St. Philip Catholic School Expansion

Transportation Impact Assessment

FINAL

July 2025

TIA Plan Reports

On 14 June 2017, the Council of the City of Ottawa adopted new Transportation Impact Assessment (TIA) Guidelines. In adopting the guidelines, Council established a requirement for those preparing and delivering transportation impact assessments and reports to sign a letter of certification.

Individuals submitting TIA reports will be responsible for all aspects of development-related transportation assessment and reporting, and undertaking such work, in accordance and compliance with the City of Ottawa's Official Plan, the Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines.

By submitting the attached TIA report (and any associated documents) and signing this document, the individual acknowledges that s/he meets the four criteria listed below.

CERTIFICATION

1. I have reviewed and have a sound understanding of the objectives, needs and requirements of the City of Ottawa's Official Plan, Transportation Master Plan and the Transportation Impact Assessment (2017) Guidelines;
2. I have a sound knowledge of industry standard practice with respect to the preparation of transportation impact assessment reports, including multi modal level of service review;
3. I have substantial experience (more than 5 years) in undertaking and delivering transportation impact studies (analysis, reporting and geometric design) with strong background knowledge in transportation planning, engineering or traffic operations; and
4. I am either a licensed[1] or registered[2] professional in good standing, whose field of expertise [check √ appropriate field(s)] is either transportation engineering ☑ or transportation planning ☐.

[1,2] **License of registration body that oversees the profession is required to have a code of conduct and ethics guidelines that will ensure appropriate conduct and representation for transportation planning and/or transportation engineering works.**

City Of Ottawa
Infrastructure Services and Community Sustainability
Planning and Growth Management
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

Ville d'Ottawa
Services d 'infrastructure et Viabilité des collectivités
Urbanisme et Gestion de la croissance
110, avenue Laurier Ouest
Ottawa (Ontario) K1P 1J1
Tél. : 613-580-2424
Télécopieur: 613-560-6006

Dated at Ottawa (City) this 16 day of July, 2025.

Name: Jake Berube
(Please Print)

Professional Title: Transportation Engineer

Signature of individual certifier that s/he meets the above criteria

Office Contact Information (Please Print)
Address: 1223 Michael Street North, Suite 100
City / Postal Code: Ottawa, Ontario, K1J 7T2
Telephone / Extension: 613-738-4160
E-Mail Address: jake.berube@parsons.com

St. Philip Catholic School (OCSB)

Transportation Impact Assessment

prepared for:
Ottawa Catholic School Board
570 West Hunt Club Road
Ottawa, ON
K2G 3R4

prepared by:

1223 Michael Street North
Suite 100
Ottawa, ON K1J 7T2

July 16, 2025

479356-01000

DOCUMENT CONTROL PAGE

CLIENT:	Edward J Cuhaci and Associates Architects Inc.
PROJECT NAME:	St. Philip Catholic School Expansion
REPORT TITLE:	TIA Step 4 – Transportation Impact Assessment
PARSONS PROJECT NO:	479356 - 01000
VERSION:	Site Plan Application (SPA)
DIGITAL MASTER:	https://parsons365can.sharepoint.com/sites/OttawaHub/Projects/Projects/479356 - St. Philip Catholic School Addition (OCSB)/4. 01000 - WBS NAME/Documents/03 - Step 3 Report/St. Philip Catholic School Extension (79 Maitland St S) - Step 3 Final Draft.docx
ORIGINATOR	Jordan Terada, E.I.T. / Juan Lavin, P.Eng
AUTHORIZATION:	Jake Berube, P.Eng.
CIRCULATION LIST:	Rochelle Fortier, P.Eng
HISTORY:	• TIA Step 1 Screening Form – Dec 30, 2024 • TIA Step 2 Scoping & Forecasting Report – Feb 14, 2025 • TIA Step 3 Strategy Report – April 10, 2025 • Transportation Impact Assessment – July 16, 2025

TABLE OF CONTENTS

EXECUTIVE SUMMARY

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

TRANSPORTATION IMPACT ASSESSMENT

Parsons has been retained by the Ottawa Catholic School Board to prepare a TIA in support of a Site Plan Control Application for a proposed extension of the St. Philip Catholic Elementary School. The school is located at the municipal address of 79 Maitland Street S in the village of Richmond. This document follows the TIA process as outlined in the City of Ottawa Transportation Impact Assessment (TIA) Guidelines (2017) and Revisions (2023). The following report represents Step 3 – Strategy Report.

1.0 SCREENING FORM

The Screening Form confirmed the need for a TIA Report based on the Trip Generation Trigger as the development is anticipated to generate more than 60 person trips during peak hours. Neither of the other triggers were met. The Screening Form and Site Plan have been provided in **Appendix A**.

2.0 SCOPING REPORT

2.1. Existing and Planned Conditions

2.1.1. Proposed Development

The St. Philip Catholic Elementary School is located at the municipal address of 79 Maitland Street South, bounded by Maitland St to the east, Fortune St to the west, Royal York St to the North, and St. Philip Church to the south (**Figure 1**). The site currently offers grades JK-6 with approximately 600 enrolled students and 50 staff within 25 classrooms (15 indoor classes, 10 portables). The site is currently zoned RI2 H(15) (Rural Institution).

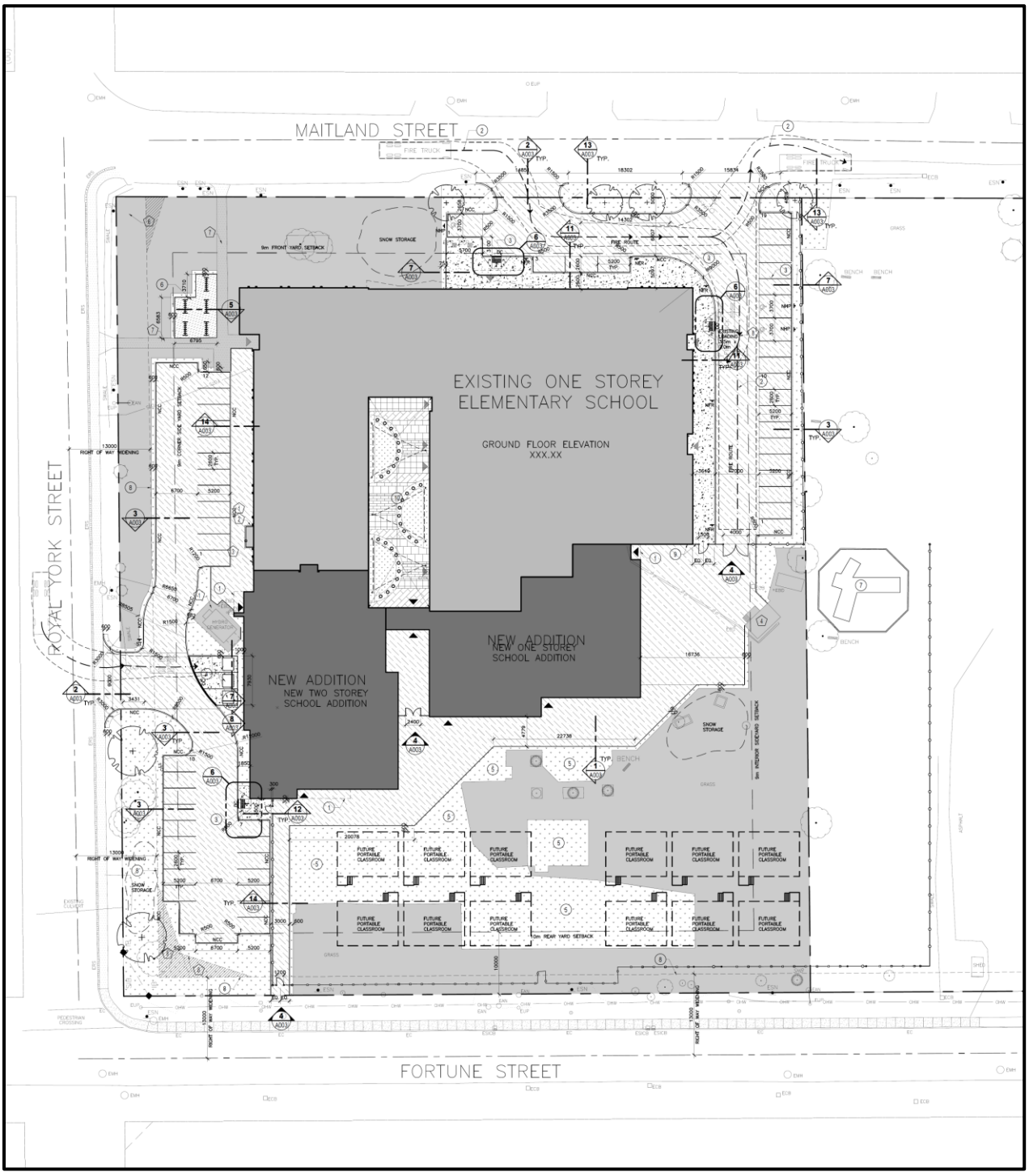
The proposed expansion development plans to provide 2 new temporary portable structures and a fixed building extension comprising of 12 new classrooms within a two-storey addition (1,503 m^2). The proposal includes a new parking lot located along the Royal York St frontage and upgrades to the existing parking lot and internal bus laybys on the Maitland St frontage. The site access locations will remain as existing, with one located approximately 85m west of Royal York/Maitland intersection; the other is approximately 75m and 105m south of Royal York/Maitland intersection functioning as a one-way bay with traffic flowing southbound. Minor refinements such as raised curbs are proposed.

The latest plan proposes 23 parking spaces off Maitland St and 36 spaces from Royal York St, with 3 of the spaces being accessible parking spaces, for a combined total of 59 parking spaces. Buses are proposed to continue using Royal York St to layby along the paved shoulder, with surplus buses using Maitland St. A total of 13 buses can layby at a single time. Pedestrian connections from public sidewalks to the school structure have been provided approximately 25m south and 30m west of Royal York/Maitland intersection and a 3m multi-use pathway (MUP) 30m south of Royal York/Fortune intersection. The proposed expansion is anticipated to be constructed in a single phase assumed by 2026.

The site plan has been illustrated in **Figure 2.**

Figure 1: Local Context

Figure 2: Proposed Site Plan (Feb. 2025)



2.1.2. Existing Conditions

Area Road Network

A description for each road within the study area included in the TIA has been provided below.

Maitland St is a north-south local road that extends from North York St in the north to Burke St in the south. Within the study area, the roadway operates as a two-way, two-lane undivided cross-section with a posted speed limit of 40 km/h. The existing ROW is estimated to be 20 m.

Royal York St is an east-west "Village Rural Collector" road that extends from King St in the east to McBean St and then continues at Fowler St to Fortune St in the west. The roadway typically operates as a two-way, two-lane undivided cross-section with assumed speed limit of 40 km/h. The existing ROW is estimated to be 16 m.

Fortune St is a north-south collector road that extends from Perth St in the north to Ottawa St in the south, designated a "Village Rural Collector" fronting the St. Philip School site. The roadway operates as a two-way two-lane undivided cross-section with a posted speed limit of 40 km/h. The existing ROW is estimated to be 20 m.

Burke St is an east-west local road that extends from Maitland St in the east to Queen Charlotte St in the west. The roadway typically operates as a two-way two-lane undivided cross-section with an assumed speed limit of 40 km/h. The existing ROW is estimated to be 16 m.

Martin St is an east-west collector road that extends from King St N in the east to Fortune St in the west. Within the study area, the roadway typically operates as a two-way two-lane undivided cross-section with a posted speed limit of 40 km/h. The existing ROW is estimated to be 16 m.

Perth St is an east-west arterial road, classified as a "Village Arterial"/"Traditional Village Main Street," that extends from Eagleson Rd in the east (continues as Old Richmond Rd) to Oldenburg Ave/Meynell Rd in the west (continues as Franktown Rd). Within the study area, the roadway typically operates as a two-way four-lane undivided urban cross-section with an occasional two-way left turn lane. The posted speed limit is 50 km/h and the existing ROW is estimated to be 27m.

McBean St is a north-south arterial road, classified as a "Village Arterial"/"Traditional Village Main Street," that extends from Bowin Rd in the south (continues as Century Rd W) to Perth St in the north. Within the study area, the roadway typically operates as a two-way two-lane undivided urban cross-section with a posted speed limit of 40 km/h. The existing ROW is estimated to be 20 m.

Existing Study Area Intersections

Maitland St/Royal York St

The Maitland/Royal York intersection is a three legged unsignalized intersection with stop control only on the northbound approach (Maitland St S). All approaches consist of one all movement lane.

Fortune St/Royal York St

The Fortune/Royal York intersection is a three legged unsignalized intersection with an all-way-stop-control. All approaches consist of one all movement lane and a pedestrian crossing is provided on the east leg.

Fortune St/Burke St

The Fortune/Burke intersection is a four-legged unsignalized intersection with stop control only on the east and west legs. All approaches consist of one all movement lane

Fortune St/Martin St

The Fortune/Martin intersection is a three-legged unsignalized intersection with stop control only on the east leg. All approaches consist of one all movement lane and a pedestrian crossing is provided on the east leg (Martin St).

Perth St/Fortune St

The Perth/Fortune intersection is a three-legged unsignalized intersection with stop control on the northbound approach. The northbound approaches consist of one all movement lane and a pedestrian crossing is provided on the south leg (Fortune St). The eastbound approach consists of a shared through-right lane and a through lane. The westbound approach consists of a shared through-left lane and a through lane.

McBean St/Martin St

The McBean/Martin intersection is a four-legged signalized intersection. All approaches consist of one all movement lane with pedestrian crossings provided on each leg. Given its location and likely school trip distribution, this intersection is not anticipated to have new trip generation from the site. Therefore, this intersection will not be analyzed further.

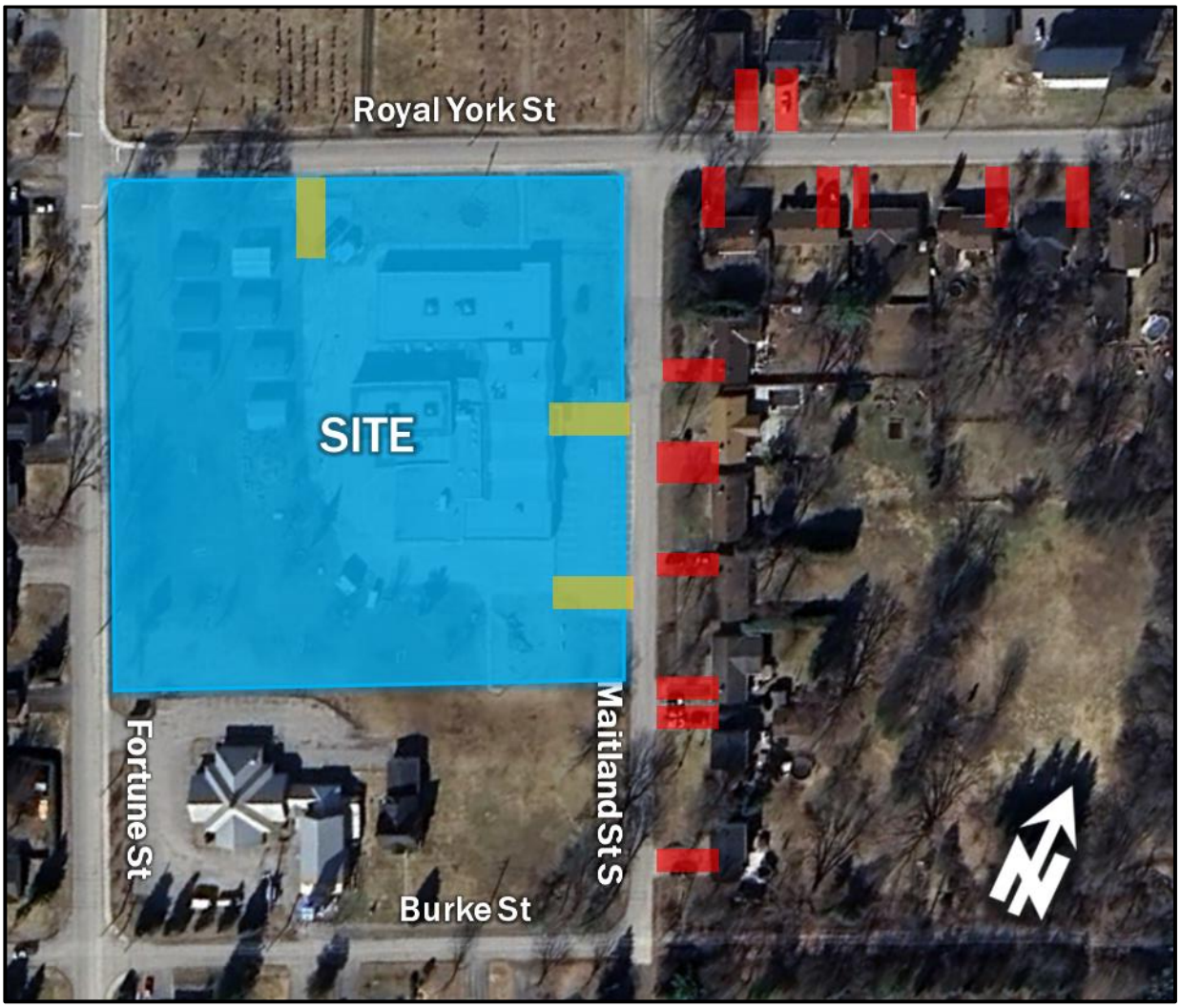
McBean St/Perth St

The McBean/Perth intersection is a three-legged signalized intersection. The eastbound and westbound approach consists of one through/right turn lane, one through lane, and one auxiliary left turn lane while the northbound approach consists of one through/right turn lane and one auxiliary left turn lane.

Existing Driveways to Adjacent Developments

A total of 14 adjacent driveways to the Maitland St and North York St accesses were identified and are illustrated in **Figure 3**. 6 of the driveways were identified along Maitland St ranging between 0-to-65m away from either of the two Maitland accesses. The other 8 adjacent driveways were identified along North York St, ranging between 95-to-200m away from the North York St access. All adjacent driveways belong to single family residential homes.

Figure 3: Adjacent Driveways within 200m of Site Accesses



Existing Area Traffic Management Measures

Existing area traffic management measures within the study area include school zone signs surrounding the school, temporary flex posts along Fortune St, and rumble strips along the site's frontage on North York St. Royal York Street restricts parent pick-up/drop-off as it is used to park buses during pick-up/drop-off time.

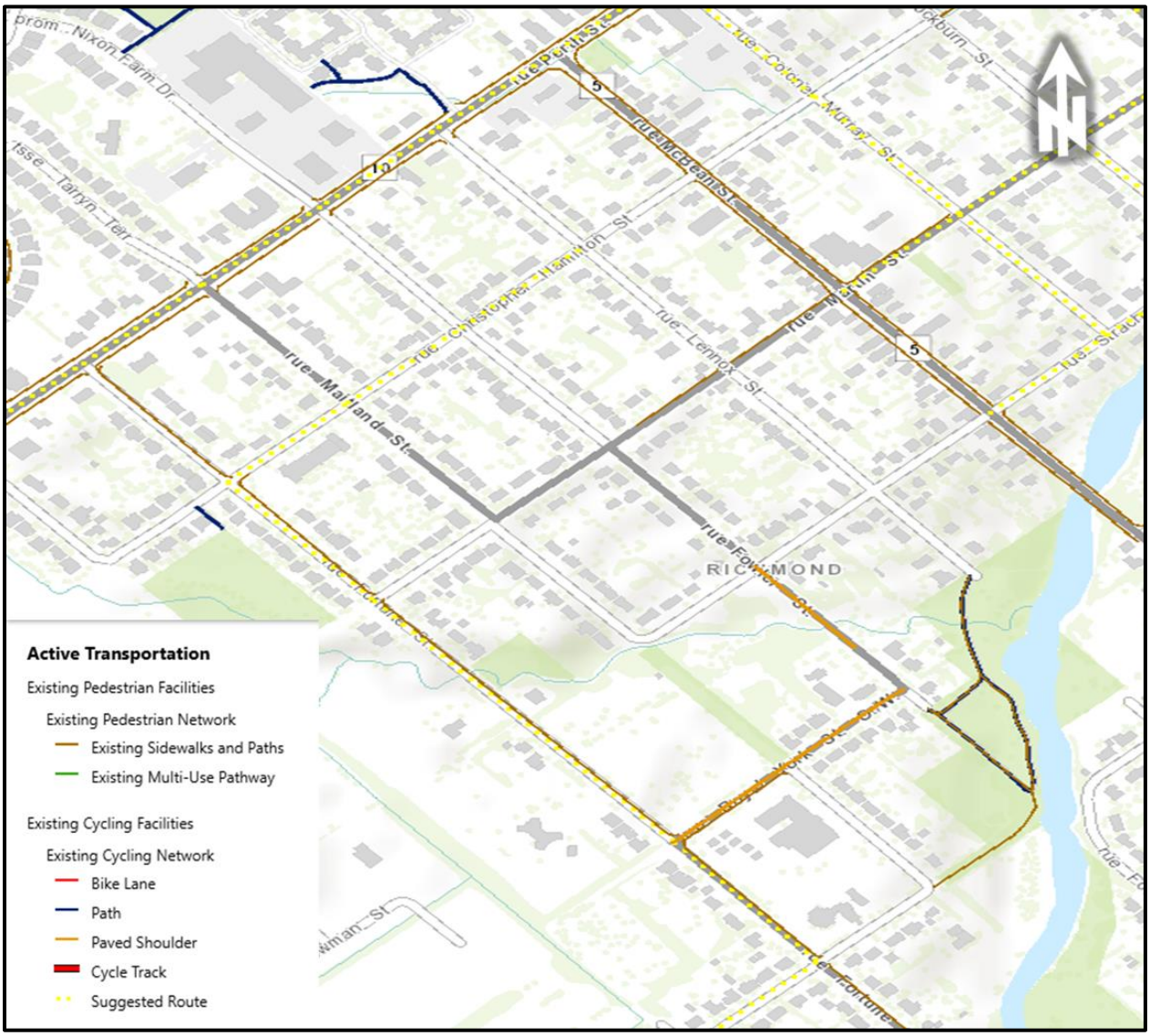
Existing Pedestrian/Cycling Network

The existing pedestrian facilities within the study area include sidewalks along the east side of Fortune St, the north side of Martin St between McBean St and Fowler St, both sides of Perth St, and both sides of McBean St. Additionally, minor unpaved pathways are provided though Jock River Park (located north-east of the site), providing additional north-south connection between the dead-ends of Maitland St, Royal York St/Fowler St, and Lennox St.

Royal York Street provides for a paved shoulder separated by a rumble strip where buses lay-up.

The existing cycling network is limited to paved shoulders on Royal York St along the site frontage which connect to the nearby suggested cycling routes along Fortune St and Perth St. An illustration of the active transportation network is shown in **Figure 4.**

Figure 4: Existing Active Transportation Network (GeoOttawa)



Transit Network

The study area is served by a 'Connexion' routes connecting to Line 1 at Tunney's Pasture which operates during peak periods. The following description of OC Transpo routes within the study area are as follow:

- **Route #283 (Munster <-> Tunney's Pasture):** identified by OC Transpo as a "Connexion Route", this route operates Monday to Friday during peak periods only. This route provides connectivity to the Pinecrest area, Lincoln Fields station, Dominion station, and to the Confederation LRT Line at Tunney's Pasture. The nearest bus stop to the site is located at the intersection of Fortune St and Royal York St, located approximately 25m west of the Royal York access.

- **Route #301 (Carlingwood <-> Richmond, Stittsville):** identified by OC Transpo as a "Local Route", this route only operates on Mondays during peak periods only. This route provides connectivity to Stittsville, Kanata Centrum, Bayshore Shopping Centre, Pinecrest area, and the Carlingwood Shopping Centre. The nearest bus stop to the site is located at the intersection of Fortune St and Royal York St, located approximately 25m west of the Royal York access.

As part of OC Transpo's "New Ways to Bus" which aims at providing improved connectivity to major LRT transit stations as they become online (such as the Trillium Line Extension or the ongoing Stage 2 Confederation Line East and West Extensions), certain modifications to bus routes have been proposed. Near this development, the following service changes have been proposed:

- **Route #283**: new terminus at Limebank Station rather than Tunney's Pasture Station.
- **Route #263**: extension to connect the Village of Richmond to Tunney's Pasture Station via Stittsville.

The transit network for the study area is illustrated in **Figure 5** with **Figure 6** illustrating the bus stop locations near to the site. Maps of active transit routes are included in **Appendix B**.

