

## Engineering

- Land/Site Development
- Municipal Infrastructure
- Environmental/Water Resources
- Traffic/Transportation
- Recreational

## Planning

- Land/Site Development
- Planning Application Management
- Municipal Planning
- Urban Design
- Expert Witness (LPAT)
- Wireless Industry

## Landscape Architecture

- Streetscapes & Public Amenities
- Open Space, Parks & Recreation
- Community & Residential
- Commercial & Institutional
- Environmental Restoration



# Proposed Bus Lay-By and Parking Lot Modifications

**745 Smyth Road, Ottawa**

**(Vincent Massey Public School)**

**Transportation Impact Assessment**

**Proposed Bus Lay-By and Parking Lot Modifications  
745 Smyth Road (Vincent Massey Public School)  
Transportation Impact Assessment**

Prepared By:

**NOVATECH**  
Suite 200, 240 Michael Cowpland Drive  
Ottawa, Ontario  
K2M 1P6

March 2023

Novatech File: 122204  
Ref: R-2022-210

March 17, 2023

City of Ottawa  
Planning and Growth Management Department  
110 Laurier Ave. W., 4<sup>th</sup> Floor,  
Ottawa, Ontario K1P 1J1

**Attention: Ms. Neeti Paudel**  
**Project Manager, Infrastructure Approvals**

Dear Ms. Paudel:

**Reference: 745 Smyth Road**  
**Transportation Impact Assessment**  
**Novatech File No. 122204**

---

We are pleased to submit the following Transportation Impact Assessment (TIA), in support of a Site Plan Control application at 745 Smyth Road, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa's *Transportation Impact Assessment Guidelines* (June 2017).

If you have any questions or comments regarding this report, please feel free to contact Brad Byvelds, or the undersigned.

Yours truly,

**NOVATECH**



Joshua Audia, P.Eng.  
Project Engineer | Transportation



## **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<sup>1</sup> or registered<sup>2</sup> 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 this 17th day of March, 2023.  
(City)

Name: Brad Byvelds, P.Eng.  
(Please Print)

Professional Title: Project Manager, Transportation

*B. Byvelds*

Signature of Individual certifier that s/he meets the above four criteria

<b>Office Contact Information (Please Print)</b>	
Address:	240 Michael Cowpland Drive, Suite 200
City / Postal Code:	Ottawa, ON, K2M 1P6
Telephone / Extension:	613-254-9643 x 286
E-Mail Address:	b.byvelds@novatech-eng.com

