prevailing Zoning By-law parking standards outlined above are considered to significantly overstate the parking supply needs of contemporary buildings in transit accessible areas of the City. Recent parking trends and evolving mobility characteristics has led to a strong downward trend in car usage and parking needs of residential and non-residential buildings to supply levels that are, in many areas of the City, far removed from the now outdated Zoning By-law regime.

As such, it is proposed to adopt the following reduced minimum parking standards for the 10 West, 84 and 90 High Street sites. The proposed site specific parking requirements are listed below. Of note, no vehicular parking requirements are proposed for ancillary uses (i.e. retail store, service establishment, take-out restaurant, convenience restaurant and restaurant <220 m^2). The proposed ancillary uses within the building will serve residents in the building or residents in the immediate area and therefore will not generate an external parking demand.

- **Residents**:
  - 1 Bedroom: 0.57 spaces / unit
  - 2 Bedroom: 0.73 spaces / unit

- **Residential Visitors:**
  - 0.10 spaces / unit

- **Ancillary Uses** (Includes: Retail Store, Service Establishment, Take-out Restaurant, Convenience Restaurant and Restaurant <220 m^2):
  - None

- **Office:**
  - 2 spaces / 100 m^2 GFA

5.3 PROPOSED VEHICULAR PARKING SUPPLY

Based on the foregoing, application of the proposed parking rates are described below and summarized in **Table 7.** The proposed parking supply was based on the recommended parking standards described in **Section 5.2** which identifies a list of ancillary uses for which parking is not required. The proposed parking supply recognizes that the building includes some ancillary retail uses. It is noted that there is flexibility to provide other ancillary uses within the building, which would be confirmed through subsequent submissions. Retail is the proposed ancillary use in the current application.

The current concept plan illustrates the provision of 283 parking spaces including 233 resident spaces and 36 residential visitor spaces for the 10 West development, 7 spaces reserved for each of the existing 84 and 90 High Street heritage buildings. This proposed supply meets and slightly exceeds the minimum parking requirements of the proposed rates (as summarized in **Table 7**).

TABLE 7 CALCULATION OF PARKING SUPPLY REQUIREMENT

Site Address	Use	Units / GFA (m^2)[1]	Rate (Minimum)	Minimum Parking Requirement[2]	Proposed Supply
10 West	**Resident**				
	Studio	0 units	-	0 spaces	233 spaces
	1-Bedroom	210 units	0.57 spaces / unit	120 spaces	
	2-Bedroom	149 units	0.73 spaces / unit	109 spaces	
	3-Bedroom	0 units	-	0 spaces	
	Resident Subtotal	***359 units***		***229 spaces*** *(0.64 spaces per unit)*	
	Non-Resident				
	Visitor	359 units	0.10 spaces / unit	36 spaces	36 spaces
	Retail (ancillary)	309 m^2	-		
	Non-Resident Subtotal			***36 spaces***	
			10 West Total	**265 spaces**	**269 spaces**
84 High Street	Resident (1-Bedroom)	6 units	0.57 spaces / unit	***4 spaces***	***7 spaces***
	Visitor		0.10 spaces / unit	***1 space***	
90 High Street	Office	~340 m^2	2 spaces / 100 sm	***7 spaces***	***7 spaces***
			Total	**277 spaces**	**283 spaces**

Notes:
1. Proposed supply is based on the site stats provided by CORE Architects, dated December 17, 2021.
2. The floor area for the existing 90 High Street heritage building is approximate.

5.4 APPROPRIATENESS OF PROPOSED PARKING REQUIREMENTS

Parking is a powerful tool that can be used to achieve a variety of community objectives. It is intended that the parking provisions on the site meet projected demands such that residents and visitors will be unlikely to disrupt off-site roadways and parking areas, but not provide so much parking as to discourage achievement of the City of Mississauga multi-modal objectives.

It is proposed to adopt reduced parking supply standards in comparison to the minimum requirements of the Mississauga Zoning By-law. The residential parking standards outlined in Zoning By-law 0225-2007 (1.31 spaces per unit) are considered to significantly overstate the parking needs of a residential building in an urban context, within the Port Credit Mobility Hub, adjacent to the Port Credit GO Station and planned Hurontario LRT and Lakeshore Road Rapid Transit.

The following sections provide an overview of the contextual factors influencing parking needs in a contemporary development in downtown / central Mississauga in area and the appropriateness of the proposed parking supply for the proposed 10 West development and the existing 84 High Street and 90 High Street buildings.

5.4.1 Resident Parking

Recently, we have observed a substantial reduction in parking space demand at many of the new residential buildings throughout the GTA, compared to those that have existed historically. Factors that have played a part in establishing the framework for this change in parking needs include the change in size of residential units on an overall basis (i.e. reduction), the enhancement in travel alternatives that reduce the need for individuals to use a car on a day-to-day basis and, in fact, reduce the need to own a vehicle. The advent of car-sharing services and the investments being made in all forms of non-automobile travel alternatives (i.e. on and off-site bicycle infrastructure and public transit) have made, and are continuing to make, a substantial difference in resident and tenant perspectives on travel mode and mobility choice. Adoption of the proposed reduced parking standards is, given the above, considered to be appropriate based upon the following considerations:

- Transportation planning principles supporting a reduced parking supply to change travel behaviour;
- The subject Site is in close proximity to significant existing and planned transit services and bicycle route facilities that provide non-automobile dependent travel connections across the City;
- A series of Transportation Demand Management measures proposed to be incorporated in the development to support the use of non-automobile travel modes;
- The existing area travel characteristics being supportive of low automobile use;
- A review of parking demands observed / recorded by BA Group at other residential condominiums in comparable areas; and
- Recent reduced residential parking approvals trends.

5.4.1.1 Transportation Planning Principles

As discussed in **Section 2.0**, there are numerous provincial and municipal transportation policies as well as local area studies that are supportive of reduced parking standards that will facilitate compact urban development and improved urban design, support economic development and maximize the return on investment in the major transportation facilities. Within these policy documents, the Site is repeatedly

identified as a priority for development focused about transit; located within a Metrolinx Mobility Hub, an Intensification Area within the Mississauga OP, and a Community Node within the Mississauga TMP.

The proposed development is consistent with the transportation-related goals set out in these policies and aims to reduce the share of auto trips and improve opportunities to travel by transit, cycling and walking through the application of transportation demand management initiatives, reduced parking standards, emphasis on active modes of travel and leveraging significant transit investments within the immediate site context (Hurontario LRT and Lakeshore Road Rapid Transit).

5.4.1.2 Area Transportation Context

The Site is located in an area well served by surface and high-order transit and is within walking distance of a number of employment, retail, and recreational uses within Port Credit. As noted in **Section 3.0**, the area's access to non-automobile transportation infrastructure will be further improved with the opening of the Hurontario LRT and planned Lakeshore Road Rapid Transit as well as significant cycling infrastructure improvements planned along Lakeshore Road, Hurontario Street and within the local street network making the Site's location highly supportive of the adoption of parking standards that are lower than the prevailing Zoning By-law requirements.

5.4.1.3 Mobility Choice Travel Plan TDM Measures

As discussed in **Section 4.0,** a Mobility Choice Travel Plan is proposed for the Site, both as a method to reduce vehicular traffic but also to reduce parking demand. Included among the measures are "hard' infrastructure elements, integrated with the development block plan, and "soft" operational strategies intended to promote sustainable transportation behaviour. One of the most effective TDM initiatives is to avoid the oversupply of parking on site which also reduces the number of trips to and from the site.

5.4.1.4 Area Travel Characteristics

A review of the travel characteristics information provided by the 2016 Transportation Tomorrow Survey (TTS) was undertaken to establish mode split characteristics for residents living in the area surrounding the site (based on 2006 TTS Zones 3642, 3877, and 3878). Travel behaviour characteristics for resident (home-based) travel during the peak weekday morning and afternoon travel periods were previously discussed in more detail in **Section 3.1**.

The 2016 TTS survey confirms that approximately 18 to 23% of residential trips during the weekday morning and afternoon peak periods are being undertaken by using non-automobile means (walking or transit). It is expected that the future non-auto mode split pattern of residents travelling to and from the proposed development, given the significant transit and active network improvements in the area, will increase over time.

While existing residential auto-drive trips are in the range of 67 – 70% in the morning and afternoon peak periods, the proposed development's goal is not simply to plan to accommodate existing demands, but to plan for future parking demands. Minimum parking requirements have gradually been reduced across Mississauga and more specifically within the Port Credit area.

As referenced in **Section 3.3.2.2**, the Hurontario LRT is expected to provide significant transit improvement to the area. The LRT is planned to open in 2024, adding 19 stops along the Hurontario corridor, from Brampton Gateway Terminal in the north, extending southwards towards the Port Credit GO Station, directly north of the site. Due to the LRT's connections to several GO Stations and employment hubs along the span of the corridor, the *Hurontario LRT Benefits Case Analysis* forecasts a reduction future transit mode share along the Hurontario – Main corridor from 24% to 49% with the introduction of the LRT. Applying the same percentage shift in mode split to the Site's existing transit mode split results in an increase from 14% to 29%. This increase translates to an auto mode split reduction from 67 – 70%, down to 52 – 55%.

The proposed parking supply (0.64 spaces / unit) recognizes future reductions in parking demand as a result of increased transit and active transportation options in the area (Hurontario LRT, Lakeshore Rapid Transit, cycling network expansions). It maximizes the efficiency of the site and surrounding infrastructure and avoids the wasteful and unnecessary oversupply of parking for private vehicles. It is also consistent with the trend of reduced parking requirements across the City in a manner which is supportive with best planning principles and the City's goals and vision for Port Credit and the City overall.

5.4.1.5 Parking Demand Data

The residential parking supply standards outlined in the current Mississauga Zoning By-law are considered conservatively high relative to the parking approvals obtained for residential buildings within similar transportation contexts across the City. Generally, parking demands across the GTA have been declining over recent years in response to the changing demographics, economic factors, policy and planning emphasis on transit and active modes of travel, and mobility choices of residents within newer buildings, in particular. Furthermore, the City of Mississauga's ongoing Zoning By-law parking review recognizes that even these more current parking standards are high and not supportive of the City's policy objectives of reducing single automobile use and promoting active modes of travel.

A review of parking demands measured at applicable proxy sites is typically included in parking justifications. In this case, there are limited developments within the City of Mississauga that have been developed as part of a mixed-use walkable community and that are in a similar context.

Proxy site demands are also influenced by the parking provision. That is, at proxy sites, if the parking provision required under the zoning by-law for that site resulted in a higher rate of parking than could be achieved with support for transit and active transportation, it is more likely that some of those parking spaces are used for car storage for vehicles that are not frequently used, instead of being used by vehicles that are actively used. However, parking surveys at such a site would record the presence of all parked cars, whether actively used or not.

Finally, the ongoing COVID-19 global pandemic (discussed in more detail below) has limited the ability to conduct parking demand surveys since early 2020.

Instead of taking guidance from existing developments that may not be directly applicable to the proposed context, it is proposed to also rely on the direction included in City and Provincial Policy that recognizes that the walkable design and transit-supportive density of the Site is supportive of reduced parking standards.

Parking Demand Data during COVID-19 Global Pandemic
Beginning in March 2020 and ongoing (at the time of writing), the province of Ontario, including Toronto, has been in a state of emergency due to the Coronavirus (also known as COVID-19 and SARS-CoV-2) global pandemic. Under the provincial Declaration of Emergency, measures that have been undertaken including the closure of non-essential workplaces and restrictions on social gatherings. Practically, the effect of these emergency measures is that much of the province has been under 'lockdown' (also colloquially referred to as 'quarantine') – meaning more people are staying at home than during typical conditions. In addition, access to properties has been restricted, and we have been unable (depending on the level of lockdown measures) to gain permission to enter underground parking areas to carry out parking occupancy surveys. Our typical practice of surveying on multiple weekday nights to capture several resident parking demand observations has not been possible.

Since March 2020, BA Group has generally been unable to conduct parking utilization surveys and therefore, we cannot conclusively or definitively state that residential parking demand at condominium buildings has been or will be affected by the current situation. Speculatively, it has been hypothesized that weekday parking demand should be higher than typical weekday conditions. This is because more people are staying at home than usual due to workplace closures, retail and restaurant closures, closure of public facilities, restrictions on social gatherings and widespread event cancellations.

Conversely, it is anecdotally known that some young adults have chosen to 'quarantine' with their families – young adults tend to be a predominant demographic group in condominium towers – and these actions could directly result in lower parking demand at condominium towers than typical conditions.
In any case, these factors must be read as speculation; BA Group does not have conclusive data to make any definitive statement with regards to whether the ongoing COVID-19 situation has any tangible effect on parking utilization in condominium buildings. For this reason, it is our opinion that the parking utilization survey results presented in this memorandum could be viewed as representative of typical conditions as there is not sufficient reason to suggest otherwise.

Resident Parking Demand
Notwithstanding the above, BA Group did undertake a parking demand survey at the 'IQ Park Towers' residential buildings located at 1185 The Queensway and 15 Zorra Street. While the proxy site at 1185 The Queensway and 15 Zorra Street has a more limited level of transit access (on a surface bus route approximately 2 km from Kipling GO/TTC), it is a relatively new condominium building (completed within the last 5 years) that can be considered to reflect changes in car ownership and use patterns.

The survey was conducted on Thursday, May 28, 2020, from 10:45pm to 11:30pm to assess resident parking demand, and is summarized in **Table 8** below.

TABLE 8 RESIDENT PARKING UTILIZATION SURVEY RESULTS – 1185 THE QUEENSWAY

Building	Total Dwelling Units	Resident Parking Supply		Resident Parking Demand			Unutilized Parking Spaces
		Spaces	Ratio	Spaces	% Space Utilization	Ratio	
IQ1 & IQ2	823	768	0.93 spaces / unit	568	74%	0.69 spaces / unit	200

Upon analysis of this parking demand data, the following key observations are made:

- The observed resident parking demand ratio is 0.69 parking spaces per unit.
- The peak observed parking demand (568 parking spaces) is significantly lower than the on-site resident parking supply (768 parking spaces); 200 resident parking spaces were empty. This result indicates that parking demand was not constrained by parking supply.

It is noted that the Remington Group, the developer of the IQ condominiums, has confirmed that all units within IQ1 and IQ2 have been sold and occupied.

As mentioned above, the parking surveys at 1185 The Queensway and 15 Zorra Street were conducted between 10:45 and 11:30pm in the evening. Based on previous parking demand surveys conducted by BA Group at other condominiums, it is believed that capturing demand at this time reflects peak residential parking demand. The results of previous parking demand surveys indicate that residential parking demand remains generally consistent between 10-11 pm and the early hours of the morning. This previously collected data, combined with the logic that the vast majority of residents would be home by 11:00pm (especially during the ongoing COVID-19 pandemic, when the surveys were conducted), is the reason why it was deemed unnecessary to extend the parking survey to other hours of the evening.

5.4.1.6 Parking Reduction Precedents

There are examples of recently approved parking reductions both in the Port Credit area and in comparable areas within the cities of Pickering and Hamilton. In the Port Credit area, a minor variance (File: A413.20) was approved on March 25, 2021 for 28 Ann Street. The approved minimum resident parking rates were 0.57 parking spaces for each one bedroom unit and 0.73 parking spaces for each two bedroom unit. The parking reduction was based upon parking space sales information provided by the applicant reflecting demand of 0.4 parking spaces for each one bedroom unit and 0.71 parking spaces for each two bedroom unit. Conditions of approval included the provision of two car-share spaces and a pre-loaded PRESTO card for each unit owner.

The proposed development is located diagonally opposite the approved 28 Ann Street development (sites are located on the northwest and southeast corners of the Park Street and Ann Street intersections) and, as such, the same parking rates are being proposed for the Site. As noted in **Section 5.2**, application of the proposed resident parking supply ratios of 0.57 spaces / unit (1 bedroom) and 0.73 spaces / unit (2 bedrooms) results in an overall resident parking rate of 0.64 spaces per unit for the 10 West site.

Other examples of recent approvals have also been included for sites with more limited access to higher order transit to demonstrate the willingness of multiple municipalities (Mississauga, Pickering, Hamilton) to significantly reduce residential parking standards compared to the inforce Zoning By-law, recognizing a shift in travel behaviour and bigger emphasis placed on existing and future transit access. These approvals range from 0.47 to 0.86 spaces per unit for sites that are significantly further from a GO Station (between 575 metres to 2.2 km).

Table 9 outlines a selection of reduced parking approvals for proxy sites with similar or less transit supportive contexts as the proposed development.

TABLE 9 RESIDENTIAL DEVELOPMENTS WITH APPROVED RESIDENT PARKING REDUCTIONS

Address	Proximity to Transit	Municipality	Resident Standard Applied	Permission Through
Approvals with comparable access to High Order Transit				
78 Park Street East and 22 – 28 Ann Street	~80 m from Port Credit GO Station	Mississauga (Port Credit)	1 bedroom: 0.57 spaces / unit 2 bedroom: 0.73 spaces / unit 3 bedroom: 1.10 spaces / unit	CoA Decision – A413.20 & Site Specific Zoning By-law 0054-2020
Approvals with less proximate access to High Order Transit				
1496 Bayly Street	- 575m from Pickering GO Station	Pickering	0.71 spaces per unit	Site Specific Zoning By-law 7810/21
600 James Street North	~900 m from West Harbour GO Station	Hamilton	0.58 spaces / unit	LPAT Case No. PL190517 Site Specific Zoning By-law 21-053-LPAT
70 Mississauga Road South	~1.2km from Port Credit GO Station	Mississauga	0.86 spaces / unit	CoA Decision – A226.21
98 James Street South	~1.5 m from West Harbour GO Station	Hamilton	0.47 spaces / unit	City of Hamilton Zoning By-law 15-024
175 Catharine Street South and 117 Forest Avenue	~2.2 km from West Harbour GO Station	Hamilton	0.65 spaces / unit	City of Hamilton Zoning By-law 20-216

The cities of Mississauga, Pickering and Hamilton have shown flexibility and pragmatism in adapting to the evolving transportation landscape as options become available to residents that were not available at the time when the Zoning By-law was enacted. In this context, the proposed resident parking supply ratios (overall rate of 0.64 spaces / unit for the 10 West development) is conservatively within the range of documented parking supply reduction approvals that are appropriate proxies for the site.

5.4.1.7 Resident Parking Assessment Summary

In summary, the proposed resident parking supply ratios (as approved at the adjacent 28 Ann Street development) are considered to be appropriate based upon the following:

- Numerous transportation planning principles that support reduced parking supplies;
- The Site adjacent to significant existing and planned transit services (Port Credit GO Station and planned Hurontario LRT and Lakeshore Road Rapid Transit) and bicycle route facilities that provide non-automobile dependent travel connections across the City;
- TDM measures proposed on-site;
- Future area travel characteristics (planned Hurontario LRT forecasts a reduction in auto driver mode split to 52-55%);
- Parking demand observed / recorded by BA Group at a residential development with a more limited level of transit access to the site;
- Range of approvals for reductions in resident parking supply ratios for developments with less proximate access to a GO Station; and
- Consistency with the recently approved parking rates for the neighbouring residential development at 78 Park Street East and 22 – 28 Ann Street.

Based on the above, an adoption of the proposed resident parking supply ratios of 0.57 spaces / unit (1 bedroom) and 0.73 spaces / unit (2 bedrooms) are considered to be appropriate and will enable the essential

resident parking demands of the proposed 10 West development and existing 84 High Street heritage building to be met.

As previously noted, the existing 84 High Street surface parking lot is proposed to be removed to accommodate the redevelopment plan for the block. As such, it is proposed to provide the residential parking spaces for the existing 84 High Street heritage building within the proposed 10 West parking garage on an exclusive basis.

5.5 APPROPRIATENESS OF PROPOSED LOADING ARRANGEMENTS (10 WEST)

The proposed loading configuration for the 10 West development is considered appropriate based on the following:

1. The at-grade retail use within the proposed 10 West development is only slightly higher (approximately 60 m^2) than the minimum Zoning By-law requirement that triggers the need to provide a loading space.

2. The proposed 10 West loading supply (2 spaces) is consistent with the Zoning By-law requirement, albeit one of the spaces is slightly deficient in length. Loading vehicles for retail uses range substantially in size and many deliveries for ancillary retail uses are made by smaller vehicles (step vans, cube vans, cars) which can be accommodated within the proposed smaller loading space. Any retail loading activity for a larger delivery vehicle can be accommodated within the shared full-size loading space while the smaller space enables deliveries by smaller vehicles in a controlled area where they will not be using spaces designated for a larger delivery vehicle.

3. While the City of Mississauga's Zoning By-law 0225-2007 does not contain shared loading provisions between uses, shared loading is recognized / permitted in other municipalities (i.e. City of Toronto) in order to maximize the efficiency of loading facilities, resulting in efficient pedestrian-oriented buildings and spaces while still meeting the functional servicing requirements of the multiple uses on the site. If shared loading provisions were applied to the site, it would result in the requirement of one (1) formal loading space.

4. It is intended that the use of the proposed loading facilities will be managed by a building facility coordinator, allowing for the efficient use of the loading spaces through scheduling of deliveries and waste/recycling collection.

Based on the foregoing, the proposed loading facilities are considered appropriate to accommodate the loading needs of the development.

5.5.1 Non-Residential Parking

5.5.1.1 Residential Visitor Parking

It is proposed to adopt a residential visitor parking requirement of 0.10 spaces per unit for the 10 West development. This rate is consistent with the recently approved non-residential parking rate for the neighbouring residential development at 78 Park Street East and 22 – 28 Ann Street.

As with resident parking, visitor parking standards in areas with high levels of transit accessibility have been approved at rates well below the Zoning By-law 0225-2007 and, in the case of the neighbouring 78 Park Street East and 22 – 28 Ann Street development, below the City of Mississauga's proposed new visitor parking rate.

Table 10 outlines a selection of reduced residential visitor parking approvals for proxy sites in the Port Credit area and in areas within the cities of Pickering and Hamilton with less transit supportive contexts as the proposed 10 West development. The provision of a lower visitor parking standard at the 10 West site (0.10 spaces per unit) is considered appropriate when compared to sites located significantly further from high order transit.

TABLE 10 RESIDENTIAL VISITOR DEVELOPMENTS WITH APPROVED PARKING REDUCTIONS

Address	Proximity to Transit	Municipality	Resident Standard Applied	Permission Through
Approvals with comparable access to High Order Transit				
78 Park Street East and 22 – 28 Ann Street	~80 m from Port Credit GO Station	Mississauga (Port Credit)	0.10 spaces / unit	CoA Decision – A413.20 & Site Specific Zoning By-law 0054-2020
Approvals with less proximate access to High Order Transit				
1496 Bayly Street	- 575m from Pickering GO Station	Pickering	0.15 spaces / unit	Site Specific Zoning By-law 7810/21
600 James Street North	~900 m from West Harbour GO Station	Hamilton	0 spaces / unit *visitors will rely on area public parking	LPAT Case No. PL190517 Site Specific Zoning By-law 21-053-LPAT
70 Mississauga Road South	~1.2km from Port Credit GO Station	Mississauga	0.15 spaces / unit	LPAT Case No. PL18019

The provision of a reduced visitor parking standard for the 10 West development is considered appropriate based upon the following considerations:

- Numerous transportation planning principles that support reduced parking supplies;
- The Site adjacent to significant existing and planned transit services (Port Credit GO Station and planned Hurontario LRT and Lakeshore Road Rapid Transit) and bicycle route facilities that provide non-automobile dependent travel connections across the City;
- Availability of public on-street parking within the Port Credit area;
- The range of recent reduced residential visitor parking supply ratio approvals with less proximate access to a GO Station; and
- Consistency with the recently approved parking rates for the neighbouring residential development at 78 Park Street East and 22 – 28 Ann Street.

5.5.1.2 Ancillary Non-Residential Parking

The retail use proposed as part of the application is considered to be ancillary and, as such, no parking has been proposed to be required for these uses. These uses are intended to serve users within the building and therefore these uses will not generate parking demand.

From a practical perspective, in the unlikely event that the ancillary non residential uses generate a nominal vehicle need, these uses can be accommodated within the proposed residential visitor spaces which is appropriate for a mixed-use urban area.

5.5.1.3 Office Parking

The existing 90 High Street is a designated heritage building and, as such, there is limited ability to modify the site and provide additional parking to accommodate possible change to office uses on the site. As such, it is proposed to accommodate the 90 High Street parking requirements for an office use within the proposed 10 West parking garage on an exclusive basis.

As noted in **Section 2.1.3**, the City of Mississauga is undertaking a review and update of the City's Zoning By-law parking requirements. This study recommends reduced office parking standards (2 spaces per 100 sm GFA) compared to those in the current Zoning By-law (5.40 spaces per 100 sm GFA). The adoption of this reduced office standard is in line with the City's policy objectives of reducing single automobile use and promoting active modes of travel within the designated Port Credit Mobility Hub and Community Node, Application of this reduced office parking standard to the existing 90 High Street building would result in a parking requirement of approximately 7 spaces.

6.0 BICYCLE PARKING CONSIDERATIONS

6.1 BICYCLE PARKING REQUIREMENTS

There are currently no bicycle parking requirements in the City's Zoning By-law 225-2007. However, the City of Mississauga's Transportation Demand Management Strategy and Implementation Plan has recommended bicycle parking standards to be included in the city's Zoning By-Law for new developments. The provision of bicycle parking was also noted by City staff in the project's Development Application Review Committee (DARC) comments at the rates summarized in **Table 11.**

Application of these rates to the proposed 10 West development are summarized in **Table 11** and result in a bicycle parking requirement of 282 spaces (252 long-term and 30 short-term spaces).

TABLE 11 CITY OF MISSISSAUGA RECOMMENDED BICYCLE PARKING RATES (10 WEST DEVELOPMENT)

Land Use	Unit Type	Number of Units / GFA	Minimum Bicycle Parking Standard	Spaces Required
Residential	Short-term	359 units	0.08 spaces / unit	29 spaces
	Long-term		0.70 spaces / unit	252 spaces
Retail	Short-term	309 m^2	0.25 spaces / 100 sm GFA	1 space
	Long-term		0.10 spaces / 100 sm GFA	0 spaces
	Total			282 spaces

6.2 PROPOSED BICYCLE PARKING SUPPLY

The current concept plan for 10 West development illustrates the provision of 287 parking spaces including 252 long-term (resident) spaces and 35 short-term (visitor) spaces for the 10 West development. This proposed bicycle parking supply meets and slightly exceeds the City's suggested rate, which is not currently required in the Citywide Zoning By-law 225-2007 (as summarized in **Table 11** above).

It is proposed to provide visitor bicycle parking spaces at-grade while long-term occupant spaces will be located in secure and weather-protected facilities within the P1 level of the parking garage.

No bicycle parking is provided for the existing 84 High Street and 90 High Street heritage buildings.

7.0 LOADING AND ACCESS CONSIDERATIONS

7.1 EXISTING LOADING ARRANGEMENTS

Waste collection / loading activity for the existing residential buildings at 17 Ann Street, 19 Ann Street, 84 High Street and 90 High Street is current managed on-street (i.e. curbside garbage pickup).

7.2 LOADING REQUIREMENTS

The City of Mississauga Zoning By-law 0225-2007 loading standards apply to the proposed development. **Table 12** summarizes the minimum loading requirements for the proposed development under the Zoning By-law.

TABLE 12 CITY OF MISSISSAUGA ZONING BY-LAW 0225-2007 LOADING REQUIREMENTS

Site Address	Use	Units / GFA (sq. m.)	Minimum Zoning By-Law Requirement	Number of Loading Spaces Required[1]
10 West	Residential	359 units	1 loading space for apartment dwelling containing > 30 units	1
	Retail	309 m^2	1 loading space for GFA greater than 250 sq. m. and less than 2350 sq. m.	1
	10 West - Required Loading Spaces[2]			**2**
84 High Street	Residential	**6 units**	**None Required (curbside pickup)**	**-**
90 High Street	Office	340 m^2	**None Required (curbside pickup)**	**-**

Notes:
1. The City of Mississauga Zoning By-law requires loading spaces to have an "unobstructed rectangular area with a minimum width of 3.5 m and a minimum length of 9.0 m". A clear height of 7.5m for a loading area is specified within the Region of Peel Waste Collection Design Standards Manual" (2007)
2. The City of Mississauga Zoning By-law does not including any provisions for shared loading arrangements.

The application of the minimum Zoning By-law loading requirements requires a total of two (2) loading spaces to be provided to service the proposed 10 West development.

Due to the nature of the infill development, site constraints make it unfeasible to accommodate the two (2) formal loading zones (further expanded upon in **Section 5.5**). It should be noted that if the retail floor area within the proposed 10 West development was less than 250 m^2 (current proposal is 60 m^2 above this threshold) no loading space would be required. Furthermore, the City of Mississauga Zoning By-law does not including any provisions for shared loading arrangements in mixed-use developments.

No dedicated loading area is required for the existing 84 and 90 High Street buildings.

7.3 PROPOSED LOADING SUPPLY AND FACILITIES

Two (2) loading spaces are proposed within a central, consolidated loading facility for the proposed 10 West development with vehicular access provided off of Ann Street. While the proposed loading supply meets the Zoning By-law requirement (2 spaces), one of the proposed spaces is deficient in length by 1 metre. The proposed loading facilities for the 10 West development are as follows:

- One (1) formal loading space, consistent with the requirements set out in the Mississauga Zoning By-law (3.5 m width and 9.0 m length); and

- One (1) proposed smaller loading space (3.5 m width and 8.0 m length), that can accommodate a range of smaller delivery vehicles (i.e. step vans and cube vans).

Refuse / recycling collection for the existing 84 and 90 High Street buildings will continue to occur as curbside pickup.

7.4 LOADING FACILITY ARRANGEMENTS

7.4.1 Refuse / Recycling Collection Facilities

Refuse / recycling collection for the proposed residential and retail components of the 10 West development will occur within the proposed loading area.

The "*Region of Peel Waste Collection Design Standards Manual" (2007)* was used to aid in the design of the bin staging area. This area can accommodate the larger of the compacted refuse and recycling bin demands as demonstrated in the Vehicle Manoeuvring Diagrams attached in **Appendix B.**

Given that the pick-up of refuse and recycling for the residential and retail uses would not occur at the same time, and that building maintenance workers would shuffle the bins on the day of collection, the proposed bin staging arrangement is acceptable given the site constraints.

The residential garbage and recycling rooms for the development are provided in the P1 level of the underground parking garage and will need to be brought to the staging pad via the parking garage ramp with the help of a tractor.

Refuse / recycling collection for the existing 84 and 90 High Street buildings will continue to occur as curbside pickup.

7.4.2 Operations and Manoeuvring

Turning movement diagrams have been developed demonstrating the ability to accommodate Peel Region front loading refuse collection vehicles and other service delivery vehicles to manoeuvre appropriately within the Site when accessing / departing each of the loading spaces proposed within the loading area.

The design vehicles used to assess the design arrangements of the proposed loading spaces are as follows:

- Formal Loading Space: TAC Heavy Single Unit Vehicle (proxy vehicle for Region of Peel Front Loading Refuse Collection Vehicle)

- Informal Loading Space: Ford E350 Cube Van

Vehicle Manoeuvring Diagrams are provided in **Appendix B** and illustrate the turning movements for the design vehicles entering / departing the proposed loading spaces. These diagrams confirm that the proposed loading arrangements are appropriate and will facilitate the manoeuvring needs of the vehicles that will make deliveries to the proposed development.

7.4.3 Height Clearances

The loading area has been designed such that a minimum of 4.5 metres is maintained through the entire loading area. A minimum height clearance of 7.5 metres is provided above the formal (refuse) loading space to enable compacted bulk lift bin collection in compliance with the Peel Waste Collection design standards.

8.0 TRAFFIC VOLUMES

The following section outlines the traffic volume forecasting scope of work as discussed and agreed upon with the City of Mississauga.

8.1 EXISTING TRAFFIC VOLUMES

Baseline existing traffic volumes for intersections within the study area for vehicles, cyclists, and pedestrians were established for the weekday morning and afternoon peak hour periods on the area street network based on intersection traffic information collected by Spectrum Traffic Data Inc. on behalf of BA Group, and additional data provided by the City of Mississauga. The turning movement count dates and sources are summarized in **Table 13**.

The raw turning movement counts are attached in **Appendix C.**

TABLE 13 EXISTING TRAFFIC COUNT INFORMATION

Intersection	Date	Source
Hurontario / Lakeshore Road East	December 17, 2019	TES Mississauga
Hurontario Street / High Street	June 24, 2021	Spectrum Traffic Counts
Hurontario Street / Park Street East	June 4, 2015	TES Mississauga
Ann Street / Lakeshore Road	June 24, 2021	Spectrum Traffic Counts
Ann Street / High Street East	June 24, 2021	Spectrum Traffic Counts
Ann Street / Park Street East	December 2, 2014	TES Mississauga

The existing turning movement counts were reviewed in detail to ensure general consistency in the traffic volumes on roadways between intersections. Where necessary, minor adjustments were made to balance traffic volumes between intersections to create a representative traffic volume base for the purposes of the traffic operations analyses undertaken as part of this study.

Due to the ongoing COVID-19 pandemic (March 2020 onwards), BA Group has applied appropriate transportation planning principles and engineering judgement to establish appropriate ‘baseline existing conditions’ based on the aforementioned counts. Corridor growth rates established in **Section 8.2.1** were used to aid in the forecast of baseline conditions by applying the specified growth rates to the available counts.

Existing traffic volumes are shown in **Figure 10**.

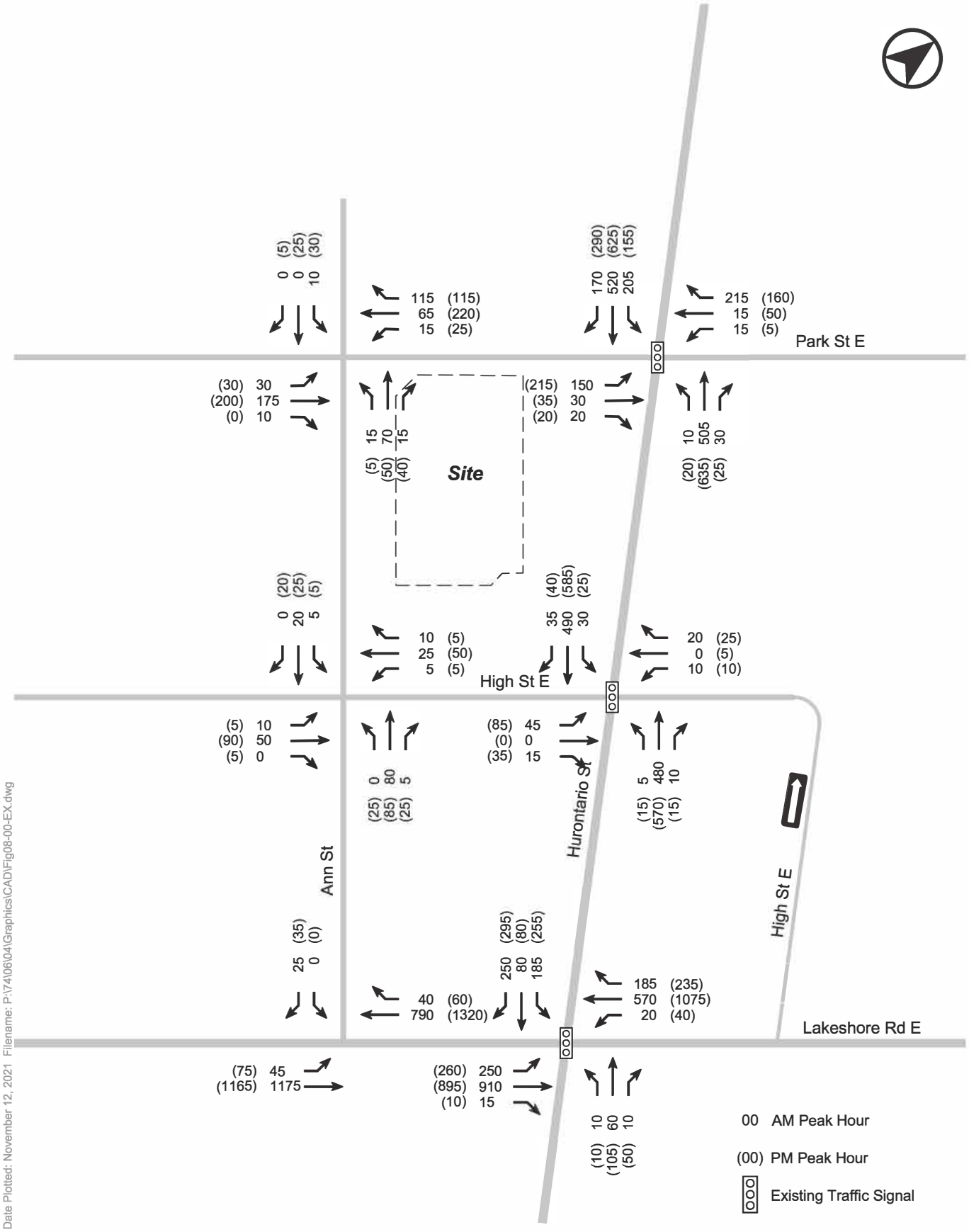

FIGURE 10 EXISTING TRAFFIC VOLUMES

8.2 FUTURE BACKGROUND TRAFFIC VOLUMES

8.2.1 Corridor Growth

Corridor growth rates have been provided by the City and were obtained using the City's Travel Demand Model and supporting traffic count data. The rates have been applied to the two major roadways of the study area, Hurontario Street and Lakeshore Road East.

The recommended projected growth rates are summarized in **Table 14** and have been applied to traffic volumes on Hurontario Street and Lakeshore Road East over a 5-year planning horizon (present-2026).

TABLE 14 CORRIDOR GROWTH RATES

Peak Hour	Lakeshore Avenue West	
	Eastbound	Westbound
AM	0.5%	0.5%
PM	1.0%	1.0%
	Hurontario Street	
	Northbound	Southbound
AM	1.5%	2.0%
PM	1.0%	1.5%

8.2.2 Specific Development Allowances

Following a review of area developments within the City of Mississauga, specific allowances have been made to account for new traffic generated by other area development proposals in the vicinity of the subject site. The specific background developments included in the analysis are summarized in **Table 15**.

TABLE 15 SPECIFIC BACKGROUND DEVELOPMENTS

Site	Development Programme	Source of Traffic Assignment
28 Anne Street	359 residential units, 250 m^2 non-residential GFA	LEA, July 2019
42-46 Park Street East	258 residential units	LEA, May 2020
21, 25, 29 Park Street East	204 residential units	No report available[1]

Notes:
1. Volumes and distribution generated based on trip generation rates observed at nearby developments of similar scale and distribution patterns determined by 2016 TTS data and observed traffic patterns.

8.2.3 Future Background Traffic Volumes

Future background traffic volumes for the 2026 horizon year were development by combining the area corridor growth, specific background developments, and existing traffic volumes as illustrated in **Figure 11**.

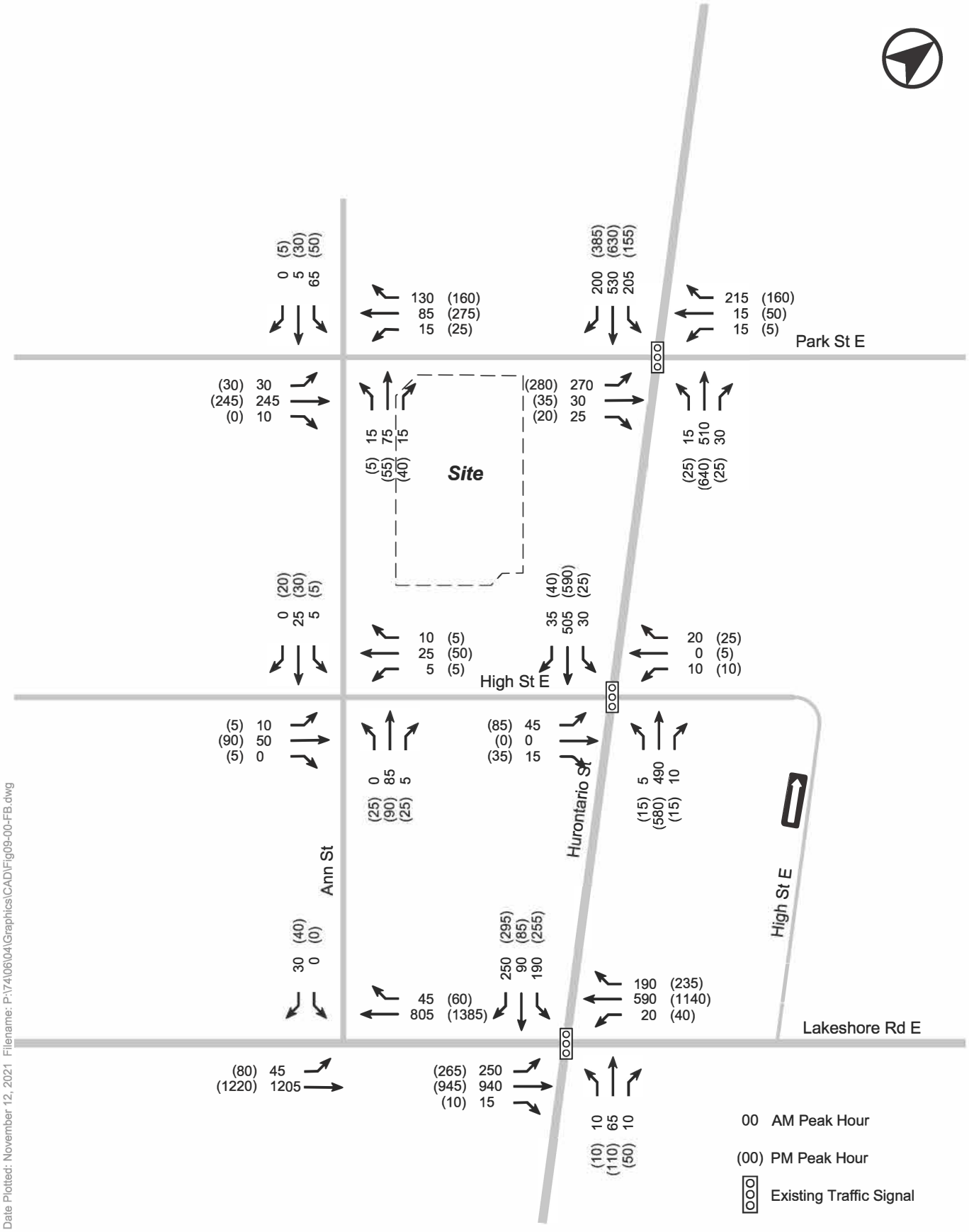

FIGURE 11 FUTURE BACKGROUND TRAFFIC VOLUMES

8.3 SITE TRAFFIC

8.3.1 Vehicle Trip Generation

The proposed development programme consists of 359 residential units, and 309 m^2 of ancillary non-residential GFA. Vehicular trip generation adopted for the proposed residential component of the development was based upon a review of trip generation rates provided by the ITE *Trip Generation Manual 11th edition.* **Land use code 222 (Multifamily housing – High Rise)** was used to determine the appropriate trip generation characteristics for the development site. The retail component of the development is considered modest in size, provides ancillary services to the residents, and therefore, would not be expected to attract any vehicle trips from off-site. The adopted Site's trip generation is summarized in **Table 16**.

As referenced in **Section 3.3.2**, the Hurontario-Main LRT is expected to increase transit mode share in the site area from 14% to 29%. To account for the expected shift in transit mode share, a 15% reduction in the formulated trip generation outputs was applied. The new site mode splits are additionally summarized in **Table 16**.

TABLE 16 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]	359 units[1]	0.09	0.19	0.27	0.19	0.14	0.33
	Number of Trips	**359 units[5]**	**30**	**65**	**95**	**65**	**50**	**115**
	15% Volume Shift to Transit		**-10**	**-15**	**-10**	**-10**	**-5**	**-15**
	Net-New Site Vehicular Trip Generation		**25**	**55**	**80**	**55**	**45**	**100**

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
4. Site statistics provided by Core Architects, dated December 17, 2021.

The Site is expected to generate a total of 80 and 100 vehicular trips in the weekday morning and afternoon peak hours, respectively.

8.3.2 Trip Distribution and Assignment

Site traffic distribution patterns are based upon a review of information from the 2016 Transportation Tomorrow Survey (TTS) and observations of existing traffic patterns in the area. The adopted distribution is summarized in **Table 17**.

TABLE 17 SITE TRIP DISTRIBUTION

To/From	Road	Inbound Proportion	Outbound Proportion

North	Hurontario Street	65%	70%
East	Lakeshore Road East	20%	15%
West	Lakeshore Road West	15%	15%

The adopted directional distribution was used to assign site trips to the area road network. The resulting site traffic for the 2026 horizon year is illustrated in **Figure 12**.

8.4 FUTURE TOTAL TRAFFIC VOLUMES

The future 2026 background traffic volumes in the weekday morning and afternoon peak hours were combined with the 2026 site traffic volumes to develop the future 2026 total traffic forecasts. The future total traffic volumes for the weekday morning and afternoon peak hours are illustrated in **Figure 13**

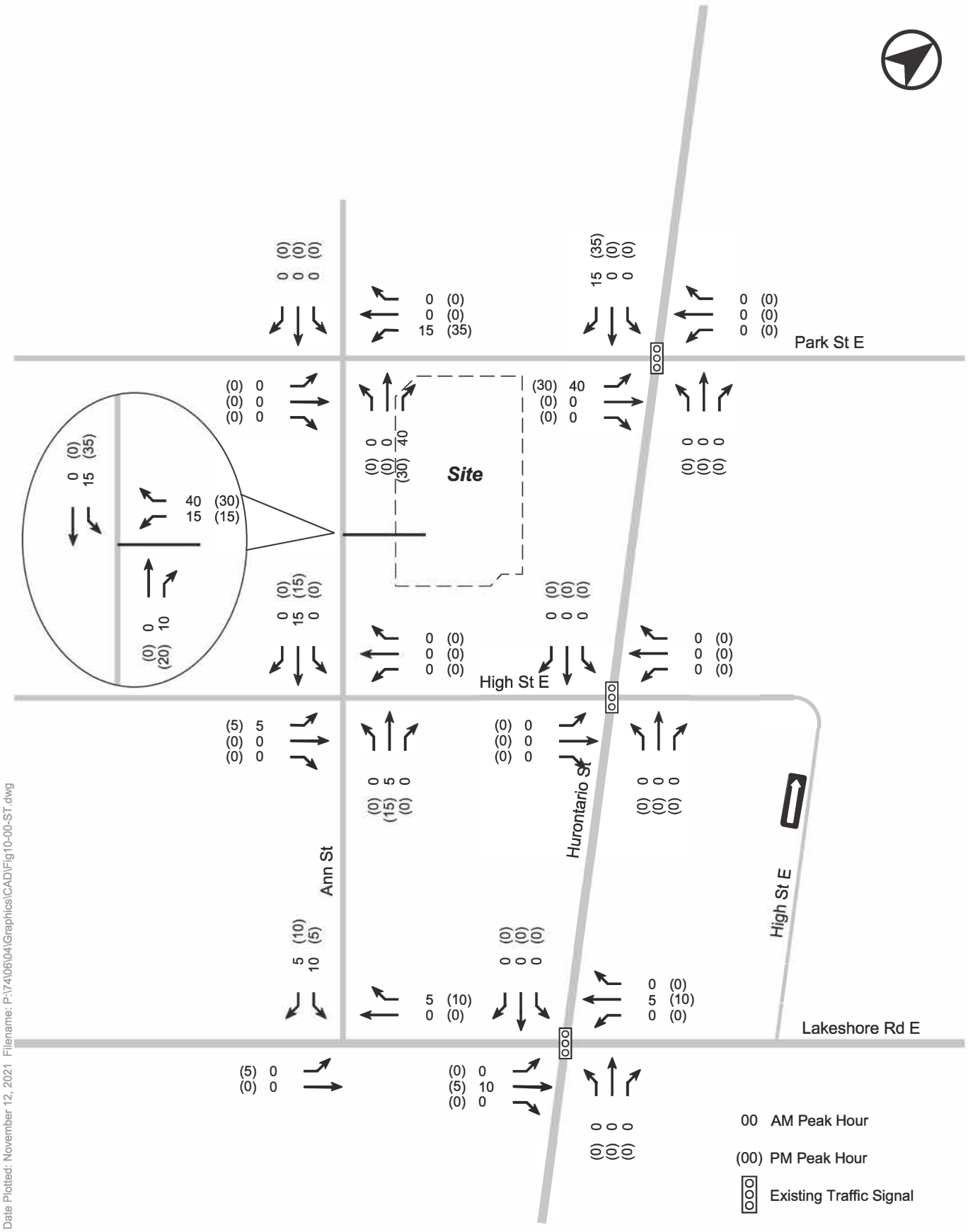

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FIGURE 12 TOTAL SITE TRAFFIC VOLUMES

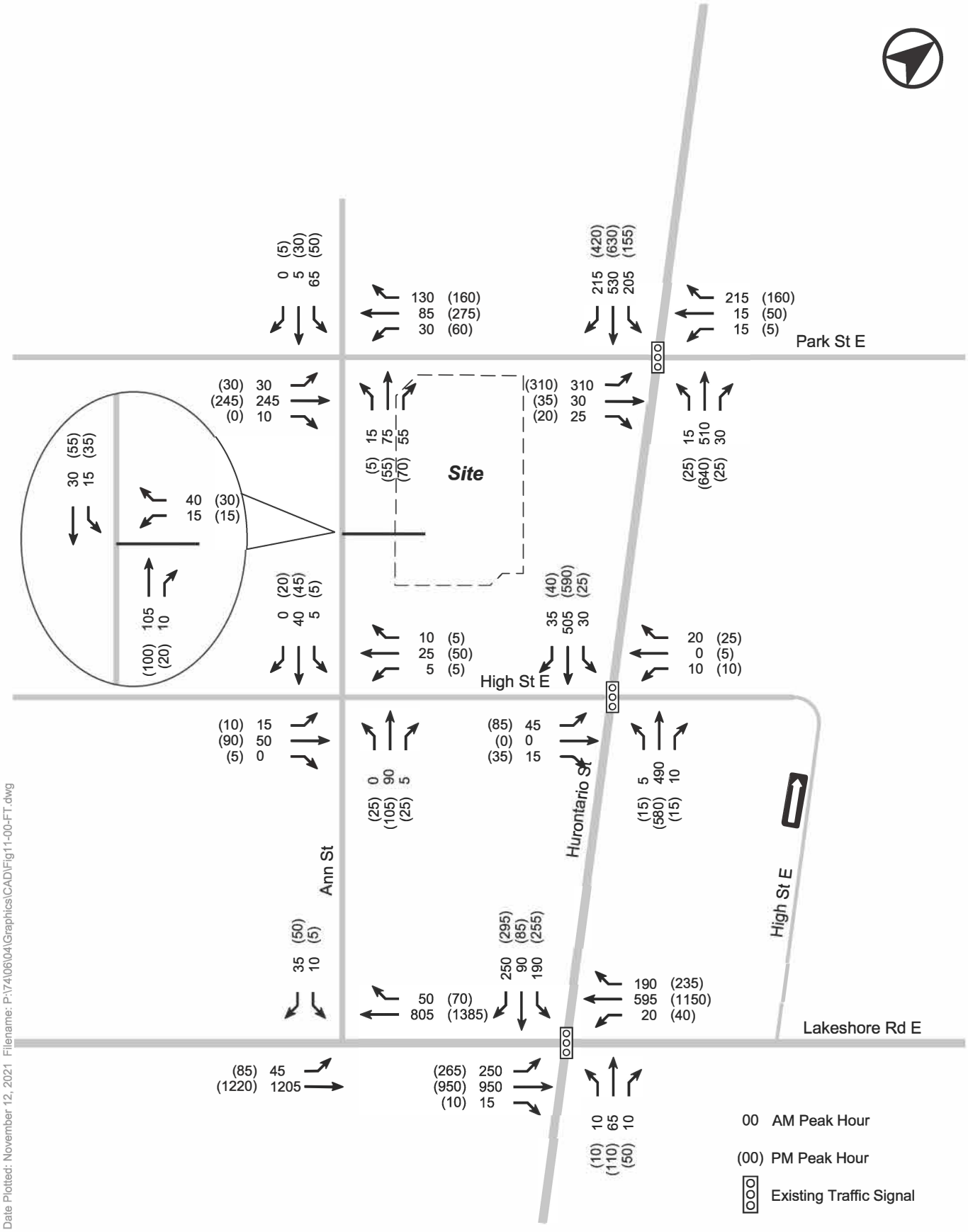

FIGURE 13 FUTURE TOTAL TRAFFIC VOLUMES

9.0 TRAFFIC ANALYSIS

9.1 BASIS OF ANALYSIS

An analysis of the study area intersections was undertaken using Synchro V11.0 and the *Highway Capacity Manual (HCM)* methodologies. The quality of traffic operations at intersections is typically based on the volume to capacity (v/c) ratio and level of service (LOS).

The v/c ratio for a particular movement (e.g. left/right turn or through) at an intersection is a measure of the capacity consumed by the number of vehicles making that movement and the total available capacity. The v/c ratio for an intersection overall is the weighted average of the v/c ratios for the critical movements. A v/c ratio of 1.00 indicates that the movement or intersection is operating at its theoretical capacity and there is no capacity available to accommodate any additional vehicles.

The LOS for a particular movement is based on the average delay per vehicle and includes deceleration delay, queue move-up time, stopped delay, and final acceleration delay. For signalized intersections, the LOS ranges from LOS A (10 seconds or less average delay per vehicle) to LOS F (greater than 80 seconds average delay per vehicle). The LOS for an intersection overall is based on the weighted average delay for all vehicles processed by the intersection.

The LOS criteria for unsignalized intersections are somewhat different from the criteria for signalized intersections as the characteristics of different transportation facilities result in different driver perceptions. The expectation is that a signalized intersection is designed to carry higher traffic volumes and experience greater delay than an unsignalized intersection. Therefore the delay values for unsignalized intersection have a smaller range, from LOS A (10 seconds or less average delay per vehicle) to LOS F (greater than 50 seconds average delay per vehicle). For unsignalized intersections, LOS is only calculated for those movements that conflict with opposing free-flow traffic and is not defined for the intersection as a whole.

Acceptable operations are generally considered to be LOS D or better although longer delays may be accepted in urban areas and where other modes of transportation such as transit are prioritized.

9.2 ANALYSIS PARAMETRES

Key parametres used in the analysis include:

- Existing lane configurations;
- Future lane configurations to account for the implementation of the Hurontario LRT (Plans provided in **Appendix E**);
- Peak hour factors (PHFs) set to 1.0 as per the region of Peel Guidelines;
- Lost time adjustments: Advanced Greens set to 1.0 seconds, Main Phase set to: 5 seconds.
- Heavy vehicle percentages as derived from existing turning movement counts;
- Pedestrian and bicycle approach crossings as derived from existing traffic counts;
- Signal timing plan data (i.e. minimum green time, pedestrian clearance time) under existing and future conditions are based on the parametres obtained from the City of Mississauga (plans Provided in **Appendix D**);
- Synchro defaults for all other parametres.

9.3 TRAFFIC OPERATIONS SCENARIOS

Traffic operations analyses results are presented in the subsequent sections for these scenarios:

- Existing conditions based on adjusted 2021 base counts;
- Future background conditions, which consider existing traffic volumes plus background traffic growth anticipated at the 5-year analysis horizon (2026 horizon year); and
- Future total conditions which consider the future background traffic with the addition of the site-generated traffic.

9.4 INTERSECTION ANALYSIS

The detailed Synchro output sheets are attached in **Appendix F** for reference.

9.4.1 Signalized Intersections

The summarized results of the intersection traffic operations analyses undertaken for all signalized intersections are summarized in **Table 18** to **Table 20**.

TABLE 18 SIGNALIZED INTERSECTION CAPACITY RESULTS – HURONTARIO STREET / LAKESHORE ROAD

Movement	Existing (2021)		Future Background (2026)		Future Total (2026)	
	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.42 (0.74)	A (C)	0.43 (0.78)	A (C)	0.43 (0.78)	A (C)
EBT	0.35 (0.39)	A (B)	0.36 (0.40)	A (B)	0.37 (0.41)	A (B)
EBR	0.01 (0.01)	A (A)	0.01 (0.01)	A (A)	0.01 (0.01)	A (A)
WBL	0.06 (0.14)	B (B)	0.06 (0.14)	B (B)	0.06 (0.14)	B (B)
WBT	0.26 (0.60)	B (C)	0.28 (0.60)	B (C)	0.28 (0.61)	B (C)
WBR	0.13 (0.19)	B (B)	0.13 (0.21)	B (B)	0.13 (0.21)	B (B)
NBL	0.04 (0.03)	D (C)	0.04 (0.03)	D (D)	0.04 (0.03)	D (D)
NBT	0.18 (0.27)	D (C)	0.19 (0.30)	D (D)	0.19 (0.30)	D (D)
SBL	0.73 (0.83)	F (E)	0.74 (0.89)	E (E)	0.74 (0.89)	E (E)
SBT	0.21 (0.15)	E (C)	0.23 (0.16)	D (C)	0.23 (0.16)	D (C)
SBR	0.19 (0.34)	F (C)	0.19 (0.28)	F (F)	0.19 (0.28)	F (F)
Overall	**0.44 (0.68)**	**D (C)**	**0.46 (0.70)**	**D (C)**	**0.46 (0.70)**	**D (C)**

Notes:
1. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).

Under existing traffic conditions, the intersection operates at an acceptable level of service during the weekday morning and afternoon peak hour periods, with overall v/c ratios of 0.54 and 0.68.

Under future background traffic conditions, with allowances of specific area developments and corridor growth, the intersection begins to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.46 and 0.70.

With the addition of site-related traffic under future 2026 traffic conditions, as the proposed development is fully developed, the intersection continues to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.46 and 0.70.

Site related impacts on the intersection are negligible.

TABLE 19 SIGNALIZED INTERSECTION CAPACITY RESULTS – HURONTARIO STREET / HIGH STREET EAST

Movement	Existing (2021)		Future Background (2026)		Future Total (2026)	
	V/C	LOS	V/C	LOS	V/C	LOS
EBLTR	0.42 (0.49)	E (D)	0.42 (0.57)	E (E)	0.42 (0.57)	E (E)
WBLTR	0.09 (0.09)	E (D)	0.09 (0.10)	E (D)	0.09 (0.10)	E (D)
NBL	0.01 (0.03)	A (A)	0.01 (0.02)	A (A)	0.01 (0.02)	A (A)
NBTR	0.18 (0.22)	A (A)	0.19 (0.21)	A (A)	0.19 (0.21)	A (A)
SBL	0.04 (0.05)	A (A)	0.04 (0.04)	A (A)	0.04 (0.04)	A (A)
SBTR	0.19 (0.23)	A (A)	0.20 (0.22)	A (B)	0.20 (0.22)	A (B)
Overall	**0.21 (0.27)**	**A (A)**	**0.22 (0.27)**	**B (B)**	**0.22 (0.27)**	**A (B)**

Notes:
1. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).

Under existing traffic conditions, the intersection operates at an acceptable level of service during the weekday morning and afternoon peak hour periods, with overall v/c ratios of 0.21 and 0.27.

Under future background traffic conditions, with allowances of specific area developments and corridor growth, the intersection begins to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.22 and 0.27.

With the addition of site-related traffic under future 2026 traffic conditions, as the proposed development is fully developed, the intersection continues to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.22 and 0.27.

Site related impacts on the intersection are negligible.

TABLE 20 SIGNALIZED INTERSECTION CAPACITY RESULTS – HURONTARIO STREET / PARK STREET EAST

Movement	Existing (2021)		Future Background (2026)[2]		Future Total (2026)[2]	
	V/C	LOS	V/C	LOS	V/C	LOS
EBL	0.55 (0.59)	D (C)	0.52 (0.52)	C (C)	0.58 (0.57)	C (C)
EBTR	0.07 (0.07)	C (C)	0.05 (0.05)	B (C)	0.05 (0.05)	B (C)
WBL	0.04 (0.01)	C (C)	0.04 (0.01)	C (D)	0.04 (0.01)	D (D)
WBTR	0.18 (0.19)	D (C)	0.18 (0.28)	D (D)	0.18 (0.29)	D (D)
NBL	0.02 (0.06)	C (B)	0.07 (0.17)	C (C)	0.07 (0.19)	C (C)
NBTR	0.32 (0.45)	C (C)	0.51 (0.53)	D (C)	0.51 (0.53)	D (C)
SBL	0.38 (0.35)	B (B)	0.52 (0.45)	C (C)	0.52 (0.45)	C (C)
SBTR	0.26 (0.32)	B (B)	0.49 (0.63)	C (C)	0.50 (0.65)	C (C)
SBR	0.11 (0.20)	B (B)	-- (--)	-- (--)	-- (--)	-- (--)
Overall	**0.40 (0.49)**	**C (B)**	**0.52 (0.59)**	**C (C)**	**0.56 (0.62)**	**C (C)**

Notes:
1. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).
2. Protected-permissive left turn added to eastbound left movements.

Under existing traffic conditions, the intersection operates at an acceptable level of service during the weekday morning and afternoon peak hour periods, with overall v/c ratios of 0.40 and 0.49.

Under future conditions, the signal was optimize to accommodate for overall corridor growth and area background development allowances. A protected-permissive left turn was added to the eastbound left movements. The overall cycle length was unchanged.

Under future background traffic conditions, with allowances of specific area developments and corridor growth, the intersection begins to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.52 and 0.59.

With the addition of site-related traffic under future 2026 traffic conditions, as the proposed development is fully developed, the intersection continues to operate at an acceptable level of service during the weekday morning and afternoon peak hours with overall v/c ratios of 0.56 and 0.62.

Site related impacts on the intersection are minimal.

Based on the foregoing, the net-new site traffic volumes can be appropriately accommodated at the network signalized intersections with the Hurontario LRT through signal timing adjustments and without the need for geometric improvements.

9.4.2 Unsignalized Intersections

The summarized results of the intersection traffic operations analyses undertaken the unsignalized intersections are summarized in **Table 21**. All unsignalized intersections will operate at acceptable levels of service (LOS C or better) under all scenario conditions.

TABLE 21 UNSIGNALIZED INTERSECTION CAPACITY RESULTS

Movement	Existing (2021)		Future Background (2026)		Future Total (2026)	
	Delay	V/C	Delay	V/C	Delay	V/C
Anne Street / Lakeshore Road[1]						
EBL	10.0 (13.2)	B (B)	10.1 (14.0)	B (B)	10.1 (14.3)	B (B)
SBLR	10.4 (10.2)	B (B)	10.4 (10.4)	B (B)	18.1 (23.8)	C (C)
Ann Street / High Street East[3]						
EBLTR	8.0 (8.0)	A (A)	8.0 (8.0)	A (A)	8.1 (8.2)	A (A)
WBLTR	7.6 (7.8)	A (A)	7.7 (7.8)	A (A)	7.7 (7.9)	A (A)
NBLTR	8.7 (8.8)	A (A)	8.7 (8.8)	A (A)	8.8 (9.1)	A (A)
SBLTR	7.7 (7.5)	A (A)	7.7 (7.5)	A (A)	7.7 (7.7)	A (A)
Ann Street / Park Street East[3]						
EBLTR	9.2 (10.0)	A (B)	10.7 (11.4)	B (B)	11.1 (11.8)	B (B)
WBLT	7.6 (9.8)	A (A)	8.2 (11.5)	A (B)	8.6 (13.2)	A (B)
NBLTR	9.2 (9.1)	A (A)	9.8 (9.8)	A (A)	10.0 (10.2)	A (B)
SBLTR	8.3 (9.0)	A (A)	9.1 (9.8)	A (A)	9.3 (10.1)	A (B)
Ann Street / Proposed Site Driveway[2]						
WBLR	-- (--)	-- (--)	0.0 (0.0)	A (A)	9.2 (9.4)	A (A)
SBLT	-- (--)	-- (--)	-- (--)	-- (--)	2.5 (3.0)	A (A)

Notes:
1. One-way stop control.
2. Two-way stop control.
3. All-way stop control
4. XX (XX): Weekday a.m. peak hour (Weekday p.m. peak hour).

10.0 SUMMARY AND CONCLUSIONS

10 West GO GP Inc., together with their project team, will be making Official Plan Amendment (OPA) and Zoning By-law Amendment (ZBA) applications to the City of Mississauga for permission to construct the proposed development.

The development block is bounded by Hurontario Street, High Street East, Ann Street and Park Street East and is located approximately 150 metres from the Port Credit GO Station and less than 100 metres from a future Hurontario LRT stop.

The Proposed Development would transform the block with the addition of a high-rise residential building, new public parkland and landscaped open space, at-grade retail/commercial space, and the retention of the two existing heritage buildings.

The existing block consists of two residential detached dwelling units on the northwestern portion of the site, a public park on the northeastern portion of the site and two heritage buildings (84 and 90 High Street) along the southern portion of the site.

The proposal contemplates a 22-storey residential tower on the northwest corner of the site and will accommodate 359 residential units and approximately 309 square metres of commercial space at grade (herein referred to as “10 West”). A total of 2,492 square metres of public parkland will be created through the redevelopment, including a 1,559 square metre park along Hurontario Street and a 934 square metre park oriented along High Street East. The two existing heritage buildings along the south half of the site will be retained as part of the redevelopment in their original location. 84 High Street is proposed to continue functioning as a 6-unit rental apartment building, and 90 High Street is envisioned to be used a commercial or office building.

A 4.5 level below-grade parking garage is proposed as part of the 10 West development which will accommodate 283 parking spaces including 269 spaces for residents and visitors of 10 West as well as off-site parking for residents and visitors of 84 High Street (7 spaces) and future commercial uses for 90 High Street (7 spaces).

Short-term visitor bicycle parking for the 10 West development (residential and retail uses) will be provided at grade and long-term resident bicycle parking will be provided on the P1 level of the parking garage, accessed via the site driveway and parking ramp.

Two (2) loading spaces are proposed within a central consolidated loading facility, accessed via the proposed private driveway from Ann Street, to accommodate the proposed 10 West retail and residential refuse, recycling and organic collection as well as delivery/moving activities. One (1) formal loading space, consistent with the requirements set out in the Mississauga Zoning By-law, and one (1) proposed smaller loading space (deficient by 1.0 m in length), that can accommodate a range of smaller delivery vehicles (i.e. step vans and cube vans). Refuse / recycling collection for the existing 84 and 90 High Street buildings will continue to occur as curbside pickup.

The following summarizes the conclusions of this transportation impact study.

Transportation Context

1. The Site is located in close proximity to the Port Credit GO Station (approximately 150 metres) and is well served by a number of frequent bus routes that provide transit connections to various regional and local rapid transit lines, as well as retail, employment, and education areas within the GTHA.

2. Significant public transit infrastructure investments are planned within the immediate vicinity of the site including the Hurontario LRT and planned Lakeshore Road Rapid Transit.

3. The forecast for future transit mode share along the Hurontario – Main corridor anticipates a substantial shift in mode share from 24% to 49% with the introduction of the LRT, approximately doubling the transit mode share along the corridor. Applying the same percentage shift in mode split to the site's existing transit mode split results in an increase from 14% to 29%.

4. Significant cycling infrastructure improvements are planned along Lakeshore Road, Hurontario Street and within the local street network. These infrastructure upgrade will provide a significant north-south and east-west connections for future residents and visitors of the site.

Parking

5. The site is subject to City of Mississauga Zoning By-law 0225-2007 requires the provision of 581 spaces for the 10 West development, comprising 472 resident spaces (1.31 space per unit) and 89 non-residential spaces. Nine (9) spaces are required for the existing 84 High Street residential building (8 resident and 1 visitor space) and 11 spaces are required for an office use within the existing 90 High Street building.

6. The current concept plan illustrates the provision of 283 parking spaces including 233 resident spaces and 36 residential visitor spaces for the 10 West development, 7 spaces reserved for each of the existing 84 and 90 High Street heritage buildings.

7. The following reduced minimum parking standards are proposed for the 10 West, 84 and 90 High Street sites.

   Residents:
   a. 1 Bedroom: 0.57 spaces / unit
   b. 2 Bedroom: 0.73 spaces / unit

   Residential Visitors: 0.10 spaces / unit

   Retail (ancillary): No requirement proposed

   Office: 2 spaces / 100 m^2 GFA

8. The proposed retail use on site is considered to be ancillary and, as such, no parking has been proposed for its exclusive use. This is appropriate and acceptable because the ancillary uses will serve future residents in the immediate area and therefore will not generate external vehicular parking demand.

9. Notwithstanding that retail uses are illustrated in the current development plans, the proposed parking requirements provide flexibility for other non- at-grade ancillary uses (as proposed in **Section 5.2**). In the event that other ancillary uses are a proposed in subsequent submissions, the same non-residential proposed parking requirement rate (i.e. no requirement) shall apply.

10. From a practical perspective, even in the unlikely event that ancillary retail uses generates a nominal vehicular demand, it is proposed that this demand could be accommodated within the residential visitor parking spaces. However, as noted above given the scale of the proposed ancillary non-residential component of the development, the associated parking demand is anticipated to be zero or insignificant.

11. Adoption of the proposed reduced parking standards is considered to be appropriate based upon the following considerations:

    - Numerous transportation planning principles that support reduced parking supplies;
    - The Site adjacent to significant existing and planned transit services (Port Credit GO Station and planned Hurontario LRT and Lakeshore Road Rapid Transit) and bicycle route facilities that provide non-automobile dependent travel connections across the City;
    - TDM measures proposed on-site;
    - Future area travel characteristics
    - Parking demand observed / recorded by BA Group at a residential development with a more limited level of transit access to the site;
    - Range of approvals for reductions in resident parking supply ratios for developments with less proximate access to a GO Station; and
    - Consistency with the recently approved parking rates for the neighbouring residential development at 78 Park Street East and 22 – 28 Ann Street.

Bicycle Parking

12. There are currently no bicycle parking requirements in the City of Mississauga's Zoning By-law 0225-2007. However, the City of Mississauga's Transportation Demand Management Strategy and Implementation Plan has recommended bicycle parking standards to be included in the City's Zoning By-Law for new developments and the provision of bicycle parking was also noted by City staff in the project's Development Application Review Committee (DARC) comments.

13. It is proposed to provide bicycle parking for the planned 10 West development that meets the recommended bicycle parking rates. A total of 287 bicycle parking spaces are provided including 252 long-term (resident) and 35 short-term (visitor).

14. The resident bicycle parking/storage space will be located in secure, controlled-access areas within the P1 level of the parking garage. The short-term visitor bicycle parking spaces will be located at-grade.

Loading

1. The prevailing Zoning By-law 0225-2007 requires the provision of 2 loading spaces for the 10 West development. No dedicated loading area is required for the existing 84 and 90 High Street buildings.

2. Two (2) loading spaces are proposed within a central, consolidated loading facility for the proposed 10 West development with vehicular access provided off of Ann Street. While the proposed loading supply meets the Zoning By-law requirement (2 spaces), one of the proposed spaces is deficient in length by 1 metre.

3. The proposed loading configuration at 10 West is considered appropriate based on the following:

   - The at-grade retail use within the proposed 10 West development is only slightly higher (approximately 60 m^2) than the minimum Zoning By-law requirement that triggers the need to provide a loading space.

   - The proposed 10 West loading supply (2 spaces) is consistent with the Zoning By-law requirement, albeit one of the spaces is slightly deficient in length. Loading vehicles for retail uses range substantially in size and many deliveries for ancillary retail uses are made by smaller vehicles (step vans, cube vans, cars) which can be accommodated within the proposed smaller loading space. Any retail loading activity for a larger delivery vehicle can be accommodated within the shared full-size loading space while the smaller space enables deliveries by smaller vehicles in a controlled area where they will not be using spaces designated for a larger delivery vehicle.

   - While the City of Mississauga's Zoning By-law 0225-2007 does not contain shared loading provisions between uses, shared loading is recognized / permitted in other municipalities (i.e. City of Toronto) in order to maximize the efficiency of loading facilities, resulting in efficient pedestrian-oriented buildings and spaces while still meeting the functional servicing requirements of the multiple uses on the site. If shared loading provisions were applied to the site, it would result in the requirement of one (1) formal loading space.

   - It is intended that the use of the proposed loading facilities will be managed by a building facility coordinator, allowing for the efficient use of the loading spaces through scheduling of deliveries and waste/recycling collection.

4. The proposed loading configuration is considered appropriate for the proposed 10 West development as it will accommodate all of the refuse, recycling and organic collection operations as well as delivery/moving activities for the proposed residential and retail uses.

5. Refuse / recycling collection for the existing 84 and 90 High Street buildings will continue to occur as curbside pickup.

Transportation Demand Management

6. A Transportation Demand Management (TDM) Plan has been prepared which will aim to reduce the overall reliance on single-occupant vehicles while promoting the use of more active and sustainable modes of transportation.

7. The key elements of the TDM plan include:
   - provide an appropriate but reduced vehicle parking supply in comparison to the prevailing Zoning By-law requirements, which take advantage of the excellent access to existing and future high order transit infrastructure within the immediate vicinity of the site;
   - explore the possibility of introducing car-share and bike share services on the site;
   - provide bicycle parking spaces (and a bicycle repair station) on the site in accordance with rates recommended by City of Mississauga staff; and
   - provide pre-loaded PRESTO cards to each first-time unit owner to encourage the use of transit a convenient means of travel to and from the site.

Traffic Volumes

8. Existing morning and afternoon peak period travel activity levels were established for the study area road network based upon intersection traffic information collected by Spectrum Traffic Data Inc. on behalf of BA Group, and additional data provided by the City of Mississauga.

Background Traffic Growth

9. For the future year of 2026, traffic growth allowances have been made for three (3) developments within the area.

10. Allowances for changes to corridor traffic volumes on Hurontario Street and Lakeshore Road East were applied on the basis of information provided by the City of Mississauga.

Site Traffic

11. The proposed development is forecast to generate 80 and 100 total net-new vehicle trips in the weekday morning and afternoon peak hours, respectively, in the 2026 horizon year. This also includes an increase of transit mode share of 15% to reflect the future impact of the Hurontario LRT.

Traffic Operations Analysis

12. Future lane configurations were adjusted to account for the implementation of the Hurontario LRT.

13. For existing conditions, the study area intersections operate within capacity.

14. For the future background and future total scenarios, all movements and intersections operate within capacity. Site impacts on the area road intersections are considered to be negligible.