Figure 5: Area Transit Network (Feb. 2025)

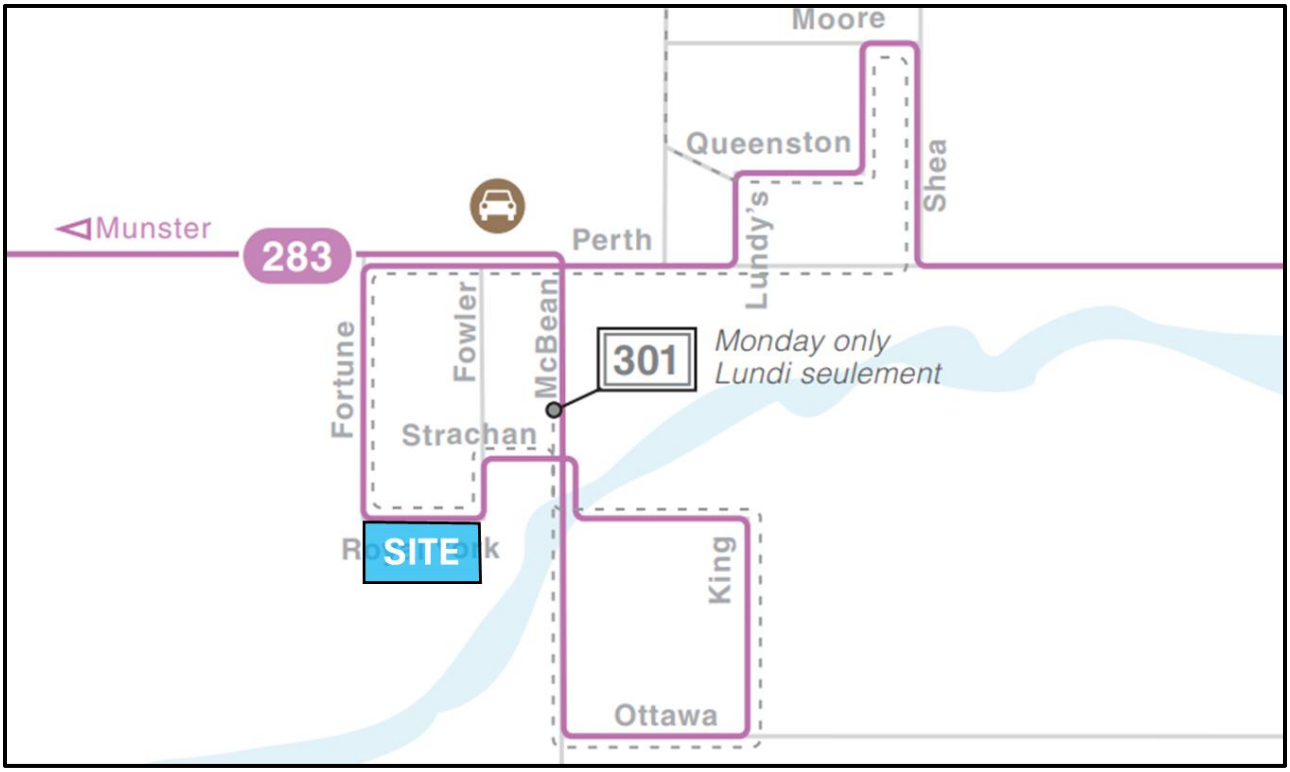
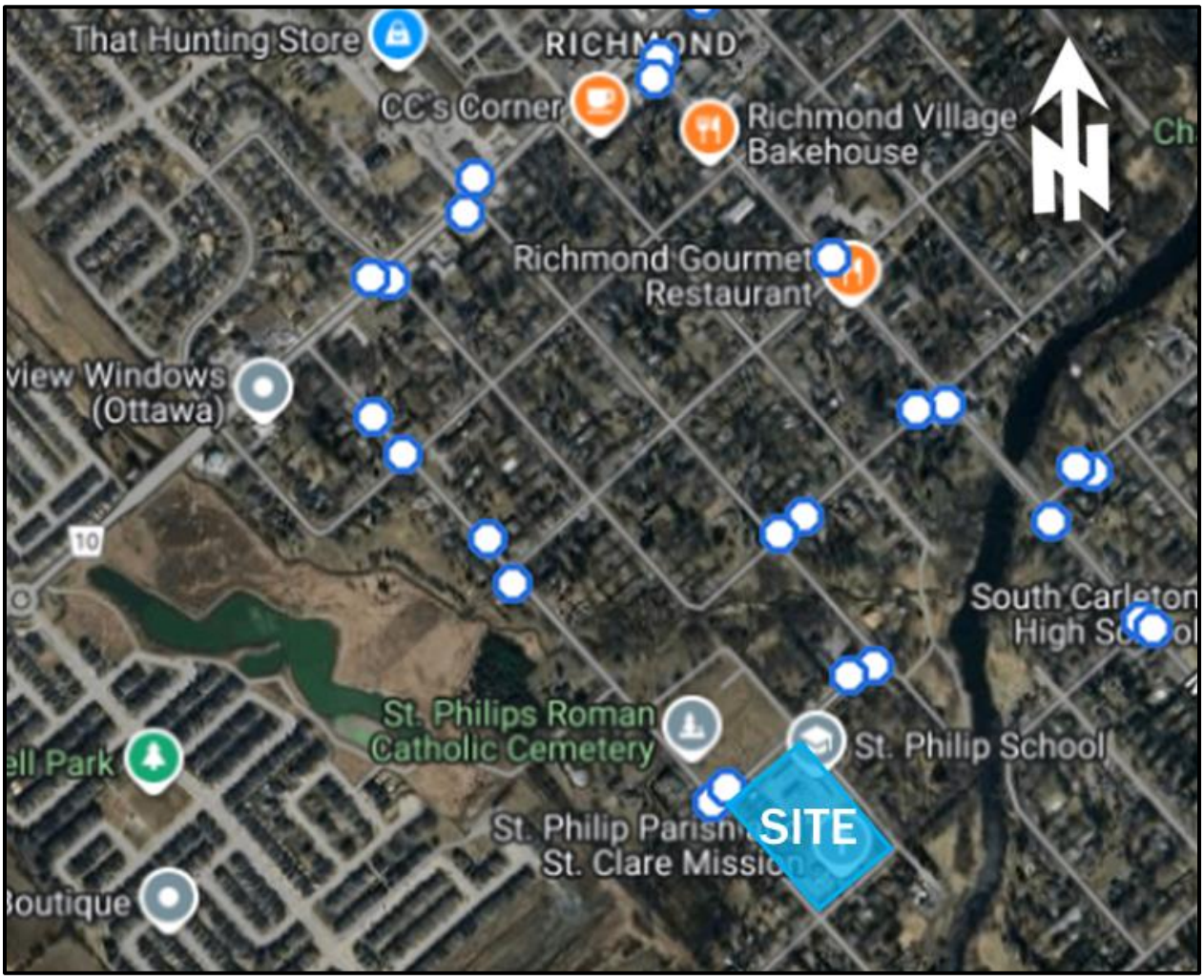


Figure 6: Bus Stop Locations



Peak Hour Travel Demands

Traffic count data was obtained from the City of Ottawa. Traffic data was unavailable on Royal York Street. The traffic volumes at study area intersections are illustrated in **Figure 7**, with raw traffic count data provided in **Appendix C**. Existing active transportations volumes have been provided in **Figure 8**. Note that school classes start at 9:20 AM and finish at 3:50 PM and is generally consistent with the commuter peak hours.

Figure 7: Existing Peak Hour Vehicle Traffic Volumes

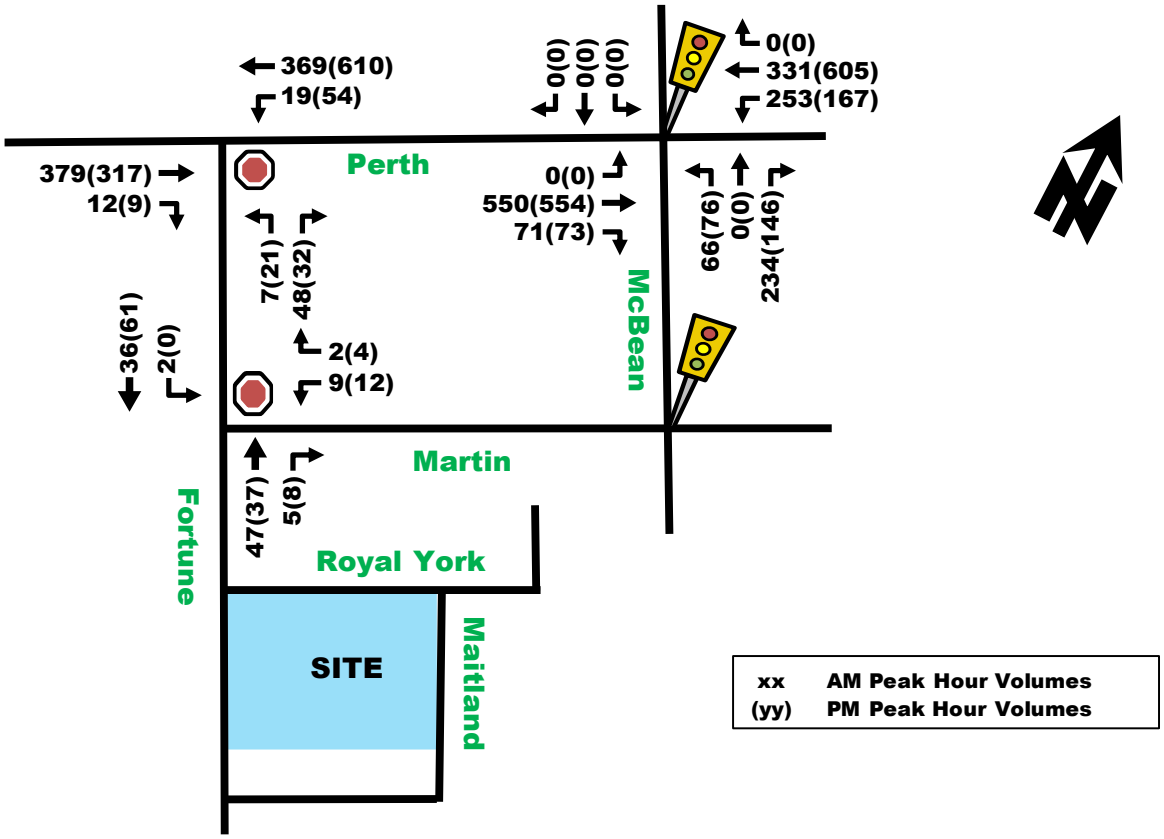
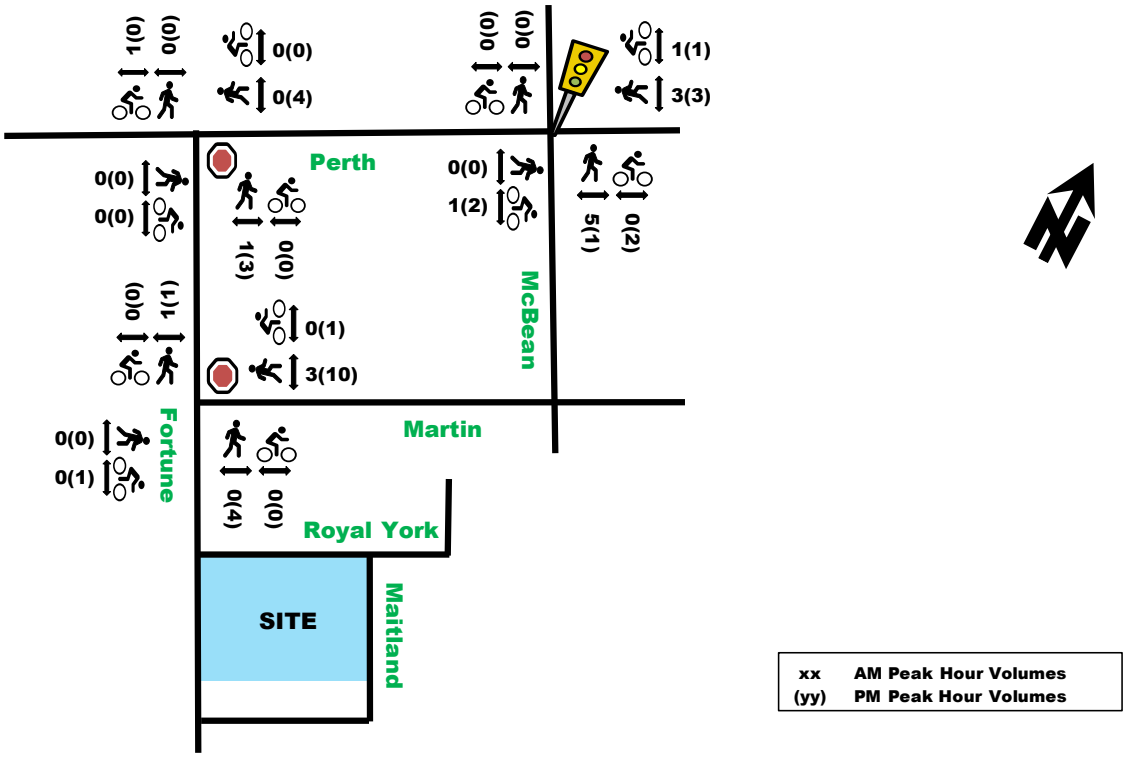


Figure 8: Existing Pedestrian and Cyclists Peak Hour Volumes



Note: some counts were performed in winter and may reflect lower than average AT users.

Existing Road Safety Conditions

A five-year collision history data (2018-2022, inclusive) was obtained from the City of Ottawa Open Data for the study area intersections, as well as road segments within the study area. Detailed collision analysis has been provided in **Appendix D**.

Upon analyzing the collision data, the total number of collisions observed within the study area was determined to be 23 collisions within the past five-years. 17 of the collisions (74%) resulted in only property damage, 6 (26%) in non-fatal injury, and 0 fatal collisions were recorded within the study area during this time period. The type of impacts that were reported include: 5 (22%) turning movement, 5 (22%) angle, 4 (17%) rear end, 4 (17%) single motor vehicle, 3 (13%) single motor vehicle and unattended vehicle, 2 (9%) sideswipe collisions.

Within the study area, the quantity of collisions that occurred at each location are:

Intersections

- Fortune St/Martin St: 1
- Maitland St/Perth St: 1
- McBean St/Perth St: 6
- Christopher Hamilton St/McBean St: 2

Mid-Block Locations

- Perth St, Queen Charlotte St to Fortune St: 2
- Fortune St, Perth St to Christopher Hamilton St: 1
- Maitland St, Royal York St to Burke St: 1
- Perth St, Oak Leaf St to McBean St: 3
- Perth St, Tarryn St to Nixon Farm St: 2
- Perth St, McBean St to Colonel Murray St: 2
- McBean St, Christopher Hamilton St to Martin St: 1
- McBean St, Perth St to Christopher Hamilton St: 2

In general, the study area shows a lower-than-average frequency of collisions compared to other intersections and road segments within the City of Ottawa. Most intersections and road segments showed less than 6 collisions within the latest 5 years collision history, making collision patterns difficult to identify. A single collision along the site boundary was reported within the data set which occurred on Maitland St between Royal York St and Burke St. This collision along the site boundary involved a single vehicle unattended collision, likely a parked vehicle.

Of all the collision occurrences and locations within the study area, the McBean St/Perth St intersection was shown to have the highest total of 6 collisions. Given the study area context, the higher relative frequency of collisions at this location can be expected due to the intersection of two arterial roads. Of the total 6 collisions, no discernable patterns were observed based on either the impact type, time of day, environmental conditions, or accident classification. It is worth noting that one of the collisions resulted in a major injury which occurred due to a single motor vehicle collision.

A total of 2 collisions have occurred which involved a pedestrian, 1 at the McBean St/Perth St intersection and 1 along Fortune St between Perth St and Christopher Hamilton St. Both collisions resulted in injuries.

2.1.3. Planned Conditions

Future Transportation Network Changes

Village of Richmond Secondary Plan (2003)

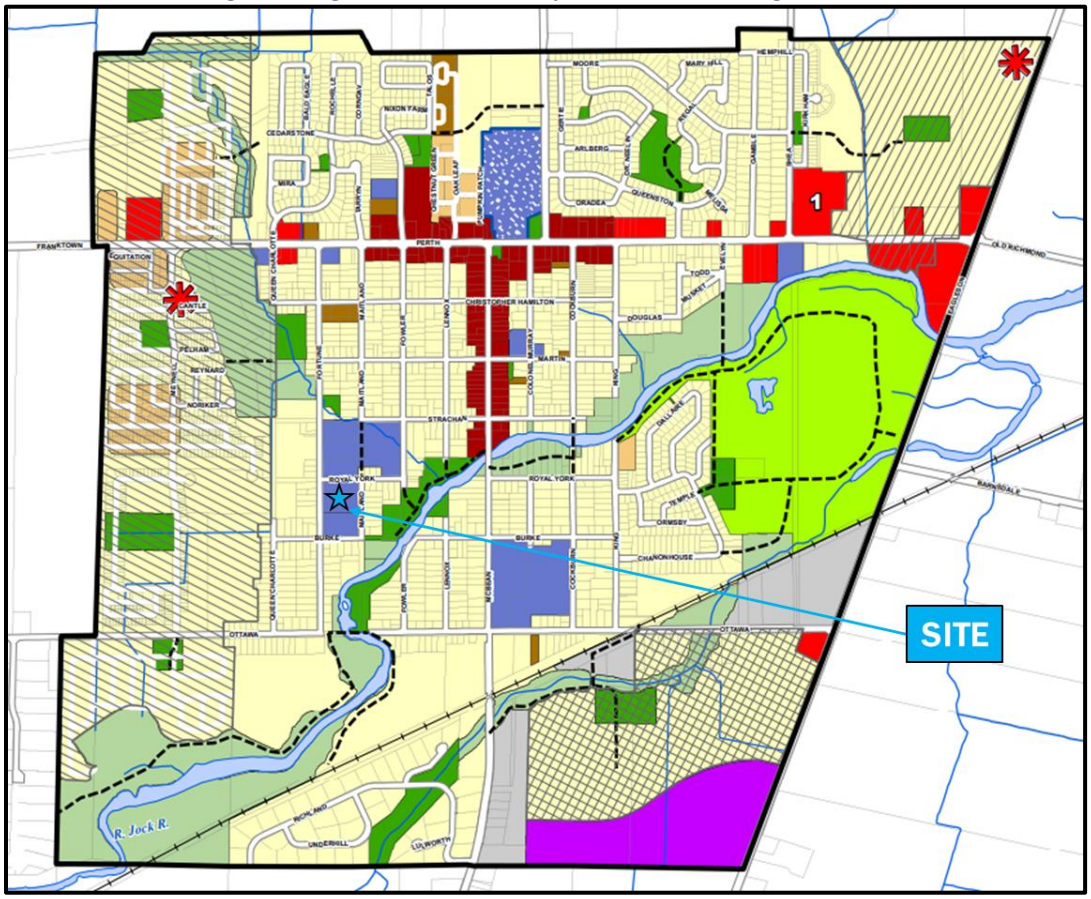
The Village of Richmond Secondary Plan recognizes specific land use designations and corresponding policies that are focused on guiding the future development of vacant lands and the redevelopment of older areas that are consistent with the community's vision. The proposed development falls within the institutional land-use designation (shown in **Figure 9**), and is subject to the following potentially relevant policies:

- *48) Development of new institutional uses shall be adequately integrated with adjacent uses to mitigate privacy impacts to these uses.*

- *49) Large scale institutional uses which have a high traffic demand, such as a high school, will require an amendment to this secondary plan*

The policies propose no significant transportation related requirements as a result of the proposed development.

Figure 9: Village of Richmond Secondary Plan- Schedule A - Designation Plan



Richmond Community Design Plan (2008)

The Richmond Community Design Plan (CDP) Schedule C – Transportation Projects, details several transportation related policies and planned infrastructure projects. Since the completion of this study, several of the transportation projects and anticipated development has been or is currently being constructed. Within the study area, there were previous plans for an active transportation pathway extension of Martin St to the west, however it has yet to be established and is unknown whether the City remains committed to fulfilling this project.

Transportation Master Plan (2023)

Within the 2023 Transportation Master Plan Update (on-going), the Active Transportation Projects list plans for a future infrastructure project along McBean St whereby separated cycling facilities or bike lanes are to be constructed from Perth St to Ottawa St. However, on November 13th, 2024, Councillor Brown approved a motion which thereby removed McBean St from the 2023 TMP list and any funding associated with it. Instead, Brown limited the McBean St resurfacing project to include a wider sidewalk[1].

[1] https://pub-ottawa.escribemeetings.com/filestream.ashx?DocumentId=211317

Transportation Master Plan (2013)

The 2013 Transportation Master Plan Network Concept Map 10 indicates plans for Perth St to be widened to four lanes from Shea Rd to Eagleson Rd and from Queen Charlotte St to the western village boundary (see **Figure 10**). As of today, there has been no indication of progress for this project.

Figure 10: Transportation Master Plan - Map 10 - 2031 Network Concept

Planned Construction and Infrastructure Projects

The City of Ottawa's Construction and Infrastructure Projects website outlines the following road segments within the study area for "Road – Resurfacing":

- Perth St, Queen Charlotte St to approximately 300 m east of Shea Rd. The targeted start date is estimated to be in 2 – 3 years.
- McBean St, Perth St to approximately 100 m south of Strachan St. The targeted start date is estimated to be in 2 – 3 years.
- Royal York St, McBean St to King St. The targeted start date is estimated to be in 4 – 7 years.

Other Area Developments

The following section outlines proposed future adjacent developments within the study area, as illustrated by **Figure 11**. Based on the City of Ottawa's Development Applications search tool, there is one active development applications initiated near the development site.

1-6295 Perth St, 6363 Perth St, 6409 Perth St (Fox Run by Caivan)

A Zoning By-Law Amendment and Plan of Subdivision application has been submitted for multiple lots located at 6295, 6363 and 6409 Perth St. Some phases have been built an occupied as of 2024, and their associated trip generation captured within the 2024 counts from McBean/Perth. The intersection of Fortune/Perth has older counts than 2024 and has been balanced the more recent McBean/Perth intersection to include phase 1 of this development. The remaining phases will consist of 369 residential units and is anticipated to generate 297 two-way vehicle trips during the morning and afternoon peak hours. The site generated trips will be accounted for in the total future background volumes.

2-6038 Ottawa St

A Zoning By-Law Amendment and Plan of Subdivision application has been submitted for a lot located at 6038 Ottawa St. The development will consist of 1,129 residential units and is anticipated to generate 929 and 987

two-way vehicle trips during the morning and afternoon peak hours. Based on the TIA by CGH, no new vehicle trips are forecasted to use study area intersections from this development.

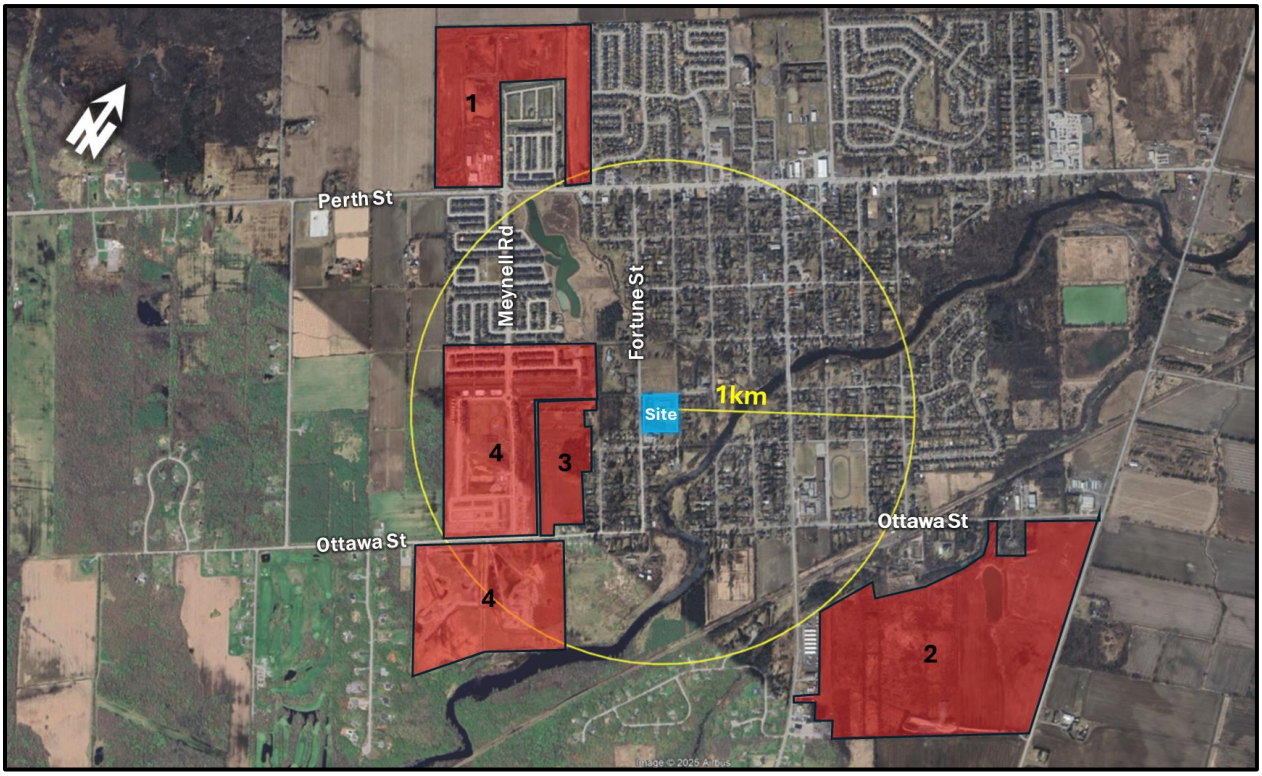
3-6305 Ottawa St (Caivan Laffin Lands)

A Zoning By-Law Amendment and Plan of Subdivision application has been submitted for a lot located at 6305 Ottawa St. The development will consist of 211 residential units and is anticipated to generate 159 and 155 two-way vehicle trips during the morning and afternoon peak hours. The site generated trips will be accounted for in the total future background volumes.

4-6420 Ottawa St (Mattamy Western Development Lands)

A Zoning By-Law Amendment and Plan of Subdivision application has been submitted for a lot located at 6420 Ottawa St. The development will consist of 1,025 residential units. No transportation impact study was found, however some houses within this development have already been built and have been captured within the 2024 counts and balanced intersections with older counts.

Figure 11: Other Area Developments

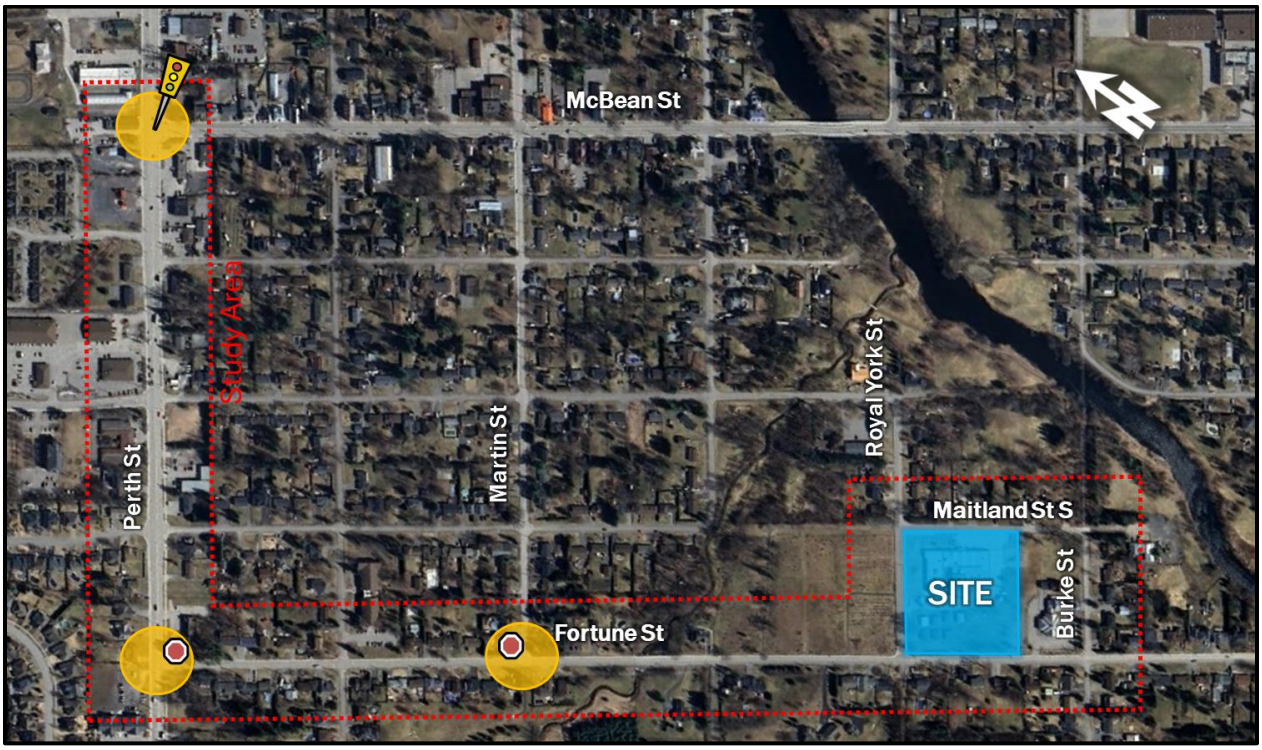


2.2. Study Area and Time Periods

For the purposes of this report, the proposed expansion is assumed to be fully constructed by 2026. The full buildout scenario and five-years after development buildout would be the years 2026 and 2031. The future horizon years include weekday morning and afternoon peak hour traffic volumes. Proposed study area intersections are listed below and illustrated in **Figure 12**, based on the available traffic information and potential implications to the surrounding roadway network. Given McBean/Martin intersection location and likely school trip distribution, this intersection is not anticipated to have new vehicle trip generation from the site. Therefore, this intersection will not be included as part of the study area.

- Perth/McBean (signalized)
- Fortune/Martin (unsignalized)
- Perth/Fortune (unsignalized)

Figure 12: Proposed Study Area and Intersections



2.3. Exemption Review

The following modules/elements of the TIA process provided in **Table 1** are recommended to be exempt in the subsequent steps of the TIA process, based on the City of Ottawa TIA guidelines and the subject site:

Table 1: Exemptions Review Summary

Module	Element	Exemption Consideration
3.3 Demand Rationalization		Less than 75 new veh/trips.
4.1 Development Design	4.1.3 New Street Network	Only required for plans of subdivision.
4.6 Neighborhood Traffic Calming	All	The development is not anticipated to meet criteria 3, 4 and 5.
4.7 Transit	All	Transit trips are to be accommodated through school buses and van trips.
4.8 Network Concept	All	The development forecasted to generate less than 200 new person trips above existing zoning.
4.9 Intersection Design	All	Less than 75 new veh/trips.