**TABLE OF CONTENTS**

**EXECUTIVE SUMMARY .....I**

**1.0 SCREENING.....1**

    1.1 INTRODUCTION ..... 1

    1.2 PROPOSED DEVELOPMENT..... 2

    1.3 SCREENING FORM ..... 2

**2.0 SCOPING.....2**

    2.1 EXISTING CONDITIONS ..... 2

        2.1.1 Roadways.....2

        2.1.2 Intersections .....4

        2.1.3 Driveways.....4

        2.1.4 Pedestrian and Cycling Facilities .....5

        2.1.5 Area Traffic Management .....5

        2.1.6 Transit .....5

        2.1.7 Existing Traffic Volumes .....6

        2.1.8 Collision Records.....7

    2.2 PLANNED CONDITIONS ..... 8

        2.2.1 Planned Transportation Projects.....8

        2.2.2 Other Area Developments .....9

    2.3 STUDY AREA AND TIME PERIODS ..... 9

    2.4 EXEMPTIONS REVIEW..... 9

**3.0 FORECASTING .....10**

    3.1 DEVELOPMENT-GENERATED TRAVEL DEMAND..... 10

    3.2 BACKGROUND TRAFFIC ..... 10

    3.3 DEMAND RATIONALIZATION..... 12

**4.0 ANALYSIS.....12**

    4.1 DEVELOPMENT DESIGN ..... 12

        4.1.1 Design for Sustainable Modes .....12

        4.1.2 Circulation and Access .....12

    4.2 PARKING ..... 13

    4.3 BOUNDARY STREETS ..... 13

    4.4 ACCESS DESIGN ..... 14

**5.0 CONCLUSIONS AND RECOMMENDATIONS .....17**

**Figures**

Figure 1: View of the Subject Site ..... 1  
 Figure 2: Roadway Network ..... 3  
 Figure 3: OC Transpo Bus Stop Locations ..... 6  
 Figure 4: Existing Traffic Volumes ..... 7  
 Figure 5: 2023 Background Volumes ..... 11  
 Figure 6: 2028 Background Volumes ..... 11  
 Figure 7: Desirable Cycling Facility Pre-Selection Nomograph ..... 15

**Tables**

Table 1: OC Transpo Transit Stops ..... 5  
 Table 2: OC Transpo Route Information ..... 5  
 Table 3: Reported Collisions ..... 7  
 Table 4: TIA Exemptions ..... 9  
 Table 5: Required and Proposed Parking ..... 13  
 Table 6: Segment MMLoS Summary ..... 13

**Appendices**

Appendix A: Preliminary Site Plan  
 Appendix B: TIA Screening Form  
 Appendix C: OC Transpo Route Maps  
 Appendix D: Traffic Count Data  
 Appendix E: Collision Records  
 Appendix F: Long-Range Model Snapshots and Intersection Growth Rate Figures  
 Appendix G: Existing and Proposed Signage Plans  
 Appendix H: MMLoS Analysis

## EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan Control application for the property located at 745 Smyth Road. The subject site is approximately 3.84 hectares in size, and is currently occupied by Vincent Massey Public School. Students attending the school range from junior kindergarten to eighth grade. The subject site is currently served by one full-movement access to Smyth Road, one full-movement access to Edgecombe Street, and one egress on Edgecombe Street.

The subject site is surrounded by the following:

- Residential uses and Halstead Street to the north,
- Smyth Road and residences to the south,
- Residences and Haig Drive to the east, and
- Edgecombe Street and residences to the west.

Modifications relating to staff parking and school bus access are proposed, and there will not be any modifications or expansions to the school building. It is proposed that the existing full-movement parking lot accesses to Smyth Road and Edgecombe Street will be removed, and the northern egress to Edgecombe Street will be converted to a full-movement access. A new bus loop is proposed along Smyth Road between the fire lane access and the existing staff parking lot access, which will allow buses to pick up and drop off students on-site. School buses currently pick up and drop off students using the curbside lane on Smyth Road. These proposed modifications are anticipated to be completed in 2023.

The subject site is designated as 'Corridor – Mainstreet' (Smyth Road) on Schedule B3 of the City of Ottawa's Official Plan. The existing zoning for the property is 'Minor Institutional' (I1A).

The study area for this report includes the boundary roadways Smyth Road and Edgecombe Street, as well as the intersections at Smyth Road/Botsford Street South/Dauphin Road and Smyth Road/Haig Drive.

The conclusions and recommendations of this TIA can be summarized as follows:

### Development Design and Parking

- Pedestrian walkways are provided between the existing sidewalk along Smyth Road and the school entrances, and between the staff parking lot and the westernmost entrance. A new 2.5m-wide sidewalk is proposed on the north side of the new bus loop, and a new 2.0m-wide sidewalk is proposed through the landscaped island formed by the proposed bus loop. Sidewalks across the proposed accesses to Smyth Road will be continuous, per City standards.
- Bicycle parking is proposed adjacent to the northeast corner of the existing parking lot, and at the western and central entrances to the school. In total, approximately 75 bicycle parking spaces are proposed.
- Bus stops #7243, #7245, #8358, and #8563 are within 400m walking distance of the school's main entrance. Transit riders travelling to/from the site would do so at these stops using OC Route 55. The proposed on-site bus loop will allow students to arrive and depart the school in a safer manner.