APPENDIX A:
Reduced Scale Architectural Plans

10 WEST GO

ISSUED FOR OPA & REZONING SUBMISSION
17 DECEMBER 2021

No.	Revisions	Date
01	ISSUED FOR OPA / REZONING	17 DEC 2021

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10 WEST GO GP INC

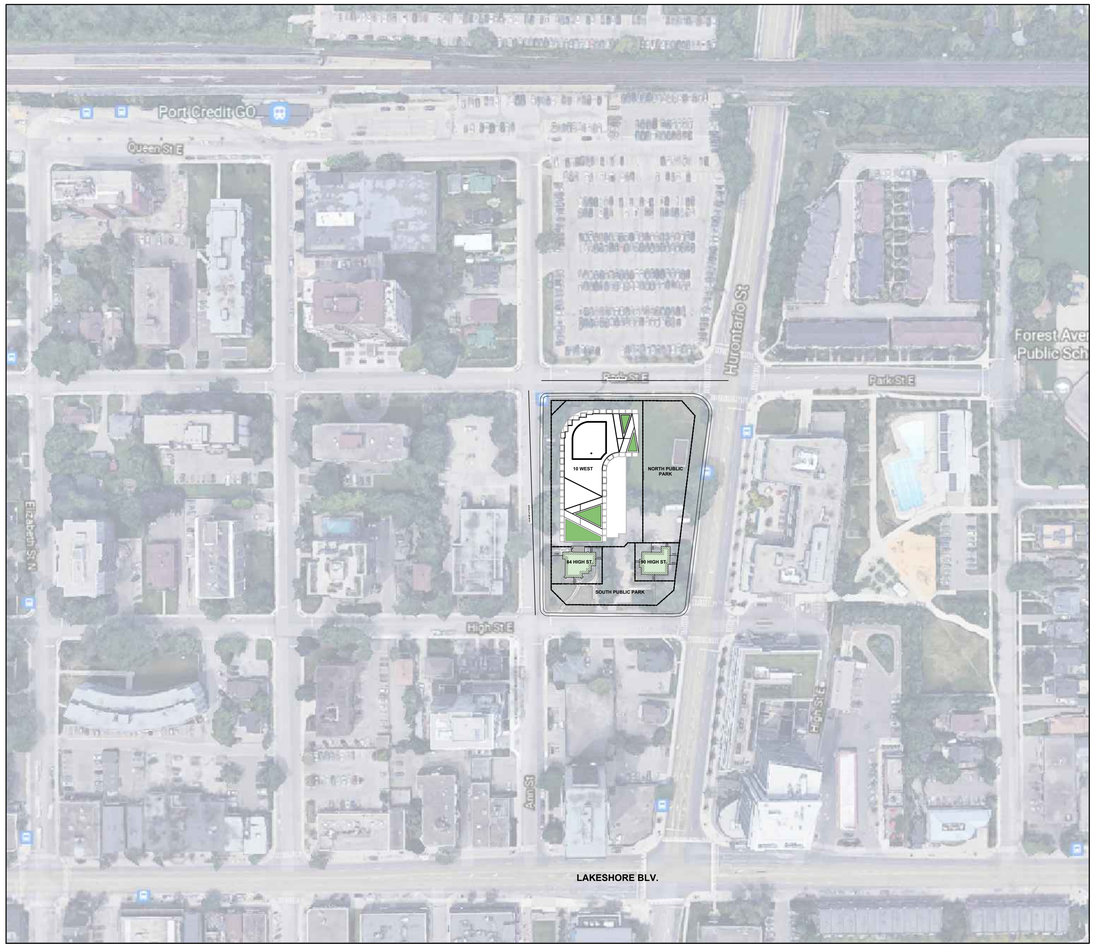
10 WEST GO
17 &19 ANN ST. 84 & 90 HIGH ST.
MISSISSAUGA, ONTARIO

ONTARIO ASSOCIATION OF ARCHITECTS
SABAK ESLAHJOU
LICENCE
4706

Drawn	Scale: NTS
Checked: DL, CY	Date: 17 DEC 2021

Title: TITLE

Project No. 21-182	Drawing No. A001



6 A100 REF. CONTEXT PLAN
1:3000

ABBREVIATION LEGEND

ACC	ARCHITECTURAL CONCRETE TYPE	EL	ELEVATION	H	HOT	O/C	ON CENTRE	S	SINK	U/S	UNDERSIDE
ACT	ACOUSTIC TILE	ELEC	ELECTRICAL	HD	HUB DRAIN	OD	OUTSIDE DIAMETER	S/A	SUPPLY AIR		
AD	AREA DRAIN	EOS	EDGE OF SLAB	HM	HOLLOW METAL	OH	OVERHEAD	SC	SEALED CONCRETE	V	VOLT
AES	ARCHITECTURAL EXPOSED STEEL	EP	ELECTRICAL PANEL	HOR	HORIZONTAL			SD	SCUPPER DRAIN	VB	VAPOUR BARRIER
ALUM	ALUMINUM	EQ	EQUAL	HSS	HOLLOW STEEL SECTION	PC	PRECAST CONCRETE	SPEC	SPECIFICATION	VCT	VINYL COMPOSITE TILE TYPE
AFF	ABOVE FINISHED FLOOR	EIF	EXTERIOR INSULATION FINISHTYPE	HT	HEIGHT	PLM	PLASTIC LAMINATE	SQ	SQUARE	VERT	VERTICAL
		EXP	EXPOSED	HW	HARDWOOD STRIP	PLYWD	PLYWOOD	SQ FT	SQUARE FEET	VEST	VESTIBULE
C	COLD	EXJ	EXPANSION JOINT			PRE-FAB	PRE-FABRICATED	SSTL	STAINLESS STEEL	VP	VAPOUR BARRIER
C/H	COLD & HOT	EXT	EXTERIOR	IM	INSULATED METAL	PS	PRESSED STEEL	STL	STEEL		
CAR	CARPET			INS	INSULATION	PT	PAINT	SIM	SIMILAR	W	WASHER, WIDE
CB	CONCRETE BLOCK	FD	FLOOR DRAIN	INT	INTERIOR	P/T	PRESSURE TREATED	ST	STONE TYPE	WD	WOOD TYPE
℄	CENTRE LINE	FDN	FOUNDATION			QM	QUIRK MITRE	STOR	STORAGE	WF	WOOD FINISH TYPE
CF	CERAMIC TILE	FIN	FINISH(ED)	JT	JOINT			STRUCT	STRUCTURE, STRUCTURAL	WP	WORKING POINT
CJ	CONCRETE FINISH TYPE	FL	FLOOR			R	RISER, RADIUS	SW	SWITCH	W.P.	WATERPROOF (MEMBRANE)
CL	CONCRETE JOINT	FT	FOOT	LAM	LAMINATED	R.O.	ROUGH OPENING			W.R.T.	WITH RESPECT TO
COL	CLOSET	FTG	FOOTING	LIN	LINEN	R/A	RETURN AIR	T	TREAD	W/	WITH
CONC	CONCRETE BLOCK	FRG	FIBRE REINFORCED GYPSUM			RAD	RADIATOR	TBB	TILE BACKER BOARD		
CONT	CONTINUOUS			MA	MARBLE TYPE	RB	RUBBER BASE	TEL	TELEPHONE	XGWB	EXTERIOR GYPSUM BOARD
CT	CONCRETE COLUMN	GALV	GALVANIZED	MAX	MAXIMUM	RC	REINFORCED CONCRETE	THK	THICK, THICKNESS		
C/W	COVERED WITH	GBL	GLASS BLOCK	MECH	MECHANICAL	RD	ROOF DRAIN	T&G	TONGUE & GROOVE		
		GR	GRANITE	MIN	MINIMUM	REF	REFERENCE DIMENSIONS	TV	TELEVISION		
D	DIAMETER, DRYER	GL	GLASS	ML	MELAMINE	REINF	REINFORCED, REINFORCING	TYP	TYPICAL		
DFJ	DEFLECTION JOINT	GWB	GYPSUM WALLBOARD	MOD	MODULE	REQ'D	REQUIRED	T/O	TOP OF SLAB		
DN	DOWN			MT	METAL TYPE	RV	REVEAL	T.O.B.	TOP OF BEAM		
DWG	DRAWING					REV	REVERSE	T.O.W.	TOP OF WALL		
				NFWH	NO FREEZE WATER HOSE	R INSUL	RIGID INSULATION				
				NIC	NOT IN CONTRACT	RM	ROOM				
				N°	NUMBER						
				NTS	NOT TO SCALE						

3 A100 REF. ABBREVIATION LEGEND

ARCHITECTURAL DRAWING LIST

DRAWING NO.	TITLE	CONSULTANT
SCHEDULES		
A001	TITLE	CORE
A100	CONTEXT PLAN, STATISTICS, ABBREV., DRAWINGS LIST & ZONING	CORE
A100a	RESIDENTIAL SOLID WASTE MANAGEMENT	CORE
A101a	SUN-SHADOW STUDY	CORE
A101b	SUN-SHADOW STUDY	CORE
A101c	SUN-SHADOW STUDY	CORE
A101d	SUN-SHADOW STUDY	CORE
A101e	SUN-SHADOW STUDY	CORE
A101f	SUN-SHADOW STUDY	CORE
A101g	SUN-SHADOW STUDY	CORE
A101h	SUN-SHADOW STUDY	CORE
A102	SURVEY PLAN	JD BARNES
A103	PARCEL PLAN	CORE
A104	SITE PLAN	CORE
PLANS		
A200	P5 PARKING LEVEL	CORE
A201	P4 PARKING LEVEL	CORE
A202	P3 PARKING LEVEL	CORE
A203	P2 PARKING LEVEL	CORE
A204	P1 PARKING LEVEL	CORE
A205	GROUND LEVEL	CORE
A206	GROUND LEVEL MEZ	CORE
A207	LEVEL 2	CORE
A208	LEVELS 3-6	CORE
A209	LEVELS 7-10	CORE
A210	LEVELS 11-14	CORE
A211	LEVEL 15	CORE
A212	LEVEL 16	CORE

DRAWING NO.	TITLE	CONSULTANT
PLANS		
A213	LEVELS 17-22	CORE
A214	LEVEL MECHANICAL PENTHOUSE	CORE
A215	LEVEL ROOF	CORE
ELEVATIONS / SECTIONS		
A400	SOUTH ELEVATION	CORE
A401	EAST ELEVATION	CORE
A402	NORTH ELEVATION	CORE
A403	WEST ELEVATION	CORE
A410	BUILDING SECTION 1	CORE
A411	BUILDING SECTION 2	CORE
PERSPECTIVES		
A600	BUILDING PERSPECTIVE	CORE
A601	BUILDING PERSPECTIVE	CORE
A602	BUILDING PERSPECTIVE	CORE
A603	BUILDING PERSPECTIVE	CORE
A604	BUILDING PERSPECTIVE	CORE
A605	BUILDING PERSPECTIVE	CORE

2 A100 REF. DRAWING LIST

BUILDING AREA

RESIDENTIAL

LEVELS	GCA (m2)	GCA (Sq Ft)	GFA (m2)	GFA (Sq Ft)
P-5	1,361.94	14,660	96.92	1,043
P-4	2,977.85	32,053	194.41	2,093
P-3	2,977.85	32,053	143.22	1,542
P-2	2,937.47	31,619	144.49	1,555
P-1	2,913.02	31,355	181.26	1,951
Ground	1,849.20	19,905	1,347.14	14,500
Mezzanine	1,229.77	13,237	894.51	9,628
Level 2	1,389.87	14,960	1,144.05	12,314
Level 3	1,528.55	16,453	1,466.78	15,788
Level 4	1,528.55	16,453	1,466.78	15,788
Level 5	1,528.55	16,453	1,466.78	15,788
Level 6	1,528.55	16,453	1,466.78	15,788
Level 7	1,284.01	13,821	1,222.24	13,156
Level 8	1,284.01	13,821	1,222.24	13,156
Level 9	1,284.01	13,821	1,222.24	13,156
Level 10	1,284.01	13,821	1,222.24	13,156
Level 11	1,038.19	11,175	978.01	10,527
Level 12	1,038.19	11,175	978.01	10,527
Level 13	1,038.19	11,175	978.01	10,527
Level 14	1,038.19	11,175	978.01	10,527
Level 15	1,038.19	11,175	966.06	10,399
Level 16	793.06	8,536	571.10	6,147
Level 17	793.06	8,536	732.88	7,889
Level 18	793.06	8,536	732.88	7,889
Level 19	793.06	8,536	732.88	7,889
Level 20	793.06	8,536	732.88	7,889
Level 21	793.06	8,536	732.88	7,889
Level 22	793.06	8,536	732.88	7,889
Mech PH	297.08	3,198	3.76	40
Total - Below Grade	13,168.13	141,741	760.30	8,184
Total - Above Grade	26,758.53	288,026	23,992.02	258,248
Total	39,926.66	429,767	24,752.32	266,432

RETAIL	GCA (m2)	GCA (SQ Ft)	GFA (m2)	GFA (Sq Ft)
Ground	322.00	3,466	300.47	3,234
Mezz	9.12	98	9.12	98
Total	331.12	3,564	309.59	3,332
Total Residential + Retail	40,257.78	433,331.14	25,061.91	269,764.15

5 A100 REF. GCA / GFA STATISTICS

VEHICULAR PARKING

						Accessible	
Levels	Visitor/Retail	84 High Street	90 High Street	Residential	Total	Type A	
P-5				30	30	0	0
P-4				72	72	1	1
P-3				72	72	1	1
P-2	7			58	65	1	1
P-1	29	7	7		43	1	1
Total Provided	36	7	7	232	283	4	4
Total Required	36	8	8	229	279	9	

BICYCLE PARKING

Levels	Visitor	Residential	Total
P-1		232	232
Ground	33		33
Total Provided	33	232	265
Total Required	29	252	281

AMENITY	Indoor (m2)	Outdoor (m2)	Total (m2)
Ground	286.50	214.26	500.76
Mezz	248.28	0	248.28
Level 2	184.05	428.84	612.89
Level 16	161.76	152	313.76
Total Provided	880.61	795.10	1,675.71
Ratio Provided	4.6m2/unit		

4 A100 REF. PARKING & AMENITY STATISITICS

UNIT DISTRIBUTION	1Bed/1Bed + Den	2Bed/2Bed+Den	Units per Floor
Ground	3	5	8
Mezzanine	7	1	8
Level 2	7	10	17
Level 3	11	12	23
Level 4	11	12	23
Level 5	11	12	23
Level 6	11	12	23
Level 7	13	7	20
Level 8	13	7	20
Level 9	13	7	20
Level 10	13	7	20
Level 11	11	5	16
Level 12	11	5	16
Level 13	11	5	16
Level 14	11	5	16
Level 15	11	4	15
Level 16	6	3	9
Level 17	6	5	11
Level 18	6	5	11
Level 19	6	5	11
Level 20	6	5	11
Level 21	6	5	11
Level 22	6	5	11
Total Units	210	149	359
Percentage	58%	42%	100%

10 WEST GO

SITE AREA	3,273.96 SQ. M. 35,241 SQ. FT.	ZONING	RA1-24, H-RA2-48, D CITY OF MISSISSAUGA BY-LAW 0225-2007
PROGRAM	RESIDENTIAL (GROUP C), GROUND LEVEL TO LEVEL 22		RETAIL (GROUP E), GROUND LEVEL
GROSS FLOOR AREA	PROPOSED RESIDENTIAL ABOVE GRADE GFA = RESIDENTIAL BELOW GRADE GFA = TOTAL=	SQ. M. 23,992.02 760.30 24,752.32	SQ. FT. 258247.9538 8183.80385 266431.7549
NO. DWELLING UNITS	1BED/ 1BED+DEN 210 UNITS / 58%	2BED/ 2BED+DEN 149 UNITS / 42%	TOTAL 359 UNITS
	REQUIRED	PROPOSED	
FLOOR SPACE INDEX	N/A (REFER TO ZONING BY-LAW 0225-2007)	7.65	
PERCENTAGE OF SITE AS LANDSCAPE AREA	N/A (REFER TO ZONING BY-LAW 0225-2007)	32.90%	
HEIGHT	SEE SCHEDULE RA-1, H-RA2-48, D	SEE DRAWINGS & DRAFT BY-LAW	
SETBACKS	SEE SCHEDULE RA-1, H-RA2-48, D	SEE DRAWINGS	
LOADING	N/A	1 FORMAL LOADING SPACE 1 PROPOSED SMALLER LOADING SPACE	
OFF-STREET LOADING PASSENGER	N/A (REFER TO ZONING BY-LAW 0225-2007)	N/A	
PERCENTAGE OF GROUND FLOOR AS RETAIL/COMMERCIAL	N/A (REFER TO ZONING BY-LAW 0225-2007)	34.83%	
AMENITY SPACE	5.6m2 PER UNIT REQUIRED AT PER ZONING BY-LAW TOTAL = 2,010.4 m2	INTERIOR AMENITY EXTERIOR AMENITY TOTAL	880.61 m2 795.1 m2 1675.71 SQ.M. (AS PER 4.6 m2/UNIT)
RESIDENTIAL PARKING	1BED/ 1BED+DEN (0.57 PARKING SPACE PER UNIT) 0.57 X 210 UNITS = 120 2BED/ 2BED+DEN (0.73 PARKING SPACE PER UNIT) 0.73 X 149 UNITS = 109 TOTAL PARKING SPACES = 229 PARKING SPACES	TOTAL OF 233 PARKING SPACES PROVIDED AT P-2 TO P-5 PARKING LEVELS	
VISITOR PARKING	0.1 PARKING PER UNIT 0.1 X 359 UNITS = 36	TOTAL OF 36 PARKING SPACES PROVIDED AT P-1 AND P-2 PARKING LEVEL	
PARKING ALLOCATION FOR 84 & 90 HIGH STREET	7 PARKING SPACES FOR 84 HIGH STREET 7 PARKING SPACES FOR 90 HIGH STREET	7 PARKING SPACES FOR 84 HIGH STREET PROVIDED AT P-1 PARKING LEVEL 7 PARKING SPACES FOR 90 HIGH STREET PROVIDED AT P-1 PARKING LEVEL	
RESIDENTIAL BICYCLE PARKING	0.7 BIKE PARKING PER UNIT AS PER ZONING BY LAW 0.7 X 359 UNITS = 252	TOTAL OF 252 BIKE PARKING SPACES PROVIDED AT P-1 PARKING LEVEL	
VISITOR BICYCLE PARKING	0.08 BIKE PARKING PER UNIT AS PER ZONING BY LAW 0.08 X 359 UNITS = 29 0.25 RETAIL PARKING /100m2 = 1	TOTAL OF 29 BIKE PARKING SPACES PROVIDED OF WHICH 23 INDOOR BIKE PARKING PROVIDED AT GROUND LEVEL AND 6 OUTDOOR RESIDENTIAL BIKE PARKING SPACES PROVIDED AT GROUND LEVEL 6 OUTDOOR RETAIL BIKE PARKING SPACES PROVIDED AT GROUND LEVEL	

1 A100 REF. UNIT DISTRIBUTION / SUMMARY

No.	Revisions	Date
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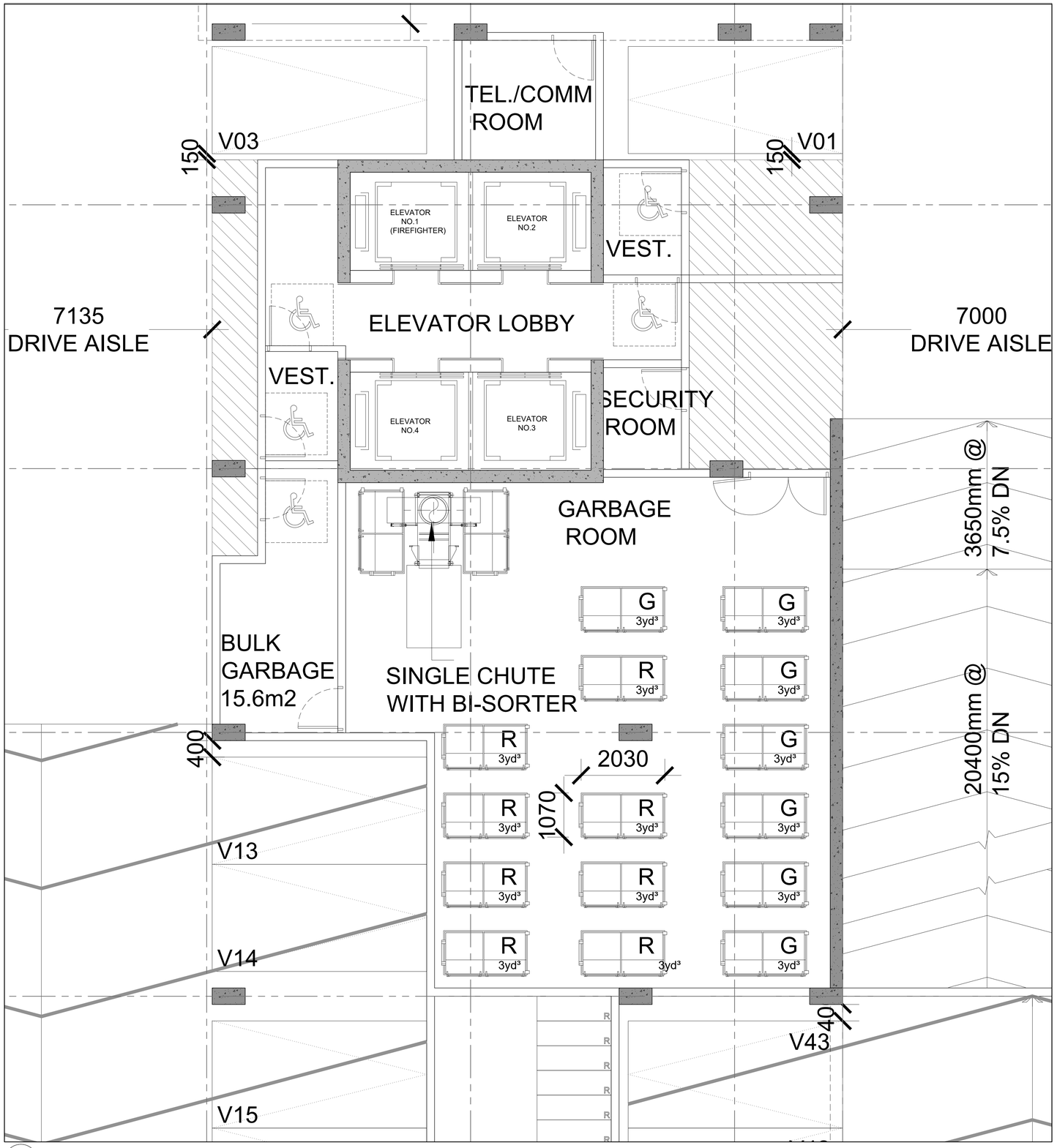
Drawn	Scale
CY	NTS
Checked	**Date**
DL, CY	17 DEC 2021

Title
CONTEXT PLAN, STATISTICS
ABBREV., DRAWINGS LIST & ZONING

Project No.	Drawing No.
21-182	A100

10 DEC 2021



3 A100a GARBAGE ROOM

Multi-Residential Complexes and Stacked Townhouses

Type of Bin	3 yd³ (units/bin)	4 yd³ (units/bin)	6 yd³ (units/bin)
Compacted Garbage	54	72	N/A
Non-compacted Garbage	18	24	36
Recyclable Materials	45	60	90

Note: Multi-Residential Complexes and Stacked Townhouses proposing less than 60 Dwelling Units will receive one Recycling Cart for every 7 Dwelling Units.

2 A100a WASTE MANAGEMENT REQUIREMENTS

AS PER REGION OF PEEL WASTE COLLECTION DESIGN STANDARDS

REQUIRED

SOLID WASTE MANAGEMENT PLAN REQUIRED:
1 GARBAGE BIN(3yd³) IS REQUIRED FOR EACH 54 UNITS AND
1 RECYCLING BIN(3yd³) IS REQUIRED FOR EACH 45 UNITS.

TOTAL # OF UNITS = 359

359/ 54 = 7x3yd³ BINS
359/ 45 = 8x3yd³ BINS

PROVIDED

SOLID WASTE MANAGEMENT PLAN PROVIDED:
WASTE STORAGE ROOM SIZE PROVIDED AS FOLLOWED:

TOTAL SPACE TO ALLOW FOR:
7x3yd³ BINS
8x3yd³ BINS
= 131.42m²

STAGING AREA PROVIDED ON GROUND LEVEL: 52.62m² STAGING AREA PROVIDED

RESIDENTIAL WASTE STORAGE AREA PROVIDED: 184.04m²

1 A100a WASTE MANAGEMENT STATISTICS

No.	Revisions	Date
01	ISSUED FOR OPA / REZONING	17 DEC 2021

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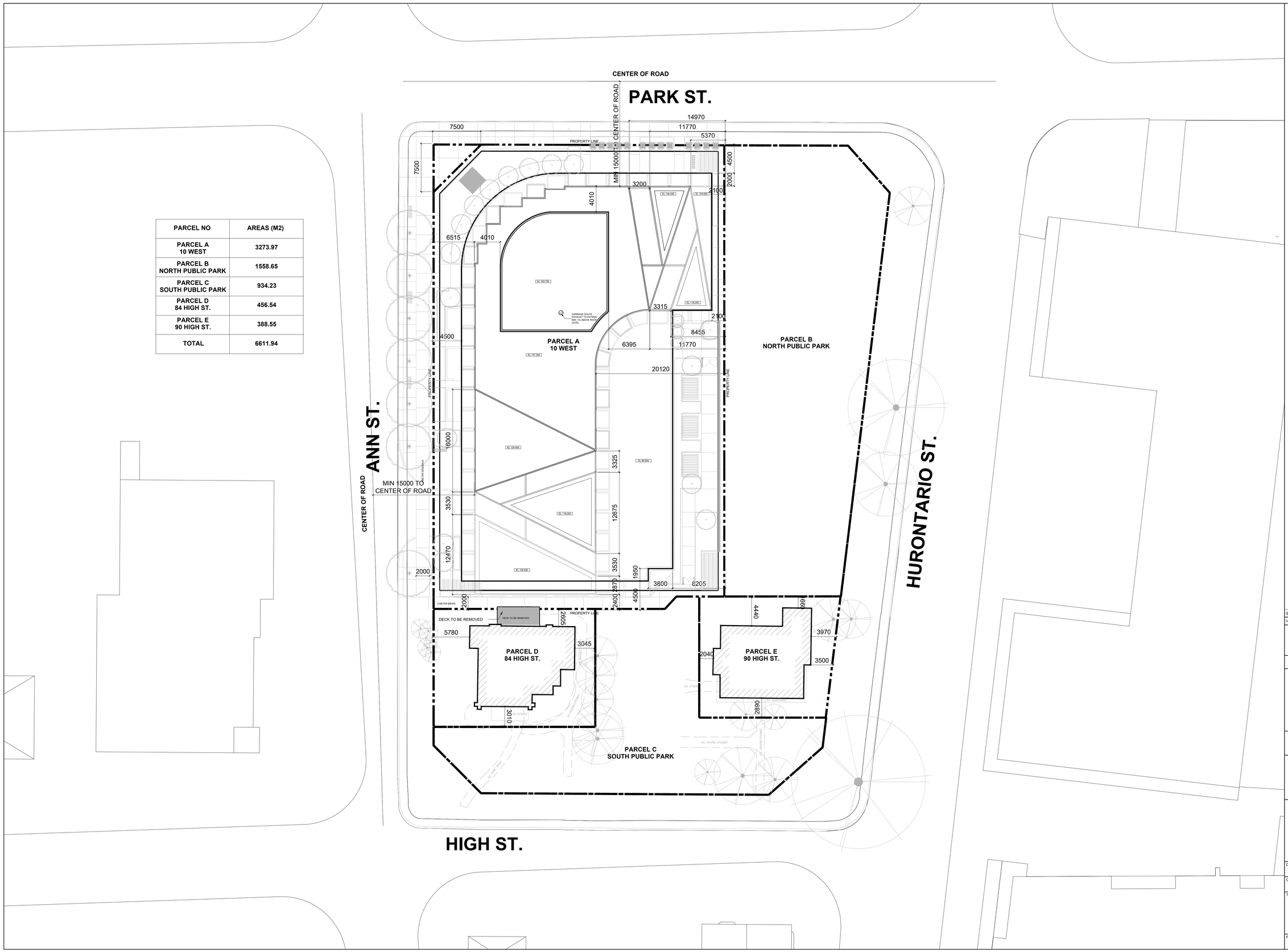
Drawn	Scale
SK, CY	1:50
Checked	**Date**
DL, CY	17 DEC 2021

Title
RESIDENTIAL SOLID WASTE MANAGEMENT

Project No.	Drawing No.
21-182	A100a

17-DEC-2021

PARCEL NO	AREAS (M2)
PARCEL A 10 WEST	3273.97
PARCEL B NORTH PUBLIC PARK	1558.65
PARCEL C SOUTH PUBLIC PARK	934.23
PARCEL D 84 HIGH ST.	456.54
PARCEL E 90 HIGH ST.	388.55
TOTAL	6611.94



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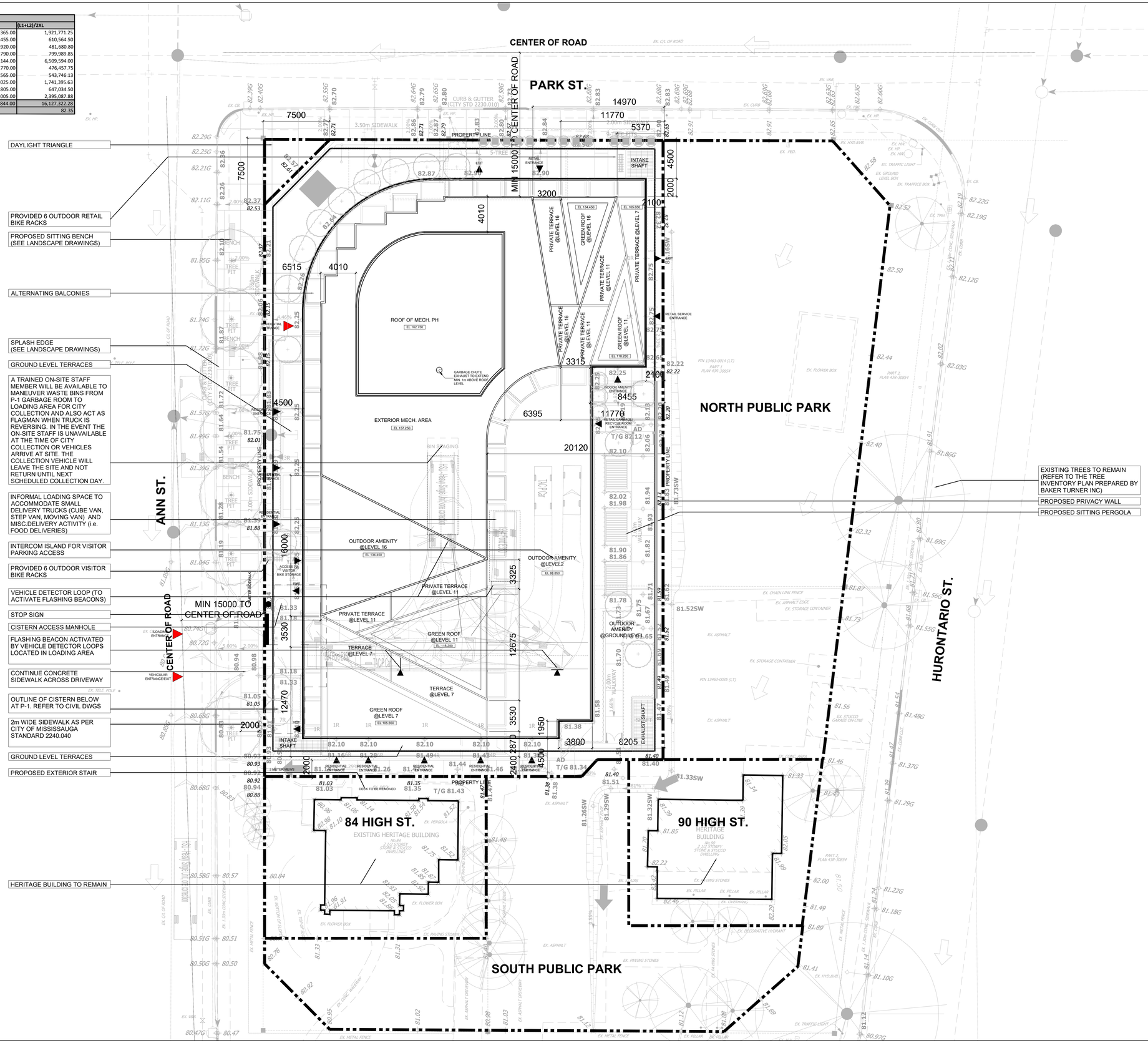
Drawn	Scale
SK	1:250
Checked	Date
DL, CY	17 DEC 2021

Title
PARCEL PLAN

Project No.	Drawing No.
21-182	A103

19 DEC 2021

ESTABLISHED GRADE CALCULATION				
LENGTH NO.	BEGIN ELEV.	END ELEV.	LENGTH	(L1+L2)/2XL
1	82.25	82.25	23,365.00	1,921,771.25
2	82.25	81.55	7,455.00	610,564.50
3	81.55	81.18	5,920.00	481,680.80
4	81.18	82.25	9,790.00	799,989.85
5	82.25	82.25	79,144.00	6,509,594.00
6	82.25	82.90	5,770.00	476,457.75
7	82.90	82.75	6,565.00	543,746.13
8	82.75	82.90	21,025.00	1,741,395.63
9	82.90	82.90	7,805.00	647,034.50
10	82.90	82.25	29,005.00	2,395,087.88
		TOTAL:	195,844.00	16,127,322.28
			EG:	82.35



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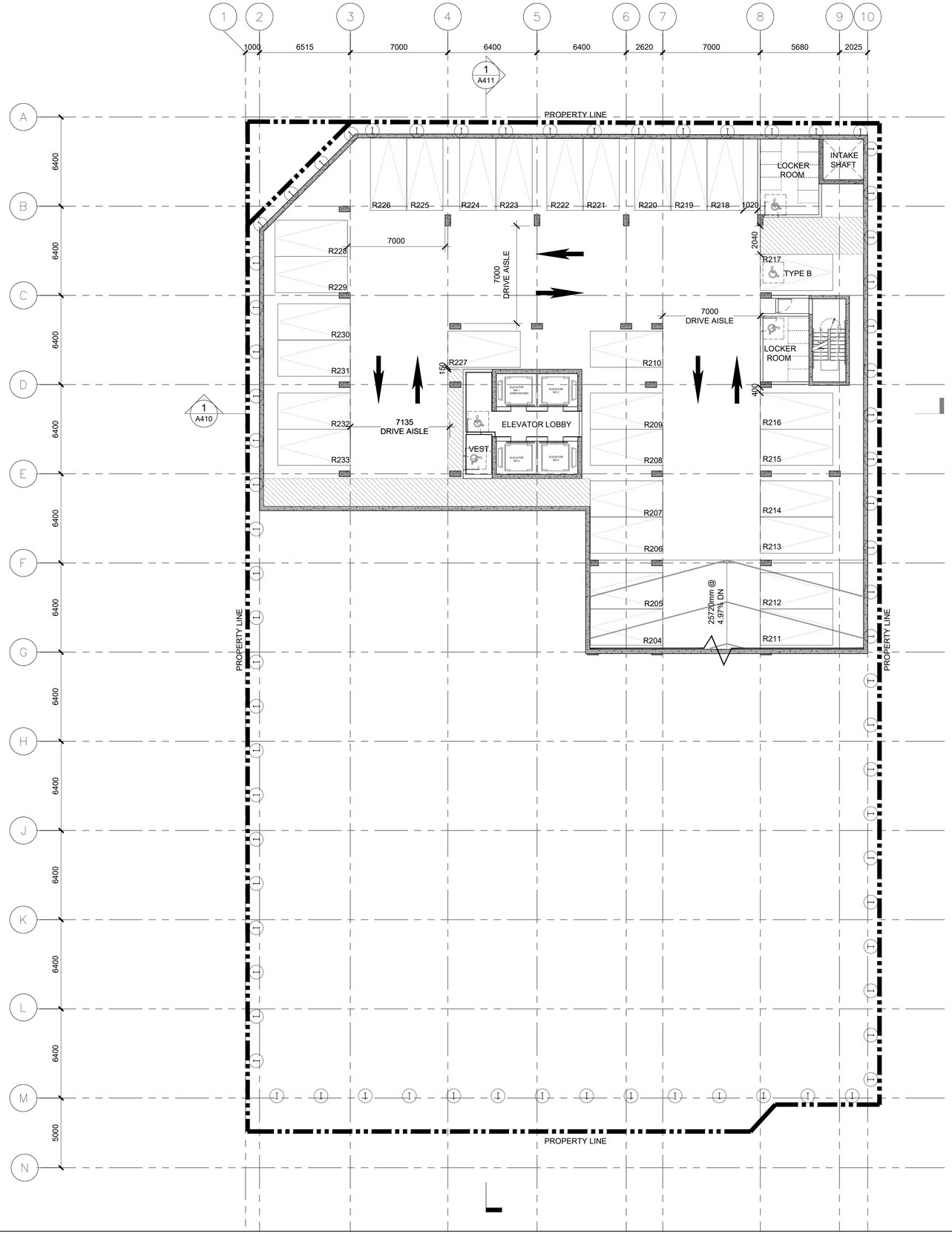
LICENCE
#706

Drawn	Scale
SK	1:200
Checked	Date
DL, CY	17 DEC 2021

Title
SITE PLAN

Project No.	Drawing No.
21-182	A104

10 DEC 2021



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR

No.	Revisions	Date
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LICENCE
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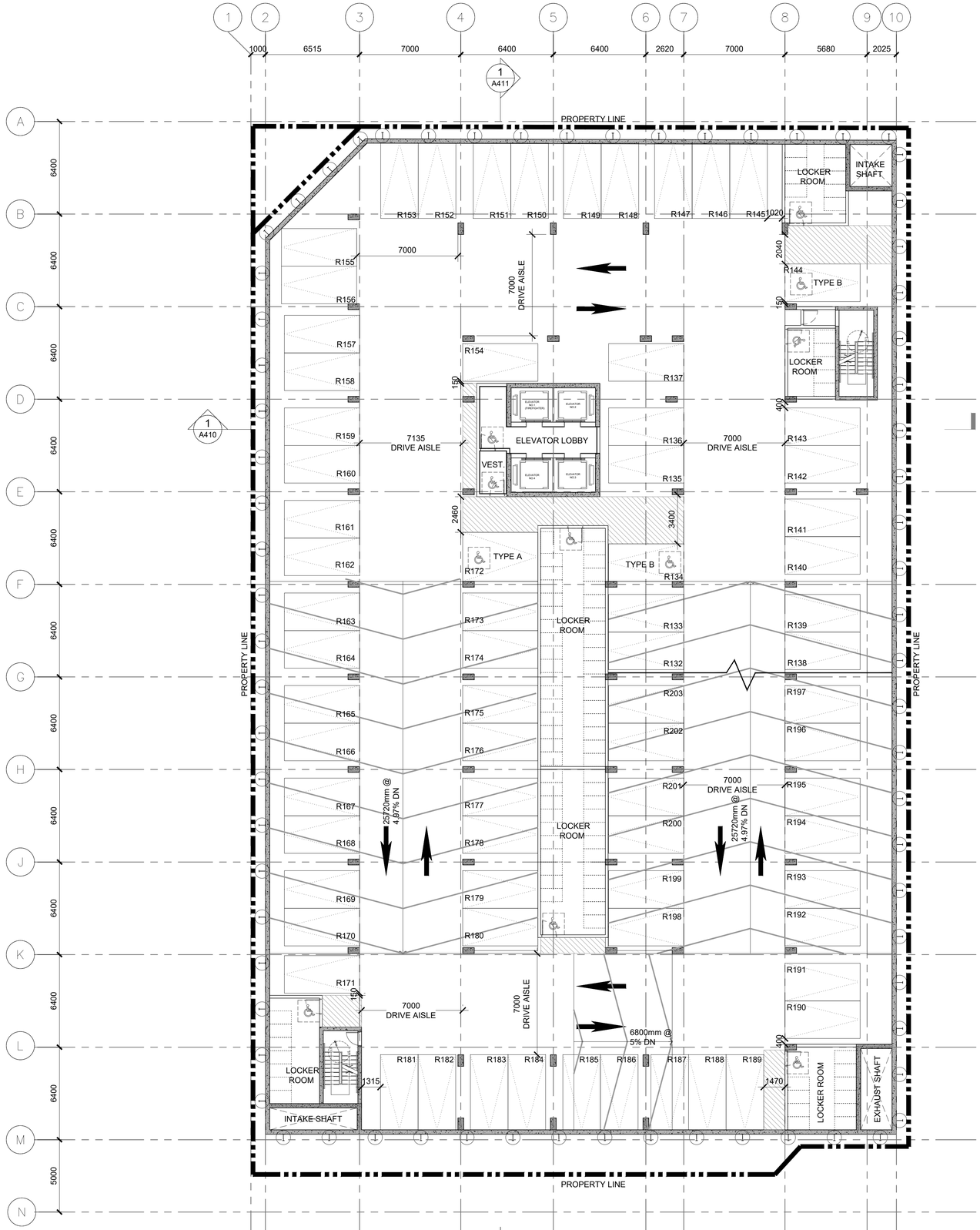
Drawn	Scale
SK	1:150
Checked	**Date**
DL, CY	17 DEC 2021

Title
P5 PARKING LEVEL

Project No.	Drawing No.
21-182	A200

10 DEC 2021



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR

No.	Revisions	Date
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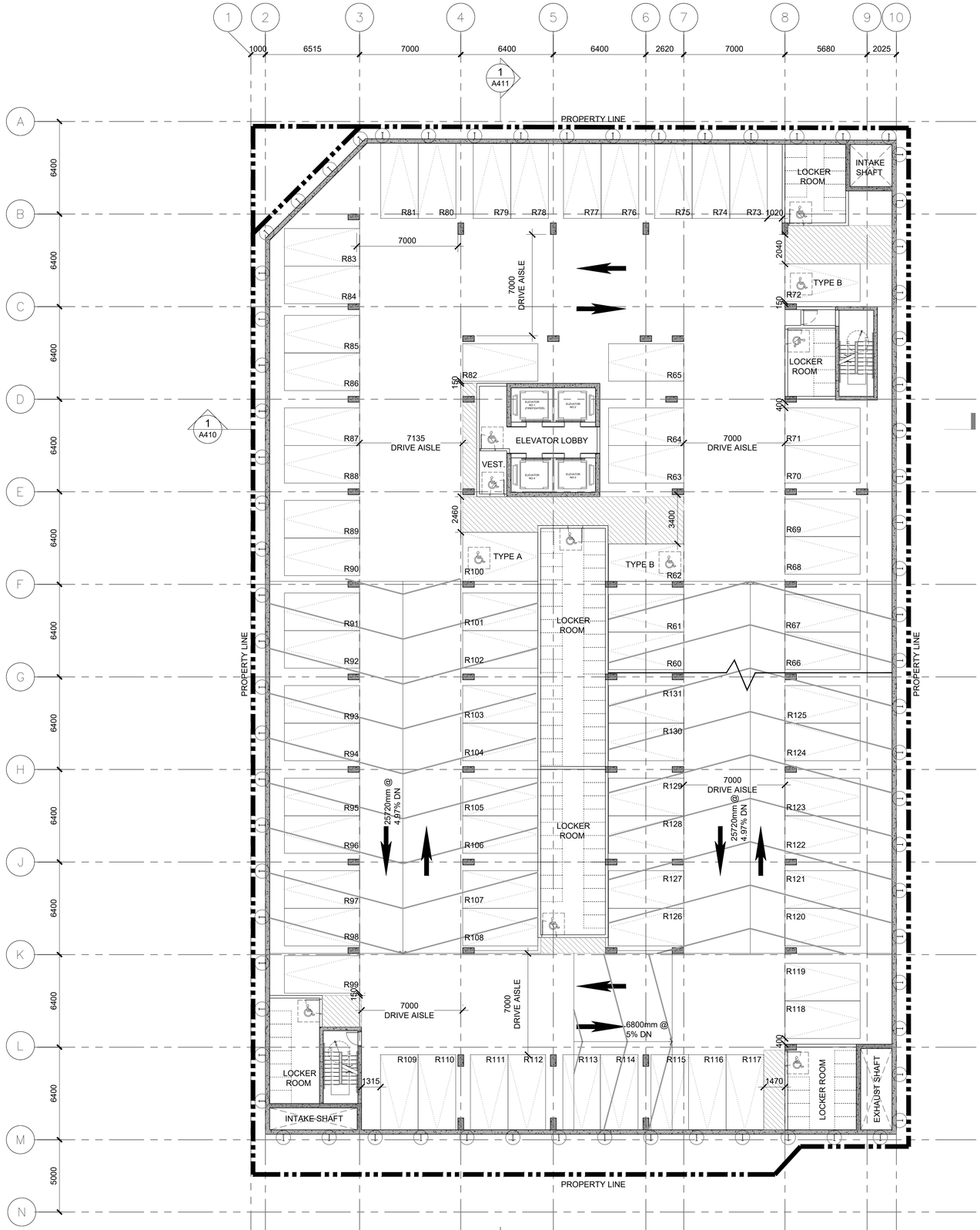
SK	1:150
Checked	Date
DL, CY	17 DEC 2021

Title
P4 PARKING LEVEL

Project No.	Drawing No.
21-182	A201

10 DEC 2021



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR

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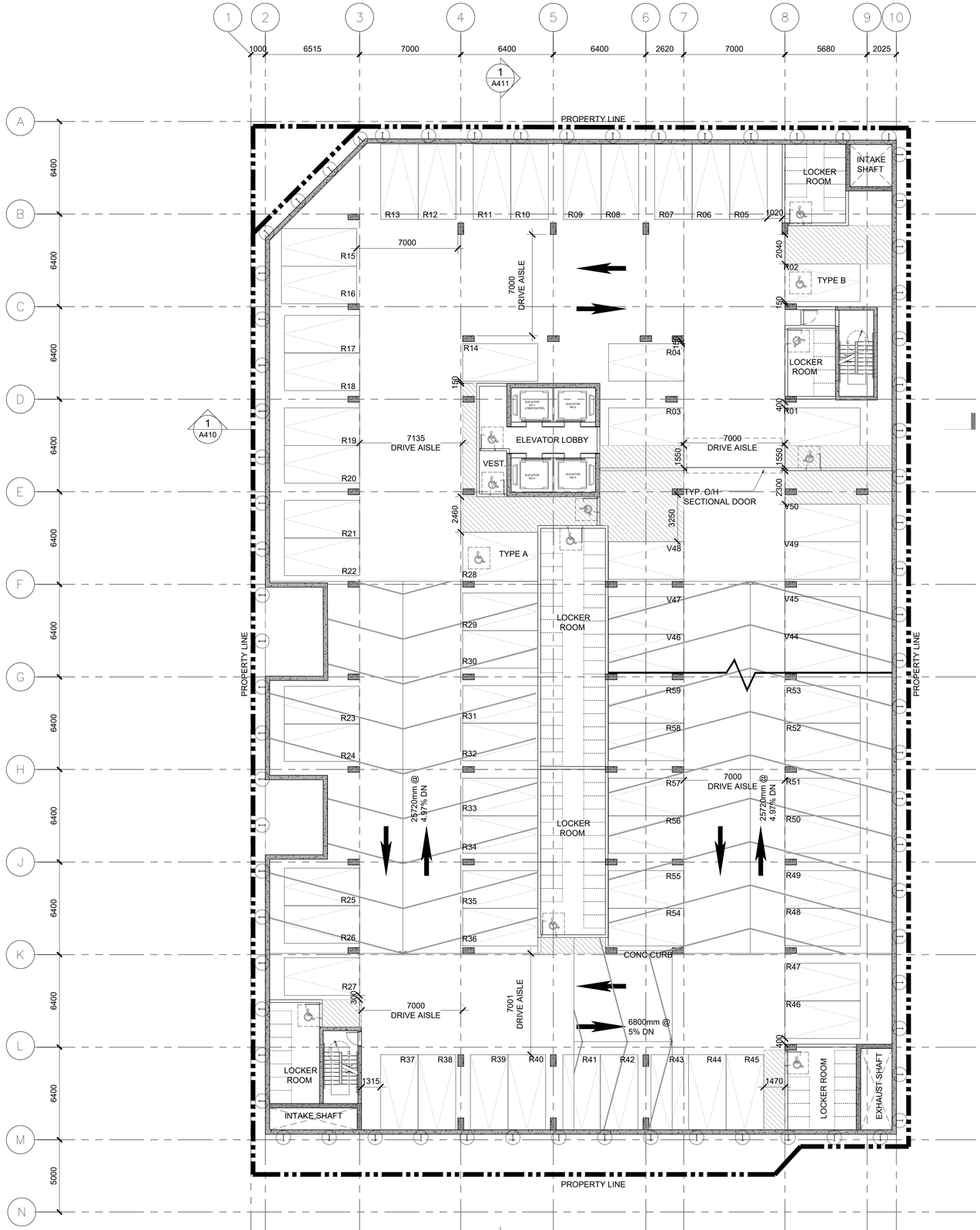
SK	1:150
Checked	Date
DL, CY	17 DEC 2021

Title
P3 PARKING LEVEL

Project No.	Drawing No.
21-182	A202

10 DEC 2021



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR

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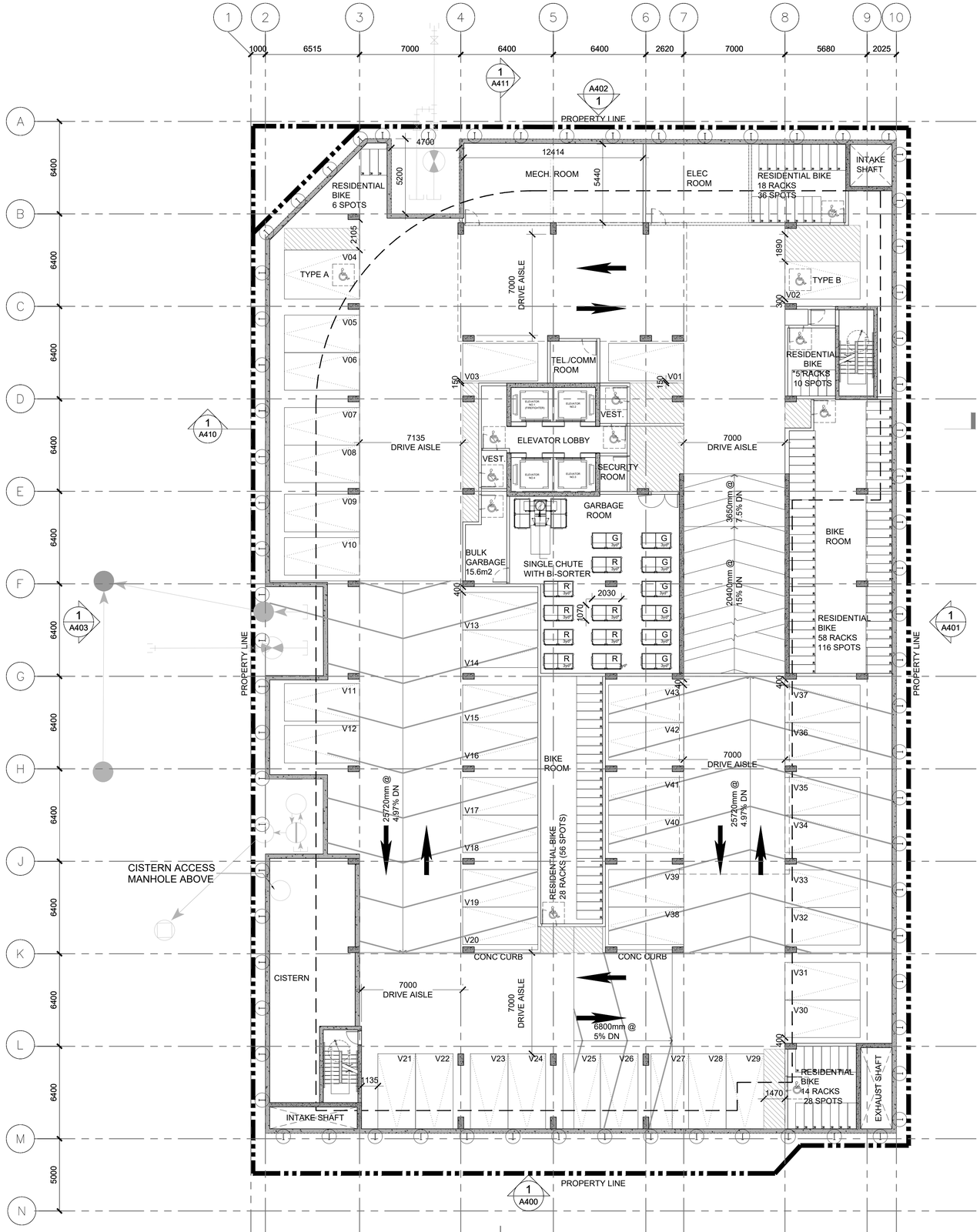
SK	1:150
Checked	**Date**
DL, CY	17 DEC 2021

Title
P2 PARKING LEVEL

Project No.	Drawing No.
21-182	A203

10 DEC 2021



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR

V5-V18 PARKING SPACES ARE ALLOCATED FOR 84 AND 90 HIGH STREET

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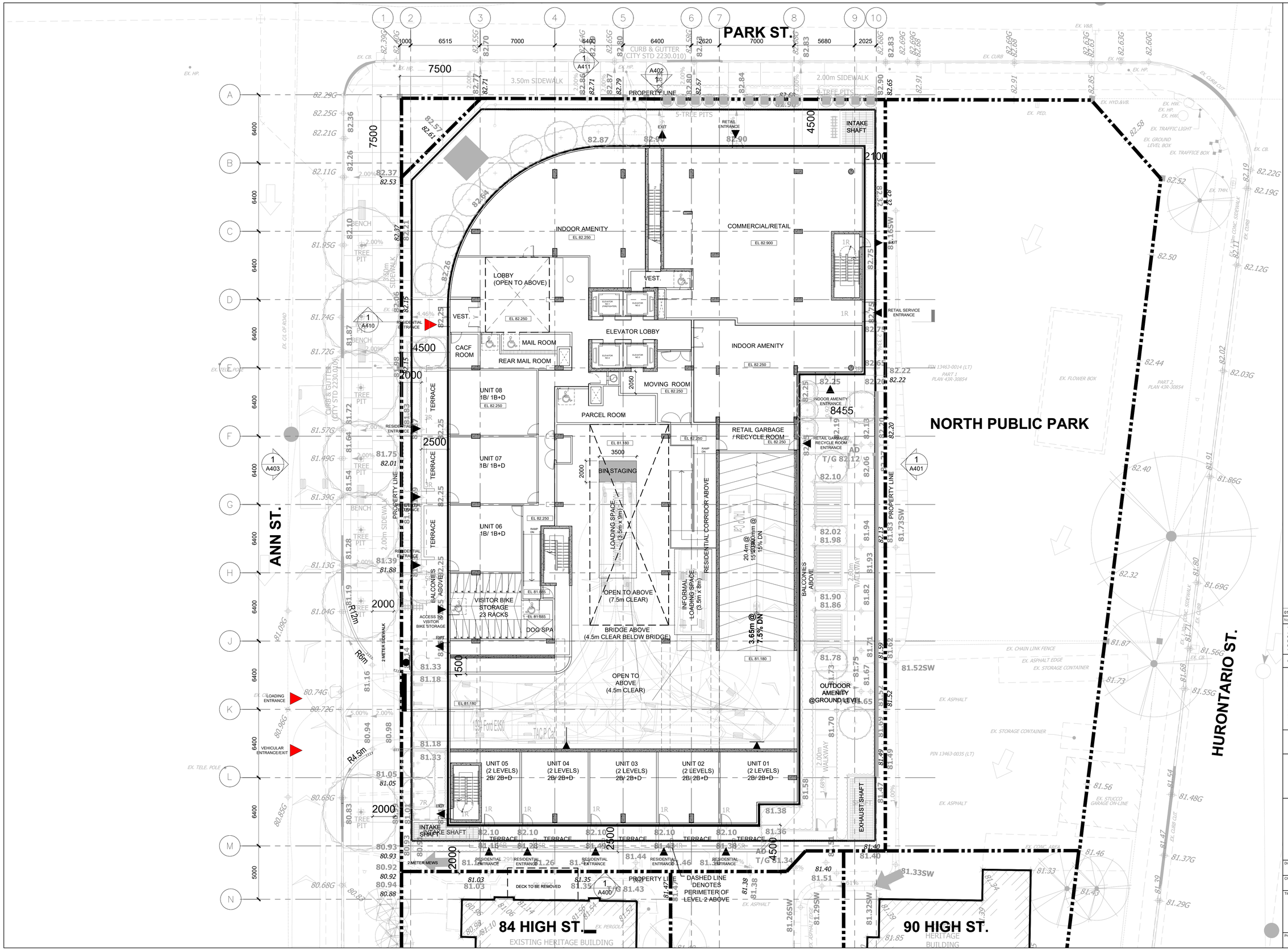
SK	1:150
Checked	Date
DL, CY	17 DEC 2021

Title
P1 PARKING LEVEL

Project No.	Drawing No.
21-182	A204

10-DEC-2021



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Title: GROUND LEVEL

Project No.: 21-182	Drawing No.: A205

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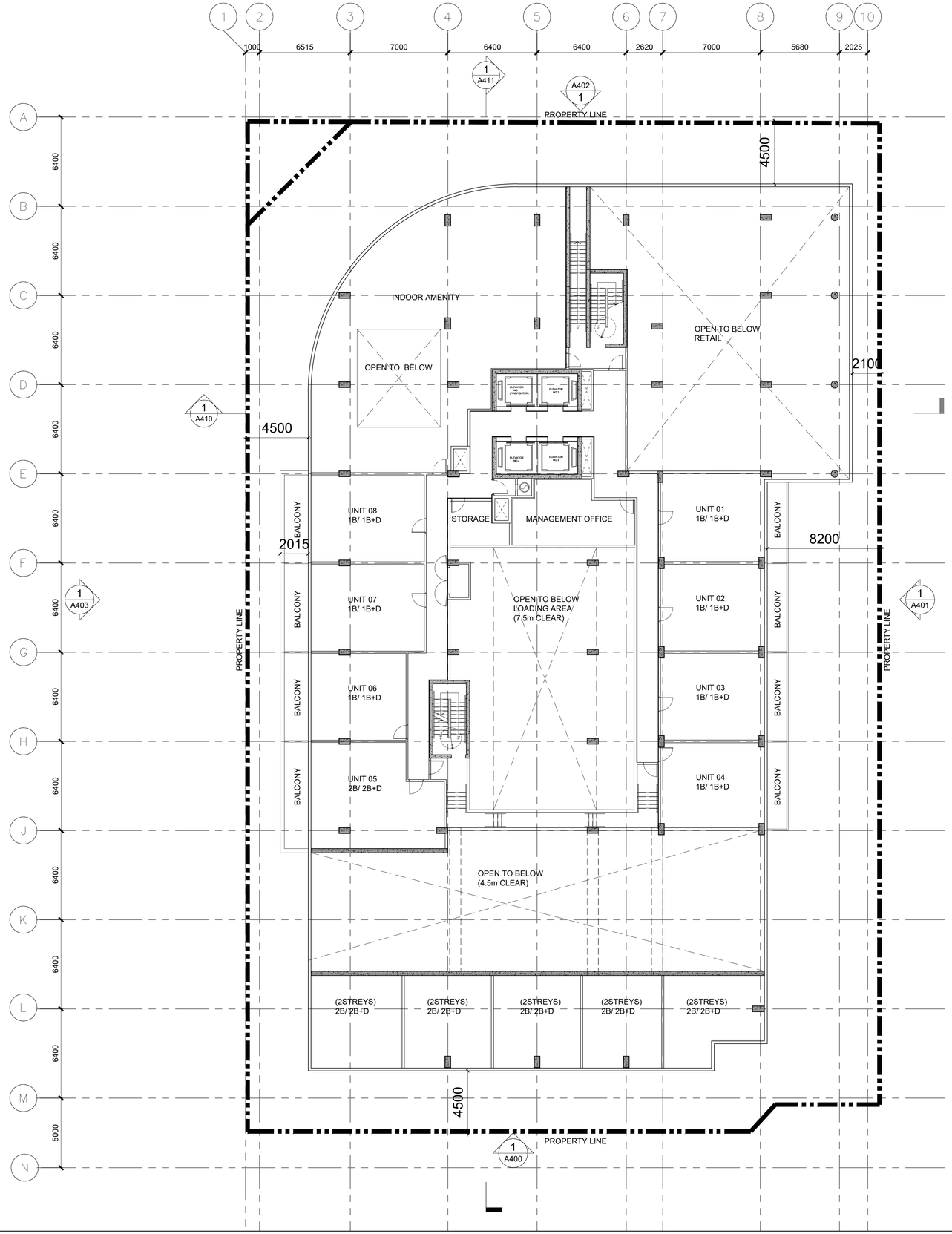

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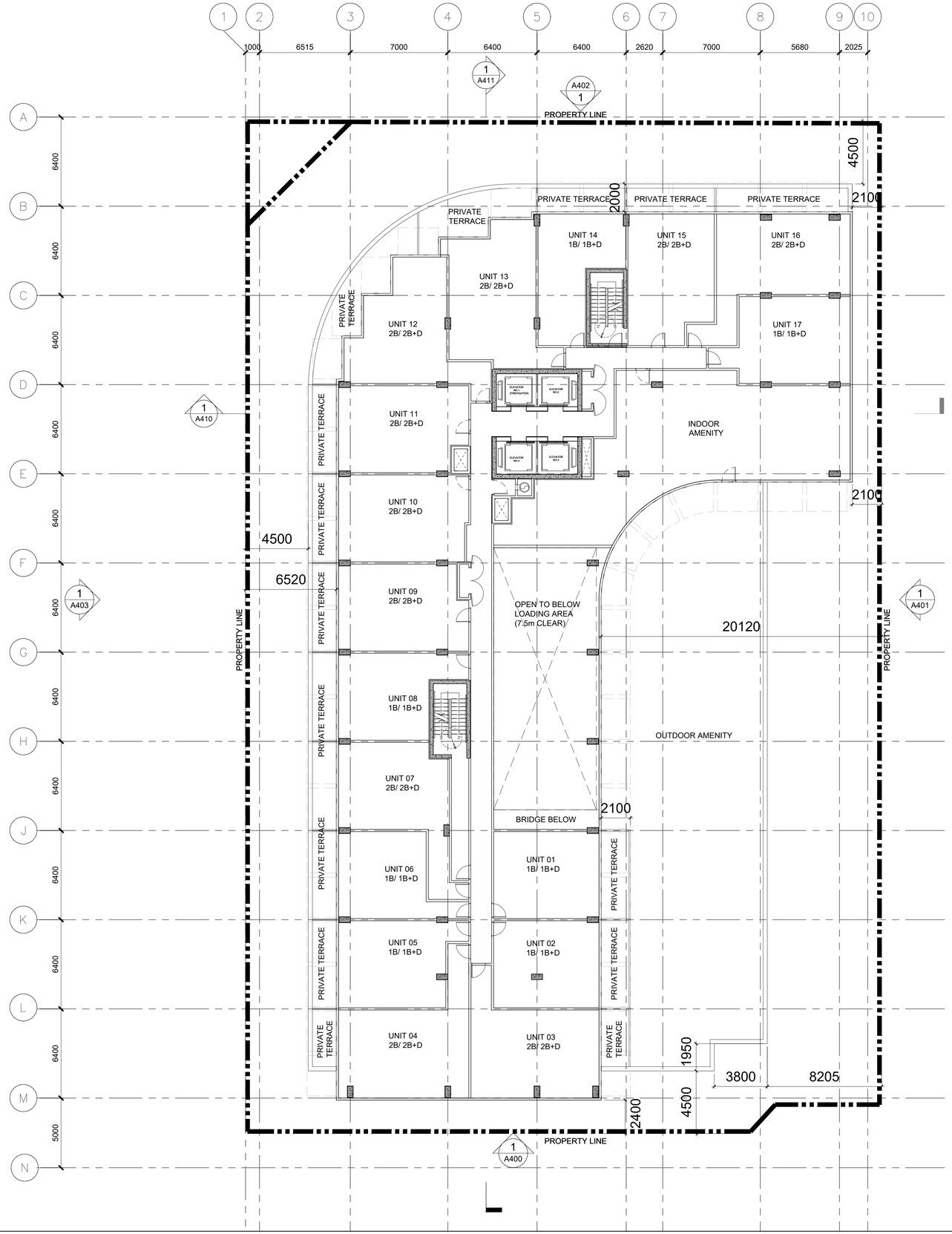
Checked	**Date**
DL, CY	17 DEC 2021

Title
MEZZENINE LEVEL

Project No.	Drawing No.
21-182	A206

10 DEC 2021



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Checked: DL, CY	Date: 17 DEC 2021

Title: LEVEL 2

Project No.: 21-182	Drawing No.: A207

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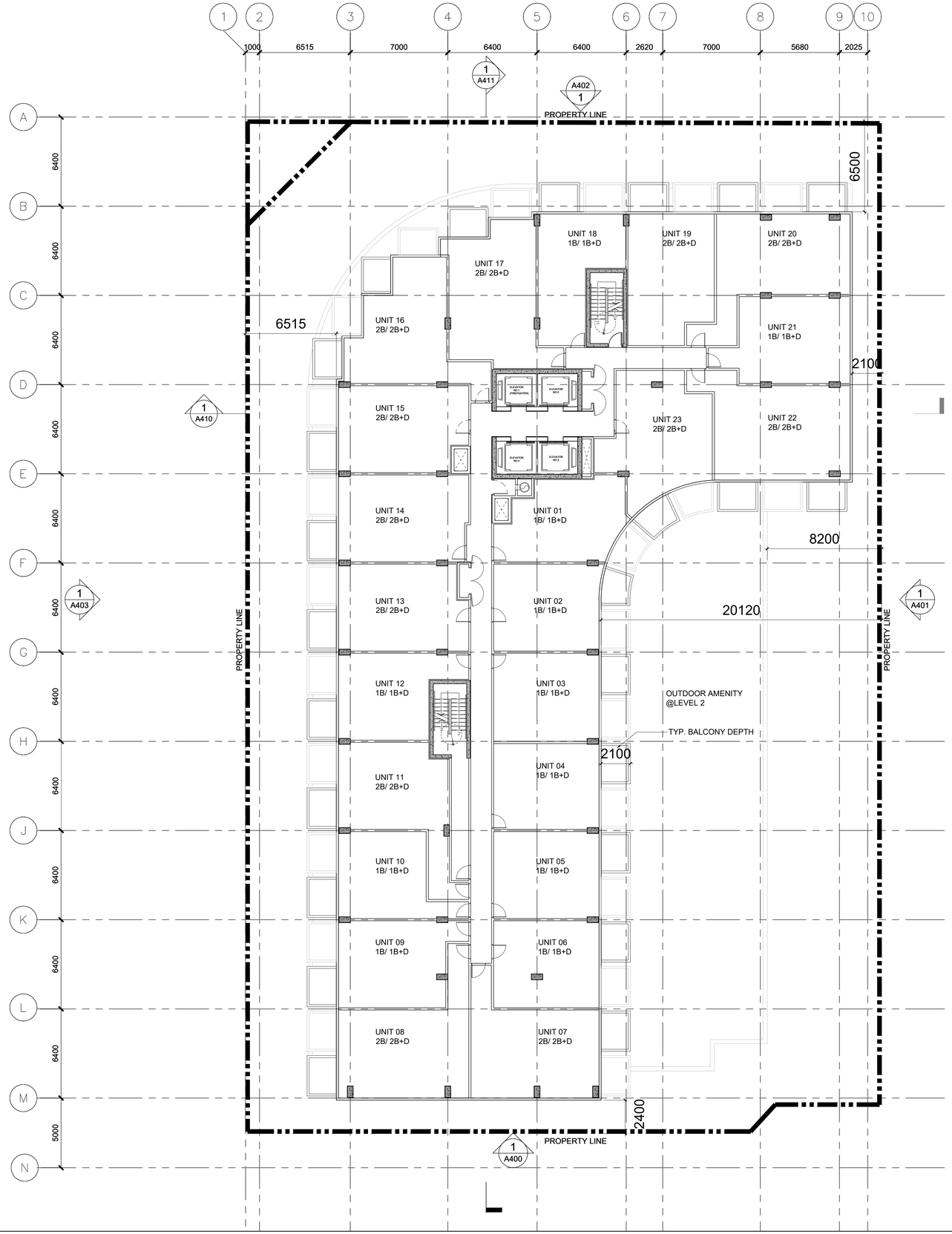

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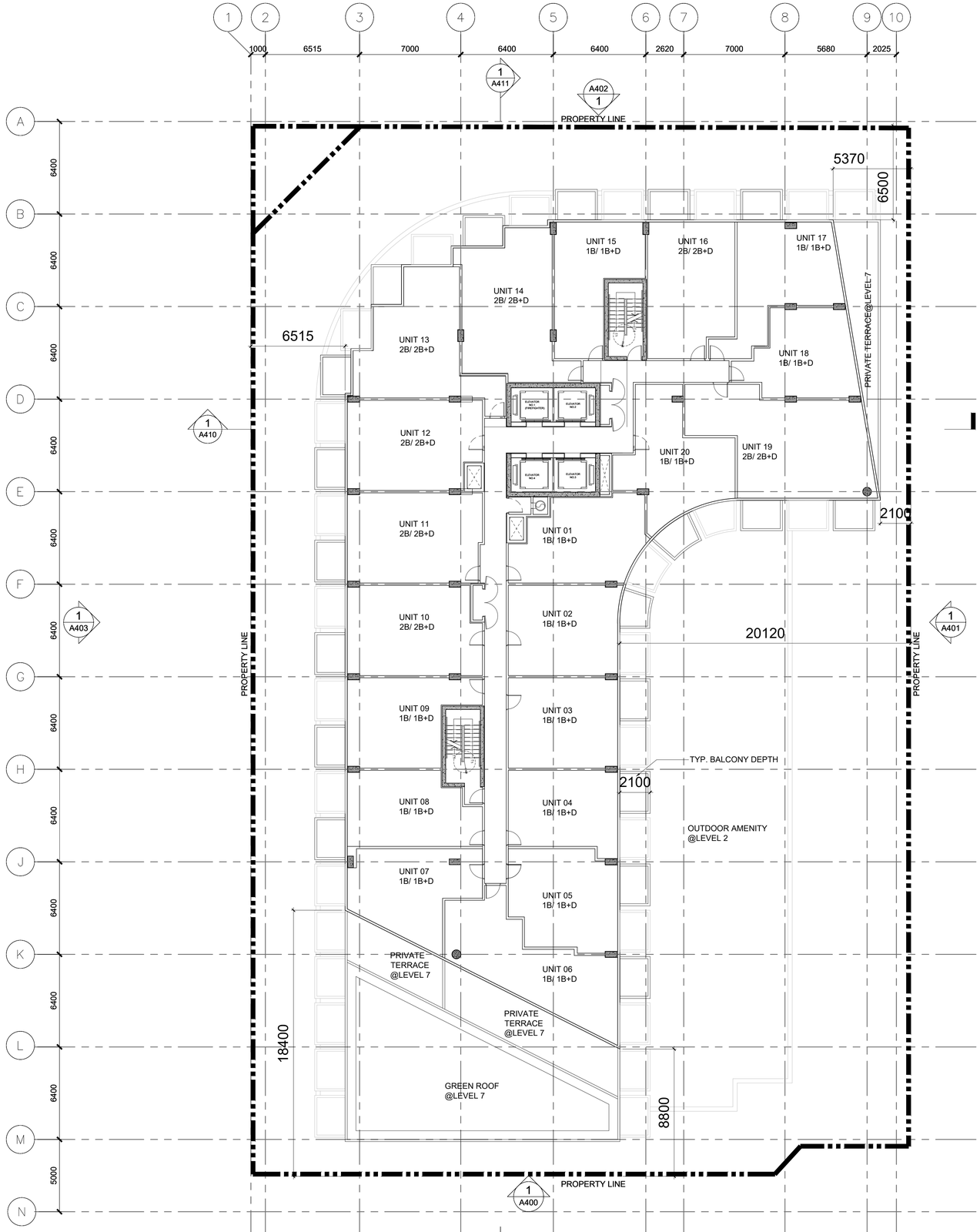
Checked	**Date**
DL, CY	17 DEC 2021

Title
LEVELS 3-6

Project No.	Drawing No.
21-182	A208

10 DEC 2021



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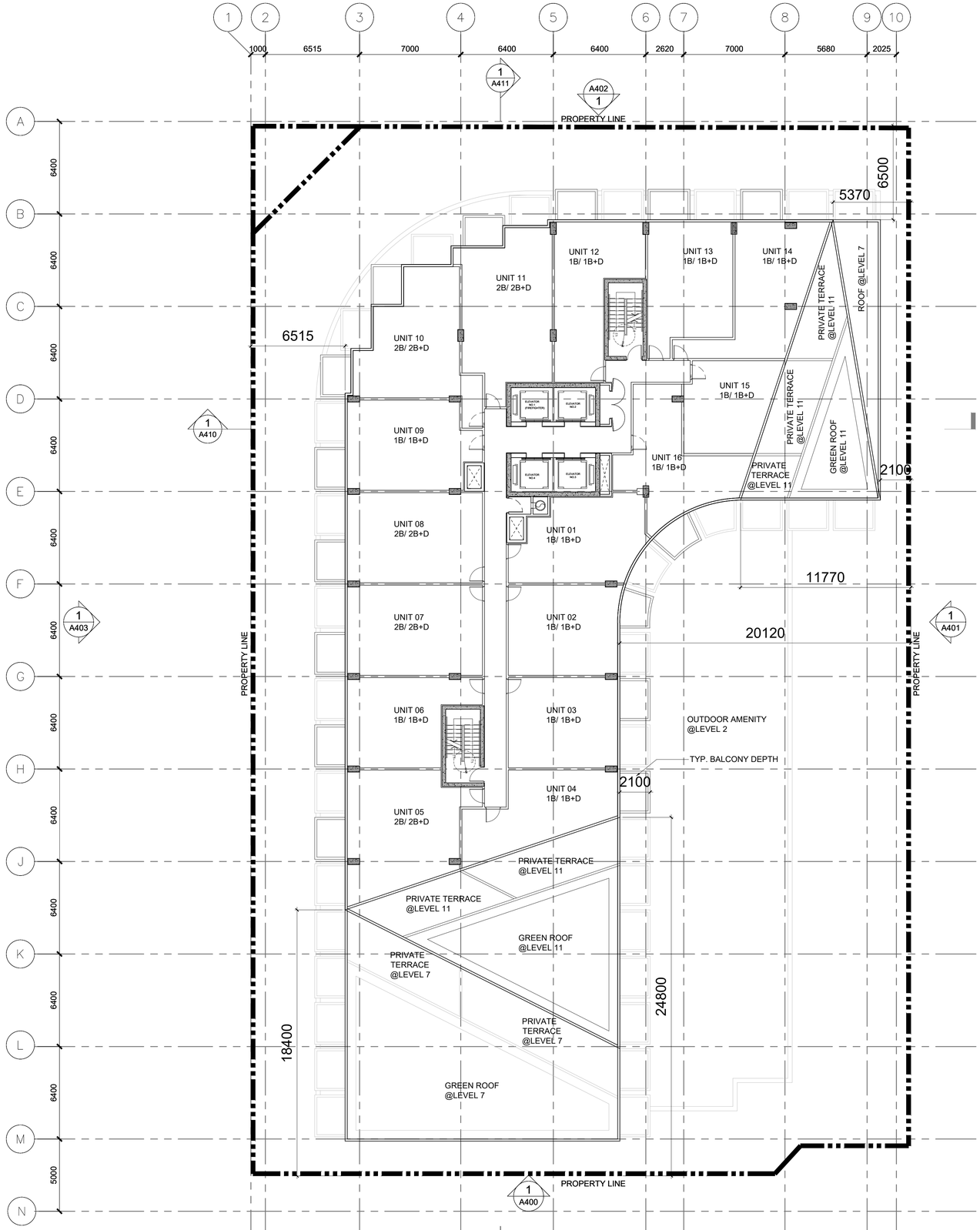
Checked	**Date**
DL, CY	17 DEC 2021

Title
LEVELS 7-10

Project No.	Drawing No.
21-182	A209

10 DEC 2021



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Title: LEVELS 11-14

Project No. 21-182	Drawing No. A210

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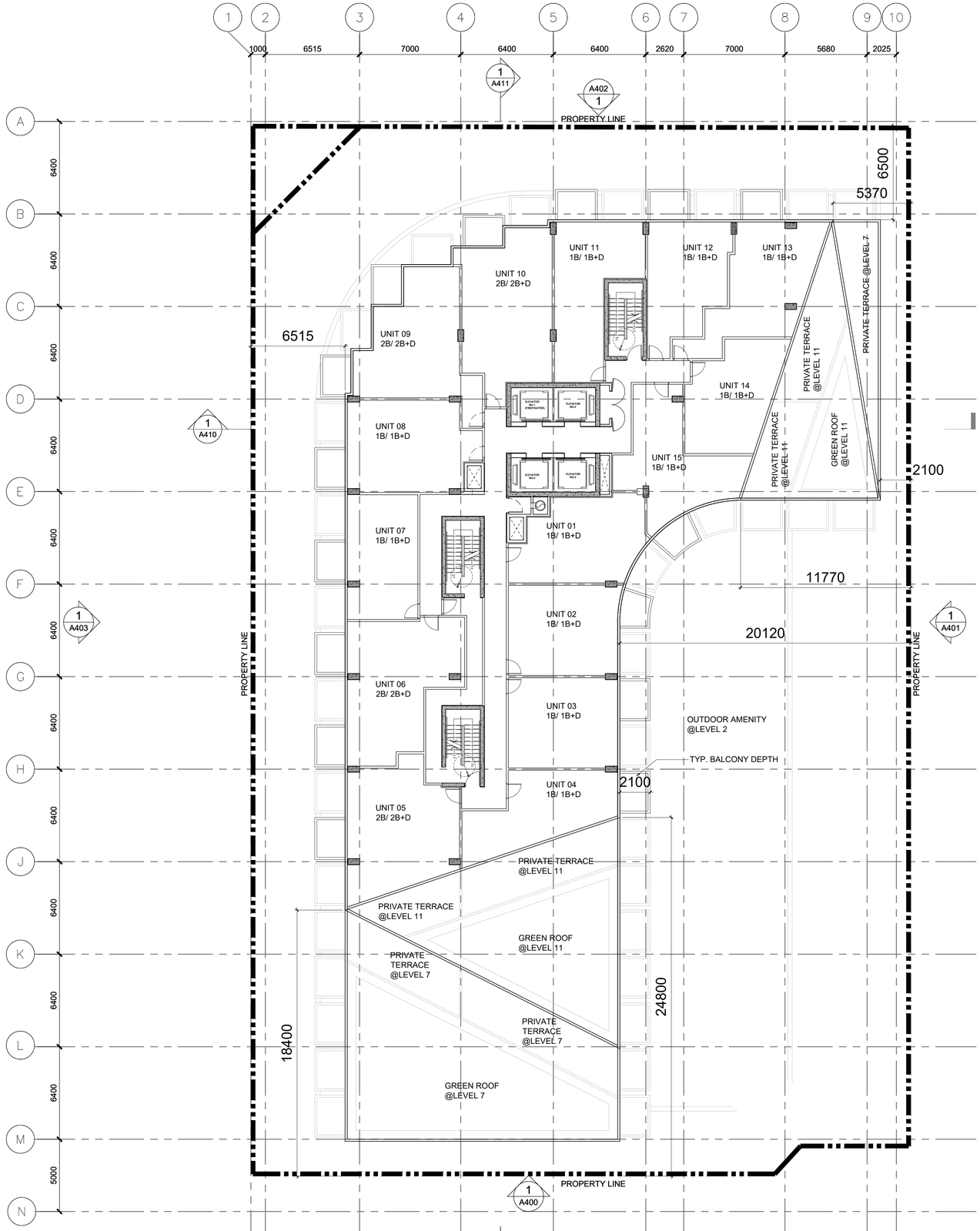