3.0 FORECASTING

3.1. Development Generated Travel Demand

3.1.1. Trip Generation and Mode Shares

Due to a limitation of auto driver data for elementary schools in the TRANS 2020 Trip Generation Manual, an estimate of the sites mode share percentages is required. The TRANS 2020 Trip Generation Manual for elementary schools conducted the survey solely on students, and therefore does not capture the travel patterns of school staff and does not provide an auto driver mode share. Staff are required to arrive before the school drop-off time and some leave after the school pick-up times. For the purposes of this analysis and to remain conservative, it will be assumed that all student and staff leave and depart the school within the peak hours.

The proposed extension will provide an additional 14 classrooms that is estimated to increase the enrolment by 336 students. Today, the school is currently occupied by approximately 600 students and 50 staff. The following trip generation analysis will estimate and rationalize a mode share percentage through the use of site observations and trip generation resources such as the TRANS 2020 Trip Generation Manual and the ITE Trip Generation Manual.

The following site observations were made during an afternoon site visit:

- The internal site circulation accessible via Maitland Ave was occupied by 8 idling student transportation vans awaiting the school end time (3:50 PM). The vans blocked other vehicles from circulating through the site and left the site at staggered times. The vans were estimated to be carrying on average 2-4 students at a time.
- The majority of pick-up and drop-off vehicles were located at the adjacent sites parking lot (St. Philip Parish) where up to approximately 20 vehicles were waiting at any given time.
- Minimal pick-up and drop off activity located along Maitland Ave (~10 vehicles) and Fortune St (~4 vehicles).
- 9 Type C (Capacity: 72 students) school buses were queued along the sites' frontage on Royal York St, all leaving at the same time (4:00 PM). Assuming the average bus has a capacity of 72 students, and a bus load of 75% in the PM, would result in approximately 55 students per bus. This results in approximately up to 495 student bus transit trips of the 600 students enrolled (83% of students taking transit).

Based on the information above, an estimation of the overall sites' mode share can be determined by assigning separate mode share percentages for the students and the staff and then proposing mode share adjustments based on the findings of the site observations.

The student mode share percentages from the TRANS 2020 Trip Generation Manual for elementary schools provide data for both Ottawa (grades JK-8) and Gatineau (grades JK-6). Since the current site also offers grades JK-6, it was determined that the Gatineau elementary school mode shares were more suitable for this analysis. Additionally, the corresponding number of students per mode were calculated based on the anticipated increase of 360 students and is shown below in **Table 2**.

Table 2: Student Mode Share Percentages – TRANS 2020 – Future Students

Travel Mode	Gatineau Mode Share	Proposed St. Philip Mode Share	Rationale
Auto Driver	0%	0%	-
Auto Passenger	30%	10%	Typical pick-up/drop-off activity was observed.
School Bus	41%	83%	Based on approximately 500 existing students using the observed 9 school buses on site.
Transit	0%	0%	-
Non-motorized	29%	7%	Rural elementary school with minimal sidewalks leading to the school.
Total	**100%**	**100%**	

To produce the most conservative scenario, a 0% absentee rate and a 100% arrival and departure rate is assumed during the peak hours. Auto passengers are assumed to be parents dropping-off and picking-up their students, which more closely resemble a pass-by trip where the vehicle enters the site, drops off students and then leaves the site again within a single hour.

Based on Statistics Canada Data for Ottawa, the "average number of children in census family with children" (i.e. how many children families with children have) is 1.8, slightly under 2 students per family[2]. Based on this, each parent drop-off/pick-up is anticipated carry 1.8 students, or if 10% of all student trips are passengers, then this would equate to approximately 6% of student arrival by a vehicle. Using these assumptions, then the breakdown of new student arrivals based on the mode shares from **Table 2** multiplied by an increase in **336 students** is summarized in **Table 3**.

Table 3: Site Generated Trips by Net Increase in Student Population

Travel Mode	AM & PM Peak Mode Share	AM Peak (Person trips/hr)			PM Peak (Person trips/hr)		
		In	Out	Total	In	Out	Total
Vehicle Trips (Primary)	0%	0	0	0	0	0	0
Student Drop-Off and Pick-Up (Similar to Pass-by Trip)	10% (trips)[1]	34	34	34	34	34	34
	6% (Vehicles)[2]	*20*	*20*	*20*	*20*	*20*	*20*
School Bus Trips (Number of Students)	83%	278	0	278	0	278	278
Non-motorized	7%	24	0	24	0	24	24
Total Person Trips (Increase in Students)	**100%**	**336**	**0**	**336**	**0**	**336**	**336**

1. Average of 1.8 students per parent drop-off, resulting in approximately 6% parent vehicle trip drop-off.
2. Parent drop-offs not considered as part of person trips as they do not stay within the site, but assumed that the number of student trips dropped off by parents stay in the morning (inbound trip) and then leave in the afternoon (outbound trip).

The estimated number of future staff were determined by the existing student to staff ratio and proportionally applied to the expected increase in students. The staff mode share percentages were obtained from the TRANS 2020 Trip Generation Manual for rural employment generators and the calculated person trips per mode are shown below in **Table 4**. It is forecasted that the new school will have a total of 78 staff, an increase in 28 staff from existing conditions.

[2] https://www12.statcan.gc.ca/census-recensement/2021/dp-pd/prof/details/page.cfm?Lang=E&SearchText=Ottawa&GENDERlist=1,2,3&STATISTIClist=1&DGUIDlist=2021A00033506,2021A000235&HEADERlist=0

Table 4: Staff Mode Share - TRANS 2020

Travel Mode	TRANS Rural Employment Mode Share	Proposed St. Philip Employment Mode Share	Rationale
Auto Driver	85%	80%	Proposed extension located within the core residential areas within Richmond. Expected increase of auto passenger and non-motorized modes.
Auto Passenger	5%	15%	Increased to account for carpooling and higher likelihood of multiple staff living within the village.
Transit	9%	0%	Two transit routes in the study area intended to connect to the LRT, however far removed.
Non-motorized	2%	5%	Increased due to likelihood of some staff residing within the village of Richmond.
Total	**100%**	**100%**	

Similarly to students, to produce the most conservative scenario, a 0% absentee rate and a 100% arrival and departure rate is assumed during the peak hours. The mode shares from **Table 4** were then multiplied by the increase of staff, 28, to produce the future estimated trip generation by staff, as summarized in **Table 5**.

Table 5: Site Generated Trips by Net Increase in Staff Population

Travel Mode	AM & PM Peak Mode Share	AM Peak (Person trips/hr)			PM Peak (Person trips/hr)		
		In	Out	Total	In	Out	Total
Vehicle Trips (Primary)	80%	23	0	23	0	23	23
Auto Passenger	15%	4	0	4	0	4	4
Transit	0%	0	0	0	0	0	0
Non-motorized	5%	1	0	1	0	1	1
Total Person Trips (Increase in Staff)	**100%**	**28**	**0**	**28**	**0**	**28**	**28**

The combined number of trips by mode share can then be calculated by summing **Table 3** and **Table 5**, resulting in **Table 6**.

Table 6: Future Additional Site Estimated Trip Generation by Travel Mode

Travel Mode	AM Peak (Person trips/hr)			PM Peak (Person trips/hr)		
	In	Out	Total	In	Out	Total
Vehicle Trips (Primary)	23	0	23	0	23	23
Auto Passenger	4	0	4	0	4	4
Drop-Off/Pick-Up	20	20	20	20	20	20
School Bus	278	0	278	0	278	278
Non-motorized	25	0	25	0	25	25
Total Person Trips	**364**	**0**	**364**	**0**	**364**	**364**

As shown above in **Table 6**, the proposed school extension is anticipated to generate approximately 25 new two-way vehicle trips plus 20 parent pick-up and drop-off trips (in and out within a single peak hour), resulting in 65 new vehicle movements two-way per peak hours. Furthermore, 280 students are anticipated to arrive by bus, and 25 trips by non-motorized travel. The increase in school bus demand will be discussed in further detail within **Section 4.1.1**.

3.1.2. Trip Distribution and Assignment

Based on the location of adjacent arterial roadways, existing vehicle turning movements and the boundary map for St. Philip Catholic School (bound by Fallowfield Rd/Rushmore Rd, Montague Rd/Ashton Station Rd, Donney Dr, and Highway 416/Borrisokane Rd), the distribution of site-generated traffic volumes was estimated as shown in **Figure 13**. It can be recognized that some trips may be destined to neighborhoods immediately adjacent to the school, which would result in a lower traffic impact for the surrounding network.

For the parent drop-off/pick-up, it was assumed that most families live near to the school and a large portion of parents would continue towards Ottawa (north and east) in the morning after dropping off their students at school and then coming from the northeast upon returning from work and headed home via the school. The parent pick-up drop-off distribution has been illustrated in **Figure 14**.

Figure 13: Staff Site Generated Vehicle Traffic Percent Distribution

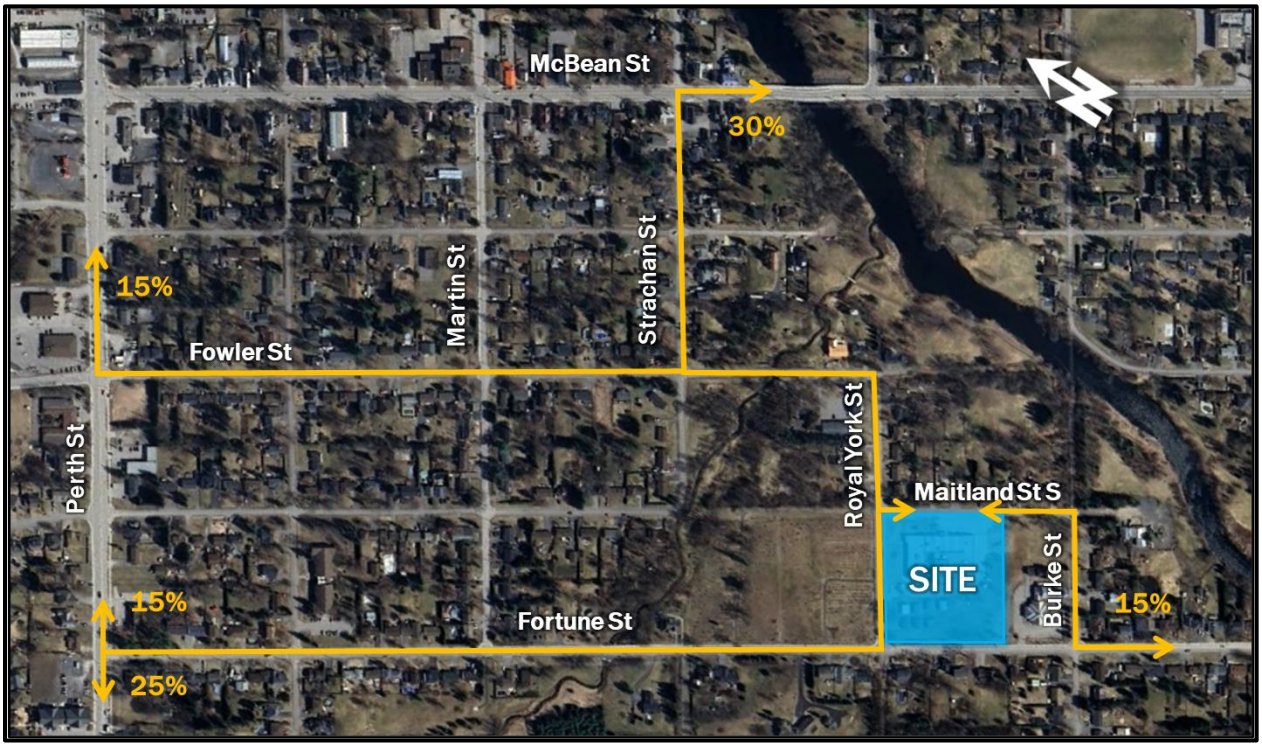
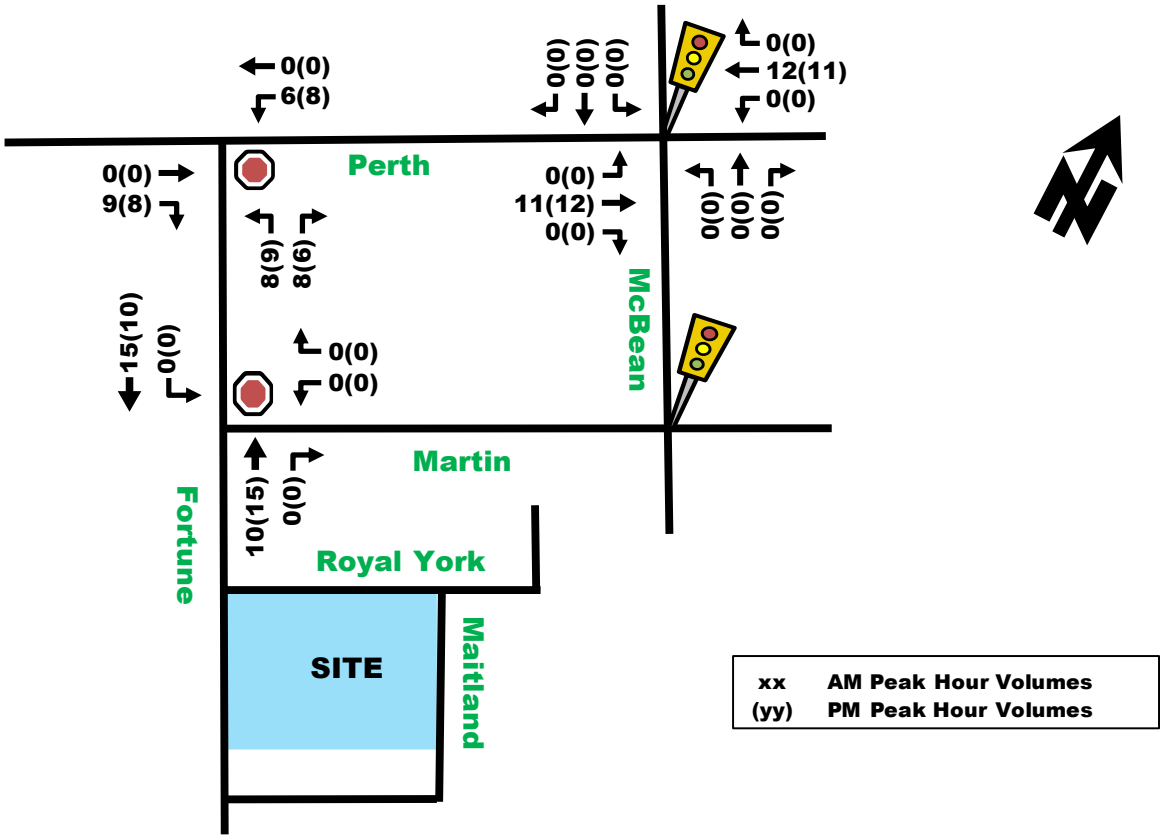


Figure 14: Parent Drop-Off and Pick-Up Route Percentage Distribution

The anticipated 'new' auto trips for the proposed development from **Figure 15** were then assigned to the road network with the distribution shown above in **Figure 13** and **Figure 14**, for the total net site-generated traffic.

Figure 15: Net New Site-Generated Traffic – AM (PM) Peak Hour



3.2. Background Network Traffic

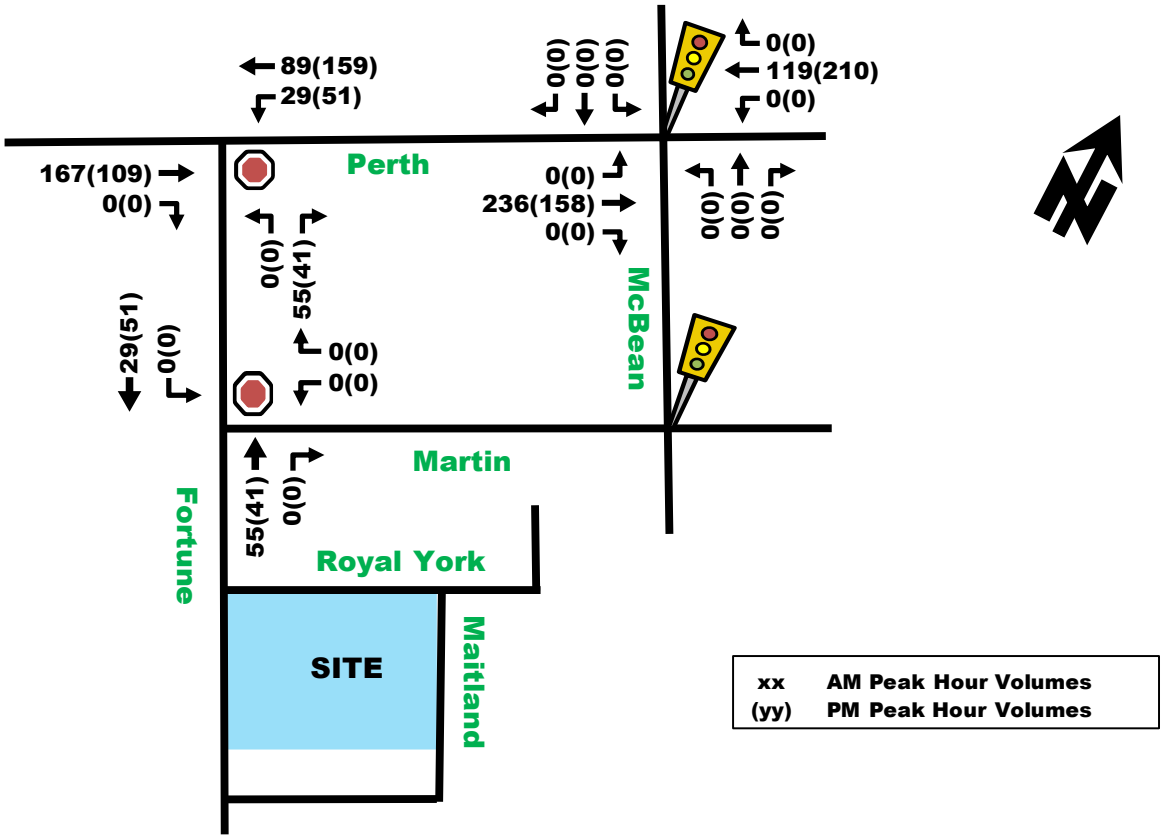
3.2.1. Transportation Network Plans

Refer to Section 2.1.3: Planned Conditions.

3.2.2. Background Growth and Other Area Developments

Vehicle volume forecasts for other area developments have been illustrated in Figure 16 which was gathered from available TIAs.

Figure 16: Other Area Development Trip Generation



To account for future growth of Richmond, a further 2% annual growth was considered for all through movements. While Fortune St may not have a long-term growth of 2% annually (local street), it was considered in this case to account for vehicle trips for Mattamy Western Development Lands (6420 Ottawa St).

3.2.3. Future Background Volumes

The future 2026 and 2031 traffic volumes can then be calculated by layering existing traffic volumes plus known other area developments and a 2% annual growth, as shown in **Figure 17** and **Figure 18**.

Figure 17: 2026 Background Traffic Volumes

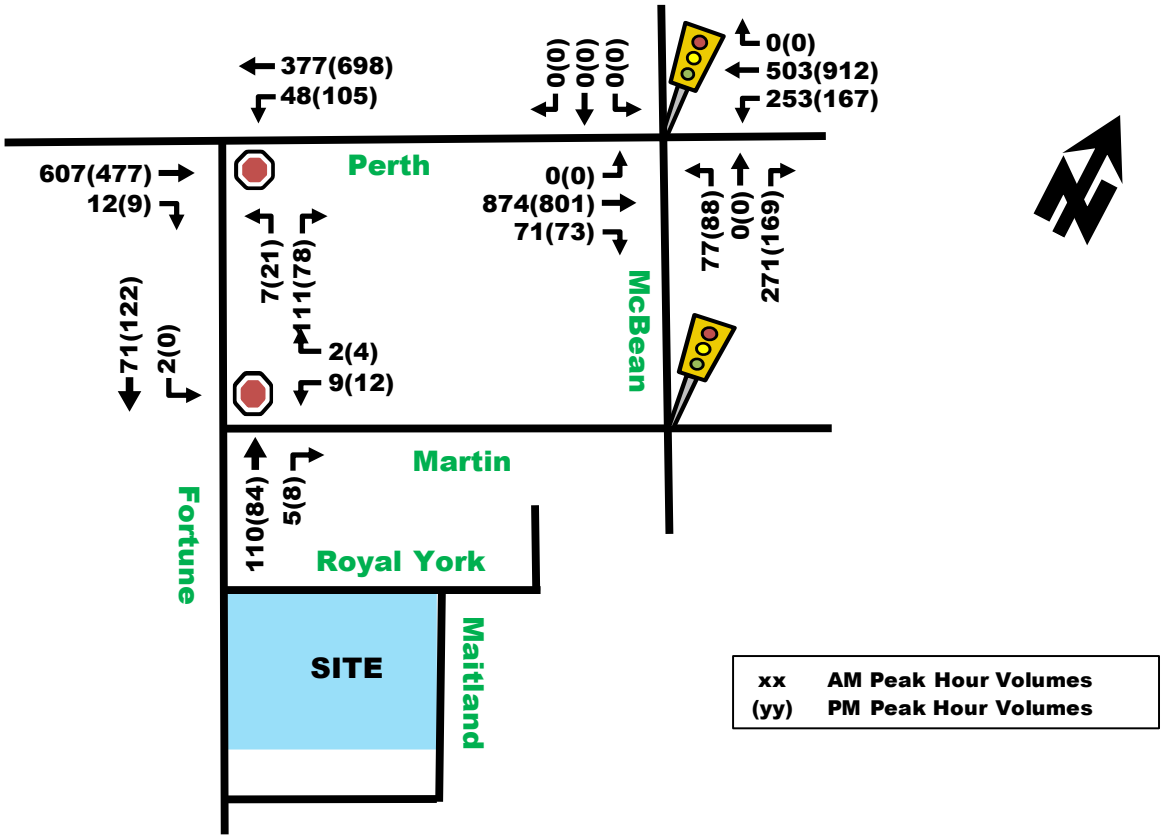
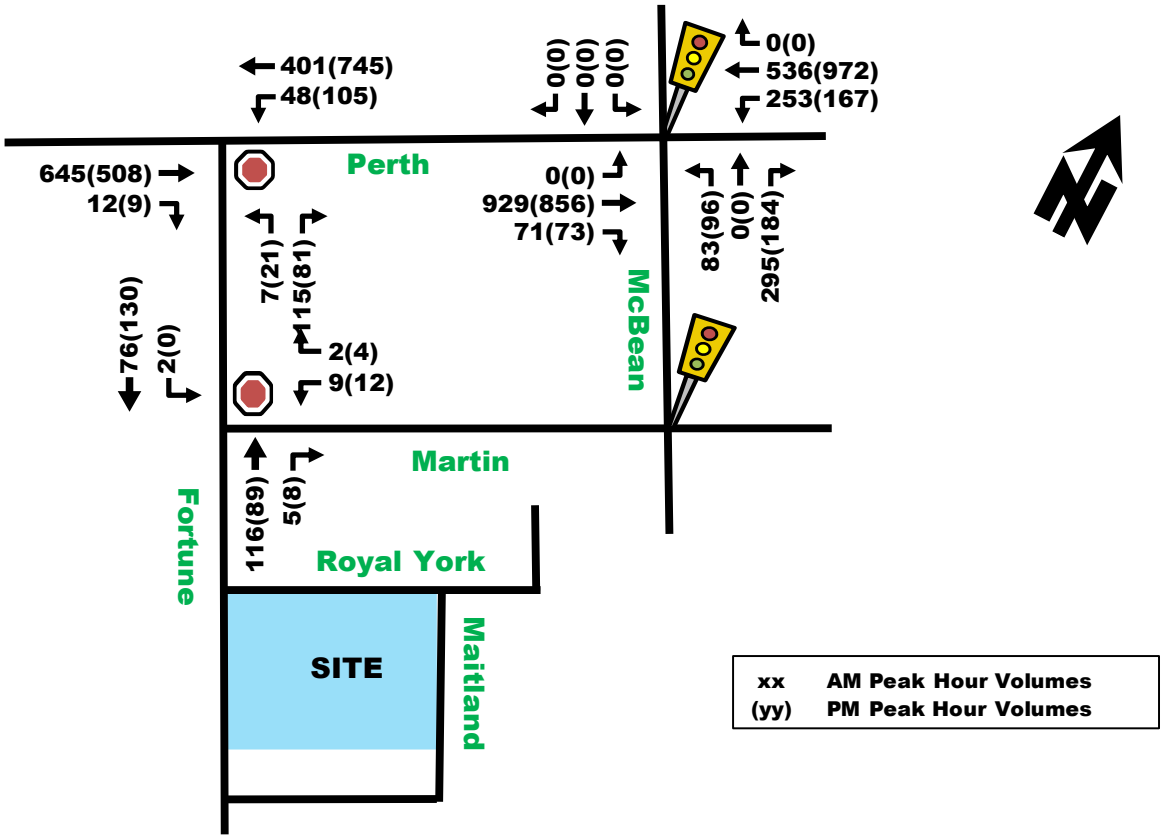


Figure 18: 2031 Background Traffic Volumes



3.3. Demand Rationalization

This section is exempt as the development is forecasted to generate less than 75 auto trips and therefore does not trigger the need for this section as outlined in the June 14, 2023 TIA Guideline revision.

4.0 ANALYSIS

4.1. Development Design

4.1.1. Design for Sustainable Modes

To accommodate the future travel demands, the site proposes certain areas be reserved for specific modes of transportation. Royal York St and between the Royal York/Maitland to Maitland Access will be reserved for buses only. The Maitland Access will be kept clear as it is a fire route, however van student transportation drop offs are anticipated to use this layby loop for front door drop off. Parents will be requested to use Fortune St as their main drop-off location. The following subsections will discuss these conditions in more detail.