- A double-wide on-site bus loop is proposed with ingress and egress on Smyth Road. The proposed bus loop will have a width of 7.5m and a parallel length of approximately 70m. The width of the bus loop allows for two rows of buses to queue within the site and wait for students to load. Once all students are loaded onto the buses, the buses will depart one at a time.
- Garbage collection currently takes place in the northeastern corner of the existing parking lot. No changes to the route for garbage trucks are proposed. The on-site fire route will include the proposed bus loop along Smyth Road.
- The proposed number of vehicle parking spaces after parking lot modifications and the existing number of bicycle parking spaces meet the minimum requirements of the City's ZBL and *Accessibility Design Standards*.

### Boundary Streets

- Based on the results of the segment MMLoS analysis:
  - Both Smyth Road and Edgecombe Street do not meet the target pedestrian level of service (PLOS) A;
  - Edgecombe Street meets the target bicycle level of service (BLOS) D and Smyth Road does not meet the target BLOS B;
  - Smyth Road meets the target transit level of service (TLOS) D;
  - Smyth Road meets the target truck level of service (TkLOS) D.
- Smyth Road can only achieve the best-possible PLOS C by implementing sidewalks with a minimum width of 2.0m and boulevard width of 2.0m. The existing 1.5m asphalt sidewalk will be removed and replaced with a 2m-wide concrete sidewalk, achieving the maximum PLOS C, for the limits of the proposed bus loop.
- Edgecombe Street achieves a PLOS C on the east side and PLOS F on the west side, as a sidewalk is only provided on the east side from Smyth Road to Hastings Avenue. The target PLOS A can be achieved by implementing 2.0m sidewalks with a minimum boulevard width of 0.5m, or 1.8m sidewalks with a minimum boulevard width of 2.0m. This is identified for the City's consideration.
- Smyth Road achieves a BLOS F. A separated facility is the only way to achieve the target BLOS B, based on the operating speed of 60 km/h. This is identified for the City's consideration.

### Access Design

- The parking lot will be modified to be served by a single full-movement access to Edgecombe Street. Signage at the existing egress to Edgecombe Street will be removed to adjust the driveway to a two-way access. No changes to the access itself are required, as it is wide enough to accommodate two-way traffic.
- The proposed bus loop will include an ingress and an egress to Smyth Road. The ingress and egress meet all relevant provisions of the *Private Approach By-Law (PABL)* and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.
- The proposed development is recommended from a transportation perspective.

## 1.0 SCREENING

### 1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of a Site Plan Control application for the property located at 745 Smyth Road. The subject site is approximately 3.84 hectares in size, and is currently occupied by Vincent Massey Public School. Students attending the school range from junior kindergarten to eighth grade. The subject site is currently served by one full-movement access to Smyth Road, one full-movement access to Edgecombe Street, and one egress on Edgecombe Street.

The subject site is surrounded by the following:

- Residential uses and Halstead Street to the north,
- Smyth Road and residences to the south,
- Residences and Haig Drive to the east, and
- Edgecombe Street and residences to the west.

An aerial of the vicinity around the subject site is provided in **Figure 1**.

**Figure 1: View of the Subject Site**



## 1.2 Proposed Development

Modifications relating to staff parking and school bus access are proposed, and there will not be any modifications or expansions to the school building. It is proposed that the existing full-movement parking lot accesses to Smyth Road and Edgecombe Street will be removed, and the northern egress to Edgecombe Street will be converted to a full-movement access. A new bus loop is proposed along Smyth Road between the fire lane access and the existing staff parking lot access, which will allow buses to pick up and drop off students on-site. School buses currently pick up and drop off students using the curbside lane on Smyth Road. These proposed modifications are anticipated to be completed in 2023.

The subject site is designated as 'Corridor – Mainstreet' (Smyth Road) on Schedule B3 of the City of Ottawa's Official Plan. The existing zoning for the property is 'Minor Institutional' (I1A).

A copy of the preliminary site plan is included in **Appendix A**.