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Title: LEVEL 15

Project No. 21-182	Drawing No. A211

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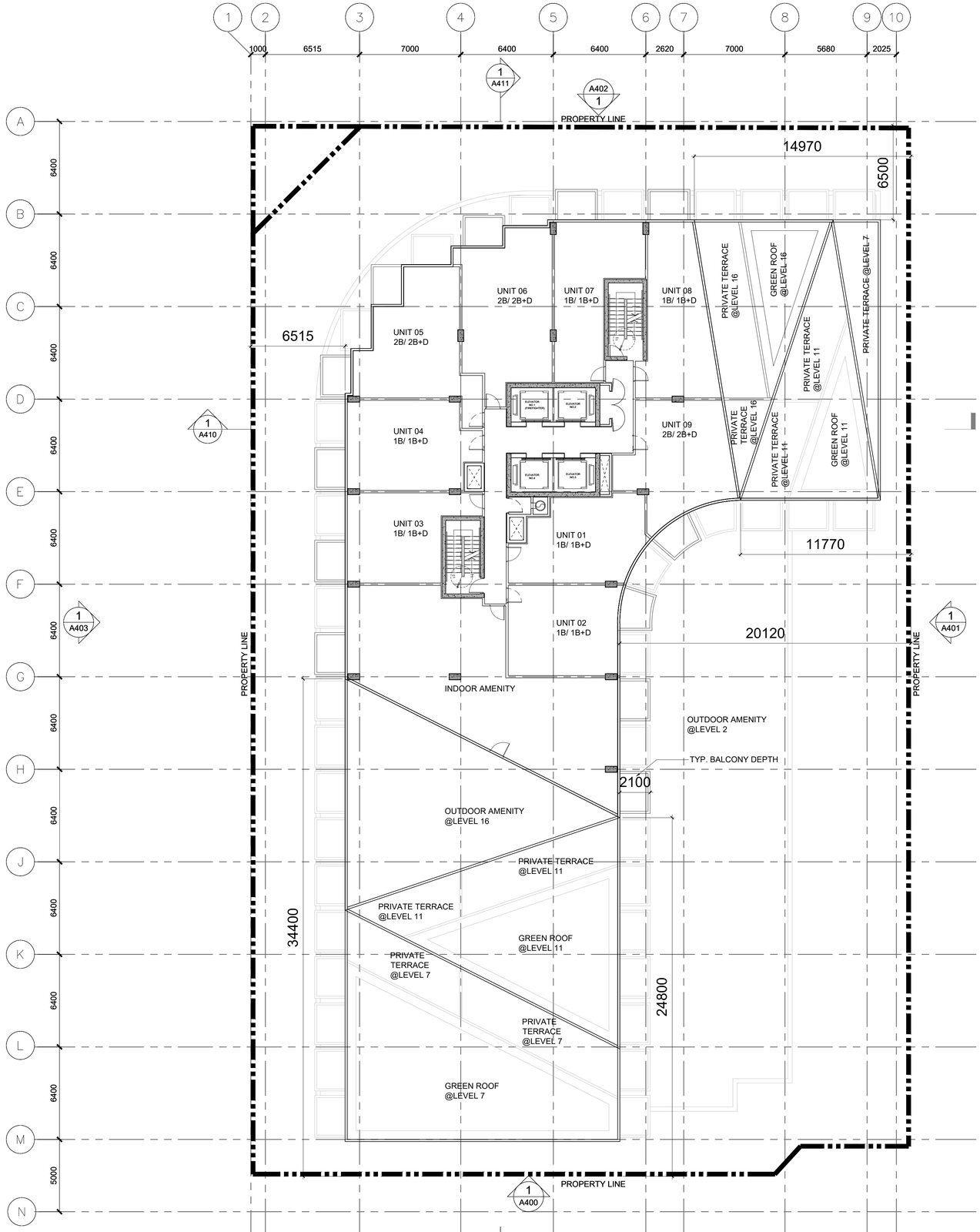

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Title: LEVEL 16

Project No. 21-182	Drawing No. A212

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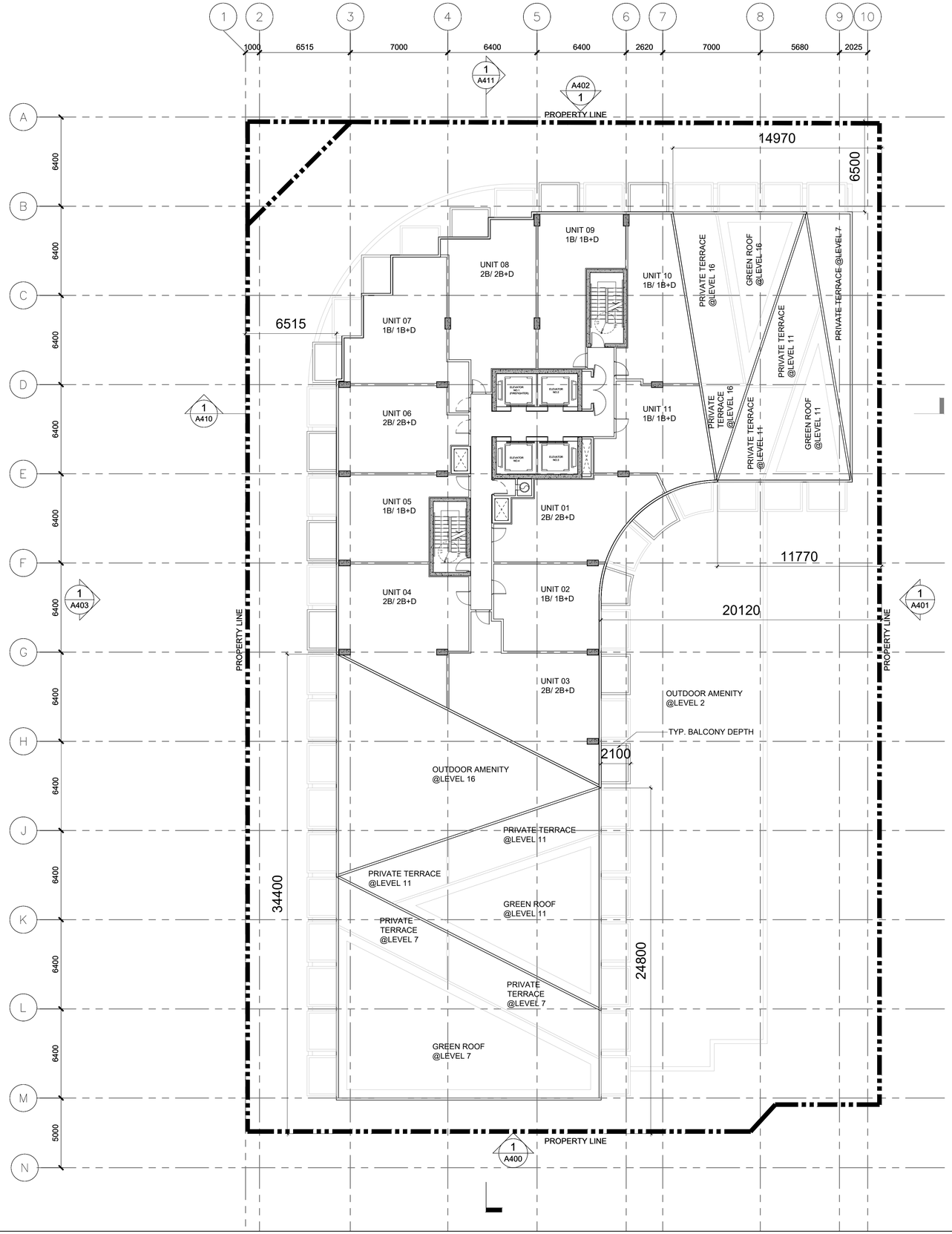

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Title
LEVELS 17-22

Project No.	Drawing No.
21-182	A213

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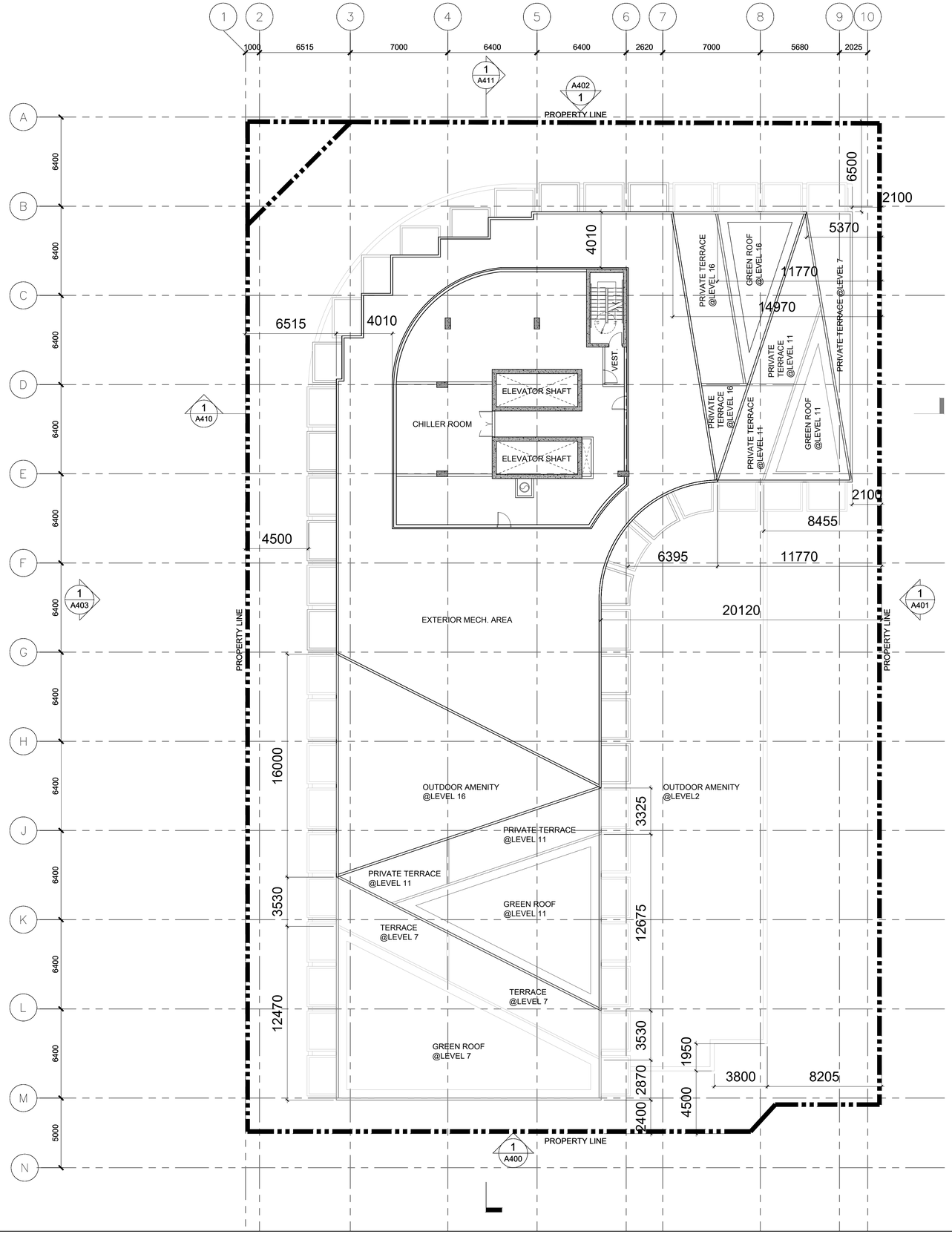

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Title: LEVEL MECHANICAL PENTHOUSE

Project No. 21-182	Drawing No. A214

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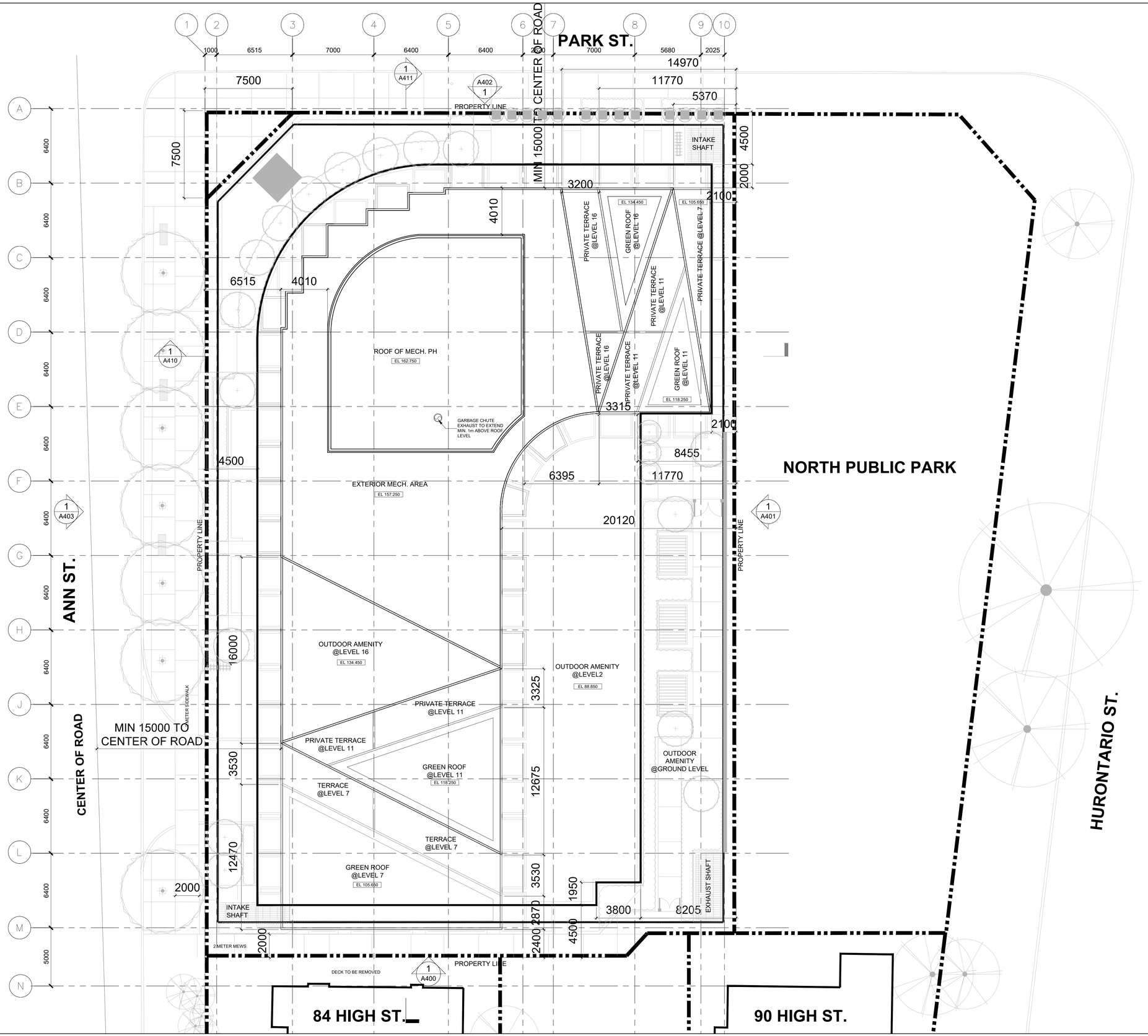

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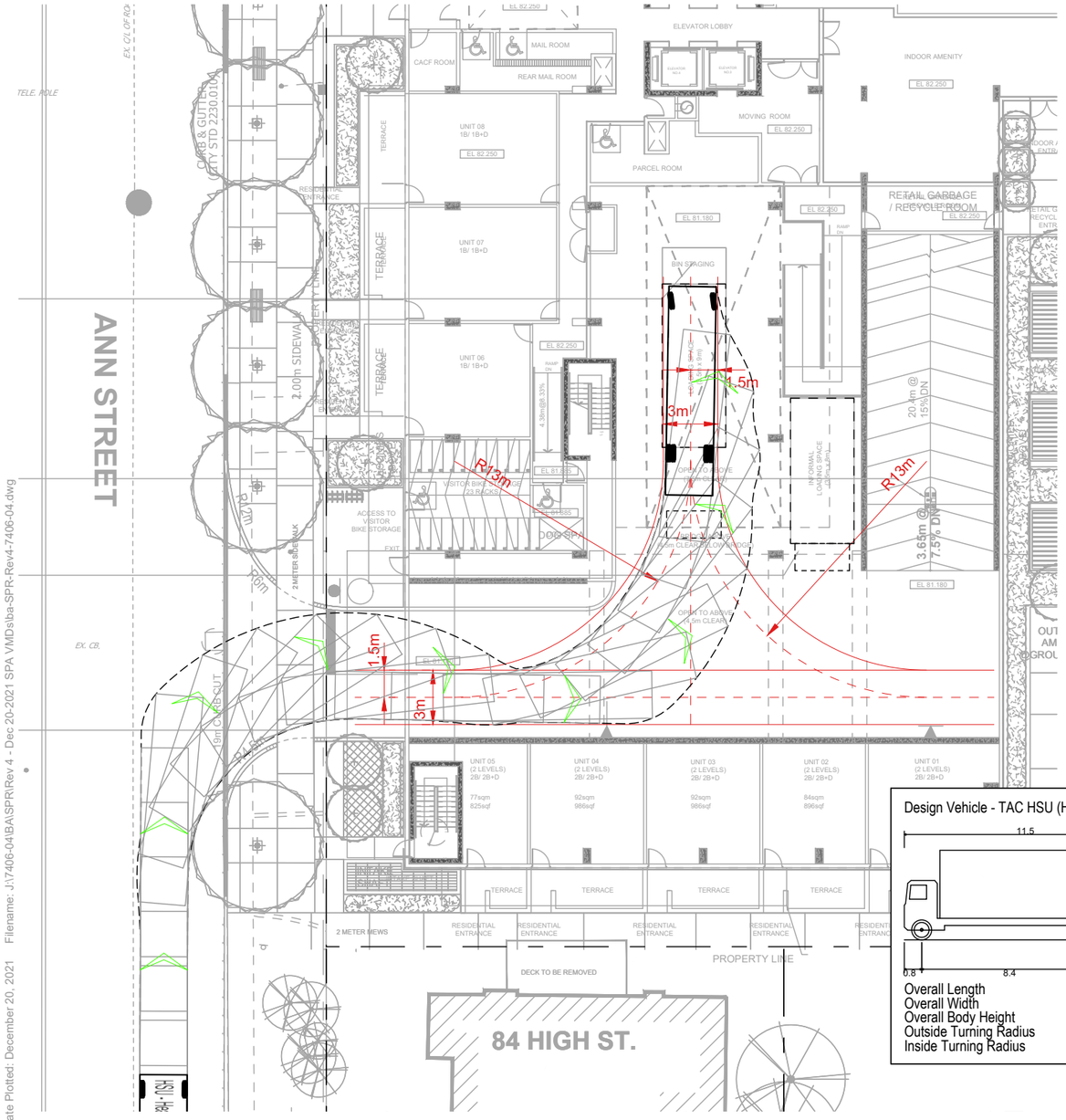
Title: LEVEL ROOF

Project No.: 21-182	Drawing No.: A215

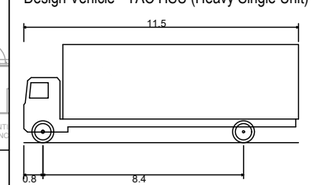
10 DEC 2021

APPENDIX B:
Vehicle Maneuvering Diagrams and Signage Plan

INBOUND

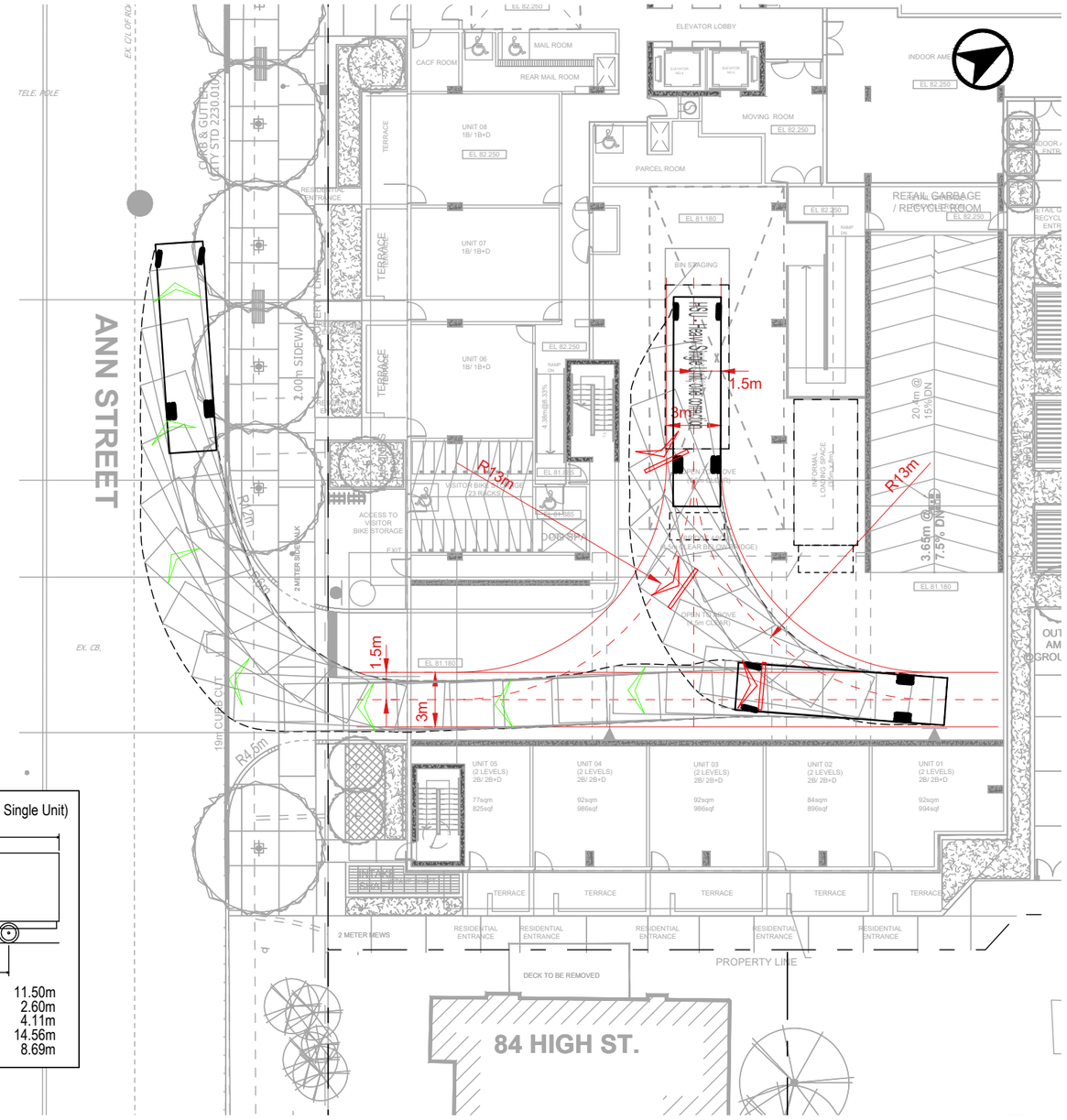


Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

OUTBOUND



Date Plotted: December 20, 2021 Filename: J:\7406-04\BA\SPR\Rev 4 - Dec 20-2021 SPA VMDs\ba-SPR-Rev4-7406-04.dwg

BA Group

10 West - Site Plan Review

Refuse Proxy Design Vehicle (Heavy Single Unit Truck - HSU)

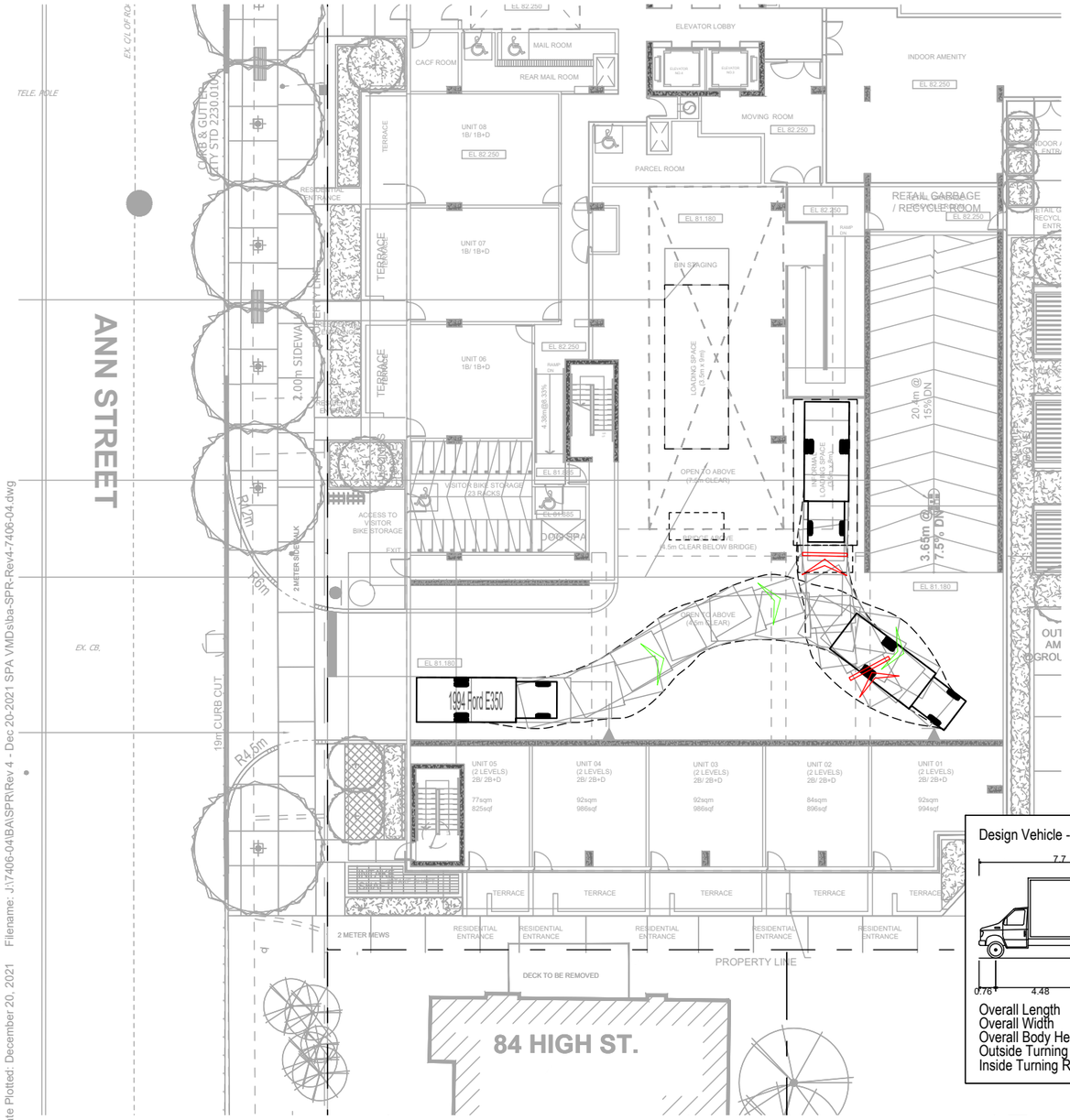
Inbound / Outbound Manoeuvres

Project:	10 West
Project No.	7406-04
Date:	October 1, 2021
Revised:	December 20, 2021

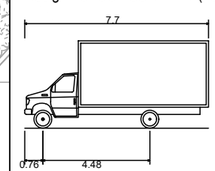
Scale 1:300 — 0 5 10m

Drawing No. VMD-1

INBOUND

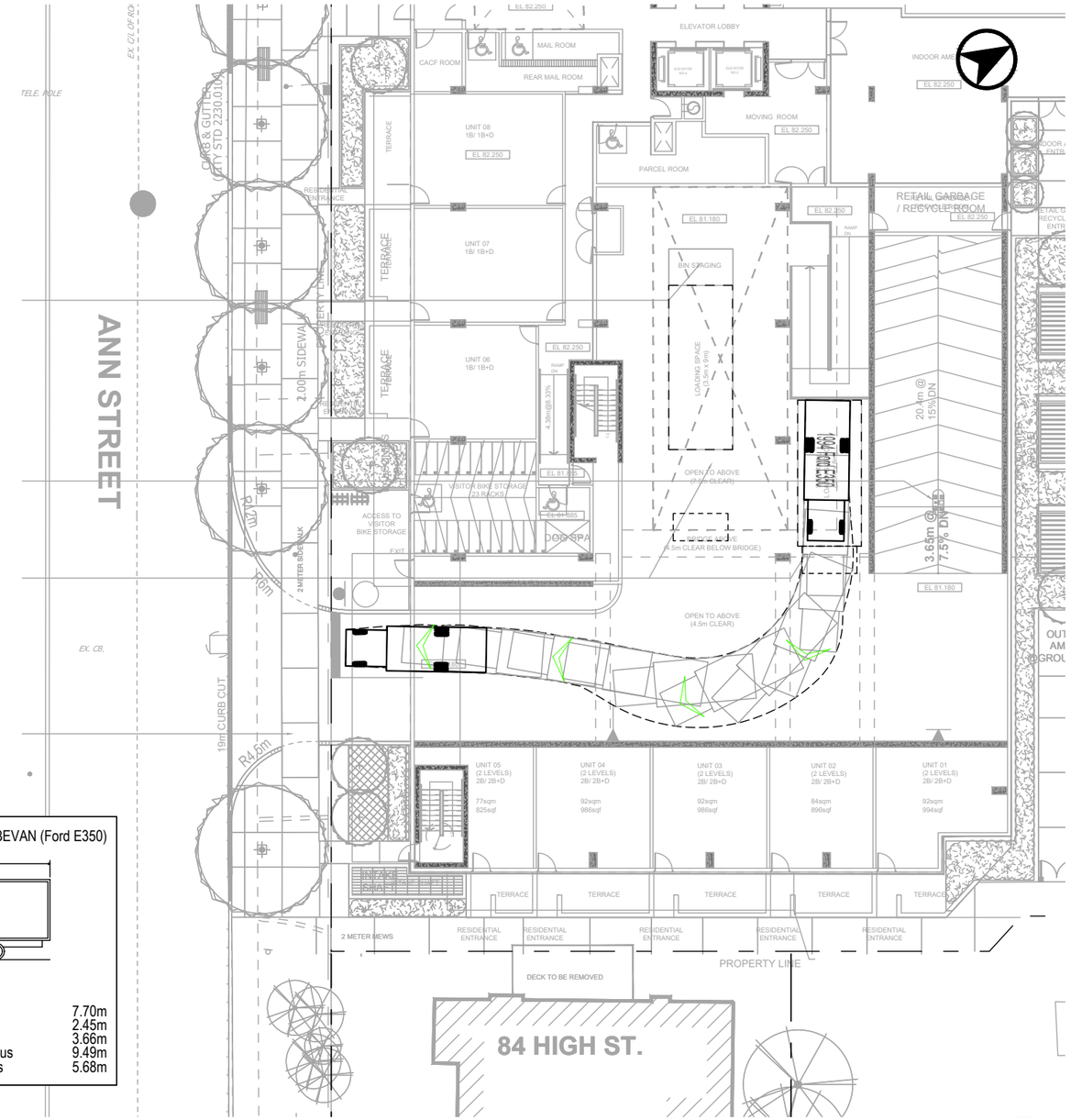


Design Vehicle - CUBEVAN (Ford E350)



Overall Length	7.70m
Overall Width	2.45m
Overall Body Height	3.66m
Outside Turning Radius	9.49m
Inside Turning Radius	5.68m

OUTBOUND



Date Plotted: December 20, 2021 Filename: J:\7406-04\BA\SPR\Rev 4 - Dec 20-2021 SPA VMDs\ba-SPR-Rev4-7406-04.dwg

BA Group

10 West - Site Plan Review

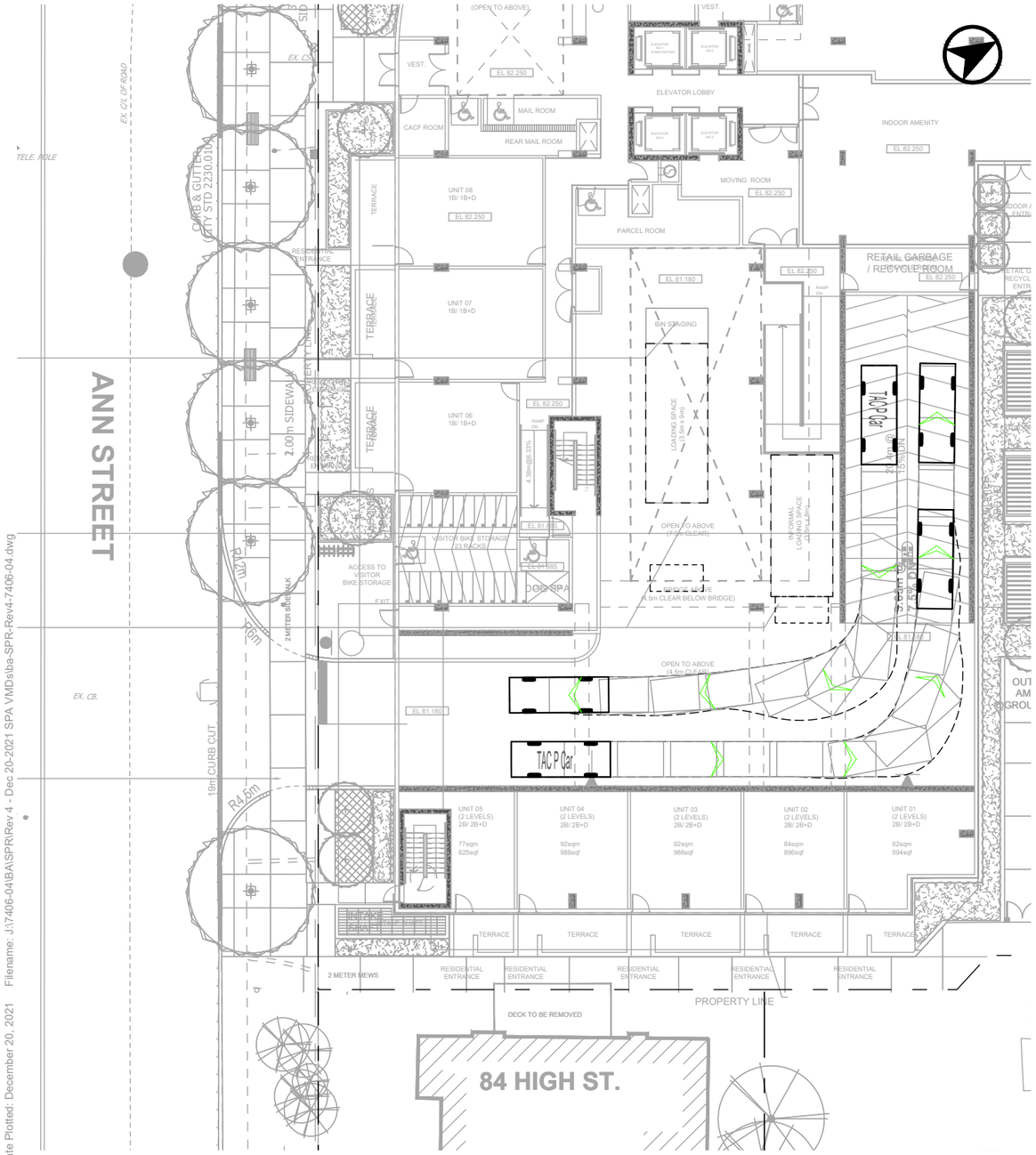
Small Delivery Truck Design Vehicle

Inbound / Outbound Manoeuvres

Project:	10 West
Project No.	7406-04
Date:	October 1, 2021
Revised:	December 20, 2021

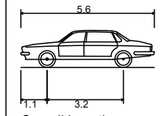
Scale 1:300 — 0 5 10m

Drawing No. VMD-2



Date Plotted: December 20, 2021 Filename: J:\7406-04\BA\SPR\Rev 4 - Dec 20-2021 SPA VMDs\ba-SPR-Rev4-7406-04.dwg

Design Vehicle - TAC P CAR



Overall Length	5.60m
Overall Width	2.00m
Overall Body Height	1.56m
Outside Turning Radius	6.90m
Inside Turning Radius	3.40m

BA Group

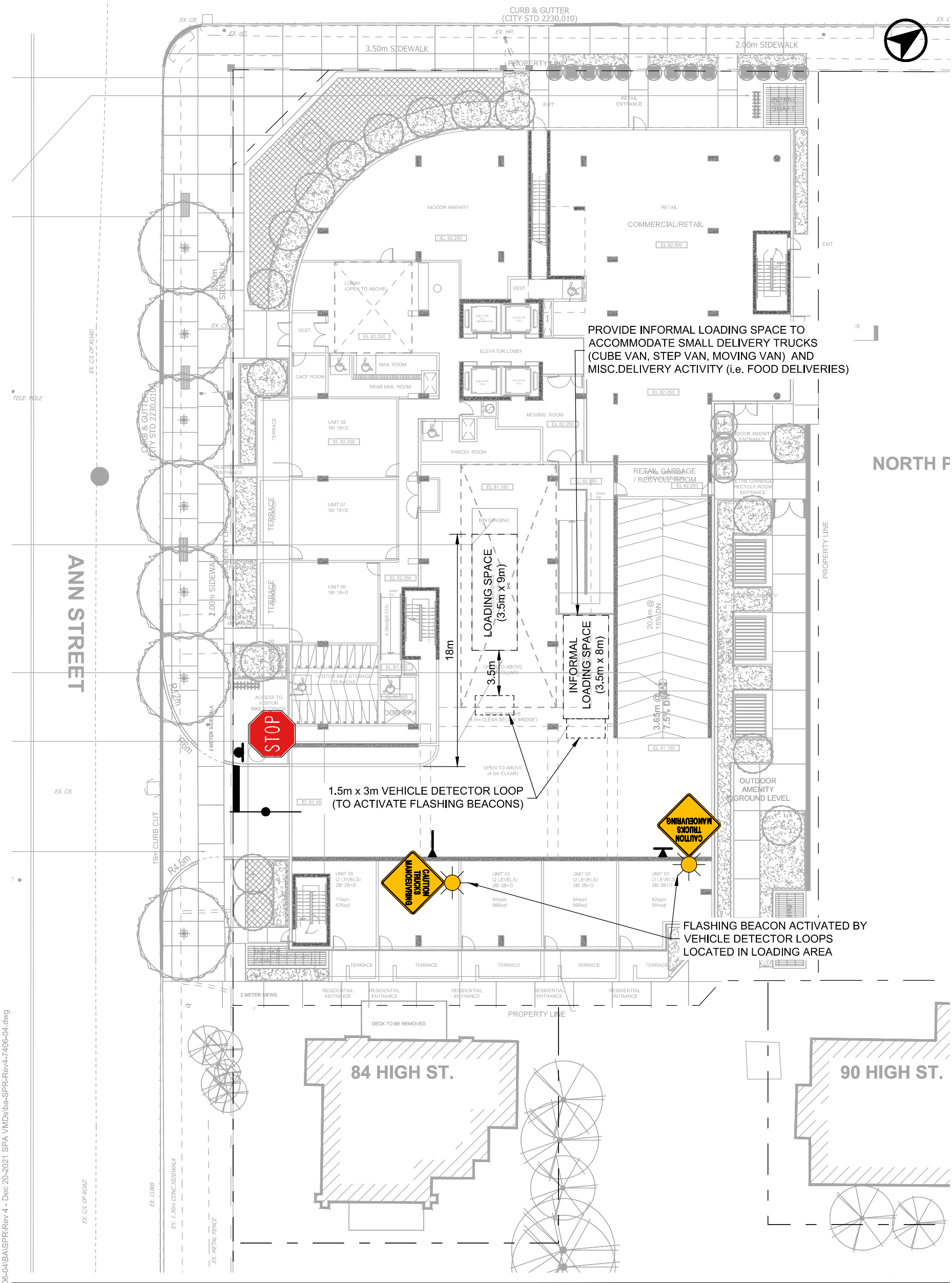
10 West - Site Plan Review

Passenger Car Design Vehicle
Inbound / Outbound Manoeuvres

Project:	10 West
Project No.	7406-04
Date:	October 1, 2021
Revised:	December 20, 2021

Scale 1:300 — 0 5 10m

Drawing No. VMD-3



SIGN MOUNT LEGEND

ALL SIGNS ARE SHOWN IN APPROXIMATE LOCATIONS AND TO BE DETERMINED ON SITE. SIGNS MUST BE VISIBLE TO DRIVER AND NOT OBSTRUCTED BY LANDSCAPE.

- PROPOSED POST
- PROPOSED WALL/COLUMN MOUNT SIGN
- PROPOSED WALL/COLUMN PERPENDICULAR

PAVEMENT MARKING:

(NOTE-ALL MARKINGS MUST CONFORM TO THE ONTARIO TRAFFIC MANUAL (OTM) BOOK 11

- 10cm YELLOW SOLID
- ALL STOP BARS TO BE 60cm (2 ft.) WHITE SOLID

BA Group

10 West

Pavement Marking & Signage Plan
(Preliminary)

Project:	10 West
Project No.	7406-04
Date:	December 20, 2021
Revised:	--

Scale 1:300 (0 – 5 – 10m)

Drawing No. SN-1

Date Plotted: December 20, 2021 Filename: J:\7406-04\BA\SPR\Rev 4 - Dec 20-2021 SPA VMDs\ba-SPR-Rev4-7406-04.dwg

APPENDIX C:
Turning Movement Counts

Spectrum

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (5 . ANN ST & HIGH ST E)

Start Time	N Approach ANN ST						E Approach HIGH ST E						S Approach ANN ST						W Approach HIGH ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	1	1	1	0	2	3	0	2	0	0	1	2	2	6	0	0	0	8	0	11	2	0	0	13	26	
07:15:00	0	3	0	0	1	3	0	3	0	0	0	3	2	9	2	0	1	13	0	7	0	0	2	7	26	
07:30:00	0	2	2	0	4	4	1	3	2	0	1	6	1	10	0	0	0	11	1	6	2	0	2	9	30	
07:45:00	2	2	0	0	1	4	2	4	1	0	1	7	3	14	0	0	3	17	0	14	3	0	1	17	45	127
08:00:00	0	1	0	0	2	1	4	7	1	0	2	12	0	11	1	0	1	12	0	13	6	0	0	19	44	145
08:15:00	0	1	0	0	3	1	1	3	3	0	3	7	1	8	0	0	0	9	1	9	0	0	4	10	27	146
08:30:00	0	4	3	0	2	7	0	9	2	0	1	11	2	9	0	0	2	11	0	15	2	0	1	17	46	162
08:45:00	1	3	3	0	0	7	1	8	0	0	1	9	2	9	0	0	0	11	0	7	2	0	2	9	36	153
BREAK																										
16:00:00	2	3	1	0	3	6	0	20	3	0	0	23	4	14	0	0	5	18	5	17	1	0	2	23	70	
16:15:00	0	2	2	0	2	4	1	13	0	0	0	14	5	8	5	0	2	18	1	26	2	0	1	29	65	
16:30:00	3	5	1	0	3	9	2	14	2	0	3	18	5	8	1	1	2	15	2	28	0	0	3	30	72	
16:45:00	5	7	1	0	5	13	0	11	1	0	2	12	7	9	4	0	1	20	0	23	2	0	3	25	70	277
17:00:00	2	3	3	0	3	8	2	12	2	0	2	16	8	14	3	0	3	25	1	16	1	0	3	18	67	274
17:15:00	3	7	0	0	10	10	1	14	1	0	2	16	3	10	10	0	6	23	2	22	1	0	1	25	74	283
17:30:00	1	4	0	0	0	5	0	10	3	0	1	13	4	11	4	0	3	19	2	31	0	0	3	33	70	281
17:45:00	3	7	2	0	5	12	3	10	1	0	11	14	5	15	2	0	5	22	2	20	0	0	5	22	70	281
Grand Total	23	55	19	0	46	97	18	143	22	0	31	183	54	165	32	1	34	252	17	265	24	0	33	306	**838**	-
Approach%	23.7%	56.7%	19.6%	0%		-	9.8%	78.1%	12%	0%		-	21.4%	65.5%	12.7%	0.4%		-	5.6%	86.6%	7.8%	0%		-	-	-
Totals %	2.7%	6.6%	2.3%	0%		11.6%	2.1%	17.1%	2.6%	0%		21.8%	6.4%	19.7%	3.8%	0.1%		30.1%	2%	31.6%	2.9%	0%		36.5%	-	-
Heavy	0	0	5	0		-	5	2	0	0		-	0	75	0	0		-	0	12	2	0		-	-	-
Heavy %	0%	0%	26.3%	0%		-	27.8%	1.4%	0%	0%		-	0%	45.5%	0%	0%		-	0%	4.5%	8.3%	0%		-	-	-
Bicycles	0	2	1	0		-	1	1	2	0		-	0	1	0	0		-	0	9	0	0		-	-	-
Bicycle %	0%	3.6%	5.3%	0%		-	5.6%	0.7%	9.1%	0%		-	0%	0.6%	0%	0%		-	0%	3.4%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Broken Clouds (17.32 °C)

Start Time	N Approach ANN ST						E Approach HIGH ST E						S Approach ANN ST						W Approach HIGH ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	2	2	0	0	1	4	2	4	1	0	1	7	3	14	0	0	3	17	0	14	3	0	1	17	45
08:00:00	0	1	0	0	2	1	4	7	1	0	2	12	0	11	1	0	1	12	0	13	6	0	0	19	44
08:15:00	0	1	0	0	3	1	1	3	3	0	3	7	1	8	0	0	0	9	1	9	0	0	4	10	27
08:30:00	0	4	3	0	2	7	0	9	2	0	1	11	2	9	0	0	2	11	0	15	2	0	1	17	46
Grand Total	2	8	3	0	8	13	7	23	7	0	7	37	6	42	1	0	6	49	1	51	11	0	6	63	**162**
Approach%	15.4%	61.5%	23.1%	0%		-	18.9%	62.2%	18.9%	0%		-	12.2%	85.7%	2%	0%		-	1.6%	81%	17.5%	0%		-	-
Totals %	1.2%	4.9%	1.9%	0%		8%	4.3%	14.2%	4.3%	0%		22.8%	3.7%	25.9%	0.6%	0%		30.2%	0.6%	31.5%	6.8%	0%		38.9%	-
PHF	0.25	0.5	0.25	0		0.46	0.44	0.64	0.58	0		0.77	0.5	0.75	0.25	0		0.72	0.25	0.85	0.46	0		0.63	-
Heavy	0	0	2	0		2	4	1	0	0		5	0	23	0	0		23	0	10	2	0		12	-
Heavy %	0%	0%	66.7%	0%		15.4%	57.1%	4.3%	0%	0%		13.5%	0%	54.8%	0%	0%		46.9%	0%	19.6%	18.2%	0%		19%	-
Lights	2	8	1	0		11	3	22	7	0		32	6	19	1	0		26	1	41	9	0		51	-
Lights %	100%	100%	33.3%	0%		84.6%	42.9%	95.7%	100%	0%		86.5%	100%	45.2%	100%	0%		53.1%	100%	80.4%	81.8%	0%		81%	-
Single-Unit Trucks	0	0	2	0		2	4	0	0	0		4	0	4	0	0		4	0	10	2	0		12	-
Single-Unit Trucks %	0%	0%	66.7%	0%		15.4%	57.1%	0%	0%	0%		10.8%	0%	9.5%	0%	0%		8.2%	0%	19.6%	18.2%	0%		19%	-
Buses	0	0	0	0		0	0	1	0	0		1	0	19	0	0		19	0	0	0	0		0	-
Buses %	0%	0%	0%	0%		0%	0%	4.3%	0%	0%		2.7%	0%	45.2%	0%	0%		38.8%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	7	-	-	-	-	-	6	-	-	-	-	-	6	-	-
Pedestrians%	-	-	-	-	29.6%		-	-	-	-	25.9%		-	-	-	-	22.2%		-	-	-	-	22.2%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (27.5 °C)

Start Time	N Approach ANN ST						E Approach HIGH ST E						S Approach ANN ST						W Approach HIGH ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	3	5	1	0	3	9	2	14	2	0	3	18	5	8	1	1	2	15	2	28	0	0	3	30	72
16:45:00	5	7	1	0	5	13	0	11	1	0	2	12	7	9	4	0	1	20	0	23	2	0	3	25	70
17:00:00	2	3	3	0	3	8	2	12	2	0	2	16	8	14	3	0	3	25	1	16	1	0	3	18	67
17:15:00	3	7	0	0	10	10	1	14	1	0	2	16	3	10	10	0	6	23	2	22	1	0	1	25	74
Grand Total	13	22	5	0	21	40	5	51	6	0	9	62	23	41	18	1	12	83	5	89	4	0	10	98	**283**
Approach%	32.5%	55%	12.5%	0%		-	8.1%	82.3%	9.7%	0%		-	27.7%	49.4%	21.7%	1.2%		-	5.1%	90.8%	4.1%	0%		-	-
Totals %	4.6%	7.8%	1.8%	0%		14.1%	1.8%	18%	2.1%	0%		21.9%	8.1%	14.5%	6.4%	0.4%		29.3%	1.8%	31.4%	1.4%	0%		34.6%	-
PHF	0.65	0.79	0.42	0		0.77	0.63	0.91	0.75	0		0.88	0.72	0.73	0.45	0.25		0.83	0.63	0.79	0.5	0		0.82	-
Heavy	0	0	0	0		0	0	0	0	0		0	0	19	0	0		19	0	0	0	0		0	-
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	46.3%	0%	0%		22.9%	0%	0%	0%	0%		0%	-
Lights	13	22	5	0		40	5	51	6	0		62	23	22	18	1		64	5	89	4	0		98	-
Lights %	100%	100%	100%	0%		100%	100%	100%	100%	0%		100%	100%	53.7%	100%	100%		77.1%	100%	100%	100%	0%		100%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	19	0	0		19	0	0	0	0		0	-
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	46.3%	0%	0%		22.9%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	16	-	-	-	-	-	9	-	-	-	-	-	10	-	-	-	-	-	9	-	-
Pedestrians%	-	-	-	-	30.8%		-	-	-	-	17.3%		-	-	-	-	19.2%		-	-	-	-	17.3%		-
Bicycles on Crosswalk	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	9.6%		-	-	-	-	0%		-	-	-	-	3.8%		-	-	-	-	1.9%		-
Bicycles on Road	0	0	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Broken Clouds (17.32 °C)

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (27.5 °C)

	Bicycles on Crosswalk	Pedestrians
N	5	16
S	2	10
E	0	9
W	1	9

Turning Movement Count (6 . ANN ST & PARK ST E)

Start Time	N Approach ANN ST						E Approach PARK ST E						S Approach ANN ST						W Approach PARK ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	0	0	1	0	0	1	7	11	2	0	0	20	2	6	0	0	1	8	1	22	1	0	1	24	53	
07:15:00	0	0	2	0	1	2	6	10	3	0	1	19	1	7	0	0	1	8	0	21	4	0	1	25	54	
07:30:00	1	1	1	0	0	3	3	12	1	0	4	16	5	6	1	0	3	12	1	26	1	0	0	28	59	
07:45:00	0	0	1	0	0	1	6	20	7	0	0	33	5	12	3	0	4	20	0	23	1	0	1	24	78	244
08:00:00	1	0	0	0	2	1	3	7	1	0	1	11	8	9	3	0	4	20	0	13	0	0	0	13	45	236
08:15:00	0	1	1	0	2	2	7	9	4	0	6	20	2	6	2	0	10	10	1	25	1	0	6	27	59	241
08:30:00	2	0	2	0	0	4	6	8	5	0	0	19	6	6	1	0	5	13	1	12	1	0	0	14	50	232
08:45:00	1	0	0	0	1	1	5	8	6	0	2	19	3	5	1	0	6	9	1	22	2	0	1	25	54	208
BREAK																										
16:00:00	1	0	2	0	3	3	7	36	6	0	2	49	2	9	2	0	1	13	0	25	1	0	0	26	91	
16:15:00	0	1	1	0	0	2	7	25	1	0	4	33	4	6	1	0	14	11	0	14	2	0	0	16	62	
16:30:00	0	0	3	0	1	3	11	30	6	0	1	47	2	9	1	0	8	12	1	30	2	0	1	33	95	
16:45:00	0	4	5	0	0	9	4	29	6	0	2	39	6	4	1	0	12	11	2	25	0	0	0	27	86	334
17:00:00	0	0	4	0	0	4	12	34	4	0	1	50	6	9	4	0	2	19	0	30	3	0	0	33	106	349
17:15:00	0	1	3	0	3	4	7	27	8	0	2	42	6	5	1	0	8	12	2	13	2	0	4	17	75	362
17:30:00	0	1	2	0	2	3	8	29	4	0	1	41	3	8	1	0	5	12	1	25	1	0	1	27	83	350
17:45:00	0	2	0	0	0	2	10	27	8	0	12	45	6	12	0	0	6	18	2	30	1	0	5	33	98	362
Grand Total	6	11	28	0	15	45	109	322	72	0	39	503	67	119	22	0	90	208	13	356	23	0	21	392	**1148**	-
Approach%	13,3%	24,4%	62,2%	0%		-	21,7%	64%	14,3%	0%		-	32,2%	57,2%	10,6%	0%		-	3,3%	90,8%	5,9%	0%		-	-	-
Totals %	0,5%	1%	2,4%	0%		3,9%	9,5%	28%	6,3%	0%		43,8%	5,8%	10,4%	1,9%	0%		18,1%	1,1%	31%	2%	0%		34,1%	-	-
Heavy	5	0	1	0		-	5	5	5	0		-	0	73	10	0		-	0	5	7	0		-	-	-
Heavy %	83,3%	0%	3,6%	0%		-	4,6%	1,6%	6,9%	0%		-	0%	61,3%	45,5%	0%		-	0%	1,4%	30,4%	0%		-	-	-
Bicycles	0	1	1	0		-	1	4	0	0		-	0	0	2	0		-	1	8	0	0		-	-	-
Bicycle %	0%	9,1%	3,6%	0%		-	0,9%	1,2%	0%	0%		-	0%	0%	9,1%	0%		-	7,7%	2,2%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: ANN ST & PARK ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:00 AM - 08:00 AM Weather: Broken Clouds (17.32 °C)

Start Time	N Approach ANN ST						E Approach PARK ST E						S Approach ANN ST						W Approach PARK ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:00:00	0	0	1	0	0	1	7	11	2	0	0	20	2	6	0	0	1	8	1	22	1	0	1	24	53
07:15:00	0	0	2	0	1	2	6	10	3	0	1	19	1	7	0	0	1	8	0	21	4	0	1	25	54
07:30:00	1	1	1	0	0	3	3	12	1	0	4	16	5	6	1	0	3	12	1	26	1	0	0	28	59
07:45:00	0	0	1	0	0	1	6	20	7	0	0	33	5	12	3	0	4	20	0	23	1	0	1	24	78
Grand Total	1	1	5	0	1	7	22	53	13	0	5	88	13	31	4	0	9	48	2	92	7	0	3	101	**244**
Approach%	14.3%	14.3%	71.4%	0%		-	25%	60.2%	14.8%	0%		-	27.1%	64.6%	8.3%	0%		-	2%	91.1%	6.9%	0%		-	-
Totals %	0.4%	0.4%	2%	0%		2.9%	9%	21.7%	5.3%	0%		36.1%	5.3%	12.7%	1.6%	0%		19.7%	0.8%	37.7%	2.9%	0%		41.4%	-
PHF	0.25	0.25	0.63	0		0.58	0.79	0.66	0.46	0		0.67	0.65	0.65	0.33	0		0.6	0.5	0.88	0.44	0		0.9	-
Heavy	1	0	1	0		2	1	4	1	0		6	0	19	4	0		23	0	2	2	0		4	-
Heavy %	100%	0%	20%	0%		28.6%	4.5%	7.5%	7.7%	0%		6.8%	0%	61.3%	100%	0%		47.9%	0%	2.2%	28.6%	0%		4%	-
Lights	0	1	4	0		5	21	49	12	0		82	13	12	0	0		25	2	90	5	0		97	-
Lights %	0%	100%	80%	0%		71.4%	95.5%	92.5%	92.3%	0%		93.2%	100%	38.7%	0%	0%		52.1%	100%	97.8%	71.4%	0%		96%	-
Single-Unit Trucks	1	0	1	0		2	0	3	1	0		4	0	1	4	0		5	0	0	2	0		2	-
Single-Unit Trucks %	100%	0%	20%	0%		28.6%	0%	5.7%	7.7%	0%		4.5%	0%	3.2%	100%	0%		10.4%	0%	0%	28.6%	0%		2%	-
Buses	0	0	0	0		0	1	0	0	0		1	0	18	0	0		18	0	1	0	0		1	-
Buses %	0%	0%	0%	0%		0%	4.5%	0%	0%	0%		1.1%	0%	58.1%	0%	0%		37.5%	0%	1.1%	0%	0%		1%	-
Articulated Trucks	0	0	0	0		0	0	1	0	0		1	0	0	0	0		0	0	1	0	0		1	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	1.9%	0%	0%		1.1%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	-
Pedestrians	-	-	-	-	1	-	-	-	-	-	5	-	-	-	-	-	9	-	-	-	-	-	3	-	-
Pedestrians%	-	-	-	-	5.6%		-	-	-	-	27.8%		-	-	-	-	50%		-	-	-	-	16.7%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: ANN ST & PARK ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (27.5 °C)

Start Time	N Approach ANN ST						E Approach PARK ST E						S Approach ANN ST						W Approach PARK ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
17:00:00	0	0	4	0	0	4	12	34	4	0	1	50	6	9	4	0	2	19	0	30	3	0	0	33	106
17:15:00	0	1	3	0	3	4	7	27	8	0	2	42	6	5	1	0	8	12	2	13	2	0	4	17	75
17:30:00	0	1	2	0	2	3	8	29	4	0	1	41	3	8	1	0	5	12	1	25	1	0	1	27	83
17:45:00	0	2	0	0	0	2	10	27	8	0	12	45	6	12	0	0	6	18	2	30	1	0	5	33	98
Grand Total	0	4	9	0	5	13	37	117	24	0	16	178	21	34	6	0	21	61	5	98	7	0	10	110	**362**
Approach%	0%	30.8%	69.2%	0%		-	20.8%	65.7%	13.5%	0%		-	34.4%	55.7%	9.8%	0%		-	4.5%	89.1%	6.4%	0%		-	-
Totals %	0%	1.1%	2.5%	0%		3.6%	10.2%	32.3%	6.6%	0%		49.2%	5.8%	9.4%	1.7%	0%		16.9%	1.4%	27.1%	1.9%	0%		30.4%	-
PHF	0	0.5	0.56	0		0.81	0.77	0.86	0.75	0		0.89	0.88	0.71	0.38	0		0.8	0.63	0.82	0.58	0		0.83	-
Heavy	0	0	0	0		0	0	0	0	0		0	0	19	0	0		19	0	2	1	0		3	-
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	55.9%	0%	0%		31.1%	0%	2%	14.3%	0%		2.7%	-
Lights	0	4	9	0		13	37	117	24	0		178	21	15	6	0		42	5	96	6	0		107	-
Lights %	0%	100%	100%	0%		100%	100%	100%	100%	0%		100%	100%	44.1%	100%	0%		68.9%	100%	98%	85.7%	0%		97.3%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	19	0	0		19	0	2	1	0		3	-
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	55.9%	0%	0%		31.1%	0%	2%	14.3%	0%		2.7%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	15	-	-	-	-	-	21	-	-	-	-	-	10	-	-
Pedestrians%	-	-	-	-	7.7%		-	-	-	-	28.8%		-	-	-	-	40.4%		-	-	-	-	19.2%		-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	1.9%		-	-	-	-	1.9%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	0	-	0	0	2	0	0	-	0	5	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:00 AM - 08:00 AM Weather: Broken Clouds (17.32 °C)

	Bicycles on Crosswalk	Pedestrians
N	0	1
S	0	9
E	0	5
W	0	3

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 05:00 PM - 06:00 PM Weather: Broken Clouds (27.5 °C)

	Bicycles on Crosswalk	Pedestrians
N	1	4
S	0	21
E	1	15
W	0	10

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ST. LAWRENCE DR
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (14 . LAKESHORE RD W & ST. LAWRENCE DR)

Start Time	N Approach HURONTARIO ST						E Approach LAKESHORE RD E						S Approach HURONTARIO ST						W Approach LAKESHORE RD E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	U-Turn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	U-Turn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	22	3	16	0	2	41	51	90	0	0	4	141	3	10	0	0	2	13	1	257	64	0	8	322	517	
07:15:00	39	5	29	1	5	74	45	73	1	0	4	119	4	12	1	0	3	17	0	279	46	0	15	325	535	
07:30:00	44	11	31	0	1	86	58	103	4	0	1	165	4	13	1	0	1	18	1	294	88	0	9	383	652	
07:45:00	59	15	44	0	2	118	56	107	7	0	5	170	6	13	1	0	1	20	5	313	75	0	5	393	701	2405
08:00:00	56	18	20	0	10	94	53	134	3	0	3	190	6	12	0	0	4	18	0	281	86	0	6	367	669	2557
08:15:00	61	14	60	0	6	135	60	133	9	0	4	202	9	18	1	0	1	28	0	326	89	0	9	415	780	2802
08:30:00	56	28	71	0	17	155	61	187	9	0	6	257	11	20	4	0	3	35	1	277	79	0	9	357	804	2954
08:45:00	75	28	64	0	10	167	60	183	11	0	3	254	5	8	3	0	8	16	3	245	66	0	5	314	751	3004
BREAK																										
16:00:00	77	16	56	0	10	149	61	249	15	0	5	325	8	29	7	0	4	44	2	147	65	0	20	214	732	
16:15:00	79	20	59	0	10	158	46	270	18	0	2	334	10	19	2	0	11	31	6	195	51	0	16	252	775	
16:30:00	74	14	56	0	7	144	58	275	11	0	2	344	9	23	1	0	2	33	2	178	55	0	14	235	756	
16:45:00	77	20	59	0	6	156	67	293	13	0	6	373	12	24	3	0	5	39	2	194	53	0	4	249	817	3080
17:00:00	95	29	47	1	12	172	54	277	9	0	1	340	9	34	2	0	2	45	2	197	59	0	11	258	815	3163
17:15:00	73	22	74	0	11	169	55	289	7	0	4	351	11	33	2	0	4	46	1	183	47	0	14	231	797	3185
17:30:00	93	14	70	0	8	177	60	275	7	0	0	342	12	25	7	0	9	44	2	193	58	0	13	253	816	3245
17:45:00	73	27	83	0	8	183	44	281	9	0	8	334	13	19	2	0	5	34	2	188	50	0	14	240	791	3219
Grand Total	1053	284	839	2	125	2178	889	3219	133	0	58	4241	132	312	37	0	65	481	30	3747	1031	0	172	4808	**11708**	-
Approach%	48.3%	13%	38.5%	0.1%		-	21%	75.9%	3.1%	0%		-	27.4%	64.9%	7.7%	0%		-	0.6%	77.9%	21.4%	0%		-	-	-
Totals %	9%	2.4%	7.2%	0%		18.6%	7.6%	27.5%	1.1%	0%		36.2%	1.1%	2.7%	0.3%	0%		4.1%	0.3%	32%	8.8%	0%		41.1%	-	-
Heavy	111	2	22	0		-	23	77	2	0		-	3	4	1	0		-	0	99	99	0		-	-	-
Heavy %	10.5%	0.7%	2.6%	0%		-	2.6%	2.4%	1.5%	0%		-	2.3%	1.3%	2.7%	0%		-	0%	2.6%	8.6%	0%		-	-	-
Bicycles	0	0	1	0		-	0	1	0	0		-	0	0	0	0		-	0	3	0	0		-	-	-
Bicycle %	0%	0%	0.1%	0%		-	0%	0%	0%	0%		-	0%	0%	0%	0%		-	0%	0.1%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ST. LAWRENCE DR
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (6.2 °C)

Start Time	N Approach HURONTARIO ST						E Approach LAKESHORE RD E						S Approach HURONTARIO ST						W Approach LAKESHORE RD E						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	56	18	20	0	10	94	53	134	3	0	3	190	6	12	0	0	4	18	0	281	86	0	6	367	669
08:15:00	61	14	60	0	6	135	60	133	9	0	4	202	9	18	1	0	1	28	0	326	89	0	9	415	780
08:30:00	56	28	71	0	17	155	61	187	9	0	6	257	11	20	4	0	3	35	1	277	79	0	9	357	804
08:45:00	75	28	64	0	10	167	60	183	11	0	3	254	5	8	3	0	8	16	3	245	66	0	5	314	751
Grand Total	248	88	215	0	43	551	234	637	32	0	16	903	31	58	8	0	16	97	4	1129	320	0	29	1453	**3004**
Approach%	45%	16%	39%	0%		-	25.9%	70.5%	3.5%	0%		-	32%	59.8%	8.2%	0%		-	0.3%	77.7%	22%	0%		-	-
Totals %	8.3%	2.9%	7.2%	0%		18.3%	7.8%	21.2%	1.1%	0%		30.1%	1%	1.9%	0.3%	0%		3.2%	0.1%	37.6%	10.7%	0%		48.4%	-
PHF	0.83	0.79	0.76	0		0.82	0.96	0.85	0.73	0		0.88	0.7	0.73	0.5	0		0.69	0.33	0.87	0.9	0		0.88	-
Heavy	35	1	12	0		48	11	25	2	0		38	1	0	1	0		2	0	37	29	0		66	-
Heavy %	14.1%	1.1%	5.6%	0%		8.7%	4.7%	3.9%	6.3%	0%		4.2%	3.2%	0%	12.5%	0%		2.1%	0%	3.3%	9.1%	0%		4.5%	-
Lights	213	87	203	0		503	223	612	30	0		865	30	58	7	0		95	4	1092	291	0		1387	-
Lights %	85.9%	98.9%	94.4%	0%		91.3%	95.3%	96.1%	93.8%	0%		95.8%	96.8%	100%	87.5%	0%		97.9%	100%	96.7%	90.9%	0%		95.5%	-
Single-Unit Trucks	9	1	6	0		16	3	8	0	0		11	1	0	1	0		2	0	13	4	0		17	-
Single-Unit Trucks %	3.6%	1.1%	2.8%	0%		2.9%	1.3%	1.3%	0%	0%		1.2%	3.2%	0%	12.5%	0%		2.1%	0%	1.2%	1.3%	0%		1.2%	-
Buses	23	0	5	0		28	7	14	2	0		23	0	0	0	0		0	0	20	24	0		44	-
Buses %	9.3%	0%	2.3%	0%		5.1%	3%	2.2%	6.3%	0%		2.5%	0%	0%	0%	0%		0%	0%	1.8%	7.5%	0%		3%	-
Articulated Trucks	3	0	1	0		4	1	3	0	0		4	0	0	0	0		0	0	4	1	0		5	-
Articulated Trucks %	1.2%	0%	0.5%	0%		0.7%	0.4%	0.5%	0%	0%		0.4%	0%	0%	0%	0%		0%	0%	0.4%	0.3%	0%		0.3%	-
Pedestrians	-	-	-	-	40	-	-	-	-	-	16	-	-	-	-	-	16	-	-	-	-	-	28	-	-
Pedestrians%	-	-	-	-	38.5%		-	-	-	-	15.4%		-	-	-	-	15.4%		-	-	-	-	26.9%		-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	2.9%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	1%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ST. LAWRENCE DR
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Rain (7.7 °C)

Start Time	N Approach HURONTARIO ST						E Approach LAKESHORE RD E						S Approach HURONTARIO ST						W Approach LAKESHORE RD E						Int. Total (15 min)
	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	Right	Thru	Left	U-Turn	Peds	Approach Total	
16:45:00	77	20	59	0	6	156	67	293	13	0	6	373	12	24	3	0	5	39	2	194	53	0	4	249	817
17:00:00	95	29	47	1	12	172	54	277	9	0	1	340	9	34	2	0	2	45	2	197	59	0	11	258	815
17:15:00	73	22	74	0	11	169	55	289	7	0	4	351	11	33	2	0	4	46	1	183	47	0	14	231	797
17:30:00	93	14	70	0	8	177	60	275	7	0	0	342	12	25	7	0	9	44	2	193	58	0	13	253	816
Grand Total	338	85	250	1	37	674	236	1134	36	0	11	1406	44	116	14	0	20	174	7	767	217	0	42	991	**3245**
Approach%	50.1%	12.6%	37.1%	0.1%		-	16.8%	80.7%	2.6%	0%		-	25.3%	66.7%	8%	0%		-	0.7%	77.4%	21.9%	0%		-	-
Totals %	10.4%	2.6%	7.7%	0%		20.8%	7.3%	34.9%	1.1%	0%		43.3%	1.4%	3.6%	0.4%	0%		5.4%	0.2%	23.6%	6.7%	0%		30.5%	-
PHF	0.89	0.73	0.84	0.25		0.95	0.88	0.97	0.89	0		0.94	0.92	0.85	0.5	0		0.95	0.88	0.97	0.92	0		0.96	-
Heavy	16	1	2	0		19	4	16	0	0		20	0	2	0	0		2	0	14	22	0		36	-
Heavy %	4.7%	1.2%	0.8%	0%		2.8%	1.7%	1.4%	0%	0%		1.4%	0%	1.7%	0%	0%		1.1%	0%	1.8%	10.1%	0%		3.6%	-
Lights	322	84	248	1		655	232	1118	36	0		1386	44	114	14	0		172	7	753	195	0		955	-
Lights %	95.3%	98.8%	99.2%	100%		97.2%	98.3%	98.6%	100%	0%		98.6%	100%	98.3%	100%	0%		98.9%	100%	98.2%	89.9%	0%		96.4%	-
Single-Unit Trucks	1	0	1	0		2	3	6	0	0		9	0	0	0	0		0	0	7	5	0		12	-
Single-Unit Trucks %	0.3%	0%	0.4%	0%		0.3%	1.3%	0.5%	0%	0%		0.6%	0%	0%	0%	0%		0%	0%	0.9%	2.3%	0%		1.2%	-
Buses	15	1	1	0		17	1	10	0	0		11	0	2	0	0		2	0	5	16	0		21	-
Buses %	4.4%	1.2%	0.4%	0%		2.5%	0.4%	0.9%	0%	0%		0.8%	0%	1.7%	0%	0%		1.1%	0%	0.7%	7.4%	0%		2.1%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	2	1	0		3	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0.3%	0.5%	0%		0.3%	-
Pedestrians	-	-	-	-	36	-	-	-	-	-	11	-	-	-	-	-	20	-	-	-	-	-	42	-	-
Pedestrians%	-	-	-	-	35.7%		-	-	-	-	10%		-	-	-	-	18.2%		-	-	-	-	38.2%		-
Bicycles on Crosswalk	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0.9%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ST. LAWRENCE DR
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (6.2 °C)

	Bicycles on Crosswalk	Pedestrians
N	3	40
S	0	16
E	0	16
W	1	28

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ST. LAWRENCE DR
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Rain (7.7 °C)

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & PARK ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (3 . HURONTARIO ST & PARK ST E)

Start Time	N Approach HURONTARIO ST						E Approach PARK ST E						S Approach HURONTARIO ST						W Approach PARK ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	21	48	8	0	1	77	4	0	0	0	3	4	5	73	1	0	1	79	2	0	24	0	0	26	186	
07:15:00	23	70	8	0	2	101	10	1	0	0	1	11	1	64	1	0	1	66	2	2	20	0	1	24	202	
07:30:00	17	66	13	0	0	96	10	0	0	0	3	10	2	81	0	0	2	83	3	0	29	0	3	32	221	
07:45:00	32	72	8	0	3	112	9	0	0	0	0	9	6	89	0	0	3	95	1	1	26	0	1	28	244	853
08:00:00	13	74	9	0	1	96	8	0	1	0	0	9	0	77	2	0	2	79	2	1	16	0	0	19	203	870
08:15:00	18	105	13	0	3	136	12	1	0	0	2	13	1	75	2	0	6	78	0	4	28	0	0	32	259	927
08:30:00	18	132	17	0	0	167	17	1	0	0	2	18	1	74	1	0	5	76	0	2	15	0	0	17	278	984
08:45:00	18	115	19	0	4	152	12	0	2	0	5	14	3	94	0	0	1	97	2	0	25	0	0	27	290	1030
BREAK																										
16:00:00	44	133	22	0	3	199	25	6	0	0	9	31	2	117	0	0	9	119	4	2	23	0	4	29	378	
16:15:00	31	131	15	0	7	177	23	1	2	0	8	26	3	142	2	0	6	147	0	2	21	0	2	23	373	
16:30:00	38	132	18	0	5	188	16	7	2	0	9	25	3	149	0	0	2	152	6	3	24	0	1	33	398	
16:45:00	32	150	26	0	4	208	16	7	3	0	3	26	4	142	2	0	4	148	5	3	31	0	7	39	421	1570
17:00:00	36	156	10	0	3	202	24	8	1	0	7	33	3	158	6	0	4	167	2	6	34	0	4	42	444	1636
17:15:00	39	166	16	1	7	222	36	4	0	0	10	40	3	141	3	0	7	147	2	3	19	0	7	24	433	1696
17:30:00	33	166	18	0	2	217	18	6	0	0	14	24	3	155	0	0	3	158	5	0	26	0	2	31	430	1728
17:45:00	38	118	21	0	8	177	26	6	1	0	7	33	4	138	3	0	4	145	6	3	28	0	13	37	392	1699
Grand Total	451	1834	241	1	53	2527	266	48	12	0	83	326	44	1769	23	0	60	1836	42	32	389	0	45	463	**5152**	-
Approach%	17,8%	72,6%	9,5%	0%		-	81,6%	14,7%	3,7%	0%		-	2,4%	96,4%	1,3%	0%		-	9,1%	6,9%	84%	0%		-	-	-
Totals %	8,8%	35,6%	4,7%	0%		49%	5,2%	0,9%	0,2%	0%		6,3%	0,9%	34,3%	0,4%	0%		35,6%	0,8%	0,6%	7,6%	0%		9%	-	-
Heavy	16	128	5	0		-	3	0	0	0		-	2	139	0	0		-	0	0	7	0		-	-	-
Heavy %	3,5%	7%	2,1%	0%		-	1,1%	0%	0%	0%		-	4,5%	7,9%	0%	0%		-	0%	0%	1,8%	0%		-	-	-
Bicycles	2	6	0	0		-	0	3	0	0		-	0	3	0	0		-	0	8	0	0		-	-	-
Bicycle %	0,4%	0,3%	0%	0%		-	0%	6,3%	0%	0%		-	0%	0,2%	0%	0%		-	0%	25%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & PARK ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (17.32 °C)