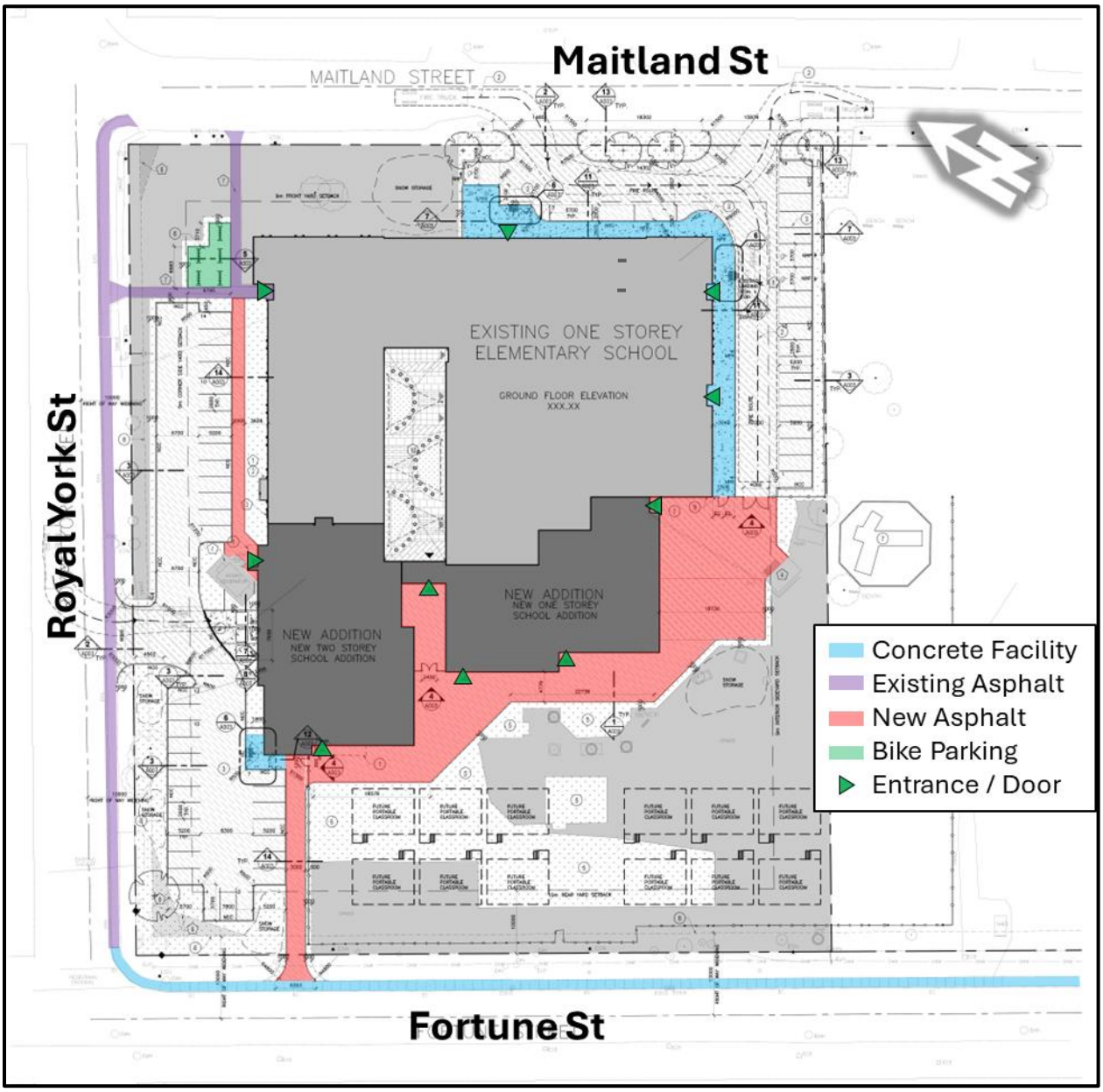
Pedestrian/Cycling Routes and Facilities

Richmond, ON is a village within the greater Ottawa National Capital Region and was established in the early 1800s. Many of the neighbourhoods adjacent to the school have been around for many decades and were originally built without pedestrian or cyclist infrastructure in mind. The boundary roads leading up to and adjacent to the school are no exception to this and generally lack formal infrastructure. The east side of Fortune St is the only road which provides a formal 1.8m wide sidewalk, while the south side of Royal York St provides a paved shoulder which offers a textured rumble strip to delineate itself from vehicle traffic. The low number of active transportation trips observed (~5%) likely reflects the general lack of pedestrian and cycling infrastructure within the town. Despite the existing low active transportation facilities provided within the Village, new developments and subdivisions are being built with sidewalks and potential new active transportation connections such as the Martin St connection to the west which may encourage future increases in active transportation trips.

OCSB is proposing a series of facilities internal to the site which connect to existing sidewalk facilities on Fortune St, the paved shoulder where buses layby and near to the front school entrance as shown in **Figure 19**. Student van transportation is proposed on the Maitland access loop, with drop-off landing on a concrete sidewalk adjacent to the school front entrance. Students taking the bus would alight on the paved shoulder on Royal York St and Maitland St which is protected by stopped busses. The site is also proposing new asphalt surrounding the school extension, along the new parking areas off Royal York St and a 3-meter-wide pathway (similar to a multi-use pathway) from the sidewalk facilities on Fortune St. Fortune St is proposed to continue operating as the main parent drop-off location. The new 3m MUP facility will provide easy connectivity for students dropped off on Fortune St to the school building.

The bike parking spaces have been proposed adjacent to asphalt surfaces connecting to Maitland St and Royal York St. New portables are erected (reserved space for up to 12 new portables) on paved surfaces which can be used to provide a surface area for students to walk to and from the portables and the main school structure.

Figure 19: Future and Existing Active Transportation Facilities



Location of School Bus Service

The school is currently serviced by 9 to 12 school buses (based on observations and information provided by the client) which line up along Royal York St. The buses act as a major traffic calming measure by blocking large segments of the road, effectively slowing down cars during critical offloading and loading operations. The school is supportive of this traffic calming measure, and would to continue to use buses as a means to provide a buffer between the roadway and students.

Based on **Section 3.1.1**, an estimated 280 'new' school bus trips are forecasted by full buildout with the increase in student population from 600 to 936 students. School buses are normally classified into four different types as summarized in **Table 7**, however have been confirmed by the client that the majority are Type C.

Table 7: Typical School Bus Types and Capacity

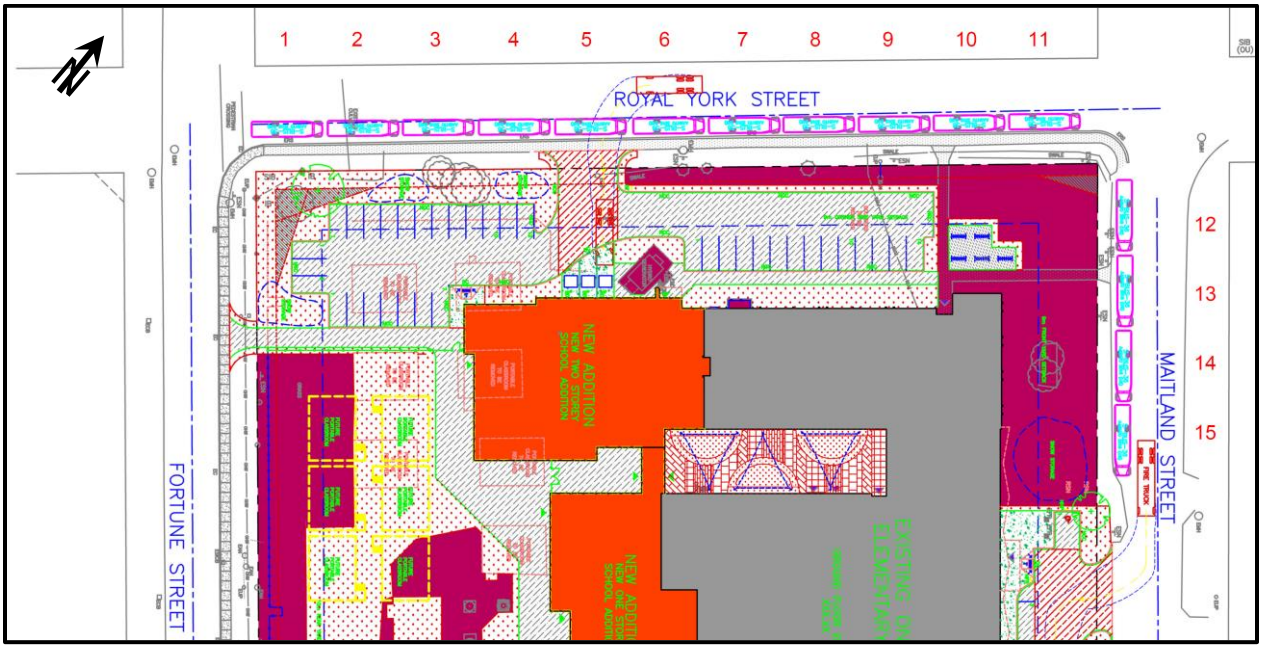
Bus Type	Type A	Type B	Type C	Type D
Example Image				
Passenger Capacity[1]	16-20	20-30	60-72	72-90
Typical Length[2]	13 to 17.5 ft	10.8 to 21.7 ft	20.9 to 38.9 ft	27.3 to 39.11 ft

1. https://www.rtoinsider.com/57015-ny-school-bus-electrification-road-map/
2. https://slideplayer.com/slide/15235762/

It is understood that not all 9 to 12 buses currently operate at full capacity, meaning that some buses could absorb some of the new transit trips, while new routes may be required to access different destinations. Based on modelling done by the school board, a total of up to 15 Type C buses are identified to satisfy future demand. A review of **Table 7**, 15 Type C buses have a capacity of up to 1,080 which is greater than the entire forecasted student population.

Buses will continue to lay-up on Royal York St. The Royal York parking area is proposed for staff only, who will arrive before the school buses, and depart after buses leave in the afternoon. For this reason, it is acceptable for buses to completely block this access during loading operations. AutoTurn Software was used to determine possible bus drop-off locations to accommodate the upper estimated limit of forecasted school buses (15 Type C buses) within the site boundary, with the assumption that blocking the Royal York access is considered acceptable. **Figure 20** illustrates possible bus loading locations with higher detail provided in **Appendix E** The buses used for the modelling include AASHTO S-BUS-36 (a 36-foot-long school bus consistent with Type C).

Figure 20: Potential Bus Layby Locations



It is recommended that Royal York St be used as the primary school layby area which can accommodate 11 school buses, and if additional buses need be added, that only then they start using Maitland St as an overflow area (additional 4 spaces before the loop access). Note that a bus layby is not recommended directly on Fortune St due to the narrow width of the street. Widening of Fortune Street would be complex complex given the existing sidewalk and hydro poles.

Parent Pick-Up/Drop-Off and Student Transportation Vans

The school also offers van transportation services (Dodge Grand Caravan). Based on site observations, vans occupy the existing parking area along Maitland Street (Area 2 below).

The following parent pick-up/drop-off and van services currently occurs at five different locations as shown in **Figure 21**, and include:

1. Paved shoulder directly south of Royal York/Maitland intersection, though often inaccessible as some staff park here as overfill parking area
2. Existing parking lot adjacent to Maitland St, mostly used by van transportation services. The school actively encourages parents not to use this area as a drop off area
3. Along the west edge of Maitland St south of the parking area
4. St. Phillip Parish parking lot, where students walk across the grassy field. It is understood that the parish has requested that parents do not use this space for future drop offs
5. Along Fortune St northbound which is approximately 8.0m wide, is posted 40km/h and has traffic volumes of less than 1,500 vehicles per day. Parking is currently permitted on this segment of road

Figure 21: Existing Parent Pick-Up/Drop-Off

Location 1: As discussed previously, the increase in school bus demand may require overflow bus layby activity along the paved shoulder directly south of Royal York/Maitland intersection. The school may continue to use this space as a parent pick-up/drop-off location until it becomes required by school buses, which at that point, should be signed as "no stopping zone" between 8:30 – 9:30 and 3:30 to 4:30 or during bus operation hours. The loss of space for parent pick-up/drop-off at this area would be relatively minor (estimated 7 vehicle spaces).

Location 2: This area will be reserved for student van drop-off only.

Location 3: This area may serve as a secondary parent drop-off area.

Location 4: The Parish has requested that parents do not use this location for drop-offs. A fence is proposed to dissuade parents from using their parking lot as a drop-off location. If future demands require further capacity, negotiations with the Parish would need to be had.

Location 5: This is the preferred parent drop-off location as it has a sidewalk landing pad and connection via the new MUP to the school extension. Drop-offs here also avoid driveways and stays clear of school bus and van student service operations. It is recommended that parents use the east side of the road adjacent to the sidewalk facilities to offload students.

4.1.2. Circulation and Access

Figure 22 illustrates different vehicular spaces and proposed internal site circulation.

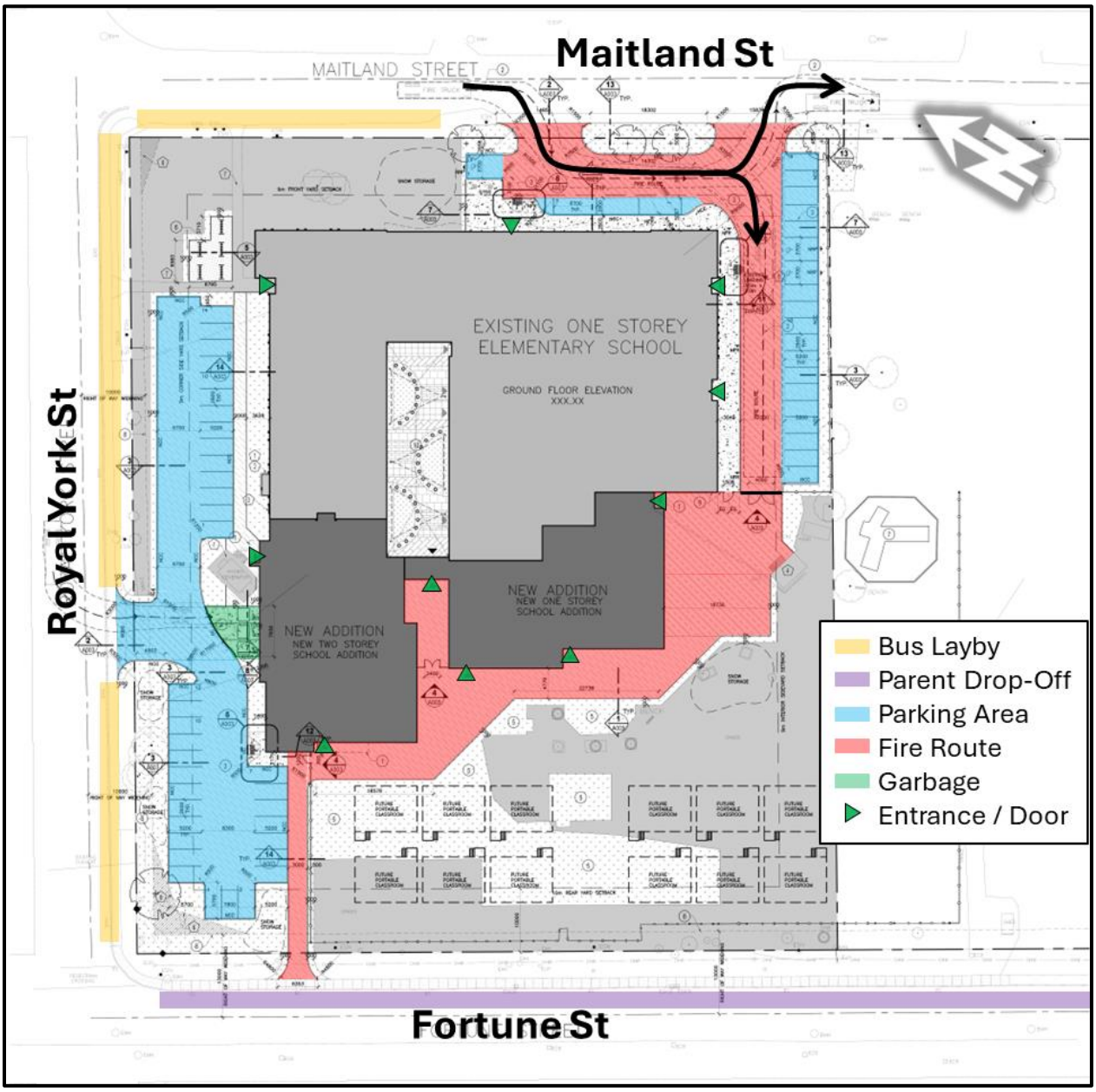
The site will provide two accesses at existing access locations but is proposing to retrofit them into more urbanized formal accesses with raised curbs and separation from travel lanes. The Royal York St access is proposed as a single all-movement access serving 36 parking spaces reserved for teachers and staff. Directly ahead from the access is reserved space for the garbage bins, where garbage trucks will enter the site, front load garbage and reverse out.

The access off Maitland St is proposed as a one-way loop, with the northern entrance intended for inbound traffic only and the southern exit intended for outbound traffic. At the southern edge of the access loop, a branch to the west is provided to access additional parking. This west branch will accommodate two-way traffic. The Maitland St access will provide a total of 23 staff parking spaces. This access has also been designed to accommodate emergency vehicles as part of a fire route. A gate is proposed even with the last row of parking spaces and parallel to the edge of the school. This gate can be opened to allow emergency vehicles into the 'backside' of the school, or west side of the lot. The new MUP from Fortune St has also been designed to withstand emergency vehicles.

School buses will have to arrive from a specific direction to layby along the property limits with the bus door facing the outside edge of the road. Buses lining up on Royal York St will have to enter headed eastbound. Upon afternoon pick-up, buses can exit either straight or turning right on to Maitland St depending on their route. Buses using the Maitland St overflow will need to enter from Royal York St headed southbound. Upon loading students, they can exit the site continuing southbound and around Burke St. Since there are no curbs on either Royal York St or Maitland St, buses can easily line up straight, parallel to travel lanes. Due to the already constrained space available for laybys, it is recommended that buses move as far forward as possible and queue that way. It is not recommended for buses to use the Maitland St loop for loading as it is part of a fire route and should be kept clear.

The accesses, garbage pick-up and fire route proposed have been checked and verified to accommodate the appropriate design vehicles. Turning templates have been provided in **Appendix F.**

Figure 22: Site Circulation and Access Locations



4.1.3. New Streets Network

Exempt, only required for Plans of Subdivision.

4.2. Parking

The following parking analysis reflects the minimum number of parking rates and spaces required based on the City of Ottawa Zoning By-Law for developments located in Area D on Schedule 1A (note: Village of Richmond does not appear on the map but assumed to be within rural).

Table 8 summarizes the minimum vehicle and bicycle parking rates from Part 4, Parking, Queueing and Loading Provisions parking by-law, referenced from Tables 101, 102, and 111A.

Table 8: Required Vehicle and Bicycle Parking Spaces

Land Use	Number of Classrooms	Vehicle Parking Rates	Vehicle Spaces		Bicycles		
		Base Rate	Min Required Spaces	Proposed Spaces	Base Rate	Min Required	Proposed Spaces
Elementary School (N81)	39	1.5/Class	59	59	1 per 100m^2	37[1]	45
1 – total site GFA proposed at 3,636.7 squared meters.							

As shown above in **Table 8**, the site is meeting the minimum required vehicle parking and exceeding minimum bike parking requirements by approximately 20%. Bike parking is proposed outdoors in bike parking racks. There are a total of 3 accessible parking spaces on site which exceed the minimum requirement of 1.

4.3. Boundary Street Design

For the purpose of this analysis, the New MMLOS Tool (Draft) was used. It is currently considered draft approved. Major changes to the MMLOS are not anticipated.

4.3.1. Existing & Future Conditions

The boundary streets to the proposed development are Fortune St, Royal York St and Maitland St.

- *Fortune St:*
  - 1 vehicle travel lane in each direction
  - 1.8m sidewalk on east side of road, no sidewalk on west side of road
  - No cycling facilities and not part of the Crosstown Bikeway Network/Rural Route
  - Less than 3,000 vehicles per day existing and future
  - Posted speed 40km/h
  - Classified as a collector roadway
  - No transit route within segment
  - Located adjacent to a school and part of a Village. For east side, “other” was considered for context to score presence of an outer boulevard, as per MMLOS guidance.
- *Royal York St:*
  - 1 vehicle travel lane in each direction
  - 1.8m asphalt shoulder separated by a narrow rumble strip on south side of road intended for mixed active transportation activity, no sidewalk on west side of road
  - Paved shoulder for cycling but not part of the Crosstown Bikeway Network/Rural Route
  - Less than 3,000 vehicles per day existing and future
  - Posted speed 40km/h
  - Classified as a collector roadway
  - Transit route 283 operates on this segment
  - Located adjacent to a school and part of a Village. For south side, “other” was considered for context to score presence of an outer boulevard, as per MMLOS guidance.
- *Maitland St:*
  - 1 vehicle travel lane in each direction
  - No sidewalk facilities on either side of road
  - No cycling facilities and not part of the Crosstown Bikeway Network/Rural Route
  - Less than 3,000 vehicles per day existing and future
  - Posted speed 40km/h
  - Classified as a local roadway
  - No transit route within segment
  - Located adjacent to a school and part of a Village

Multi-modal Level of Service analysis for the subject road segments adjacent to the site is summarized in **Table 9** with detail analysis provided in **Appendix G**. Note that the truck level of service is no longer calculated, but rather confirmed as part of the geometrics checks and truck turning templates.

Table 9: MMLOS – Boundary Street Segments Existing and Future Conditions

Road Segment	Level of Service							
	Pedestrian		Bicycle		Transit		Public Realm	
	PLoS	Target	BLoS	Target	TLoS	Target	PR	Target
Existing and Future Conditions								
Fortune St (West Side)	F	B	C	C	-	N/A	D	N/A
Fortune St (East Side)	D	B	C	C	-	N/A	C	N/A
Royal York St (North Side)	F	B	A	C	C	E	C	N/A
Royal York St (South Side)	B	B	A	C	C	E	B	N/A
Maitland St (Both Sides)	F	B	C	C	-	N/A	D	N/A

Pedestrian

Only the south side of Royal York St achieved the pedestrian desired level of service due to two-way traffic being less than or equal to 1,500/day and a facility being provided. If facilities were provided on the north side of Royal York St or both sides of Maitland St, then their targets would also be met. Since Fortune St has slightly higher traffic volumes, then mitigations such as providing a 1.5m buffer from vehicles would achieve the target PLoS of B for road segments within 300m walk to a school.

Bicycle

All the bike level of service (BLoS) targets were met. Royal York St exceeded the target due to its paved shoulder facilities and low vehicle volumes.

Transit

Only Royal York St has transit services along the boundary segments, and the transit level of service (TLoS) was met.

Public Realm

The public realm analysis showed very good to average overall street health and attractiveness due to the presence of some pedestrian facilities and biking facilities, as well as a wide outer boulevard which supports trees. Royal York St also has a transit route within its segment.

4.4. Access Intersection Design

Note, former sections 4.4.2 (Access Control) and 4.4.3 (Access Design) have been moved to Section 4.9.1 and 4.9.2 as per the revised TIA Guidelines, June 2023.

4.4.1. Location and Design of Access

Vehicle Access and Circulation

The site currently has two accesses which will remain in their current location but will be upgraded to a more urbanized design with raised curbs and separated from the general travel lane as is today. One access is located approximately 85m west of Royal York/Maitland intersection and will offer access to parking and garbage pick-up; the other is located approximately 75m and 105m south of Royal York/Maitland intersection functioning as a one-way bay with traffic flowing southbound and access to parking.

The Royal York St access has been designed as a 9m wide driveway with flaring at the road edge to accommodate garbage truck turning movements. The Maitland St access has been designed slightly wider, at approximately

10m on inbound and 11m on outbound to accommodate fire trucks as part of their emergency fire route. Signage is encouraged at the Maitland St access to promote proper circulation as a one-way loop.

Royal York Street Access Throat Length

The Transportation Association of Canada (TAC) *Geometric Design Guide for Canadian Roads*, Chapter 8 (Access) provides guidelines for clear throat length. These guidelines apply to private approaches on arterial and collector roads. As Royal York Street is classified as a collector roadway, these guidelines are applicable to this site.

The proposed site plan includes a 5-metre throat length from Royal York Street to the new parking lot. This throat length is constrained by the existing building footprint and the location of a hydro generator. The access location was selected to accommodate waste collection vehicle movements to the existing waste bins.

TAC does not provide a specific guidance for a school with regards to the desired throat length. TAC recommends a throat length measuring between 8m up to 40m for a variety of land uses that access a collector roadway, varying based on the size of the development. The Royal York St access will provide 33 parking spaces, which is considered a small parking lot corresponding to an 8m clear throat requirement. 8m of clear throat length provides sufficient storage for a single vehicle.

To mitigate potential conflicts during school pick-ups and drop-off times, the lot will be reserved for staff who arrive and depart during periods of low traffic volumes. Given the small lot size and the low traffic volumes on Royal York Street during these times, no adverse impacts are anticipated as a result of the short throat length. Outside school hours, the lot could be used be to access the outdoor spaces surrounding the school. In these cases, given the low traffic volume on Royal York, conflicts are expected to be nominal with negligible impacts to traffic on Royal York Street.

Based on this analysis, the proposed 5m throat length is considered acceptable.

Private Approach By-law

The Private Approach By-Law requirements for the City of Ottawa were reviewed, with the following observations:

- The site has three frontages (approximately 130m, 110 and 110m long) which permits having the proposed two-way and two one-way private approaches.
- The site is not adjacent to any major collector roads or arterial roads, thus exempting section 25(m).
- The distance between the proposed accesses and the adjacent property lines meets the required 3m separation. The Maitland Street egress is approximately 3.5m from the adjacent property line.
- Both private approaches exceed the 9m in width which is not in compliance with Section 25(c), but is deemed acceptable given the garbage truck pick-up off Royal York St access and fire truck turning requirements for the Maitland St access.
- The grade of the private approach is to not exceed 2% within the private property for a distance of 9.0m to the curb line. No major grades are proposed within the site.

The access designs are in conformance with the City of Ottawa Private Approach By-law 2003-447. The access on Royal York St crosses a sidewalk and is to be constructed as per City of Ottawa Standard Detail SC7.1.

4.5. Transportation Demand Management

4.5.1. Context for TDM

Based on the type of development, it is assumed that most trips generated by the proposed site will be students and staff entering the site in the AM peak hour and existing the proposed site in the PM peak hour to return home. Sections 3.1.1 and 3.1.2 describe how many trips are anticipated per travel mode.

4.5.2. TDM Program

The TDM infrastructure checklist and TDM Measures are attached as **Appendix H**.

TDM Supportive Development Design and Infrastructure Checklist (Non-Residential):

- Ten (10) out of the ten (10) "required" measures have been satisfied.
- At least eight (8) of sixteen (16) "basic" measures related to walking, cycling, transit and parking have been satisfied or are not applicable.
- Four (4) of the of the eleven (11) candidate "better" measures are also proposed or are non-applicable.

TDM Measures Checklist (Non-Residential):

- Five (5) out of ten (10) "basic" measures related to walking, cycling, transit, parking and TDM marketing have been satisfied or are not applicable. One (1) of those, which have been designated by an asterisk (*), are considered by the TDM Measures to be some of the most dependably effective tools to encourage sustainable travel modes. This includes:
  - Display walking and cycling information at major entrances.
  - *Designate an internal coordinator or contract with external coordinator
- Thirteen (13) out of twenty-six (26) "better" measures related to walking, cycling, transit, parking and TDM marketing have been satisfied or are not applicable. Of note, this includes:
  - Students receive fully subsidized school bus transportation.
  - OCSB provides a "bike to work" and "walk a block" incentive to encourage sustainable modes

4.5.3. Need and Opportunity

Given the concentrated arrival and departure times before and after the school bell, the site is a great candidate for transit-oriented transportation. The school board (OCSB) provides bus transit services to all students, which provides a large incentive for students to travel to and from the school for free. The site is accessible via active transportation facilities and is a recommended mode of transportation for those who live near the school or along the existing facilities. The site proposes additional bike parking racks for those who wish to bike.

4.6. Neighbourhood Traffic Management

This section is exempt as it does not meet all criteria outlined in the June 14, 2023 TIA Guideline revision.

4.7. Transit

Based on the TIA Guidelines Update, June 2023, this section is exempt as less than 75 vehicle trips are forecasted and transit trips will be accommodated through school buses and van trips.

4.8. Review of Network Concept

Based on the TIA Guidelines Update, June 2023, this section is exempt as less than 200 new person trips above existing zoning are forecasted.

4.9. Intersection Design

This section is exempt as the development is forecasted to generate less than 75 auto trips and therefore does not trigger the need for this section as outlined in the June 14, 2023 TIA Guideline revision.

5.0 FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Based on the results summarized herein the following findings and recommendations are provided:

Existing Conditions

- OCSB school board is proposing an extension to the St. Phillip Catholic School in Richmond, ON which has a current population around 600 students and 50 staff.
- The site is served by predominantly school buses which drop-off and pick-up students along the site boundary on Royal York St. Site observations confirmed 9 buses serve the site during bell hours, however the school confirmed that up to 12 buses may serve the existing school.
- The site is served by pedestrian facilities on Fortune St and paved shoulders on Royal York St.