## 1.3 Screening Form

The City's 2017 TIA Guidelines identify three triggers for completing a TIA report, including trip generation, location, and safety. The criteria for each trigger are outlined in the City's TIA Screening Form, which is included in **Appendix B**. The trigger results are as follows:

- Trip Generation Trigger – The development is not anticipated to generate any new person trips; further assessment is **not required** based on this trigger.
- Location Triggers – The development proposes new connections to a Spine Cycling Route; further assessment is **required** based on this trigger.
- Safety Triggers – New connections are proposed within 150m of adjacent traffic signals; further assessment is **required** based on this trigger.

## 2.0 SCOPING

### 2.1 Existing Conditions

#### 2.1.1 Roadways

All roadways within the study area fall under the jurisdiction of the City of Ottawa.

Smyth Road is an arterial roadway that generally runs on an east-west alignment between Rideau River Drive and St. Laurent Boulevard/Russell Road. The roadway continues as Main Street west of Rideau River Drive, and as Lancaster Road east of St. Laurent Boulevard/Russell Road. Within the study area, Smyth Road has a four-lane undivided urban cross-section and asphalt sidewalks on both sides of the roadway. On either side of the study area, Smyth Road has posted speed limit signs of 50 km/h, with school zone signage within the study area. Smyth Road is classified as a truck route, allowing full loads. Street parking is not permitted between 7:00am and 7:00pm on weekdays between Dauphin Street/Botsford Street South and Haig Drive. On the north side of the roadway, the westbound curbside lane is designated as a school bus loading zone during these hours. The City of Ottawa's Official Plan identifies a right-of-way (ROW) protection of 26m within the study area, and therefore a widening is not required.

Haig Drive is a collector roadway that generally runs on a north-south alignment between Kilborn Avenue and Russell Road. South of Kilborn Avenue, the roadway continues as Canterbury Avenue. Within the study area, Haig Drive has a two-lane urban cross-section, asphalt sidewalks on both sides of the roadway south of Smyth road, an asphalt sidewalk on the west side of the roadway north of Smyth Road, and an unposted speed limit of 50 km/h. Haig Drive is not classified as a truck route. Street parking is generally permitted south of Smyth Road and on the west side of Haig Drive north of Smyth Road (excluding the first 25m north of Smyth Road), and is permitted between April 1 and November 30 on the east side of Haig Drive north of Smyth Road (excluding the first 25m).