Start Time	N Approach HURONTARIO ST						E Approach PARK ST E						S Approach HURONTARIO ST						W Approach PARK ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	13	74	9	0	1	96	8	0	1	0	0	9	0	77	2	0	2	79	2	1	16	0	0	19	203
08:15:00	18	105	13	0	3	136	12	1	0	0	2	13	1	75	2	0	6	78	0	4	28	0	0	32	259
08:30:00	18	132	17	0	0	167	17	1	0	0	2	18	1	74	1	0	5	76	0	2	15	0	0	17	278
08:45:00	18	115	19	0	4	152	12	0	2	0	5	14	3	94	0	0	1	97	2	0	25	0	0	27	290
Grand Total	67	426	58	0	8	551	49	2	3	0	9	54	5	320	5	0	14	330	4	7	84	0	0	95	**1030**
Approach%	12.2%	77.3%	10.5%	0%		-	90.7%	3.7%	5.6%	0%		-	1.5%	97%	1.5%	0%		-	4.2%	7.4%	88.4%	0%		-	-
Totals %	6.5%	41.4%	5.6%	0%		53.5%	4.8%	0.2%	0.3%	0%		5.2%	0.5%	31.1%	0.5%	0%		32%	0.4%	0.7%	8.2%	0%		9.2%	-
PHF	0.93	0.81	0.76	0		0.82	0.72	0.5	0.38	0		0.75	0.42	0.85	0.63	0		0.85	0.5	0.44	0.75	0		0.74	-
Heavy	8	55	1	0		64	0	0	0	0		0	0	52	0	0		52	0	0	1	0		1	-
Heavy %	11.9%	12.9%	1.7%	0%		11.6%	0%	0%	0%	0%		0%	0%	16.3%	0%	0%		15.8%	0%	0%	1.2%	0%		1.1%	-
Lights	59	371	57	0		487	49	2	3	0		54	5	268	5	0		278	4	7	83	0		94	-
Lights %	88.1%	87.1%	98.3%	0%		88.4%	100%	100%	100%	0%		100%	100%	83.8%	100%	0%		84.2%	100%	100%	98.8%	0%		98.9%	-
Single-Unit Trucks	8	42	1	0		51	0	0	0	0		0	0	40	0	0		40	0	0	0	0		0	-
Single-Unit Trucks %	11.9%	9.9%	1.7%	0%		9.3%	0%	0%	0%	0%		0%	0%	12.5%	0%	0%		12.1%	0%	0%	0%	0%		0%	-
Buses	0	10	0	0		10	0	0	0	0		0	0	9	0	0		9	0	0	1	0		1	-
Buses %	0%	2.3%	0%	0%		1.8%	0%	0%	0%	0%		0%	0%	2.8%	0%	0%		2.7%	0%	0%	1.2%	0%		1.1%	-
Articulated Trucks	0	3	0	0		3	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	-
Articulated Trucks %	0%	0.7%	0%	0%		0.5%	0%	0%	0%	0%		0%	0%	0.9%	0%	0%		0.9%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	8	-	-	-	-	-	11	-	-	-	-	-	0	-	-
Pedestrians%	-	-	-	-	25.8%		-	-	-	-	25.8%		-	-	-	-	35.5%		-	-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	3.2%		-	-	-	-	9.7%		-	-	-	-	0%		-
Bicycles on Road	0	1	0	0	0	-	0	1	0	0	0	-	0	1	0	0	0	-	0	2	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & PARK ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

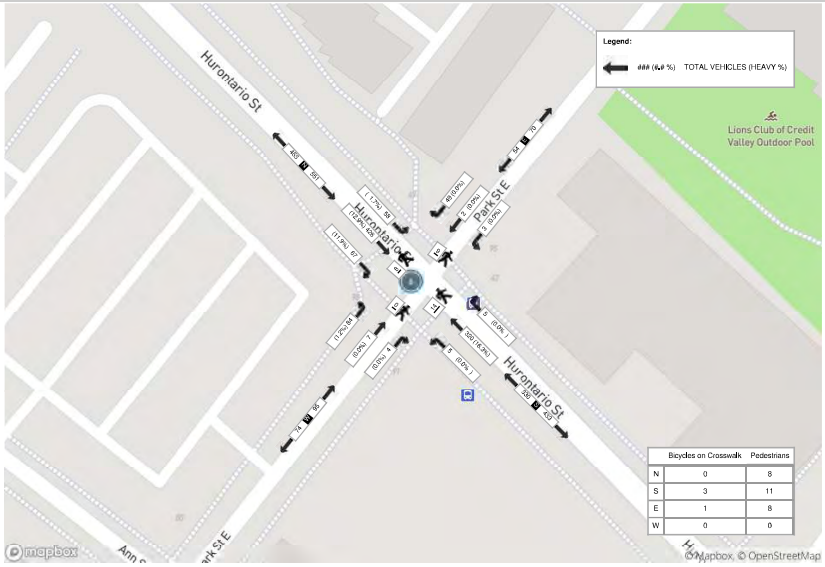
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (27.5 °C)

Start Time	N Approach HURONTARIO ST						E Approach PARK ST E						S Approach HURONTARIO ST						W Approach PARK ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	32	150	26	0	4	208	16	7	3	0	3	26	4	142	2	0	4	148	5	3	31	0	7	39	421
17:00:00	36	156	10	0	3	202	24	8	1	0	7	33	3	158	6	0	4	167	2	6	34	0	4	42	444
17:15:00	39	166	16	1	7	222	36	4	0	0	10	40	3	141	3	0	7	147	2	3	19	0	7	24	433
17:30:00	33	166	18	0	2	217	18	6	0	0	14	24	3	155	0	0	3	158	5	0	26	0	2	31	430
Grand Total	140	638	70	1	16	849	94	25	4	0	34	123	13	596	11	0	18	620	14	12	110	0	20	136	**1728**
Approach%	16.5%	75.1%	8.2%	0.1%		-	76.4%	20.3%	3.3%	0%		-	2.1%	96.1%	1.8%	0%		-	10.3%	8.8%	80.9%	0%		-	-
Totals %	8.1%	36.9%	4.1%	0.1%		49.1%	5.4%	1.4%	0.2%	0%		7.1%	0.8%	34.5%	0.6%	0%		35.9%	0.8%	0.7%	6.4%	0%		7.9%	-
PHF	0.9	0.96	0.67	0.25		0.96	0.65	0.78	0.33	0		0.77	0.81	0.94	0.46	0		0.93	0.7	0.5	0.81	0		0.81	-
Heavy	0	16	2	0		18	2	0	0	0		2	1	17	0	0		18	0	0	1	0		1	-
Heavy %	0%	2.5%	2.9%	0%		2.1%	2.1%	0%	0%	0%		1.6%	7.7%	2.9%	0%	0%		2.9%	0%	0%	0.9%	0%		0.7%	-
Lights	140	622	68	1		831	92	25	4	0		121	12	579	11	0		602	14	12	109	0		135	-
Lights %	100%	97.5%	97.1%	100%		97.9%	97.9%	100%	100%	0%		98.4%	92.3%	97.1%	100%	0%		97.1%	100%	100%	99.1%	0%		99.3%	-
Single-Unit Trucks	0	6	2	0		8	2	0	0	0		2	1	9	0	0		10	0	0	0	0		0	-
Single-Unit Trucks %	0%	0.9%	2.9%	0%		0.9%	2.1%	0%	0%	0%		1.6%	7.7%	1.5%	0%	0%		1.6%	0%	0%	0%	0%		0%	-
Buses	0	10	0	0		10	0	0	0	0		0	0	8	0	0		8	0	0	1	0		1	-
Buses %	0%	1.6%	0%	0%		1.2%	0%	0%	0%	0%		0%	0%	1.3%	0%	0%		1.3%	0%	0%	0.9%	0%		0.7%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	11	-	-	-	-	-	19	-	-	-	-	-	15	-	-	-	-	-	16	-	-
Pedestrians%	-	-	-	-	12.5%		-	-	-	-	21.6%		-	-	-	-	17%		-	-	-	-	18.2%		-
Bicycles on Crosswalk	-	-	-	-	5	-	-	-	-	-	15	-	-	-	-	-	3	-	-	-	-	-	4	-	-
Bicycles on Crosswalk%	-	-	-	-	5.7%		-	-	-	-	17%		-	-	-	-	3.4%		-	-	-	-	4.5%		-
Bicycles on Road	2	0	0	0	0	-	0	2	0	0	0	-	0	1	0	0	0	-	0	2	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

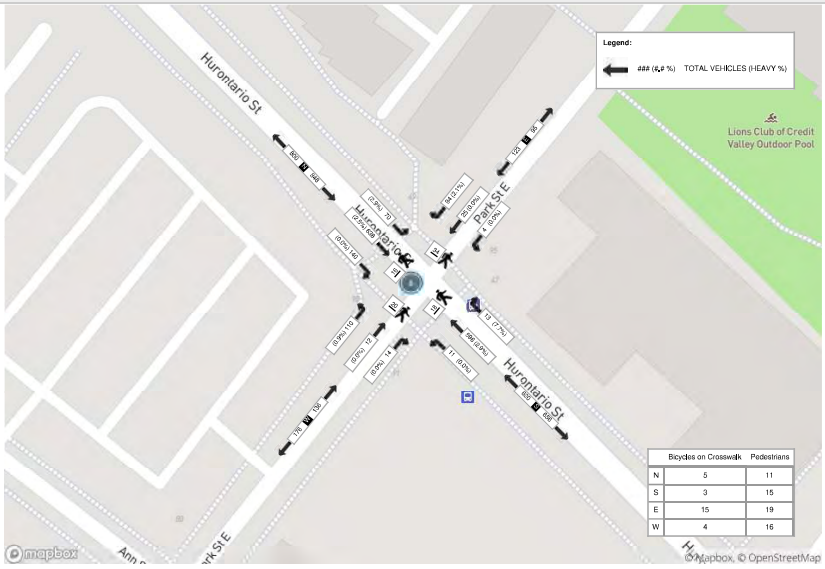
BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (17.32 °C)



BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (27.5 °C)



Turning Movement Count - Details Report

Location..... HURONTARIO ST @ PARK ST E
Municipality..... Mississauga
Road 1 PARK ST E **Road 2** HURONTARIO ST
Count Date..... Thursday, June 04, 2015

		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT
07:00	07:15	5	56	48	11	109	14	106	1	7	121	1	8	15	1	24	32	6	2	1	40
07:15	07:30	13	82	52	11	147	8	184	5	16	197	0	0	9	2	9	47	3	1	0	51
07:30	07:45	16	89	43	12	148	17	169	2	7	188	0	13	31	1	44	63	4	7	3	74
07:45	08:00	18	111	41	11	170	3	113	2	7	118	0	6	17	1	23	35	4	4	0	43
08:00	08:15	37	140	46	26	223	5	189	6	12	200	0	0	29	1	29	56	6	3	3	65
08:15	08:30	75	124	31	17	230	2	172	4	12	178	1	4	64	1	69	30	5	8	2	43
08:30	08:45	58	177	52	23	287	3	163	14	18	180	4	5	82	13	91	30	8	2	2	40
08:45	09:00	36	167	36	14	239	1	150	5	19	156	11	8	38	2	57	32	9	5	2	46
11:00	11:15	32	161	35	18	228	5	142	1	9	148	0	3	24	4	27	23	1	4	3	28
11:15	11:30	26	180	32	20	238	1	166	5	18	172	1	3	19	0	23	31	1	5	4	37
11:30	11:45	34	195	21	16	250	2	162	7	12	171	2	2	26	1	30	22	5	4	1	31
11:45	12:00	32	193	35	18	260	0	166	2	11	168	2	3	38	1	43	16	5	4	0	25
12:00	12:15	30	163	30	12	223	1	169	4	8	174	1	2	31	1	34	28	1	2	3	31
12:15	12:30	39	160	24	21	223	0	148	5	14	153	3	6	28	0	37	21	3	2	1	26
12:30	12:45	21	168	23	18	212	3	146	1	13	150	2	1	19	0	22	18	2	1	4	21
12:45	13:00	15	219	32	12	266	0	194	3	17	197	1	5	15	2	21	26	3	1	2	30
13:00	13:15	21	176	40	18	237	1	160	3	12	164	0	1	25	3	26	36	2	3	2	41
13:15	13:30	18	142	31	13	191	0	166	11	13	177	0	4	26	3	30	17	3	2	2	22
13:30	13:45	16	189	29	25	234	0	189	3	20	192	0	3	30	0	33	32	1	5	4	38
13:45	14:00	20	173	36	19	229	0	151	4	13	155	2	2	22	1	26	16	6	0	0	22
15:00	15:15	61	173	31	16	265	1	164	4	19	169	2	4	30	3	36	25	5	0	0	30
15:15	15:30	54	220	43	23	317	1	180	8	21	189	8	7	59	3	74	22	10	2	2	34
15:30	15:45	45	199	39	10	283	1	208	6	13	215	8	16	104	12	128	22	4	1	1	27
15:45	16:00	32	208	51	11	291	4	204	6	14	214	2	6	80	2	88	35	4	1	1	40
16:00	16:15	51	217	42	15	310	4	184	4	12	192	4	4	53	0	61	26	1	3	0	30
16:15	16:30	34	203	54	11	291	2	157	3	11	162	4	10	42	7	56	45	4	3	2	52
16:30	16:45	22	196	46	10	264	5	167	5	10	177	4	11	35	2	50	33	6	7	1	46
16:45	17:00	27	191	69	11	287	2	168	6	9	176	3	18	32	1	53	51	6	8	0	65
17:00	17:15	30	204	60	15	294	2	189	4	6	195	1	6	39	2	46	47	10	5	2	62
17:15	17:30	47	224	66	11	337	3	171	6	7	180	1	11	32	0	44	58	5	5	1	68
17:30	17:45	38	266	97	12	401	6	213	6	10	225	2	14	45	1	61	26	3	3	1	32
17:45	18:00	44	258	70	10	372	8	218	8	8	234	2	17	45	2	64	83	17	7	0	107
Total	.....	1047	5624	1385	490	8056	105	5428	154	398	5687	72	203	1184	73	1459	1084	153	110	50	1347

APPENDIX D:
Signal Timing Plans

Signal Timing Report

Runtime: 2021-06-18 15:11:52

Device: 0711

Region: Mississauga **Signal ID:** 0711 **Location:** HURONTARIO STREET N at High Street

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	8	0	9	0	8	0	9
Ped Clear	Sec	0	8	0	13	0	8	0	13
Min Green	Sec	0	8	0	8	0	8	0	8
Passage	Sec	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0
Maximum 1	Sec	0	27	0	25	0	27	0	25
Maximum 2	Sec	0	27	0	25	0	27	0	25
Yellow Change	Sec	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
Red Clearance	Sec	0.0	2.0	0.0	2.5	0.0	2.0	0.0	2.5
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	other	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	0	Enabled Non-Actuated 1 Max Veh Recall Ped Recall Dual Entry Act Rest In	0	Enabled Non Lock Det Dual Entry
[P2] Ring	Ring	0	1	0	1	0	2	0	2
[P2] Concurrency	Phase (,)	()	(6)	()	(8)	()	(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	9	3	55	9	0	0	0
Split	Split	5	2	3	4	2	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	none	none	none	none
Split 1 - Time	Sec	0	72	0	33	0	72	0	33
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	none	none	none	none	none
Split 2 - Time	Sec	0	68	0	32	0	68	0	32
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	none	none	none	none	none
Split 3 - Time	Sec	0	68	0	32	0	68	0	32
Split 3 - Coord	Enum	false	true	false	false	false	true	false	false
Split 4 - Mode	Enum	none	none	none	none	none	none	none	none
Split 4 - Time	Sec	0	95	0	45	0	95	0	45
Split 4 - Coord	Enum	false	true	false	false	false	true	false	false
Split 5 - Mode	Enum	none	none	none	pedRecall	none	none	none	pedRecall
Split 5 - Time	Sec	0	68	0	32	0	68	0	32
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	12345678901234567890123456789012345678901	12345678901234567890123456789012	12345678901234567890123456789012	1---------- ------	----------5--------- ------	-2---------- --------	----------4 -----	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	-2---------- ------	-----6---------- -----	----------1---------- -----	---------- 7----	---------- -8---	---------- 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	19	3	12
Plan 1 Minute	Min	0	0	0	30	0	30	0	0
Plan 1 Action	Number	8	1	4	2	3	2	7	5
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

Signal Timing Report

Runtime: 2021-06-18 15:08:20

Device: 0705

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

Phase	Units	1	2	3	4	5	6	7	8
Walk	Sec	0	12	0	12	0	12	0	12
Ped Clear	Sec	0	26	0	26	0	26	0	26
Min Green	Sec	0	8	0	8	5	8	0	8
Passage	Sec	0.0	4.0	0.0	4.0	3.0	4.0	0.0	4.0
Maximum 1	Sec	0	20	0	30	13	20	0	30
Maximum 2	Sec	0	20	0	30	13	20	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	4.0	0.0	3.0	0.0	4.0	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	140	120	120	0	0	0	0	0
Offset	Sec	11	92	70	0	0	0	0	0
Split	Split	1	2	3	0	0	0	0	0
Sequence	Sequence	1	1	1	0	0	0	0	0

Coord Split	Units	1	2	3	4	5	6	7	8
Split 1 - Mode	Enum	none	none	none	pedRecall	none	none	none	pedRecall
Split 1 - Time	Sec	0	91	0	49	20	71	0	49
Split 1 - Coord	Enum	false	true	false	false	false	true	false	false
Split 2 - Mode	Enum	none	none	none	pedRecall	none	none	none	pedRecall
Split 2 - Time	Sec	0	72	0	48	17	55	0	48
Split 2 - Coord	Enum	false	true	false	false	false	true	false	false
Split 3 - Mode	Enum	none	none	none	pedRecall	none	none	none	pedRecall
Split 3 - Time	Sec	0	72	0	48	14	58	0	48
Split 3 - 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---------- --------	----------5------- --------	-2---------- ---------	---------- 4-------	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	-2---------- --------	-----6---------- -------	---------1---------- --------	---------- --7----	---------- ---8---	---------- -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	9	15	19	3	0	0
Plan 1 Minute	Min	0	0	30	0	30	0	0	0
Plan 1 Action	Number	8	1	2	3	2	7	0	0
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

Signal Timing Audit Report

Runtime: 2021-08-05 08:27:41

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	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

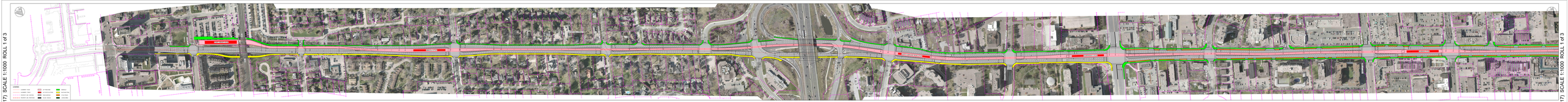
TB Schedule	Units	1	2	3	4	5	6	7	8
Month	Bit	JFMAMJJASOND	JFMAMJJASOND	JFMAMJJASOND	J----------	-F---------	---A--------	----M-------	------J-----
Day of Week	Bit	-MTWTF-	S------	------S	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS	SMTWTFS
Day of Month	Bit	12345678901234 56789012345678 901	123456789012345 678901234567890 1	123456789012345 678901234567890 1	1---------- ------	----------5-------- ------	-2---------- --------	----------4- ------	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	-2---------- ------	-----6---------- -----	----------1---------- -----	---------- 7----	---------- -8---	---------- 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 E:
Hurontario LRT Plans


AECOM
HuLRT - ROAD PLAN (FEB. 24, 2017) SCALE 1:1000 ROLL 1 of 3
AECOM
HuLRT - ROAD PLAN (FEB. 24, 2017) SCALE 1:1000 ROLL 1 of 3

APPENDIX F:
Synchro Worksheets

Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

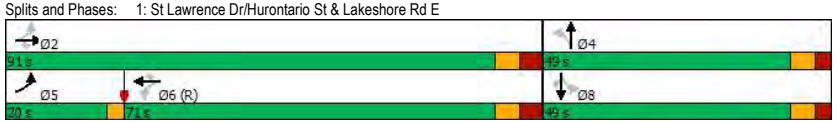
Existing AM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	250	910	15	20	570	185	10	60	185	80	250
Future Volume (vph)	250	910	15	20	570	185	10	60	185	80	250
Lane Group Flow (vph)	250	910	15	20	570	185	10	70	185	80	250
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.41	0.35	0.01	0.06	0.26	0.19	0.04	0.19	0.73	0.21	0.53
Control Delay	7.8	8.1	0.9	14.8	14.0	2.6	41.0	41.2	93.3	70.0	33.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	7.8	8.1	0.9	14.8	14.0	2.6	41.0	41.2	93.3	70.0	33.3
Queue Length 50th (m)	18.4	45.7	0.0	2.2	37.1	0.0	2.4	15.7	57.2	24.5	28.2
Queue Length 95th (m)	37.1	73.1	1.1	7.8	63.5	12.3	7.0	27.4	68.2	35.2	42.4
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0				30.0
Base Capacity (vph)	649	2606	1113	362	2156	979	401	574	397	603	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	32
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.35	0.01	0.06	0.26	0.19	0.02	0.12	0.47	0.13	0.44

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	910	15	20	570	185	10	60	10	185	80	250
Future Volume (vph)	250	910	15	20	570	185	10	60	10	185	80	250
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)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1628	3579	1518	1771	3476	1468	1732	1813		1691	1921	1350
Flt Permitted	0.40	1.00	1.00	0.31	1.00	1.00	0.70	1.00		0.71	1.00	1.00
Satd. Flow (perm)	693	3579	1518	584	3476	1468	1276	1813		1267	1921	1350
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	910	15	20	570	185	10	60	10	185	80	250
RTOR Reduction (vph)	0	0	4	0	0	70	0	5	0	0	0	200
Lane Group Flow (vph)	250	910	11	20	570	115	10	65	0	185	80	50
Confl. Peds. (#/hr)	35		15	15		35	30		5	5		30
Confl. Bikes (#/hr)			5			10						
Heavy Vehicles (%)	9%	2%	0%	0%	5%	3%	0%	4%	0%	5%	0%	13%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	99.0	99.0	99.0	83.9	83.9	83.9	26.0	26.0		26.0	26.0	26.0
Effective Green, g (s)	101.0	102.0	102.0	86.9	86.9	86.9	28.0	28.0		28.0	28.0	28.0
Actuated g/C Ratio	0.72	0.73	0.73	0.62	0.62	0.62	0.20	0.20		0.20	0.20	0.20
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	594	2607	1105	362	2157	911	255	362		253	384	270
v/s Ratio Prot	c0.04	c0.25			0.16			0.04			0.04	
v/s Ratio Perm	0.26		0.01	0.03		0.08	0.01			c0.15		0.04
v/c Ratio	0.42	0.35	0.01	0.06	0.26	0.13	0.04	0.18		0.73	0.21	0.19
Uniform Delay, d1	6.7	6.9	5.2	10.4	12.0	10.9	45.2	46.5		52.5	46.7	46.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.49	1.55	6.01
Incremental Delay, d2	0.5	0.4	0.0	0.3	0.3	0.3	0.1	0.2		10.3	0.3	0.3
Delay (s)	7.1	7.3	5.2	10.7	12.3	11.2	45.2	46.7		88.6	72.6	279.8
Level of Service	A	A	A	B	B	B	D	D		F	E	F
Approach Delay (s)		7.2			12.0			46.5			178.9	
Approach LOS		A			B			D			F	

Intersection Summary

HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

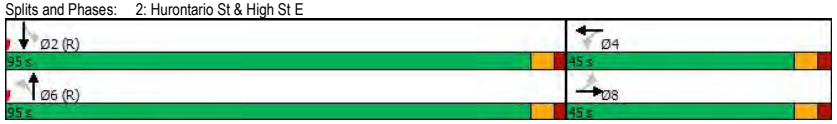
Queues
2: Hurontario St & High St E

Existing AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	0	10	0	5	480	30	490
Future Volume (vph)	45	0	10	0	5	480	30	490
Lane Group Flow (vph)	0	60	0	30	5	490	30	525
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.5		-1.5	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.47		0.22	0.01	0.18	0.04	0.19
Control Delay		51.4		29.8	3.0	2.4	2.2	2.0
Queue Delay		0.0		0.0	0.0	0.2	0.0	0.3
Total Delay		51.4		29.8	3.0	2.7	2.2	2.3
Queue Length 50th (m)		10.4		1.9	0.2	8.8	1.0	10.2
Queue Length 95th (m)		25.5		12.1	m1.2	24.2	3.3	18.0
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		369		408	740	2706	708	2757
Starvation Cap Reductn		0		0	0	1442	0	1569
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.16		0.07	0.01	0.39	0.04	0.44

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	15	10	0	20	5	480	10	30	490	35
Future Volume (vph)	45	0	15	10	0	20	5	480	10	30	490	35
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)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.98	1.00	
Frt		0.97			0.91		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1507			1505		1766	3109		1631	3167	
Flt Permitted		0.79			0.90		0.46	1.00		0.47	1.00	
Satd. Flow (perm)		1234			1371		850	3109		813	3167	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	0	15	10	0	20	5	480	10	30	490	35
RTOR Reduction (vph)	0	21	0	0	21	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	39	0	0	9	0	5	490	0	30	524	0
Confl. Peds. (#/hr)	5		5	5		5	5		10	10		5
Heavy Vehicles (%)	23%	0%	0%	27%	0%	5%	0%	17%	11%	7%	14%	11%
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)		9.0			9.0		118.5	118.5		118.5	118.5	
Effective Green, g (s)		10.5			10.5		119.5	119.5		119.5	119.5	
Actuated g/C Ratio		0.08			0.08		0.85	0.85		0.85	0.85	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		92			102		725	2653		693	2703	
v/s Ratio Prot								0.16			c0.17	
v/s Ratio Perm		c0.03			0.01		0.01			0.04		
v/c Ratio		0.42			0.09		0.01	0.18		0.04	0.19	
Uniform Delay, d1		61.8			60.3		1.5	1.8		1.6	1.8	
Progression Factor		1.00			1.00		1.33	1.14		0.95	0.94	
Incremental Delay, d2		3.1			0.4		0.0	0.1		0.1	0.2	
Delay (s)		64.9			60.6		2.0	2.2		1.6	1.8	
Level of Service		E			E		A	A		A	A	
Approach Delay (s)		64.9			60.6			2.2			1.8	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	6.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.21		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
3: Hurontario St & Park St E

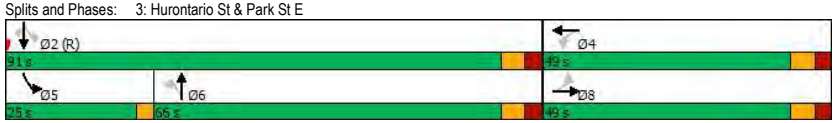
Existing AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	150	30	15	15	10	505	205	520	170
Future Volume (vph)	150	30	15	15	10	505	205	520	170
Lane Group Flow (vph)	150	50	15	230	10	535	205	520	170
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA	Perm
Protected Phases		8		4		6	5	2	
Permitted Phases	8		4		6		2		2
Detector Phase	8	8	4	4	6	6	5	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	38.0	38.0	38.0	38.0	33.0	33.0	8.0	33.0	33.0
Total Split (s)	49.0	49.0	49.0	49.0	66.0	66.0	25.0	91.0	91.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	47.1%	47.1%	17.9%	65.0%	65.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag					Lag	Lag	Lead		
Lead-Lag Optimize?					Yes	Yes	Yes		
Recall Mode	Max	Max	Max	Max	Max	Max	None	C-Max	C-Max
v/c Ratio	0.55	0.09	0.04	0.37	0.02	0.32	0.37	0.26	0.17
Control Delay	49.0	22.9	33.8	7.4	21.9	21.3	12.1	12.8	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0
Total Delay	49.0	22.9	33.8	7.4	21.9	22.1	12.1	12.8	1.9
Queue Length 50th (m)	36.3	6.1	3.0	3.1	1.3	41.5	22.8	34.6	0.0
Queue Length 95th (m)	61.6	16.4	8.7	23.4	5.7	64.6	34.4	44.5	9.1
Internal Link Dist (m)		73.3		75.8		94.7		197.8	
Turn Bay Length (m)	25.0		25.0		30.0		30.0		30.0
Base Capacity (vph)	272	548	419	618	436	1674	628	2019	1009
Starvation Cap Reductn	0	0	0	0	0	798	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.09	0.04	0.37	0.02	0.61	0.33	0.26	0.17

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 97 (69%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	30	20	15	15	215	10	505	30	205	520	170
Future Volume (vph)	150	30	20	15	15	215	10	505	30	205	520	170
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)	5.0	5.0		5.0	5.0		5.0	5.0		1.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00		0.98	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1686	1701		1751	1497		1785	3310		1710	3288	1536
Flt Permitted	0.49	1.00		0.72	1.00		0.46	1.00		0.40	1.00	1.00
Satd. Flow (perm)	867	1701		1335	1497		864	3310		715	3288	1536
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	30	20	15	15	215	10	505	30	205	520	170
RTOR Reduction (vph)	0	14	0	0	147	0	0	2	0	0	0	66
Lane Group Flow (vph)	150	36	0	15	83	0	10	533	0	205	520	104
Confl. Peds. (#/hr)	10		15	15		10			10	10		
Heavy Vehicles (%)	5%	4%	6%	0%	18%	7%	0%	9%	10%	4%	11%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	42.0	42.0		42.0	42.0		68.7	68.7		84.0	84.0	84.0
Effective Green, g (s)	44.0	44.0		44.0	44.0		70.7	70.7		86.0	86.0	86.0
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.51	0.51		0.61	0.61	0.61
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		3.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	272	534		419	470		436	1671		540	2019	943
v/s Ratio Prot		0.02			0.06			c0.16		c0.04	0.16	
v/s Ratio Perm	c0.17			0.01			0.01			0.19		0.07
v/c Ratio	0.55	0.07		0.04	0.18		0.02	0.32		0.38	0.26	0.11
Uniform Delay, d1	39.8	33.6		33.3	34.8		17.4	20.4		12.2	12.4	11.2
Progression Factor	1.00	1.00		1.00	1.00		1.16	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.8	0.2		0.2	0.8		0.1	0.5		0.4	0.3	0.2
Delay (s)	47.6	33.9		33.4	35.7		20.2	20.9		12.7	12.7	11.4
Level of Service	D	C		C	D		C	C		B	B	B
Approach Delay (s)		44.2			35.5			20.9			12.4	
Approach LOS		D			D			C			B	

Intersection Summary

HCM 2000 Control Delay	21.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	83.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Existing AM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	1175	790	40	0	25
Future Volume (Veh/h)	45	1175	790	40	0	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	45	1175	790	40	0	25
Pedestrians					20	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	850				1508	435
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	682				1391	234
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	94				100	96
cM capacity (veh/h)	758				116	692

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	45	588	588	527	303	25
Volume Left	45	0	0	0	0	0
Volume Right	0	0	0	0	40	25
cSH	758	1700	1700	1700	1700	692
Volume to Capacity	0.06	0.35	0.35	0.31	0.18	0.04
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.0	0.9
Control Delay (s)	10.0	0.0	0.0	0.0	0.0	10.4
Lane LOS	B					B
Approach Delay (s)	0.4			0.0		10.4
Approach LOS						B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	50	0	5	25	10	0	80	5	5	20	0
Future Volume (vph)	10	50	0	5	25	10	0	80	5	5	20	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	50	0	5	25	10	0	80	5	5	20	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	60	40	85	25
Volume Left (vph)	10	5	0	5
Volume Right (vph)	0	10	5	0
Hadj (s)	0.37	0.16	0.84	0.27
Departure Headway (s)	4.6	4.4	5.0	4.5
Degree Utilization, x	0.08	0.05	0.12	0.03
Capacity (veh/h)	760	789	697	773
Control Delay (s)	8.0	7.6	8.7	7.7
Approach Delay (s)	8.0	7.6	8.7	7.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.2		
Level of Service	A		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	175	10	15	65	115	15	70	15	10	0	0
Future Volume (vph)	30	175	10	15	65	115	15	70	15	10	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	175	10	15	65	115	15	70	15	10	0	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	215	80	115	100	10
Volume Left (vph)	30	15	0	15	10
Volume Right (vph)	10	0	115	15	0
Hadj (s)	0.01	0.16	-0.70	0.46	0.20
Departure Headway (s)	4.5	5.1	4.3	5.3	5.2
Degree Utilization, x	0.27	0.11	0.14	0.15	0.01
Capacity (veh/h)	772	673	808	635	629
Control Delay (s)	9.2	7.6	6.8	9.2	8.3
Approach Delay (s)	9.2	7.1		9.2	8.3
Approach LOS	A	A		A	A

Intersection Summary			
Delay		8.4	
Level of Service		A	
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)		15	

Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

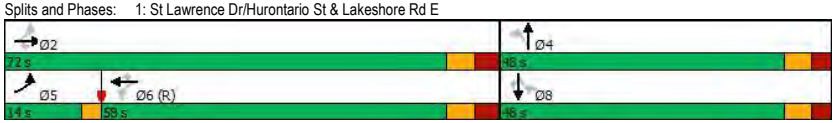
Existing PM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	260	895	10	40	1075	235	10	105	255	80	295
Future Volume (vph)	260	895	10	40	1075	235	10	105	255	80	295
Lane Group Flow (vph)	260	895	10	40	1075	235	10	155	255	80	295
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	14.0	72.0	72.0	58.0	58.0	58.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	11.7%	60.0%	60.0%	48.3%	48.3%	48.3%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.71	0.39	0.01	0.14	0.60	0.28	0.03	0.30	0.83	0.15	0.53
Control Delay	24.4	12.3	0.0	20.9	24.6	5.9	27.1	28.5	61.4	30.5	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
Total Delay	24.4	12.3	0.0	20.9	24.6	5.9	27.1	28.5	61.6	30.5	12.5
Queue Length 50th (m)	23.5	53.4	0.0	5.6	104.4	6.0	1.8	25.5	58.9	14.8	14.0
Queue Length 95th (m)	#70.8	81.5	0.0	13.9	133.4	22.4	5.5	39.3	84.3	24.7	36.7
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0				30.0
Base Capacity (vph)	365	2273	941	293	1804	825	454	663	392	688	654
Starvation Cap Reductn	0	0	0	0	0	0	0	0	7	0	62
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.39	0.01	0.14	0.60	0.28	0.02	0.23	0.66	0.12	0.50

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	260	895	10	40	1075	235	10	105	50	255	80	295
Future Volume (vph)	260	895	10	40	1075	235	10	105	50	255	80	295
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)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.92	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	0.96	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1667	3579	1462	1752	3614	1464	1709	1810		1741	1921	1432
Flt Permitted	0.16	1.00	1.00	0.32	1.00	1.00	0.70	1.00		0.60	1.00	1.00
Satd. Flow (perm)	283	3579	1462	587	3614	1464	1268	1810		1096	1921	1432
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	260	895	10	40	1075	235	10	105	50	255	80	295
RTOR Reduction (vph)	0	0	4	0	0	95	0	16	0	0	0	158
Lane Group Flow (vph)	260	895	6	40	1075	140	10	139	0	255	80	137
Confl. Peds. (#/hr)	55		40	40		55	50		20	20		50
Confl. Bikes (#/hr)			5			5						
Heavy Vehicles (%)	7%	2%	0%	0%	1%	2%	0%	0%	0%	1%	0%	5%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	73.2	73.2	73.2	56.9	56.9	56.9	31.8	31.8		31.8	31.8	31.8
Effective Green, g (s)	75.2	76.2	76.2	59.9	59.9	59.9	33.8	33.8		33.8	33.8	33.8
Actuated g/C Ratio	0.63	0.64	0.64	0.50	0.50	0.50	0.28	0.28		0.28	0.28	0.28
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	353	2272	928	293	1803	730	357	509		308	541	403
v/s Ratio Prot	c0.09	0.25			c0.30			0.08			0.04	
v/s Ratio Perm	0.37		0.00	0.07		0.10	0.01			c0.23		0.10
v/c Ratio	0.74	0.39	0.01	0.14	0.60	0.19	0.03	0.27		0.83	0.15	0.34
Uniform Delay, d1	15.1	10.7	8.0	16.2	21.4	16.6	31.2	33.5		40.4	32.3	34.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	7.8	0.5	0.0	1.0	1.5	0.6	0.0	0.3		16.5	0.1	0.5
Delay (s)	22.9	11.2	8.0	17.1	22.9	17.2	31.2	33.8		56.9	32.4	34.7
Level of Service	C	B	A	B	C	B	C	C		E	C	C
Approach Delay (s)		13.8			21.7			33.7			43.4	
Approach LOS		B			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	23.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	96.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

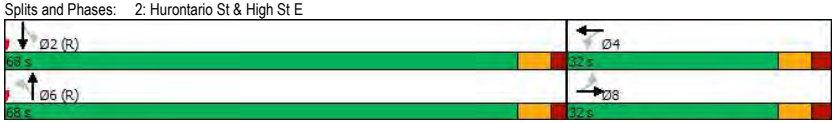
Queues
2: Hurontario St & High St E

Existing PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	0	10	5	15	570	25	585
Future Volume (vph)	85	0	10	5	15	570	25	585
Lane Group Flow (vph)	0	120	0	40	15	585	25	625
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	32.0	32.0	32.0	32.0	68.0	68.0	68.0	68.0
Total Split (%)	32.0%	32.0%	32.0%	32.0%	68.0%	68.0%	68.0%	68.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.5		-1.5	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.55		0.17	0.03	0.22	0.04	0.23
Control Delay		38.0		20.8	3.9	3.9	2.6	2.4
Queue Delay		0.0		0.0	0.0	0.0	0.0	0.1
Total Delay		38.0		20.8	3.9	3.9	2.6	2.5
Queue Length 50th (m)		16.7		2.7	0.6	13.9	0.6	8.3
Queue Length 95th (m)		33.1		11.6	2.7	25.3	1.9	11.0
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		396		436	585	2684	556	2676
Starvation Cap Reductn		0		0	0	0	0	849
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.30		0.09	0.03	0.22	0.04	0.34

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 9 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated

Splits and Phases: 2: Hurontario St & High St E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	0	35	10	5	25	15	570	15	25	585	40
Future Volume (vph)	85	0	35	10	5	25	15	570	15	25	585	40
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)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.93	1.00	
Frt		0.96			0.92		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1741			1655		1762	3517		1597	3505	
Flt Permitted		0.76			0.92		0.41	1.00		0.43	1.00	
Satd. Flow (perm)		1378			1549		766	3517		725	3505	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	0	35	10	5	25	15	570	15	25	585	40
RTOR Reduction (vph)	0	28	0	0	22	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	92	0	0	18	0	15	584	0	25	622	0
Confl. Peds. (#/hr)	15		15	15		15	10		50	50		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	3%	0%	4%	3%	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)		12.2			12.2		75.3	75.3		75.3	75.3	
Effective Green, g (s)		13.7			13.7		76.3	76.3		76.3	76.3	
Actuated g/C Ratio		0.14			0.14		0.76	0.76		0.76	0.76	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		188			212		584	2683		553	2674	
v/s Ratio Prot								0.17			c0.18	
v/s Ratio Perm		c0.07			0.01		0.02			0.03		
v/c Ratio		0.49			0.09		0.03	0.22		0.05	0.23	
Uniform Delay, d1		39.9			37.7		2.9	3.4		2.9	3.4	
Progression Factor		1.00			1.00		1.00	1.00		0.64	0.59	
Incremental Delay, d2		2.0			0.2		0.1	0.2		0.1	0.2	
Delay (s)		41.9			37.9		2.9	3.6		2.0	2.2	
Level of Service		D			D		A	A		A	A	
Approach Delay (s)		41.9			37.9			3.5			2.2	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
3: Hurontario St & Park St E

Existing PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	215	35	5	50	20	635	155	625	290
Future Volume (vph)	215	35	5	50	20	635	155	625	290
Lane Group Flow (vph)	215	55	5	210	20	660	155	625	290
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA	Perm
Protected Phases		8		4		6	5	2	
Permitted Phases	8		4		6		2		2
Detector Phase	8	8	4	4	6	6	5	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	38.0	38.0	38.0	38.0	33.0	33.0	8.0	33.0	33.0
Total Split (s)	40.0	40.0	40.0	40.0	37.0	37.0	23.0	60.0	60.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	37.0%	37.0%	23.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	1.0	5.0	5.0
Lead/Lag					Lag	Lag	Lead		
Lead-Lag Optimize?					Yes	Yes	Yes		
Recall Mode	Max	Max	Max	Max	Max	Max	None	C-Max	C-Max
v/c Ratio	0.59	0.09	0.01	0.31	0.06	0.45	0.33	0.32	0.31
Control Delay	34.8	15.9	21.4	8.0	18.4	21.7	11.3	12.9	2.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0
Total Delay	34.8	15.9	21.4	8.0	18.4	22.1	11.3	12.9	2.3
Queue Length 50th (m)	35.6	4.7	0.7	6.8	2.6	52.3	13.3	34.6	0.0
Queue Length 95th (m)	61.9	13.2	3.2	23.1	8.3	72.9	22.8	46.1	11.6
Internal Link Dist (m)		73.3		75.8		94.7		197.8	
Turn Bay Length (m)	25.0		25.0		30.0		30.0		30.0
Base Capacity (vph)	362	629	465	676	325	1480	586	1930	941
Starvation Cap Reductn	0	0	0	0	0	374	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.09	0.01	0.31	0.06	0.60	0.26	0.32	0.31

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E

HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	35	20	5	50	160	20	635	25	155	625	290
Future Volume (vph)	215	35	20	5	50	160	20	635	25	155	625	290
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)	5.0	5.0		5.0	5.0		5.0	5.0		1.0	5.0	5.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.94
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.98	1.00		0.99	1.00	1.00
Frt	1.00	0.95		1.00	0.89		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1749	1762		1753	1635		1756	3483		1723	3510	1475
Flt Permitted	0.56	1.00		0.72	1.00		0.41	1.00		0.31	1.00	1.00
Satd. Flow (perm)	1035	1762		1331	1635		767	3483		563	3510	1475
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	35	20	5	50	160	20	635	25	155	625	290
RTOR Reduction (vph)	0	13	0	0	104	0	0	2	0	0	0	131
Lane Group Flow (vph)	215	42	0	5	106	0	20	658	0	155	625	160
Confl. Peds. (#/hr)	15		20	20		15	20		35	35		20
Heavy Vehicles (%)	1%	3%	0%	0%	2%	2%	0%	4%	0%	3%	4%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	33.0	33.0		33.0	33.0		40.4	40.4		53.0	53.0	53.0
Effective Green, g (s)	35.0	35.0		35.0	35.0		42.4	42.4		55.0	55.0	55.0
Actuated g/C Ratio	0.35	0.35		0.35	0.35		0.42	0.42		0.55	0.55	0.55
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		3.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	362	616		465	572		325	1476		444	1930	811
v/s Ratio Prot		0.02			0.06			c0.19		c0.04	0.18	
v/s Ratio Perm	c0.21			0.00			0.03			0.15		0.11
v/c Ratio	0.59	0.07		0.01	0.19		0.06	0.45		0.35	0.32	0.20
Uniform Delay, d1	26.7	21.6		21.2	22.6		17.0	20.5		11.7	12.3	11.4
Progression Factor	1.00	1.00		1.00	1.00		0.98	0.99		1.00	1.00	1.00
Incremental Delay, d2	7.0	0.2		0.0	0.7		0.4	1.0		0.5	0.4	0.5
Delay (s)	33.7	21.9		21.2	23.3		17.0	21.3		12.2	12.8	11.9
Level of Service	C	C		C	C		B	C		B	B	B
Approach Delay (s)		31.3			23.3			21.2			12.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Existing PM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	75	1165	1320	60	0	35
Future Volume (Veh/h)	75	1165	1320	60	0	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	75	1165	1320	60	0	35
Pedestrians					30	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.79				0.79	0.79
vC, conflicting volume	1410				2112	720
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	975				1869	96
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	85				100	95
cM capacity (veh/h)	512				43	727

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	75	582	582	880	500	35
Volume Left	75	0	0	0	0	0
Volume Right	0	0	0	0	60	35
cSH	512	1700	1700	1700	1700	727
Volume to Capacity	0.15	0.34	0.34	0.52	0.29	0.05
Queue Length 95th (m)	4.1	0.0	0.0	0.0	0.0	1.2
Control Delay (s)	13.2	0.0	0.0	0.0	0.0	10.2
Lane LOS	B					B
Approach Delay (s)	0.8			0.0		10.2
Approach LOS						B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	90	5	5	50	5	25	85	25	5	25	20
Future Volume (vph)	5	90	5	5	50	5	25	85	25	5	25	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	90	5	5	50	5	25	85	25	5	25	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	100	60	135	50
Volume Left (vph)	5	5	25	5
Volume Right (vph)	5	5	25	20
Hadj (s)	-0.02	-0.03	0.42	-0.22
Departure Headway (s)	4.4	4.4	4.7	4.2
Degree Utilization, x	0.12	0.07	0.18	0.06
Capacity (veh/h)	782	763	729	803
Control Delay (s)	8.0	7.8	8.8	7.5
Approach Delay (s)	8.0	7.8	8.8	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.2	
Level of Service			A	
Intersection Capacity Utilization			28.3%	ICU Level of Service
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	200	0	25	220	115	5	50	40	30	25	5
Future Volume (vph)	30	200	0	25	220	115	5	50	40	30	25	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	200	0	25	220	115	5	50	40	30	25	5

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	230	245	115	95	60
Volume Left (vph)	30	25	0	5	30
Volume Right (vph)	0	0	115	40	5
Hadj (s)	0.03	0.05	-0.70	-0.08	0.05
Departure Headway (s)	4.9	5.2	4.4	5.3	5.5
Degree Utilization, x	0.31	0.35	0.14	0.14	0.09
Capacity (veh/h)	712	668	778	618	588
Control Delay (s)	10.0	9.8	7.0	9.1	9.0
Approach Delay (s)	10.0	8.9		9.1	9.0
Approach LOS	B	A		A	A

Intersection Summary				
Delay			9.3	
Level of Service			A	
Intersection Capacity Utilization			46.7%	ICU Level of Service
Analysis Period (min)			15	

Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

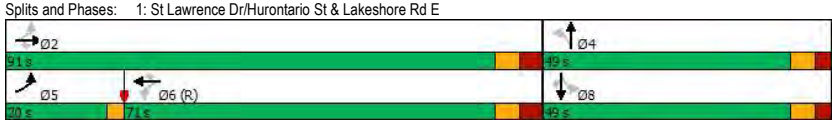
Future Background AM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	250	940	15	20	590	190	10	65	190	90	250
Future Volume (vph)	250	940	15	20	590	190	10	65	190	90	250
Lane Group Flow (vph)	250	940	15	20	590	190	10	75	190	90	250
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.42	0.36	0.01	0.06	0.28	0.20	0.04	0.20	0.74	0.23	0.53
Control Delay	8.2	8.5	0.9	15.3	14.5	2.7	40.4	41.1	62.1	38.3	28.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	8.2	8.5	0.9	15.3	14.5	2.7	40.4	41.1	62.1	38.3	28.7
Queue Length 50th (m)	18.8	48.6	0.0	2.2	39.3	0.0	2.4	16.8	57.5	26.5	48.8
Queue Length 95th (m)	37.8	77.7	1.1	8.0	67.2	12.8	6.9	28.6	83.1	44.6	74.0
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0				30.0
Base Capacity (vph)	635	2590	1106	348	2137	974	388	574	396	603	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	34
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.36	0.01	0.06	0.28	0.20	0.03	0.13	0.48	0.15	0.45

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	940	15	20	590	190	10	65	10	190	90	250
Future Volume (vph)	250	940	15	20	590	190	10	65	10	190	90	250
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)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1628	3579	1518	1772	3476	1468	1733	1815		1691	1921	1350
Flt Permitted	0.39	1.00	1.00	0.30	1.00	1.00	0.68	1.00		0.71	1.00	1.00
Satd. Flow (perm)	674	3579	1518	567	3476	1468	1237	1815		1261	1921	1350
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	940	15	20	590	190	10	65	10	190	90	250
RTOR Reduction (vph)	0	0	4	0	0	73	0	5	0	0	0	199
Lane Group Flow (vph)	250	940	11	20	590	117	10	70	0	190	90	51
Confl. Peds. (#/hr)	35		15	15		35	30		5	5		30
Confl. Bikes (#/hr)			5			10						
Heavy Vehicles (%)	9%	2%	0%	0%	5%	3%	0%	4%	0%	5%	0%	13%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	98.3	98.3	98.3	83.1	83.1	83.1	26.7	26.7		26.7	26.7	26.7
Effective Green, g (s)	100.3	101.3	101.3	86.1	86.1	86.1	28.7	28.7		28.7	28.7	28.7
Actuated g/C Ratio	0.72	0.72	0.72	0.61	0.61	0.61	0.20	0.20		0.20	0.20	0.20
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	579	2589	1098	348	2137	902	253	372		258	393	276
v/s Ratio Prot	c0.04	c0.26			0.17			0.04			0.05	
v/s Ratio Perm	0.27		0.01	0.04		0.08	0.01			c0.15		0.04
v/c Ratio	0.43	0.36	0.01	0.06	0.28	0.13	0.04	0.19		0.74	0.23	0.19
Uniform Delay, d1	6.9	7.3	5.4	10.8	12.5	11.3	44.6	46.0		52.1	46.4	46.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.89	0.84	5.16
Incremental Delay, d2	0.5	0.4	0.0	0.3	0.3	0.3	0.1	0.2		10.3	0.3	0.3
Delay (s)	7.5	7.7	5.4	11.1	12.8	11.6	44.7	46.3		56.5	39.1	237.5
Level of Service	A	A	A	B	B	B	D	D		E	D	F
Approach Delay (s)		7.6			12.5			46.1			138.9	
Approach LOS		A			B			D			F	

Intersection Summary

HCM 2000 Control Delay	36.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

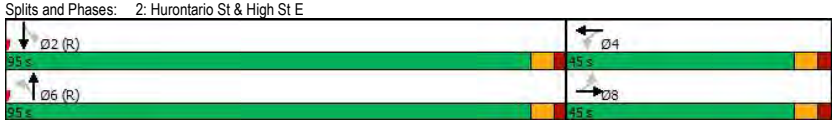
Queues
2: Hurontario St & High St E

Future Background AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	0	10	0	5	490	30	505
Future Volume (vph)	45	0	10	0	5	490	30	505
Lane Group Flow (vph)	0	60	0	30	5	500	30	540
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.5		-1.5	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.47		0.22	0.01	0.18	0.04	0.20
Control Delay		51.4		29.8	3.2	2.5	7.3	9.6
Queue Delay		0.0		0.0	0.0	0.2	0.0	0.5
Total Delay		51.4		29.8	3.2	2.8	7.3	10.1
Queue Length 50th (m)		10.4		1.9	0.1	9.0	3.8	58.3
Queue Length 95th (m)		25.5		12.1	m1.1	26.2	m10.4	80.5
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		369		408	731	2706	703	2757
Starvation Cap Reductn		0		0	0	1429	0	1706
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.16		0.07	0.01	0.39	0.04	0.51

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	15	10	0	20	5	490	10	30	505	35
Future Volume (vph)	45	0	15	10	0	20	5	490	10	30	505	35
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)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.98	1.00	
Frt		0.97			0.91		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1507			1505		1767	3110		1632	3168	
Flt Permitted		0.79			0.90		0.45	1.00		0.47	1.00	
Satd. Flow (perm)		1234			1371		838	3110		805	3168	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	0	15	10	0	20	5	490	10	30	505	35
RTOR Reduction (vph)	0	21	0	0	21	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	39	0	0	9	0	5	500	0	30	539	0
Confl. Peds. (#/hr)	5		5	5		5	5		10	10		5
Heavy Vehicles (%)	23%	0%	0%	27%	0%	5%	0%	17%	11%	7%	14%	11%
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)		9.0			9.0		118.5	118.5		118.5	118.5	
Effective Green, g (s)		10.5			10.5		119.5	119.5		119.5	119.5	
Actuated g/C Ratio		0.08			0.08		0.85	0.85		0.85	0.85	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		92			102		715	2654		687	2704	
v/s Ratio Prot								0.16			c0.17	
v/s Ratio Perm		c0.03			0.01		0.01			0.04		
v/c Ratio		0.42			0.09		0.01	0.19		0.04	0.20	
Uniform Delay, d1		61.8			60.3		1.5	1.8		1.6	1.8	
Progression Factor		1.00			1.00		1.37	1.19		3.23	4.72	
Incremental Delay, d2		3.1			0.4		0.0	0.2		0.1	0.1	
Delay (s)		64.9			60.6		2.1	2.3		5.1	8.7	
Level of Service		E			E		A	A		A	A	
Approach Delay (s)		64.9			60.6			2.3			8.5	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
3: Hurontario St & Park St E

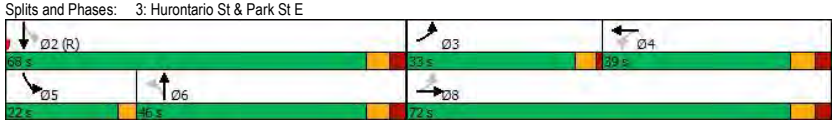
Future Background AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	270	30	15	15	15	510	205	530
Future Volume (vph)	270	30	15	15	15	510	205	530
Lane Group Flow (vph)	270	55	15	230	15	540	205	730
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	33.0	72.0	39.0	39.0	46.0	46.0	22.0	68.0
Total Split (%)	23.6%	51.4%	27.9%	27.9%	32.9%	32.9%	15.7%	48.6%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	2.5	5.0	5.0	5.0	5.0	5.0	1.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max
v/c Ratio	0.50	0.07	0.04	0.38	0.07	0.51	0.50	0.50
Control Delay	24.8	12.2	36.7	8.1	31.8	36.7	26.2	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0
Total Delay	24.8	12.2	36.7	8.1	31.8	37.8	26.2	26.5
Queue Length 50th (m)	46.1	4.6	3.0	3.1	2.9	62.5	34.7	72.5
Queue Length 95th (m)	66.9	12.5	9.4	25.4	7.8	69.6	52.4	91.3
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	597	817	413	613	225	1063	442	1472
Starvation Cap Reductn	0	0	0	0	0	300	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	0.07	0.04	0.38	0.07	0.71	0.46	0.50

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	270	30	25	15	15	215	15	510	30	205	530	200
Future Volume (vph)	270	30	25	15	15	215	15	510	30	205	530	200
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)	2.5	5.0		5.0	5.0		5.0	5.0		1.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.86		1.00	0.99		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)	1694	1682		1751	1497		1785	3311		1712	3209	
Flt Permitted	0.46	1.00		0.72	1.00		0.37	1.00		0.31	1.00	
Satd. Flow (perm)	819	1682		1329	1497		703	3311		567	3209	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	270	30	25	15	15	215	15	510	30	205	530	200
RTOR Reduction (vph)	0	13	0	0	148	0	0	3	0	0	28	0
Lane Group Flow (vph)	270	42	0	15	82	0	15	537	0	205	702	0
Confl. Peds. (#/hr)	10		15	15		10			10	10		
Heavy Vehicles (%)	5%	4%	6%	0%	18%	7%	0%	9%	10%	4%	11%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	65.0	65.0		41.5	41.5		42.9	42.9		61.0	61.0	
Effective Green, g (s)	67.0	67.0		43.5	43.5		44.9	44.9		63.0	63.0	
Actuated g/C Ratio	0.48	0.48		0.31	0.31		0.32	0.32		0.45	0.45	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	523	804		412	465		225	1061		395	1444	
v/s Ratio Prot	c0.08	0.02			0.05			0.16		c0.06	c0.22	
v/s Ratio Perm	c0.17			0.01			0.02			0.17		
v/c Ratio	0.52	0.05		0.04	0.18		0.07	0.51		0.52	0.49	
Uniform Delay, d1	23.3	19.5		33.6	35.2		33.0	38.6		25.0	27.1	
Progression Factor	1.00	1.00		1.00	1.00		0.88	0.89		1.00	1.00	
Incremental Delay, d2	0.9	0.1		0.2	0.8		0.6	1.7		1.2	1.2	
Delay (s)	24.1	19.6		33.8	36.0		29.6	36.1		26.1	28.3	
Level of Service	C	B		C	D		C	D		C	C	
Approach Delay (s)		23.4			35.9			35.9			27.8	
Approach LOS		C			D			D			C	

Intersection Summary

HCM 2000 Control Delay	30.3	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)	13.5
Intersection Capacity Utilization	88.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Background AM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	1205	805	45	0	30
Future Volume (Veh/h)	45	1205	805	45	0	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	45	1205	805	45	0	30
Pedestrians					20	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	870				1540	445
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	692				1418	232
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	94				100	96
cM capacity (veh/h)	747				111	691

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	45	602	602	537	313	30
Volume Left	45	0	0	0	0	0
Volume Right	0	0	0	0	45	30
cSH	747	1700	1700	1700	1700	691
Volume to Capacity	0.06	0.35	0.35	0.32	0.18	0.04
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.0	1.1
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	10.4
Lane LOS	B					B
Approach Delay (s)	0.4			0.0		10.4
Approach LOS						B

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		43.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	50	0	5	25	10	0	85	5	5	25	0
Future Volume (vph)	10	50	0	5	25	10	0	85	5	5	25	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	50	0	5	25	10	0	85	5	5	25	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	60	40	90	30
Volume Left (vph)	10	5	0	5
Volume Right (vph)	0	10	5	0
Hadj (s)	0.37	0.16	0.85	0.22
Departure Headway (s)	4.6	4.4	5.0	4.5
Degree Utilization, x	0.08	0.05	0.13	0.04
Capacity (veh/h)	754	783	695	779
Control Delay (s)	8.0	7.7	8.7	7.7
Approach Delay (s)	8.0	7.7	8.7	7.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.2	
Level of Service		A	
Intersection Capacity Utilization		19.6%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	245	10	15	85	130	15	75	15	65	5	0
Future Volume (vph)	30	245	10	15	85	130	15	75	15	65	5	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	245	10	15	85	130	15	75	15	65	5	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	285	100	130	105	70
Volume Left (vph)	30	15	0	15	65
Volume Right (vph)	10	0	130	15	0
Hadj (s)	0.01	0.15	-0.70	0.48	0.19
Departure Headway (s)	4.8	5.4	4.6	5.7	5.5
Degree Utilization, x	0.38	0.15	0.17	0.17	0.11
Capacity (veh/h)	714	630	746	578	590
Control Delay (s)	10.7	8.2	7.3	9.8	9.1
Approach Delay (s)	10.7	7.7		9.8	9.1
Approach LOS	B	A		A	A

Intersection Summary				
Delay		9.4		
Level of Service		A		
Intersection Capacity Utilization	39.9%		ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Background AM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	105	0	0	30
Future Volume (Veh/h)	0	0	105	0	0	30
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	105	0	0	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	135	105			105	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	135	105			105	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	863	955			1499	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	105	30
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1499
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.9%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

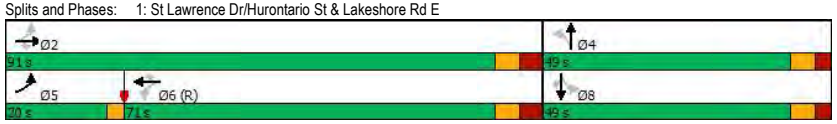
Future Background PM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	265	945	10	40	1140	235	10	110	255	85	295
Future Volume (vph)	265	945	10	40	1140	235	10	110	255	85	295
Lane Group Flow (vph)	265	945	10	40	1140	235	10	160	255	85	295
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.76	0.40	0.01	0.14	0.60	0.28	0.03	0.31	0.89	0.16	0.51
Control Delay	29.7	12.7	0.0	21.9	26.1	7.8	34.2	36.3	77.0	31.6	26.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4
Total Delay	29.7	12.7	0.0	21.9	26.1	7.8	34.2	36.3	77.1	31.6	27.0
Queue Length 50th (m)	29.0	67.3	0.0	6.3	127.7	11.2	2.1	32.2	78.3	24.9	56.8
Queue Length 95th (m)	#65.3	86.9	0.1	14.9	157.5	29.4	6.6	50.9	#114.2	43.2	89.8
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0				30.0
Base Capacity (vph)	371	2341	956	293	1902	840	393	581	328	603	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	2	0	78
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.40	0.01	0.14	0.60	0.28	0.03	0.28	0.78	0.14	0.54

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	945	10	40	1140	235	10	110	50	255	85	295
Future Volume (vph)	265	945	10	40	1140	235	10	110	50	255	85	295
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)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	0.95	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1667	3579	1446	1750	3614	1451	1697	1812		1738	1921	1420
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.70	1.00		0.57	1.00	1.00
Satd. Flow (perm)	264	3579	1446	557	3614	1451	1253	1812		1046	1921	1420
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	265	945	10	40	1140	235	10	110	50	255	85	295
RTOR Reduction (vph)	0	0	3	0	0	77	0	12	0	0	0	185
Lane Group Flow (vph)	265	945	7	40	1140	158	10	148	0	255	85	110
Confl. Peds. (#/hr)	55		40	40		55	50		20	20		50
Confl. Bikes (#/hr)			5			5						
Heavy Vehicles (%)	7%	2%	0%	0%	1%	2%	0%	0%	0%	1%	0%	5%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	88.6	88.6	88.6	70.7	70.7	70.7	36.4	36.4		36.4	36.4	36.4
Effective Green, g (s)	90.6	91.6	91.6	73.7	73.7	73.7	38.4	38.4		38.4	38.4	38.4
Actuated g/C Ratio	0.65	0.65	0.65	0.53	0.53	0.53	0.27	0.27		0.27	0.27	0.27
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	340	2341	946	293	1902	763	343	497		286	526	389
v/s Ratio Prot	c0.09	0.26			c0.32			0.08			0.04	
v/s Ratio Perm	0.41		0.00	0.07		0.11	0.01			c0.24		0.08
v/c Ratio	0.78	0.40	0.01	0.14	0.60	0.21	0.03	0.30		0.89	0.16	0.28
Uniform Delay, d1	18.1	11.4	8.4	16.9	22.9	17.6	37.2	40.1		48.8	38.6	40.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.95	0.84	3.37
Incremental Delay, d2	10.8	0.5	0.0	1.0	1.4	0.6	0.0	0.3		27.1	0.1	0.4
Delay (s)	28.9	11.9	8.4	17.9	24.3	18.2	37.2	40.5		73.5	32.5	135.0
Level of Service	C	B	A	B	C	B	D	D		E	C	F
Approach Delay (s)		15.6			23.1			40.3			96.6	
Approach LOS		B			C			D			F	

Intersection Summary

HCM 2000 Control Delay	34.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	96.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

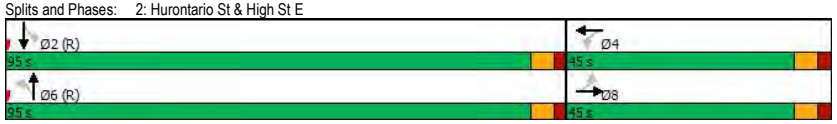
Queues
2: Hurontario St & High St E

Future Background PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	0	10	5	15	580	25	590
Future Volume (vph)	85	0	10	5	15	580	25	590
Lane Group Flow (vph)	0	120	0	40	15	595	25	630
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.5		-1.5	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.62		0.19	0.02	0.21	0.04	0.22
Control Delay		59.8		28.4	7.1	6.3	9.3	12.6
Queue Delay		0.0		0.0	0.0	0.4	0.0	1.1
Total Delay		59.8		28.4	7.1	6.7	9.3	13.7
Queue Length 50th (m)		27.2		3.9	0.9	21.3	3.4	72.0
Queue Length 95th (m)		46.6		15.0	m4.2	54.7	m6.4	99.3
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		429		457	611	2837	571	2830
Starvation Cap Reductn		0		0	0	1624	0	1895
Spillback Cap Reductn		1		1	0	0	0	203
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.28		0.09	0.02	0.49	0.04	0.67

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	0	35	10	5	25	15	580	15	25	590	40
Future Volume (vph)	85	0	35	10	5	25	15	580	15	25	590	40
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)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.98			1.00		0.98	1.00		0.91	1.00	
Frt		0.96			0.92		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1729			1645		1753	3512		1555	3503	
Flt Permitted		0.81			0.92		0.41	1.00		0.42	1.00	
Satd. Flow (perm)		1444			1537		755	3512		695	3503	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	0	35	10	5	25	15	580	15	25	590	40
RTOR Reduction (vph)	0	20	0	0	22	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	100	0	0	18	0	15	594	0	25	628	0
Confl. Peds. (#/hr)	15		15	15		15	10		50	50		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	3%	0%	4%	3%	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)		15.4			15.4		112.1	112.1		112.1	112.1	
Effective Green, g (s)		16.9			16.9		113.1	113.1		113.1	113.1	
Actuated g/C Ratio		0.12			0.12		0.81	0.81		0.81	0.81	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		174			185		609	2837		561	2829	
v/s Ratio Prot								0.17			c0.18	
v/s Ratio Perm		c0.07			0.01		0.02			0.04		
v/c Ratio		0.57			0.10		0.02	0.21		0.04	0.22	
Uniform Delay, d1		58.1			54.8		2.6	3.1		2.7	3.1	
Progression Factor		1.00			1.00		1.96	1.77		2.53	3.59	
Incremental Delay, d2		4.5			0.2		0.1	0.2		0.1	0.1	
Delay (s)		62.7			55.0		5.2	5.7		6.9	11.4	
Level of Service		E			D		A	A		A	B	
Approach Delay (s)		62.7			55.0			5.7			11.3	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
3: Hurontario St & Park St E

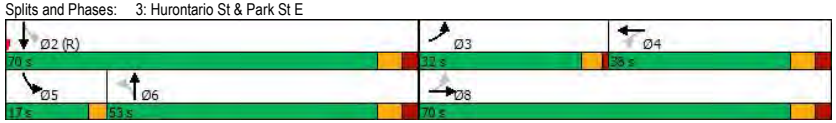
Future Background PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	280	35	5	50	25	640	155	630
Future Volume (vph)	280	35	5	50	25	640	155	630
Lane Group Flow (vph)	280	55	5	210	25	665	155	1015
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	32.0	70.0	38.0	38.0	53.0	53.0	17.0	70.0
Total Split (%)	22.9%	50.0%	27.1%	27.1%	37.9%	37.9%	12.1%	50.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	2.5	5.0	5.0	5.0	5.0	5.0	1.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max
v/c Ratio	0.50	0.07	0.01	0.38	0.17	0.53	0.44	0.65
Control Delay	25.9	14.4	38.6	21.8	26.7	29.0	23.9	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.2
Total Delay	25.9	14.4	38.6	21.8	26.7	31.2	23.9	27.3
Queue Length 50th (m)	49.2	5.5	1.1	22.4	4.5	72.7	24.6	103.5
Queue Length 95th (m)	71.1	13.7	4.9	49.6	8.2	65.1	38.9	127.5
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	609	826	388	555	144	1245	373	1571
Starvation Cap Reductn	0	0	0	0	0	420	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	111
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	0.07	0.01	0.38	0.17	0.81	0.42	0.70

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	280	35	20	5	50	160	25	640	25	155	630	385
Future Volume (vph)	280	35	20	5	50	160	25	640	25	155	630	385
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)	2.5	5.0		5.0	5.0		5.0	5.0		1.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	0.97	
Flpb, ped/bikes	0.99	1.00		0.97	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.95		1.00	0.89		1.00	0.99		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)	1757	1757		1740	1628		1767	3480		1723	3242	
Flt Permitted	0.48	1.00		0.72	1.00		0.22	1.00		0.26	1.00	
Satd. Flow (perm)	879	1757		1321	1628		403	3480		472	3242	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	280	35	20	5	50	160	25	640	25	155	630	385
RTOR Reduction (vph)	0	11	0	0	76	0	0	2	0	0	66	0
Lane Group Flow (vph)	280	44	0	5	134	0	25	663	0	155	949	0
Confl. Peds. (#/hr)	15		20	20		15	20		35	35		20
Heavy Vehicles (%)	1%	3%	0%	0%	2%	2%	0%	4%	0%	3%	4%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	63.0	63.0		39.2	39.2		48.0	48.0		63.0	63.0	
Effective Green, g (s)	65.0	65.0		41.2	41.2		50.0	50.0		65.0	65.0	
Actuated g/C Ratio	0.46	0.46		0.29	0.29		0.36	0.36		0.46	0.46	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	541	815		388	479		143	1242		344	1505	
v/s Ratio Prot	c0.08	0.03			0.08			0.19		0.05	c0.29	
v/s Ratio Perm	c0.16			0.00			0.06			0.16		
v/c Ratio	0.52	0.05		0.01	0.28		0.17	0.53		0.45	0.63	
Uniform Delay, d1	24.4	20.6		35.0	38.0		30.9	35.7		23.5	28.4	
Progression Factor	1.00	1.00		1.00	1.00		0.72	0.76		1.00	1.00	
Incremental Delay, d2	0.8	0.1		0.1	1.4		2.6	1.6		0.9	2.0	
Delay (s)	25.3	20.7		35.1	39.4		24.9	28.7		24.4	30.4	
Level of Service	C	C		D	D		C	C		C	C	
Approach Delay (s)		24.5			39.3			28.6			29.6	
Approach LOS		C			D			C			C	

Intersection Summary

HCM 2000 Control Delay	29.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	94.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Background PM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	1220	1385	60	0	40
Future Volume (Veh/h)	80	1220	1385	60	0	40
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	80	1220	1385	60	0	40
Pedestrians					30	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.78				0.78	0.78
vC, conflicting volume	1475				2215	752
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1042				1992	114
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	83				100	94
cM capacity (veh/h)	478				34	702

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	80	610	610	923	522	40
Volume Left	80	0	0	0	0	0
Volume Right	0	0	0	0	60	40
cSH	478	1700	1700	1700	1700	702
Volume to Capacity	0.17	0.36	0.36	0.54	0.31	0.06
Queue Length 95th (m)	4.8	0.0	0.0	0.0	0.0	1.4
Control Delay (s)	14.0	0.0	0.0	0.0	0.0	10.4
Lane LOS	B					B
Approach Delay (s)	0.9			0.0		10.4
Approach LOS						B

Intersection Summary				
Average Delay		0.6		
Intersection Capacity Utilization		58.1%	ICU Level of Service	B
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	90	5	5	50	5	25	90	25	5	30	20
Future Volume (vph)	5	90	5	5	50	5	25	90	25	5	30	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	90	5	5	50	5	25	90	25	5	30	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	100	60	140	55
Volume Left (vph)	5	5	25	5
Volume Right (vph)	5	5	25	20
Hadj (s)	-0.02	-0.03	0.43	-0.20
Departure Headway (s)	4.4	4.5	4.8	4.2
Degree Utilization, x	0.12	0.07	0.19	0.06
Capacity (veh/h)	776	757	726	798
Control Delay (s)	8.0	7.8	8.8	7.5
Approach Delay (s)	8.0	7.8	8.8	7.5
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.2		
Level of Service		A		
Intersection Capacity Utilization		28.8%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	245	0	25	275	160	5	55	40	50	30	5
Future Volume (vph)	30	245	0	25	275	160	5	55	40	50	30	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	245	0	25	275	160	5	55	40	50	30	5

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	275	300	160	100	85
Volume Left (vph)	30	25	0	5	50
Volume Right (vph)	0	0	160	40	5
Hadj (s)	0.02	0.04	-0.70	-0.06	0.08
Departure Headway (s)	5.1	5.4	4.7	5.7	5.9
Degree Utilization, x	0.39	0.45	0.21	0.16	0.14
Capacity (veh/h)	669	646	746	557	542
Control Delay (s)	11.4	11.5	7.7	9.8	9.8
Approach Delay (s)	11.4	10.2		9.8	9.8
Approach LOS	B	B		A	A

Intersection Summary				
Delay		10.5		
Level of Service		B		
Intersection Capacity Utilization		52.3%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Background PM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	100	0	0	55
Future Volume (Veh/h)	0	0	100	0	0	55
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	100	0	0	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	155	100			100	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	155	100			100	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	841	961			1505	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	100	55
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1505
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary				
Average Delay		0.0		
Intersection Capacity Utilization		8.6%	ICU Level of Service	A
Analysis Period (min)		15		

Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

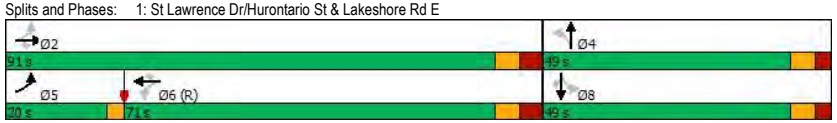
Future Total AM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	250	950	15	20	595	190	10	65	190	90	250
Future Volume (vph)	250	950	15	20	595	190	10	65	190	90	250
Lane Group Flow (vph)	250	950	15	20	595	190	10	75	190	90	250
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.42	0.37	0.01	0.06	0.28	0.20	0.04	0.20	0.74	0.23	0.53
Control Delay	8.2	8.5	0.9	15.3	14.5	2.7	40.4	41.1	63.3	39.5	28.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	8.2	8.5	0.9	15.3	14.5	2.7	40.4	41.1	63.3	39.5	28.5
Queue Length 50th (m)	18.8	49.4	0.0	2.2	39.7	0.0	2.4	16.8	58.4	26.9	48.4
Queue Length 95th (m)	37.8	78.5	1.1	8.0	67.6	12.8	6.9	28.6	83.4	44.7	73.8
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0				30.0
Base Capacity (vph)	632	2590	1106	345	2137	974	388	574	396	603	595
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	34
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.37	0.01	0.06	0.28	0.20	0.03	0.13	0.48	0.15	0.45

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	950	15	20	595	190	10	65	10	190	90	250
Future Volume (vph)	250	950	15	20	595	190	10	65	10	190	90	250
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)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00		1.00	1.00	0.96
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1629	3579	1518	1772	3476	1468	1733	1815		1691	1921	1350
Flt Permitted	0.39	1.00	1.00	0.30	1.00	1.00	0.68	1.00		0.71	1.00	1.00
Satd. Flow (perm)	670	3579	1518	562	3476	1468	1237	1815		1261	1921	1350
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	250	950	15	20	595	190	10	65	10	190	90	250
RTOR Reduction (vph)	0	0	4	0	0	73	0	5	0	0	0	199
Lane Group Flow (vph)	250	950	11	20	595	117	10	70	0	190	90	51
Confl. Peds. (#/hr)	35		15	15		35	30		5	5		30
Confl. Bikes (#/hr)			5			10						
Heavy Vehicles (%)	9%	2%	0%	0%	5%	3%	0%	4%	0%	5%	0%	13%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	98.3	98.3	98.3	83.1	83.1	83.1	26.7	26.7		26.7	26.7	26.7
Effective Green, g (s)	100.3	101.3	101.3	86.1	86.1	86.1	28.7	28.7		28.7	28.7	28.7
Actuated g/C Ratio	0.72	0.72	0.72	0.61	0.61	0.61	0.20	0.20		0.20	0.20	0.20
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	577	2589	1098	345	2137	902	253	372		258	393	276
v/s Ratio Prot	c0.04	c0.27			0.17			0.04			0.05	
v/s Ratio Perm	0.27		0.01	0.04		0.08	0.01			c0.15		0.04
v/c Ratio	0.43	0.37	0.01	0.06	0.28	0.13	0.04	0.19		0.74	0.23	0.19
Uniform Delay, d1	6.9	7.3	5.4	10.8	12.5	11.3	44.6	46.0		52.1	46.4	46.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.91	0.86	5.12
Incremental Delay, d2	0.5	0.4	0.0	0.3	0.3	0.3	0.1	0.2		10.3	0.3	0.3
Delay (s)	7.5	7.7	5.4	11.1	12.8	11.6	44.7	46.3		57.7	40.3	236.0
Level of Service	A	A	A	B	B	B	D	D		E	D	F
Approach Delay (s)		7.6			12.5			46.1			138.9	
Approach LOS		A			B			D			F	

Intersection Summary

HCM 2000 Control Delay	36.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

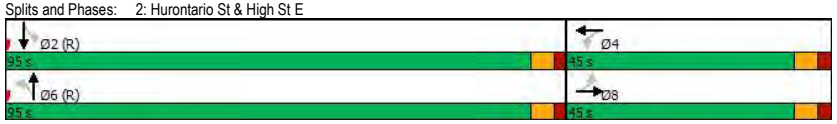
Queues
2: Hurontario St & High St E

Future Total AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	45	0	10	0	5	490	30	505
Future Volume (vph)	45	0	10	0	5	490	30	505
Lane Group Flow (vph)	0	60	0	30	5	500	30	540
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.5		-1.5	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.47		0.22	0.01	0.18	0.04	0.20
Control Delay		51.4		29.8	3.2	2.5	7.2	9.4
Queue Delay		0.0		0.0	0.0	0.2	0.0	0.5
Total Delay		51.4		29.8	3.2	2.8	7.2	9.9
Queue Length 50th (m)		10.4		1.9	0.1	9.0	3.7	58.1
Queue Length 95th (m)		25.5		12.1	m1.1	26.2	m9.9	80.1
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		369		408	731	2706	703	2757
Starvation Cap Reductn		0		0	0	1429	0	1707
Spillback Cap Reductn		0		0	0	0	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.16		0.07	0.01	0.39	0.04	0.51