Proposed Development

- The new extension plans to add 12 new permanent classrooms within a building extension and space for 12 future portable classrooms.
- The new school addition will accommodate approximately 336 new students and 28 new staff, for a combined total of 936 students and 78 staff.
- A custom trip generation and custom mode shares were developed based on first principles, using site observations for mode shares and the existing student and staff population. A very conservative trip generation rate was derived assuming all students and staff attended school at a single day and all arrived within a single peak hour. These assumptions resulted in a forecasted increase in 23 'new' primary vehicle trips (predominantly staff) along with 20 parent pick-up/drop-off vehicle trips during the peak hours. Furthermore, an increase in 278 school bus trips and 25 active transportation trips during the peak hours are forecasted.
- The site meets the parking bylaw requirements, providing the minimum required vehicle parking and exceeding minimum bike parking requirements by approximately 20%.
- The site will maintain its two existing access locations but both will modify their function:
  - The Royal York Access will be formalized into an urban access with curbs and will serve a much larger parking lot with garbage bins still accessed from this area. An increase from 4 parking spaces to 36 spaces is proposed. This access is proposed as a single access with all movements allowed and intended for staff parking only who are anticipated to arrive before buses layby on Royal York St in the morning and leave after the buses leave in the afternoon.
  - The Maitland Access will be formalized into an urban loop access with curbs and a more defined circulation route, with an entrance only at the northern end and outbound only at the southern end. The new access will accommodate 23 new staff parking spaces, a slight reduction from the existing 35 parking spaces. This new access will also provide separation between the roadway and the parking facilities. The internal loop is proposed to be used by student van transportation only.
- The school board forecasts a maximum of up to 15 Type C school buses to accommodate various destinations (though acknowledged they will likely not operate at maximum capacity). To accommodate the buses, 11 can layby on Royal York St similar to today and 4 on Maitland St between the Royal York/Maitland intersection and the Maitland school access. School buses on Royal York St will temporarily block the Royal York access; however, since staff arrive at different times as bus operations, the blockage will not have a major impact.
- Parent drop-off is proposed along the east side of Fortune St adjacent to the existing sidewalk facility. A new 3m MUP will connect the Fortune St sidewalk facilities to the school. Fortune St currently allows on-street parking.
- The site provides notable TDM measures and infrastructure for a school. Specifically, the site provides all students with free school bus transportation to encourage them arriving by bus.

Future Conditions

- Other area developments were acknowledged within this report.
- The MMLOS road segment analysis showed that only the south side of Royal York St met the pedestrian level of service. If pedestrian facilities were provided on Maitland St, then the target would also be met. A

1.5m buffer from vehicle travel would be required to meet the target at Fortune St given the slightly higher traffic volumes. However, it is acknowledged that the stopped buses on Royal York St provide a physical buffer from the roadway for students getting on and off the bus. Similarly, vehicles dropping off students on Fortune St provide some buffer measures from the sidewalk facility. All other targets including cycling and transit were met.

- Given the low number of vehicle trips forecasted (less than 75), no major impacts to the study area network are anticipated. Future conditions are forecasted to operate similarly to today.

Based on the preceding report, the proposed school extension for St. Phillip Catholic School is recommended from a transportation perspective.

Prepared By:

Juan Lavin, P. Eng.
Transportation Engineer

Reviewed By:

Jake Berube, P.Eng. RSP1
Transportation Engineer

Appendix A:

TIA Screening Form & Site Plan

PARSONS

Office: +1 613.738.4160
1223 Michael Street, Suite 100|Ottawa, ON K1J 7T2

City of Ottawa 2017 TIA Guidelines (2023 Revisions)

TIA Screening Form

Date	26-Nov-24
Project	St. Philip Primary School Addition
Project Number	910537-10042

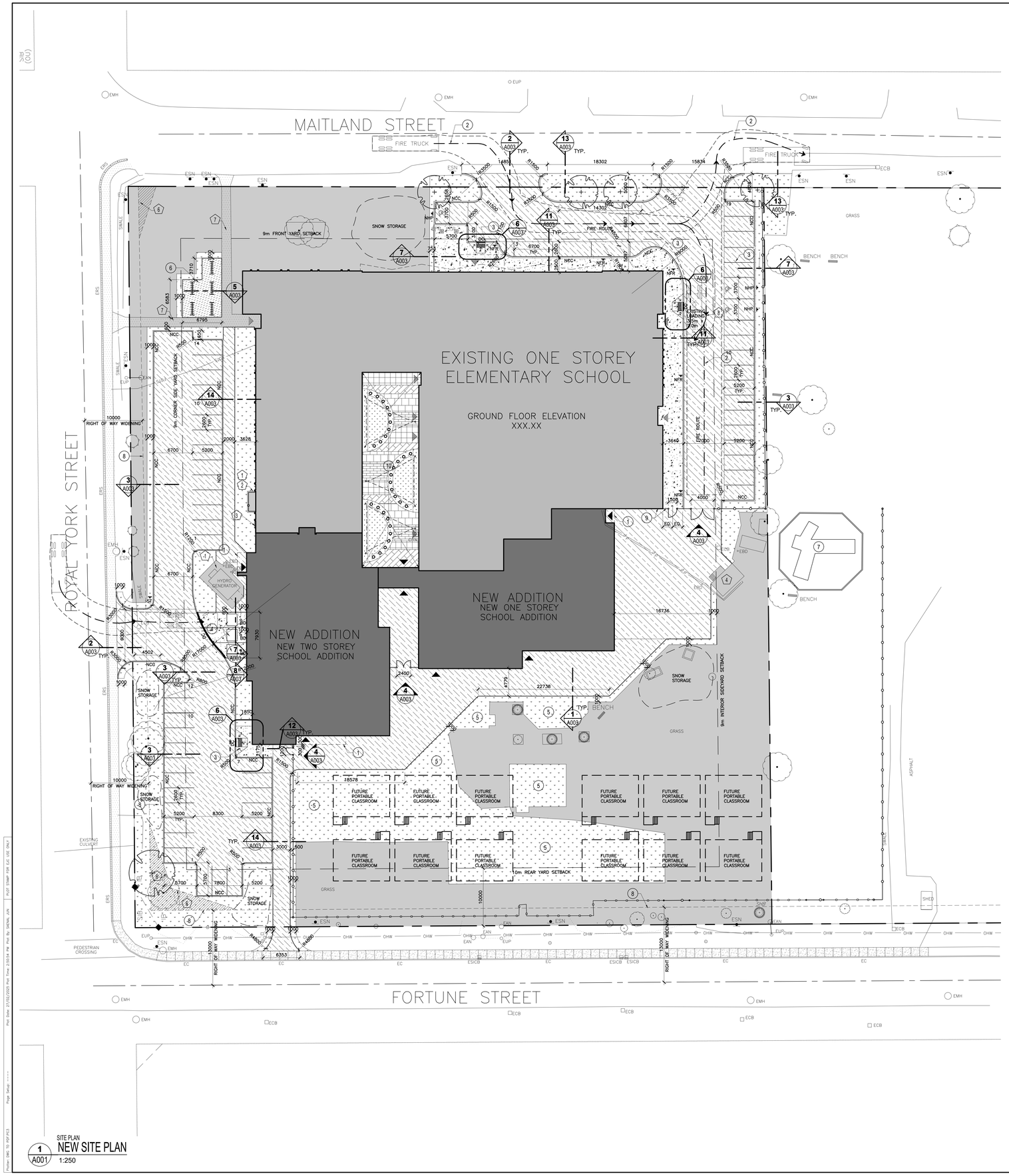
Results of Screening	Yes/No
Development Satisfies the Trip Generation Trigger	Yes
Development Satisfies the Location Trigger	No
Development Satisfies the Safety Trigger	No

Module 1.1 - Description of Proposed Development	
Municipal Address	79 Maitland St S, Richmond, ON, K0A 2Z0
Description of location	Bound by Royal York St to the north, Maitland St to the east, St. Philip Church and Burke St to the south and Fortune St to the west.
Land Use	Primary School
Development Size	New Addition: 12 new classrooms plus a multi-purpose room within a school addition and room for 5 more portables, for a combined new 18 new teaching rooms.
Number of Accesses and Locations	Refined access on Maitland St and formalized access on Royal York St (previously a garbage only access, proposed to access new vehicular parking)
Development Phasing	Single Phase
Buildout Year	2026 (Estimated)
Sketch Plan / Site Plan	See Attached

Module 1.2 - Trip Generation Trigger		
Land Use Type	Primary School	
Development Size	350	Students
Trip Generation Trigger Met?	Yes	

Module 1.3 - Location Triggers	
Development Proposes a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit, or Spine Bicycle Networks (See Sheet 3)	No
Development is in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone. (See Sheet 3)	No
Location Trigger Met?	No

Module 1.4 - Safety Triggers		
Posted Speed Limit on any boundary road	<80	km/h
Horizontal / Vertical Curvature on a boundary street limits sight lines at a proposed driveway	No	
A proposed driveway is within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions) or within auxiliary lanes of an intersection;	No	
A proposed driveway makes use of an existing median break that serves an existing site	No	
There is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development	No	
The development includes a drive-thru facility	No	
Safety Trigger Met?	No	



SITE PLAN
NEW SITE PLAN
1:250

LEGEND

- BARRIER FREE PARKING
- EXISTING BUILDING ENTRANCE/EXIT
- NEW BUILDING ENTRANCE/EXIT
- EBD EXISTING BOLLARD TO REMAIN
- EC EXISTING CONCRETE CURB TO REMAIN
- EDC EXISTING DEPRESSED CONCRETE CURB TO REMAIN
- ERS EXISTING CONCRETE RUMBLE STRIP TO REMAIN
- EXISTING CHAIN LINK FENCE TO REMAIN
- 1200mm HIGH NEW CHAIN LINK FENCE
- NCC NEW CURB, UNLESS OTHERWISE INDICATED
- DC DEPRESSED CURB
- ROAD CENTER LINE
- FIRE ROUTE
- SET BACK LINE
- PROPERTY LOT LINE
- SIB IRON BAR (REFER TO SURVEY)
- EMH EXISTING MAN HOLE TO REMAIN (REFER TO CIVIL)
- ECB EXISTING CATCH BASIN TO REMAIN (REFER TO CIVIL)
- ESICB EXISTING SIDE INLET CATCH BASIN TO REMAIN (REFER TO CIVIL)
- EFP EXISTING FLAG POLE TO REMAIN
- EUP EXISTING UTILITY POST TO REMAIN
- DRN EXISTING DRAIN TO REMAIN
- EAN EXISTING UTILITY POLE ANCHOR TO REMAIN (REFER TO CIVIL)
- ESN EXISTING SIGN TO REMAIN
- BENCH EXISTING BENCH TO REMAIN
- P EXISTING UNDERGROUND HYDRO LINE, REFER TO ELECTRICAL
- FOTS EXISTING UNDERGROUND FIBRE OPTIC LINE, REFER TO ELECTRICAL
- OHW EXISTING OVERHEAD UTILITY WIRES, REFER TO ELECTRICAL
- NFR NEW FIRE ROUTE SIGN (EVERY 25 METRES)
- NHP NEW HANDICAPPED PARKING SIGN
- LA NEW LOADING AREA SIGN
- ST NEW STOP SIGN
- LS NEW LIGHT STANDARD AND/OR REINSTATED EXISTING LIGHT STANDARD, REFER TO ELECTRICAL
- FH NEW FIRE HYDRANT (REFER TO CIVIL)
- MH NEW MAN HOLE (REFER TO CIVIL)
- CB NEW CATCH BASIN (REFER TO CIVIL)
- BD NEW BOLLARD

- NEW BUILDING
- EXISTING BUILDING
- EXISTING AREA NOT IN SCOPE OF WORK
- EXISTING LIGHT DUTY ASPHALT PAVING TO REMAIN
- EXISTING CONCRETE WALK TO REMAIN
- NEW TYPE 1 ASPHALT – HEAVY DUTY (REFER TO SPEC.)
- NEW TYPE 2 ASPHALT – LIGHT DUTY (REFER TO SPEC.)
- NEW CONCRETE WALK
- NEW SEEDED GRASS
- NEW SODDED GRASS (REFER TO LANDSCAPE)
- NEW CONCRETE PAVING
- CORNER TRIANGLE REQUIREMENT BY OFFICIAL PLAN
- NEW TREES (REFER TO LANDSCAPE)
- EXISTING TREES TO REMAIN (REFER TO LANDSCAPE)
- SHB EXISTING SHRUB TO REMAIN (REFER TO LANDSCAPE)

EXISTING SCHOOL + ADDITION

SITE DATA

SITE AREA	14,127.3 m²
FOOTPRINT	
EXISTING SCHOOL FOOTPRINT	2,952.2 m²
SCHOOL ADDITION FOOTPRINT	1,533.4 m²
TOTAL FOOTPRINT	4,485.6 m²
GROSS FLOOR AREA (AS PER CITY OF OTTAWA ZONING BY-LAW DEFINITION)	
EXISTING SCHOOL GROSS FLOOR AREA	2,133.3 m²
SCHOOL ADDITION GROSS FLOOR AREA	1,503.4 m²
TOTAL GROSS FLOOR AREA	3,636.7 m²

TOPOGRAPHICAL AND SURVEY INFORMATION PROVIDED BY STANTEC GEOMATICS LTD. (613)722-4420

PROJECT No.: 161614821-111
LEGAL DESCRIPTION:
UNIT 35, INDEX PLAN 4D-18
GEOGRAPHIC TOWNSHIP OF GOULBOURN
CITY OF OTTAWA

CITY OF OTTAWA ZONING

	REQUIRED		PROVIDED
RI–RURAL INSTITUTIONAL ZONE R12H (15)			
LOT AREA	MIN.	4000.0m²	14,120.0m²
LOT COVERAGE	MAX.	30%	31.7%
BUILDING HEIGHT	MAX.	15m	8.71m
FRONT YARD SETBACK	MIN.	9.0m	14.7m
REAR YARD SETBACK	MIN.	10.0m	31.6m
INT. SIDE YARD SETBACK	MIN.	9.0m	18.1m
CORNER YARD SETBACK	MIN.	9.5m	19.6m
LANDSCAPING IN PARKING	MIN.	20%	35.2%

PARKING CALCULATIONS

MOTOR VEHICLE PARKING :
EXISTING SCHOOL + ADDITION

REQUIRED: 15 EXISTING CLASSROOMS + 12 NEW CLASSROOMS + 12 FUTURE PORTABLE CLASSROOMS = 39 TOTAL

USE	No. CLASS	SPACES PER	SPACES REQ'D
ELEMENTARY SCHOOL	39	1.5/CLASS	59
TOTAL REQUIRED PARKING SPACES			59 SPACES
TOTAL REQUIRED PARKING SPACES FOR PERSONS WITH DISABILITIES			1 SPACES

PROVIDED	SPACES @ 5.2mD X 2.6mW	56 SPACES
	SPACES FOR PERSONS WITH DISABILITIES @ 5.2mD X 3.67mW	3 SPACES
	TOTAL SPACES PROVIDED	59 SPACES

BICYCLE PARKING (0.6m X 1.8m)

	USE	GROSS AREA	SPACES PER	SPACES REQ'D
REQUIRED	SCHOOL	3,636.7m²	1 / 100m²	37 SPACES
	TOTAL REQUIRED PARKING SPACES			37 SPACES
PROVIDED	SCHOOL			45 SPACES
	TOTAL SPACES PROVIDED			45 SPACES

LOADING SPACES (3.5m X 7.0m)

	USE	GROSS AREA	TABLE 113A	SPACES REQ'D
REQUIRED	SCHOOL	3,636.7m²	COLUMN V	1
	TOTAL REQUIRED PARKING SPACES			1 SPACES
PROVIDED	SCHOOL			1 SPACES

GENERAL NOTES

1. EXTENT OF CONTRACT IS LIMITED TO WITHIN PROPERTY EXCEPT WHERE SHOWN OTHERWISE.
2. ALL WORK OUTSIDE PROPERTY LINE TO BE CONSTRUCTED TO CITY OF OTTAWA CONSTRUCTION STANDARDS.
3. PARKING STALL SIZE: 2600mm x 5200mm
   BARRIER FREE PARKING STALL: 3900mm x 5200mm
4. FOR LANDSCAPE/PLANTING DETAILS SEE DRAWING AS PREPARED BY JBLA.
5. FOR SITE GRADING INFORMATION SEE GRADING & DRAINAGE DRAWING AS PREPARED BY WSP.
6. FOR SITE SERVICES INFORMATION SEE SITE SERVICES DRAWING AS PREPARED BY WSP.
7. FOR SOIL INVESTIGATION REPORT REFER TO REPORT PREPARED BY EXP SERVICES.
8. SLOPES OF CONCRETE/PAVING AT DEPRESSED CURBS SHALL NOT EXCEED 5%.
9. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY ERRORS TO THE ARCHITECT. CONTRACTOR TO COORDINATE WITH ALL DRAWINGS.
10. FOR SITE SURVEY INFORMATION, SEE TOPOLOGICAL SURVEY DRAWING PREPARED BY ANNIS, O'SULLIVAN, VOLLEBEKK LTD.

SITE PLAN NOTES – NEW

1. NEW SECOND FLOOR OVERHANG OR CANOPY
2. NEW FIRE ROUTE
3. NEW CURB RAMP WITH FLARED SIDES AND TACTILE SURFACE WALKING INDICATOR. REFER TO SITE DETAILS AND SPECIFICATIONS
4. GARBAGE EARTH BIN, REFER TO DETAILS AND SPECIFICATIONS
5. PROVIDE SOD WHERE EXISTING PORTABLE CLASSROOMS AND CRUSHED STONE PATHWAY WERE REMOVED
6. NEW BICYCLE PARKING SPACE
7. RELOCATED EXISTING PLAY STRUCTURE
8. RIGHT OF WAY WIDENING LINE REQUIRED BY CITY OF OTTAWA
9. ALIGN
10. COURTYARD DESIGN WITH SAILS, REFER TO LANDSCAPE

SITE PLAN NOTES – EXISTING

1. EXISTING CONCRETE PAD
2. EXISTING GAS METER FENCE
3. SHEET METAL PROTECTION FOR EXISTING ELECTRICAL CONDUITS
4. EXISTING FIRE PUMP HOUSE TO REMAIN, REFER TO ELECTRICAL
5. NOT USED
6. CORNER TRIANGLE REQUIREMENT BY OFFICIAL PLAN
7. EXISTING ASPHALT PAVED SIDEWALK TO REMAIN
8. EXISTING LOADING SPACE 3.5m X 7.0m

TRUE NORTH | PLAN NORTH

ISSUE NO.	REV NO.	DATE YYYY/MM/DD	ISSUE
3	0	2025/01/31	ISSUED CONSTRUCTION DOCUMENTS 66%
2	0	2024/12/30	ISSUED FOR OBC 2012 COMPLIANCE
1	0	2024/12/11	ISSUED FOR DESIGN DEVELOPMENT

EDWARD J. CUHACI
& ASSOCIATES ARCHITECTS Inc.
171 Slater St, Suite 700, Ottawa, Ontario, K1P 5H7
Fax: (613) 236-1944 Telephone: (613) 236-7135 E-mail: info@cuhaci.com

PROJECT TITLE/TITRE DU PROJET
ST. PHILIP CATHOLIC SCHOOL
ADDITION 2025
79 MAITLAND STREET S
RICHMOND, ONTARIO, K0A 2Z0

OTTAWA CATHOLIC SCHOOL BOARD
570 WEST HUNT CLUB ROAD
OTTAWA, ONTARIO, K2G 3R4

DRAWING TITLE/TITRE DU DESSIN
SITE PLAN

SCALE / ÉCHELLE	AS SHOWN	PROJ. No	2501
DRAWN BY / DESSINÉ PAR	S.J.	ISSUE No.	3
CHECKED BY / VÉRIFIÉ PAR	J.J.	REV. No	----
DATE	2024 10 09	DRAWING/DESSIN	A001

ACAD FILE/FICHIER: 2501-A001.DWG

Plotted: DWG TO PDF.PC3 | Page Setup: ---- | Plot Date: 27/02/2025 Plot Time: 2:55:04 PM Plot By: SADNL JUA | PLOT STAMP FOR LOC USE ONLY

Appendix B:

Transit Route Maps

283 Connexion

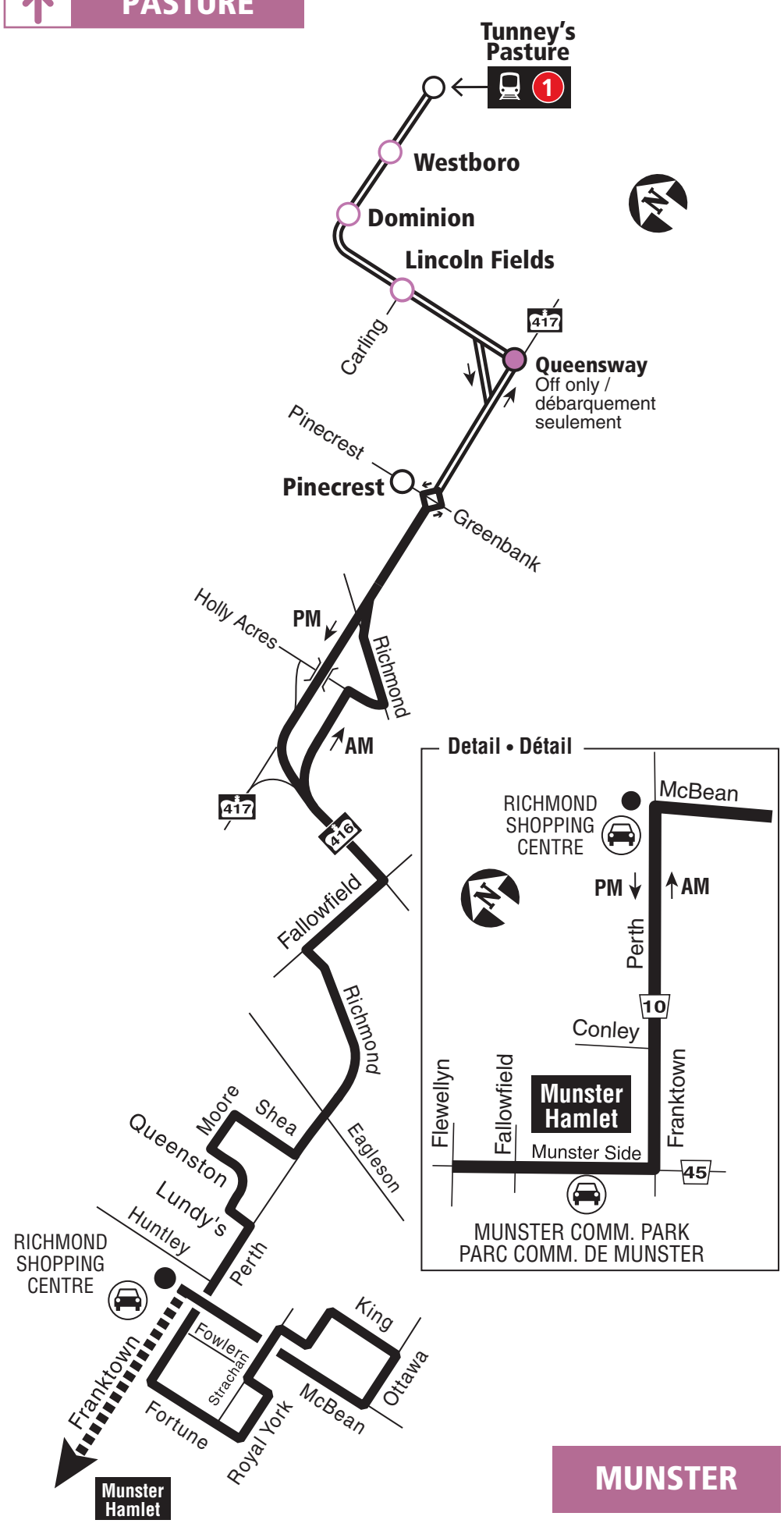
MUNSTER
TUNNEY'S PASTURE

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement

AM ↑ TUNNEY'S PASTURE



MUNSTER

2022.04

- Transitway & Station
- AM: Off only - PM: Full Service
  AM : débarquement seulement - PM : service complet
- Limited stops: Off only in AM - No stop in PM /
  Arrêts limités : débarquement en AM seulement - aucun arrêt en PM
- Some trips / Quelques trajets
- Park & Ride / Parc-o-bus

2022.04

Schedule / Horaire 613-560-1000

Text / Texto* 560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service
Service à la clientèle **613-560-5000**

Lost and Found / Objets perdus **613-563-4011**

Security / Sécurité **613-741-2478**

Effective April 24, 2022

En vigueur 24 avril 2022

OC Transpo

INFO 613-560-5000
octranspo.com

301

Local

CARLINGWOOD

RICHMOND
STITTSVILLE

Monday only / Lundi seulement

Peak periods only

Périodes de pointe seulement

AM ↑ **CARLINGWOOD**

NO CHARGE
SANS FRAIS

PM ↓ **RICHMOND**

2022.04

Transitway & Station

Park & Ride / Parc-o-bus

2022.04

Schedule / Horaire 613-560-1000

Text / Texto* 560560

plus your four digit bus stop number / *plus* votre numéro d'arrêt à quatre chiffres

*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

Customer Service
Service à la clientèle **613-560-5000**

Lost and Found / Objets perdus **613-563-4011**

Security / Sécurité **613-741-2478**

Effective April 24, 2022

En vigueur 24 avril 2022

OC Transpo

INFO 613-560-5000
octranspo.com

Appendix C:

Existing Peak Hour Volumes

Transportation Services - Traffic Services

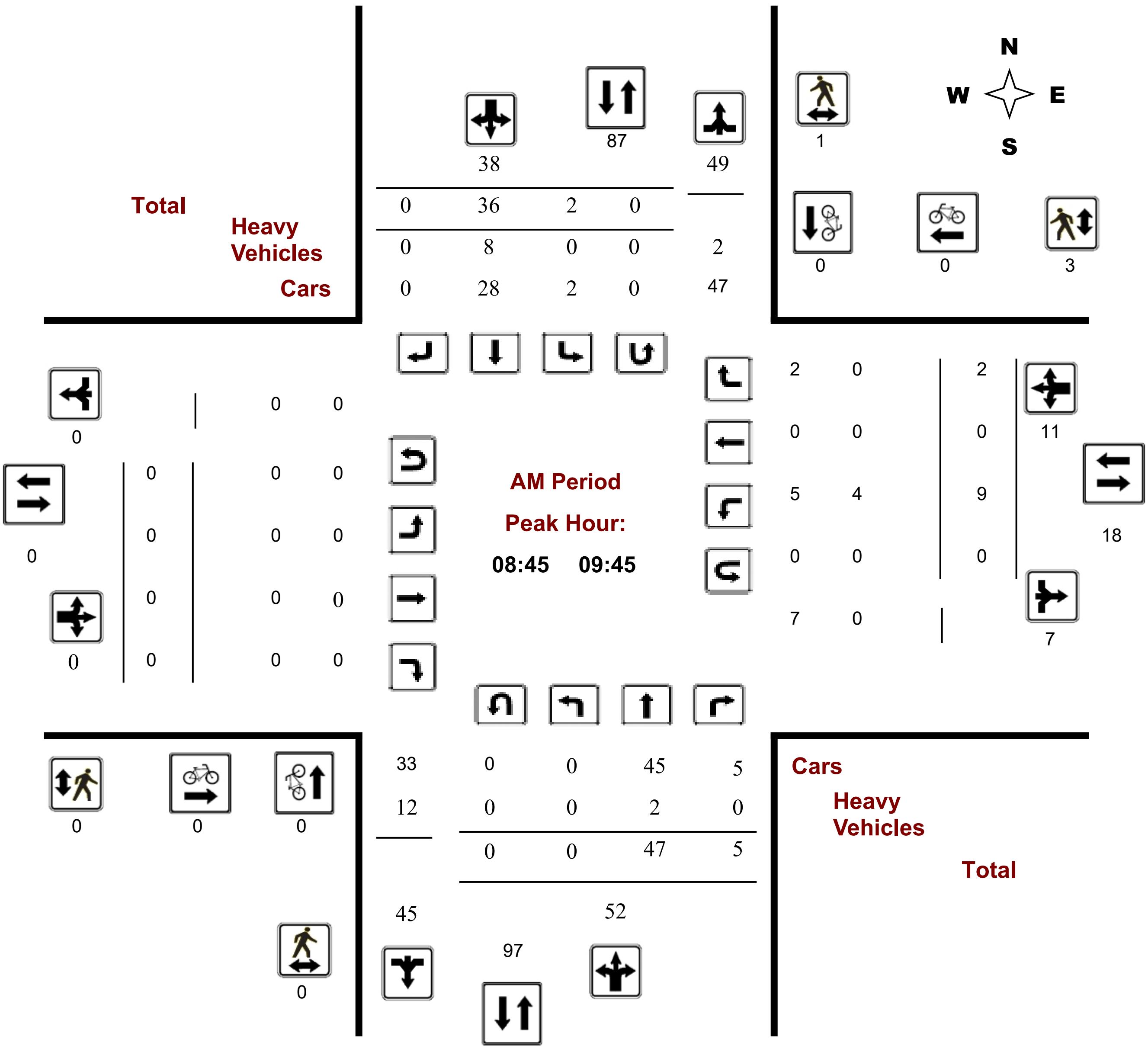
Turning Movement Count - Study Results

FORTUNE ST @ MARTIN ST

Survey Date: Tuesday, December 04, 2018 **WO No:** 38180

Start Time: 07:00 **Device:** Miovision

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

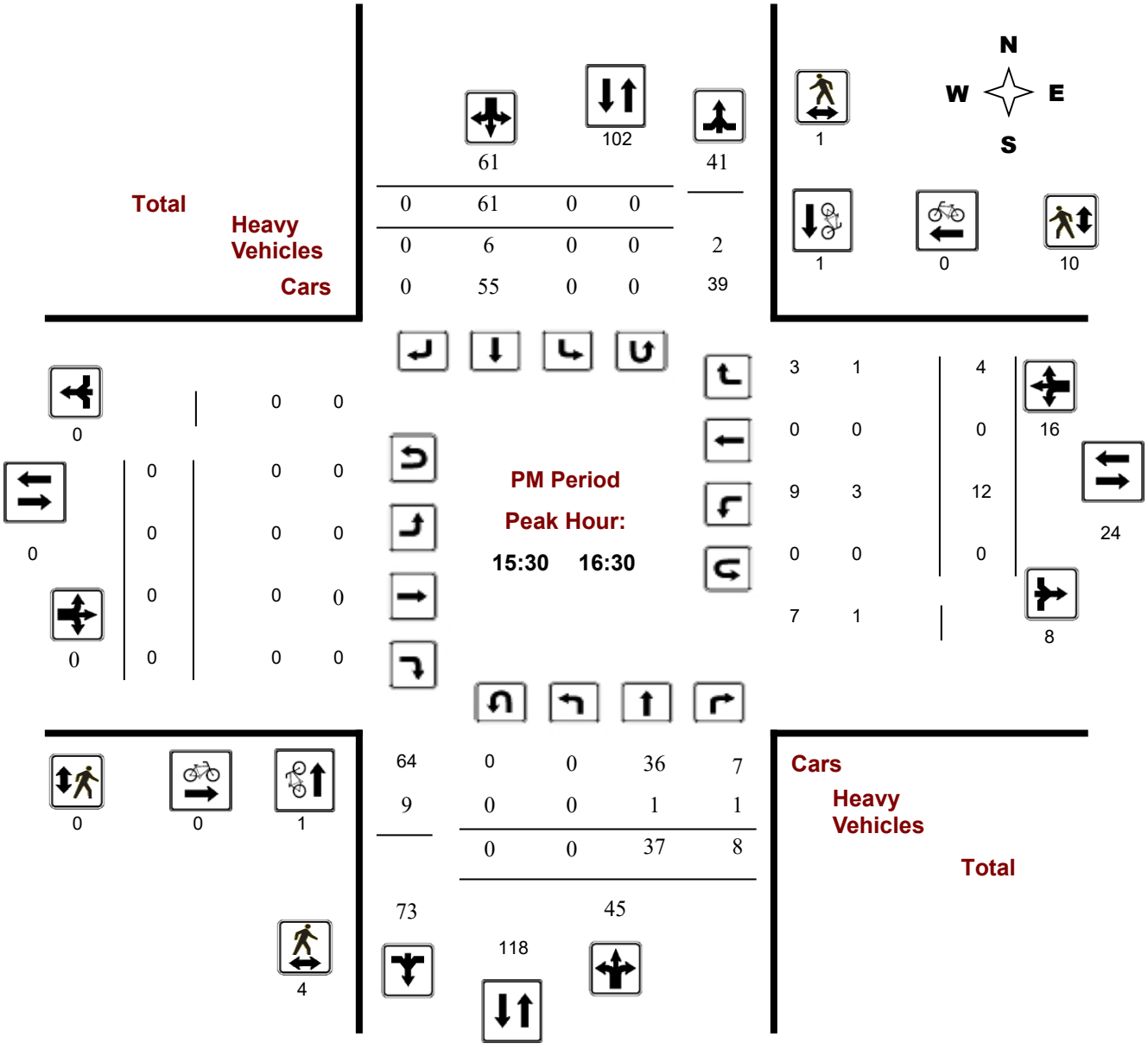
Turning Movement Count - Study Results

FORTUNE ST @ MARTIN ST

Survey Date: Tuesday, December 04, 2018 **WO No:** 38180

Start Time: 07:00 **Device:** Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FORTUNE ST @ MARTIN ST

Survey Date: Tuesday, December 04, 2018 **WO No:** 38180

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
16:30	16:45	0	2	1	3	1	17	0	18	21	0	0	0	0	2	0	1	3	3	24
16:45	17:00	0	7	1	8	0	13	0	13	21	0	0	0	0	2	0	0	2	2	23
17:00	17:15	0	13	1	14	0	6	0	6	20	0	0	0	0	0	0	1	1	1	21
17:15	17:30	0	4	0	4	0	7	0	7	11	0	0	0	0	0	0	1	1	1	12
17:30	17:45	0	4	0	4	1	8	0	9	13	0	0	0	0	1	0	0	1	1	14
17:45	18:00	0	8	0	8	0	3	0	3	11	0	0	0	0	1	0	0	1	1	12
07:00	07:15	0	9	0	9	0	3	0	3	12	0	0	0	0	0	0	0	0	0	12
07:15	07:30	0	16	0	16	2	3	0	5	21	0	0	0	0	0	0	0	0	0	21
07:30	07:45	0	8	1	9	0	2	0	2	11	0	0	0	0	0	0	0	0	0	11
07:45	08:00	0	4	0	4	0	3	0	3	7	0	0	0	0	1	0	0	1	1	8
08:00	08:15	0	8	0	8	1	4	0	5	13	0	0	0	0	0	0	1	1	1	14
08:15	08:30	0	6	0	6	0	10	0	10	16	0	0	0	0	0	0	0	0	0	16
08:45	09:00	0	11	0	11	0	10	0	10	21	0	0	0	0	1	0	1	2	2	23
09:00	09:15	0	15	2	17	0	16	0	16	33	0	0	0	0	4	0	0	4	4	37
09:30	09:45	0	6	1	7	1	6	0	7	14	0	0	0	0	1	0	1	2	2	16
11:30	11:45	0	11	0	11	0	0	0	0	11	0	0	0	0	1	0	0	1	1	12
12:00	12:15	0	3	0	3	0	5	0	5	8	0	0	0	0	1	0	1	2	2	10
16:00	16:15	0	5	1	6	0	12	0	12	18	0	0	0	0	0	0	2	2	2	20
08:30	08:45	0	5	0	5	1	6	0	7	12	0	0	0	0	0	0	0	0	0	12
09:15	09:30	0	15	2	17	1	4	0	5	22	0	0	0	0	3	0	0	3	3	25
09:45	10:00	0	7	0	7	1	9	0	10	17	0	0	0	0	1	0	0	1	1	18
11:45	12:00	0	5	0	5	0	4	0	4	9	0	0	0	0	0	0	0	0	0	9
12:45	13:00	0	4	2	6	0	7	0	7	13	0	0	0	0	0	0	1	1	1	14
13:00	13:15	0	9	0	9	0	2	0	2	11	0	0	0	0	1	0	0	1	1	12
13:15	13:30	0	5	0	5	0	6	0	6	11	0	0	0	0	1	0	0	1	1	12
15:15	15:30	0	6	0	6	0	8	0	8	14	0	0	0	0	0	0	1	1	1	15
15:30	15:45	0	6	0	6	0	19	0	19	25	0	0	0	0	5	0	0	5	5	30
15:45	16:00	0	19	7	26	0	18	0	18	44	0	0	0	0	5	0	1	6	6	50
16:15	16:30	0	7	0	7	0	12	0	12	19	0	0	0	0	2	0	1	3	3	22
12:15	12:30	0	2	0	2	0	2	0	2	4	0	0	0	0	1	0	0	1	1	5
15:00	15:15	0	8	0	8	1	14	0	15	23	0	0	0	0	3	0	1	4	4	27
12:30	12:45	0	5	2	7	1	6	0	7	14	0	0	0	0	2	0	1	3	3	17
Total:		0	243	21	264	11	245	0	256	520	0	0	0	0	39	0	15	54	54	574

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cycliste volumes reffer to Cyclist Volume report.

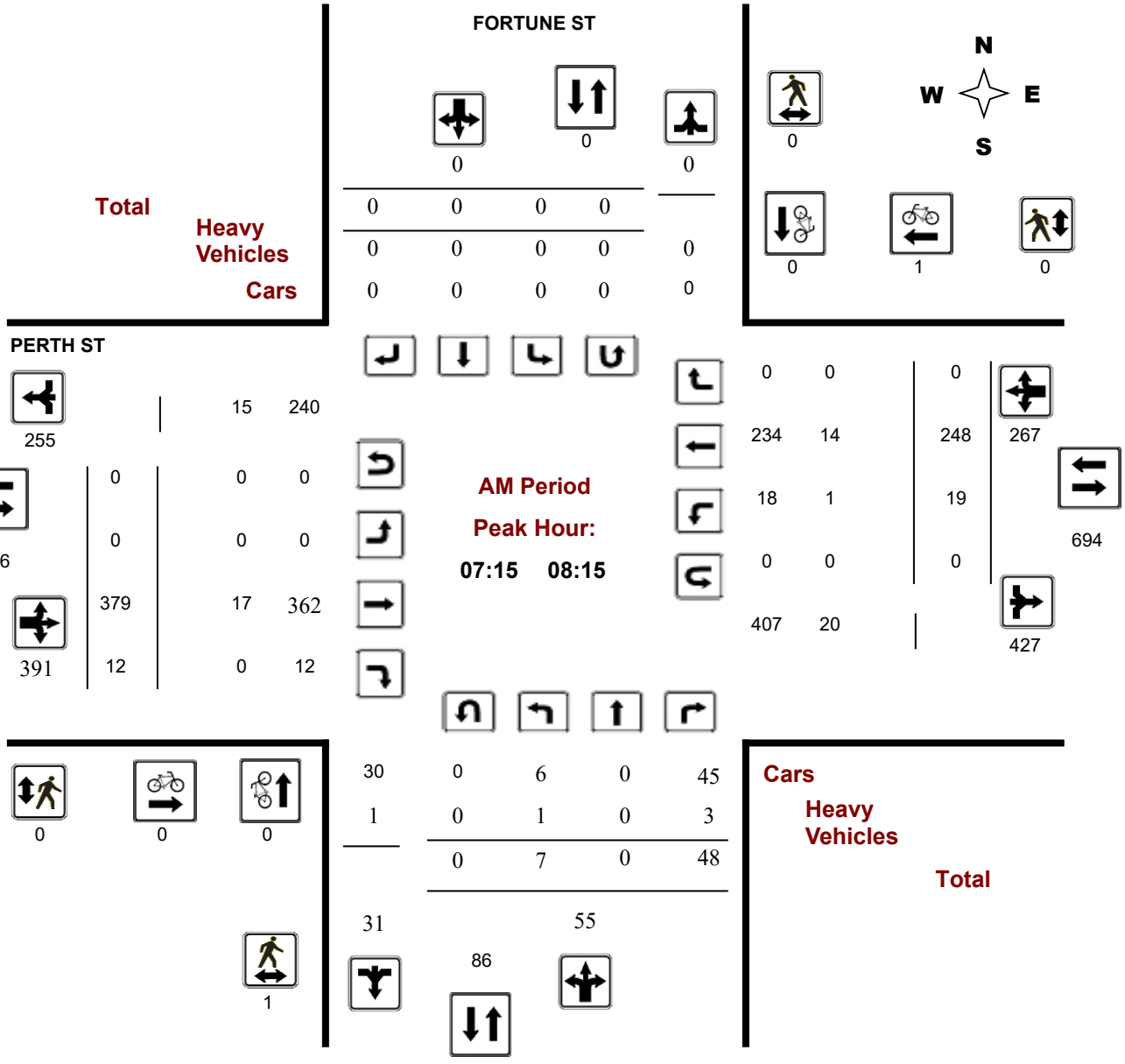
Transportation Services - Traffic Services

Turning Movement Count - Study Results

FORTUNE ST @ PERTH ST

Survey Date: Tuesday, April 30, 2019
Start Time: 07:00
WO No: 38624
Device: Miovision

AM Period Peak Hour Diagram



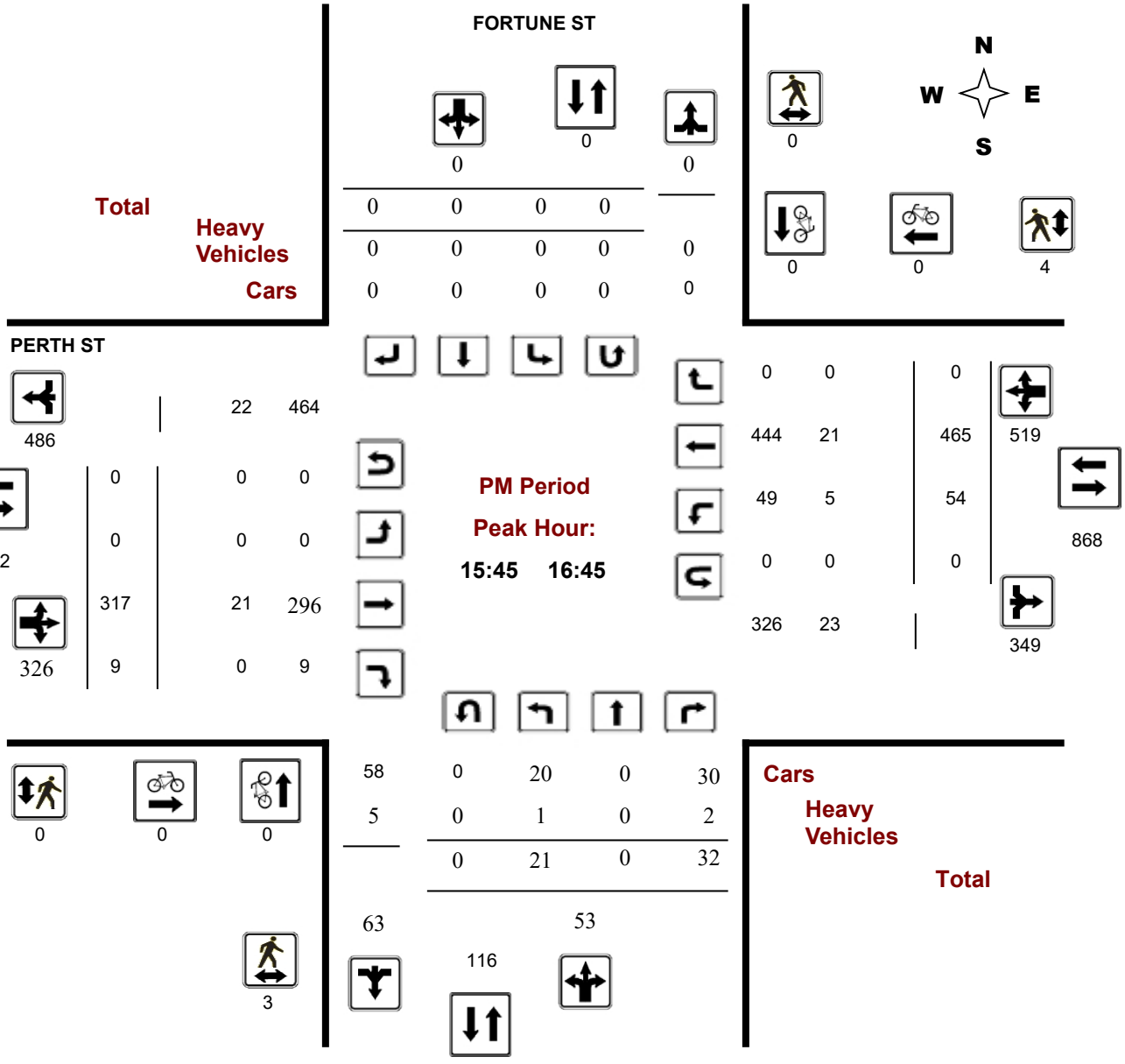
Transportation Services - Traffic Services

Turning Movement Count - Study Results

FORTUNE ST @ PERTH ST

Survey Date: Tuesday, April 30, 2019
Start Time: 07:00
WO No: 38624
Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

FORTUNE ST @ PERTH ST

Survey Date: Tuesday, April 30, 2019 **WO No:** 38624

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		FORTUNE ST									PERTH ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	0	5	6	0	0	0	0	6	0	85	2	87	6	53	0	59	146	152
07:15	07:30	2	0	13	15	0	0	0	0	15	0	104	4	108	4	56	0	60	168	183
07:30	07:45	2	0	12	14	0	0	0	0	14	0	107	3	110	5	66	0	71	181	195
07:45	08:00	3	0	8	11	0	0	0	0	11	0	81	1	82	4	67	0	71	153	164
17:45	18:00	5	0	13	18	0	0	0	0	18	0	50	5	55	13	97	0	110	165	183
08:00	08:15	0	0	15	15	0	0	0	0	15	0	87	4	91	6	59	0	65	156	171
08:15	08:30	4	0	9	13	0	0	0	0	13	0	77	5	82	8	71	0	79	161	174
09:15	09:30	7	0	19	26	0	0	0	0	26	0	58	2	60	9	55	0	64	124	150
08:30	08:45	2	0	7	9	0	0	0	0	9	0	70	1	71	8	49	0	57	128	137
08:45	09:00	0	0	13	13	0	0	0	0	13	0	61	1	62	6	41	0	47	109	122
09:00	09:15	2	0	17	20	0	0	0	0	20	0	75	9	84	11	44	0	55	139	159
09:30	09:45	2	0	13	15	0	0	0	0	15	0	71	2	73	8	56	0	64	137	152
09:45	10:00	1	0	10	11	0	0	0	0	11	0	55	1	56	6	53	0	59	115	126
11:30	11:45	0	0	3	3	0	0	0	0	3	0	62	2	64	5	58	0	63	127	130
11:45	12:00	0	0	4	4	0	0	0	0	4	0	45	0	45	4	49	0	53	98	102
12:00	12:15	3	0	9	12	0	0	0	0	12	0	48	2	50	7	51	0	58	108	120
12:15	12:30	2	0	5	7	0	0	0	0	7	0	55	0	55	6	46	0	52	107	114
12:30	12:45	0	0	4	4	0	0	0	0	4	0	55	4	59	9	60	0	69	128	132
12:45	13:00	1	0	8	9	0	0	0	0	9	0	58	0	58	6	50	0	56	114	123
13:00	13:15	0	0	4	4	0	0	0	0	4	0	37	2	39	2	40	0	42	81	85
13:15	13:30	1	0	2	3	0	0	0	0	3	0	62	0	62	6	56	0	62	124	127
15:00	15:15	2	0	9	11	0	0	0	0	11	0	48	5	53	8	81	0	89	142	153
15:15	15:30	5	0	12	17	0	0	0	0	17	0	68	3	71	10	86	0	96	167	184
15:30	15:45	3	0	10	13	0	0	0	0	13	0	69	3	72	9	85	0	94	166	179
15:45	16:00	11	0	17	28	0	0	0	0	28	0	67	4	71	11	114	0	125	196	224
16:00	16:15	4	0	5	9	0	0	0	0	9	0	90	2	92	16	125	0	141	233	242
16:15	16:30	2	0	6	8	0	0	0	0	8	0	79	3	82	8	121	0	129	211	219
16:30	16:45	4	0	4	8	0	0	0	0	8	0	81	0	81	19	105	0	124	205	213
16:45	17:00	2	0	15	17	0	0	0	0	17	0	67	0	67	10	109	0	119	186	203
17:00	17:15	0	0	6	6	0	0	0	0	6	0	75	1	76	21	113	0	134	210	216
17:15	17:30	2	0	6	8	0	0	0	0	8	0	51	6	57	12	110	0	122	179	187
17:30	17:45	1	0	4	5	0	0	0	0	5	0	55	2	57	25	103	0	128	185	190
Total:		74	0	287	362	0	0	0	0	362	0	2153	79	2232	288	2329	0	2617	4849	5,211

Note: U-Turns are included in Totals.

Transportation Services - Traffic Services

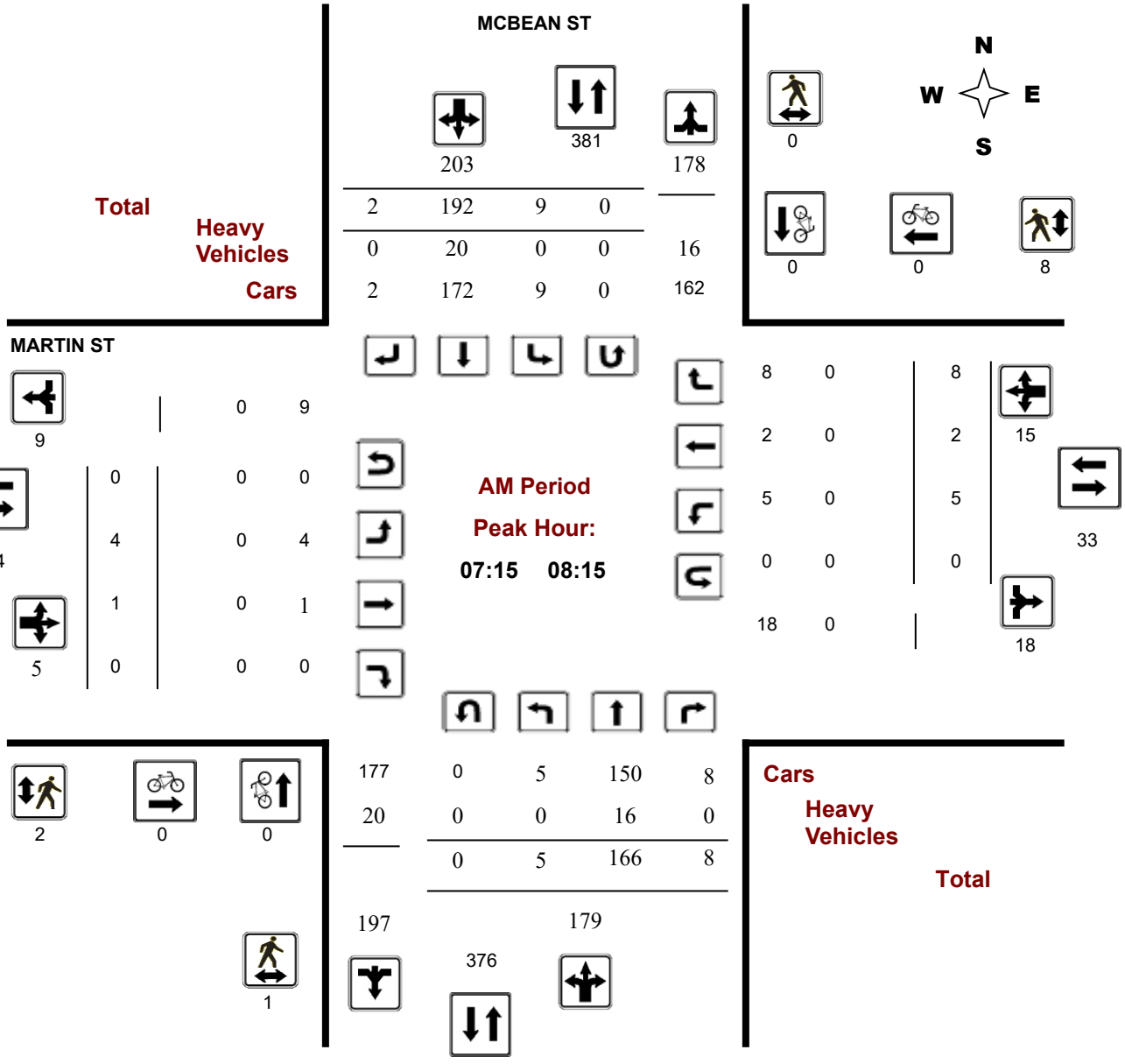
Turning Movement Count - Study Results

MARTIN ST @ MCBEAN ST

Survey Date: Wednesday, November 21, 2018 **WO No:** 38145

Start Time: 07:00 **Device:** Miovision

AM Period Peak Hour Diagram



Transportation Services - Traffic Services

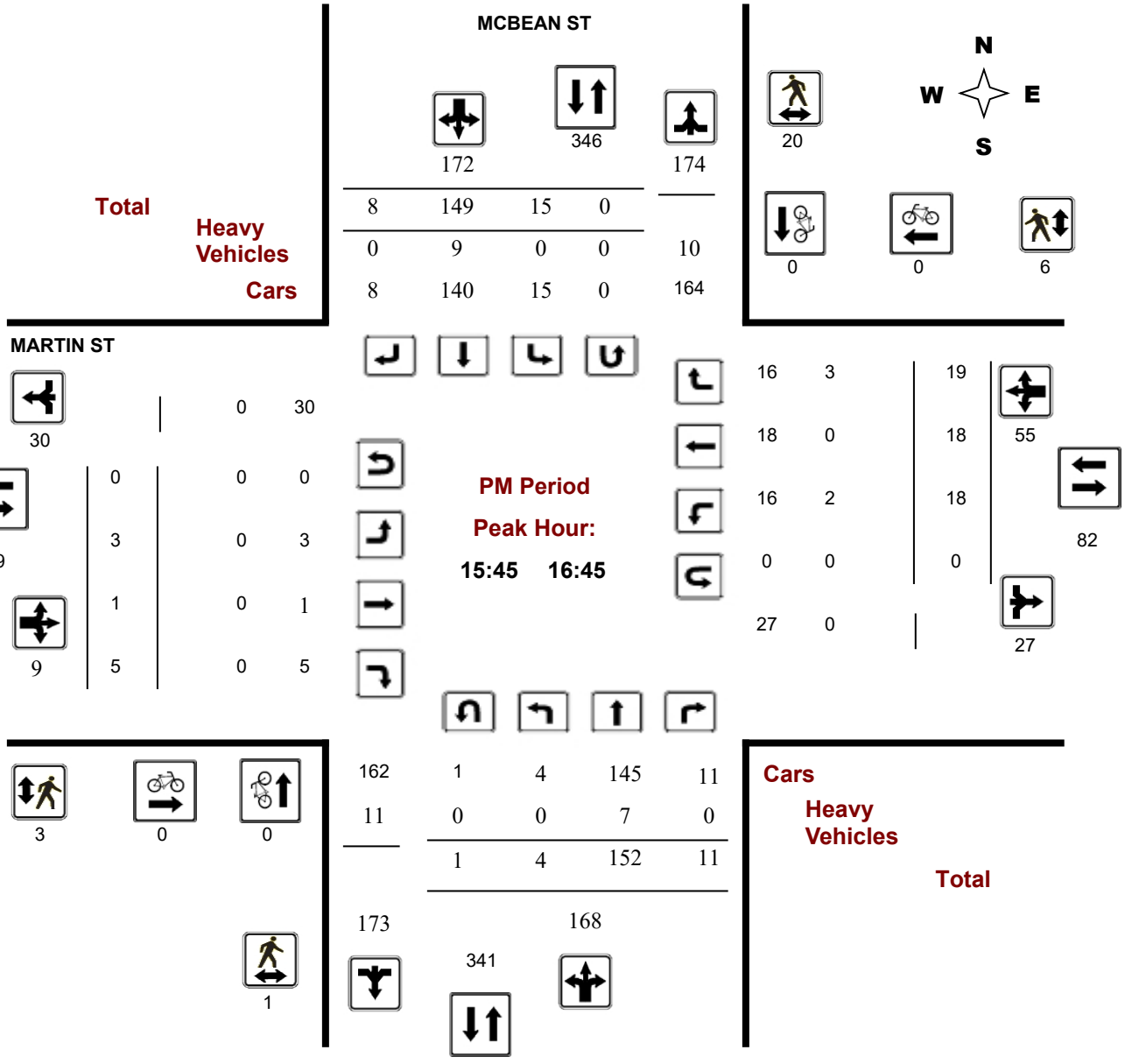
Turning Movement Count - Study Results

MARTIN ST @ MCBEAN ST

Survey Date: Wednesday, November 21, 2018 **WO No:** 38145

Start Time: 07:00 **Device:** Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