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	0	15	10	0	20	5	490	10	30	505	35
Future Volume (vph)	45	0	15	10	0	20	5	490	10	30	505	35
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)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.98	1.00	
Frt		0.97			0.91		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1507			1505		1767	3110		1632	3168	
Flt Permitted		0.79			0.90		0.45	1.00		0.47	1.00	
Satd. Flow (perm)		1234			1371		838	3110		805	3168	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	45	0	15	10	0	20	5	490	10	30	505	35
RTOR Reduction (vph)	0	21	0	0	21	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	39	0	0	9	0	5	500	0	30	539	0
Confl. Peds. (#/hr)	5		5	5		5	5		10	10		5
Heavy Vehicles (%)	23%	0%	0%	27%	0%	5%	0%	17%	11%	7%	14%	11%
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)		9.0			9.0		118.5	118.5		118.5	118.5	
Effective Green, g (s)		10.5			10.5		119.5	119.5		119.5	119.5	
Actuated g/C Ratio		0.08			0.08		0.85	0.85		0.85	0.85	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		92			102		715	2654		687	2704	
v/s Ratio Prot								0.16			c0.17	
v/s Ratio Perm		c0.03			0.01		0.01			0.04		
v/c Ratio		0.42			0.09		0.01	0.19		0.04	0.20	
Uniform Delay, d1		61.8			60.3		1.5	1.8		1.6	1.8	
Progression Factor		1.00			1.00		1.37	1.19		3.15	4.63	
Incremental Delay, d2		3.1			0.4		0.0	0.2		0.1	0.1	
Delay (s)		64.9			60.6		2.1	2.3		5.0	8.5	
Level of Service		E			E		A	A		A	A	
Approach Delay (s)		64.9			60.6			2.3			8.3	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	10.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
3: Hurontario St & Park St E

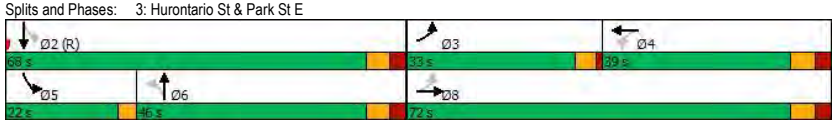
Future Total AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	310	30	15	15	15	510	205	530
Future Volume (vph)	310	30	15	15	15	510	205	530
Lane Group Flow (vph)	310	55	15	230	15	540	205	745
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	33.0	72.0	39.0	39.0	46.0	46.0	22.0	68.0
Total Split (%)	23.6%	51.4%	27.9%	27.9%	32.9%	32.9%	15.7%	48.6%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	2.5	5.0	5.0	5.0	5.0	5.0	1.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max
v/c Ratio	0.57	0.07	0.04	0.39	0.07	0.51	0.50	0.51
Control Delay	26.4	12.2	38.9	8.6	31.8	36.7	26.2	26.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0
Total Delay	26.4	12.2	38.9	8.6	31.8	37.8	26.2	26.5
Queue Length 50th (m)	54.4	4.6	3.1	3.1	2.9	62.5	34.7	73.9
Queue Length 95th (m)	77.7	12.5	9.7	26.4	7.9	69.6	52.4	93.1
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	590	817	390	591	222	1063	442	1473
Starvation Cap Reductn	0	0	0	0	0	300	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	0.53	0.07	0.04	0.39	0.07	0.71	0.46	0.51

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	30	25	15	15	215	15	510	30	205	530	215
Future Volume (vph)	310	30	25	15	15	215	15	510	30	205	530	215
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)	2.5	5.0		5.0	5.0		5.0	5.0		1.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.86		1.00	0.99		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)	1694	1682		1751	1497		1785	3311		1712	3204	
Flt Permitted	0.45	1.00		0.72	1.00		0.37	1.00		0.31	1.00	
Satd. Flow (perm)	795	1682		1329	1497		693	3311		567	3204	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	310	30	25	15	15	215	15	510	30	205	530	215
RTOR Reduction (vph)	0	13	0	0	152	0	0	3	0	0	31	0
Lane Group Flow (vph)	310	42	0	15	78	0	15	537	0	205	714	0
Confl. Peds. (#/hr)	10		15	15		10			10	10		
Heavy Vehicles (%)	5%	4%	6%	0%	18%	7%	0%	9%	10%	4%	11%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	65.0	65.0		39.1	39.1		42.9	42.9		61.0	61.0	
Effective Green, g (s)	67.0	67.0		41.1	41.1		44.9	44.9		63.0	63.0	
Actuated g/C Ratio	0.48	0.48		0.29	0.29		0.32	0.32		0.45	0.45	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	530	804		390	439		222	1061		395	1441	
v/s Ratio Prot	c0.10	0.02			0.05			0.16		c0.06	c0.22	
v/s Ratio Perm	c0.18			0.01			0.02			0.17		
v/c Ratio	0.58	0.05		0.04	0.18		0.07	0.51		0.52	0.50	
Uniform Delay, d1	24.0	19.5		35.3	36.9		33.0	38.6		25.0	27.2	
Progression Factor	1.00	1.00		1.00	1.00		0.88	0.89		1.00	1.00	
Incremental Delay, d2	1.7	0.1		0.2	0.9		0.6	1.7		1.2	1.2	
Delay (s)	25.7	19.6		35.5	37.7		29.6	36.1		26.1	28.5	
Level of Service	C	B		D	D		C	D		C	C	
Approach Delay (s)		24.8			37.6			35.9			28.0	
Approach LOS		C			D			D			C	

Intersection Summary

HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	91.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Total AM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	1205	805	50	10	35
Future Volume (Veh/h)	45	1205	805	50	10	35
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	45	1205	805	50	10	35
Pedestrians					20	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	875				1542	448
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	696				1420	232
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	94				91	95
cM capacity (veh/h)	744				111	690

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	45	602	602	537	318	45
Volume Left	45	0	0	0	0	10
Volume Right	0	0	0	0	50	35
cSH	744	1700	1700	1700	1700	319
Volume to Capacity	0.06	0.35	0.35	0.32	0.19	0.14
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.0	3.9
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	18.1
Lane LOS	B					C
Approach Delay (s)	0.4			0.0		18.1
Approach LOS						C

Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		43.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	50	0	5	25	10	0	90	5	5	40	0
Future Volume (vph)	15	50	0	5	25	10	0	90	5	5	40	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	50	0	5	25	10	0	90	5	5	40	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	65	40	95	45
Volume Left (vph)	15	5	0	5
Volume Right (vph)	0	10	5	0
Hadj (s)	0.38	0.16	0.85	0.15
Departure Headway (s)	4.7	4.5	5.1	4.4
Degree Utilization, x	0.08	0.05	0.13	0.06
Capacity (veh/h)	742	770	690	787
Control Delay (s)	8.1	7.7	8.8	7.7
Approach Delay (s)	8.1	7.7	8.8	7.7
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.3	
Level of Service		A	
Intersection Capacity Utilization		21.1%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	245	10	30	85	130	15	75	55	65	5	0
Future Volume (vph)	30	245	10	30	85	130	15	75	55	65	5	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	245	10	30	85	130	15	75	55	65	5	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	285	115	130	145	70
Volume Left (vph)	30	30	0	15	65
Volume Right (vph)	10	0	130	55	0
Hadj (s)	0.01	0.19	-0.70	0.18	0.19
Departure Headway (s)	4.9	5.6	4.7	5.5	5.6
Degree Utilization, x	0.39	0.18	0.17	0.22	0.11
Capacity (veh/h)	691	609	722	603	572
Control Delay (s)	11.1	8.6	7.5	10.0	9.3
Approach Delay (s)	11.1	8.0		10.0	9.3
Approach LOS	B	A		A	A

Intersection Summary				
Delay		9.7		
Level of Service		A		
Intersection Capacity Utilization	46.3%		ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Total AM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	40	105	10	15	30
Future Volume (Veh/h)	15	40	105	10	15	30
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	40	105	10	15	30
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	170	110			115	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	170	110			115	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	96			99	
cM capacity (veh/h)	817	949			1487	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	55	115	45
Volume Left	15	0	15
Volume Right	40	10	0
cSH	909	1700	1487
Volume to Capacity	0.06	0.07	0.01
Queue Length 95th (m)	1.5	0.0	0.2
Control Delay (s)	9.2	0.0	2.5
Lane LOS	A		A
Approach Delay (s)	9.2	0.0	2.5
Approach LOS	A		

Intersection Summary				
Average Delay		2.9		
Intersection Capacity Utilization		19.1%	ICU Level of Service	A
Analysis Period (min)		15		

Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

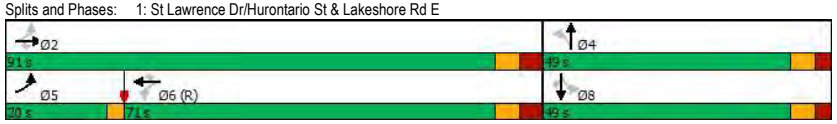
Future Total PM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	265	950	10	40	1150	235	10	110	255	85	295
Future Volume (vph)	265	950	10	40	1150	235	10	110	255	85	295
Lane Group Flow (vph)	265	950	10	40	1150	235	10	160	255	85	295
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	-2.0	-3.0	-3.0	-3.0	-3.0	-3.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	Max	Max	C-Max	C-Max	C-Max	None	None	None	None	None
v/c Ratio	0.76	0.41	0.01	0.14	0.61	0.28	0.03	0.31	0.89	0.16	0.51
Control Delay	30.8	12.7	0.0	22.0	26.3	7.9	34.2	36.3	77.1	31.8	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.4
Total Delay	30.8	12.7	0.0	22.0	26.3	7.9	34.2	36.3	77.2	31.8	26.7
Queue Length 50th (m)	30.4	67.8	0.0	6.3	130.0	11.4	2.1	32.2	78.2	24.7	55.9
Queue Length 95th (m)	#68.2	87.5	0.1	15.0	159.5	29.7	6.6	50.9	#114.1	43.0	88.9
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0				30.0
Base Capacity (vph)	368	2341	956	291	1898	838	393	581	328	603	621
Starvation Cap Reductn	0	0	0	0	0	0	0	0	2	0	78
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.41	0.01	0.14	0.61	0.28	0.03	0.28	0.78	0.14	0.54

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 6:WBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	950	10	40	1150	235	10	110	50	255	85	295
Future Volume (vph)	265	950	10	40	1150	235	10	110	50	255	85	295
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)	1.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	0.95	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.95		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1667	3579	1446	1750	3614	1451	1697	1812		1738	1921	1420
Flt Permitted	0.15	1.00	1.00	0.30	1.00	1.00	0.70	1.00		0.57	1.00	1.00
Satd. Flow (perm)	258	3579	1446	555	3614	1451	1253	1812		1046	1921	1420
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	265	950	10	40	1150	235	10	110	50	255	85	295
RTOR Reduction (vph)	0	0	3	0	0	76	0	12	0	0	0	185
Lane Group Flow (vph)	265	950	7	40	1150	159	10	148	0	255	85	110
Confl. Peds. (#/hr)	55		40	40		55	50		20	20		50
Confl. Bikes (#/hr)			5			5						
Heavy Vehicles (%)	7%	2%	0%	0%	1%	2%	0%	0%	0%	1%	0%	5%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	88.6	88.6	88.6	70.5	70.5	70.5	36.4	36.4		36.4	36.4	36.4
Effective Green, g (s)	90.6	91.6	91.6	73.5	73.5	73.5	38.4	38.4		38.4	38.4	38.4
Actuated g/C Ratio	0.65	0.65	0.65	0.52	0.52	0.52	0.27	0.27		0.27	0.27	0.27
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	339	2341	946	291	1897	761	343	497		286	526	389
v/s Ratio Prot	c0.10	0.27			c0.32			0.08			0.04	
v/s Ratio Perm	0.41		0.00	0.07		0.11	0.01			c0.24		0.08
v/c Ratio	0.78	0.41	0.01	0.14	0.61	0.21	0.03	0.30		0.89	0.16	0.28
Uniform Delay, d1	19.3	11.4	8.4	17.0	23.2	17.7	37.2	40.1		48.8	38.6	40.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.95	0.85	3.31
Incremental Delay, d2	11.1	0.5	0.0	1.0	1.4	0.6	0.0	0.3		27.1	0.1	0.4
Delay (s)	30.4	11.9	8.4	18.0	24.6	18.4	37.2	40.5		73.6	32.8	132.8
Level of Service	C	B	A	B	C	B	D	D		E	C	F
Approach Delay (s)		15.9			23.4			40.3			95.6	
Approach LOS		B			C			D			F	

Intersection Summary

HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	96.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

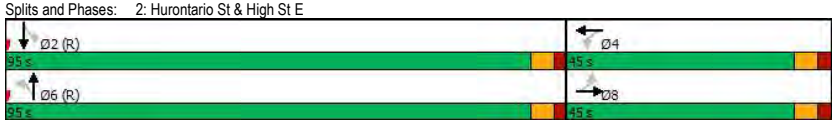
Queues
2: Hurontario St & High St E

Future Total PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	0	10	5	15	580	25	590
Future Volume (vph)	85	0	10	5	15	580	25	590
Lane Group Flow (vph)	0	120	0	40	15	595	25	630
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		-1.5		-1.5	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)		5.0		5.0	5.0	5.0	5.0	5.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max
v/c Ratio		0.62		0.19	0.02	0.21	0.04	0.22
Control Delay		59.8		28.4	7.2	6.4	9.0	12.1
Queue Delay		0.0		0.0	0.0	0.4	0.0	1.1
Total Delay		59.8		28.4	7.2	6.8	9.0	13.2
Queue Length 50th (m)		27.2		3.9	0.9	21.9	3.2	70.6
Queue Length 95th (m)		46.6		15.0	m4.2	54.8	m6.0	98.0
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		429		457	611	2837	571	2830
Starvation Cap Reductn		0		0	0	1625	0	1896
Spillback Cap Reductn		1		1	0	0	0	204
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.28		0.09	0.02	0.49	0.04	0.67

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	0	35	10	5	25	15	580	15	25	590	40
Future Volume (vph)	85	0	35	10	5	25	15	580	15	25	590	40
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)		5.0			5.0		5.0	5.0		5.0	5.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.97		1.00	0.99		1.00	1.00	
Flpb, ped/bikes		0.98			1.00		0.98	1.00		0.91	1.00	
Frt		0.96			0.92		1.00	1.00		1.00	0.99	
Flt Protected		0.97			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1729			1645		1753	3512		1555	3503	
Flt Permitted		0.81			0.92		0.41	1.00		0.42	1.00	
Satd. Flow (perm)		1444			1537		755	3512		695	3503	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	0	35	10	5	25	15	580	15	25	590	40
RTOR Reduction (vph)	0	20	0	0	22	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	100	0	0	18	0	15	594	0	25	628	0
Confl. Peds. (#/hr)	15		15	15		15	10		50	50		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	3%	0%	4%	3%	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)		15.4			15.4		112.1	112.1		112.1	112.1	
Effective Green, g (s)		16.9			16.9		113.1	113.1		113.1	113.1	
Actuated g/C Ratio		0.12			0.12		0.81	0.81		0.81	0.81	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		174			185		609	2837		561	2829	
v/s Ratio Prot								0.17			c0.18	
v/s Ratio Perm		c0.07			0.01		0.02			0.04		
v/c Ratio		0.57			0.10		0.02	0.21		0.04	0.22	
Uniform Delay, d1		58.1			54.8		2.6	3.1		2.7	3.1	
Progression Factor		1.00			1.00		1.97	1.80		2.43	3.44	
Incremental Delay, d2		4.5			0.2		0.1	0.2		0.1	0.1	
Delay (s)		62.7			55.0		5.3	5.8		6.6	11.0	
Level of Service		E			D		A	A		A	B	
Approach Delay (s)		62.7			55.0			5.7			10.8	
Approach LOS		E			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	44.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
3: Hurontario St & Park St E

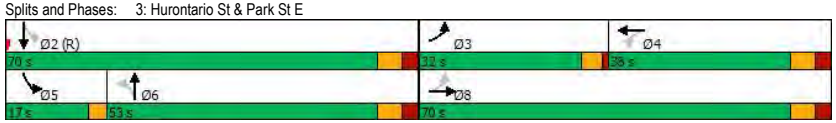
Future Total PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	310	35	5	50	25	640	155	630
Future Volume (vph)	310	35	5	50	25	640	155	630
Lane Group Flow (vph)	310	55	5	210	25	665	155	1050
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	32.0	70.0	38.0	38.0	53.0	53.0	17.0	70.0
Total Split (%)	22.9%	50.0%	27.1%	27.1%	37.9%	37.9%	12.1%	50.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	2.5	5.0	5.0	5.0	5.0	5.0	1.0	5.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Max
v/c Ratio	0.55	0.07	0.01	0.39	0.19	0.53	0.44	0.66
Control Delay	27.0	14.4	39.8	22.7	27.0	28.8	23.9	26.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.2
Total Delay	27.0	14.4	39.8	22.7	27.0	31.0	23.9	27.0
Queue Length 50th (m)	55.6	5.5	1.1	22.9	4.5	72.1	24.6	106.0
Queue Length 95th (m)	79.1	13.7	5.0	50.4	8.4	65.0	38.9	130.5
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	604	826	373	537	133	1245	373	1580
Starvation Cap Reductn	0	0	0	0	0	420	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	99
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.07	0.01	0.39	0.19	0.81	0.42	0.71

Intersection Summary

Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	35	20	5	50	160	25	640	25	155	630	420
Future Volume (vph)	310	35	20	5	50	160	25	640	25	155	630	420
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)	2.5	5.0		5.0	5.0		5.0	5.0		1.0	5.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	0.97	
Flpb, ped/bikes	0.99	1.00		0.97	1.00		0.99	1.00		0.99	1.00	
Frt	1.00	0.95		1.00	0.89		1.00	0.99		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)	1758	1757		1740	1628		1768	3480		1723	3228	
Flt Permitted	0.47	1.00		0.72	1.00		0.20	1.00		0.26	1.00	
Satd. Flow (perm)	862	1757		1321	1628		373	3480		472	3228	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	310	35	20	5	50	160	25	640	25	155	630	420
RTOR Reduction (vph)	0	11	0	0	78	0	0	2	0	0	81	0
Lane Group Flow (vph)	310	44	0	5	132	0	25	663	0	155	969	0
Confl. Peds. (#/hr)	15		20	20		15	20		35	35		20
Heavy Vehicles (%)	1%	3%	0%	0%	2%	2%	0%	4%	0%	3%	4%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	63.0	63.0		37.5	37.5		48.0	48.0		63.0	63.0	
Effective Green, g (s)	65.0	65.0		39.5	39.5		50.0	50.0		65.0	65.0	
Actuated g/C Ratio	0.46	0.46		0.28	0.28		0.36	0.36		0.46	0.46	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	547	815		372	459		133	1242		344	1498	
v/s Ratio Prot	c0.09	0.03			0.08			0.19		0.05	c0.30	
v/s Ratio Perm	c0.17			0.00			0.07			0.16		
v/c Ratio	0.57	0.05		0.01	0.29		0.19	0.53		0.45	0.65	
Uniform Delay, d1	25.0	20.6		36.2	39.3		31.0	35.7		23.5	28.7	
Progression Factor	1.00	1.00		1.00	1.00		0.71	0.75		1.00	1.00	
Incremental Delay, d2	1.4	0.1		0.1	1.6		3.1	1.6		0.9	2.2	
Delay (s)	26.3	20.7		36.3	40.9		25.1	28.5		24.4	30.9	
Level of Service	C	C		D	D		C	C		C	C	
Approach Delay (s)		25.5			40.7			28.4			30.0	
Approach LOS		C			D			C			C	

Intersection Summary

HCM 2000 Control Delay	29.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	97.2%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Total PM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	85	1220	1385	70	5	50
Future Volume (Veh/h)	85	1220	1385	70	5	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	85	1220	1385	70	5	50
Pedestrians					30	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.78				0.78	0.78
vC, conflicting volume	1485				2230	758
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1045				2007	107
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	82				85	93
cM capacity (veh/h)	474				33	706

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	85	610	610	923	532	55
Volume Left	85	0	0	0	0	5
Volume Right	0	0	0	0	70	50
cSH	474	1700	1700	1700	1700	246
Volume to Capacity	0.18	0.36	0.36	0.54	0.31	0.22
Queue Length 95th (m)	5.2	0.0	0.0	0.0	0.0	6.7
Control Delay (s)	14.3	0.0	0.0	0.0	0.0	23.8
Lane LOS	B					C
Approach Delay (s)	0.9			0.0		23.8
Approach LOS						C

Intersection Summary				
Average Delay		0.9		
Intersection Capacity Utilization		58.7%	ICU Level of Service	B
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	90	5	5	50	5	25	105	25	5	45	20
Future Volume (vph)	10	90	5	5	50	5	25	105	25	5	45	20
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	90	5	5	50	5	25	105	25	5	45	20

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	105	60	155	70
Volume Left (vph)	10	5	25	5
Volume Right (vph)	5	5	25	20
Hadj (s)	-0.01	-0.03	0.47	-0.16
Departure Headway (s)	4.5	4.5	4.8	4.3
Degree Utilization, x	0.13	0.08	0.21	0.08
Capacity (veh/h)	756	739	715	782
Control Delay (s)	8.2	7.9	9.1	7.7
Approach Delay (s)	8.2	7.9	9.1	7.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.4		
Level of Service		A		
Intersection Capacity Utilization		30.8%	ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	245	0	60	275	160	5	55	70	50	30	5
Future Volume (vph)	30	245	0	60	275	160	5	55	70	50	30	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	245	0	60	275	160	5	55	70	50	30	5

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	275	335	160	130	85
Volume Left (vph)	30	60	0	5	50
Volume Right (vph)	0	0	160	70	5
Hadj (s)	0.02	0.09	-0.70	-0.19	0.08
Departure Headway (s)	5.3	5.6	4.8	5.7	6.1
Degree Utilization, x	0.40	0.52	0.21	0.21	0.14
Capacity (veh/h)	644	627	728	559	521
Control Delay (s)	11.8	13.2	7.8	10.2	10.1
Approach Delay (s)	11.8	11.5		10.2	10.1
Approach LOS	B	B		B	B

Intersection Summary				
Delay		11.3		
Level of Service		B		
Intersection Capacity Utilization		63.1%	ICU Level of Service	B
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Total PM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	30	100	20	35	55
Future Volume (Veh/h)	15	30	100	20	35	55
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	30	100	20	35	55
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	235	110			120	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	235	110			120	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	97			98	
cM capacity (veh/h)	740	949			1480	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	45	120	90
Volume Left	15	0	35
Volume Right	30	20	0
cSH	867	1700	1480
Volume to Capacity	0.05	0.07	0.02
Queue Length 95th (m)	1.3	0.0	0.6
Control Delay (s)	9.4	0.0	3.0
Lane LOS	A		A
Approach Delay (s)	9.4	0.0	3.0
Approach LOS	A		

Intersection Summary				
Average Delay		2.7		
Intersection Capacity Utilization		21.5%	ICU Level of Service	A
Analysis Period (min)		15		

Appendix B Technical Comments

Project Status Report

Outstanding Checklist Items

Group Name	Cycle	Ref #	Comment Text	Applicant Response	Milestone	Resolved Status	Create Date (M/D/Y)
	1	151	Staff agree that parking reductions are appropriate for the proposed development given its location in Port Credit that is well serviced by MiWay transit and has access to existing and planned higher order transit.Solely relying on the PDC approved Parking Regulations Study is premature because the Study is not in force and may be subject to further changes. However, staff will give consideration to the direction of this Study. Applications continue being evaluated against the Citys current Zoning By-law. Staff advise that parking is required for all uses and recommend a shared parking arrangement, per the PDC approved Parking Regulations Study, based on the 0.20 visitor parking rate for the residential component. Staff request the Applicant provide clarification if a shared parking arrangement is being requested.As parking for 84 High Street (Parcel D) and 90 High Street (Parcel E) will be provided off-site at 17/19 Ann Street (Parcel A), Staff require the Applicant to prepare an off-site parking agreement for the subject parcels in the event the parcels have different ownership.		Recommendation Report	Not Met	03/24/2022 8:43 AM
PARKING	1	152	Staff commend the Applicant for considering the provision of a range of TDM measures; however staff are not clear which TDM measures are committed to being provided on site. Staff request the Applicant provide clarification, specific details and commitments as to how these measures will be provided and implemented on site. For example:Transit passes: The value of the pre-loaded transit pass (value/duration) and to whom (first owner or occupant of the residential unit).Electric vehicle charging stations: The number of electric vehicle charging stations to be provided in the parking garage and whether they will be resident accessible only or publicly accessible.Car-Share service: An agreement with a car share provider for a minimum of 2 years, the number of parking spaces assigned to the service, and the location of the parking spaces on the site.		Recommendation Report	Not Met	03/24/2022 8:43 AM

1	153	Staff require the Applicant undertake a satisfactory Parking Utilization Study (PUS) with appropriate proxy sites in Mississauga, per the Citys Parking Terms of Reference, to justify the requested parking rates, including visitor parking, as the parking reduction is greater than 10% from the existing Zoning By-law 0225-2007, as amended. Staff advise there are appropriate condominium residence proxy sites to survey in Port Credit and there are no longer pandemic restrictions that would limit the undertaking of parking surveys by consultants. Before undertaking proxy surveys, please contact staff to discuss scope.		Recommendation Report	Not Met	03/24/2022 8:43 AM
1	154	Staff advise the Applicant that each development application is reviewed based on its own merit. The reduced parking rates for the adjacent development were approved following both the rezoning and minor variance processes, and having received satisfactory proxy site data and sales data. Staff request that if parking sales data is available for the subject site that the Applicant provide it as supportive secondary justification per the requirements outlined in the Citys Parking Terms of Reference. If the Applicant wishes to reference precedent applications, please provide discussion regarding similarities.		Recommendation Report	Not Met	03/24/2022 8:43 AM

Project Status Report

REGION OF PEEL	1	203	The Region of Peel will provide front-end collection of garbage and recyclable materials subject to the following conditions being met and labelled on a Waste Management Plan prior to the Official Plan Amendment approval: 1. The waste management plan only showed the waste storage room. Please include the waste collection point details. Please refer to WCDSM Appendix 4 for an illustration of this requirement: a. Please indicate the length/extent of the 7.5m clearance. b. Please show dimensions of the collection point. c. The Collection Point must show sufficient space for the staging of all bins of a single stream, whichever is larger (for 359 units, 8 3-cubic yard bins for Recyclable Materials must be shown staged on the staging area) and setting-out of Bulky Items (minimum 10 square meters). d. The number, size, and type of receptacles in the Collection Point must be clearly labelled. e. The Collection Point should not require the jockeying of front-end bins (i.e. manually positioning one front-end bin at a time for the waste collection vehicle to pick up) by property management staff. If jockeying of bins during collection is required, please indicate on the waste management plan that property management staff will be responsible for jockeying the bins during collection, subject to the following requirements and must be added to the plan as additional waste management note: 1. The bins should be properly positioned in the collection area on the day of collection before 7 am. 2. The driver is not required to exit the collection vehicle to facilitate collection. 3. Property management is responsible for moving bins during collection. 4. The Region will not be responsible for emptying bins that are inaccessible to the collection vehicle. 5. Property management must be visible to waste collection vehicle on approach to site, otherwise the waste collection vehicle will not enter the site. 6. Property management will be responsible for safely maneuvering waste collection vehicles into and/or out of, as well as around the site.		Recommendation Report	Not Met	03/28/2022 2:20 PM

TRAFFIC REVIEW	1	214	[TRAFFIC STUDY REVIEW] A Traffic Impact Study prepared by BA Consulting Group Ltd. dated Dec 2021 was submitted in support of the proposed development. Based on the information provided to date, staff provide the following comments: (A) The report should be stamped and signed by P. Eng, prior to final approval. (B) Under Section 8. Provide figure for future lane configurations and stop controls used in the analysis. (C) 8.1 Existing Traffic Volumes. The traffic counts conducted during the ongoing pandemic will not be accepted. In order to grow traffic volumes to existing 2022 levels, please obtain historical traffic data counts and utilize regression analysis to determine appropriate growth rates. Note, there is HuLRT construction in this area. (D) 8.2.2 Specific Development Allowances. The following rezoning application should be included in the analysis: 128 Lakeshore Rd (OZ 22-5 W1), 0 Park St E (OZ 22-10 W1). (E) 9.4 Intersection Analysis. Include 95th Percentile Queue Lengths in the tables. (F) Synhro Outputs. For the Lost Time Adjustment value of 0 should be used. Any deviation from Synchro Defaults should be justified. (G) Include a section for the Community Impacts. Any traffic related impacts on the existing community and comments from the public shall be addressed in this section.		Recommendation Report	Not Met	04/04/2022 12:52 AM
	1	215	[SCHEDULE 'C' - ADDITIONAL TERMS, PROVISIONS, CONDITIONS AND NOTES] The Transportation Impact Study prepared by BA Consulting Group Ltd, dated Dec 2021, identifies several TDM measures to be implemented as part of the proposed development to reduce single occupancy vehicle (SOV) trips to the site. The following shall be included under Schedule 'C' of the Development Agreement: (i)the possibility of introducing car-share and bike share services on the site;(ii) Long-term and short-term bicycle parking spaces (and a bicycle repair station) on the site in accordance with rates recommended by City of Mississauga staff.(iii) Pre-loaded PRESTO cards to each first-time unit owner.		Agreement	Not Met	04/04/2022 12:52 AM

Project Status Report

Outstanding Checklist Items

Group Name	Cycle	Ref #	Comment Text	Applicant Response	Mile-stone	Resolved Status	Create Date (M/D/Y)
PARKING	1	155	Subject to the Applicant addressing the comments provided above, staff see merit in reduced parking standards and can support the PDC approved Parking Regulations Study parking rates for the proposed development based on the current site context e.g. walkable to nearby amenities and access to existing and planned transit networks. As such, staff can support the proposed development of 359 residential units and 309.6 m2 GFA for retail use per the PDC approved parking rates: 0.8 resident spaces per unit 0.20 visitor spaces per unit with a shared parking arrangement between the retail uses of the subject site. For the visitor component, a shared parking arrangement is applicable for the calculation of required visitor/non-residential parking in accordance with the following: the greater of 0.20 visitor spaces/unit or parking required for all non-residential uses, except restaurant and take-out restaurant. Restaurant and take-out restaurant shall not be included in the above shared parking arrangement and shall be provided in accordance with applicable regulations contained in Table 3.1.2.2 of City of Mississaugas Zoning By-law 0225-227. All required parking spaces must be accessible to all users participating in the shared parking arrangement and may not be reserved for a particular use or occupant.		Note	Note	03/24/2022 9:09 AM
PLANNER - COMM SERVICES							
	1	231	PARKING: Clarification is required as to where is the parking for 90 and 84 High Streets for those uses. Are they in the North or South Parks? Does the applicant need an easement for access from proposed parking over the North or South Public Parks?		Note	Note	04/14/2022 12:16 PM
REGION OF PEEL							
	1	204	For more information, please consult the Waste Collection Design Standards Manual available at: https://peelregion.ca/public-works/design-standards/pdf/waste-collection-design-standards-manual.pdf		Note	Note	03/28/2022 2:29 PM

Appendix C Reduced Architectural Plans

10 WEST GO

RE-ISSUED FOR OPA & REZONING SUBMISSION
28 OCTOBER 2022
APP NO: OZ/OPA 22-3 W1

No.	Revisions	Date
02	RE-ISSUED FOR OPA / REZONING	28 OCT 2022
01	ISSUED FOR OPA / REZONING	17 DEC 2021

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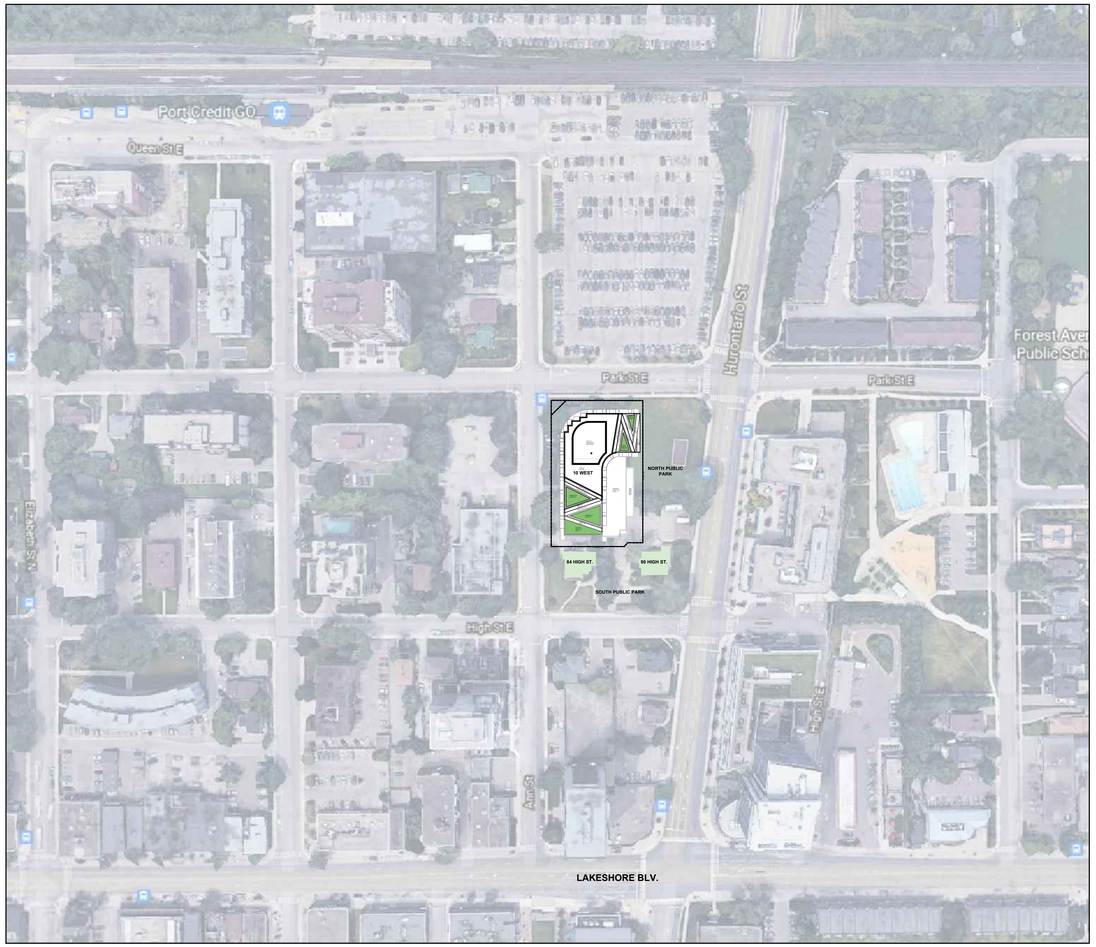
10 WEST GO
MISSISSAUGA, ONTARIO
APP NO: OZ/OPA 22-3 W1

Drawn	Scale: NTS
Checked: DL, CY	Date: 24 OCT 2022

Title: TITLE

Project No: 21-182	Drawing No: A001

18 JUNE 2022



6 A100 CONTEXT PLAN
1:3000

ABBREVIATION LEGEND

ACC	ARCHITECTURAL CONCRETE TYPE	EL	ELEVATION	H	HOT	0/C	ON CENTRE	S	SINK	U/S	UNDERSIDE
ACT	ACOUSTIC TILE	ELEC	ELECTRICAL	HD	HUB DRAIN	OD	OUTSIDE DIAMETER	S/A	SUPPLY AIR		
AD	AREA DRAIN	EOS	EDGE OF SLAB	HM	HOLLOW METAL	OH	OVERHEAD	SC	SEALED CONCRETE	V	VOLT
AES	ARCHITECTURAL EXPOSED STEEL	EP	ELECTRICAL PANEL	HOR	HORIZONTAL			SD	SCUPPER DRAIN	VB	VAPOUR BARRIER
ALUM	ALUMINUM	EQ	EQUAL	HSS	HOLLOW STEEL SECTION	PC	PRECAST CONCRETE	SPEC	SPECIFICATION	VCT	VINYL COMPOSITE TILE TYPE
AFF	ABOVE FINISHED FLOOR	EIF	EXTERIOR INSULATION FINISHTYPE	HT	HEIGHT	PLM	PLASTIC LAMINATE	SQ	SQUARE	VERT	VERTICAL
		EXP	EXPOSED	HW	HARDWOOD STRIP	PLYWD	PLYWOOD	SQ FT	SQUARE FEET	VEST	VESTIBULE
C	COLD	EXJ	EXPANSION JOINT			PRE-FAB	PRE-FABRICATED	SSTL	STAINLESS STEEL	VP	VAPOUR BARRIER
C/H	COLD & HOT	EXT	EXTERIOR	IM	INSULATED METAL	PS	PRESSED STEEL	STL	STEEL		
CAR	CARPET			INS	INSULATION	PT	PAINT	SIM	SIMILAR	W	WASHER, WIDE
CB	CONCRETE BLOCK	FD	FLOOR DRAIN	INT	INTERIOR	P/T	PRESSURE TREATED	ST	STONE TYPE	WD	WOOD TYPE
℄	CENTRE LINE	FDN	FOUNDATION					STOR	STORAGE	WF	WOOD FINISH TYPE
CF	CERAMIC TILE	FIN	FINISH(ED)	JT	JOINT	QM	QUIRK MITRE	STRUCT	STRUCTURE, STRUCTURAL	WP	WORKING POINT
CJ	CONCRETE FINISH TYPE	FL	FLOOR					SW	SWITCH	W.P.	WATERPROOF (MEMBRANE)
CL	CONCRETE JOINT	FT	FOOT	LAM	LAMINATED	R	RISER, RADIUS			W.R.T.	WITH RESPECT TO
COL	CLOSET	FTG	FOOTING	LIN	LINEN	R.O.	ROUGH OPENING	T	TREAD	W/	WITH
CONC	CONCRETE BLOCK	FRG	FIBRE REINFORCED GYPSUM			R/A	RETURN AIR	TBB	TILE BACKER BOARD		
CONT	CONTINUOUS			MA	MARBLE TYPE	RAD	RADIATOR	TEL	TELEPHONE	XGWB	EXTERIOR GYPSUM BOARD
CT	CONCRETE COLUMN	GALV	GALVANIZED	MAX	MAXIMUM	RB	RUBBER BASE	THK	THICK, THICKNESS		
C/W	COVERED WITH	GBL	GLASS BLOCK	MECH	MECHANICAL	RC	REINFORCED CONCRETE	T&G	TONGUE & GROOVE		
		GR	GRANITE	MIN	MINIMUM	RD	ROOF DRAIN	TV	TELEVISION		
D	DIAMETER, DRYER	GL	GLASS	ML	MELAMINE	REF	REFERENCE DIMENSIONS	TYP	TYPICAL		
DFJ	DEFLECTION JOINT	GWB	GYPSUM WALLBOARD	MOD	MODULE	REINF	REINFORCED, REINFORCING	T/O	TOP OF SLAB		
DN	DOWN			MT	METAL TYPE	REQ'D	REQUIRED	T.O.B.	TOP OF BEAM		
DWG	DRAWING					RV	REVEAL	T.O.W.	TOP OF WALL		
				NFWH	NO FREEZE WATER HOSE	REV	REVERSE				
				NIC	NOT IN CONTRACT	R INSUL	RIGID INSULATION				
				N°	NUMBER	RM	ROOM				
				NTS	NOT TO SCALE						

3 A100 ABBREVIATION LEGEND
REF.

ARCHITECTURAL DRAWING LIST

DRAWING NO.	TITLE	CONSULTANT
SCHEDULES		
A001	TITLE	CORE
A100	CONTEXT PLAN, STATISTICS, ABBREV., DRAWINGS LIST & ZONING	CORE
A100a	RESIDENTIAL SOLID WASTE MANAGEMENT	CORE
A101a	SUN-SHADOW STUDY	CORE
A101b	SUN-SHADOW STUDY	CORE
A101c	SUN-SHADOW STUDY	CORE
A101d	SUN-SHADOW STUDY	CORE
A101e	SUN-SHADOW STUDY	CORE
A101f	SUN-SHADOW STUDY	CORE
A101g	SUN-SHADOW STUDY	CORE
A102	SURVEY	JD BARNES
A103	PARCEL PLAN	CORE
A104	SITE PLAN	CORE
PLANS		
A200	P5.5 PARKING LEVEL	CORE
A201	P5 PARKING LEVEL	CORE
A202	P4 PARKING LEVEL	CORE
A203	P3 PARKING LEVEL	CORE
A204	P2 PARKING LEVEL	CORE
A205	P1 PARKING LEVEL	CORE
A206	GROUND LEVEL	CORE
A207	MEZZENINE LEVEL	CORE
A208	LEVEL 2	CORE
A209	LEVELS 3-6	CORE
A210	LEVEL 7	CORE
A211	LEVELS 8-10	CORE
A212	LEVEL 11	CORE
A213	LEVELS 12-14	CORE

DRAWING NO.	TITLE	CONSULTANT
PLANS		
A214	LEVEL 15	CORE
A215	LEVEL 16	CORE
A216	LEVELS 17-22	CORE
A217	LEVEL MECHANICAL PENTHOUSE	CORE
A218	LEVEL ROOF	CORE
ELEVATIONS / SECTIONS		
A400	SOUTH ELEVATION	CORE
A401	EAST ELEVATION	CORE
A402	NORTH ELEVATION	CORE
A403	WEST ELEVATION	CORE
A410	SECTION 1	CORE
A411	SECTION 2	CORE
PERSPECTIVES		
A600	BUILDING PERSPECTIVE	CORE
A601	BUILDING PERSPECTIVE	CORE
A602	BUILDING PERSPECTIVE	CORE
A603	BUILDING PERSPECTIVE	CORE
A604	BUILDING PERSPECTIVE	CORE
A605	BUILDING PERSPECTIVE	CORE

2 A100 DRAWING LIST
REF.

BUILDING AREA
RESIDENTIAL

LEVELS	GCA (m2)	GCA (Sq Ft)	GFA (m2)	GFA (Sq Ft)
P-5+	724.03	7,793	69.36	747
P-5	2,840.32	30,573	133.12	1,433
P-4	2,840.32	30,573	133.12	1,433
P-3	2,840.32	30,573	133.12	1,433
P-2	2,794.51	30,080	137.17	1,476
P-1	2,762.61	29,736	200.78	2,161
Ground	1,870.62	20,135	1,361.93	14,660
Mezzanine	1,174.09	12,638	900.07	9,688
Level 2	1,292.67	13,914	989.83	10,654
Level 3	1,446.68	15,572	1,383.87	14,896
Level 4	1,446.68	15,572	1,383.87	14,896
Level 5	1,446.68	15,572	1,383.87	14,896
Level 6	1,446.68	15,572	1,383.87	14,896
Level 7	1,301.58	14,010	1,104.37	11,887
Level 8	1,301.58	14,010	1,238.77	13,334
Level 9	1,301.58	14,010	1,238.77	13,334
Level 10	1,301.58	14,010	1,238.77	13,334
Level 11	1,035.47	11,146	972.66	10,470
Level 12	1,035.47	11,146	972.66	10,470
Level 13	1,035.47	11,146	972.66	10,470
Level 14	1,035.47	11,146	972.66	10,470
Level 15	1,035.47	11,146	960.93	10,343
Level 16	789.61	8,499	730.24	7,860
Level 17	789.61	8,499	730.24	7,860
Level 18	789.61	8,499	730.24	7,860
Level 19	789.61	8,499	730.24	7,860
Level 20	789.61	8,499	730.24	7,860
Level 21	789.61	8,499	730.24	7,860
Level 22	789.61	8,499	730.24	7,860
Mech PH	331.38	3,567	34.61	373
Total - Below Grade	14,802.11	159,329	806.65	8,683
Total - Above Grade	26,366.40	283,806	23,605.88	254,092
Total	41,168.51	443,134	24,412.53	262,774

RETAIL	GCA (m2)	GCA (SQ Ft)	GFA (m2)	GFA (Sq Ft)
Ground	329.18	3,543	307.51	3,310
Mezz	12.39	133	12.39	133
Total	341.57	3,677	319.90	3,443
Total Residential + Retail	41,510.09	446,810.85	24,732.43	266,217.66

5 A100 GCA / GFA STATISTICS
REF.

VEHICULAR PARKING

Levels	Visitor/Retail	84 High Street	90 High Street	Residential	Total	Accessible
P-5+				11	11	1
P-5				69	69	2
P-4				69	69	3
P-3				69	69	3
P-2	31			32	63	1
P-1	25	6	7		38	2
Total Provided	56	6	7	250	319	11
Ratio Required	0.2/UNIT			0.8/UNIT		
Total Required	73	6	7	291	377	9

BICYCLE PARKING

Levels	Visitor(Indoor)	Visitor(Outdoor)	Retail(Outdoor)	Residential		Total
P-1	0	0	0	218		218
Ground	19	0	0	0		19
Total Provided	19	0	0	218		237
Ratio Required	0.05/UNIT			0.6/UNIT		
Total Required	19			218		

AMENITY	Indoor (m2)	Outdoor (m2)	Total (m2)
Ground	220.46	250.91	471.37
Mezz	149.04	0	149.04
Level 2	240.03	418.86	658.89
Level 7	134.40	105.3	239.70
Total Provided	743.93	775.07	1,519.00
Ratio Provided	4.18 m2/unit		
Ratio Required	5.60 m2/unit		

LANDSCAPE	AREA(m2)
Total Provided	997.35
Ratio Provided	30.46%
Ratio Required	30.00%

4 A100 PARKING & AMENITY STATISITICS
REF.

UNIT DISTRIBUTION	1Bed	1Bed + Den	2Bed	2Bed+Den	Units per Floor
Ground	0	0	2	2	4
Mezzanine	1	7	0	0	8
Level 2	10	3	4	0	17
Level 3	10	8	5	1	24
Level 4	10	8	5	1	24
Level 5	10	8	5	1	24
Level 6	10	8	5	1	24
Level 7	7	7	4	1	19
Level 8	7	7	5	2	21
Level 9	7	7	5	2	21
Level 10	7	7	5	2	21
Level 11	7	4	3	2	16
Level 12	7	4	3	2	16
Level 13	7	4	3	2	16
Level 14	7	4	3	2	16
Level 15	7	4	2	2	15
Level 16	5	2	0	4	11
Level 17	5	2	0	4	11
Level 18	5	2	0	4	11
Level 19	5	2	0	4	11
Level 20	5	2	0	4	11
Level 21	5	2	0	4	11
Level 22	5	2	0	4	11
Total Units	149	104	64	51	368
Percentage	41%	29%	16%	14%	100%

10 WEST GO			
SITE AREA	1,273.95 SQ. M. 13,241 SQ. FT.	ZONING	RA1-24, H-RA2-4B, D CITY OF MISSISSAUGA BY LAW 0225-2007
PROGRAM	RESIDENTIAL (GROUP C), GROUND LEVEL TO LEVEL 22	RETAIL (GROUP E), GROUND LEVEL	
GROSS FLOOR AREA	PROPOSED RESIDENTIAL ABOVE GRADE GFA = RESIDENTIAL BELOW GRADE GFA = TOTAL =	SQ. M. 23,605.88 806.65 24,412.53	SQ. FT. 254091.5734 8683.68764 262774.261
NO. DWELLING UNITS	1BED/ 1BED+DEN 151 UNITS / 70%	2BED/ 2BED+DEN 116 UNITS / 30%	TOTAL 363 UNITS
FLOOR SPACE INDEX	REQUIRED N/A (REFER TO ZONING BY-LAW 0225-2007)	PROPOSED 7.16	
PERCENTAGE OF SITE AS LANDSCAPE AREA	N/A (REFER TO ZONING BY-LAW 0225-2007)	997.35 m2	30.46%
HEIGHT	SEE SCHEDULE RA-1, H-RA2-4B, D	76.00m	
SETBACKS	SEE SCHEDULE RA-1, H-RA2-4B, D	SEE DRAWINGS	
LOADING	N/A	1 FORMAL LOADING SPACE 1 PROPOSED SMALLER LOADING SPACE	
OFF-STREET LOADING PASSENGER	N/A (REFER TO ZONING BY-LAW 0225-2007)	N/A	
PERCENTAGE OF GROUND FLOOR AS RETAIL/COMMERCIAL	N/A (REFER TO ZONING BY-LAW 0225-2007)	14.96%	
AMENITY SPACE	5.6m2 PER UNIT REQUIRED AT PER ZONING BY-LAW TOTAL = 2,016.4 m2	INTERIOR AMENITY EXTERIOR AMENITY TOTAL	743.93 m2 775.07 m2 1519 m2 (42 PER 4.18 m2/UNIT)
RESIDENTIAL PARKING	0.8 PARKING PER UNIT 0.8 X 363 UNITS = 291	TOTAL OF 250 PARKING SPACES PROVIDED AT P-2 TO P-5.5 PARKING LEVELS MINIMUM 0.68 PER UNIT	
VISITOR PARKING	0.2 PARKING PER UNIT 0.2 X 363 UNITS = 73	TOTAL OF 56 PARKING SPACES PROVIDED AT P-1 AND P-2 PARKING LEVEL MINIMUM 0.15 PER UNIT	
PARKING ALLOCATION FOR 84 & 90 HIGH STREET	6 PARKING SPACES FOR 84 HIGH STREET 7 PARKING SPACES FOR 90 HIGH STREET	6 PARKING SPACES FOR 84 HIGH STREET PROVIDED AT P-1 PARKING LEVEL 7 PARKING SPACES FOR 90 HIGH STREET PROVIDED AT P-1 PARKING LEVEL	
RESIDENTIAL BICYCLE PARKING	0.6 BIKE PARKING PER UNIT AS PER ZONING BY-LAW 0.6 X 363 UNITS = 218	TOTAL OF 218 BIKE PARKING SPACES PROVIDED AT P-1 PARKING LEVEL	
VISITOR BICYCLE PARKING	0.05 BIKE PARKING PER UNIT AS PER ZONING BY-LAW 0.05 X 363 UNITS = 19	TOTAL OF 19 BIKE PARKING SPACES PROVIDED OF WHICH 19 INDOOR BIKE PARKING PROVIDED AT GROUND LEVEL	

1 A100 UNIT DISTRIBUTION / SUMMARY
REF.

No.	Revisions	Date
02	RE-ISSUED FOR OPA / REZONING	28 OCT 2022
01	ISSUED FOR OPA / REZONING	17 DEC 2021

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APP NO: OZ/OPA 22-3 W1

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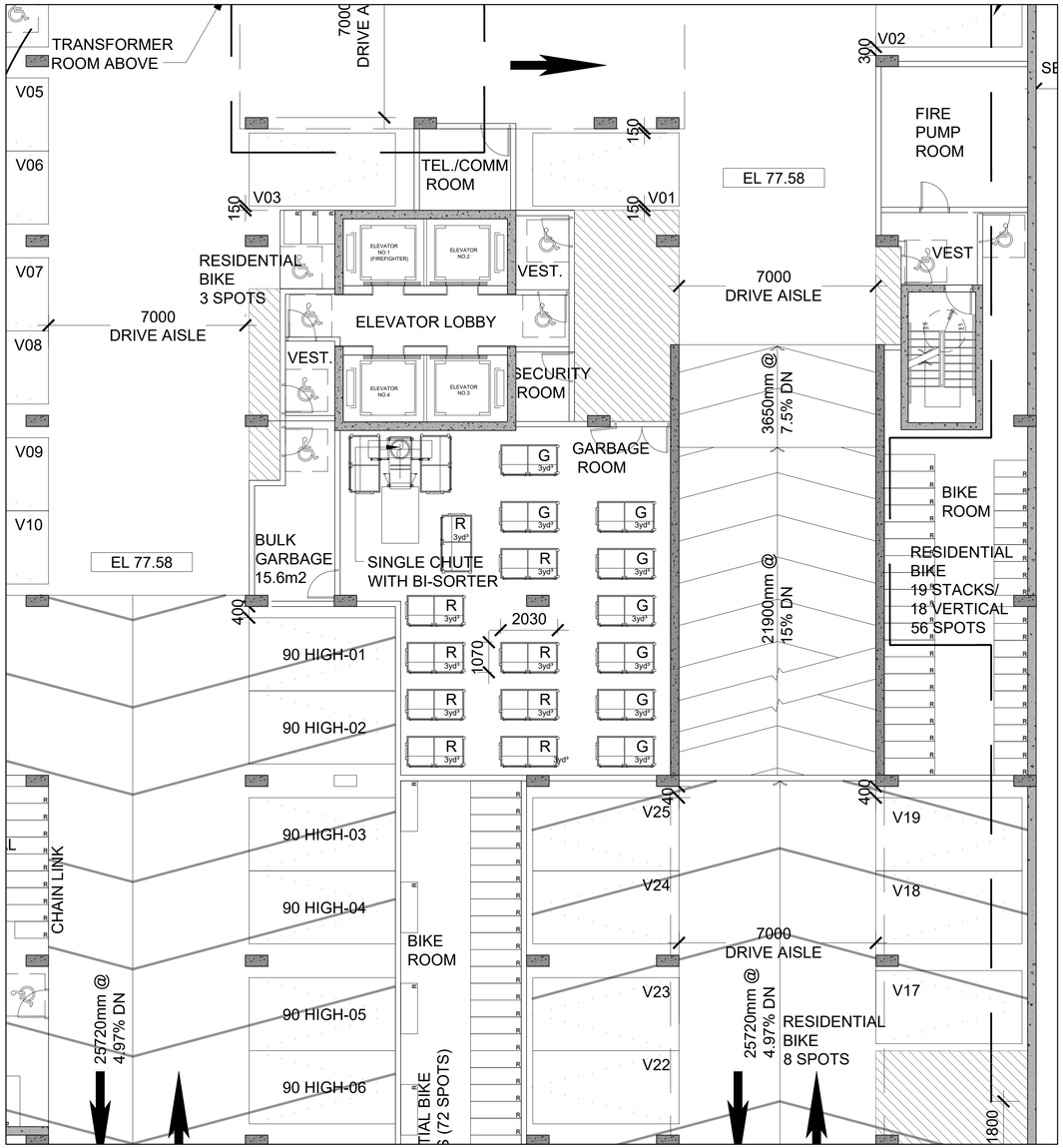
BABAK ESLAHJOU
LICENCE
4706

Drawn: CY	Scale: NTS
Checked: DL, CY	Date: 24 OCT 2022

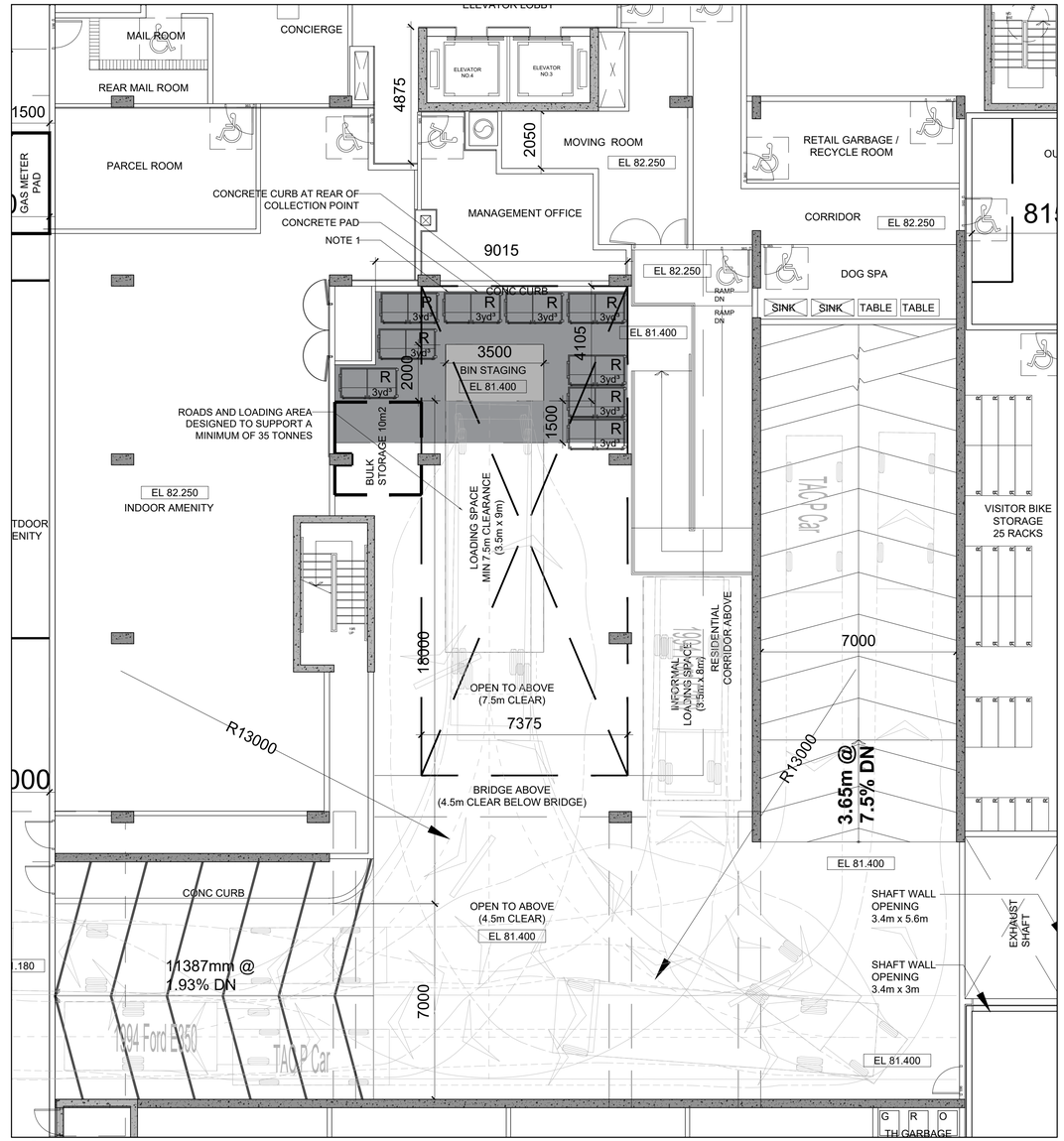
Title: CONTEXT PLAN, STATISTICS ABBREV., DRAWINGS LIST & ZONING

Project No.	Drawing No.
21-182	A100

16 JUNE 2022



4 A100a GARBAGE ROOM
1:100



2 A100a STAGING AREA
1:100

Multi-Residential Complexes and Stacked Townhouses

Type of Bin	3 yd³ (units/bin)	4 yd³ (units/bin)	6 yd³ (units/bin)
Compacted Garbage	54	72	N/A
Non-compacted Garbage	18	24	36
Recyclable Materials	45	60	90

Note: Multi-Residential Complexes and Stacked Townhouses proposing less than 60 Dwelling Units will receive one Recycling Cart for every 7 Dwelling Units.

NOTE 1:

PROPERTY MANAGEMENT STAFF TO FACILITATE WASTE COLLECTION

I. DRIVER IS NOT REQUIRED TO EXIT THE WASTE COLLECTION VEHICLE TO FACILITATE COLLECTION;

II. PROPERTY MANAGEMENT STAFF IS RESPONSIBLE FOR JOCKEYING OF FRONT-END BINS DURING COLLECTION;

III. THE REGION WILL NOT BE RESPONSIBLE FOR EMPTYING BINS THAT ARE INACCESSIBLE TO THE WASTE COLLECTION VEHICLE; AND

IV. PROPERTY MANAGEMENT STAFF MUST BE VISIBLE TO WASTE COLLECTION VEHICLE ON APPROACH TO THE SITE, OTHERWISE THE WASTE COLLECTION VEHICLE WILL NOT ENTER THE SITE.

- ROAD AND LOADING AREA DESIGNED TO SUPPORT MINIMUM OF 35 TONNES

3 A100a WASTE MANAGEMENT REQUIREMENTS
1:100

AS PER REGION OF PEEL WASTE COLLECTION DESIGN STANDARDS

REQUIRED

SOLID WASTE MANAGEMENT PLAN REQUIRED:
1 GARBAGE BIN(3yd³) IS REQUIRED FOR EACH 54 UNITS AND
1 RECYCLING BIN(3yd³) IS REQUIRED FOR EACH 45 UNITS.

TOTAL # OF UNITS = 363

363/ 54 = 7x3yd³ BINS (GARBAGE)
363/ 45 = 9x3yd³ BINS(RECYCLE)

PROVIDED

SOLID WASTE MANAGEMENT PLAN PROVIDED:
WASTE STORAGE ROOM SIZE PROVIDED AS FOLLOWED:

SPACE TO ALLOW FOR GARBAGE STORAGE:
7x3yd³ BINS(GARBAGE) & 9x3yd³ BINS(RECYCLE)
= 131.30m²

SPACE FOR BULK STORAGE
=15.65m²

TOTAL RESIDENTIAL WASTE STORAGE AREA PROVIDED: 146.95m²

1 A100a WASTE MANAGEMENT STATISTICS

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02	RE-ISSUED FOR OPA / REZONING	28 OCT 2022
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Drawn	Scale
SK, CY	1:100
Checked	**Date**
DL, CY	24 OCT 2022

Title
RESIDENTIAL SOLID WASTE MANAGEMENT

Project No.	Drawing No.
21-182	A100a

16 JUNE 2022

PARCEL	AREAS (M2)
10 WEST CONDOMINIUM	3273.97
POPS SPACE	178.10
NORTH PUBLIC PARK (LANDS TO BE RETAINED BY CITY)	1152.49 (EXCLUDE 10mX10m DAYLIGHT TRIANGLE)
SOUTH PUBLIC PARK (PARCEL A)	383.96
SOUTH PUBLIC PARK (PARCEL B) (LANDS TO BE TRANSFERRED TO CITY)	913.06 (EXCLUDE 10mX10m/ 7.5mX7.5m DAYLIGHT TRIANGLE)
TOTAL CITY PARK	2,449.51

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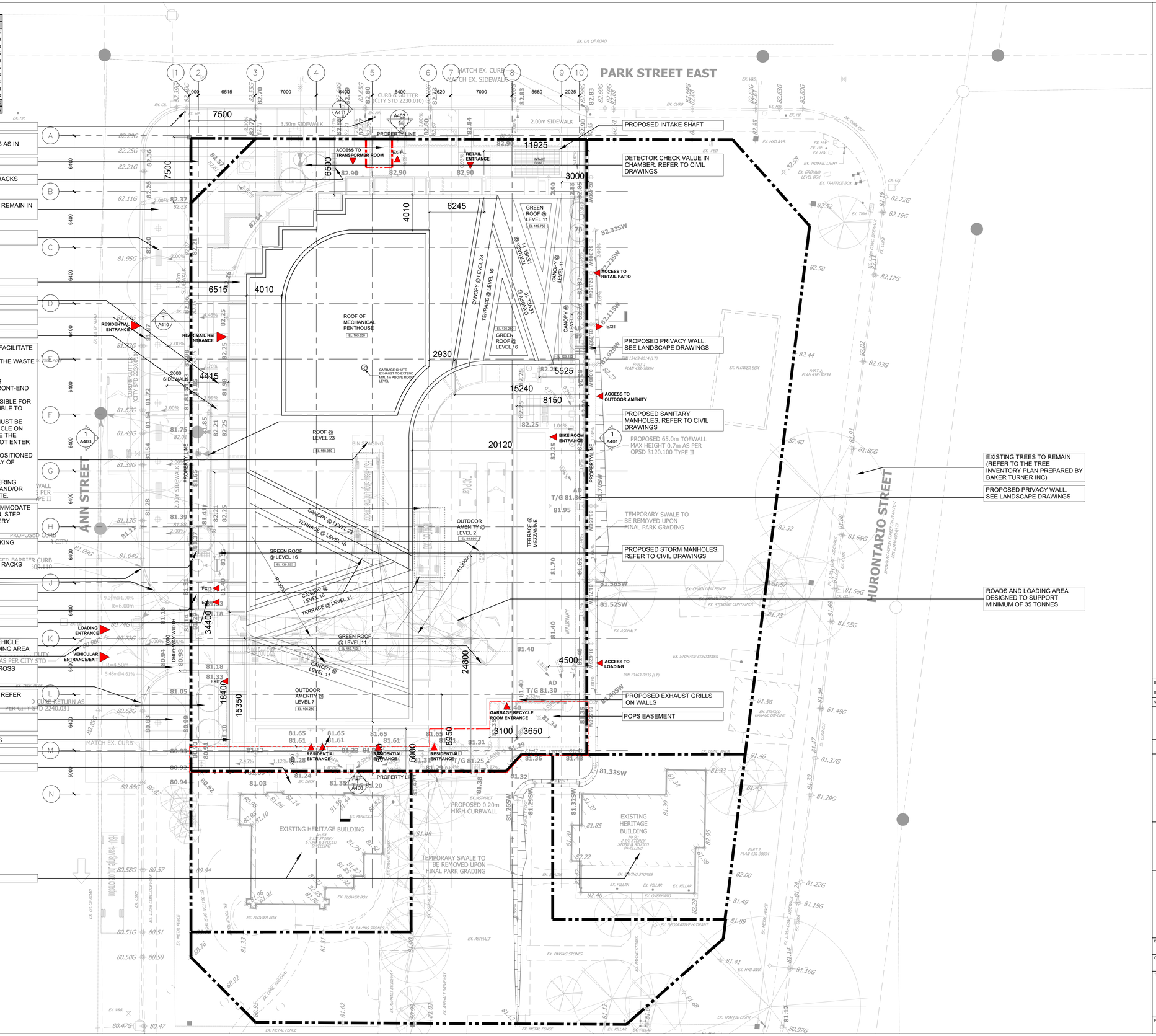
Drawn	Scale
SK	1:250
Checked	Date
DL, CY	24 OCT 2022

Title
PARCEL PLAN

Project No.	Drawing No.
21-182	A103

14 JUNE 2023

ESTABLISHED GRADE CALCULATION				
LENGTH NO.	BEGIN ELEV.	END ELEV.	LENGTH	(L1+L2)/2XL
1	82.25	82.25	23,365.00	1,921,771.25
2	82.25	81.55	7,455.00	610,564.50
3	81.55	81.18	5,920.00	481,680.80
4	81.18	82.25	9,790.00	799,989.85
5	82.25	82.25	79,144.00	6,509,594.00
6	82.25	82.90	5,770.00	476,457.75
7	82.90	82.75	6,565.00	543,746.13
8	82.75	82.90	21,025.00	1,741,395.63
9	82.90	82.90	7,805.00	647,034.50
10	82.90	82.25	29,005.00	2,395,087.88
		TOTAL:	195,844.00	16,127,322.28
			EG:	82.35



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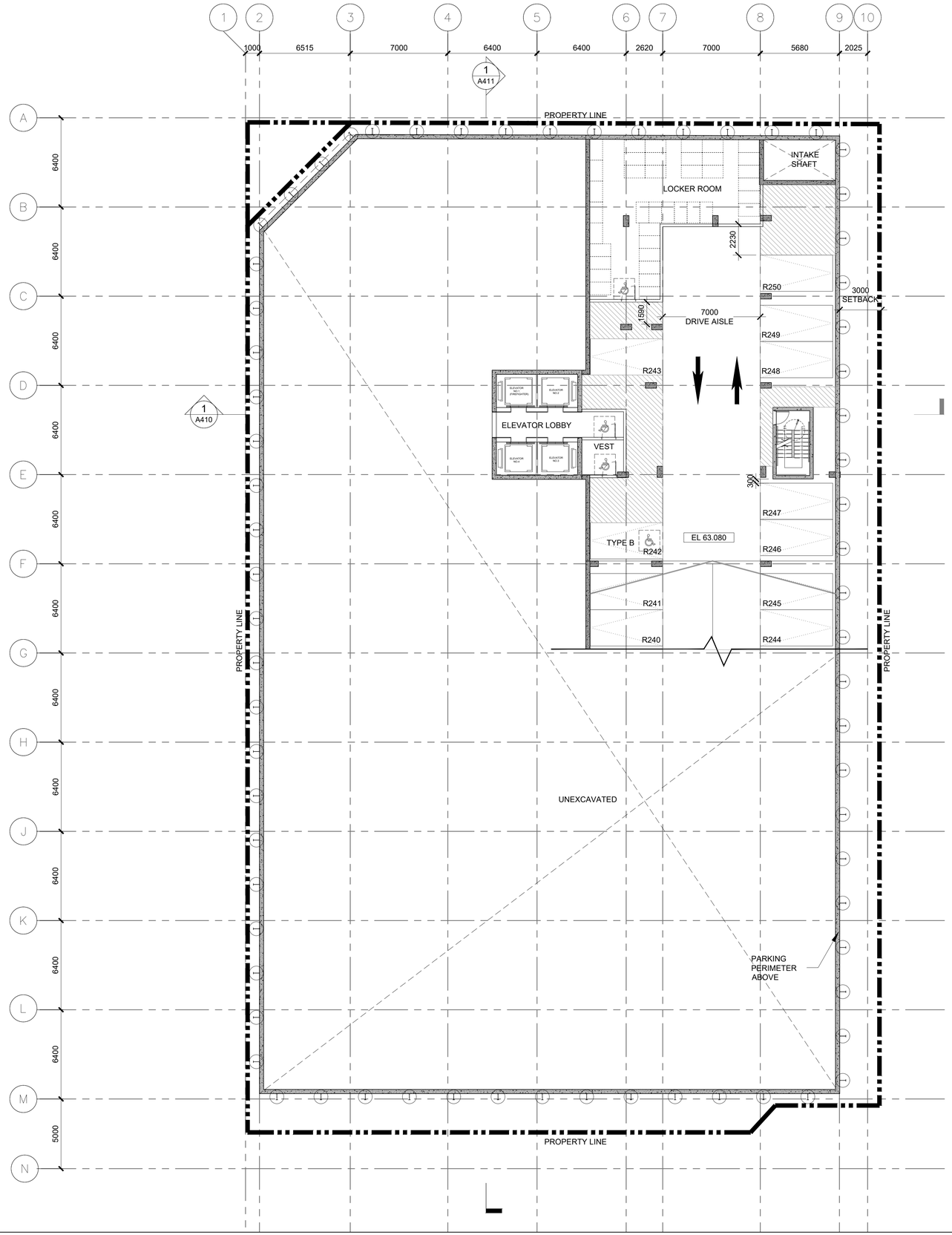
Drawn	Scale
SK	1:200
Checked	Date
DL, CY	24 OCT 2022

Title

SITE PLAN

Project No.	Drawing No.
21-182	A104

16 JUNE 2022



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR

No.	Revisions	Date
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APP NO: OZ/OPA 22-3 W1

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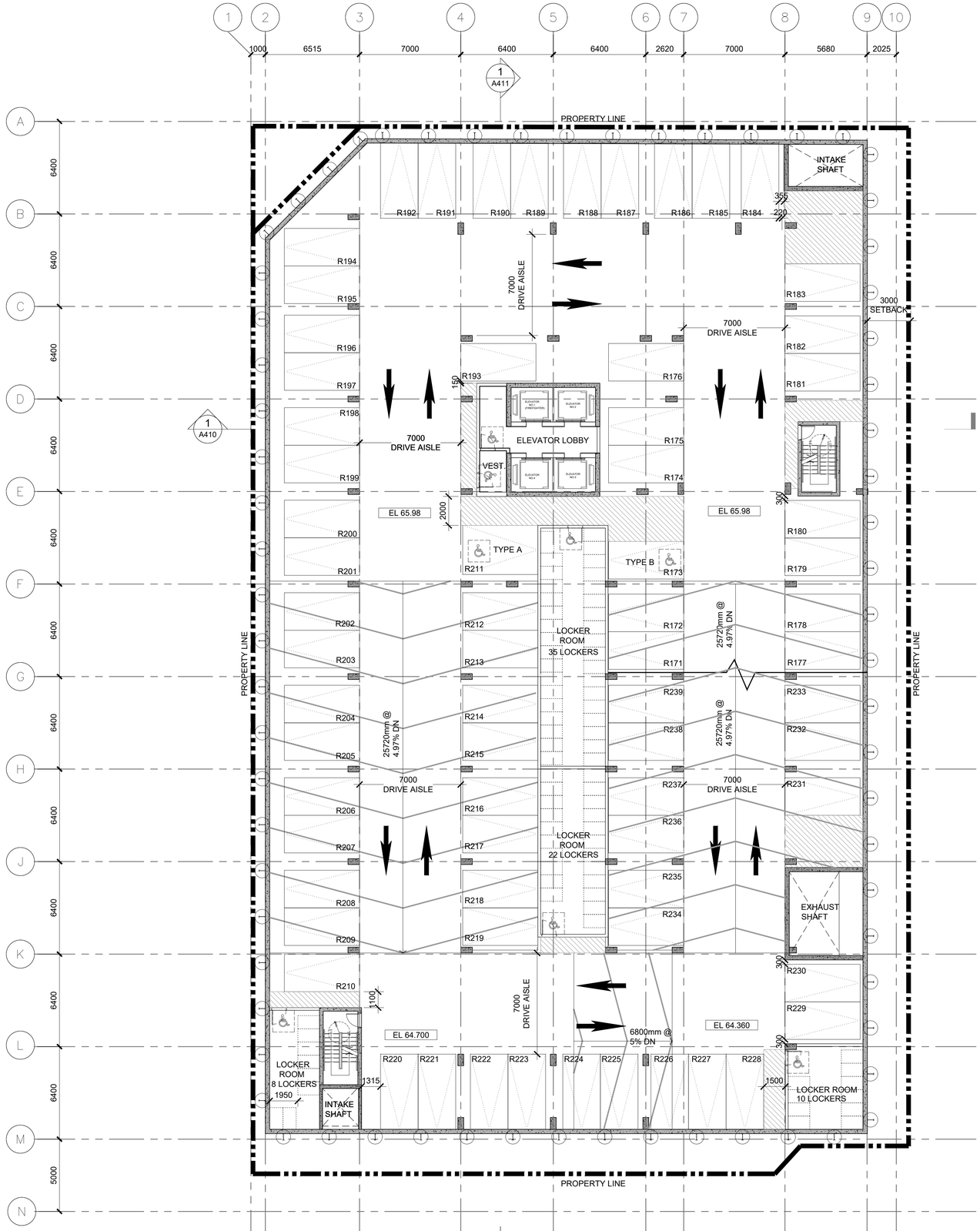
Drawn	Scale
SK	1:150
Checked	**Date**
DL, CY	24 OCT 2022