MARTIN ST @ MCBEAN ST

Survey Date: Wednesday, November 21, 2018 **WO No:** 38145

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		MCBEAN ST									MARTIN ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	1	21	0	22	3	10	0	13	35	1	3	1	5	0	1	4	5	10	45
07:15	07:30	1	33	0	34	1	29	0	30	64	0	0	0	0	1	0	2	3	3	67
07:30	07:45	3	45	1	49	1	86	1	88	137	2	0	0	2	1	0	2	3	5	142
07:45	08:00	1	58	5	64	3	53	0	56	120	2	0	0	2	2	0	1	3	5	125
08:00	08:15	0	30	2	32	4	24	1	29	61	0	1	0	1	1	2	3	6	7	68
08:15	08:30	0	23	4	27	2	19	0	21	48	0	1	0	1	1	1	1	3	4	52
08:30	08:45	0	23	1	24	1	14	0	15	39	0	0	0	0	2	3	0	5	5	44
08:45	09:00	0	21	2	23	0	22	0	22	45	0	0	0	0	0	0	6	6	6	51
09:00	09:15	0	45	3	48	4	20	1	25	73	4	2	0	6	5	0	8	13	19	92
09:15	09:30	0	29	0	29	1	34	0	35	64	0	0	1	1	1	0	1	2	3	67
09:30	09:45	0	25	3	28	0	21	2	23	51	0	0	1	1	1	3	1	5	6	57
09:45	10:00	0	27	1	28	1	18	2	21	49	0	1	0	1	0	0	0	0	1	50
11:30	11:45	0	30	0	30	1	19	0	20	50	1	0	1	2	1	2	2	5	7	57
11:45	12:00	2	11	3	16	5	27	1	33	49	0	2	3	5	0	0	1	1	6	55
12:00	12:15	2	30	0	32	1	16	0	17	49	0	0	0	0	1	1	1	3	3	52
12:15	12:30	0	28	1	29	3	18	2	23	52	1	0	2	3	1	2	1	4	7	59
12:30	12:45	2	16	3	21	0	25	2	27	48	1	0	2	3	1	0	2	3	6	54
12:45	13:00	0	18	8	26	2	21	2	25	51	1	0	1	2	1	2	6	9	11	62
13:00	13:15	1	21	1	23	1	25	2	29	52	2	0	0	2	2	1	2	5	7	59
13:15	13:30	0	23	2	25	1	27	0	28	53	1	0	0	1	4	1	1	6	7	60
15:00	15:15	0	26	1	27	2	25	4	31	58	0	0	0	0	3	1	2	6	6	64
15:15	15:30	1	31	3	35	2	26	1	29	64	4	2	2	8	3	2	5	10	18	82
15:30	15:45	0	29	1	30	1	37	1	39	69	0	1	0	1	3	2	3	8	9	78
15:45	16:00	0	40	6	46	11	37	4	52	98	2	0	0	2	8	6	5	19	21	119
16:00	16:15	2	32	1	35	1	29	2	32	67	0	1	3	4	2	5	3	10	14	81
16:15	16:30	2	48	2	53	0	42	1	43	96	0	0	2	2	4	2	5	11	13	109
16:30	16:45	0	32	2	34	3	41	1	45	79	1	0	0	1	4	5	6	15	16	95
16:45	17:00	0	41	4	45	1	40	1	42	87	0	0	0	0	0	2	8	10	10	97
17:30	17:45	0	15	2	17	2	30	0	32	49	3	1	1	5	0	1	6	7	12	61
17:45	18:00	0	39	3	42	1	36	2	39	81	0	0	0	0	2	0	2	4	4	85
17:00	17:15	0	20	6	26	0	45	2	47	73	1	0	0	1	2	3	1	6	7	80
17:15	17:30	0	30	0	30	3	40	1	44	74	0	0	0	0	5	1	4	10	10	84
Total:		18	940	71	1030	62	956	36	1055	2085	27	15	20	62	62	49	95	206	268	2,353

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cycliste volumes reffer to Cyclist Volume report.

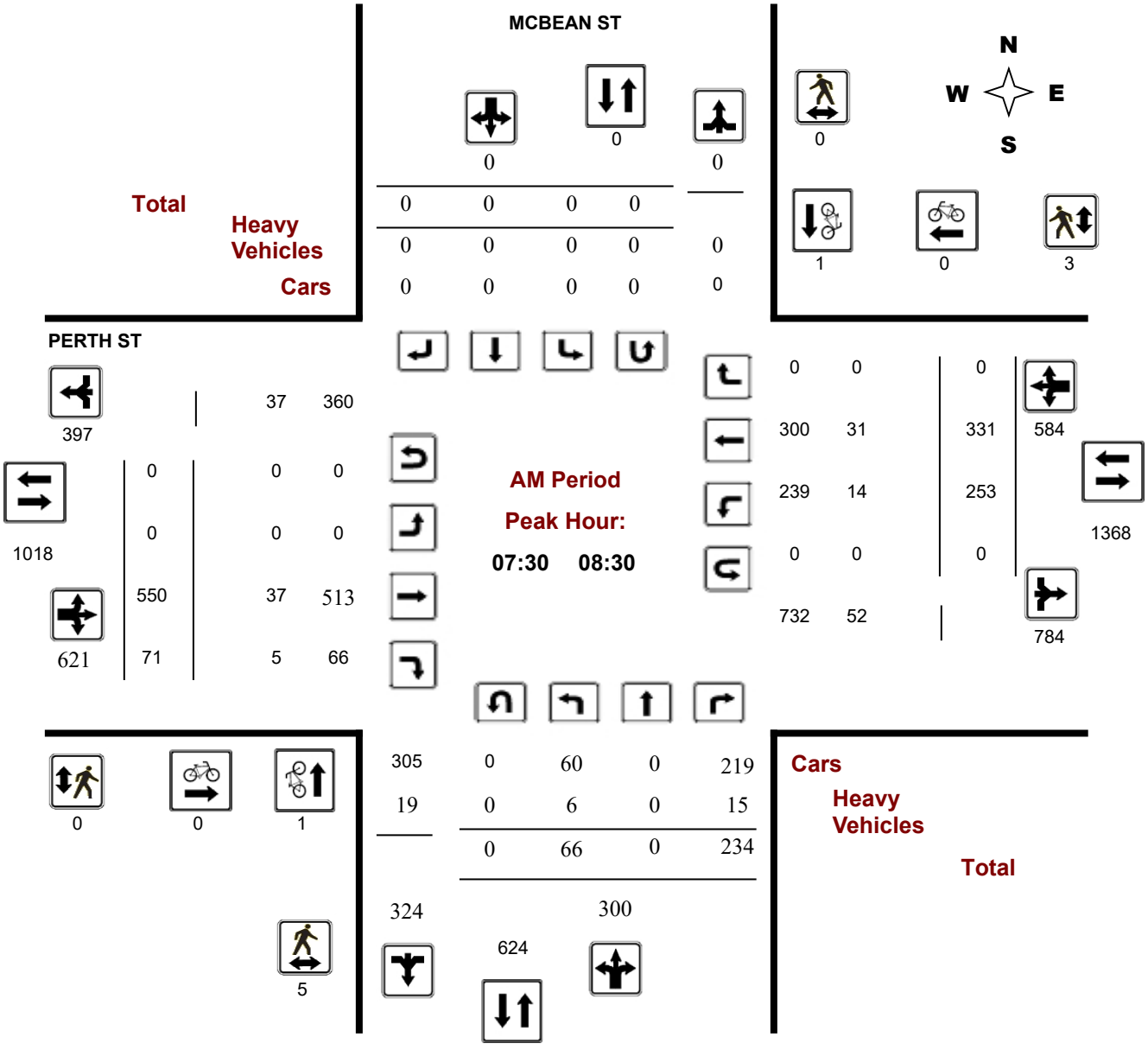
Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCBEAN ST @ PERTH ST

Survey Date: Tuesday, June 11, 2024
Start Time: 07:00
WO No: 42445
Device: Miovision

AM Period Peak Hour Diagram



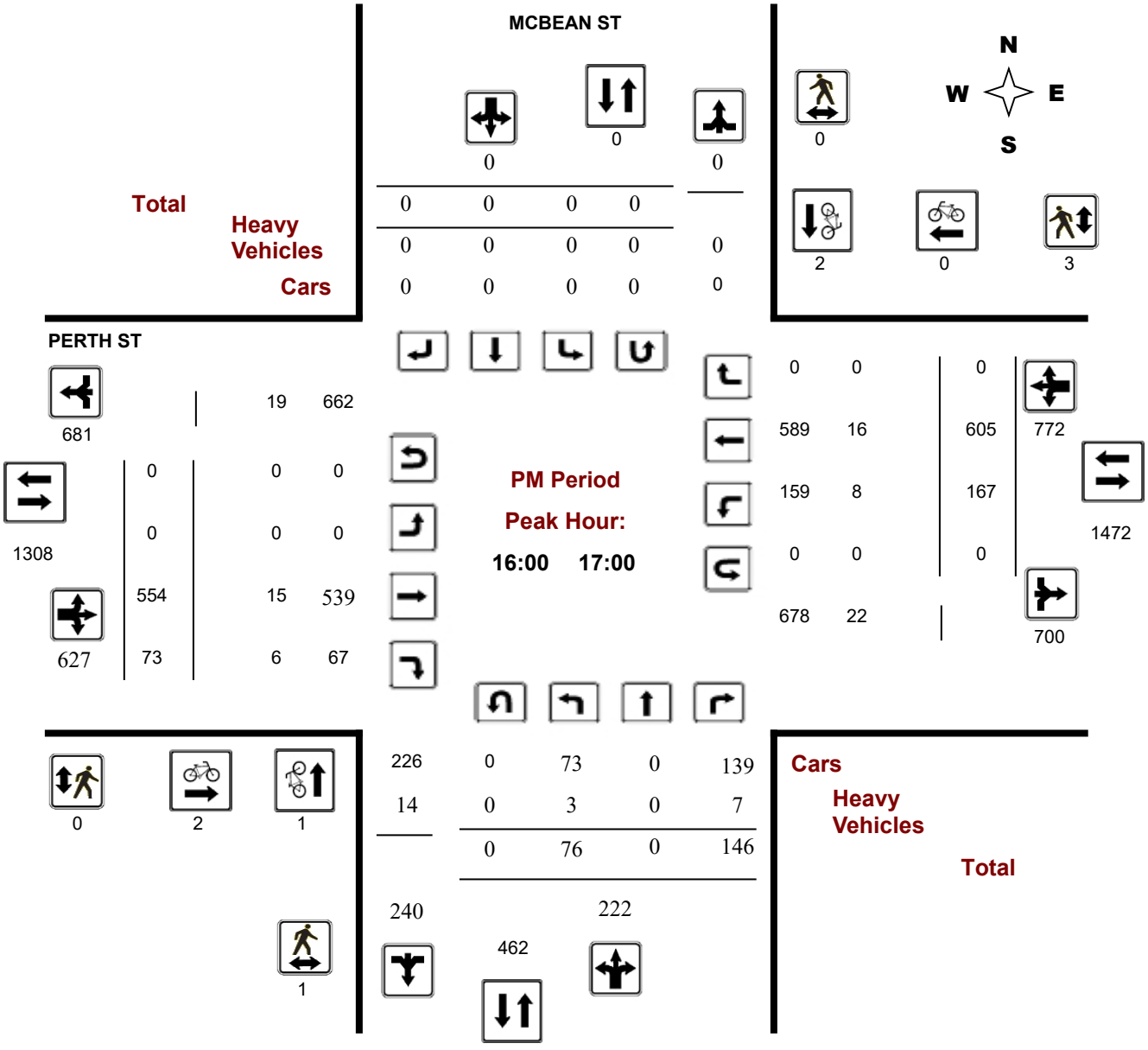
Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCBEAN ST @ PERTH ST

Survey Date: Tuesday, June 11, 2024
Start Time: 07:00
WO No: 42445
Device: Miovision

PM Period Peak Hour Diagram



Transportation Services - Traffic Services

Turning Movement Count - Study Results

MCBEAN ST @ PERTH ST

Survey Date: Tuesday, June 11, 2024 **WO No:** 42445

Start Time: 07:00 **Device:** Miovision

Full Study 15 Minute Increments

		MCBEAN ST									PERTH ST									
		Northbound				Southbound					Eastbound				Westbound					
Time Period		LT	ST	RT	N TOT	LT	ST	RT	S TOT	STR TOT	LT	ST	RT	E TOT	LT	ST	RT	W TOT	STR TOT	Grand Total
07:00	07:15	8	0	41	49	0	0	0	0	49	0	102	11	113	18	57	0	75	188	237
07:15	07:30	7	0	38	45	0	0	0	0	45	0	129	9	138	25	58	0	83	221	266
07:30	07:45	17	0	44	61	0	0	0	0	61	0	158	21	179	56	53	0	109	288	349
15:15	15:30	16	0	24	40	0	0	0	0	40	0	153	9	162	28	108	0	136	298	338
07:45	08:00	13	0	91	104	0	0	0	0	104	0	112	22	134	110	78	0	188	322	426
08:00	08:15	22	0	69	91	0	0	0	0	91	0	167	19	186	56	88	0	144	330	421
08:15	08:30	14	0	30	44	0	0	0	0	44	0	113	9	122	31	112	0	143	265	309
08:30	08:45	13	0	26	39	0	0	0	0	39	0	125	12	137	28	102	0	130	267	306
08:45	09:00	12	0	44	56	0	0	0	0	56	0	85	17	102	40	105	0	145	247	303
09:00	09:15	16	0	49	65	0	0	0	0	65	0	79	14	93	30	103	0	133	226	291
09:15	09:30	18	0	40	58	0	0	0	0	58	0	125	22	147	43	99	0	142	289	347
09:30	09:45	16	0	36	52	0	0	0	0	52	0	89	7	96	33	87	0	120	216	268
09:45	10:00	13	0	22	35	0	0	0	0	35	0	117	9	126	29	89	0	118	244	279
11:30	11:45	10	0	33	43	0	0	0	0	43	0	100	10	110	22	87	0	109	219	262
11:45	12:00	8	0	35	43	0	0	0	0	43	0	104	11	115	14	90	0	104	219	262
12:00	12:15	7	0	26	33	0	0	0	0	33	0	110	5	115	22	83	0	105	220	253
12:15	12:30	15	0	24	39	0	0	0	0	39	0	122	8	130	31	93	0	124	254	293
12:30	12:45	13	0	28	41	0	0	0	0	41	0	78	5	83	28	90	0	118	201	242
12:45	13:00	16	0	35	51	0	0	0	0	51	0	93	6	99	31	84	0	115	214	265
13:00	13:15	14	0	27	41	0	0	0	0	41	0	81	10	91	15	83	0	98	189	230
13:15	13:30	10	0	22	32	0	0	0	0	32	0	91	9	100	19	91	0	110	210	242
15:00	15:15	14	0	27	41	0	0	0	0	41	0	115	9	124	22	121	0	143	267	308
15:30	15:45	11	0	33	44	0	0	0	0	44	0	112	20	132	37	134	0	171	303	347
15:45	16:00	12	0	41	53	0	0	0	0	53	0	118	8	126	32	149	0	181	307	360
16:15	16:30	12	0	31	43	0	0	0	0	43	0	128	17	145	51	147	0	198	343	386
16:30	16:45	23	0	29	52	0	0	0	0	52	0	160	19	179	45	163	0	208	387	439
17:30	17:45	13	0	24	37	0	0	0	0	37	0	109	15	124	30	131	0	161	285	322
17:45	18:00	15	0	26	41	0	0	0	0	41	0	95	12	107	67	135	0	202	309	350
16:00	16:15	17	0	48	65	0	0	0	0	65	0	148	16	164	38	134	0	172	336	401
16:45	17:00	24	0	38	62	0	0	0	0	62	0	118	21	139	33	161	0	194	333	395
17:00	17:15	19	0	26	45	0	0	0	0	45	0	117	21	138	39	168	0	207	345	390
17:15	17:30	20	0	28	48	0	0	0	0	48	0	114	19	133	31	145	0	176	309	357
Total:		458	0	1135	1593	0	0	0	0	1593	0	3667	422	4089	1134	3428	0	4562	8651	10,244

Note: U-Turns are included in Totals, cyclist volume is not included in totals. For cycliste volumes reffer to Cyclist Volume report.

Appendix D:

Historic Collision Data

Total Area

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	3	4	2	4	0	1	3	0	17	74%
Non-fatal injury	1	1	0	1	0	3	0	0	6	26%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**4**	**5**	**2**	**5**	**0**	**4**	**3**	**0**	**23**	100%
	#3 or 17%	#1 or 22%	#6 or 9%	#1 or 22%	#7 or 0%	#3 or 17%	#5 or 13%	#7 or 0%		

PERTH ST, QUEEN CHARLOTTE ST N to FORTUNE ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	2	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	1	0	1	0	0	0	0	2	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	100%
	0%	50%	0%	50%	0%	0%	0%	0%		

FORTUNE ST, PERTH ST to HAMILTON ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	1	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	0	0	0	0	0	0	0	0	0%
Non-fatal injury	0	0	0	0	0	1	0	0	1	100%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	100%
	0%	0%	0%	0%	0%	100%	0%	0%		

FORTUNE ST/MARTIN ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	1	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	0	0	1	0	0	0	0	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	100%
	0%	0%	0%	100%	0%	0%	0%	0%		

MAITLAND ST, ROYAL YORK ST W to BURKE ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	1	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	0	0	0	0	0	1	0	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	100%
	0%	0%	0%	0%	0%	0%	100%	0%		

MAITLAND ST/PERTH ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	1	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	0	0	1	0	0	0	0	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**1**	100%
	0%	0%	0%	100%	0%	0%	0%	0%		

MCBEAN ST/PERTH ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	6	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	1	1	1	0	0	0	0	0	3	50%
Non-fatal injury	0	1	0	0	0	2	0	0	3	50%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**1**	**2**	**1**	**0**	**0**	**2**	**0**	**0**	**6**	100%
	17%	33%	17%	0%	0%	33%	0%	0%		

PERTH ST, OAK LEAF PRIV to MCBEAN ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	3	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	1	0	1	0	0	1	0	3	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**1**	**0**	**1**	**0**	**0**	**1**	**0**	**3**	100%
	0%	33%	0%	33%	0%	0%	33%	0%		

PERTH ST, TARRYN TERR to NIXON FARM DR

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	2	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	1	0	0	0	0	0	0	0	1	50%
Non-fatal injury	1	0	0	0	0	0	0	0	1	50%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	100%
	100%	0%	0%	0%	0%	0%	0%	0%		

PERTH ST, MCBEAN ST to COLONEL MURRAY ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	2	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	0	0	0	0	1	1	0	2	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**	100%
	0%	0%	0%	0%	0%	50%	50%	0%		

MCBEAN ST, HAMILTON ST to MARTIN ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	1	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	0	0	1	0	0	0	0	0	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	100%
	0%	0%	100%	0%	0%	0%	0%	0%		

CHRISTOPHER HAMILTON ST/MCBEAN ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	2	n/a	1825	**n/a**

Classification of Accident	Rear End	Turning Movement	Sideswipe	Angle	Approaching	SMV other	SMV unattended vehicle	Other	Total	
P.D. only	1	0	0	0	0	0	0	0	1	50%
Non-fatal injury	0	0	0	1	0	0	0	0	1	50%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**	100%
	50%	0%	0%	50%	0%	0%	0%	0%		

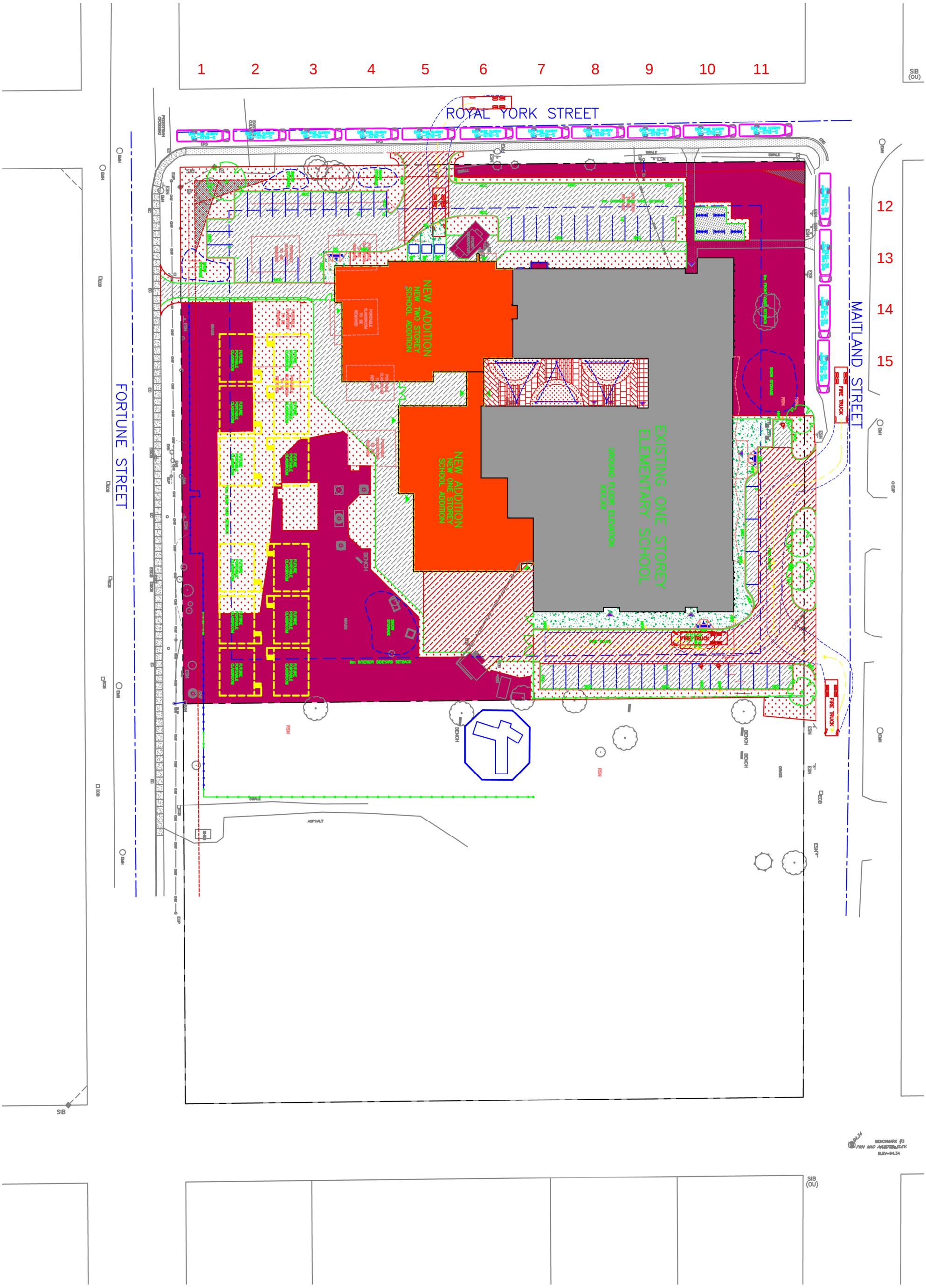
MCBEAN ST, PERTH ST to HAMILTON ST

Years	Total # Collisions	24 Hr AADT Veh Volume	Days	Collisions/MEV
2018-2022	1	n/a	1825	**n/a**

Classification of Accident	*Rear End*	*Turning Movement*	*Sideswipe*	*Angle*	*Approaching*	*SMV other*	*SMV unattended vehicle*	*Other*	*Total*	
P.D. only	0	1	0	0	0	0	0	0	1	100%
Non-fatal injury	0	0	0	0	0	0	0	0	0	0%
Non-reportable	0	0	0	0	0	0	0	0	0	0%
Total	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	100%
	0%	100%	0%	0%	0%	0%	0%	0%		

Appendix E:

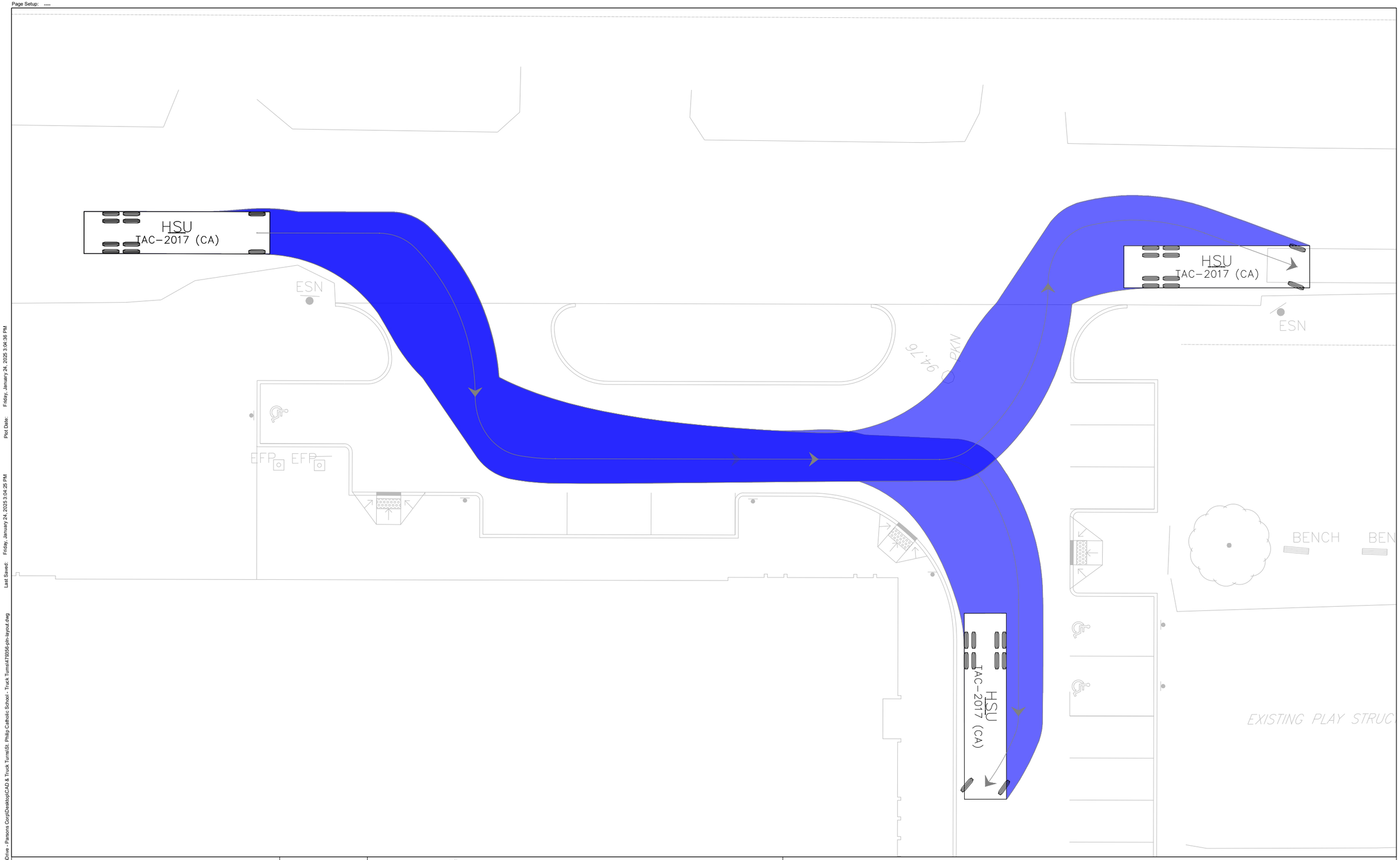
Bus Loading Area


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
ROYAL YORK STREET
FORTUNE STREET
MAITLAND STREET
NEW ADDITION
NEW TWO STOREY
SCHOOL ADDITION
EXISTING ONE STOREY
ELEMENTARY SCHOOL
GROUND FLOOR ELEVATION
XXX.XX
NEW ADDITION
NEW ONE STOREY
SCHOOL ADDITION
PORTABLE CLASSROOM
FUTURE PORTABLE CLASSROOM
BENCH
ASPHALT
FIRE TRUCK
SIB
SIB (OU)
BENCHMARK #3
FIRE HYD ANGLE/ELEV.
ELEV=94.34

Appendix F:

Turning Templates

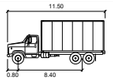
Page Setup: ----



PARSONS®

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

Legend



Not to Scale

Drawing Description: HSU MAITLAND ACCESS		
Client	Date: Jan 24, 2025	Figure Number: 001
Project Number: 479356	Project Description: St. Philip Catholic School	

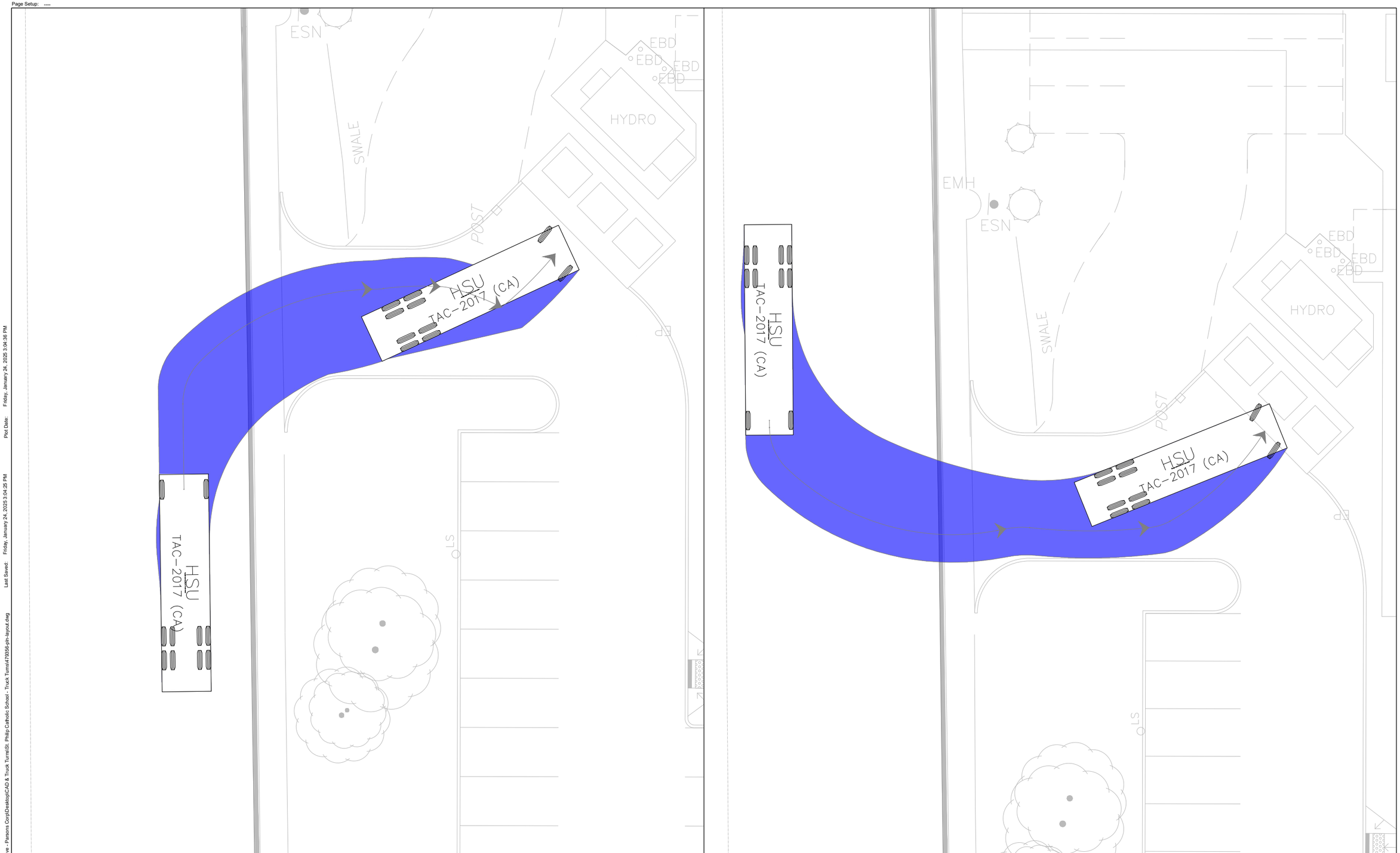
Consultant's Information: C:\Users\jo004287h\OneDrive - Parsons Corp\Desktop\CAD & Truck Turns\St. Philip Catholic School - Truck Turns\479356-plh-layout.dwg
Last Saved: Friday, January 24, 2025 3:04:25 PM
Plot Date: Friday, January 24, 2025 3:04:38 PM

Page Setup: ----

Plot Date: Friday, January 24, 2025 3:04:38 PM

Last Saved: Friday, January 24, 2025 3:04:25 PM

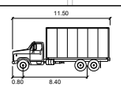
Consultant's Information C:\Users\jo004287\Hr\OneDrive - Parsons Corp\Desktop\CAD & Truck Turns\St. Philip Catholic School - Truck Turns\479356-sph-layout.dwg



PARSONS®

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

Legend



HSU

	meters
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 40.0

Not to Scale

Drawing Description: HSU ROYAL YORK ACCESS

Client:

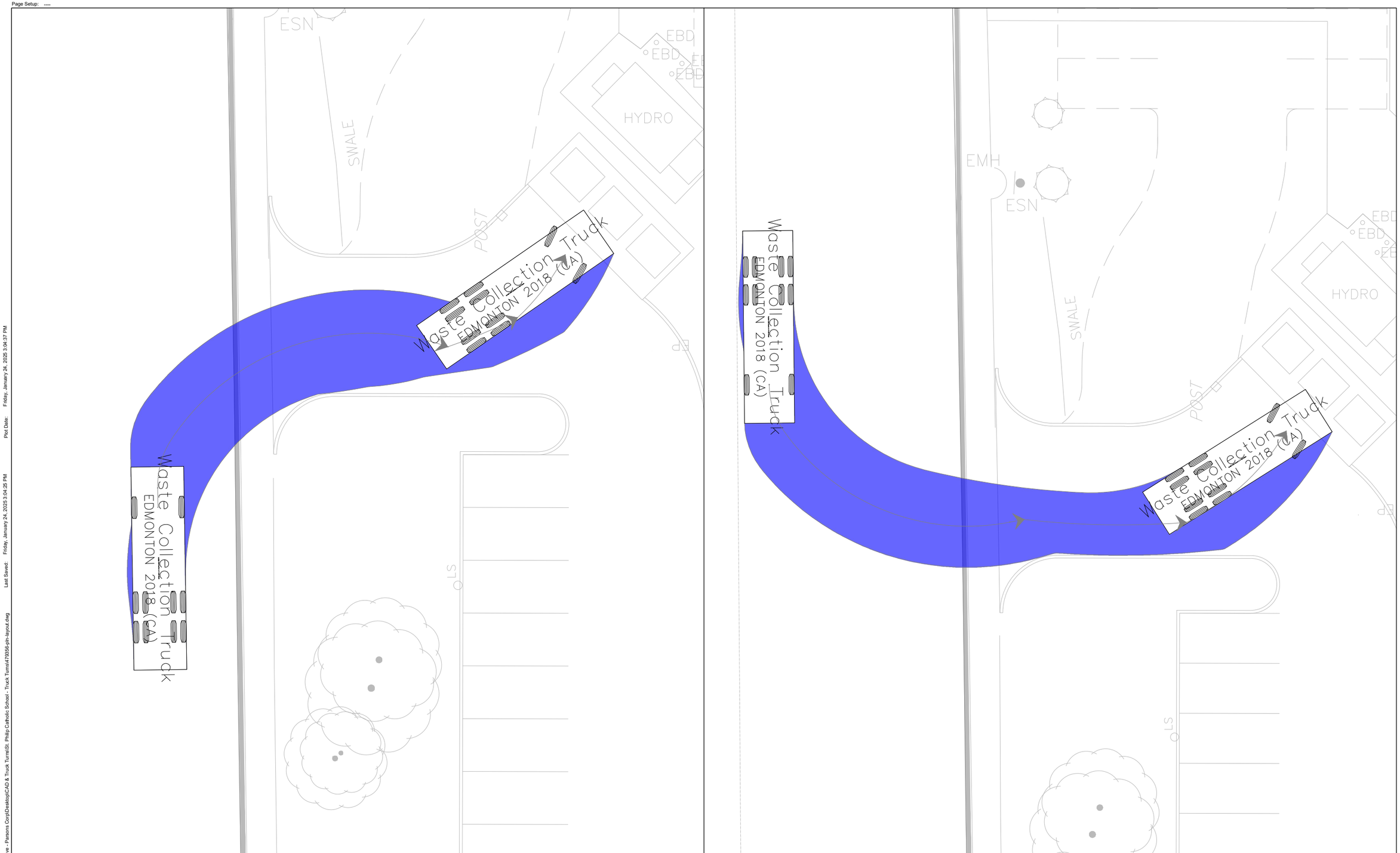
Date: Jan 24, 2025

Figure Number: 002

Project Number: 479356

Project Description: St. Philip Catholic School

Page Setup: ----



PARSONS®

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

Legend

Waste Collection Truck

meters	
Width	: 2.60
Track	: 2.60
Lock to Lock Time	: 6.0
Steering Angle	: 27.7

Not to Scale

Drawing Description: EDMONTON 2018 FRONT LOADING GARBAGE TRUCK		
Client	Date: Jan 24, 2025	Figure Number: 003
Project Number: 479356	Project Description: St. Philip Catholic School	

Consultant's Information

Plot Date: Friday, January 24, 2025 3:04:37 PM

Last Saved: Friday, January 24, 2025 3:04:25 PM

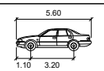
C:\Users\jo0423h\OneDrive - Parsons Corp\Desktop\CAD & Truck Turns\St. Philip Catholic School - Truck Turns\479356-cph-layout.dwg

Page Setup: ----

PARSONS®

NOTE: The location of utilities is approximate only, the exact location should be determined by consulting the municipal authorities and utility companies concerned. The contractor shall prove the location of utilities and shall be responsible for adequate protection from damage.

Legend



P

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

Not to Scale

Drawing Description: PASSENGER CAR		
Client	Date: Jan 24, 2025	Figure Number: 004
Project Number: 479356	Project Description: St. Philip Catholic School	

Plot Date: Friday, January 24, 2025 3:04:38 PM
Last Saved: Friday, January 24, 2025 3:04:25 PM
Consultant's Information: C:\Users\jo004287\OneDrive - Parsons Corp\Desktop\CAD & Truck Turns\St. Philip Catholic School - Truck Turns\479356-plh-layout.dwg

Appendix G:

MMLOS: Road Segments

Multi-Modal Level of Service - Segments Form

Project: 479356
Consultant: Parsons
Date: Mar 25, 2025
Scenario: St. Phillips School Richmond, ON

		Segment Name	Fortune St				Royal York St				Maitland St			
		OP Transect / Policy Area	Within 300m of school				Within 300m of school				Within 300m of school			
		Segment Component	Majority (>50%)		Critical		Majority (>50%)		Critical		Majority (>50%)		Critical	
		Side of Street	W or N	E or S	W or N	E or S	W or N	E or S	W or N	E or S	W or N	E or S	W or N	E or S
Pedestrian		PLOS Inputs												
	Posted Speed (km/h)		40 km/h		40 km/h		40 km/h		40 km/h		40 km/h		40 km/h	
	Two-Way ADT		1,800		1,800		1,500		1,500		1,800		1,800	
	Pedestrian Facility		None	Sidewalk			None	Sidewalk			None	Sidewalk		
	Does the facility meet the TMP Sidewalk or MUP Policy? If not, for MUPs, does the location have a low volume of peak daily users AND are pedestrian volumes likely less than 20% of total users?		No	Yes			No	Yes			No	No		
	Facility Width (m)		-	1.80m			-	1.80m			-	-		
	Offset from Motor Vehicle Travel Lanes (m)		-	< 0.5m			-	< 0.5m			-	-		
	Presence of Adjacent Parking?		-	-			-	-			-	-		
	General Purpose Curb Lane ADT		-	≤ 3000			-	≤ 3000			-	-		
	Max. Distance between Controlled Crossings (m)		-	-			-	-	-	-	-	-		
	Score		0.00	2.25	-	-	0.00	3.50	-	-	0.00	0.00	-	-
	PLOS		F	D	-	-	F	B	-	-	F	F	-	-
	Target PLOS		B				B				B			
Bicycle		BLOS Inputs												
	Cycling Route Classification		Elsewhere				Elsewhere				Elsewhere			
	Cycling Facility		Shared Operating Space	Shared Operating Space	Input PLOS First	Input PLOS First	Paved Shoulder without Buffer	Paved Shoulder without Buffer	Input PLOS First	Input PLOS First	Shared Operating Space	Shared Operating Space	Input PLOS First	Input PLOS First
	Is the minimum level of separation provided according to OTM Book 18 Pre-Selection Nomograph - Rural Context (Figure 5.6)? (for paved shoulders)		-	-			-	-			-	-		
	Facility Operation		-	-			-	-			-	-		
	Pedestrian/Cyclist Volume		-	-			-	-			-	-		
	Facility Width		-	-			-	-			-	-		
	Boulevard/Buffer Width (excluding curb)		-	-			-	-			-	-		
	Unsignalized Roadway Crossing Type (where cyclists are required to yield)		None	None			None	None			None	None		
	Number of Travel Lanes at Crossing		-	-			-	-			-	-		
	Crossing includes Median Refuge (≥ 2.7m)		-	-			-	-			-	-		
	Cross-street Posted Speed (km/h)		-	-			-	-			-	-		
	Cycling Path Blockages (e.g. bus stops and/or loading zones)		Rare	Rare			Rare	Rare			Rare	Rare		
	Score		3.30	3.30	-	-	5.00	5.00	-	-	3.30	3.30	-	-
	BLOS		C	C	-	-	A	A	-	-	C	C	-	-
	Target BLOS		C				C				C			
Transit		TLOS Inputs												
	Transit Facility		Select Transit Designation				Mixed Traffic				Select Transit Designation			
	Facility Type						Mixed Traffic	Mixed Traffic						
	On-Street Parking / Driveway Friction						-	-						
	Expected Transit Running Time (Qualitative)						Slightly Impeded or Unimpeded	Slightly Impeded or Unimpeded						
	Transit Travel Speed (Mixed Traffic Only)						Enter Speed (if available)	Enter Speed (if available)						
	TLOS		-	-			C	C			-	-		
	Target TLOS		-				E (D if road connects to transit station)				-			
Public Realm		PRLOS Inputs												
	Context		Mainstreet or active frontage street within a Hub, Special District, or Village	Other Streets			Mainstreet or active frontage street within a Hub, Special District, or Village	Other Streets			Mainstreet or active frontage street within a Hub, Special District, or Village	Mainstreet or active frontage street within a Hub, Special District, or Village		
	Inner Boulevard Width		≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m			≤ 0.6m	≤ 0.6m		
	Middle Boulevard Width		≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m			≤ 0.5m	≤ 0.5m		
	Outer Boulevard (Frontage) Width		-	≥ 3.0m			-	≥ 3.0m			-	-		
	Transit Route on Segment?		No	No			Yes	Yes			No	No		
	Bus Stop Elements		-	-			No platform or shelter	No platform or shelter			-	-		
	Number of Midblock Traffic Lanes (both travel directions)		≤ 2				≤ 2				≤ 2			
	Score		10.50	19.50			15.60	24.60			10.50	10.50		
	PRLOS		D	C			C	B			D	D		
			D				C				D			

Appendix H:

TDM Checklists

TDM-Supportive Development Design and Infrastructure Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

REQUIRED	The Official Plan or Zoning By-law provides related guidance that must be followed
BASIC	The measure is generally feasible and effective, and in most cases would benefit the development and its users
BETTER	The measure could maximize support for users of sustainable modes, and optimize development performance

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	1.	**WALKING & CYCLING: ROUTES**	
	1.1	**Building location & access points**	
BASIC	1.1.1	Locate building close to the street, and do not locate parking areas between the street and building entrances	☑ direct pathways from road to entrance proposed.
BASIC	1.1.2	Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	☑ transit drops off students along site frontage, near to front door.
BASIC	1.1.3	Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	☑ modern design with windows.
	1.2	**Facilities for walking & cycling**	
REQUIRED	1.2.1	Provide convenient, direct access to stations or major stops along rapid transit routes within 600 metres; minimize walking distances from buildings to rapid transit; provide pedestrian-friendly, weather-protected (where possible) environment between rapid transit accesses and building entrances; ensure quality linkages from sidewalks through building entrances to integrated stops/stations *(see Official Plan policy 4.3.3)*	☑ transit drops off students along site frontage on Royal York and Maitland, near to front door.
REQUIRED	1.2.2	Provide safe, direct and attractive pedestrian access from public sidewalks to building entrances through such measures as: reducing distances between public sidewalks and major building entrances; providing walkways from public streets to major building entrances; within a site, providing walkways along the front of adjoining buildings, between adjacent buildings, and connecting areas where people may congregate, such as courtyards and transit stops; and providing weather protection through canopies, colonnades, and other design elements wherever possible *(see Official Plan policy 4.3.12)*	☑ direct pathways from all three boundary streets to entrances proposed.

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
REQUIRED	1.2.3	Provide sidewalks of smooth, well-drained walking surfaces of contrasting materials or treatments to differentiate pedestrian areas from vehicle areas, and provide marked pedestrian crosswalks at intersection sidewalks *(see Official Plan policy 4.3.10)*	☑ A mixture of sidewalks and pathways proposed, following city design specs. The paved shoulder on Royal York has a rumble divider for contrasting materials.
REQUIRED	1.2.4	Make sidewalks and open space areas easily accessible through features such as gradual grade transition, depressed curbs at street corners and convenient access to extra-wide parking spaces and ramps *(see Official Plan policy 4.3.10)*	☑ Provided.
REQUIRED	1.2.5	Include adequately spaced inter-block/street cycling and pedestrian connections to facilitate travel by active transportation. Provide links to the existing or planned network of public sidewalks, multi-use pathways and on-road cycle routes. Where public sidewalks and multi-use pathways intersect with roads, consider providing traffic control devices to give priority to cyclists and pedestrians *(see Official Plan policy 4.3.11)*	☑ Paved shoulder provided on Royal York. Bike parking accessed via a paved path connecting to Royal York and Maitland.
BASIC	1.2.6	Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	☑ transit operates on boundary street.
BASIC	1.2.7	Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	☑ transit operates on boundary street.
BASIC	1.2.8	Design roads used for access or circulation by cyclists using a target operating speed of no more than 30 km/h, or provide a separated cycling facility	☐
	1.3	**Amenities for walking & cycling**	
BASIC	1.3.1	Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails	☐
BASIC	1.3.2	Provide wayfinding signage for site access (where required, e.g. when multiple buildings or entrances exist) and egress (where warranted, such as when directions to reach transit stops/stations, trails or other common destinations are not obvious)	☐

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑ Bicycle parking provided. Shelter not feasible for public non-profit education facility.
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑ Bicycle parking exceeds minimums.
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑ Bicycle parking to meet requirements.
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☑ Bicycle parking exceeds minimums.
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☑ Bicycle parking exceeds minimums by approximately 22%.
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☑ Bicycle parking to meet requirements. Less than 50 required.
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☑ Bicycle parking exceeds minimums.
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☑ Shower facilities exist on site.
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☑ Change facilities and lockers exist on site.
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐ Not applicable.
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☑ Buses arrive prior to bell (no waiting anticipated)
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	6.	**PARKING**	
	6.1	**Number of parking spaces**	
REQUIRED	6.1.1	Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	☑ Parking meets requirements.
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	Separate short-term and long-term parking areas using signage or physical barriers, to permit access controls and simplify enforcement (i.e. to discourage employees from parking in visitor spaces, and vice versa)	☐
	7.	**OTHER**	
	7.1	**On-site amenities to minimize off-site trips**	
BETTER	7.1.1	Provide on-site amenities to minimize mid-day or mid-commute errands	☐

TDM Measures Checklist:
Non-Residential Developments (office, institutional, retail or industrial)

Legend

BASIC — The measure is generally feasible and effective, and in most cases would benefit the development and its users

BETTER — The measure could maximize support for users of sustainable modes, and optimize development performance

★ — The measure is one of the most dependably effective tools to encourage the use of sustainable modes

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		1. TDM PROGRAM MANAGEMENT	
		1.1 Program coordinator	
BASIC	★	1.1.1 Designate an internal coordinator, or contract with an external coordinator	☑ OCSB Board
		1.2 Travel surveys	
BETTER		1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2. WALKING AND CYCLING	
		2.1 Information on walking/cycling routes & destinations	
BASIC		2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances	☑
		2.2 Bicycle skills training	
		Commuter travel	
BETTER	★	2.2.1 Offer on-site cycling courses for commuters, or subsidize off-site courses	☐
		2.3 Valet bike parking	
		Visitor travel	
BETTER		2.3.1 Offer secure valet bike parking during public events when demand exceeds fixed supply (e.g. for festivals, concerts, games)	☐ Not applicable

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		3. TRANSIT	
		3.1 Transit information	
BASIC		3.1.1 Display relevant transit schedules and route maps at entrances	☐ Students use public school buses.
BASIC		3.1.2 Provide online links to OC Transpo and STO information	☐ Students use public school buses.
BETTER		3.1.3 Provide real-time arrival information display at entrances	☐ Not applicable.
		3.2 Transit fare incentives	
		Commuter travel	
BETTER		3.2.1 Offer preloaded PRESTO cards to encourage commuters to use transit	☑ Students do not need to pay for school bus transportation
BETTER	*	3.2.2 Subsidize or reimburse monthly transit pass purchases by employees	☐
		Visitor travel	
BETTER		3.2.3 Arrange inclusion of same-day transit fare in price of tickets (e.g. for festivals, concerts, games)	☐ Not applicable.
		3.3 Enhanced public transit service	
		Commuter travel	
BETTER		3.3.1 Contract with OC Transpo to provide enhanced transit services (e.g. for shift changes, weekends)	☐ Not applicable.
		Visitor travel	
BETTER		3.3.2 Contract with OC Transpo to provide enhanced transit services (e.g. for festivals, concerts, games)	☐ Not applicable.
		3.4 Private transit service	
		Commuter travel	
BETTER		3.4.1 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for shift changes, weekends)	☐ Not applicable.
		Visitor travel	
BETTER		3.4.2 Provide shuttle service when OC Transpo cannot offer sufficient quality or capacity to serve demand (e.g. for festivals, concerts, games)	☐ Not applicable.

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		4. RIDESHARING	
		4.1 Ridematching service	
		Commuter travel	
BASIC	*	4.1.1 Provide a dedicated ridematching portal at OttawaRideMatch.com	☐
		4.2 Carpool parking price incentives	
		Commuter travel	
BETTER		4.2.1 Provide discounts on parking costs for registered carpools	☐
		4.3 Vanpool service	
		Commuter travel	
BETTER		4.3.1 Provide a vanpooling service for long-distance commuters	☐
		5. CARSHARING & BIKESHARING	
		5.1 Bikeshare stations & memberships	
BETTER		5.1.1 Contract with provider to install on-site bikeshare station for use by commuters and visitors	☐
		Commuter travel	
BETTER		5.1.2 Provide employees with bikeshare memberships for local business travel	☐
		5.2 Carshare vehicles & memberships	
		Commuter travel	
BETTER		5.2.1 Contract with provider to install on-site carshare vehicles and promote their use by tenants	☐
BETTER		5.2.2 Provide employees with carshare memberships for local business travel	☐
		6. PARKING	
		6.1 Priced parking	
		Commuter travel	
BASIC	*	6.1.1 Charge for long-term parking (daily, weekly, monthly)	☐
BASIC		6.1.2 Unbundle parking cost from lease rates at multi-tenant sites	☐
		Visitor travel	
BETTER		6.1.3 Charge for short-term parking (hourly)	☐

		TDM measures: *Non-residential developments*	Check if proposed & add descriptions
		7. TDM MARKETING & COMMUNICATIONS	
		7.1 Multimodal travel information	
		Commuter travel	
BASIC	*	7.1.1 Provide a multimodal travel option information package to new/relocating employees and students	☐
		Visitor travel	
BETTER	*	7.1.2 Include multimodal travel option information in invitations or advertising that attract visitors or customers (e.g. for festivals, concerts, games)	☐ Not applicable.
		7.2 Personalized trip planning	
		Commuter travel	
BETTER	*	7.2.1 Offer personalized trip planning to new/relocating employees	☐
		7.3 Promotions	
		Commuter travel	
BETTER		7.3.1 Deliver promotions and incentives to maintain awareness, build understanding, and encourage trial of sustainable modes	☑ OCSB provides “bike to work” and “Walk a block” programs
		8. OTHER INCENTIVES & AMENITIES	
		8.1 Emergency ride home	
		Commuter travel	
BETTER	*	8.1.1 Provide emergency ride home service to non-driving commuters	☐
		8.2 Alternative work arrangements	
		Commuter travel	
BASIC	*	8.2.1 Encourage flexible work hours	☐ Not applicable.
BETTER		8.2.2 Encourage compressed workweeks	☐ Not applicable.
BETTER	*	8.2.3 Encourage telework	☐ Not applicable.
		8.3 Local business travel options	
		Commuter travel	
BASIC	*	8.3.1 Provide local business travel options that minimize the need for employees to bring a personal car to work	☐
		8.4 Commuter incentives	
		Commuter travel	
BETTER		8.4.1 Offer employees a taxable, mode-neutral commuting allowance	☐
		8.5 On-site amenities	
		Commuter travel	
BETTER		8.5.1 Provide on-site amenities/services to minimize mid-day or mid-commute errands	☐ Not applicable.