Title

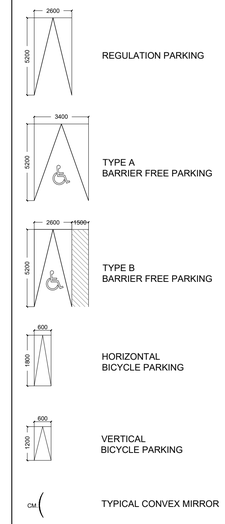
P5.5 PARKING LEVEL

Project No.	Drawing No.
21-182	A200

16 JUNE 2022



PARKING LEGEND



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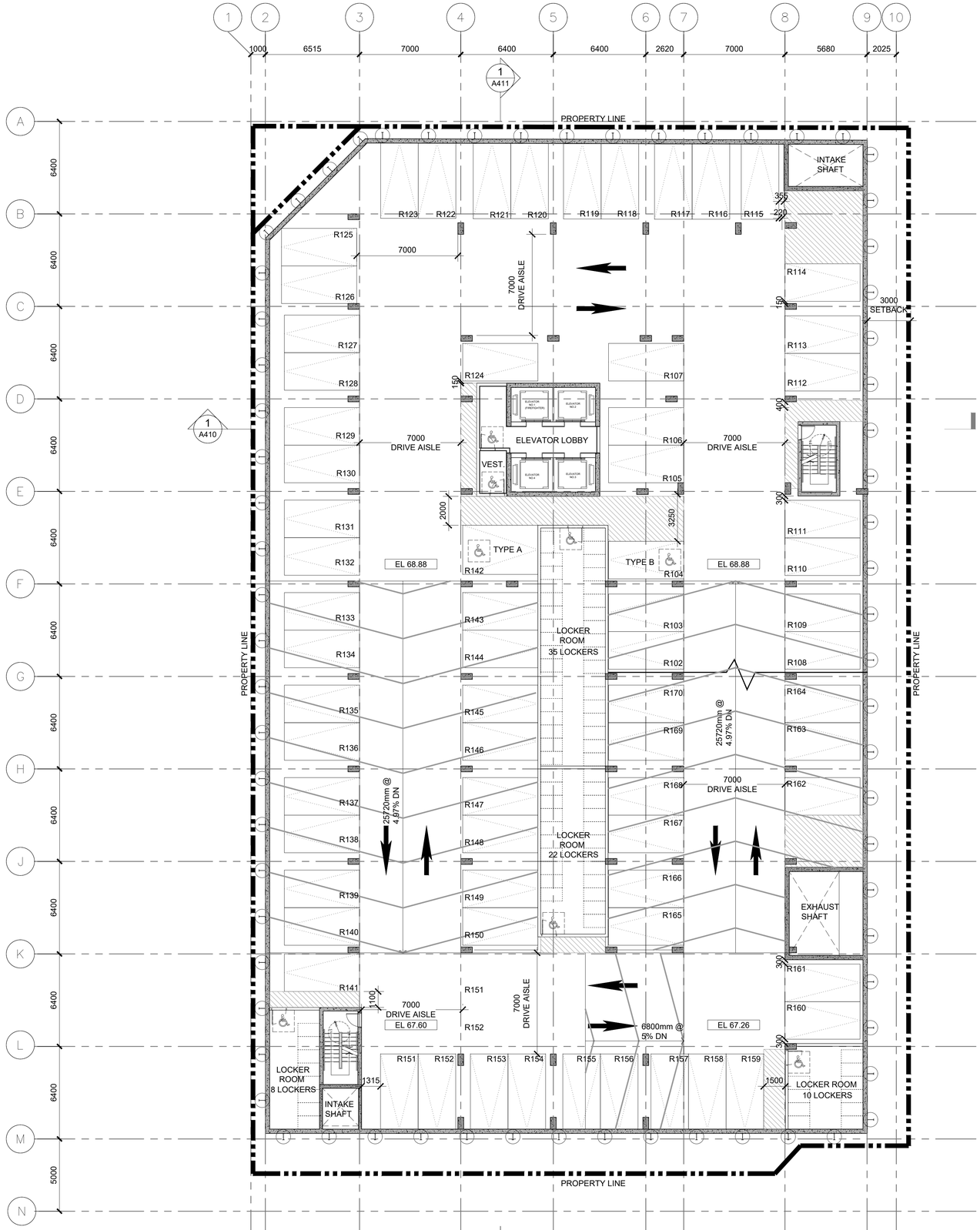
Drawn	Scale
SK	1:150
Checked	**Date**
DL, CY	24 OCT 2022

Title

P5 PARKING LEVEL

Project No.	Drawing No.
21-182	A201

16 JUNE 2023



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
- VERTICAL BICYCLE PARKING
- TYPICAL CONVEX MIRROR

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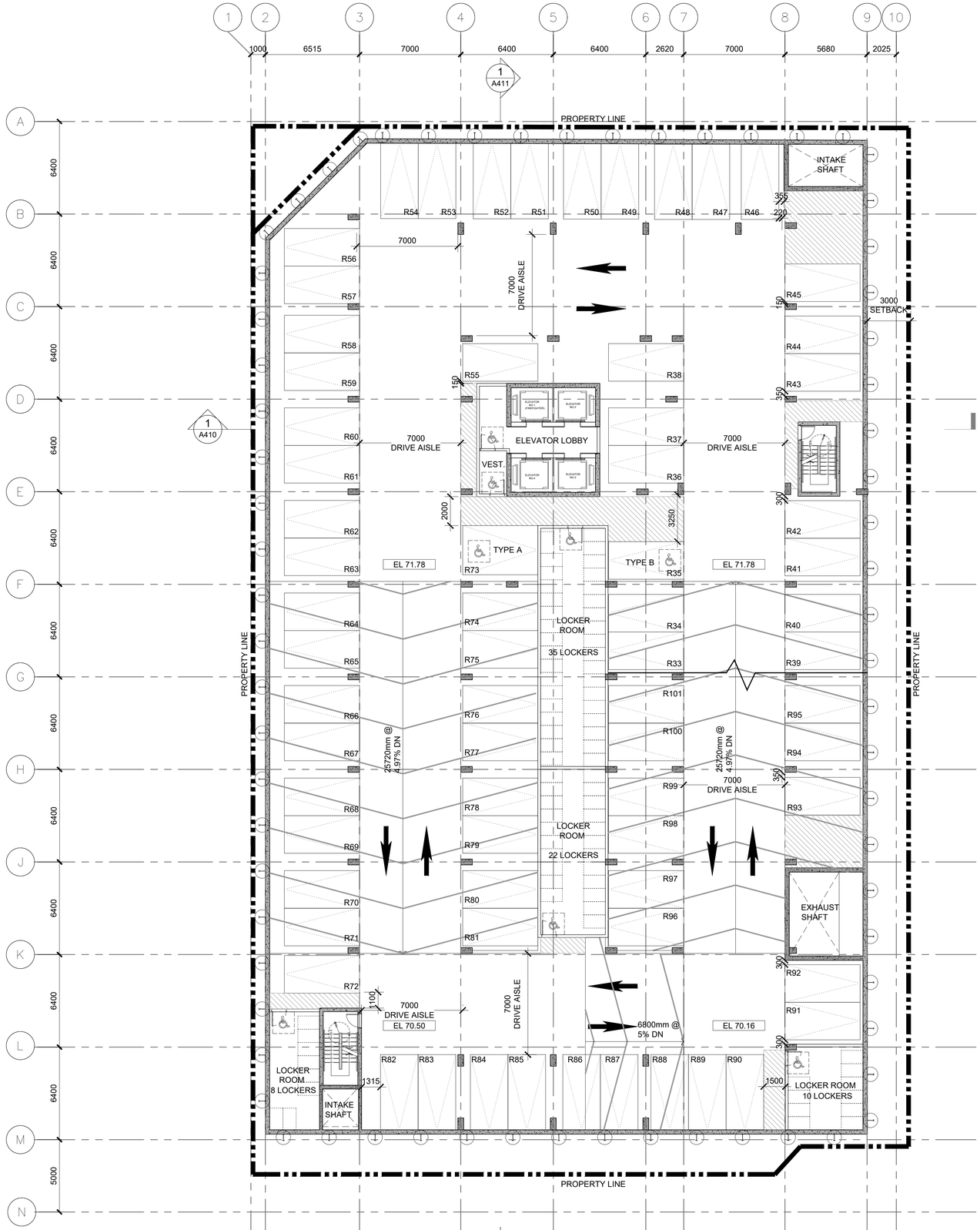
Drawn	Scale
SK	1:150
Checked	**Date**
DL, CY	24 OCT 2022

Title

P4 PARKING LEVEL

Project No.	Drawing No.
21-182	A202

16 JUNE 2023



PARKING LEGEND

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SK	1:150
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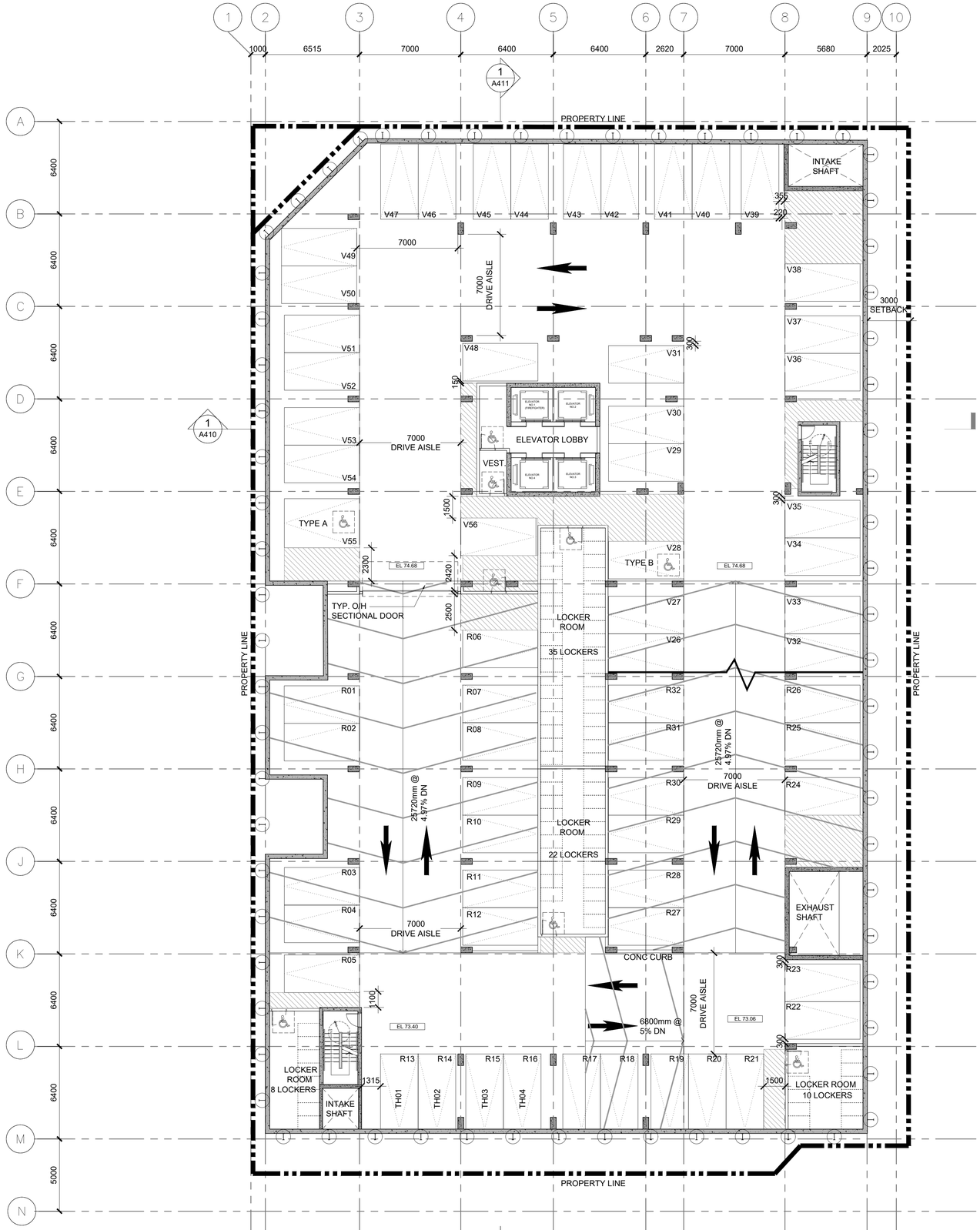
DL, CY	24 OCT 2022

Title
P3 PARKING LEVEL

Project No.	Drawing No.
21-182	A203

16 JUNE 2023



PARKING LEGEND

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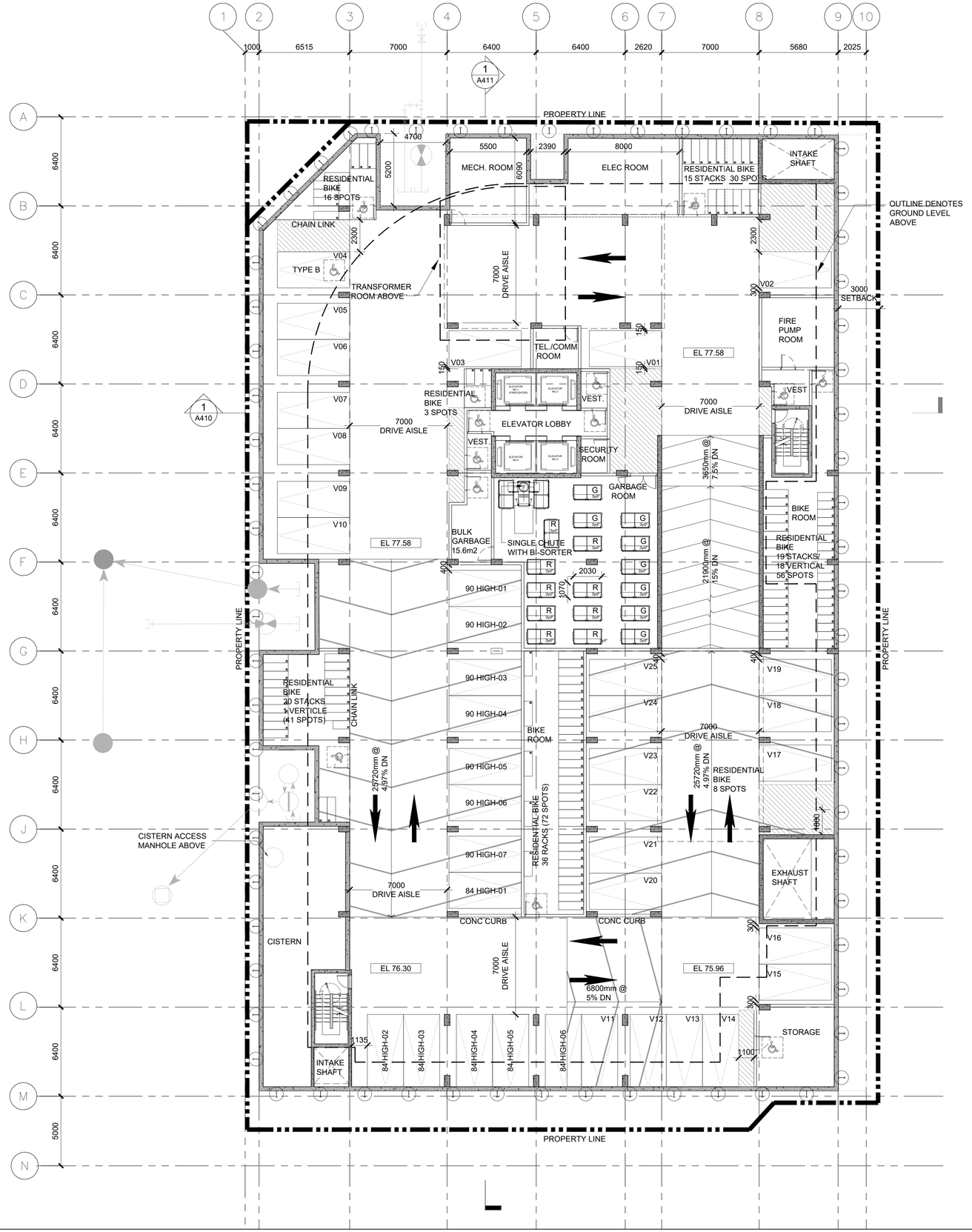
Drawn	Scale
SK	1:150
Checked	**Date**
DL, CY	24 OCT 2022

Title

P2 PARKING LEVEL

Project No.	Drawing No.
21-182	A204

16 JUNE 2023



PARKING LEGEND

- REGULATION PARKING
- TYPE A BARRIER FREE PARKING
- TYPE B BARRIER FREE PARKING
- HORIZONTAL BICYCLE PARKING
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V5-V18 PARKING SPACES ARE ALLOCATED FOR 84 AND 90 HIGH STREET

No.	Revisions	Date
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SK	1:150
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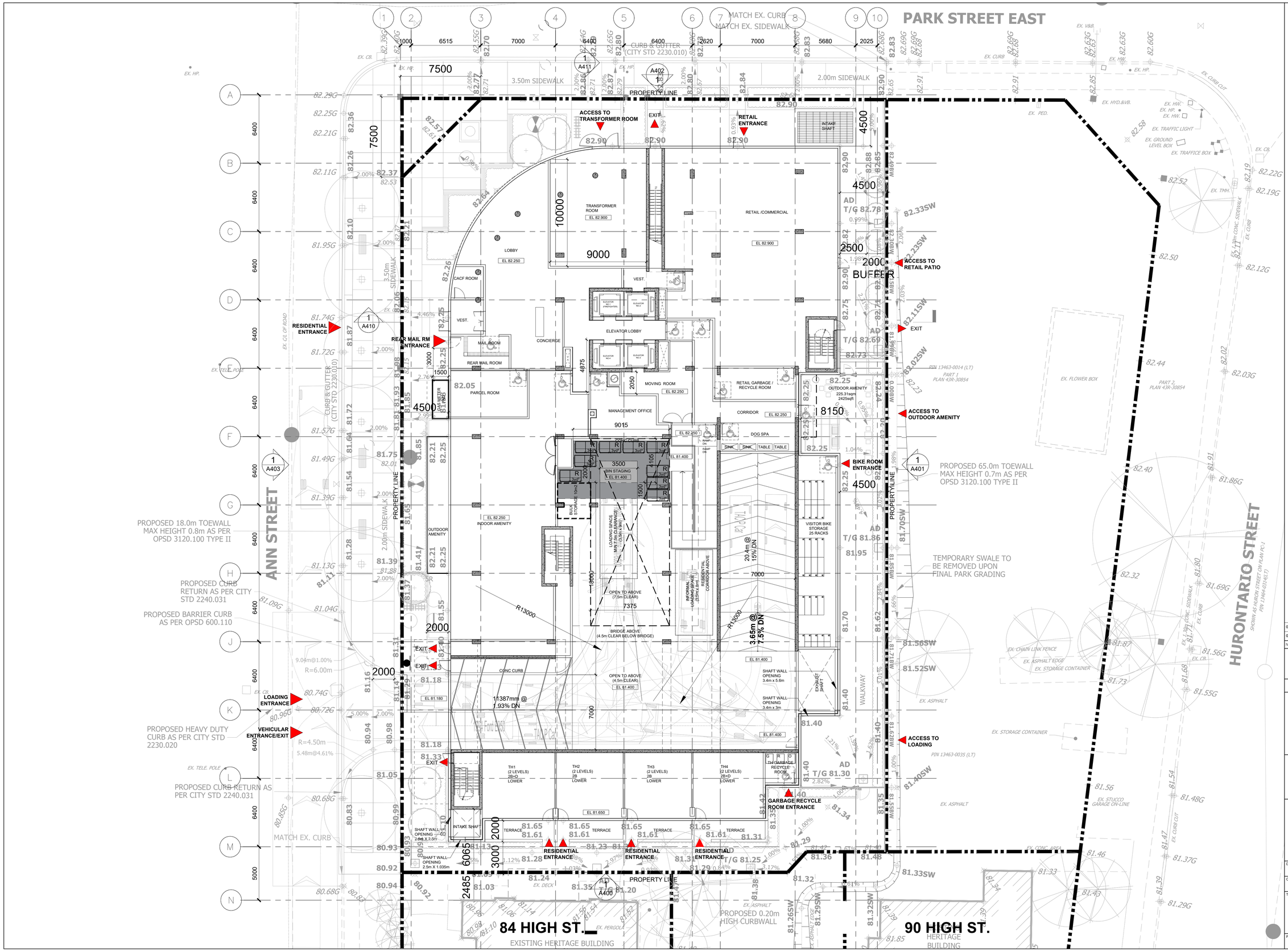
Title

P1 PARKING LEVEL

Project No.	Drawing No.
21-182	A205

16 JUNE 2023



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02	RE-ISSUED FOR OPA / REZONING	28 OCT 2022
01	ISSUED FOR OPA / REZONING	17 DEC 2021

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10 WEST GO

MISSISSAUGA, ONTARIO

APP NO. OZ/OPA 22-3 W1

ONTARIO ASSOCIATION OF ARCHITECTS
SABAK ESLAHJOU
LICENCE 4706

Drawn: SK, MS	Scale: 1:150
Checked: DL, CY	Date: 24 OCT 2022

Title: GROUND LEVEL

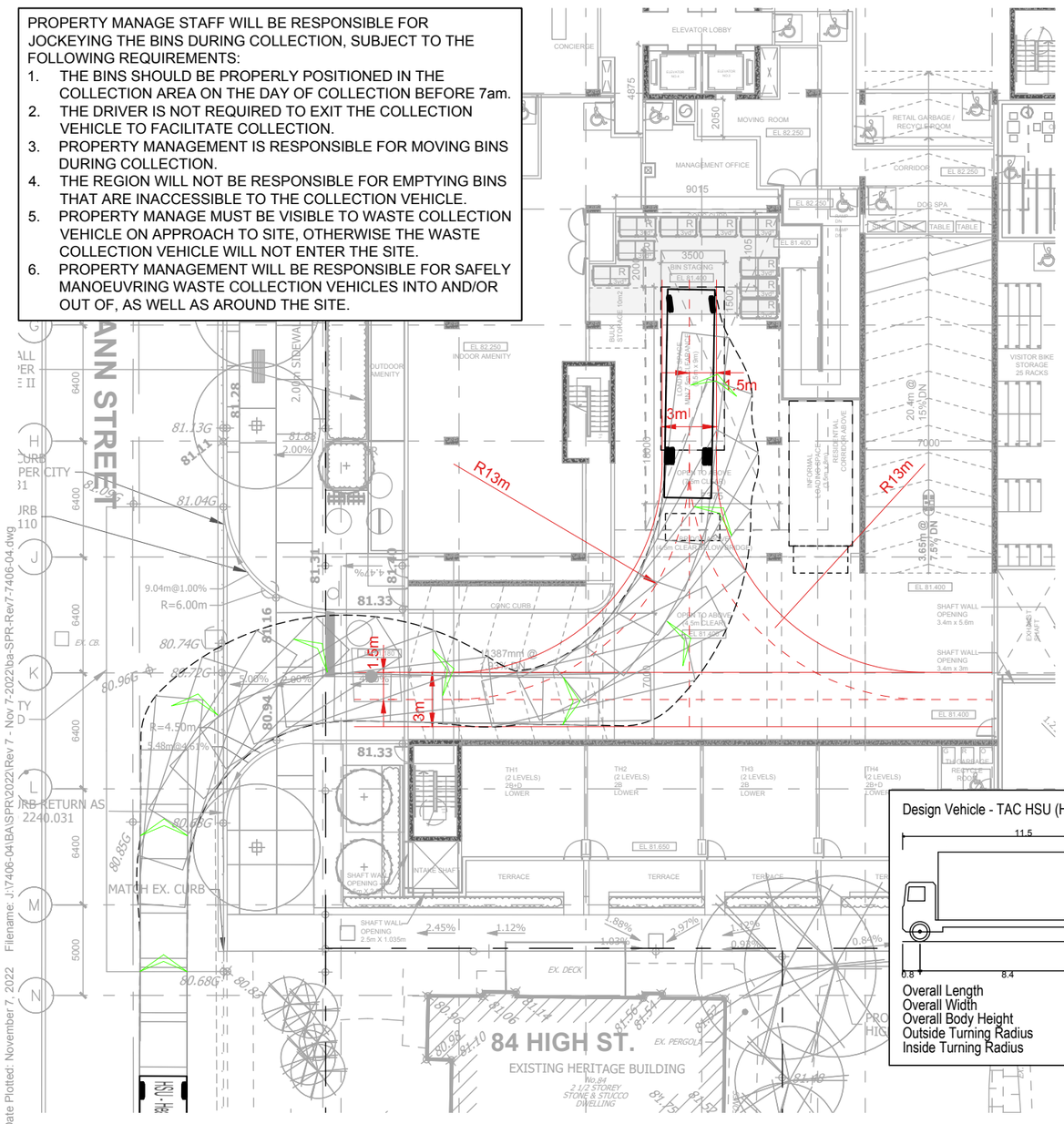
Project No. 21-182	Drawing No. A206

Appendix D Vehicle Maneuvering Diagrams & Daylight Triangles

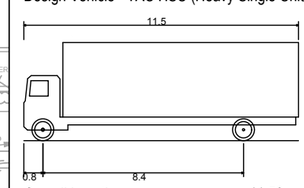
INBOUND

PROPERTY MANAGE STAFF WILL BE RESPONSIBLE FOR JOCKEYING THE BINS DURING COLLECTION, SUBJECT TO THE FOLLOWING REQUIREMENTS:

1. THE BINS SHOULD BE PROPERLY POSITIONED IN THE COLLECTION AREA ON THE DAY OF COLLECTION BEFORE 7am.
2. THE DRIVER IS NOT REQUIRED TO EXIT THE COLLECTION VEHICLE TO FACILITATE COLLECTION.
3. PROPERTY MANAGEMENT IS RESPONSIBLE FOR MOVING BINS DURING COLLECTION.
4. THE REGION WILL NOT BE RESPONSIBLE FOR EMPTYING BINS THAT ARE INACCESSIBLE TO THE COLLECTION VEHICLE.
5. PROPERTY MANAGE MUST BE VISIBLE TO WASTE COLLECTION VEHICLE ON APPROACH TO SITE, OTHERWISE THE WASTE COLLECTION VEHICLE WILL NOT ENTER THE SITE.
6. PROPERTY MANAGEMENT WILL BE RESPONSIBLE FOR SAFELY MANOEUVRING WASTE COLLECTION VEHICLES INTO AND/OR OUT OF, AS WELL AS AROUND THE SITE.

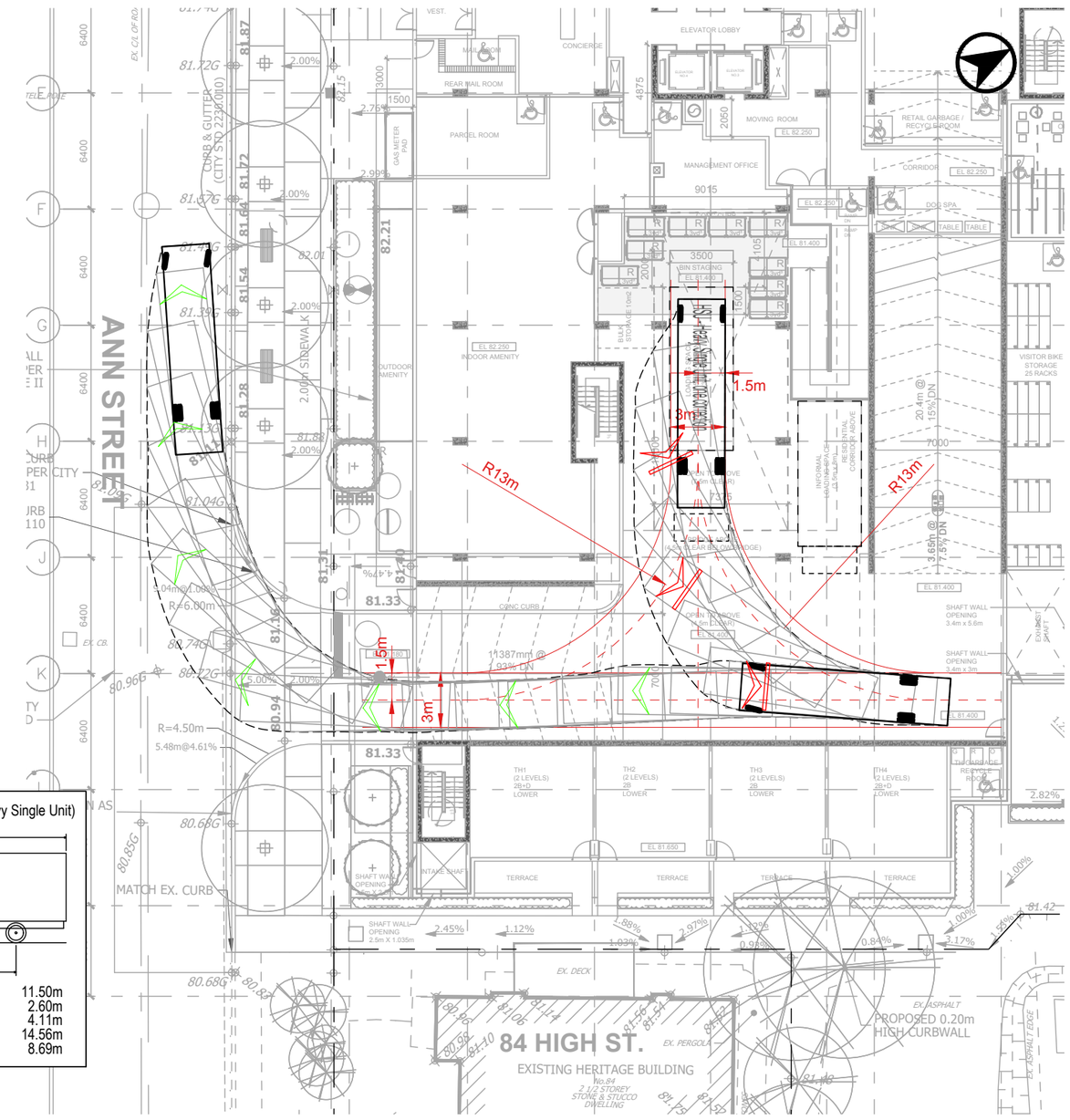


Design Vehicle - TAC HSU (Heavy Single Unit)



Overall Length	11.50m
Overall Width	2.60m
Overall Body Height	4.11m
Outside Turning Radius	14.56m
Inside Turning Radius	8.69m

OUTBOUND



Date Plotted: November 7, 2022 Filename: J:\7406-04\BA\SPR\2022\Rev 7 - Nov 7-2022\ba-SPR-Rev7-7406-04.dwg

BA Group

10 West - Site Plan Review

Refuse Proxy Design Vehicle (Heavy Single Unit Truck - HSU)

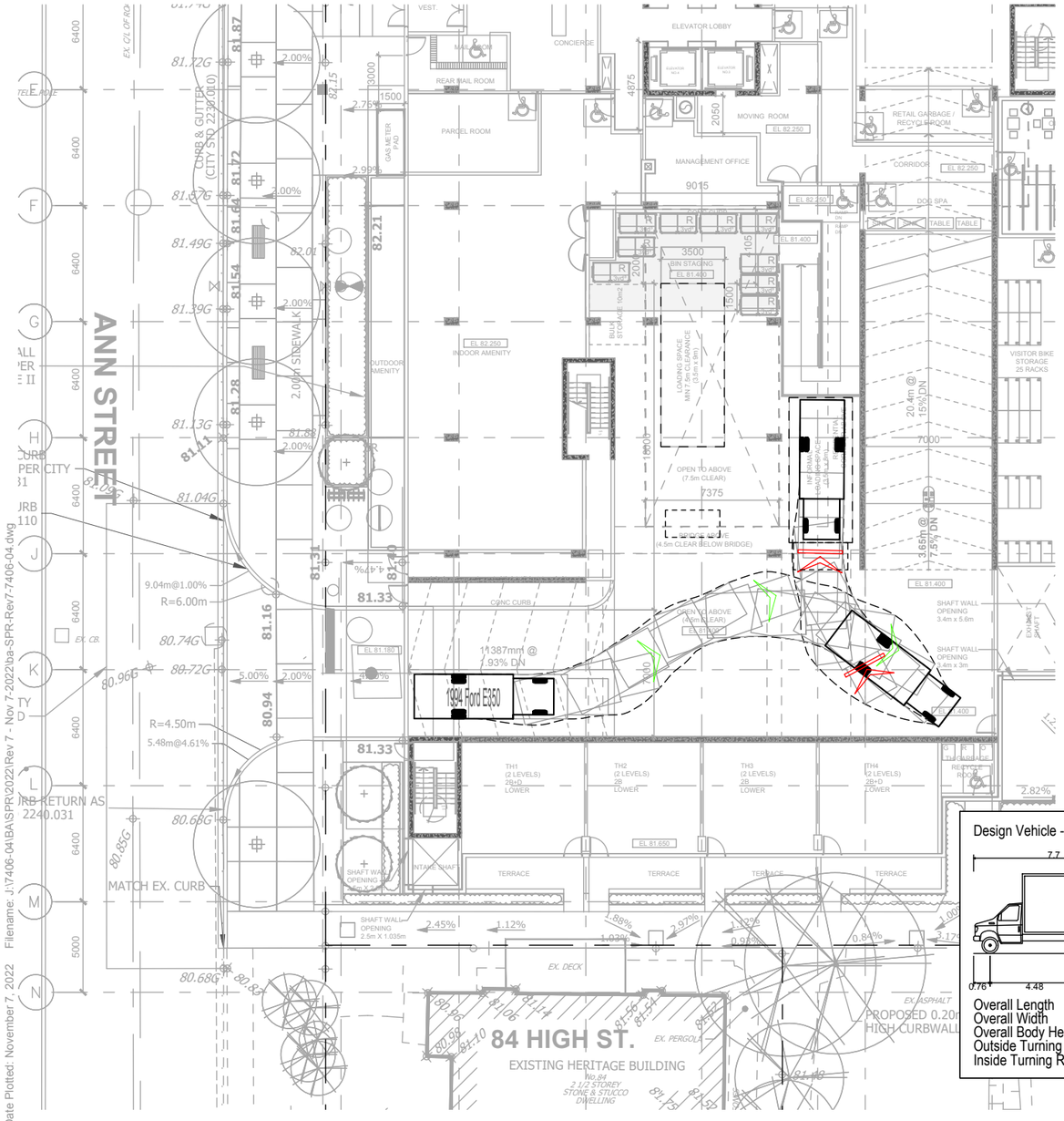
Inbound / Outbound Manoeuvres

Project:	10 West
Project No.	7406-04
Date:	October 1, 2021
Revised:	November 7, 2022

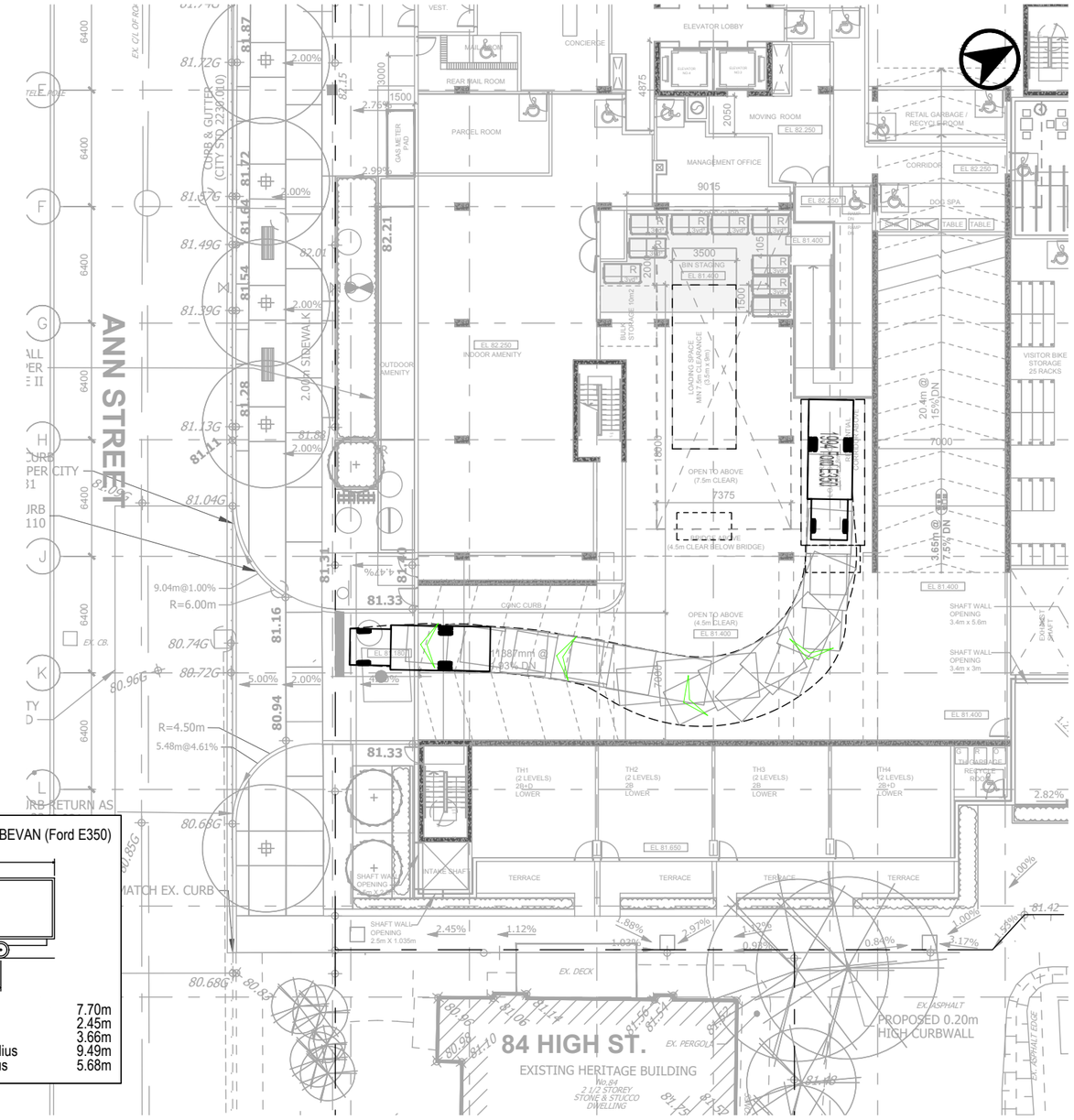
Scale 1:300 — 0 5 10m

Drawing No. VMD-1

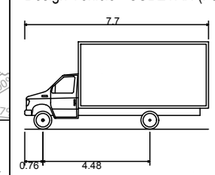
INBOUND



OUTBOUND



Design Vehicle - CUBEVAN (Ford E350)



Overall Length	7.70m
Overall Width	2.45m
Overall Body Height	3.66m
Outside Turning Radius	9.49m
Inside Turning Radius	5.68m

Date Plotted: November 7, 2022 Filename: J:\7406-04\BA\SPR\2022\Rev 7 - Nov 7-2022\ba-SPR-Rev7-7406-04.dwg

BA Group

10 West - Site Plan Review

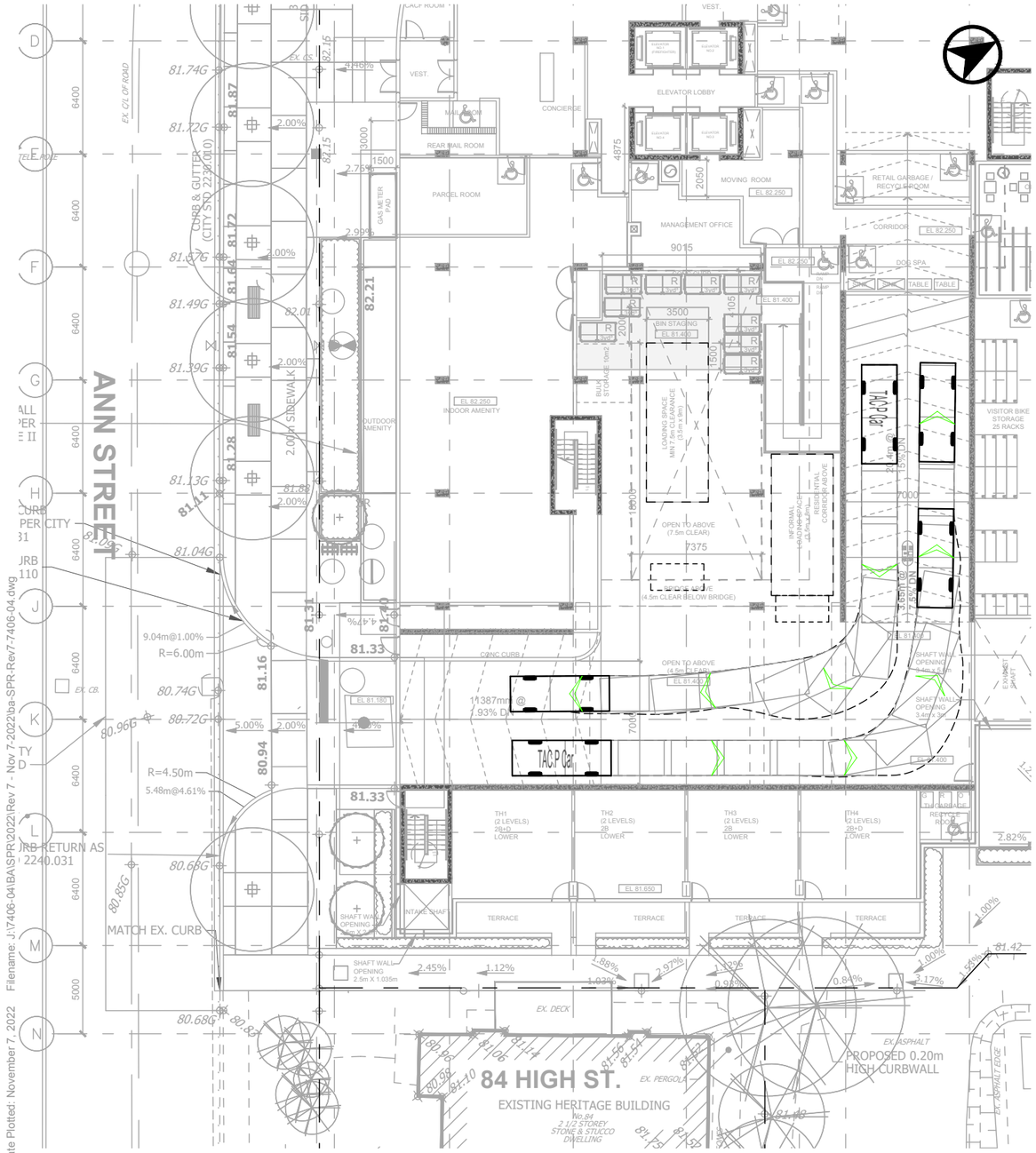
Small Delivery Truck Design Vehicle

Inbound / Outbound Manoeuvres

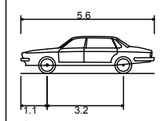
Project:	10 West
Project No.	7406-04
Date:	October 1, 2021
Revised:	November 7, 2022

Scale 1:300 (0 – 5 – 10m)

Drawing No. VMD-2



Design Vehicle - TAC P CAR



Overall Length	5.60m
Overall Width	2.00m
Overall Body Height	1.56m
Outside Turning Radius	6.90m
Inside Turning Radius	3.40m

BA Group

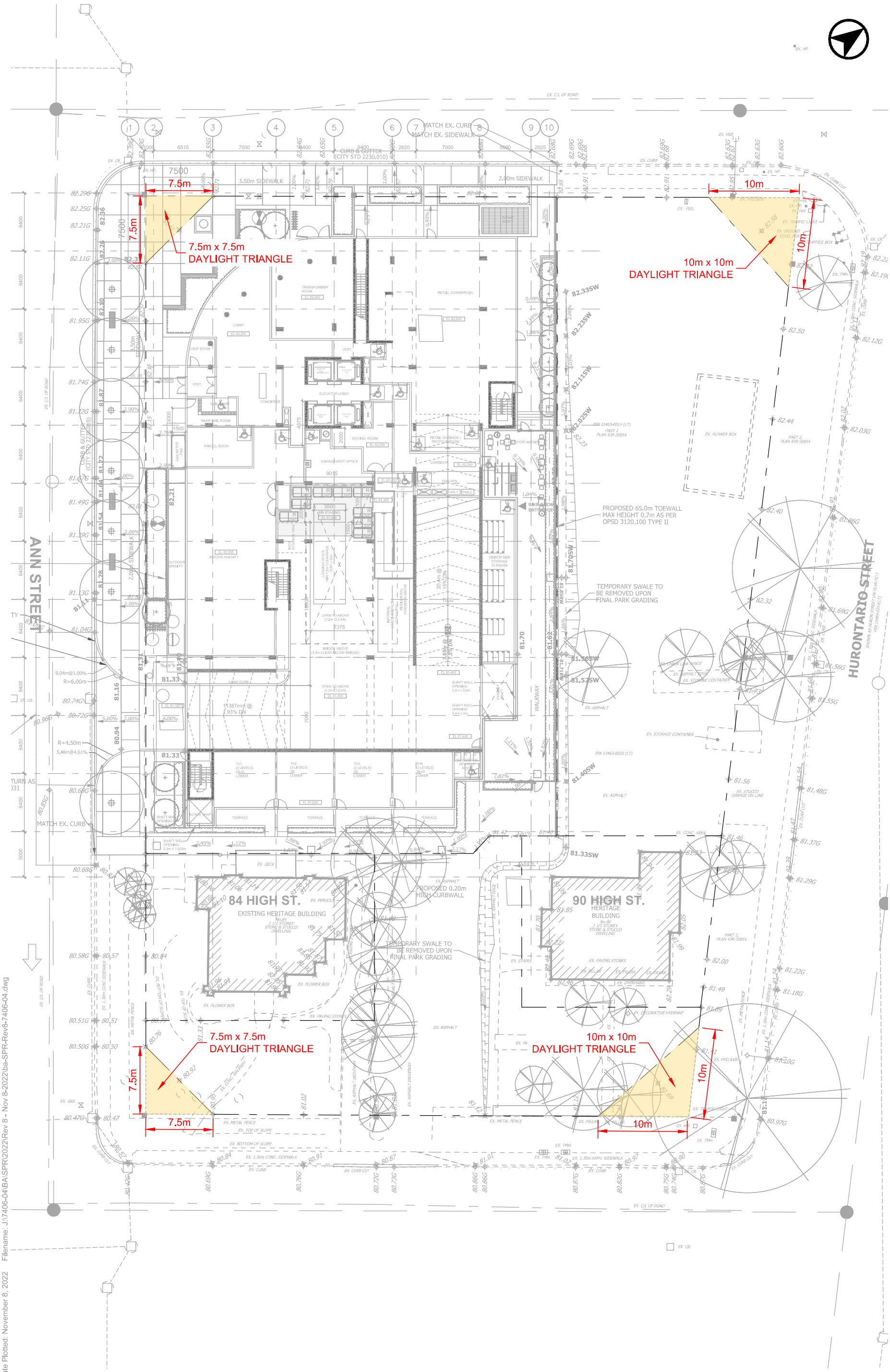
10 West - Site Plan Review

Passenger Car Design Vehicle
Inbound / Outbound Manoeuvres

Project:	10 West
Project No.	7406-04
Date:	October 1, 2021
Revised:	November 7, 2022

Scale 1:300 — 0 5 10m

Drawing No. VMD-3



BA Group

10 West - Site Plan Review

Ground Level
Daylight Triangle Review

Project:	10 West
Project No.	7406-04
Date:	November 3, 2022
Revised:	November 8, 2022

Scale 1:300 — 0 5 10m

Drawing No. SPR-1a

Appendix E Parking Proxy Surveys

Project: 42 Port St E
Project No: 7406-06
Location: Port Credit
Date: September 2022

No of Units:		
	26 Park St	84
	12 Park St	60
	1 Hurontario St	213
	6-8 Ann St	66
	7 Helene St	39

Residential Parking Summary

Date	Time	26 Park St				12 Park St				1 Hurontario St				6-8 Ann St				7 Helene St					
		Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate		
Friday September 23, 2022	2:00	81	67	83%	0.797619	55	44	80%	0.733333	312	224	72%	1.051643	-	-	-	-	40	26	65%	0.666667		0.812316
Wednesday September 28, 2022	2:00	81	54	67%	0.642857	55	40	73%	0.666667	312	221	71%	1.037559	86	62	72%	0.939394	40	26	65%	0.666667		0.790629
Average				75%	0.720238			76%	0.7			71%	1.044601			72%	0.939394			65%	0.666667	Average	0.81418

Project: 42 Port St E
Project No: 7406-06
Location: Port Credit
Date: September 2022

No of Units:		
	26 Park St	84
	28 Elizabeth St	102
	49 Queen St E	48
	1 Hurontario St	213
	6-8 Ann St	66
	66 High St E	48
	15 Elizabeth St N	47

Visitor Parking Summary

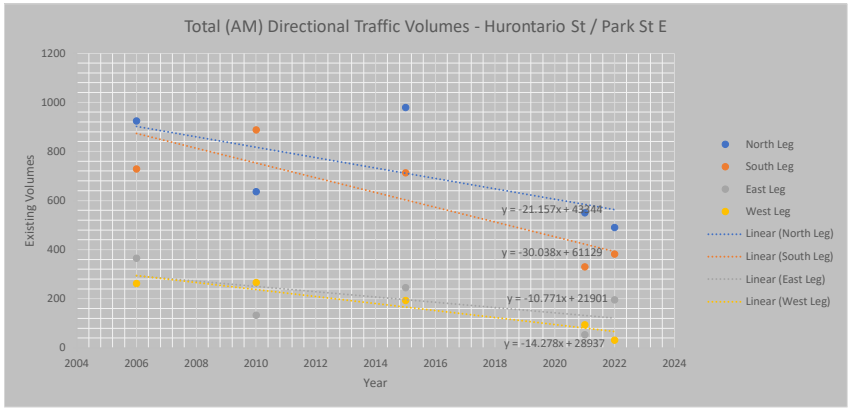
Date	Time	26 Park St				28 Elizabeth St				49 Queen St E				1 Hurontario St				6-8 Ann St				66 High St E				15 Elizabeth St N			
		Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate
Friday September 23, 2022	18:00	8	3	38%	0.035714	18	1	6%	0.009804	6	1	17%	0.020833	41	18	44%	0.084507	11	7	64%	0.106061	10	3	30%	0.0625	8	2	25%	0.042553
	19:00	8	2	25%	0.02381	18	0	0%	0	6	4	67%	0.083333	41	20	49%	0.093897	11	7	64%	0.106061	10	3	30%	0.0625	8	3	38%	0.06383
	20:00	8	2	25%	0.02381	18	0	0%	0	6	4	67%	0.083333	41	24	59%	0.112676	11	6	55%	0.090909	10	5	50%	0.104167	8	5	63%	0.106383
	21:00	8	1	13%	0.011905	18	1	6%	0.009804	6	4	67%	0.083333	41	20	49%	0.093897	11	6	55%	0.090909	10	7	70%	0.145833	8	5	63%	0.106383
	22:00	8	1	13%	0.011905	18	1	6%	0.009804	6	3	50%	0.0625	41	18	44%	0.084507	11	5	45%	0.075758	10	6	60%	0.125	8	2	25%	0.042553
	23:00	8	1	13%	0.011905	18	1	6%	0.009804	6	4	67%	0.083333	41	15	37%	0.070423	11	5	45%	0.075758	10	6	60%	0.125	8	1	13%	0.021277
Saturday September 24, 2022	12:00	8	5	63%	0.059524	18	1	6%	0.009804	6	4	67%	0.083333	41	20	49%	0.093897	11	3	27%	0.045455	10	3	30%	0.0625	8	4	50%	0.085106
	13:00	8	5	63%	0.059524	18	1	6%	0.009804	6	2	33%	0.041667	41	24	59%	0.112676	11	3	27%	0.045455	10	2	20%	0.041667	8	3	38%	0.06383
	14:00	8	8	100%	0.095238	18	1	6%	0.009804	6	2	33%	0.041667	41	28	68%	0.131455	11	4	36%	0.060606	10	5	50%	0.104167	8	2	25%	0.042553
	15:00	8	7	88%	0.083333	18	0	0%	0	6	2	33%	0.041667	41	31	76%	0.14554	11	6	55%	0.090909	10	7	70%	0.145833	8	2	25%	0.042553
	16:00	8	4	50%	0.047619	18	0	0%	0	6	3	50%	0.0625	41	26	63%	0.122066	11	5	45%	0.075758	10	5	50%	0.104167	8	1	13%	0.021277
	17:00	8	5	63%	0.059524	18	0	0%	0	6	3	50%	0.0625	41	27	66%	0.126761	11	6	55%	0.090909	10	7	70%	0.145833	8	1	13%	0.021277
	18:00	8	3	38%	0.035714	18	0	0%	0	6	2	33%	0.041667	41	25	61%	0.117371	11	7	64%	0.106061	10	6	60%	0.125	8	3	38%	0.06383
	19:00	8	4	50%	0.047619	18	0	0%	0	6	3	50%	0.0625	41	20	49%	0.093897	11	9	82%	0.136364	10	6	60%	0.125	8	4	50%	0.085106
	20:00	8	4	50%	0.047619	18	1	6%	0.009804	6	3	50%	0.0625	41	14	34%	0.065728	11	7	64%	0.106061	10	4	40%	0.083333	8	2	25%	0.042553
Friday September 30, 2022	18:00	8	4	50%	0.047619	18	1	6%	0.009804	6	1	17%	0.020833	41	10	24%	0.046948	11	2	18%	0.030303	10	2	20%	0.041667	8	4	50%	0.085106
	19:00	8	3	38%	0.035714	18	1	6%	0.009804	6	2	33%	0.041667	41	10	24%	0.046948	11	3	27%	0.045455	10	3	30%	0.0625	8	5	63%	0.106383
	20:00	8	1	13%	0.011905	18	0	0%	0	6	6	100%	0.125	41	14	34%	0.065728	11	3	27%	0.045455	10	4	40%	0.083333	8	4	50%	0.085106
	21:00	8	1	13%	0.011905	18	1	6%	0.009804	6	6	100%	0.125	41	12	29%	0.056338	11	3	27%	0.045455	10	5	50%	0.104167	8	4	50%	0.085106
	22:00	8	5	63%	0.059524	18	2	11%	0.019608	6	5	83%	0.104167	41	7	17%	0.032864	11	5	45%	0.075758	10	4	40%	0.083333	8	4	50%	0.085106
	23:00	8	4	50%	0.047619	18	2	11%	0.019608	6	6	100%	0.125	41	7	17%	0.032864	11	5	45%	0.075758	10	3	30%	0.0625	8	4	50%	0.085106
Saturday October 1, 2022	12:00	8	3	38%	0.035714	18	3	17%	0.029412	6	5	83%	0.104167	41	14	34%	0.065728	11	5	45%	0.075758	10	2	20%	0.041667	8	4	50%	0.085106
	13:00	8	5	63%	0.059524	18	2	11%	0.019608	6	6	100%	0.125	41	22	54%	0.103286	11	5	45%	0.075758	10	3	30%	0.0625	8	4	50%	0.085106
	14:00	8	5	63%	0.059524	18	0	0%	0	6	6	100%	0.125	41	28	68%	0.131455	11	5	45%	0.075758	10	5	50%	0.104167	8	2	25%	0.042553
	15:00	8	4	50%	0.047619	18	0	0%	0	6	5	83%	0.104167	41	27	66%	0.126761	11	6	55%	0.090909	10	5	50%	0.104167	8	2	25%	0.042553
	16:00	8	5	63%	0.059524	18	0	0%	0	6	5	83%	0.104167	41	25	61%	0.117371	11	5	45%	0.075758	10	4	40%	0.083333	8	1	13%	0.021277
	17:00	8	5	63%	0.059524	18	1	6%	0.009804	6	4	67%	0.083333	41	23	56%	0.107981	11	4	36%	0.060606	10	4	40%	0.083333	8	5	63%	0.106383
	18:00	8	7	88%	0.083333	18	2	11%	0.019608	6	4	67%	0.083333	41	22	54%	0.103286	11	6	55%	0.090909	10	3	30%	0.0625	8	5	63%	0.106383
	19:00	8	6	75%	0.071429	18	1	6%	0.009804	6	5	83%	0.104167	41	25	61%	0.117371	11	4	36%	0.060606	10	7	70%	0.145833	8	5	63%	0.106383
	20:00	8	7	88%	0.083333	18	1	6%	0.009804	6	6	100%	0.125	41	16	39%	0.075117	11	3	27%	0.045455	10	4	40%	0.083333	8	5	63%	0.106383

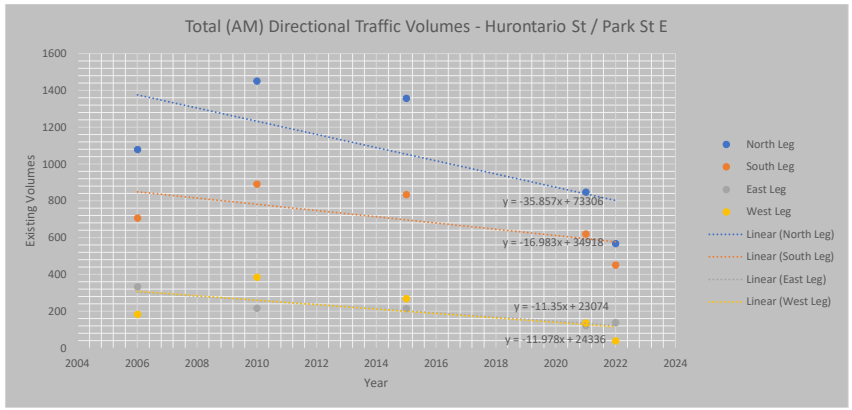
		26 Park St				28 Elizabeth St				49 Queen St E				1 Hurontario St				6-8 Ann St				66 High St E				15 Elizabeth St N			
		Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate	Supply	Demand	% Full	Unit Rate
Friday	18:00			44%	0.041667			6%	0.009804			17%	0.020833			34%	0.065728			41%	0.068182			25%	0.052083			38%	0.06383
	19:00			31%	0.029762			3%	0.004902			50%	0.0625			37%	0.070423			45%	0.075758			30%	0.0625			50%	0.085106
	20:00			19%	0.017857			0%	0			83%	0.104167			46%	0.089202			41%	0.068182			45%	0.09375			56%	0.095745
	21:00			13%	0.011905			6%	0.009804			83%	0.104167			39%	0.075117			41%	0.068182			60%	0.125			56%	0.095745
	22:00			38%	0.035714			8%	0.014706			67%	0.083333			30%	0.058685			45%	0.075758			50%	0.104167			38%	0.06383
	23:00			31%	0.029762			8%	0.014706			83%	0.104167			27%	0.051643			45%	0.075758			45%	0.09375			31%	0.053191
			Max	44%	0.04		Max	8%	0.01		Max	83%	0.10		Max	46%	0.09		Max	45%	0.08		Max	60%	0.13		Max	56%	0.10
			Min	13%	0.01		Min	0%	0.00		Min	17%	0.02		Min	27%	0.05		Min	41%	0.07		Min	25%	0.05		Min	31%	0.05
			Average	29%	0.03		Average	5%	0.01		Average	64%	0.08		Average	36%	0.07		Average	43%	0.07		Average	43%	0.09		Average	45%	0.08
Saturday	12:00			50%	0.047619			11%	0.019608			75%	0.09375			41%	0.079812			36%	0.060606			25%	0.052083			50%	0.085106
	13:00			63%	0.059524			8%	0.014706			67%	0.083333			56%	0.107981			36%	0.060606			25%	0.052083			44%	0.074468
	14:00			81%	0.077381			3%	0.004902			67%	0.083333			68%	0.131455			41%	0.068182			50%	0.104167			25%	0.042553
	15:00			69%	0.065476			0%	0			58%	0.072917			71%	0.13615			55%	0.090909			60%	0.125			25%	0.042553
	16:00			56%	0.053571			0%	0			67%	0.083333			62%	0.119718			45%	0.075758			45%	0.09375			13%	0.021277
	17:00			63%	0.059524			3%	0.004902			58%	0.072917			61%	0.117371			45%	0.075758			55%	0.114583			38%	0.06383
	18:00			63%	0.059524			6%	0.009804			50%	0.0625			57%	0.110329			59%	0.098485			45%	0.09375			50%	0.085106
	19:00			63%	0.059524			3%	0.004902			67%	0.083333			55%	0.105634			59%	0.098485			65%	0.135417			56%	0.095745
	20:00			69%	0.065476			6%	0.009804			75%	0.09375			37%	0.070423			45%	0.075758			40%	0.083333			44%	0.074468
			Max	81%	0.08		Max	11%	0.02		Max	75%	0.09		Max	71%	0.14		Max	59%	0.10		Max	65%	0.14		Max	56%	0.10
			Min	50%	0.05		Min	0%	0.00		Min	50%	0.06		Min	37%	0.07		Min	36%	0.06		Min	25%	0.05		Min	13%	0.02
			Average	64%	0.06		Average	4%	0.01		Average	65%	0.08		Average	57%	0.11		Average	47%	0.08		Average	46%	0.09		Average	38%	0.07

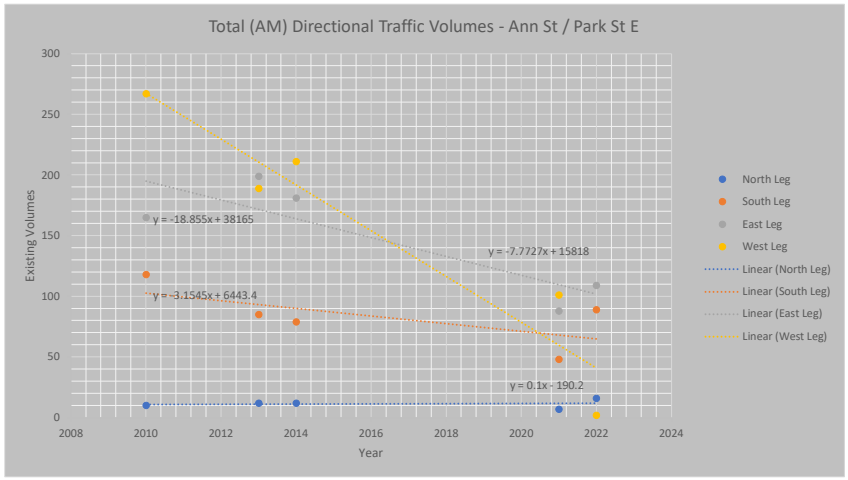
Max	0.13
Min	0.00
Average	0.06

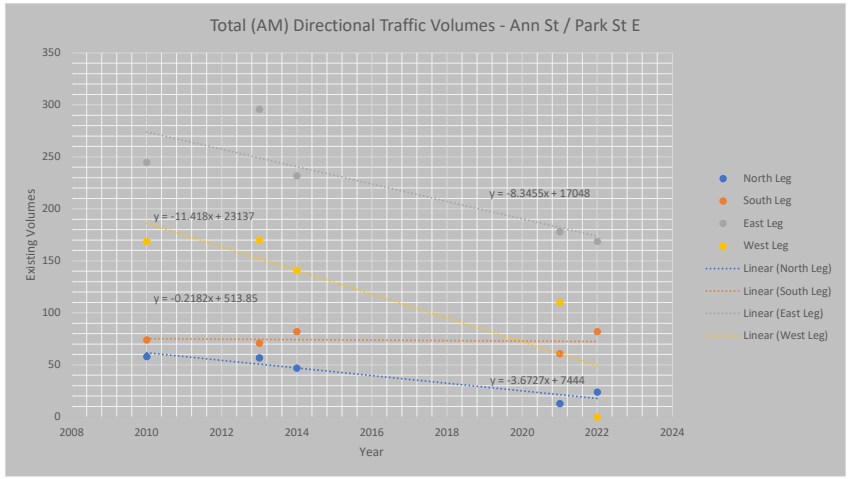
Max	0.14
Min	0.00
Average	0.07

Appendix F Assessment of Existing Traffic Volumes


Total (AM) Directional Traffic Volumes - Hurontario St / Park St E
Existing Volumes
Year
y = -21.157x + 43348
y = -30.038x + 61129
y = -10.771x + 21901
y = -14.278x + 28937
North Leg
South Leg
East Leg
West Leg
Linear (North Leg)
Linear (South Leg)
Linear (East Leg)
Linear (West Leg)


Total (AM) Directional Traffic Volumes - Hurontario St / Park St E
Existing Volumes
Year
y = -35.857x + 73306
y = -16.983x + 34918
y = -11.35x + 23074
y = -11.978x + 24336
North Leg
South Leg
East Leg
West Leg
Linear (North Leg)
Linear (South Leg)
Linear (East Leg)
Linear (West Leg)


Total (AM) Directional Traffic Volumes - Ann St / Park St E
Existing Volumes
Year
y = -18.855x + 38165
y = -7.7727x + 15818
y = -3.1545x + 6443.4
y = 0.1x - 190.2
North Leg
South Leg
East Leg
West Leg
Linear (North Leg)
Linear (South Leg)
Linear (East Leg)
Linear (West Leg)


Total (AM) Directional Traffic Volumes - Ann St / Park St E
Existing Volumes
Year
y = -8.3455x + 17048
y = -11.418x + 23137
y = -0.2182x + 513.85
y = -3.6727x + 7444
North Leg
South Leg
East Leg
West Leg
Linear (North Leg)
Linear (South Leg)
Linear (East Leg)
Linear (West Leg)

Hurontario / Park St E (AM)				
Year	N-Leg	S-Leg	E-Leg	W-Leg
2006	924	729	365	262
2010	636	888	133	266
2015	979	714	246	194
2021	551	330	54	95
2022	491	383	196	32
Trend Point	902.3836	873.1321	293.5891	295.4444
Slope	-21.1572	-30.03774	-10.77149	-14.27778
Growth	-2%	-3%	-4%	-5%

Hurontario / Park St E (PM)				
Year	N-Leg	S-Leg	E-Leg	W-Leg
2006	1079	707	333	183
2010	1451	891	217	386
2015	1356	834	215	269
2021	848	620	123	136
2022	568	451	139	39
Trend Point	1375.945	850.0524	305.2809	308.0063
Slope	-35.85744	-16.98323	-11.3501	-11.97799
Growth	-3%	-2%	-4%	-4%

Anne / Park St (AM)				
Year	N-Leg	S-Leg	E-Leg	W-Leg
2010	10	118	165	267
2013	12	85	199	189
2014	12	79	181	211
2021	7	48	88	101
2022	16	89	109	2
Trend Point	10.8	102.7273	195.0364	267.1273
Slope	0.1	-3.154545	-7.772727	-18.85455
Growth	1%	-3%	-4%	-7%

Anne / Park St (PM)				
Year	N-Leg	S-Leg	E-Leg	W-Leg
2010	58	74	245	169
2013	57	71	296	170
2014	47	82	232	141
2021	13	61	178	110
2022	24	82	169	0
Trend Point	61.83636	75.30909	274.0727	186.5091
Slope	-3.672727	-0.218182	-8.345455	-11.41818
Growth	-6%	0%	-3%	-6%

Appendix G Traffic Counts

Spectrum

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (5 . ANN ST & HIGH ST E)

Start Time	N Approach ANN ST						E Approach HIGH ST E						S Approach ANN ST						W Approach HIGH ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	1	1	1	0	2	3	0	2	0	0	1	2	2	6	0	0	0	8	0	11	2	0	0	13	26	
07:15:00	0	3	0	0	1	3	0	3	0	0	0	3	2	9	2	0	1	13	0	7	0	0	2	7	26	
07:30:00	0	2	2	0	4	4	1	3	2	0	1	6	1	10	0	0	0	11	1	6	2	0	2	9	30	
07:45:00	2	2	0	0	1	4	2	4	1	0	1	7	3	14	0	0	3	17	0	14	3	0	1	17	45	127
08:00:00	0	1	0	0	2	1	4	7	1	0	2	12	0	11	1	0	1	12	0	13	6	0	0	19	44	145
08:15:00	0	1	0	0	3	1	1	3	3	0	3	7	1	8	0	0	0	9	1	9	0	0	4	10	27	146
08:30:00	0	4	3	0	2	7	0	9	2	0	1	11	2	9	0	0	2	11	0	15	2	0	1	17	46	162
08:45:00	1	3	3	0	0	7	1	8	0	0	1	9	2	9	0	0	0	11	0	7	2	0	2	9	36	153
BREAK																										
16:00:00	2	3	1	0	3	6	0	20	3	0	0	23	4	14	0	0	5	18	5	17	1	0	2	23	70	
16:15:00	0	2	2	0	2	4	1	13	0	0	0	14	5	8	5	0	2	18	1	26	2	0	1	29	65	
16:30:00	3	5	1	0	3	9	2	14	2	0	3	18	5	8	1	1	2	15	2	28	0	0	3	30	72	
16:45:00	5	7	1	0	5	13	0	11	1	0	2	12	7	9	4	0	1	20	0	23	2	0	3	25	70	277
17:00:00	2	3	3	0	3	8	2	12	2	0	2	16	8	14	3	0	3	25	1	16	1	0	3	18	67	274
17:15:00	3	7	0	0	10	10	1	14	1	0	2	16	3	10	10	0	6	23	2	22	1	0	1	25	74	283
17:30:00	1	4	0	0	0	5	0	10	3	0	1	13	4	11	4	0	3	19	2	31	0	0	3	33	70	281
17:45:00	3	7	2	0	5	12	3	10	1	0	11	14	5	15	2	0	5	22	2	20	0	0	5	22	70	281
Grand Total	23	55	19	0	46	97	18	143	22	0	31	183	54	165	32	1	34	252	17	265	24	0	33	306	**838**	-
Approach%	23.7%	56.7%	19.6%	0%		-	9.8%	78.1%	12%	0%		-	21.4%	65.5%	12.7%	0.4%		-	5.6%	86.6%	7.8%	0%		-	-	-
Totals %	2.7%	6.6%	2.3%	0%		11.6%	2.1%	17.1%	2.6%	0%		21.8%	6.4%	19.7%	3.8%	0.1%		30.1%	2%	31.6%	2.9%	0%		36.5%	-	-
Heavy	0	0	5	0		-	5	2	0	0		-	0	75	0	0		-	0	12	2	0		-	-	-
Heavy %	0%	0%	26.3%	0%		-	27.8%	1.4%	0%	0%		-	0%	45.5%	0%	0%		-	0%	4.5%	8.3%	0%		-	-	-
Bicycles	0	2	1	0		-	1	1	2	0		-	0	1	0	0		-	0	9	0	0		-	-	-
Bicycle %	0%	3.6%	5.3%	0%		-	5.6%	0.7%	9.1%	0%		-	0%	0.6%	0%	0%		-	0%	3.4%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Broken Clouds (17.32 °C)

Start Time	N Approach ANN ST						E Approach HIGH ST E						S Approach ANN ST						W Approach HIGH ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
07:45:00	2	2	0	0	1	4	2	4	1	0	1	7	3	14	0	0	3	17	0	14	3	0	1	17	45
08:00:00	0	1	0	0	2	1	4	7	1	0	2	12	0	11	1	0	1	12	0	13	6	0	0	19	44
08:15:00	0	1	0	0	3	1	1	3	3	0	3	7	1	8	0	0	0	9	1	9	0	0	4	10	27
08:30:00	0	4	3	0	2	7	0	9	2	0	1	11	2	9	0	0	2	11	0	15	2	0	1	17	46
Grand Total	2	8	3	0	8	13	7	23	7	0	7	37	6	42	1	0	6	49	1	51	11	0	6	63	**162**
Approach%	15.4%	61.5%	23.1%	0%		-	18.9%	62.2%	18.9%	0%		-	12.2%	85.7%	2%	0%		-	1.6%	81%	17.5%	0%		-	-
Totals %	1.2%	4.9%	1.9%	0%		8%	4.3%	14.2%	4.3%	0%		22.8%	3.7%	25.9%	0.6%	0%		30.2%	0.6%	31.5%	6.8%	0%		38.9%	-
PHF	0.25	0.5	0.25	0		0.46	0.44	0.64	0.58	0		0.77	0.5	0.75	0.25	0		0.72	0.25	0.85	0.46	0		0.83	-
Heavy	0	0	2	0		2	4	1	0	0		5	0	23	0	0		23	0	10	2	0		12	-
Heavy %	0%	0%	66.7%	0%		15.4%	57.1%	4.3%	0%	0%		13.5%	0%	54.8%	0%	0%		46.9%	0%	19.6%	18.2%	0%		19%	-
Lights	2	8	1	0		11	3	22	7	0		32	6	19	1	0		26	1	41	9	0		51	-
Lights %	100%	100%	33.3%	0%		84.6%	42.9%	95.7%	100%	0%		86.5%	100%	45.2%	100%	0%		53.1%	100%	80.4%	81.8%	0%		81%	-
Single-Unit Trucks	0	0	2	0		2	4	0	0	0		4	0	4	0	0		4	0	10	2	0		12	-
Single-Unit Trucks %	0%	0%	66.7%	0%		15.4%	57.1%	0%	0%	0%		10.8%	0%	9.5%	0%	0%		8.2%	0%	19.6%	18.2%	0%		19%	-
Buses	0	0	0	0		0	0	1	0	0		1	0	19	0	0		19	0	0	0	0		0	-
Buses %	0%	0%	0%	0%		0%	0%	4.3%	0%	0%		2.7%	0%	45.2%	0%	0%		38.8%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	8	-	-	-	-	-	7	-	-	-	-	-	6	-	-	-	-	-	6	-	-
Pedestrians%	-	-	-	-	29.6%		-	-	-	-	25.9%		-	-	-	-	22.2%		-	-	-	-	22.2%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

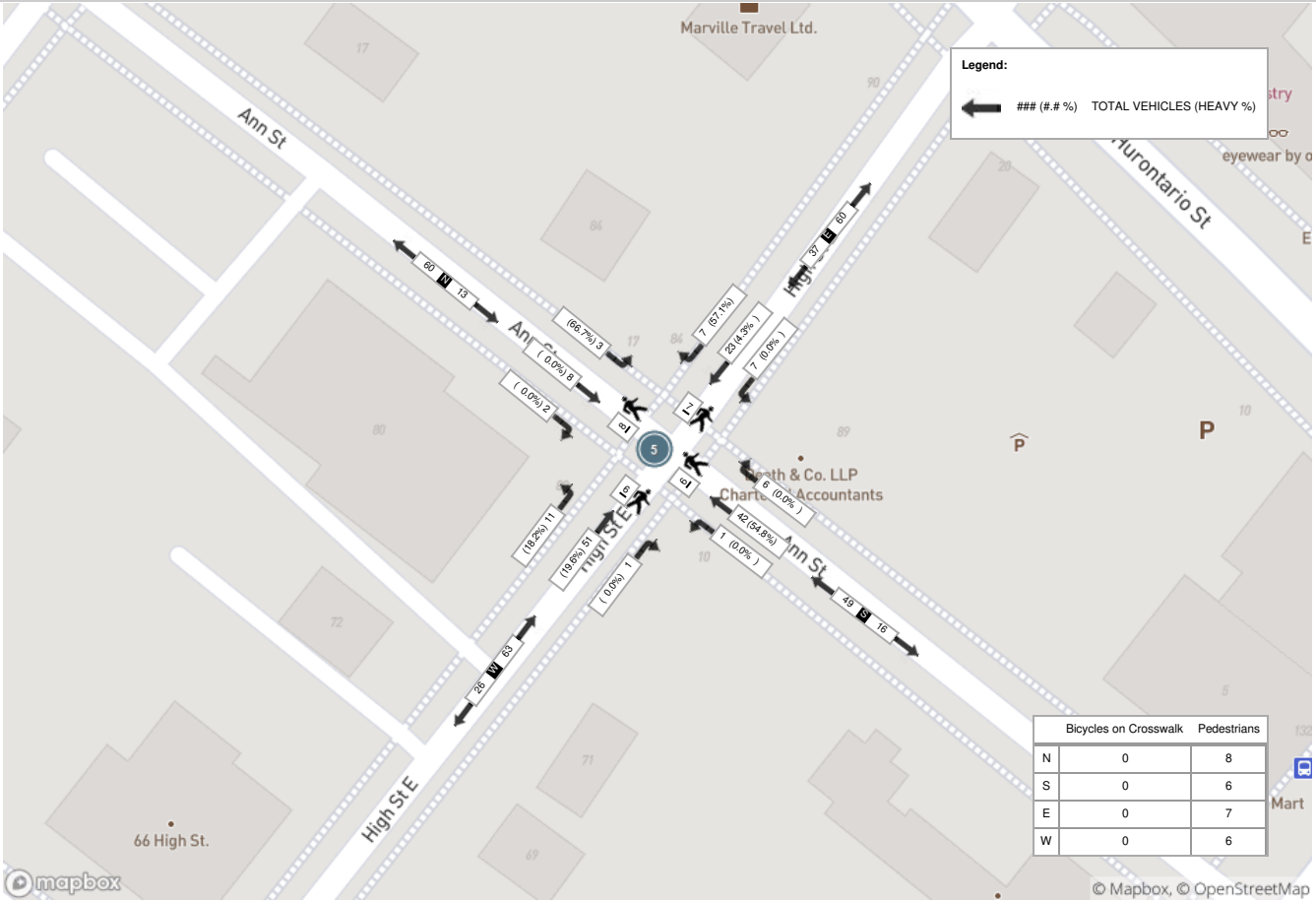
Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (27.5 °C)

Start Time	N Approach ANN ST						E Approach HIGH ST E						S Approach ANN ST						W Approach HIGH ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	3	5	1	0	3	9	2	14	2	0	3	18	5	8	1	1	2	15	2	28	0	0	3	30	72
16:45:00	5	7	1	0	5	13	0	11	1	0	2	12	7	9	4	0	1	20	0	23	2	0	3	25	70
17:00:00	2	3	3	0	3	8	2	12	2	0	2	16	8	14	3	0	3	25	1	16	1	0	3	18	67
17:15:00	3	7	0	0	10	10	1	14	1	0	2	16	3	10	10	0	6	23	2	22	1	0	1	25	74
Grand Total	13	22	5	0	21	40	5	51	6	0	9	62	23	41	18	1	12	83	5	89	4	0	10	98	**283**
Approach%	32.5%	55%	12.5%	0%		-	8.1%	82.3%	9.7%	0%		-	27.7%	49.4%	21.7%	1.2%		-	5.1%	90.8%	4.1%	0%		-	-
Totals %	4.6%	7.8%	1.8%	0%		14.1%	1.8%	18%	2.1%	0%		21.9%	8.1%	14.5%	6.4%	0.4%		29.3%	1.8%	31.4%	1.4%	0%		34.6%	-
PHF	0.65	0.79	0.42	0		0.77	0.63	0.91	0.75	0		0.86	0.72	0.73	0.45	0.25		0.83	0.63	0.79	0.5	0		0.82	-
Heavy	0	0	0	0		0	0	0	0	0		0	0	19	0	0		19	0	0	0	0		0	-
Heavy %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	46.3%	0%	0%		22.9%	0%	0%	0%	0%		0%	-
Lights	13	22	5	0		40	5	51	6	0		62	23	22	18	1		64	5	89	4	0		98	-
Lights %	100%	100%	100%	0%		100%	100%	100%	100%	0%		100%	100%	53.7%	100%	100%		77.1%	100%	100%	100%	0%		100%	-
Single-Unit Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Buses	0	0	0	0		0	0	0	0	0		0	0	19	0	0		19	0	0	0	0		0	-
Buses %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	46.3%	0%	0%		22.9%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	16	-	-	-	-	-	9	-	-	-	-	-	10	-	-	-	-	-	9	-	-
Pedestrians%	-	-	-	-	30.8%		-	-	-	-	17.3%		-	-	-	-	19.2%		-	-	-	-	17.3%		-
Bicycles on Crosswalk	-	-	-	-	5	-	-	-	-	-	0	-	-	-	-	-	2	-	-	-	-	-	1	-	-
Bicycles on Crosswalk%	-	-	-	-	9.6%		-	-	-	-	0%		-	-	-	-	3.8%		-	-	-	-	1.9%		-
Bicycles on Road	0	0	0	0	0	-	1	0	0	0	0	-	0	0	0	0	0	-	0	1	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:45 AM - 08:45 AM Weather: Broken Clouds (17.32 °C)

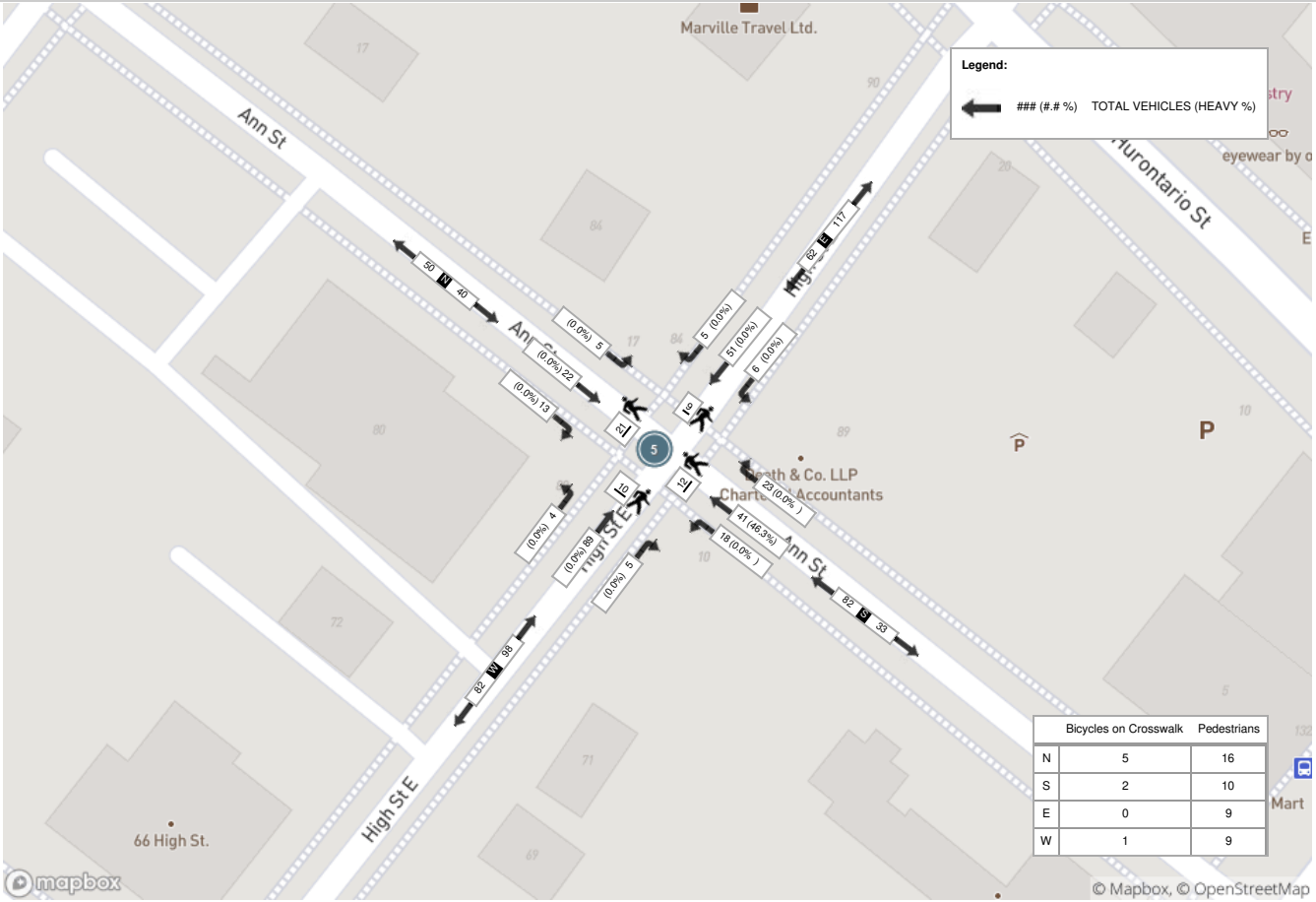


	Bicycles on Crosswalk	Pedestrians
N	0	8
S	0	6
E	0	7
W	0	6

Turning Movement Count
Location Name: ANN ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (27.5 °C)



	Bicycles on Crosswalk	Pedestrians
N	5	16
S	2	10
E	0	9
W	1	9

Turning Movement Count - Details Report

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

Municipality..... Mississauga

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

Count Date..... Tuesday, December 17, 2019

		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT
07:00	07:15	28	4	16	9	48	1	1	1	0	3	1	64	31	5	96	30	164	0	15	194
07:15	07:30	26	4	32	13	62	0	3	5	2	8	2	91	45	10	138	55	207	1	12	263
07:30	07:45	31	10	35	8	76	1	10	5	0	16	1	92	39	10	132	58	203	0	19	261
07:45	08:00	41	13	52	7	106	3	18	3	1	24	6	125	40	7	171	70	251	1	23	322
08:00	08:15	39	9	49	9	97	4	13	0	1	17	5	121	32	5	158	77	252	2	9	331
08:15	08:30	41	19	62	10	122	5	17	2	1	24	2	136	49	11	187	54	231	4	18	289
08:30	08:45	51	13	59	8	123	1	9	2	0	12	7	162	51	7	220	63	225	2	6	290
08:45	09:00	55	32	76	15	163	2	14	7	0	23	6	146	53	9	205	50	191	7	10	248
11:00	11:15	71	14	60	10	145	1	15	7	1	23	4	101	50	7	155	57	115	0	13	172
11:15	11:30	65	14	72	10	151	3	13	7	1	23	11	131	44	4	186	67	133	4	10	204
11:30	11:45	74	23	70	10	167	3	11	8	2	22	6	110	60	6	176	73	122	4	9	199
11:45	12:00	80	14	64	10	158	2	12	12	1	26	9	131	55	11	195	62	132	1	5	195
12:00	12:15	72	17	75	8	164	5	11	9	1	25	3	112	66	8	181	55	122	2	11	179
12:15	12:30	58	14	78	4	150	3	19	10	1	32	4	120	61	6	185	61	148	3	14	212
12:30	12:45	69	23	64	9	156	6	20	8	0	34	10	108	38	5	156	71	125	3	19	199
12:45	13:00	54	23	67	11	144	1	17	9	0	27	9	131	47	8	187	75	137	5	17	217
13:00	13:15	66	17	68	13	151	6	19	14	1	39	11	106	57	10	174	66	112	4	10	182
13:15	13:30	66	18	63	12	147	1	13	10	0	24	12	139	64	8	215	72	131	3	14	206
13:30	13:45	58	14	51	10	123	4	14	6	1	24	10	120	71	6	201	65	113	6	16	184
13:45	14:00	63	15	62	10	140	3	15	13	0	31	4	132	75	5	211	54	127	3	14	184
15:00	15:15	72	18	83	6	173	4	39	6	1	49	12	157	80	8	249	73	148	3	16	224
15:15	15:30	68	21	92	17	181	2	18	16	1	36	13	198	68	9	279	63	133	4	16	200
15:30	15:45	67	15	73	6	155	6	25	5	0	36	9	189	80	9	278	65	135	10	19	210
15:45	16:00	75	27	77	3	179	3	16	9	0	28	6	201	55	6	262	61	146	4	13	211
16:00	16:15	64	16	78	12	158	5	19	10	0	34	9	243	64	7	316	55	152	3	12	210
16:15	16:30	68	24	74	8	166	2	21	7	1	30	18	264	76	7	358	59	177	2	12	238
16:30	16:45	62	21	93	12	176	4	24	6	1	34	6	248	50	7	304	62	159	7	7	228
16:45	17:00	71	31	88	4	190	2	24	15	0	41	20	273	60	8	353	55	190	4	7	249
17:00	17:15	62	12	68	3	142	2	22	11	0	35	7	256	67	2	330	68	231	6	12	305
17:15	17:30	66	19	68	4	153	1	27	17	0	45	8	232	51	3	291	64	238	0	9	302
17:30	17:45	51	11	83	7	145	3	28	7	0	38	6	271	59	4	336	68	199	1	5	268
17:45	18:00	62	17	75	4	154	2	34	12	0	48	7	223	52	1	282	66	204	3	9	273
Total	.....	1896	542	2127	282	4565	91	561	259	18	911	244	5133	1790	219	7167	1994	5353	102	401	7449

Turning Movement Count - Details Report

Location..... HURONTARIO ST @ PARK ST E

Municipality..... Mississauga

Road 1 PARK ST E **Road 2** HURONTARIO ST

Count Date..... Thursday, June 04, 2015

		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT
07:00	07:15	5	56	48	11	109	14	106	1	7	121	1	8	15	1	24	32	6	2	1	40
07:15	07:30	13	82	52	11	147	8	184	5	16	197	0	0	9	2	9	47	3	1	0	51
07:30	07:45	16	89	43	12	148	17	169	2	7	188	0	13	31	1	44	63	4	7	3	74
07:45	08:00	18	111	41	11	170	3	113	2	7	118	0	6	17	1	23	35	4	4	0	43
08:00	08:15	37	140	46	26	223	5	189	6	12	200	0	0	29	1	29	56	6	3	3	65
08:15	08:30	75	124	31	17	230	2	172	4	12	178	1	4	64	1	69	30	5	8	2	43
08:30	08:45	58	177	52	23	287	3	163	14	18	180	4	5	82	13	91	30	8	2	2	40
08:45	09:00	36	167	36	14	239	1	150	5	19	156	11	8	38	2	57	32	9	5	2	46
11:00	11:15	32	161	35	18	228	5	142	1	9	148	0	3	24	4	27	23	1	4	3	28
11:15	11:30	26	180	32	20	238	1	166	5	18	172	1	3	19	0	23	31	1	5	4	37
11:30	11:45	34	195	21	16	250	2	162	7	12	171	2	2	26	1	30	22	5	4	1	31
11:45	12:00	32	193	35	18	260	0	166	2	11	168	2	3	38	1	43	16	5	4	0	25
12:00	12:15	30	163	30	12	223	1	169	4	8	174	1	2	31	1	34	28	1	2	3	31
12:15	12:30	39	160	24	21	223	0	148	5	14	153	3	6	28	0	37	21	3	2	1	26
12:30	12:45	21	168	23	18	212	3	146	1	13	150	2	1	19	0	22	18	2	1	4	21
12:45	13:00	15	219	32	12	266	0	194	3	17	197	1	5	15	2	21	26	3	1	2	30
13:00	13:15	21	176	40	18	237	1	160	3	12	164	0	1	25	3	26	36	2	3	2	41
13:15	13:30	18	142	31	13	191	0	166	11	13	177	0	4	26	3	30	17	3	2	2	22
13:30	13:45	16	189	29	25	234	0	189	3	20	192	0	3	30	0	33	32	1	5	4	38
13:45	14:00	20	173	36	19	229	0	151	4	13	155	2	2	22	1	26	16	6	0	0	22
15:00	15:15	61	173	31	16	265	1	164	4	19	169	2	4	30	3	36	25	5	0	0	30
15:15	15:30	54	220	43	23	317	1	180	8	21	189	8	7	59	3	74	22	10	2	2	34
15:30	15:45	45	199	39	10	283	1	208	6	13	215	8	16	104	12	128	22	4	1	1	27
15:45	16:00	32	208	51	11	291	4	204	6	14	214	2	6	80	2	88	35	4	1	1	40
16:00	16:15	51	217	42	15	310	4	184	4	12	192	4	4	53	0	61	26	1	3	0	30
16:15	16:30	34	203	54	11	291	2	157	3	11	162	4	10	42	7	56	45	4	3	2	52
16:30	16:45	22	196	46	10	264	5	167	5	10	177	4	11	35	2	50	33	6	7	1	46
16:45	17:00	27	191	69	11	287	2	168	6	9	176	3	18	32	1	53	51	6	8	0	65
17:00	17:15	30	204	60	15	294	2	189	4	6	195	1	6	39	2	46	47	10	5	2	62
17:15	17:30	47	224	66	11	337	3	171	6	7	180	1	11	32	0	44	58	5	5	1	68
17:30	17:45	38	266	97	12	401	6	213	6	10	225	2	14	45	1	61	26	3	3	1	32
17:45	18:00	44	258	70	10	372	8	218	8	8	234	2	17	45	2	64	83	17	7	0	107
Total	.....	1047	5624	1385	490	8056	105	5428	154	398	5687	72	203	1184	73	1459	1084	153	110	50	1347

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (2 . HURONTARIO ST & HIGH ST E)

Start Time	N Approach HURONTARIO ST						E Approach HIGH ST E						S Approach HURONTARIO ST						W Approach HIGH ST E						Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Thru N:S	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	Left E:S	UTurn E:E	Peds E:	Approach Total	Right S:E	Thru S:N	Left S:W	UTurn S:S	Peds S:	Approach Total	Right W:S	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	2	42	2	0	3	46	6	0	0	0	3	6	0	62	0	0	0	62	3	0	12	0	1	15	129	
07:15:00	3	64	4	0	1	71	2	0	2	0	3	4	1	50	0	0	0	51	3	0	8	0	1	11	137	
07:30:00	5	61	3	0	1	69	9	1	6	0	4	16	1	69	1	0	1	71	4	1	4	0	3	9	165	
07:45:00	6	62	5	0	1	73	7	0	2	0	2	9	1	78	1	0	1	80	2	0	12	0	1	14	176	607
08:00:00	8	65	4	0	0	77	3	1	3	0	2	7	3	64	2	0	2	69	3	0	11	0	0	14	167	645
08:15:00	8	94	5	0	1	107	7	0	3	0	1	10	3	63	0	0	0	66	2	0	9	0	0	11	194	702
08:30:00	12	109	8	0	2	129	4	1	5	0	2	10	1	59	2	0	3	62	6	0	10	0	2	16	217	754
08:45:00	8	98	14	0	1	120	5	0	0	0	6	5	2	87	0	0	1	89	4	0	9	0	1	13	227	805
BREAK																										
16:00:00	18	115	3	0	2	136	7	2	1	0	18	10	8	100	4	0	4	112	6	1	13	0	4	20	278	
16:15:00	6	125	2	0	3	133	9	1	5	0	6	15	1	119	5	0	1	125	9	1	22	0	1	32	305	
16:30:00	12	128	5	0	0	145	6	2	4	0	11	12	3	120	5	0	2	128	5	3	28	0	1	36	321	
16:45:00	9	146	5	0	2	160	5	3	2	0	7	10	4	127	2	0	2	133	9	1	20	0	3	30	333	1237
17:00:00	8	144	6	0	4	158	6	1	3	0	8	10	1	131	4	0	3	136	8	0	21	0	3	29	333	1292
17:15:00	8	153	4	0	6	165	9	1	1	1	11	12	7	118	4	0	7	129	9	0	16	0	1	25	331	1318
17:30:00	12	155	9	0	4	176	3	1	4	0	22	8	2	128	2	0	4	132	6	0	29	0	2	35	351	1348
17:45:00	5	116	3	0	4	124	5	1	3	0	13	9	5	127	8	0	5	140	8	2	16	0	8	26	299	1314
Grand Total	130	1677	82	0	35	1889	93	15	44	1	119	153	43	1502	40	0	36	1585	87	9	240	0	32	336	**3963**	-
Approach%	6.9%	88.8%	4.3%	0%		-	60.8%	9.8%	28.8%	0.7%		-	2.7%	94.8%	2.5%	0%		-	25.9%	2.7%	71.4%	0%		-	-	-
Totals %	3.3%	42.3%	2.1%	0%		47.7%	2.3%	0.4%	1.1%	0%		3.9%	1.1%	37.9%	1%	0%		40%	2.2%	0.2%	6.1%	0%		8.5%	-	-
Heavy	7	121	3	0		-	3	0	3	0		-	2	124	0	0		-	0	0	17	0		-	-	-
Heavy %	5.4%	7.2%	3.7%	0%		-	3.2%	0%	6.8%	0%		-	4.7%	8.3%	0%	0%		-	0%	0%	7.1%	0%		-	-	-
Bicycles	0	5	0	0		-	0	2	0	0		-	1	2	1	0		-	0	1	2	0		-	-	-
Bicycle %	0%	0.3%	0%	0%		-	0%	13.3%	0%	0%		-	2.3%	0.1%	2.5%	0%		-	0%	11.1%	0.8%	0%		-	-	-

Turning Movement Count
Location Name: HURONTARIO ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (17.32 °C)

Start Time	N Approach HURONTARIO ST						E Approach HIGH ST E						S Approach HURONTARIO ST						W Approach HIGH ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
08:00:00	8	65	4	0	0	77	3	1	3	0	2	7	3	64	2	0	2	69	3	0	11	0	0	14	167
08:15:00	8	94	5	0	1	107	7	0	3	0	1	10	3	63	0	0	0	66	2	0	9	0	0	11	194
08:30:00	12	109	8	0	2	129	4	1	5	0	2	10	1	59	2	0	3	62	6	0	10	0	2	16	217
08:45:00	8	98	14	0	1	120	5	0	0	0	6	5	2	87	0	0	1	89	4	0	9	0	1	13	227
Grand Total	36	366	31	0	4	433	19	2	11	0	11	32	9	273	4	0	6	286	15	0	39	0	3	54	**805**
Approach%	8.3%	84.5%	7.2%	0%		-	59.4%	6.3%	34.4%	0%		-	3.1%	95.5%	1.4%	0%		-	27.8%	0%	72.2%	0%		-	-
Totals %	4.5%	45.5%	3.9%	0%		53.8%	2.4%	0.2%	1.4%	0%		4%	1.1%	33.9%	0.5%	0%		35.5%	1.9%	0%	4.8%	0%		6.7%	-
PHF	0.75	0.84	0.55	0		0.84	0.68	0.5	0.55	0		0.8	0.75	0.78	0.5	0		0.8	0.63	0	0.89	0		0.84	-
Heavy	4	51	2	0		57	1	0	3	0		4	1	45	0	0		46	0	0	9	0		9	-
Heavy %	11.1%	13.9%	6.5%	0%		13.2%	5.3%	0%	27.3%	0%		12.5%	11.1%	16.5%	0%	0%		16.1%	0%	0%	23.1%	0%		16.7%	-
Lights	32	315	29	0		376	18	2	8	0		28	8	228	4	0		240	15	0	30	0		45	-
Lights %	88.9%	86.1%	93.5%	0%		86.8%	94.7%	100%	72.7%	0%		87.5%	88.9%	83.5%	100%	0%		83.9%	100%	0%	76.9%	0%		83.3%	-
Single-Unit Trucks	3	39	2	0		44	1	0	3	0		4	1	32	0	0		33	0	0	9	0		9	-
Single-Unit Trucks %	8.3%	10.7%	6.5%	0%		10.2%	5.3%	0%	27.3%	0%		12.5%	11.1%	11.7%	0%	0%		11.5%	0%	0%	23.1%	0%		16.7%	-
Buses	1	9	0	0		10	0	0	0	0		0	0	10	0	0		10	0	0	0	0		0	-
Buses %	2.8%	2.5%	0%	0%		2.3%	0%	0%	0%	0%		0%	0%	3.7%	0%	0%		3.5%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	3	0	0		3	0	0	0	0		0	0	3	0	0		3	0	0	0	0		0	-
Articulated Trucks %	0%	0.8%	0%	0%		0.7%	0%	0%	0%	0%		0%	0%	1.1%	0%	0%		1%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	4	-	-	-	-	-	11	-	-	-	-	-	6	-	-	-	-	-	3	-	-
Pedestrians%	-	-	-	-	16.7%		-	-	-	-	45.8%		-	-	-	-	25%		-	-	-	-	12.5%		-
Bicycles on Crosswalk	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-
Bicycles on Road	0	1	0	0	0	-	0	0	0	0	0	-	1	1	0	0	0	-	0	0	1	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: HURONTARIO ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

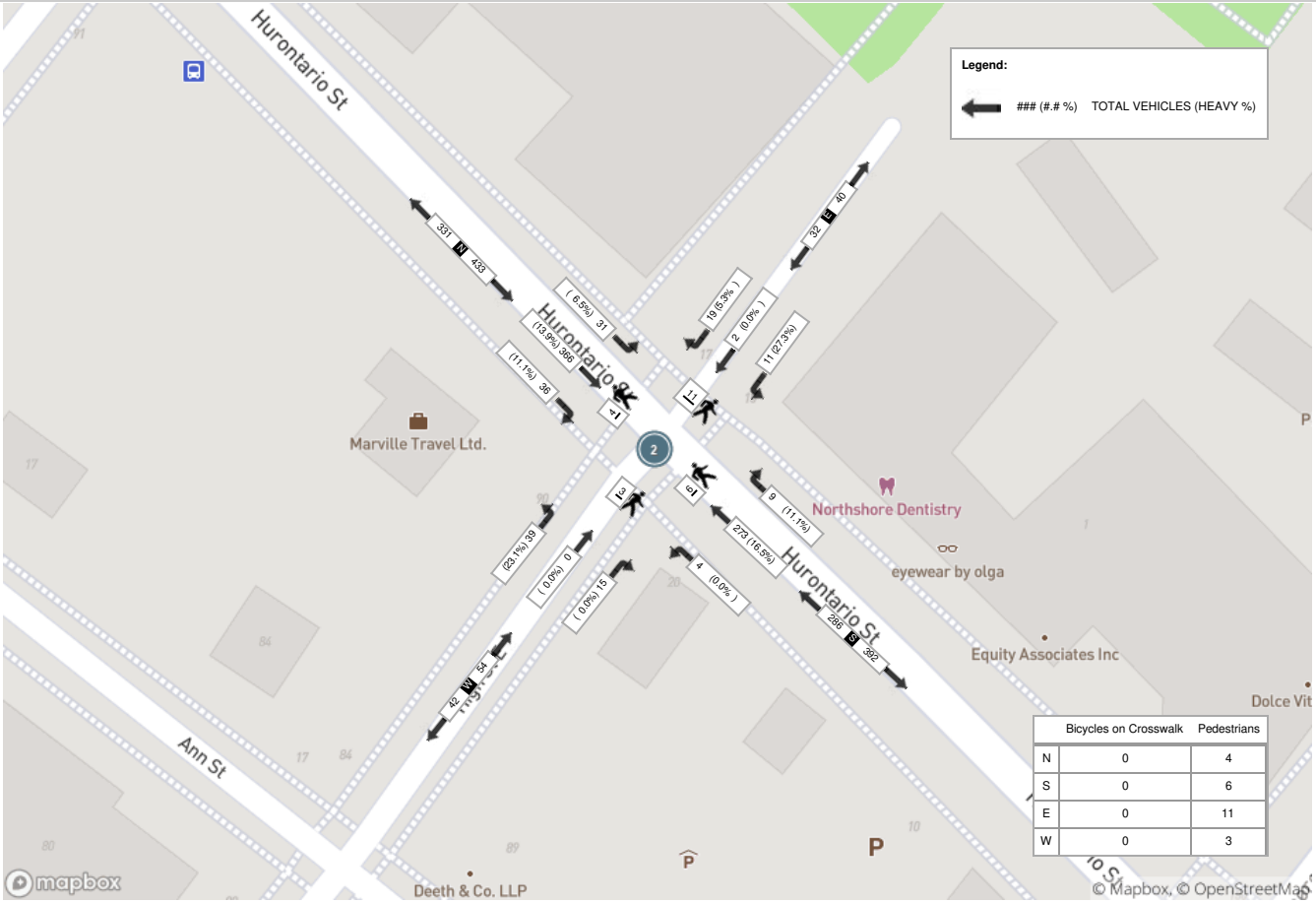
Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (27.5 °C)

Start Time	N Approach HURONTARIO ST						E Approach HIGH ST E						S Approach HURONTARIO ST						W Approach HIGH ST E						Int. Total (15 min)
	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	Right	Thru	Left	UTurn	Peds	Approach Total	
16:45:00	9	146	5	0	2	160	5	3	2	0	7	10	4	127	2	0	2	133	9	1	20	0	3	30	333
17:00:00	8	144	6	0	4	158	6	1	3	0	8	10	1	131	4	0	3	136	8	0	21	0	3	29	333
17:15:00	8	153	4	0	6	165	9	1	1	1	11	12	7	118	4	0	7	129	9	0	16	0	1	25	331
17:30:00	12	155	9	0	4	176	3	1	4	0	22	8	2	128	2	0	4	132	6	0	29	0	2	35	351
Grand Total	37	598	24	0	16	659	23	6	10	1	48	40	14	504	12	0	16	530	32	1	86	0	9	119	**1348**
Approach%	5.6%	90.7%	3.6%	0%		-	57.5%	15%	25%	2.5%		-	2.6%	95.1%	2.3%	0%		-	26.9%	0.8%	72.3%	0%		-	-
Totals %	2.7%	44.4%	1.8%	0%		48.9%	1.7%	0.4%	0.7%	0.1%		3%	1%	37.4%	0.9%	0%		39.3%	2.4%	0.1%	6.4%	0%		8.8%	-
PHF	0.77	0.96	0.67	0		0.94	0.64	0.5	0.63	0.25		0.83	0.5	0.96	0.75	0		0.97	0.89	0.25	0.74	0		0.85	-
Heavy	0	16	1	0		17	1	0	0	0		1	0	17	0	0		17	0	0	0	0		0	-
Heavy %	0%	2.7%	4.2%	0%		2.6%	4.3%	0%	0%	0%		2.5%	0%	3.4%	0%	0%		3.2%	0%	0%	0%	0%		0%	-
Lights	37	582	23	0		642	22	6	10	1		39	14	487	12	0		513	32	1	86	0		119	-
Lights %	100%	97.3%	95.8%	0%		97.4%	95.7%	100%	100%	100%		97.5%	100%	96.6%	100%	0%		96.8%	100%	100%	100%	0%		100%	-
Single-Unit Trucks	0	6	1	0		7	1	0	0	0		1	0	9	0	0		9	0	0	0	0		0	-
Single-Unit Trucks %	0%	1%	4.2%	0%		1.1%	4.3%	0%	0%	0%		2.5%	0%	1.8%	0%	0%		1.7%	0%	0%	0%	0%		0%	-
Buses	0	10	0	0		10	0	0	0	0		0	0	8	0	0		8	0	0	0	0		0	-
Buses %	0%	1.7%	0%	0%		1.5%	0%	0%	0%	0%		0%	0%	1.6%	0%	0%		1.5%	0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	-	13	-	-	-	-	-	32	-	-	-	-	-	12	-	-	-	-	-	7	-	-
Pedestrians%	-	-	-	-	14.6%		-	-	-	-	36%		-	-	-	-	13.5%		-	-	-	-	7.9%		-
Bicycles on Crosswalk	-	-	-	-	3	-	-	-	-	-	16	-	-	-	-	-	4	-	-	-	-	-	2	-	-
Bicycles on Crosswalk%	-	-	-	-	3.4%		-	-	-	-	18%		-	-	-	-	4.5%		-	-	-	-	2.2%		-
Bicycles on Road	0	0	0	0	0	-	0	2	0	0	0	-	0	1	1	0	0	-	0	0	0	0	0	-	-
Bicycles on Road%	-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-	-	-	-	0%		-

Turning Movement Count
Location Name: HURONTARIO ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Broken Clouds (17.32 °C)

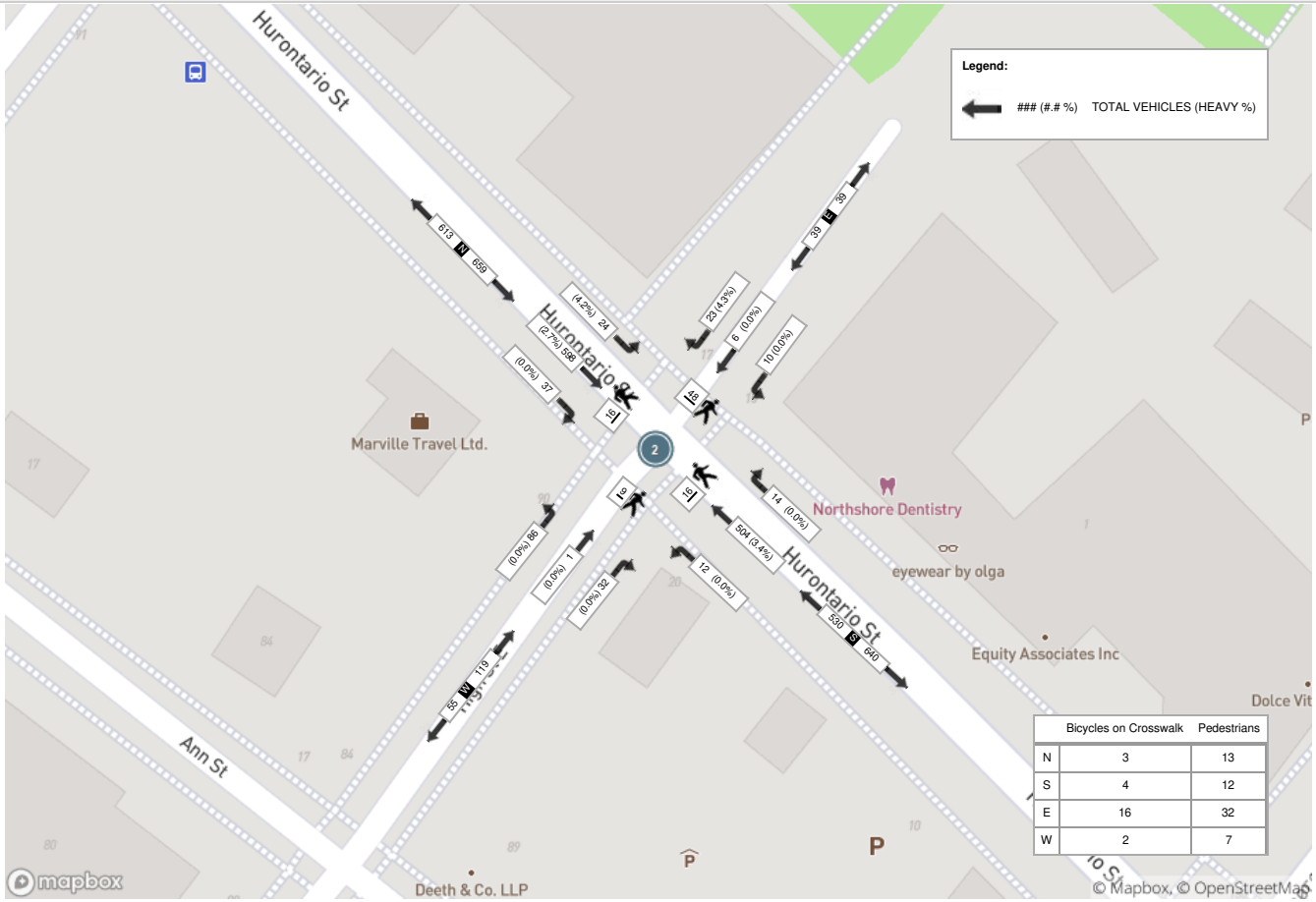


	Bicycles on Crosswalk	Pedestrians
N	0	4
S	0	6
E	0	11
W	0	3

Turning Movement Count
Location Name: HURONTARIO ST & HIGH ST E
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:45 PM - 05:45 PM Weather: Broken Clouds (27.5 °C)



	Bicycles on Crosswalk	Pedestrians
N	3	13
S	4	12
E	16	32
W	2	7

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ANN ST
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (13 . LAKESHORE RD W & ANN ST)

Start Time	N Approach ANN ST					E Approach LAKESHORE RD E					W Approach LAKESHORE RD E					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	U-Turn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	U-Turn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	U-Turn W:W	Peds W:	Approach Total		
07:00:00	1	0	0	6	1	11	100	0	0	111	315	22	0	0	337	449	
07:15:00	5	0	0	6	5	12	105	0	0	117	325	15	0	0	340	462	
07:30:00	4	1	0	3	5	15	131	0	1	146	394	22	0	0	416	567	
07:45:00	3	0	0	6	3	12	163	0	0	175	392	10	0	0	402	580	2058
08:00:00	5	1	0	11	6	11	158	0	0	169	376	13	0	0	389	564	2173
08:15:00	4	0	0	4	4	9	199	0	0	208	414	10	0	0	424	636	2347
08:30:00	6	0	0	14	6	10	237	0	0	247	356	10	0	0	366	619	2399
08:45:00	6	0	0	13	6	10	251	0	0	261	306	11	0	0	317	584	2403
BREAK																	
16:00:00	4	0	0	9	4	15	331	0	0	346	220	16	0	0	236	586	
16:15:00	5	0	0	7	5	13	342	0	0	355	260	16	0	0	276	636	
16:30:00	13	0	0	10	13	17	349	0	0	366	238	18	0	0	256	635	
16:45:00	9	0	0	7	9	12	364	1	0	377	240	19	0	0	259	645	2502
17:00:00	8	0	0	8	8	12	359	0	1	371	268	12	0	0	280	659	2575
17:15:00	16	1	0	13	17	12	342	0	0	354	234	20	0	0	254	625	2564
17:30:00	13	1	0	7	14	14	345	0	0	359	254	17	0	1	271	644	2573
17:45:00	6	0	0	8	6	14	355	0	0	369	232	15	1	1	248	623	2551
Grand Total	108	4	0	132	112	199	4131	1	2	4331	4824	246	1	2	5071	**9514**	-
Approach%	96.4%	3.6%	0%		-	4.6%	95.4%	0%		-	95.1%	4.9%	0%		-	-	-
Totals %	1.1%	0%	0%		1.2%	2.1%	43.4%	0%		45.5%	50.7%	2.6%	0%		53.3%	-	-
Heavy	2	0	0		-	76	114	0		-	194	26	0		-	-	-
Heavy %	1.9%	0%	0%		-	38.2%	2.8%	0%		-	4%	10.6%	0%		-	-	-
Bicycles	0	0	0		-	0	1	0		-	3	0	0		-	-	-
Bicycle %	0%	0%	0%		-	0%	0%	0%		-	0.1%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ANN ST
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (6.2 °C)

Start Time	N Approach ANN ST					E Approach LAKESHORE RD E					W Approach LAKESHORE RD E					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
08:00:00	5	1	0	11	6	11	158	0	0	169	376	13	0	0	389	564
08:15:00	4	0	0	4	4	9	199	0	0	208	414	10	0	0	424	636
08:30:00	6	0	0	14	6	10	237	0	0	247	356	10	0	0	366	619
08:45:00	6	0	0	13	6	10	251	0	0	261	306	11	0	0	317	584
Grand Total	21	1	0	42	22	40	845	0	0	885	1452	44	0	0	1496	**2403**
Approach%	95.5%	4.5%	0%		-	4.5%	95.5%	0%		-	97.1%	2.9%	0%		-	-
Totals %	0.9%	0%	0%		0.9%	1.7%	35.2%	0%		36.8%	60.4%	1.8%	0%		62.3%	-
PHF	0.88	0.25	0		0.92	0.91	0.84	0		0.85	0.88	0.85	0		0.88	-
Heavy	1	0	0		1	19	45	0		64	65	6	0		71	-
Heavy %	4.8%	0%	0%		4.5%	47.5%	5.3%	0%		7.2%	4.5%	13.6%	0%		4.7%	-
Lights	20	1	0		21	21	800	0		821	1387	38	0		1425	-
Lights %	95.2%	100%	0%		95.5%	52.5%	94.7%	0%		92.8%	95.5%	86.4%	0%		95.3%	-
Single-Unit Trucks	1	0	0		1	0	20	0		20	15	0	0		15	-
Single-Unit Trucks %	4.8%	0%	0%		4.5%	0%	2.4%	0%		2.3%	1%	0%	0%		1%	-
Buses	0	0	0		0	19	19	0		38	45	6	0		51	-
Buses %	0%	0%	0%		0%	47.5%	2.2%	0%		4.3%	3.1%	13.6%	0%		3.4%	-
Articulated Trucks	0	0	0		0	0	6	0		6	5	0	0		5	-
Articulated Trucks %	0%	0%	0%		0%	0%	0.7%	0%		0.7%	0.3%	0%	0%		0.3%	-
Pedestrians	-	-	-	42	-	-	-	-	0	-	-	-	-	0	-	-
Pedestrians%	-	-	-	100%		-	-	-	0%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: LAKESHORE RD W & ANN ST
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

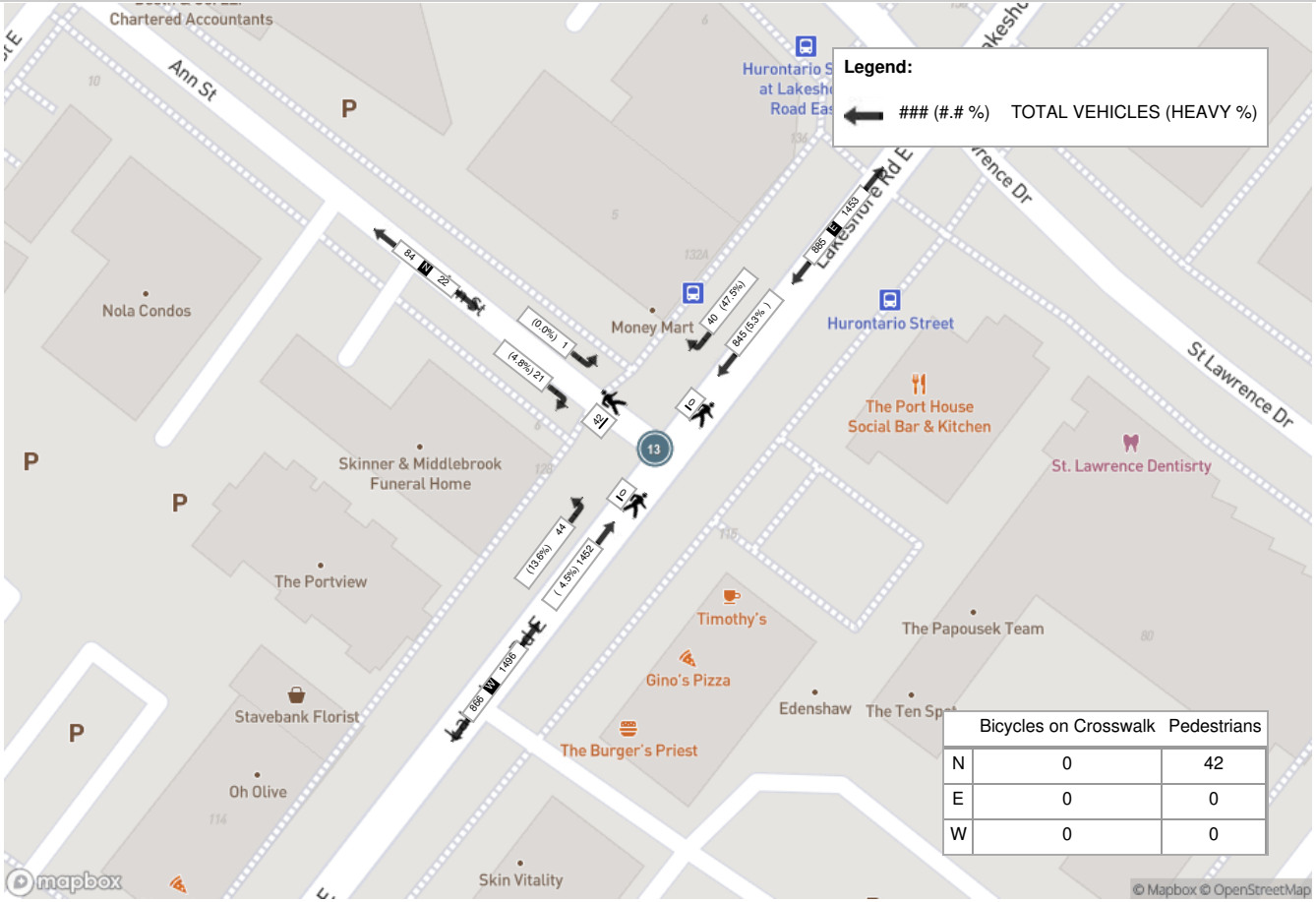
Peak Hour: 04:15 PM - 05:15 PM Weather: Rain (7.7 °C)

Start Time	N Approach ANN ST					E Approach LAKESHORE RD E					W Approach LAKESHORE RD E					Int. Total (15 min)
	Right	Left	U-Turn	Peds	Approach Total	Right	Thru	U-Turn	Peds	Approach Total	Thru	Left	U-Turn	Peds	Approach Total	
16:15:00	5	0	0	7	5	13	342	0	0	355	260	16	0	0	276	636
16:30:00	13	0	0	10	13	17	349	0	0	366	238	18	0	0	256	635
16:45:00	9	0	0	7	9	12	364	1	0	377	240	19	0	0	259	645
17:00:00	8	0	0	8	8	12	359	0	1	371	268	12	0	0	280	659
Grand Total	35	0	0	32	35	54	1414	1	1	1469	1006	65	0	0	1071	**2575**
Approach%	100%	0%	0%		-	3.7%	96.3%	0.1%		-	93.9%	6.1%	0%		-	-
Totals %	1.4%	0%	0%		1.4%	2.1%	54.9%	0%		57%	39.1%	2.5%	0%		41.6%	-
PHF	0.67	0	0		0.67	0.79	0.97	0.25		0.97	0.94	0.86	0		0.96	-
Heavy	0	0	0		0	18	24	0		42	43	5	0		48	-
Heavy %	0%	0%	0%		0%	33.3%	1.7%	0%		2.9%	4.3%	7.7%	0%		4.5%	-
Lights	35	0	0		35	36	1390	1		1427	963	60	0		1023	-
Lights %	100%	0%	0%		100%	66.7%	98.3%	100%		97.1%	95.7%	92.3%	0%		95.5%	-
Single-Unit Trucks	0	0	0		0	0	17	0		17	15	0	0		15	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	1.2%	0%		1.2%	1.5%	0%	0%		1.4%	-
Buses	0	0	0		0	18	7	0		25	26	5	0		31	-
Buses %	0%	0%	0%		0%	33.3%	0.5%	0%		1.7%	2.6%	7.7%	0%		2.9%	-
Articulated Trucks	0	0	0		0	0	0	0		0	2	0	0		2	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0.2%	0%	0%		0.2%	-
Pedestrians	-	-	-	32	-	-	-	-	1	-	-	-	-	0	-	-
Pedestrians%	-	-	-	97%		-	-	-	3%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

Turning Movement Count
Location Name: LAKESHORE RD W & ANN ST
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 08:00 AM - 09:00 AM Weather: Overcast (6.2 °C)

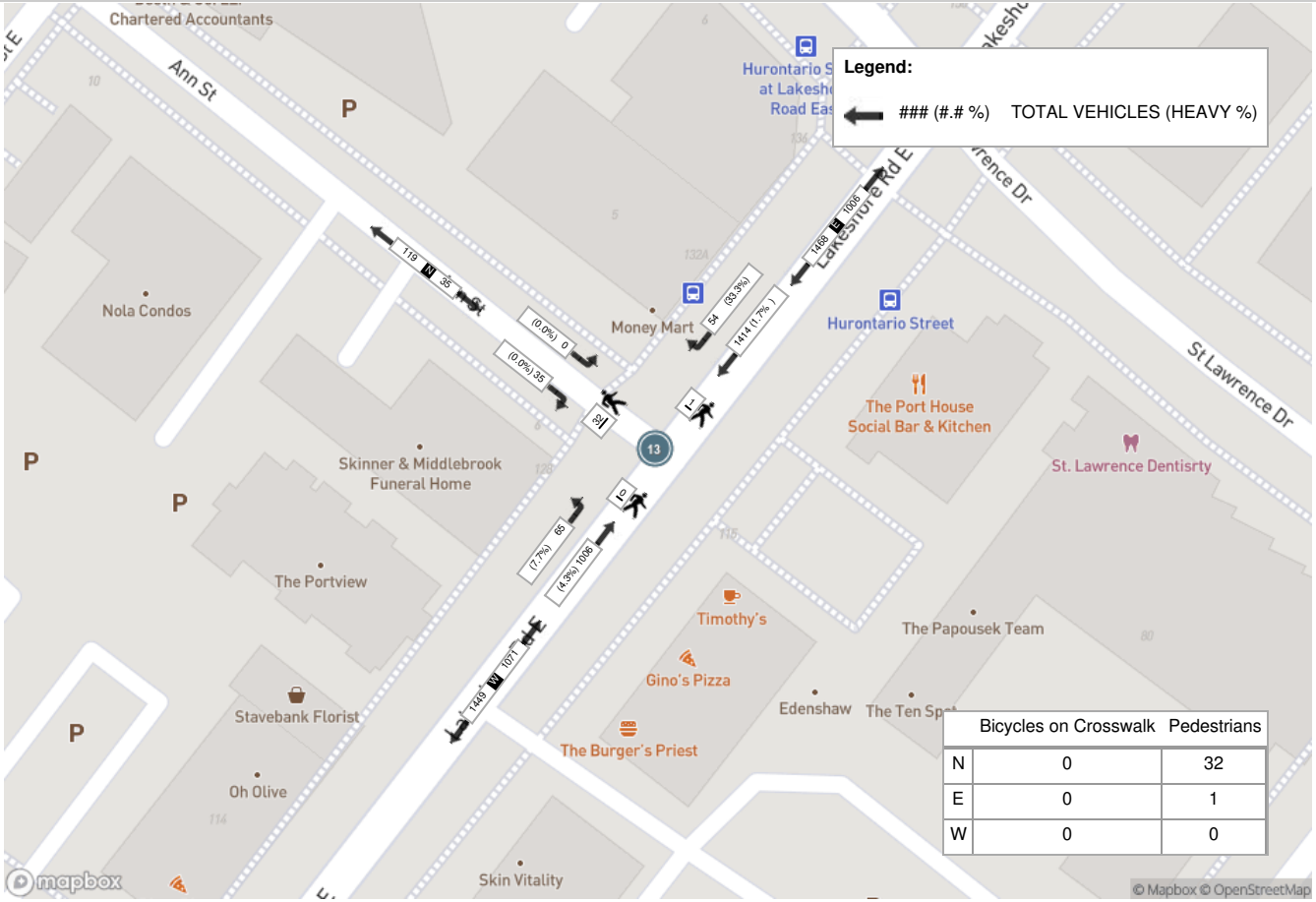


	Bicycles on Crosswalk	Pedestrians
N	0	42
E	0	0
W	0	0

Turning Movement Count
Location Name: LAKESHORE RD W & ANN ST
Date: Thu, May 04, 2017 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:15 PM - 05:15 PM Weather: Rain (7.7 °C)



	Bicycles on Crosswalk	Pedestrians
N	0	32
E	0	1
W	0	0

Turning Movement Count - Details Report

Location..... ANN ST @ PARK ST E

Municipality..... Mississauga

Road 1 PARK ST E **Road 2** ANN ST

Count Date..... Tuesday, December 02, 2014

		North Approach					South Approach					East Approach					West Approach				
Time Period		LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT	LT	TH	RT	Heavy	TOT
07:00	07:15	3	10	1	0	14	0	0	0	0	0	2	0	0	0	2	0	5	8	0	13
07:15	07:30	3	1	0	0	4	0	18	3	4	21	0	5	15	1	20	8	35	2	0	45
07:30	07:45	4	0	0	0	4	0	13	6	6	19	2	10	23	0	35	8	47	1	0	56
07:45	08:00	2	0	0	0	2	2	23	2	9	27	7	16	39	0	62	18	63	2	1	83
08:00	08:15	1	1	1	0	3	0	9	1	4	10	4	16	27	2	47	1	35	0	0	36
08:15	08:30	3	0	0	0	3	0	18	5	9	23	1	22	14	1	37	5	31	0	1	36
08:30	08:45	2	2	0	0	4	1	9	5	4	15	8	29	10	1	47	9	25	0	1	34
08:45	09:00	2	2	0	0	4	0	8	0	6	8	1	29	11	1	41	3	27	0	0	30
15:00	15:15	4	3	1	0	8	4	8	2	5	14	3	26	12	0	41	2	29	2	1	33
15:15	15:30	2	0	0	0	2	0	15	4	10	19	1	28	9	0	38	1	28	0	1	29
15:30	15:45	0	4	0	0	4	2	6	6	3	14	4	36	10	1	50	3	25	1	2	29
15:45	16:00	1	0	0	0	1	4	9	3	4	16	5	37	9	0	51	3	32	0	3	35
16:00	16:15	8	2	1	0	11	1	11	8	8	20	8	43	11	2	62	4	33	3	0	40
16:15	16:30	6	2	2	0	10	1	10	5	5	16	4	36	14	0	54	7	21	2	0	30
16:30	16:45	2	3	2	0	7	3	15	6	2	24	8	21	20	0	49	8	35	2	0	45
16:45	17:00	14	4	1	0	19	2	12	9	7	23	10	49	20	0	79	6	30	1	0	37
17:00	17:15	5	3	0	0	8	1	12	5	2	18	3	31	15	0	49	4	28	0	0	32
17:15	17:30	9	8	1	0	18	2	11	7	0	20	6	25	20	0	51	12	24	0	0	36
17:30	17:45	14	11	5	0	30	1	15	5	0	21	4	41	8	0	53	7	29	0	0	36
17:45	18:00	1	2	0	0	3	3	4	1	0	8	2	31	9	0	42	3	28	1	0	32
Total	.....	86	58	15	0	159	27	226	83	88	336	83	531	296	9	910	112	610	25	10	747

Spectrum

Turning Movement Count
Location Name: PARK ST E & PORT CREDIT GO STATION PARKING LOT ACCESS
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Turning Movement Count (7 . PARK ST E & PORT CREDIT GO STATION PARKING LOT ACCESS)

Start Time	N Approach PORT CREDIT GO STATION PARKING LOT ACCESS					E Approach PARK ST E					W Approach PARK ST E					Int. Total (15 min)	Int. Total (1 hr)
	Right N:W	Left N:E	UTurn N:N	Peds N:	Approach Total	Right E:N	Thru E:W	UTurn E:E	Peds E:	Approach Total	Thru W:E	Left W:N	UTurn W:W	Peds W:	Approach Total		
07:00:00	1	1	0	0	2	4	18	0	0	22	26	0	0	0	26	50	
07:15:00	0	0	0	0	0	4	21	0	0	25	25	0	0	0	25	50	
07:30:00	0	0	0	0	0	1	15	1	1	17	29	1	0	0	30	47	
07:45:00	1	0	0	1	1	1	31	0	0	32	28	1	0	0	29	62	209
08:00:00	0	0	0	0	0	4	12	0	0	16	24	0	0	0	24	40	199
08:15:00	0	1	0	0	1	1	20	1	2	22	27	0	0	0	27	50	199
08:30:00	0	0	0	0	0	1	20	0	2	21	20	1	0	0	21	42	194
08:45:00	0	0	0	2	0	0	18	0	0	18	24	0	0	0	24	42	174
BREAK																	
16:00:00	0	3	0	4	3	0	48	0	3	48	28	0	0	0	28	79	
16:15:00	0	0	0	4	0	1	33	0	0	34	19	0	0	0	19	53	
16:30:00	0	1	0	2	1	0	46	0	0	46	34	1	1	0	36	83	
16:45:00	0	3	0	1	3	1	40	0	1	41	38	0	0	0	38	82	297
17:00:00	0	2	0	0	2	1	49	0	1	50	38	0	0	1	38	90	308
17:15:00	0	1	0	3	1	1	43	0	2	44	22	0	0	0	22	67	322
17:30:00	0	0	0	1	0	1	39	0	1	40	29	0	0	0	29	69	308
17:45:00	1	1	0	0	2	2	45	0	3	47	35	0	0	2	35	84	310
Grand Total	3	13	0	18	16	23	498	2	16	523	446	4	1	3	451	**990**	-
Approach%	18.8%	81.3%	0%		-	4.4%	95.2%	0.4%		-	98.9%	0.9%	0.2%		-	-	-
Totals %	0.3%	1.3%	0%		1.6%	2.3%	50.3%	0.2%		52.8%	45.1%	0.4%	0.1%		45.6%	-	-
Heavy	0	0	0		-	1	16	1		-	5	0	0		-	-	-
Heavy %	0%	0%	0%		-	4.3%	3.2%	50%		-	1.1%	0%	0%		-	-	-
Bicycles	0	1	0		-	0	5	0		-	9	0	0		-	-	-
Bicycle %	0%	7.7%	0%		-	0%	1%	0%		-	2%	0%	0%		-	-	-

Spectrum

Turning Movement Count
Location Name: PARK ST E & PORT CREDIT GO STATION PARKING LOT ACCESS
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:00 AM - 08:00 AM Weather: Broken Clouds (17.32 °C)

Start Time	N Approach PORT CREDIT GO STATION PARKING LOT ACCESS					E Approach PARK ST E					W Approach PARK ST E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
07:00:00	1	1	0	0	2	4	18	0	0	22	26	0	0	0	26	50
07:15:00	0	0	0	0	0	4	21	0	0	25	25	0	0	0	25	50
07:30:00	0	0	0	0	0	1	15	1	1	17	29	1	0	0	30	47
07:45:00	1	0	0	1	1	1	31	0	0	32	28	1	0	0	29	62
Grand Total	2	1	0	1	3	10	85	1	1	96	108	2	0	0	110	**209**
Approach%	66.7%	33.3%	0%		-	10.4%	88.5%	1%		-	98.2%	1.8%	0%		-	-
Totals %	1%	0.5%	0%		1.4%	4.8%	40.7%	0.5%		45.9%	51.7%	1%	0%		52.6%	-
PHF	0.5	0.25	0		0.38	0.63	0.69	0.25		0.75	0.93	0.5	0		0.92	-
Heavy	0	0	0		0	0	6	1		7	3	0	0		3	-
Heavy %	0%	0%	0%		0%	0%	7.1%	100%		7.3%	2.8%	0%	0%		2.7%	-
Lights	2	1	0		3	10	79	0		89	105	2	0		107	-
Lights %	100%	100%	0%		100%	100%	92.9%	0%		92.7%	97.2%	100%	0%		97.3%	-
Single-Unit Trucks	0	0	0		0	0	4	1		5	1	0	0		1	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	4.7%	100%		5.2%	0.9%	0%	0%		0.9%	-
Buses	0	0	0		0	0	1	0		1	1	0	0		1	-
Buses %	0%	0%	0%		0%	0%	1.2%	0%		1%	0.9%	0%	0%		0.9%	-
Articulated Trucks	0	0	0		0	0	1	0		1	1	0	0		1	-
Articulated Trucks %	0%	0%	0%		0%	0%	1.2%	0%		1%	0.9%	0%	0%		0.9%	-
Pedestrians	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-
Pedestrians%	-	-	-	0%		-	-	-	50%		-	-	-	0%		-
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	50%		-	-	-	0%		-	-	-	0%		-
Bicycles on Road	0	0	0	0	-	0	0	0	0	-	0	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

Spectrum

Turning Movement Count
Location Name: PARK ST E & PORT CREDIT GO STATION PARKING LOT ACCESS
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

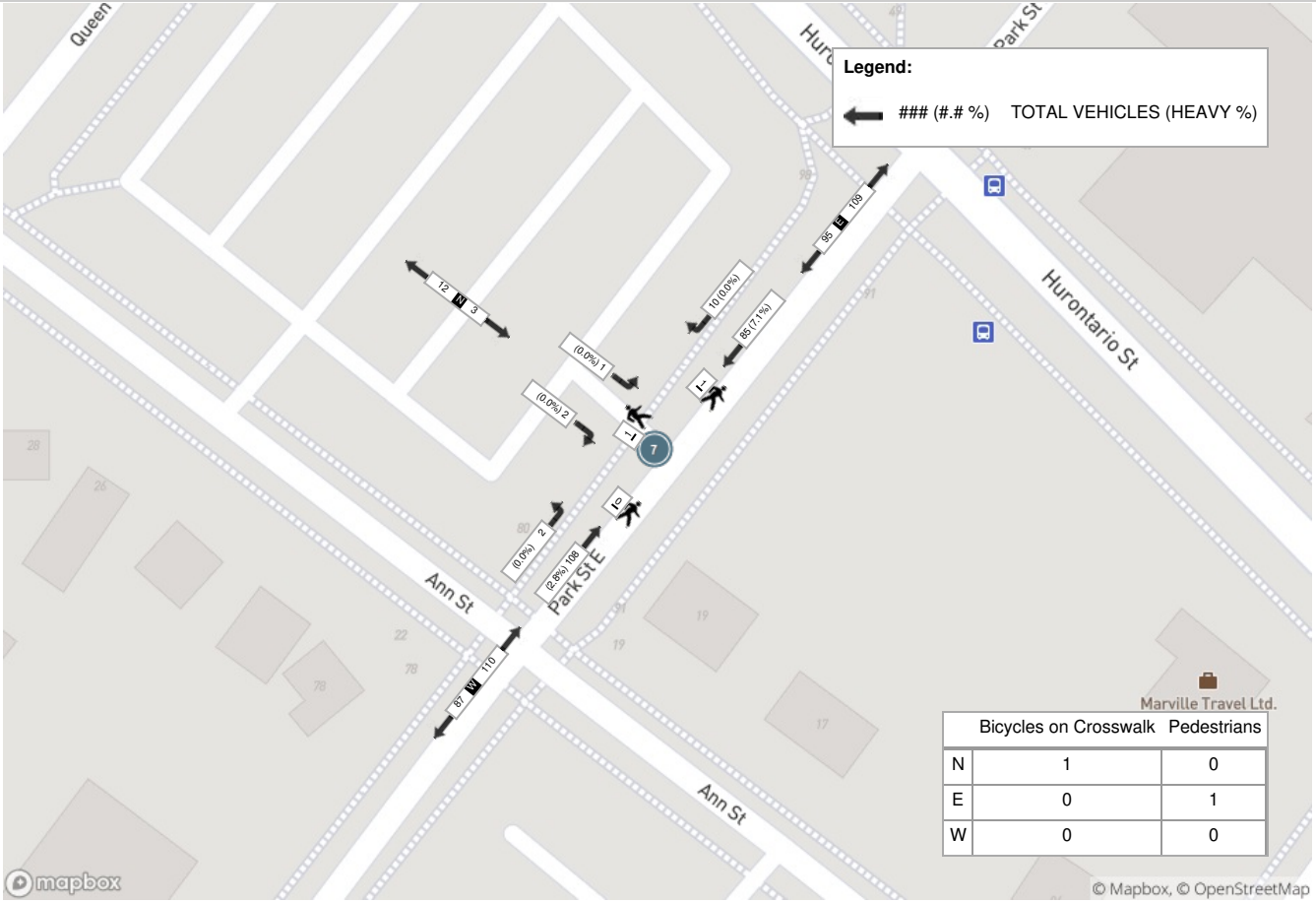
Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (27.5 °C)

Start Time	N Approach PORT CREDIT GO STATION PARKING LOT ACCESS					E Approach PARK ST E					W Approach PARK ST E					Int. Total (15 min)
	Right	Left	UTurn	Peds	Approach Total	Right	Thru	UTurn	Peds	Approach Total	Thru	Left	UTurn	Peds	Approach Total	
16:30:00	0	1	0	2	1	0	46	0	0	46	34	1	1	0	36	83
16:45:00	0	3	0	1	3	1	40	0	1	41	38	0	0	0	38	82
17:00:00	0	2	0	0	2	1	49	0	1	50	38	0	0	1	38	90
17:15:00	0	1	0	3	1	1	43	0	2	44	22	0	0	0	22	67
Grand Total	0	7	0	6	7	3	178	0	4	181	132	1	1	1	134	**322**
Approach%	0%	100%	0%		-	1.7%	98.3%	0%		-	98.5%	0.7%	0.7%		-	-
Totals %	0%	2.2%	0%		2.2%	0.9%	55.3%	0%		56.2%	41%	0.3%	0.3%		41.6%	-
PHF	0	0.58	0		0.58	0.75	0.91	0		0.91	0.87	0.25	0.25		0.88	-
Heavy	0	0	0		0	0	0	0		0	0	0	0		0	-
Heavy %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Lights	0	7	0		7	3	178	0		181	132	1	1		134	-
Lights %	0%	100%	0%		100%	100%	100%	0%		100%	100%	100%	100%		100%	-
Single-Unit Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Single-Unit Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Buses	0	0	0		0	0	0	0		0	0	0	0		0	-
Buses %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Articulated Trucks	0	0	0		0	0	0	0		0	0	0	0		0	-
Articulated Trucks %	0%	0%	0%		0%	0%	0%	0%		0%	0%	0%	0%		0%	-
Pedestrians	-	-	-	3	-	-	-	-	4	-	-	-	-	1	-	-
Pedestrians%	-	-	-	27.3%		-	-	-	36.4%		-	-	-	9.1%		-
Bicycles on Crosswalk	-	-	-	3	-	-	-	-	0	-	-	-	-	0	-	-
Bicycles on Crosswalk%	-	-	-	27.3%		-	-	-	0%		-	-	-	0%		-
Bicycles on Road	0	0	0	0	-	0	3	0	0	-	4	0	0	0	-	-
Bicycles on Road%	-	-	-	0%		-	-	-	0%		-	-	-	0%		-

Turning Movement Count
Location Name: PARK ST E & PORT CREDIT GO STATION PARKING LOT ACCESS
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 07:00 AM - 08:00 AM Weather: Broken Clouds (17.32 °C)

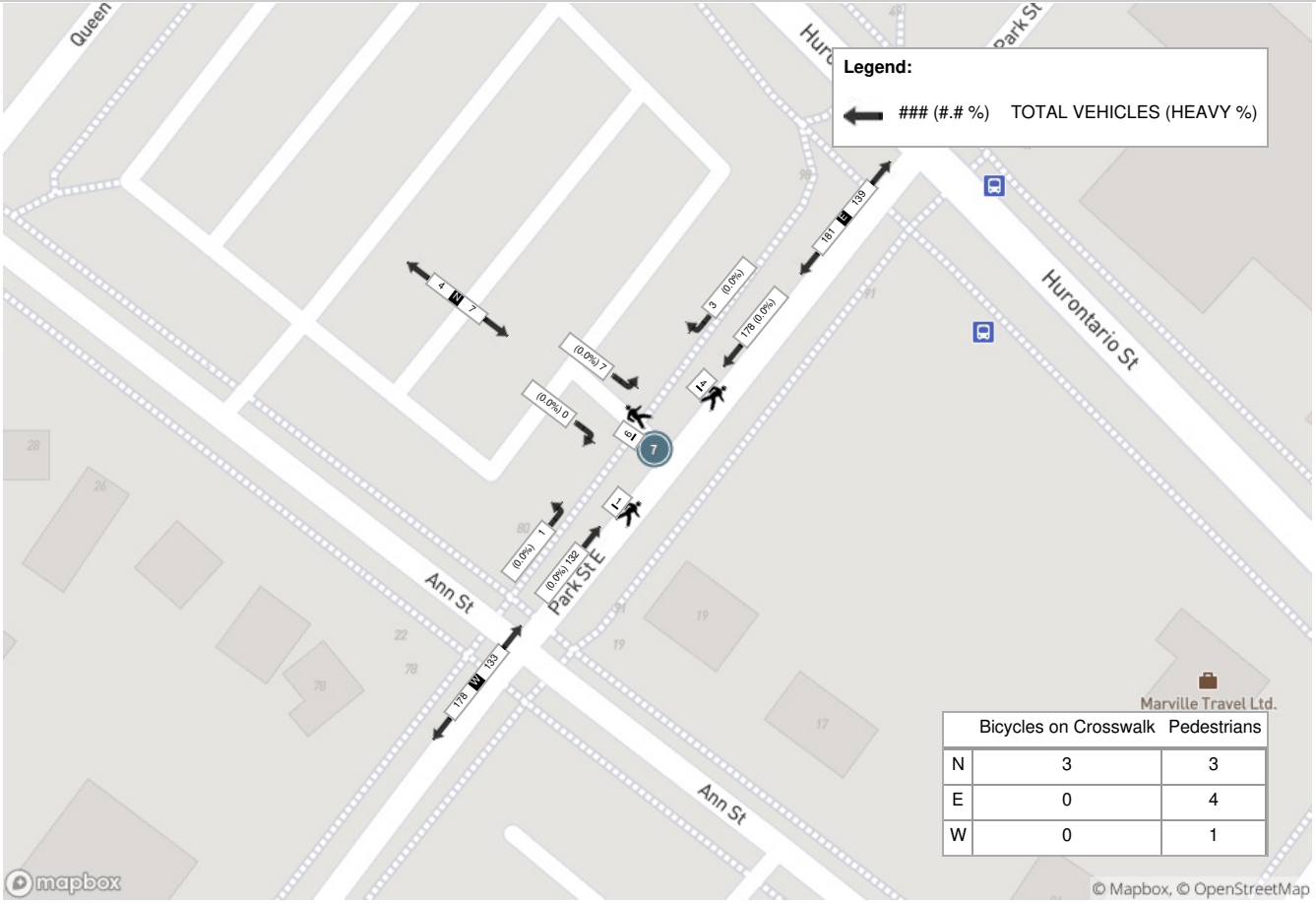


	Bicycles on Crosswalk	Pedestrians
N	1	0
E	0	1
W	0	0

Turning Movement Count
Location Name: PARK ST E & PORT CREDIT GO STATION PARKING LOT ACCESS
Date: Thu, Jun 24, 2021 Deployment Lead: Theo Daglis

BA Group
300 45 ST. CLAIR AVE W
TORONTO ONTARIO, M4V 1K9
CANADA

Peak Hour: 04:30 PM - 05:30 PM Weather: Broken Clouds (27.5 °C)



	Bicycles on Crosswalk	Pedestrians
N	3	3
E	0	4
W	0	1

Appendix H Synchro Calculation Sheets

HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	910	15	20	570	230	10	75	10	210	90	285
Future Volume (vph)	310	910	15	20	570	230	10	75	10	210	90	285
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)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1628	3579	1514	1770	3476	1462	1727	1819		1691	1921	1345
Flt Permitted	0.40	1.00	1.00	0.31	1.00	1.00	0.70	1.00		0.70	1.00	1.00
Satd. Flow (perm)	677	3579	1514	584	3476	1462	1270	1819		1249	1921	1345
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	310	910	15	20	570	230	10	75	10	210	90	285
RTOR Reduction (vph)	0	0	5	0	0	102	0	4	0	0	0	226
Lane Group Flow (vph)	310	910	10	20	570	128	10	81	0	210	90	59
Confl. Peds. (#/hr)	35		15	15		35	30		5	5		30
Confl. Bikes (#/hr)			5			10						
Heavy Vehicles (%)	9%	2%	0%	0%	5%	3%	0%	4%	0%	5%	0%	13%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	96.3	96.3	96.3	78.0	78.0	78.0	29.2	29.2		29.2	29.2	29.2
Effective Green, g (s)	96.3	96.3	96.3	78.0	78.0	78.0	29.2	29.2		29.2	29.2	29.2
Actuated g/C Ratio	0.69	0.69	0.69	0.56	0.56	0.56	0.21	0.21		0.21	0.21	0.21
Clearance Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	569	2461	1041	325	1936	814	264	379		260	400	280
v/s Ratio Prot	c0.06	0.25			0.16			0.04			0.05	
v/s Ratio Perm	c0.31		0.01	0.03		0.09	0.01			c0.17		0.04
v/c Ratio	0.54	0.37	0.01	0.06	0.29	0.16	0.04	0.21		0.81	0.23	0.21
Uniform Delay, d1	8.8	9.1	6.9	14.2	16.4	15.0	44.2	45.9		52.7	46.0	45.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.98	0.97	5.29
Incremental Delay, d2	1.1	0.4	0.0	0.4	0.4	0.4	0.1	0.3		16.4	0.3	0.4
Delay (s)	9.9	9.6	6.9	14.6	16.8	15.5	44.3	46.2		68.1	45.1	243.2
Level of Service	A	A	A	B	B	B	D	D		E	D	F
Approach Delay (s)		9.6			16.4			46.0			149.9	
Approach LOS		A			B			D			F	

Intersection Summary			
HCM 2000 Control Delay	42.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

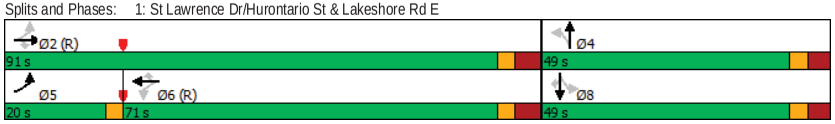
Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Existing AM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	310	910	15	20	570	230	10	75	210	90	285
Future Volume (vph)	310	910	15	20	570	230	10	75	210	90	285
Lane Group Flow (vph)	310	910	15	20	570	230	10	85	210	90	285
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	46.5	46.5	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.53	0.37	0.01	0.06	0.29	0.25	0.04	0.22	0.81	0.23	0.56
Control Delay	11.3	10.5	1.1	20.2	19.0	3.4	39.7	42.1	73.2	43.8	27.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.3
Total Delay	11.3	10.5	1.1	20.2	19.0	3.4	39.7	42.1	73.4	43.8	28.0
Queue Length 50th (m)	28.1	53.5	0.0	2.5	43.8	0.0	2.4	19.5	62.2	23.6	35.2
Queue Length 95th (m)	53.4	83.5	1.2	9.2	74.8	16.0	6.9	32.0	92.2	42.8	67.7
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0		31.0		30.0
Base Capacity (vph)	608	2461	1050	327	1954	922	381	548	374	576	603
Starvation Cap Reductn	0	0	0	0	0	0	0	0	12	0	56
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.37	0.01	0.06	0.29	0.25	0.03	0.16	0.58	0.16	0.52

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	0	15	10	0	40	5	600	10	45	560	50
Future Volume (vph)	85	0	15	10	0	40	5	600	10	45	560	50
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)		6.5			6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.98	1.00	
Frt		0.98			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1491			1521		1768	3138		1652	3184	
Flt Permitted		0.79			0.94		0.42	1.00		0.42	1.00	
Satd. Flow (perm)		1223			1440		783	3138		732	3184	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	0	15	10	0	40	5	600	10	45	560	50
RTOR Reduction (vph)	0	20	0	0	36	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	80	0	0	14	0	5	610	0	45	607	0
Confl. Peds. (#/hr)	5		5	5		5	5		10	10		5
Heavy Vehicles (%)	23%	0%	0%	27%	0%	5%	0%	16%	11%	6%	13%	11%
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)		15.4			15.4		112.1	112.1		112.1	112.1	
Effective Green, g (s)		15.4			15.4		112.1	112.1		112.1	112.1	
Actuated g/C Ratio		0.11			0.11		0.80	0.80		0.80	0.80	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		134			158		626	2512		586	2549	
v/s Ratio Prot								c0.19			0.19	
v/s Ratio Perm		c0.07			0.01		0.01			0.06		
v/c Ratio		0.59			0.09		0.01	0.24		0.08	0.24	
Uniform Delay, d1		59.3			56.0		2.8	3.5		3.0	3.4	
Progression Factor		1.00			1.00		0.61	0.99		0.09	0.15	
Incremental Delay, d2		6.9			0.3		0.0	0.2		0.2	0.2	
Delay (s)		66.2			56.3		1.7	3.6		0.5	0.7	
Level of Service		E			E		A	A		A	A	
Approach Delay (s)		66.2			56.3			3.6			0.7	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Hurontario St & High St E

Existing AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	0	10	0	5	600	45	560
Future Volume (vph)	85	0	10	0	5	600	45	560
Lane Group Flow (vph)	0	100	0	50	5	610	45	610
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5		6.5	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.65		0.26	0.01	0.24	0.08	0.24
Control Delay		63.4		23.0	2.6	4.1	0.6	0.8
Queue Delay		0.0		0.0	0.0	0.3	0.0	0.2
Total Delay		63.4		23.0	2.6	4.3	0.6	0.9
Queue Length 50th (m)		21.8		2.7	0.4	28.3	0.1	0.5
Queue Length 95th (m)		40.0		14.9	m0.5	25.7	0.3	0.6
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		353		424	628	2513	587	2552
Starvation Cap Reductn		0		0	0	1173	0	1015
Spillback Cap Reductn		0		1	0	86	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.28		0.12	0.01	0.46	0.08	0.40

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E

HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	30	20	15	15	215	10	685	30	205	620	165
Future Volume (vph)	150	30	20	15	15	215	10	685	30	205	620	165
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)	7.0	7.0		7.0	7.0		7.0	7.0		3.0	7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	0.99	1.00		0.98	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.94		1.00	0.86		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1685	1701		1751	1497		1785	3320		1713	3288	1536
Flt Permitted	0.51	1.00		0.72	1.00		0.42	1.00		0.30	1.00	1.00
Satd. Flow (perm)	900	1701		1335	1497		783	3320		542	3288	1536
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	150	30	20	15	15	215	10	685	30	205	620	165
RTOR Reduction (vph)	0	14	0	0	151	0	0	2	0	0	0	62
Lane Group Flow (vph)	150	36	0	15	80	0	10	713	0	205	620	103
Confl. Peds. (#/hr)	10		15	15		10			10	10		
Heavy Vehicles (%)	5%	4%	6%	0%	18%	7%	0%	9%	10%	4%	11%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	42.0	42.0		42.0	42.0		68.4	68.4		84.0	84.0	84.0
Effective Green, g (s)	42.0	42.0		42.0	42.0		68.4	68.4		84.0	84.0	84.0
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.49	0.49		0.60	0.60	0.60
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		3.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	270	510		400	449		382	1622		430	1972	921
v/s Ratio Prot		0.02			0.05			0.21		c0.04	0.19	
v/s Ratio Perm	c0.17			0.01			0.01			c0.24		0.07
v/c Ratio	0.56	0.07		0.04	0.18		0.03	0.44		0.48	0.31	0.11
Uniform Delay, d1	41.2	35.0		34.7	36.2		18.5	23.3		13.9	13.8	12.0
Progression Factor	1.00	1.00		1.00	1.00		0.84	0.93		1.00	1.00	1.00
Incremental Delay, d2	8.0	0.3		0.2	0.9		0.1	0.9		0.8	0.4	0.2
Delay (s)	49.2	35.3		34.9	37.1		15.8	22.5		14.7	14.2	12.3
Level of Service	D	D		C	D		B	C		B	B	B
Approach Delay (s)		45.7			36.9			22.5			14.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

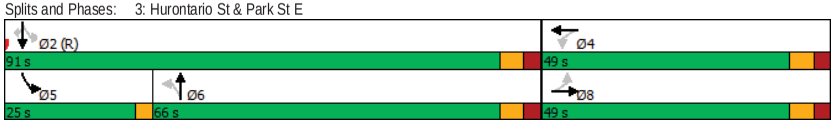
Queues
3: Hurontario St & Park St E

Existing AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	150	30	15	15	10	685	205	620	165
Future Volume (vph)	150	30	15	15	10	685	205	620	165
Lane Group Flow (vph)	150	50	15	230	10	715	205	620	165
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA	Perm
Protected Phases		8		4		6	5	2	
Permitted Phases	8		4		6		2		2
Detector Phase	8	8	4	4	6	6	5	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	38.0	38.0	38.0	38.0	33.0	33.0	8.0	33.0	33.0
Total Split (s)	49.0	49.0	49.0	49.0	66.0	66.0	25.0	91.0	91.0
Total Split (%)	35.0%	35.0%	35.0%	35.0%	47.1%	47.1%	17.9%	65.0%	65.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag					Lag	Lag	Lead		
Lead-Lag Optimize?					Yes	Yes	Yes		
Recall Mode	Max	Max	Max	Max	Max	Max	None	C-Min	C-Min
v/c Ratio	0.56	0.10	0.04	0.38	0.03	0.44	0.46	0.31	0.17
Control Delay	50.6	23.9	35.2	7.8	17.1	23.0	14.6	14.3	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0
Total Delay	50.6	23.9	35.2	7.8	17.1	23.7	14.6	14.3	2.5
Queue Length 50th (m)	36.8	6.3	3.1	3.1	1.3	80.6	23.8	44.7	1.1
Queue Length 95th (m)	62.1	16.7	8.9	24.0	3.7	95.7	36.0	56.4	10.6
Internal Link Dist (m)		73.3		75.8		94.7		197.8	
Turn Bay Length (m)	25.0		25.0		30.0		30.0		30.0
Base Capacity (vph)	269	524	400	599	382	1624	523	1972	983
Starvation Cap Reductn	0	0	0	0	0	553	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.10	0.04	0.38	0.03	0.67	0.39	0.31	0.17

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 97 (69%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	80	0	10	35	10	0	75	10	10	15	0
Future Volume (vph)	10	80	0	10	35	10	0	75	10	10	15	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	80	0	10	35	10	0	75	10	10	15	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	90	55	85	25
Volume Left (vph)	10	10	0	10
Volume Right (vph)	0	10	10	0
Hadj (s)	0.34	0.15	0.74	0.53
Departure Headway (s)	4.6	4.4	5.0	4.9
Degree Utilization, x	0.11	0.07	0.12	0.03
Capacity (veh/h)	760	784	691	699
Control Delay (s)	8.2	7.8	8.7	8.1
Approach Delay (s)	8.2	7.8	8.7	8.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay		8.3		
Level of Service		A		
Intersection Capacity Utilization	22.8%		ICU Level of Service	A
Analysis Period (min)		15		

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Existing AM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	45	1230	825	40	5	20
Future Volume (Veh/h)	45	1230	825	40	5	20
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	45	1230	825	40	5	20
Pedestrians					20	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.92				0.92	0.92
vC, conflicting volume	885				1570	452
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	689				1438	217
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	94				95	97
cM capacity (veh/h)	748				107	704

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	45	615	615	550	315	25
Volume Left	45	0	0	0	0	5
Volume Right	0	0	0	0	40	20
cSH	748	1700	1700	1700	1700	333
Volume to Capacity	0.06	0.36	0.36	0.32	0.19	0.08
Queue Length 95th (m)	1.5	0.0	0.0	0.0	0.0	1.9
Control Delay (s)	10.1	0.0	0.0	0.0	0.0	16.7
Lane LOS	B					C
Approach Delay (s)	0.4			0.0		16.7
Approach LOS						C

Intersection Summary				
Average Delay		0.4		
Intersection Capacity Utilization		44.0%	ICU Level of Service	A
Analysis Period (min)		15		

Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

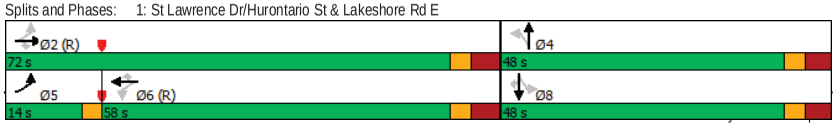
Existing PM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	315	895	10	40	1070	280	10	125	370	115	425
Future Volume (vph)	315	895	10	40	1070	280	10	125	370	115	425
Lane Group Flow (vph)	315	895	10	40	1070	280	10	175	370	115	425
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	8.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	14.0	72.0	72.0	58.0	58.0	58.0	48.0	48.0	48.0	48.0	48.0
Total Split (%)	11.7%	60.0%	60.0%	48.3%	48.3%	48.3%	40.0%	40.0%	40.0%	40.0%	40.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.91	0.48	0.01	0.18	0.78	0.41	0.02	0.27	0.91	0.17	0.66
Control Delay	50.1	19.4	0.0	26.2	37.1	7.9	25.4	25.6	64.0	27.1	20.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.8	0.0	2.2
Total Delay	50.1	19.4	0.0	26.2	37.1	7.9	25.4	25.6	80.7	27.1	23.0
Queue Length 50th (m)	~48.3	77.7	0.0	6.7	123.9	9.9	1.5	25.5	81.1	18.2	40.4
Queue Length 95th (m)	#92.2	85.9	0.0	14.4	138.5	28.6	5.7	46.6	#151.2	34.4	83.8
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0		31.0		30.0
Base Capacity (vph)	347	1947	807	246	1520	739	444	672	416	696	653
Starvation Cap Reductn	0	0	0	0	0	0	0	0	46	0	118
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.46	0.01	0.16	0.70	0.38	0.02	0.26	1.00	0.17	0.79

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 70 (58%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 100
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: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Existing AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	175	10	15	65	110	0	80	15	10	0	0
Future Volume (vph)	30	175	10	15	65	110	0	80	15	10	0	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	175	10	15	65	110	0	80	15	10	0	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	215	80	110	95	10
Volume Left (vph)	30	15	0	0	10
Volume Right (vph)	10	0	110	15	0
Hadj (s)	0.01	0.16	-0.70	0.54	0.20
Departure Headway (s)	4.5	5.1	4.3	5.4	5.2
Degree Utilization, x	0.27	0.11	0.13	0.14	0.01
Capacity (veh/h)	776	675	811	628	632
Control Delay (s)	9.2	7.6	6.7	9.2	8.2
Approach Delay (s)	9.2	7.1		9.2	8.2
Approach LOS	A	A		A	A

Intersection Summary

Delay		8.4		
Level of Service		A		
Intersection Capacity Utilization		35.3%	ICU Level of Service	A
Analysis Period (min)		15		

Queues
2: Hurontario St & High St E

Existing PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	115	0	10	5	10	695	35	870
Future Volume (vph)	115	0	10	5	10	695	35	870
Lane Group Flow (vph)	0	145	0	50	10	710	35	920
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	32.0	32.0	32.0	32.0	68.0	68.0	68.0	68.0
Total Split (%)	32.0%	32.0%	32.0%	32.0%	68.0%	68.0%	68.0%	68.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5		6.5	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.67		0.20	0.02	0.27	0.07	0.35
Control Delay		45.6		18.2	5.2	5.2	15.1	18.7
Queue Delay		0.4		0.1	0.0	0.4	0.0	2.2
Total Delay		46.0		18.2	5.2	5.6	15.1	20.9
Queue Length 50th (m)		21.9		2.7	0.5	21.1	5.3	92.9
Queue Length 95th (m)		40.0		12.5	2.4	37.1	m10.3	100.3
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		366		416	403	2586	474	2604
Starvation Cap Reductn		0		0	0	1287	0	1496
Spillback Cap Reductn		41		46	0	117	0	0
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.45		0.14	0.02	0.55	0.07	0.83

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 9 (9%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E

HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	315	895	10	40	1070	280	10	125	50	370	115	425
Future Volume (vph)	315	895	10	40	1070	280	10	125	50	370	115	425
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)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.91	1.00	1.00	0.93	1.00	0.99		1.00	1.00	0.94
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	0.95	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	3579	1453	1750	3614	1456	1704	1822		1738	1921	1424
Flt Permitted	0.20	1.00	1.00	0.32	1.00	1.00	0.68	1.00		0.63	1.00	1.00
Satd. Flow (perm)	347	3579	1453	586	3614	1456	1225	1822		1147	1921	1424
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	315	895	10	40	1070	280	10	125	50	370	115	425
RTOR Reduction (vph)	0	0	5	0	0	136	0	12	0	0	0	138
Lane Group Flow (vph)	315	895	5	40	1070	144	10	163	0	370	115	287
Confl. Peds. (#/hr)	55		40	40		55	50		20	20		50
Confl. Bikes (#/hr)			5			5						
Heavy Vehicles (%)	7%	2%	0%	0%	1%	2%	0%	0%	0%	1%	0%	5%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	62.8	62.8	62.8	45.7	45.7	45.7	42.7	42.7		42.7	42.7	42.7
Effective Green, g (s)	62.8	62.8	62.8	45.7	45.7	45.7	42.7	42.7		42.7	42.7	42.7
Actuated g/C Ratio	0.52	0.52	0.52	0.38	0.38	0.38	0.36	0.36		0.36	0.36	0.36
Clearance Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	336	1873	760	223	1376	554	435	648		408	683	506
v/s Ratio Prot	c0.11	0.25			0.30			0.09			0.06	
v/s Ratio Perm	c0.38		0.00	0.07		0.10	0.01			c0.32		0.20
v/c Ratio	0.94	0.48	0.01	0.18	0.78	0.26	0.02	0.25		0.91	0.17	0.57
Uniform Delay, d1	16.8	18.2	13.7	24.7	32.7	25.5	25.1	27.4		36.8	26.5	31.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	32.9	0.9	0.0	1.8	4.4	1.1	0.0	0.2		23.2	0.1	1.5
Delay (s)	49.7	19.1	13.7	26.4	37.1	26.7	25.1	27.6		60.0	26.6	32.6
Level of Service	D	B	B	C	D	C	C	C		E	C	C
Approach Delay (s)		26.9			34.7			27.4			43.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	33.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	107.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Queues
3: Hurontario St & Park St E

Existing PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	215	35	5	50	20	800	155	930	290
Future Volume (vph)	215	35	5	50	20	800	155	930	290
Lane Group Flow (vph)	215	55	5	210	20	825	155	930	290
Turn Type	Perm	NA	Perm	NA	Perm	NA	pm+pt	NA	Perm
Protected Phases		8		4		6	5	2	
Permitted Phases	8		4		6		2		2
Detector Phase	8	8	4	4	6	6	5	2	2
Switch Phase									
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0	8.0
Minimum Split (s)	38.0	38.0	38.0	38.0	33.0	33.0	8.0	33.0	33.0
Total Split (s)	40.0	40.0	40.0	40.0	37.0	37.0	23.0	60.0	60.0
Total Split (%)	40.0%	40.0%	40.0%	40.0%	37.0%	37.0%	23.0%	60.0%	60.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.0	4.0	4.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0	7.0	3.0	7.0	7.0
Lead/Lag					Lag	Lag	Lead		
Lead-Lag Optimize?					Yes	Yes	Yes		
Recall Mode	Max	Max	Max	Max	Max	Max	None	C-Min	C-Min
v/c Ratio	0.60	0.09	0.01	0.33	0.09	0.59	0.43	0.50	0.33
Control Delay	36.3	16.9	22.8	8.6	26.7	27.8	14.2	16.2	4.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.2	0.0
Total Delay	36.3	16.9	22.8	8.6	26.7	29.6	14.2	16.4	4.7
Queue Length 50th (m)	36.3	4.9	0.7	7.0	2.2	53.5	14.0	60.7	7.1
Queue Length 95th (m)	62.6	13.6	3.3	24.0	m10.1	107.2	24.0	77.6	20.8
Internal Link Dist (m)		73.3		75.8		94.7		197.8	
Turn Bay Length (m)	25.0		25.0		30.0		30.0		30.0
Base Capacity (vph)	359	594	438	646	229	1405	494	1860	883
Starvation Cap Reductn	0	0	0	0	0	400	0	0	0
Spillback Cap Reductn	0	14	0	0	0	0	0	254	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.09	0.01	0.33	0.09	0.82	0.31	0.58	0.33

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Hurontario St & Park St E

HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	0	30	10	5	35	10	695	15	35	870	50
Future Volume (vph)	115	0	30	10	5	35	10	695	15	35	870	50
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)		6.5			6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.98			1.00		0.99	1.00		0.94	1.00	
Frt		0.97			0.91		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1749			1630		1771	3522		1619	3543	
Flt Permitted		0.74			0.93		0.29	1.00		0.38	1.00	
Satd. Flow (perm)		1340			1535		549	3522		642	3543	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	115	0	30	10	5	35	10	695	15	35	870	50
RTOR Reduction (vph)	0	28	0	0	30	0	0	1	0	0	3	0
Lane Group Flow (vph)	0	117	0	0	20	0	10	709	0	35	917	0
Confl. Peds. (#/hr)	15		15	15		15	10		50	50		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	3%	0%	4%	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)		14.1			14.1		73.4	73.4		73.4	73.4	
Effective Green, g (s)		14.1			14.1		73.4	73.4		73.4	73.4	
Actuated g/C Ratio		0.14			0.14		0.73	0.73		0.73	0.73	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		188			216		402	2585		471	2600	
v/s Ratio Prot								0.20			c0.26	
v/s Ratio Perm		c0.09			0.01		0.02			0.05		
v/c Ratio		0.62			0.09		0.02	0.27		0.07	0.35	
Uniform Delay, d1		40.4			37.4		3.6	4.4		3.7	4.8	
Progression Factor		1.00			1.00		1.00	1.00		2.95	3.47	
Incremental Delay, d2		6.2			0.2		0.1	0.3		0.3	0.3	
Delay (s)		46.7			37.6		3.7	4.7		11.3	16.9	
Level of Service		D			D		A	A		B	B	
Approach Delay (s)		46.7			37.6			4.7			16.7	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Existing PM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	1220	1450	55	0	45
Future Volume (Veh/h)	65	1220	1450	55	0	45
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	1220	1450	55	0	45
Pedestrians					30	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.74				0.74	0.74
vC, conflicting volume	1535				2248	782
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1010				1978	0
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	86				100	94
cM capacity (veh/h)	469				34	784

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	65	610	610	967	538	45
Volume Left	65	0	0	0	0	0
Volume Right	0	0	0	0	55	45
cSH	469	1700	1700	1700	1700	784
Volume to Capacity	0.14	0.36	0.36	0.57	0.32	0.06
Queue Length 95th (m)	3.8	0.0	0.0	0.0	0.0	1.5
Control Delay (s)	13.9	0.0	0.0	0.0	0.0	9.9
Lane LOS	B					A
Approach Delay (s)	0.7			0.0		9.9
Approach LOS						A

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	58.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	35	20	5	50	160	20	800	25	155	930	290
Future Volume (vph)	215	35	20	5	50	160	20	800	25	155	930	290
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)	7.0	7.0		7.0	7.0		7.0	7.0		3.0	7.0	7.0
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.95		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	0.98		1.00	1.00		1.00	1.00	0.94
Flpb, ped/bikes	0.99	1.00		0.98	1.00		0.99	1.00		1.00	1.00	1.00
Frt	1.00	0.95		1.00	0.89		1.00	1.00		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1749	1762		1753	1635		1766	3489		1728	3510	1475
Flt Permitted	0.59	1.00		0.72	1.00		0.31	1.00		0.22	1.00	1.00
Satd. Flow (perm)	1089	1762		1331	1635		571	3489		405	3510	1475
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	215	35	20	5	50	160	20	800	25	155	930	290
RTOR Reduction (vph)	0	13	0	0	107	0	0	2	0	0	0	102
Lane Group Flow (vph)	215	42	0	5	103	0	20	823	0	155	930	188
Confl. Peds. (#/hr)	15		20	20		15	20		35	35		20
Heavy Vehicles (%)	1%	3%	0%	0%	2%	2%	0%	4%	0%	3%	4%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		pm+pt	NA	Perm
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4			6			2		2
Actuated Green, G (s)	33.0	33.0		33.0	33.0		40.2	40.2		53.0	53.0	53.0
Effective Green, g (s)	33.0	33.0		33.0	33.0		40.2	40.2		53.0	53.0	53.0
Actuated g/C Ratio	0.33	0.33		0.33	0.33		0.40	0.40		0.53	0.53	0.53
Clearance Time (s)	7.0	7.0		7.0	7.0		7.0	7.0		3.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	359	581		439	539		229	1402		344	1860	781
v/s Ratio Prot		0.02			0.06			c0.24		0.04	c0.26	
v/s Ratio Perm	c0.20			0.00			0.04			0.19		0.13
v/c Ratio	0.60	0.07		0.01	0.19		0.09	0.59		0.45	0.50	0.24
Uniform Delay, d1	28.0	23.0		22.5	24.0		18.5	23.4		13.6	15.0	12.7
Progression Factor	1.00	1.00		1.00	1.00		1.28	1.09		1.00	1.00	1.00
Incremental Delay, d2	7.2	0.2		0.0	0.8		0.7	1.8		0.9	1.0	0.7
Delay (s)	35.2	23.2		22.6	24.7		24.5	27.2		14.6	16.0	13.4
Level of Service	D	C		C	C		C	C		B	B	B
Approach Delay (s)		32.7			24.7			27.1			15.3	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.0
Intersection Capacity Utilization	93.5%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	30	220	0	25	230	105	5	45	20	30	25	5
Future Volume (vph)	30	220	0	25	230	105	5	45	20	30	25	5
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	30	220	0	25	230	105	5	45	20	30	25	5

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	250	255	105	70	60
Volume Left (vph)	30	25	0	5	30
Volume Right (vph)	0	0	105	20	5
Hadj (s)	0.02	0.05	-0.70	0.04	0.05
Departure Headway (s)	4.8	5.1	4.4	5.4	5.5
Degree Utilization, x	0.33	0.36	0.13	0.11	0.09
Capacity (veh/h)	727	677	790	597	588
Control Delay (s)	10.2	9.9	6.8	9.1	9.0
Approach Delay (s)	10.2	9.0		9.1	9.0
Approach LOS	B	A		A	A

Intersection Summary			
Delay		9.4	
Level of Service		A	
Intersection Capacity Utilization		47.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Existing PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	110	10	5	55	5	30	60	30	5	30	15
Future Volume (vph)	5	110	10	5	55	5	30	60	30	5	30	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	110	10	5	55	5	30	60	30	5	30	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	125	65	120	50
Volume Left (vph)	5	5	30	5
Volume Right (vph)	10	5	30	15
Hadj (s)	-0.04	-0.03	0.29	-0.16
Departure Headway (s)	4.3	4.4	4.7	4.3
Degree Utilization, x	0.15	0.08	0.16	0.06
Capacity (veh/h)	794	767	733	779
Control Delay (s)	8.1	7.8	8.6	7.6
Approach Delay (s)	8.1	7.8	8.6	7.6
Approach LOS	A	A	A	A

Intersection Summary			
Delay		8.1	
Level of Service		A	
Intersection Capacity Utilization		29.3%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	950	15	20	615	240	10	80	10	220	130	305
Future Volume (vph)	350	950	15	20	615	240	10	80	10	220	130	305
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)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1629	3579	1514	1771	3476	1462	1731	1821		1691	1921	1345
Flt Permitted	0.37	1.00	1.00	0.30	1.00	1.00	0.64	1.00		0.70	1.00	1.00
Satd. Flow (perm)	631	3579	1514	561	3476	1462	1166	1821		1243	1921	1345
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	350	950	15	20	615	240	10	80	10	220	130	305
RTOR Reduction (vph)	0	0	5	0	0	113	0	4	0	0	0	239
Lane Group Flow (vph)	350	950	10	20	615	127	10	86	0	220	130	66
Confl. Peds. (#/hr)	35		15	15		35	30		5	5		30
Confl. Bikes (#/hr)			5			10						
Heavy Vehicles (%)	9%	2%	0%	0%	5%	3%	0%	4%	0%	5%	0%	13%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	94.5	94.5	94.5	74.2	74.2	74.2	30.5	30.5		30.5	30.5	30.5
Effective Green, g (s)	94.5	94.5	94.5	74.2	74.2	74.2	30.5	30.5		30.5	30.5	30.5
Actuated g/C Ratio	0.68	0.68	0.68	0.53	0.53	0.53	0.22	0.22		0.22	0.22	0.22
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	549	2415	1021	297	1842	774	254	396		270	418	293
v/s Ratio Prot	c0.08	0.27			0.18			0.05			0.07	
v/s Ratio Perm	c0.35		0.01	0.04		0.09	0.01			c0.18		0.05
v/c Ratio	0.64	0.39	0.01	0.07	0.33	0.16	0.04	0.22		0.81	0.31	0.23
Uniform Delay, d1	10.0	10.1	7.4	16.0	18.8	16.9	43.2	45.0		52.1	45.9	45.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.58	0.51	2.07
Incremental Delay, d2	2.4	0.5	0.0	0.4	0.5	0.5	0.1	0.3		16.6	0.4	0.4
Delay (s)	12.5	10.5	7.5	16.5	19.3	17.4	43.3	45.2		46.9	23.8	93.6
Level of Service	B	B	A	B	B	B	D	D		D	C	F
Approach Delay (s)		11.0			18.7			45.0			64.1	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

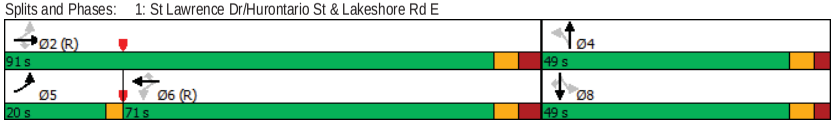
Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Background AM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	350	950	15	20	615	240	10	80	220	130	305
Future Volume (vph)	350	950	15	20	615	240	10	80	220	130	305
Lane Group Flow (vph)	350	950	15	20	615	240	10	90	220	130	305
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.62	0.39	0.01	0.07	0.33	0.27	0.04	0.23	0.81	0.31	0.57
Control Delay	13.7	11.6	1.3	23.2	21.9	3.9	38.6	41.3	51.7	24.3	12.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
Total Delay	13.7	11.6	1.3	23.2	21.9	3.9	38.6	41.3	52.1	24.3	13.3
Queue Length 50th (m)	34.0	59.5	0.0	2.7	51.3	0.0	2.3	20.6	62.1	25.8	50.9
Queue Length 95th (m)	64.2	92.6	1.3	10.0	88.2	17.5	6.8	32.8	95.5	50.9	82.4
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0		30.0		30.0
Base Capacity (vph)	585	2414	1030	304	1886	902	349	549	373	576	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	20	0	68
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.39	0.01	0.07	0.33	0.27	0.03	0.16	0.62	0.23	0.56

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	0	15	10	0	40	5	655	10	45	630	55
Future Volume (vph)	85	0	15	10	0	40	5	655	10	45	630	55
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)		6.5			6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.98	1.00	
Frt		0.98			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1491			1521		1770	3139		1655	3185	
Flt Permitted		0.79			0.94		0.39	1.00		0.40	1.00	
Satd. Flow (perm)		1223			1440		723	3139		691	3185	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	0	15	10	0	40	5	655	10	45	630	55
RTOR Reduction (vph)	0	20	0	0	36	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	80	0	0	14	0	5	665	0	45	682	0
Confl. Peds. (#/hr)	5		5	5		5	5		10	10		5
Heavy Vehicles (%)	23%	0%	0%	27%	0%	5%	0%	16%	11%	6%	13%	11%
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)		15.4			15.4		112.1	112.1		112.1	112.1	
Effective Green, g (s)		15.4			15.4		112.1	112.1		112.1	112.1	
Actuated g/C Ratio		0.11			0.11		0.80	0.80		0.80	0.80	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		134			158		578	2513		553	2550	
v/s Ratio Prot								0.21			c0.21	
v/s Ratio Perm		c0.07			0.01		0.01			0.07		
v/c Ratio		0.59			0.09		0.01	0.26		0.08	0.27	
Uniform Delay, d1		59.3			56.0		2.8	3.5		3.0	3.5	
Progression Factor		1.00			1.00		0.50	0.86		0.23	0.20	
Incremental Delay, d2		6.9			0.3		0.0	0.2		0.2	0.2	
Delay (s)		66.2			56.3		1.4	3.3		0.9	0.9	
Level of Service		E			E		A	A		A	A	
Approach Delay (s)		66.2			56.3			3.3			0.9	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Hurontario St & High St E

Future Background AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	0	10	0	5	655	45	630
Future Volume (vph)	85	0	10	0	5	655	45	630
Lane Group Flow (vph)	0	100	0	50	5	665	45	685
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5		6.5	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.65		0.26	0.01	0.26	0.08	0.27
Control Delay		63.4		23.0	2.0	3.7	1.2	1.0
Queue Delay		0.0		0.0	0.0	0.3	0.0	0.2
Total Delay		63.4		23.0	2.0	4.0	1.2	1.2
Queue Length 50th (m)		21.8		2.7	0.3	32.1	0.5	3.2
Queue Length 95th (m)		40.0		14.9	m0.4	14.4	m1.0	5.4
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		353		424	579	2513	554	2552
Starvation Cap Reductn		0		0	0	1159	0	932
Spillback Cap Reductn		3		7	0	564	0	62
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.29		0.12	0.01	0.49	0.08	0.42

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E

HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	370	30	45	15	15	215	30	720	30	205	670	255
Future Volume (vph)	370	30	45	15	15	215	30	720	30	205	670	255
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)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
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	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.86		1.00	0.99		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)	1695	1630		1752	1497		1785	3321		1715	3208	
Flt Permitted	0.42	1.00		0.71	1.00		0.28	1.00		0.18	1.00	
Satd. Flow (perm)	752	1630		1306	1497		526	3321		324	3208	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	370	30	45	15	15	215	30	720	30	205	670	255
RTOR Reduction (vph)	0	24	0	0	160	0	0	2	0	0	28	0
Lane Group Flow (vph)	370	51	0	15	70	0	30	748	0	205	897	0
Confl. Peds. (#/hr)	10		15	15		10			10	10		
Heavy Vehicles (%)	5%	4%	6%	0%	18%	7%	0%	9%	10%	4%	11%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	65.0	65.0		36.0	36.0		42.7	42.7		61.0	61.0	
Effective Green, g (s)	65.0	65.0		36.0	36.0		42.7	42.7		61.0	61.0	
Actuated g/C Ratio	0.46	0.46		0.26	0.26		0.31	0.31		0.44	0.44	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	514	756		335	384		160	1012		293	1397	
v/s Ratio Prot	c0.13	0.03			0.05			0.23		c0.08	0.28	
v/s Ratio Perm	c0.21			0.01			0.06			c0.23		
v/c Ratio	0.72	0.07		0.04	0.18		0.19	0.74		0.70	0.64	
Uniform Delay, d1	26.6	20.7		39.1	40.5		35.9	43.7		28.1	30.9	
Progression Factor	1.00	1.00		1.00	1.00		0.99	0.99		1.00	1.00	
Incremental Delay, d2	4.8	0.2		0.3	1.0		2.5	4.7		7.1	2.3	
Delay (s)	31.4	20.9		39.3	41.6		38.2	47.9		35.3	33.2	
Level of Service	C	C		D	D		D	D		D	C	
Approach Delay (s)		29.6			41.4			47.5			33.6	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	37.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	100.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

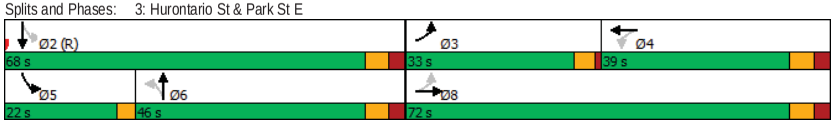
Queues
3: Hurontario St & Park St E

Future Background AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	370	30	15	15	30	720	205	670
Future Volume (vph)	370	30	15	15	30	720	205	670
Lane Group Flow (vph)	370	75	15	230	30	750	205	925
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	33.0	72.0	39.0	39.0	46.0	46.0	22.0	68.0
Total Split (%)	23.6%	51.4%	27.9%	27.9%	32.9%	32.9%	15.7%	48.6%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	7.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Min
v/c Ratio	0.70	0.10	0.04	0.42	0.19	0.74	0.68	0.65
Control Delay	32.1	10.1	42.2	9.5	41.3	48.7	34.8	31.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Total Delay	32.1	10.1	42.2	9.5	41.3	54.7	34.8	31.8
Queue Length 50th (m)	69.9	4.7	3.3	3.3	6.5	100.3	35.7	104.4
Queue Length 95th (m)	98.0	14.1	9.9	27.0	17.2	136.1	54.0	128.4
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	554	780	335	544	160	1014	339	1426
Starvation Cap Reductn	0	0	0	0	0	210	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	0.67	0.10	0.04	0.42	0.19	0.93	0.60	0.65

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	80	0	15	35	10	0	120	10	10	50	0
Future Volume (vph)	10	80	0	15	35	10	0	120	10	10	50	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	80	0	15	35	10	0	120	10	10	50	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	90	60	130	60
Volume Left (vph)	10	15	0	10
Volume Right (vph)	0	10	10	0
Hadj (s)	0.34	0.15	0.80	0.22
Departure Headway (s)	4.8	4.7	5.2	4.7
Degree Utilization, x	0.12	0.08	0.19	0.08
Capacity (veh/h)	715	726	674	730
Control Delay (s)	8.5	8.1	9.3	8.1
Approach Delay (s)	8.5	8.1	9.3	8.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.7	
Level of Service			A	
Intersection Capacity Utilization			26.5%	ICU Level of Service A
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Background AM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	1310	865	65	5	60
Future Volume (Veh/h)	65	1310	865	65	5	60
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	1310	865	65	5	60
Pedestrians					20	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.90				0.90	0.90
vC, conflicting volume	950				1702	485
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	724				1559	207
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	91				94	91
cM capacity (veh/h)	714				85	702

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	65	655	655	577	353	65
Volume Left	65	0	0	0	0	5
Volume Right	0	0	0	0	65	60
cSH	714	1700	1700	1700	1700	450
Volume to Capacity	0.09	0.39	0.39	0.34	0.21	0.14
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.0	4.0
Control Delay (s)	10.5	0.0	0.0	0.0	0.0	14.4
Lane LOS	B					B
Approach Delay (s)	0.5			0.0		14.4
Approach LOS						B

Intersection Summary				
Average Delay			0.7	
Intersection Capacity Utilization			46.9%	ICU Level of Service A
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Background AM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	140	0	0	60
Future Volume (Veh/h)	0	0	140	0	0	60
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	140	0	0	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	200	140			140	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	200	140			140	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	793	913			1456	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	140	60
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1456
Volume to Capacity	0.00	0.08	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		10.7%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Background AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	240	10	15	85	200	0	115	25	180	35	0
Future Volume (vph)	35	240	10	15	85	200	0	115	25	180	35	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	35	240	10	15	85	200	0	115	25	180	35	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	285	100	200	140	215
Volume Left (vph)	35	15	0	0	180
Volume Right (vph)	10	0	200	25	0
Hadj (s)	0.02	0.15	-0.70	0.51	0.17
Departure Headway (s)	5.6	6.2	5.3	6.4	5.9
Degree Utilization, x	0.44	0.17	0.30	0.25	0.35
Capacity (veh/h)	602	543	629	499	558
Control Delay (s)	13.0	9.3	9.4	11.5	12.1
Approach Delay (s)	13.0	9.3		11.5	12.1
Approach LOS	B	A		B	B

Intersection Summary			
Delay		11.4	
Level of Service		B	
Intersection Capacity Utilization		52.5%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	955	10	45	1170	295	10	130	50	380	150	445
Future Volume (vph)	355	955	10	45	1170	295	10	130	50	380	150	445
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)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.90	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	0.95	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	3579	1435	1747	3614	1442	1697	1823		1735	1921	1411
Flt Permitted	0.20	1.00	1.00	0.30	1.00	1.00	0.65	1.00		0.60	1.00	1.00
Satd. Flow (perm)	347	3579	1435	551	3614	1442	1153	1823		1104	1921	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	355	955	10	45	1170	295	10	130	50	380	150	445
RTOR Reduction (vph)	0	0	5	0	0	103	0	10	0	0	0	210
Lane Group Flow (vph)	355	955	5	45	1170	193	10	170	0	380	150	235
Confl. Peds. (#/hr)	55		40	40		55	50		20	20		50
Confl. Bikes (#/hr)			5			5						
Heavy Vehicles (%)	7%	2%	0%	0%	1%	2%	0%	0%	0%	1%	0%	5%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	75.8	75.8	75.8	52.5	52.5	52.5	49.7	49.7		49.7	49.7	49.7
Effective Green, g (s)	75.8	75.8	75.8	52.5	52.5	52.5	49.7	49.7		49.7	49.7	49.7
Actuated g/C Ratio	0.54	0.54	0.54	0.38	0.38	0.38	0.36	0.36		0.36	0.36	0.36
Clearance Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	378	1937	776	206	1355	540	409	647		391	681	500
v/s Ratio Prot	c0.14	0.27			0.32			0.09			0.08	
v/s Ratio Perm	c0.37		0.00	0.08		0.13	0.01			c0.34		0.17
v/c Ratio	0.94	0.49	0.01	0.22	0.86	0.36	0.02	0.26		0.97	0.22	0.47
Uniform Delay, d1	19.7	20.1	14.8	29.8	40.4	31.6	29.4	32.1		44.5	31.6	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.99	0.86	2.30
Incremental Delay, d2	30.7	0.9	0.0	2.4	7.5	1.8	0.0	0.2		36.8	0.2	0.7
Delay (s)	50.4	21.0	14.8	32.2	47.9	33.4	29.4	32.3		80.7	27.2	81.1
Level of Service	D	C	B	C	D	C	C	C		F	C	F
Approach Delay (s)		28.9			44.6			32.2			72.6	
Approach LOS		C			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	113.4%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

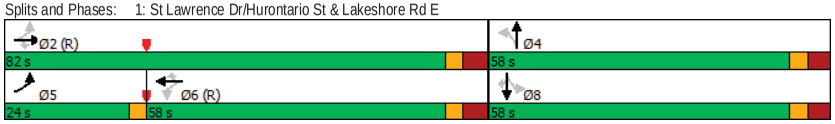
Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Background PM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	355	955	10	45	1170	295	10	130	380	150	445
Future Volume (vph)	355	955	10	45	1170	295	10	130	380	150	445
Lane Group Flow (vph)	355	955	10	45	1170	295	10	180	380	150	445
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	24.0	82.0	82.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
Total Split (%)	17.1%	58.6%	58.6%	41.4%	41.4%	41.4%	41.4%	41.4%	41.4%	41.4%	41.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.91	0.49	0.01	0.22	0.86	0.46	0.02	0.27	0.97	0.22	0.63
Control Delay	50.0	21.5	0.0	34.9	48.9	17.1	28.9	30.1	80.9	27.7	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.3	0.0	2.7
Total Delay	50.0	21.5	0.0	34.9	48.9	17.1	28.9	30.1	125.2	27.7	28.3
Queue Length 50th (m)	57.1	90.7	0.0	9.1	169.0	27.9	1.9	33.4	114.8	39.6	89.9
Queue Length 95th (m)	#116.5	109.4	0.1	20.2	#202.3	55.7	6.1	53.0	#179.1	64.1	125.7
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0		30.0		30.0
Base Capacity (vph)	395	1938	791	207	1356	643	421	674	403	700	722
Starvation Cap Reductn	0	0	0	0	0	0	0	0	66	0	169
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.49	0.01	0.22	0.86	0.46	0.02	0.27	1.13	0.21	0.80

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	0	30	10	5	35	10	755	15	35	935	60
Future Volume (vph)	115	0	30	10	5	35	10	755	15	35	935	60
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)		6.5			6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.98			0.99		0.99	1.00		0.93	1.00	
Frt		0.97			0.91		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1734			1618		1769	3519		1600	3537	
Flt Permitted		0.78			0.94		0.27	1.00		0.35	1.00	
Satd. Flow (perm)		1410			1532		503	3519		589	3537	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	115	0	30	10	5	35	10	755	15	35	935	60
RTOR Reduction (vph)	0	20	0	0	30	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	125	0	0	20	0	10	769	0	35	993	0
Confl. Peds. (#/hr)	15		15	15		15	10		50	50		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	3%	0%	4%	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)		18.5			18.5		109.0	109.0		109.0	109.0	
Effective Green, g (s)		18.5			18.5		109.0	109.0		109.0	109.0	
Actuated g/C Ratio		0.13			0.13		0.78	0.78		0.78	0.78	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		186			202		391	2739		458	2753	
v/s Ratio Prot								0.22			c0.28	
v/s Ratio Perm		c0.09			0.01		0.02			0.06		
v/c Ratio		0.67			0.10		0.03	0.28		0.08	0.36	
Uniform Delay, d1		57.9			53.4		3.5	4.4		3.6	4.8	
Progression Factor		1.00			1.00		0.85	0.76		0.12	0.11	
Incremental Delay, d2		9.2			0.2		0.1	0.2		0.1	0.1	
Delay (s)		67.1			53.6		3.1	3.5		0.5	0.6	
Level of Service		E			D		A	A		A	A	
Approach Delay (s)		67.1			53.6			3.5			0.6	
Approach LOS		E			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Hurontario St & High St E

Future Background PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	115	0	10	5	10	755	35	935
Future Volume (vph)	115	0	10	5	10	755	35	935
Lane Group Flow (vph)	0	145	0	50	10	770	35	995
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5		6.5	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.71		0.22	0.03	0.28	0.08	0.36
Control Delay		66.0		23.9	4.3	3.9	0.7	0.7
Queue Delay		2.4		0.3	0.0	0.3	0.0	0.4
Total Delay		68.4		24.2	4.3	4.2	0.7	1.1
Queue Length 50th (m)		34.6		3.9	0.5	22.2	0.3	4.2
Queue Length 95th (m)		55.6		15.6	m0.8	m21.5	m0.2	m3.4
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		404		446	392	2741	465	2756
Starvation Cap Reductn		0		0	0	1205	0	1121
Spillback Cap Reductn		159		175	0	553	0	531
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.59		0.18	0.03	0.50	0.08	0.61

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E

HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	40	40	5	50	160	45	835	25	155	985	475
Future Volume (vph)	350	40	40	5	50	160	45	835	25	155	985	475
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)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
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		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.89		1.00	1.00		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1758	1717		1742	1628		1785	3487		1733	3280	
Flt Permitted	0.45	1.00		0.70	1.00		0.08	1.00		0.15	1.00	
Satd. Flow (perm)	829	1717		1292	1628		157	3487		283	3280	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	350	40	40	5	50	160	45	835	25	155	985	475
RTOR Reduction (vph)	0	22	0	0	79	0	0	1	0	0	42	0
Lane Group Flow (vph)	350	58	0	5	131	0	45	859	0	155	1418	0
Confl. Peds. (#/hr)	15		20	20		15	20		35	35		20
Heavy Vehicles (%)	1%	3%	0%	0%	2%	2%	0%	4%	0%	3%	4%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	63.0	63.0		35.3	35.3		47.9	47.9		63.0	63.0	
Effective Green, g (s)	63.0	63.0		35.3	35.3		47.9	47.9		63.0	63.0	
Actuated g/C Ratio	0.45	0.45		0.25	0.25		0.34	0.34		0.45	0.45	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	526	772		325	410		53	1193		252	1476	
v/s Ratio Prot	c0.11	0.03			0.08			0.25		0.05	c0.43	
v/s Ratio Perm	c0.19			0.00			0.29			0.22		
v/c Ratio	0.67	0.08		0.02	0.32		0.85	0.72		0.62	0.96	
Uniform Delay, d1	27.1	21.9		39.3	42.6		42.7	40.2		26.7	37.3	
Progression Factor	1.00	1.00		1.00	1.00		0.85	0.87		1.00	1.00	
Incremental Delay, d2	3.2	0.2		0.1	2.0		83.4	3.7		4.4	15.8	
Delay (s)	30.3	22.1		39.4	44.6		119.8	38.5		31.2	53.1	
Level of Service	C	C		D	D		F	D		C	D	
Approach Delay (s)		28.7			44.5			42.6			51.0	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	116.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

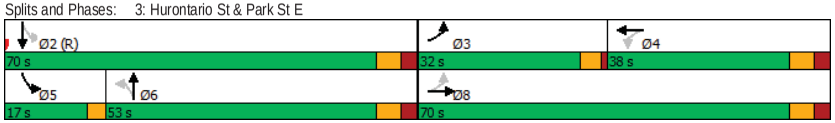
Queues
3: Hurontario St & Park St E

Future Background PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	350	40	5	50	45	835	155	985
Future Volume (vph)	350	40	5	50	45	835	155	985
Lane Group Flow (vph)	350	80	5	210	45	860	155	1460
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	32.0	70.0	38.0	38.0	53.0	53.0	17.0	70.0
Total Split (%)	22.9%	50.0%	27.1%	27.1%	37.9%	37.9%	12.1%	50.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	7.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Min
v/c Ratio	0.65	0.10	0.02	0.43	0.85	0.72	0.60	0.96
Control Delay	31.0	12.3	42.6	25.2	123.9	39.0	30.9	51.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0
Total Delay	31.0	12.3	42.6	25.2	123.9	44.5	30.9	51.2
Queue Length 50th (m)	66.5	6.5	1.1	24.8	12.7	123.5	25.3	206.2
Queue Length 95th (m)	93.3	16.8	5.1	52.1	#37.4	148.2	40.1	#261.6
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	570	794	326	490	53	1195	280	1517
Starvation Cap Reductn	0	0	0	0	0	272	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	0.61	0.10	0.02	0.43	0.85	0.93	0.55	0.96

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, 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: 3: Hurontario St & Park St E



HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	5	110	10	15	55	5	30	125	30	5	90	15
Future Volume (vph)	5	110	10	15	55	5	30	125	30	5	90	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	5	110	10	15	55	5	30	125	30	5	90	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	125	75	185	110
Volume Left (vph)	5	15	30	5
Volume Right (vph)	10	5	30	15
Hadj (s)	-0.04	0.00	0.46	-0.07
Departure Headway (s)	4.7	4.8	5.0	4.6
Degree Utilization, x	0.16	0.10	0.26	0.14
Capacity (veh/h)	711	691	690	739
Control Delay (s)	8.6	8.3	9.7	8.3
Approach Delay (s)	8.6	8.3	9.7	8.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.9	
Level of Service			A	
Intersection Capacity Utilization			35.1%	ICU Level of Service A
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Background PM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	1320	1540	85	0	115
Future Volume (Veh/h)	100	1320	1540	85	0	115
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	100	1320	1540	85	0	115
Pedestrians					30	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.70				0.70	0.70
vC, conflicting volume	1655				2472	842
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1071				2244	0
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	76				100	85
cM capacity (veh/h)	420				19	742

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	100	660	660	1027	598	115
Volume Left	100	0	0	0	0	0
Volume Right	0	0	0	0	85	115
cSH	420	1700	1700	1700	1700	742
Volume to Capacity	0.24	0.39	0.39	0.60	0.35	0.15
Queue Length 95th (m)	7.3	0.0	0.0	0.0	0.0	4.4
Control Delay (s)	16.2	0.0	0.0	0.0	0.0	10.7
Lane LOS	C					B
Approach Delay (s)	1.1			0.0		10.7
Approach LOS						B

Intersection Summary				
Average Delay			0.9	
Intersection Capacity Utilization			68.1%	ICU Level of Service C
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Background PM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	0	0	135	0	0	110
Future Volume (Veh/h)	0	0	135	0	0	110
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	0	135	0	0	110
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	245	135			135	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	135			135	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			100	
cM capacity (veh/h)	748	919			1462	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	0	135	110
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1700	1462
Volume to Capacity	0.06	0.08	0.00
Queue Length 95th (m)	0.0	0.0	0.0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		10.4%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Background PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	260	0	25	285	260	5	105	25	145	85	10
Future Volume (vph)	45	260	0	25	285	260	5	105	25	145	85	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	45	260	0	25	285	260	5	105	25	145	85	10

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	305	310	260	135	240
Volume Left (vph)	45	25	0	5	145
Volume Right (vph)	0	0	260	25	10
Hadj (s)	0.03	0.04	-0.70	0.13	0.10
Departure Headway (s)	6.2	6.4	5.6	6.9	6.6
Degree Utilization, x	0.53	0.55	0.41	0.26	0.44
Capacity (veh/h)	545	544	615	450	501
Control Delay (s)	15.9	15.7	11.2	12.4	14.7
Approach Delay (s)	15.9	13.7		12.4	14.7
Approach LOS	C	B		B	B

Intersection Summary			
Delay		14.3	
Level of Service		B	
Intersection Capacity Utilization		68.9%	ICU Level of Service C
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	350	960	15	20	620	240	10	80	10	220	130	305
Future Volume (vph)	350	960	15	20	620	240	10	80	10	220	130	305
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)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.95	1.00	1.00	0.94	1.00	1.00		1.00	1.00	0.95
Flpb, ped/bikes	0.99	1.00	1.00	0.99	1.00	1.00	0.97	1.00		0.99	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1629	3579	1514	1771	3476	1462	1731	1821		1691	1921	1345
Flt Permitted	0.37	1.00	1.00	0.30	1.00	1.00	0.64	1.00		0.70	1.00	1.00
Satd. Flow (perm)	626	3579	1514	556	3476	1462	1166	1821		1243	1921	1345
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	350	960	15	20	620	240	10	80	10	220	130	305
RTOR Reduction (vph)	0	0	5	0	0	113	0	4	0	0	0	239
Lane Group Flow (vph)	350	960	10	20	620	127	10	86	0	220	130	66
Confl. Peds. (#/hr)	35		15	15		35	30		5	5		30
Confl. Bikes (#/hr)			5			10						
Heavy Vehicles (%)	9%	2%	0%	0%	5%	3%	0%	4%	0%	5%	0%	13%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	94.5	94.5	94.5	74.2	74.2	74.2	30.5	30.5		30.5	30.5	30.5
Effective Green, g (s)	94.5	94.5	94.5	74.2	74.2	74.2	30.5	30.5		30.5	30.5	30.5
Actuated g/C Ratio	0.68	0.68	0.68	0.53	0.53	0.53	0.22	0.22		0.22	0.22	0.22
Clearance Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	546	2415	1021	294	1842	774	254	396		270	418	293
v/s Ratio Prot	c0.08	0.27			0.18			0.05			0.07	
v/s Ratio Perm	c0.35		0.01	0.04		0.09	0.01			c0.18		0.05
v/c Ratio	0.64	0.40	0.01	0.07	0.34	0.16	0.04	0.22		0.81	0.31	0.23
Uniform Delay, d1	10.1	10.1	7.4	16.0	18.8	16.9	43.2	45.0		52.1	45.9	45.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.58	0.51	2.02
Incremental Delay, d2	2.6	0.5	0.0	0.4	0.5	0.5	0.1	0.3		16.6	0.4	0.4
Delay (s)	12.6	10.6	7.5	16.5	19.3	17.4	43.3	45.2		46.8	23.8	91.6
Level of Service	B	B	A	B	B	B	D	D		D	C	F
Approach Delay (s)		11.1			18.7			45.0			63.1	
Approach LOS		B			B			D			E	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

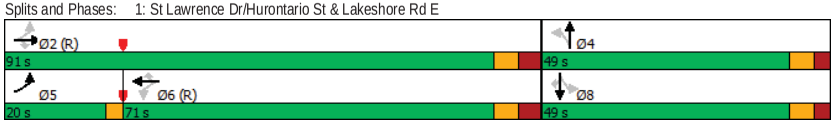
Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Total AM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	350	960	15	20	620	240	10	80	220	130	305
Future Volume (vph)	350	960	15	20	620	240	10	80	220	130	305
Lane Group Flow (vph)	350	960	15	20	620	240	10	90	220	130	305
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	7.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	10.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	20.0	91.0	91.0	71.0	71.0	71.0	49.0	49.0	49.0	49.0	49.0
Total Split (%)	14.3%	65.0%	65.0%	50.7%	50.7%	50.7%	35.0%	35.0%	35.0%	35.0%	35.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	0.0	4.0	4.0	4.0	4.0	4.0	3.0	3.0	3.0	3.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	8.0	8.0	8.0	8.0	8.0	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.62	0.40	0.01	0.07	0.34	0.27	0.04	0.23	0.81	0.31	0.57
Control Delay	13.8	11.7	1.3	23.2	21.9	3.9	38.6	41.3	51.6	24.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
Total Delay	13.8	11.7	1.3	23.2	21.9	3.9	38.6	41.3	52.1	24.2	13.1
Queue Length 50th (m)	34.0	60.3	0.0	2.7	51.8	0.0	2.3	20.6	62.1	25.5	48.6
Queue Length 95th (m)	64.2	93.8	1.3	10.0	89.0	17.5	6.8	32.8	95.7	50.2	82.3
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0		30.0		30.0
Base Capacity (vph)	582	2414	1030	301	1886	902	349	549	373	576	617
Starvation Cap Reductn	0	0	0	0	0	0	0	0	20	0	69
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.40	0.01	0.07	0.33	0.27	0.03	0.16	0.62	0.23	0.56

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	0	15	10	0	40	5	655	10	45	630	55
Future Volume (vph)	85	0	15	10	0	40	5	655	10	45	630	55
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)		6.5			6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.98		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.99			1.00		0.99	1.00		0.98	1.00	
Frt		0.98			0.89		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1491			1521		1770	3139		1655	3185	
Flt Permitted		0.79			0.94		0.39	1.00		0.40	1.00	
Satd. Flow (perm)		1223			1440		723	3139		691	3185	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	85	0	15	10	0	40	5	655	10	45	630	55
RTOR Reduction (vph)	0	20	0	0	36	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	80	0	0	14	0	5	665	0	45	682	0
Confl. Peds. (#/hr)	5		5	5		5	5		10	10		5
Heavy Vehicles (%)	23%	0%	0%	27%	0%	5%	0%	16%	11%	6%	13%	11%
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)		15.4			15.4		112.1	112.1		112.1	112.1	
Effective Green, g (s)		15.4			15.4		112.1	112.1		112.1	112.1	
Actuated g/C Ratio		0.11			0.11		0.80	0.80		0.80	0.80	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		134			158		578	2513		553	2550	
v/s Ratio Prot								0.21			c0.21	
v/s Ratio Perm		c0.07			0.01		0.01			0.07		
v/c Ratio		0.59			0.09		0.01	0.26		0.08	0.27	
Uniform Delay, d1		59.3			56.0		2.8	3.5		3.0	3.5	
Progression Factor		1.00			1.00		0.50	0.85		0.23	0.21	
Incremental Delay, d2		6.9			0.3		0.0	0.2		0.2	0.2	
Delay (s)		66.2			56.3		1.4	3.2		0.9	0.9	
Level of Service		E			E		A	A		A	A	
Approach Delay (s)		66.2			56.3			3.2			0.9	
Approach LOS		E			E			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Hurontario St & High St E

Future Total AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	85	0	10	0	5	655	45	630
Future Volume (vph)	85	0	10	0	5	655	45	630
Lane Group Flow (vph)	0	100	0	50	5	665	45	685
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5		6.5	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.65		0.26	0.01	0.26	0.08	0.27
Control Delay		63.4		23.0	2.0	3.6	1.2	1.0
Queue Delay		0.0		0.0	0.0	0.3	0.0	0.2
Total Delay		63.4		23.0	2.0	3.9	1.2	1.2
Queue Length 50th (m)		21.8		2.7	0.3	32.0	0.5	3.3
Queue Length 95th (m)		40.0		14.9	m0.4	13.6	m0.9	5.5
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		353		424	579	2513	554	2552
Starvation Cap Reductn		0		0	0	1159	0	952
Spillback Cap Reductn		3		7	0	564	0	62
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.29		0.12	0.01	0.49	0.08	0.43

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E

HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	410	30	45	15	15	215	30	720	30	205	670	275
Future Volume (vph)	410	30	45	15	15	215	30	720	30	205	670	275
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)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
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	1.00	
Flpb, ped/bikes	1.00	1.00		0.98	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.91		1.00	0.86		1.00	0.99		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)	1695	1630		1752	1497		1785	3321		1715	3204	
Flt Permitted	0.41	1.00		0.71	1.00		0.27	1.00		0.18	1.00	
Satd. Flow (perm)	733	1630		1306	1497		504	3321		324	3204	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	410	30	45	15	15	215	30	720	30	205	670	275
RTOR Reduction (vph)	0	24	0	0	162	0	0	2	0	0	32	0
Lane Group Flow (vph)	410	51	0	15	68	0	30	748	0	205	913	0
Confl. Peds. (#/hr)	10		15	15		10			10	10		
Heavy Vehicles (%)	5%	4%	6%	0%	18%	7%	0%	9%	10%	4%	11%	4%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	65.0	65.0		34.5	34.5		42.7	42.7		61.0	61.0	
Effective Green, g (s)	65.0	65.0		34.5	34.5		42.7	42.7		61.0	61.0	
Actuated g/C Ratio	0.46	0.46		0.25	0.25		0.31	0.31		0.44	0.44	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	518	756		321	368		153	1012		293	1396	
v/s Ratio Prot	c0.15	0.03			0.05			0.23		c0.08	0.29	
v/s Ratio Perm	c0.22			0.01			0.06			c0.23		
v/c Ratio	0.79	0.07		0.05	0.18		0.20	0.74		0.70	0.65	
Uniform Delay, d1	27.5	20.7		40.2	41.6		36.0	43.7		28.1	31.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	0.99		1.00	1.00	
Incremental Delay, d2	8.1	0.2		0.3	1.1		2.8	4.7		7.1	2.4	
Delay (s)	35.5	20.9		40.5	42.8		38.7	48.0		35.3	33.6	
Level of Service	D	C		D	D		D	D		D	C	
Approach Delay (s)		33.3			42.6			47.6			33.9	
Approach LOS		C			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	103.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

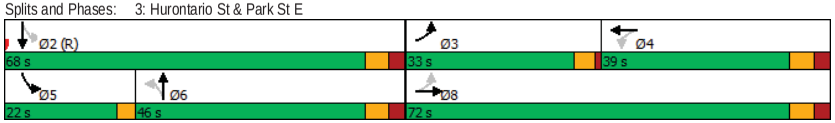
Queues
3: Hurontario St & Park St E

Future Total AM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	410	30	15	15	30	720	205	670
Future Volume (vph)	410	30	15	15	30	720	205	670
Lane Group Flow (vph)	410	75	15	230	30	750	205	945
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	33.0	72.0	39.0	39.0	46.0	46.0	22.0	68.0
Total Split (%)	23.6%	51.4%	27.9%	27.9%	32.9%	32.9%	15.7%	48.6%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	7.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Min
v/c Ratio	0.77	0.10	0.05	0.43	0.20	0.74	0.68	0.66
Control Delay	35.9	10.1	42.7	9.7	41.8	48.8	34.8	32.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Total Delay	35.9	10.1	42.7	9.7	41.8	54.8	34.8	32.0
Queue Length 50th (m)	79.9	4.7	3.4	3.4	6.5	100.3	35.7	107.1
Queue Length 95th (m)	111.1	14.1	9.9	27.0	17.3	136.1	54.0	131.5
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	549	780	321	531	153	1014	339	1426
Starvation Cap Reductn	0	0	0	0	0	210	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	0.75	0.10	0.05	0.43	0.20	0.93	0.60	0.66

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 3: Hurontario St & Park St E



HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	15	80	0	15	35	10	0	125	10	10	65	0
Future Volume (vph)	15	80	0	15	35	10	0	125	10	10	65	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	80	0	15	35	10	0	125	10	10	65	0

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	95	60	135	75
Volume Left (vph)	15	15	0	10
Volume Right (vph)	0	10	10	0
Hadj (s)	0.35	0.15	0.81	0.18
Departure Headway (s)	4.9	4.7	5.2	4.7
Degree Utilization, x	0.13	0.08	0.19	0.10
Capacity (veh/h)	694	714	668	733
Control Delay (s)	8.6	8.1	9.4	8.1
Approach Delay (s)	8.6	8.1	9.4	8.1
Approach LOS	A	A	A	A

Intersection Summary				
Delay			8.7	
Level of Service			A	
Intersection Capacity Utilization			26.4%	ICU Level of Service A
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Total AM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	65	1310	865	70	15	65
Future Volume (Veh/h)	65	1310	865	70	15	65
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	65	1310	865	70	15	65
Pedestrians					20	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.90				0.90	0.90
vC, conflicting volume	955				1705	488
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	727				1560	207
tC, single (s)	4.4				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	91				82	91
cM capacity (veh/h)	711				84	702

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	65	655	655	577	358	80
Volume Left	65	0	0	0	0	15
Volume Right	0	0	0	0	70	65
cSH	711	1700	1700	1700	1700	296
Volume to Capacity	0.09	0.39	0.39	0.34	0.21	0.27
Queue Length 95th (m)	2.4	0.0	0.0	0.0	0.0	8.6
Control Delay (s)	10.6	0.0	0.0	0.0	0.0	21.6
Lane LOS	B					C
Approach Delay (s)	0.5			0.0		21.6
Approach LOS						C

Intersection Summary				
Average Delay			1.0	
Intersection Capacity Utilization			47.7%	ICU Level of Service A
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Total AM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	40	140	10	20	60
Future Volume (Veh/h)	15	40	140	10	20	60
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	40	140	10	20	60
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	245	145			150	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	145			150	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	96			99	
cM capacity (veh/h)	737	908			1444	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	55	150	80
Volume Left	15	0	20
Volume Right	40	10	0
cSH	854	1700	1444
Volume to Capacity	0.06	0.09	0.01
Queue Length 95th (m)	1.6	0.0	0.3
Control Delay (s)	9.5	0.0	2.0
Lane LOS	A		A
Approach Delay (s)	9.5	0.0	2.0
Approach LOS	A		

Intersection Summary			
Average Delay		2.4	
Intersection Capacity Utilization		25.6%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Total AM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	35	240	10	35	85	200	0	115	65	180	35	0
Future Volume (vph)	35	240	10	35	85	200	0	115	65	180	35	0
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	35	240	10	35	85	200	0	115	65	180	35	0

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	285	120	200	180	215
Volume Left (vph)	35	35	0	0	180
Volume Right (vph)	10	0	200	65	0
Hadj (s)	0.02	0.21	-0.70	0.26	0.17
Departure Headway (s)	5.8	6.4	5.5	6.3	6.1
Degree Utilization, x	0.46	0.21	0.31	0.31	0.36
Capacity (veh/h)	580	523	608	513	536
Control Delay (s)	13.6	10.0	9.7	12.1	12.5
Approach Delay (s)	13.6	9.8		12.1	12.5
Approach LOS	B	A		B	B

Intersection Summary			
Delay		11.9	
Level of Service		B	
Intersection Capacity Utilization		54.6%	ICU Level of Service A
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	355	960	10	45	1180	295	10	130	50	380	150	445
Future Volume (vph)	355	960	10	45	1180	295	10	130	50	380	150	445
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)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.90	1.00	1.00	0.92	1.00	0.99		1.00	1.00	0.93
Flpb, ped/bikes	1.00	1.00	1.00	0.98	1.00	1.00	0.95	1.00		0.98	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1665	3579	1435	1747	3614	1442	1697	1823		1735	1921	1411
Flt Permitted	0.20	1.00	1.00	0.30	1.00	1.00	0.65	1.00		0.60	1.00	1.00
Satd. Flow (perm)	347	3579	1435	549	3614	1442	1153	1823		1104	1921	1411
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	355	960	10	45	1180	295	10	130	50	380	150	445
RTOR Reduction (vph)	0	0	5	0	0	101	0	10	0	0	0	210
Lane Group Flow (vph)	355	960	5	45	1180	194	10	170	0	380	150	235
Confl. Peds. (#/hr)	55		40	40		55	50		20	20		50
Confl. Bikes (#/hr)			5			5						
Heavy Vehicles (%)	7%	2%	0%	0%	1%	2%	0%	0%	0%	1%	0%	5%
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA		Perm	NA	Perm
Protected Phases	5	2			6			4			8	
Permitted Phases	2		2	6		6	4			8		8
Actuated Green, G (s)	75.8	75.8	75.8	52.5	52.5	52.5	49.7	49.7		49.7	49.7	49.7
Effective Green, g (s)	75.8	75.8	75.8	52.5	52.5	52.5	49.7	49.7		49.7	49.7	49.7
Actuated g/C Ratio	0.54	0.54	0.54	0.38	0.38	0.38	0.36	0.36		0.36	0.36	0.36
Clearance Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0		7.0	7.0	7.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)	378	1937	776	205	1355	540	409	647		391	681	500
v/s Ratio Prot	c0.14	0.27			0.33			0.09			0.08	
v/s Ratio Perm	c0.37		0.00	0.08		0.13	0.01			c0.34		0.17
v/c Ratio	0.94	0.50	0.01	0.22	0.87	0.36	0.02	0.26		0.97	0.22	0.47
Uniform Delay, d1	19.7	20.1	14.8	29.8	40.6	31.6	29.4	32.1		44.5	31.6	34.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		0.98	0.86	2.26
Incremental Delay, d2	30.7	0.9	0.0	2.5	7.9	1.9	0.0	0.2		36.8	0.2	0.7
Delay (s)	50.4	21.0	14.8	32.2	48.5	33.4	29.4	32.3		80.5	27.2	79.6
Level of Service	D	C	B	C	D	C	C	C		F	C	E
Approach Delay (s)		28.9			45.1			32.2			71.9	
Approach LOS		C			D			C			E	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	113.7%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

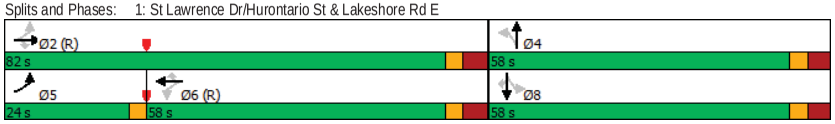
Queues
1: St Lawrence Dr/Hurontario St & Lakeshore Rd E

Future Total PM Peak Hour Period

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT	SBR
Lane Configurations											
Traffic Volume (vph)	355	960	10	45	1180	295	10	130	380	150	445
Future Volume (vph)	355	960	10	45	1180	295	10	130	380	150	445
Lane Group Flow (vph)	355	960	10	45	1180	295	10	180	380	150	445
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Perm
Protected Phases	5	2			6			4		8	
Permitted Phases	2		2	6		6	4		8		8
Detector Phase	5	2	2	6	6	6	4	4	8	8	8
Switch Phase											
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Split (s)	12.0	46.0	46.0	46.0	46.0	46.0	45.0	45.0	45.0	45.0	45.0
Total Split (s)	24.0	82.0	82.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0
Total Split (%)	17.1%	58.6%	58.6%	41.4%	41.4%	41.4%	41.4%	41.4%	41.4%	41.4%	41.4%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	0.0	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0	4.0	4.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	3.0	7.5	7.5	7.5	7.5	7.5	7.0	7.0	7.0	7.0	7.0
Lead/Lag	Lead			Lag	Lag	Lag					
Lead-Lag Optimize?	Yes			Yes	Yes	Yes					
Recall Mode	None	C-Min	C-Min	C-Min	C-Min	C-Min	None	None	None	None	None
v/c Ratio	0.91	0.50	0.01	0.22	0.87	0.46	0.02	0.27	0.97	0.22	0.63
Control Delay	49.9	21.5	0.0	34.9	49.3	17.3	29.0	30.2	81.2	27.6	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	0.0	2.7
Total Delay	49.9	21.5	0.0	34.9	49.3	17.3	29.0	30.2	125.3	27.6	28.0
Queue Length 50th (m)	57.1	91.3	0.0	9.1	171.0	28.3	1.9	33.4	114.5	38.4	89.3
Queue Length 95th (m)	#116.5	110.0	0.1	20.3	#207.2	56.3	6.1	53.0	#179.0	64.2	125.2
Internal Link Dist (m)		43.4			254.1			90.8		102.6	
Turn Bay Length (m)	130.0		90.0	130.0		60.0	30.0		30.0		30.0
Base Capacity (vph)	395	1938	791	205	1356	642	420	673	402	699	721
Starvation Cap Reductn	0	0	0	0	0	0	0	0	66	0	169
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.50	0.01	0.22	0.87	0.46	0.02	0.27	1.13	0.21	0.81

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 105
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: St Lawrence Dr/Hurontario St & Lakeshore Rd E



HCM Signalized Intersection Capacity Analysis
2: Hurontario St & High St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	0	30	10	5	35	10	755	15	35	935	60
Future Volume (vph)	115	0	30	10	5	35	10	755	15	35	935	60
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)		6.5			6.5		6.0	6.0		6.0	6.0	
Lane Util. Factor		1.00			1.00		1.00	0.95		1.00	0.95	
Frpb, ped/bikes		0.99			0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		0.98			0.99		0.99	1.00		0.93	1.00	
Frt		0.97			0.91		1.00	1.00		1.00	0.99	
Flt Protected		0.96			0.99		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1734			1618		1769	3519		1600	3537	
Flt Permitted		0.78			0.94		0.27	1.00		0.35	1.00	
Satd. Flow (perm)		1410			1532		503	3519		589	3537	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	115	0	30	10	5	35	10	755	15	35	935	60
RTOR Reduction (vph)	0	20	0	0	30	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	125	0	0	20	0	10	769	0	35	993	0
Confl. Peds. (#/hr)	15		15	15		15	10		50	50		10
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	3%	0%	4%	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)		18.5			18.5		109.0	109.0		109.0	109.0	
Effective Green, g (s)		18.5			18.5		109.0	109.0		109.0	109.0	
Actuated g/C Ratio		0.13			0.13		0.78	0.78		0.78	0.78	
Clearance Time (s)		6.5			6.5		6.0	6.0		6.0	6.0	
Vehicle Extension (s)		3.0			3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		186			202		391	2739		458	2753	
v/s Ratio Prot								0.22			c0.28	
v/s Ratio Perm		c0.09			0.01		0.02			0.06		
v/c Ratio		0.67			0.10		0.03	0.28		0.08	0.36	
Uniform Delay, d1		57.9			53.4		3.5	4.4		3.6	4.8	
Progression Factor		1.00			1.00		0.85	0.75		0.13	0.11	
Incremental Delay, d2		9.2			0.2		0.1	0.2		0.1	0.1	
Delay (s)		67.1			53.6		3.1	3.5		0.6	0.7	
Level of Service		E			D		A	A		A	A	
Approach Delay (s)		67.1			53.6			3.5			0.6	
Approach LOS		E			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	12.5
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Queues
2: Hurontario St & High St E

Future Total PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	115	0	10	5	10	755	35	935
Future Volume (vph)	115	0	10	5	10	755	35	935
Lane Group Flow (vph)	0	145	0	50	10	770	35	995
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)	28.5	28.5	28.5	28.5	22.0	22.0	22.0	22.0
Total Split (s)	45.0	45.0	45.0	45.0	95.0	95.0	95.0	95.0
Total Split (%)	32.1%	32.1%	32.1%	32.1%	67.9%	67.9%	67.9%	67.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.5	2.5	2.5	2.5	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.5		6.5	6.0	6.0	6.0	6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Min	C-Min	C-Min	C-Min
v/c Ratio		0.71		0.22	0.03	0.28	0.08	0.36
Control Delay		66.0		23.9	4.3	3.9	0.7	0.7
Queue Delay		2.4		0.3	0.0	0.3	0.0	0.4
Total Delay		68.4		24.2	4.3	4.2	0.7	1.1
Queue Length 50th (m)		34.6		3.9	0.5	22.1	0.3	4.3
Queue Length 95th (m)		55.6		15.6	m0.8	m21.4	m0.2	m3.6
Internal Link Dist (m)		58.2		28.1		102.6		94.7
Turn Bay Length (m)					30.0		30.0	
Base Capacity (vph)		404		446	392	2741	465	2756
Starvation Cap Reductn		0		0	0	1204	0	1146
Spillback Cap Reductn		159		174	0	550	0	508
Storage Cap Reductn		0		0	0	0	0	0
Reduced v/c Ratio		0.59		0.18	0.03	0.50	0.08	0.62

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 55 (39%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Hurontario St & High St E

HCM Signalized Intersection Capacity Analysis
3: Hurontario St & Park St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	380	40	40	5	50	160	45	835	25	155	985	510
Future Volume (vph)	380	40	40	5	50	160	45	835	25	155	985	510
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)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
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		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.89		1.00	1.00		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1758	1717		1742	1628		1785	3487		1733	3269	
Flt Permitted	0.44	1.00		0.70	1.00		0.08	1.00		0.15	1.00	
Satd. Flow (perm)	817	1717		1292	1628		157	3487		283	3269	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	380	40	40	5	50	160	45	835	25	155	985	510
RTOR Reduction (vph)	0	22	0	0	80	0	0	1	0	0	47	0
Lane Group Flow (vph)	380	58	0	5	130	0	45	859	0	155	1448	0
Confl. Peds. (#/hr)	15		20	20		15	20		35	35		20
Heavy Vehicles (%)	1%	3%	0%	0%	2%	2%	0%	4%	0%	3%	4%	2%
Turn Type	pm+pt	NA		Perm	NA		Perm	NA		pm+pt	NA	
Protected Phases	3	8			4			6		5	2	
Permitted Phases	8			4			6			2		
Actuated Green, G (s)	63.0	63.0		34.3	34.3		47.9	47.9		63.0	63.0	
Effective Green, g (s)	63.0	63.0		34.3	34.3		47.9	47.9		63.0	63.0	
Actuated g/C Ratio	0.45	0.45		0.24	0.24		0.34	0.34		0.45	0.45	
Clearance Time (s)	4.5	7.0		7.0	7.0		7.0	7.0		3.0	7.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	530	772		316	398		53	1193		252	1471	
v/s Ratio Prot	c0.12	0.03			0.08			0.25		0.05	c0.44	
v/s Ratio Perm	c0.20			0.00			0.29			0.22		
v/c Ratio	0.72	0.08		0.02	0.33		0.85	0.72		0.62	0.98	
Uniform Delay, d1	27.7	21.9		40.1	43.4		42.7	40.2		26.7	38.0	
Progression Factor	1.00	1.00		1.00	1.00		0.85	0.87		1.00	1.00	
Incremental Delay, d2	4.6	0.2		0.1	2.2		83.4	3.7		4.4	20.0	
Delay (s)	32.3	22.1		40.1	45.5		119.8	38.5		31.2	58.0	
Level of Service	C	C		D	D		F	D		C	E	
Approach Delay (s)		30.5			45.4			42.5			55.5	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	47.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.5
Intersection Capacity Utilization	119.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

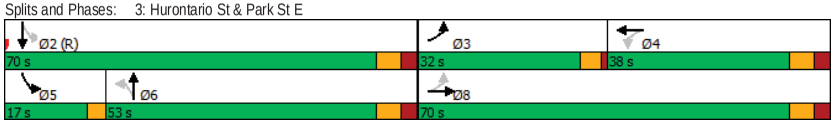
Queues
3: Hurontario St & Park St E

Future Total PM Peak Hour Period

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	380	40	5	50	45	835	155	985
Future Volume (vph)	380	40	5	50	45	835	155	985
Lane Group Flow (vph)	380	80	5	210	45	860	155	1495
Turn Type	pm+pt	NA	Perm	NA	Perm	NA	pm+pt	NA
Protected Phases	3	8		4		6	5	2
Permitted Phases	8		4		6		2	
Detector Phase	3	8	4	4	6	6	5	2
Switch Phase								
Minimum Initial (s)	5.0	8.0	8.0	8.0	8.0	8.0	5.0	8.0
Minimum Split (s)	9.5	38.0	38.0	38.0	33.0	33.0	8.0	33.0
Total Split (s)	32.0	70.0	38.0	38.0	53.0	53.0	17.0	70.0
Total Split (%)	22.9%	50.0%	27.1%	27.1%	37.9%	37.9%	12.1%	50.0%
Yellow Time (s)	3.5	4.0	4.0	4.0	4.0	4.0	3.0	4.0
All-Red Time (s)	1.0	3.0	3.0	3.0	3.0	3.0	0.0	3.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	4.5	7.0	7.0	7.0	7.0	7.0	3.0	7.0
Lead/Lag	Lead		Lag	Lag	Lag	Lag	Lead	
Lead-Lag Optimize?	Yes		Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Max	Max	Max	Max	Max	None	C-Min
v/c Ratio	0.70	0.10	0.02	0.44	0.85	0.72	0.60	0.98
Control Delay	33.0	12.3	42.8	25.7	123.9	39.0	30.9	55.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	5.4	0.0	0.0
Total Delay	33.0	12.3	42.8	25.7	123.9	44.4	30.9	55.6
Queue Length 50th (m)	73.8	6.5	1.2	25.3	12.7	123.5	25.3	214.5
Queue Length 95th (m)	103.0	16.8	5.1	52.1	#37.3	148.1	40.1	#271.8
Internal Link Dist (m)		73.3		75.8		94.7		197.8
Turn Bay Length (m)	25.0		25.0		30.0		60.0	
Base Capacity (vph)	566	794	316	478	53	1195	280	1518
Starvation Cap Reductn	0	0	0	0	0	272	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	0.67	0.10	0.02	0.44	0.85	0.93	0.55	0.98

Intersection Summary
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 3: Hurontario St & Park St E



HCM Unsignalized Intersection Capacity Analysis
5: Ann St & High St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	10	110	10	15	55	5	30	140	30	5	105	15
Future Volume (vph)	10	110	10	15	55	5	30	140	30	5	105	15
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	10	110	10	15	55	5	30	140	30	5	105	15

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	130	75	200	125
Volume Left (vph)	10	15	30	5
Volume Right (vph)	10	5	30	15
Hadj (s)	-0.03	0.00	0.49	-0.06
Departure Headway (s)	4.8	4.9	5.1	4.6
Degree Utilization, x	0.17	0.10	0.28	0.16
Capacity (veh/h)	694	674	681	730
Control Delay (s)	8.8	8.5	10.0	8.5
Approach Delay (s)	8.8	8.5	10.0	8.5
Approach LOS	A	A	B	A

Intersection Summary				
Delay			9.1	
Level of Service			A	
Intersection Capacity Utilization			34.8%	ICU Level of Service	A
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
4: Lakeshore Rd E & Ann St

Future Total PM Peak Hour Period

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	105	1320	1540	95	5	125
Future Volume (Veh/h)	105	1320	1540	95	5	125
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	105	1320	1540	95	5	125
Pedestrians					30	
Lane Width (m)					3.5	
Walking Speed (m/s)					1.2	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (m)			67			
pX, platoon unblocked	0.69				0.69	0.69
vC, conflicting volume	1665				2488	848
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1075				2261	0
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	75				72	83
cM capacity (veh/h)	417				18	738

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	105	660	660	1027	608	130
Volume Left	105	0	0	0	0	5
Volume Right	0	0	0	0	95	125
cSH	417	1700	1700	1700	1700	291
Volume to Capacity	0.25	0.39	0.39	0.60	0.36	0.45
Queue Length 95th (m)	7.9	0.0	0.0	0.0	0.0	17.5
Control Delay (s)	16.5	0.0	0.0	0.0	0.0	27.0
Lane LOS	C					D
Approach Delay (s)	1.2			0.0		27.0
Approach LOS						D

Intersection Summary				
Average Delay			1.6	
Intersection Capacity Utilization			69.6%	ICU Level of Service	C
Analysis Period (min)			15	

HCM Unsignalized Intersection Capacity Analysis
8: Ann St & Site Driveway

Future Total PM Peak Hour Period

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	15	30	135	20	35	110
Future Volume (Veh/h)	15	30	135	20	35	110
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	15	30	135	20	35	110
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	325	145			155	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	325	145			155	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	97			98	
cM capacity (veh/h)	657	908			1438	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	45	155	145
Volume Left	15	0	35
Volume Right	30	20	0
cSH	805	1700	1438
Volume to Capacity	0.06	0.09	0.02
Queue Length 95th (m)	1.4	0.0	0.6
Control Delay (s)	9.7	0.0	2.0
Lane LOS	A		A
Approach Delay (s)	9.7	0.0	2.0
Approach LOS	A		

Intersection Summary			
Average Delay		2.1	
Intersection Capacity Utilization		29.4%	ICU Level of Service A
Analysis Period (min)		15	

HCM Unsignalized Intersection Capacity Analysis
6: Ann St & Park St E

Future Total PM Peak Hour Period

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	45	260	0	60	285	260	5	105	55	145	85	10
Future Volume (vph)	45	260	0	60	285	260	5	105	55	145	85	10
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	45	260	0	60	285	260	5	105	55	145	85	10

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	305	345	260	165	240
Volume Left (vph)	45	60	0	5	145
Volume Right (vph)	0	0	260	55	10
Hadj (s)	0.03	0.09	-0.70	0.00	0.10
Departure Headway (s)	6.5	6.6	5.8	7.0	6.8
Degree Utilization, x	0.55	0.63	0.42	0.32	0.46
Capacity (veh/h)	524	528	598	451	482
Control Delay (s)	17.0	19.1	11.7	13.2	15.4
Approach Delay (s)	17.0	16.0		13.2	15.4
Approach LOS	C	C		B	C

Intersection Summary			
Delay		15.8	
Level of Service		C	
Intersection Capacity Utilization		72.1%	ICU Level of Service C
Analysis Period (min)		15	