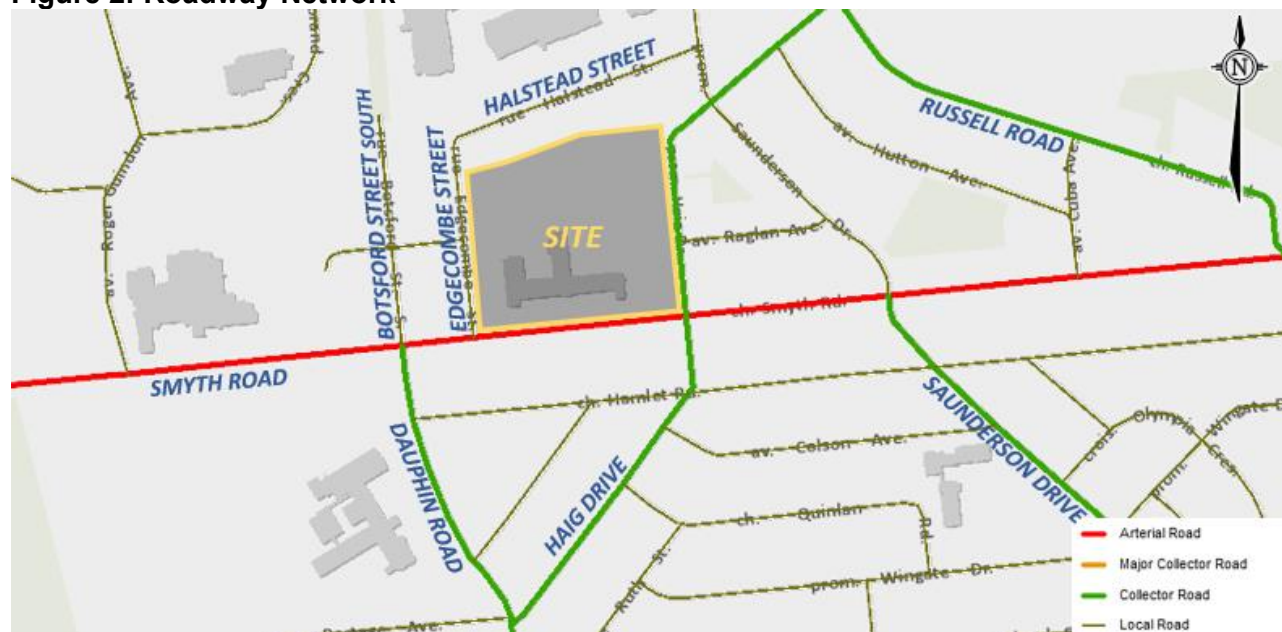
Dauphin Road is a collector roadway that generally runs on a north-south alignment between Smyth Road and Haig Drive/Portage Avenue. Dauphin Road has a two-lane urban cross-section, an asphalt sidewalk on the west side, and an unposted speed limit of 50 km/h. The roadway is not classified as a truck route. Street parking is not permitted between Smyth Road and Hamlet Road, and is generally permitted south of Hamlet Road.

Botsford Street South is a local roadway that runs on a north-south alignment, starting at Smyth Road and terminating approximately 250m north of Smyth Road. Botsford Street South has a two-lane urban cross-section, no sidewalks, and a posted speed limit of 40 km/h. The roadway is not classified as a truck route. Street parking is not permitted on the east side of the roadway, and is restricted on the west side of the roadway between 8:00am and 5:00pm on weekdays.

Edgecombe Street is a local roadway that runs on a north-south alignment for approximately 210m north of Smyth Road, before continuing as Halstead Street. Edgecombe Street has a two-lane urban cross-section, an asphalt sidewalk on the east side of the roadway between Smyth Road and Hastings Avenue, and a posted speed limit of 40 km/h. The roadway is not classified as a truck route. Street parking is generally permitted north of Hastings Avenue, and stopping is generally restricted south of Hastings Avenue (from 7:00am to 7:00pm on weekdays on the west side, and at all hours on the east side).

The roadway of the greater area surrounding the subject site is illustrated in **Figure 2**.

**Figure 2: Roadway Network**



### 2.1.2 Intersections

#### Smyth Road/Botsford Street South/Dauphin Road

- Signalized four-legged intersection
- North Approach (Botsford Street South): one shared left turn/through/right turn lane
- South Approach (Dauphin Road): one left turn lane and one shared through/right turn lane
- East/West Approaches (Smyth Road): one shared left turn/through lane and one shared through/right turn lane
- Zebra-striped crosswalk on west approach, and standard crosswalks on north, south, and east approaches



#### Smyth Road/Haig Drive

- Signalized four-legged intersection
- North/South Approaches (Haig Drive): one shared left turn/through/right turn lane
- East/West Approaches (Smyth Road): one shared left turn/through lane and one shared through/right turn lane
- Zebra-striped crosswalk on east and west approaches, and standard crosswalks on north and south approaches



### 2.1.3 Driveways

A review of the existing adjacent driveways along the boundary roads are provided as follows:

#### **Smyth Road, North Side**

- Ten driveways to residences at 679, 703, 705, 713, 771, 789, 793, 797, 801, 805, 809 & 813 Smyth Road
- One driveway to a church at 691 Smyth Road

#### **Smyth Road, South Side**

- 17 driveways to residences at 706, 710, 714, 718, 724, 728, 732, 736, 740, 744, 748, 752, 758, 762, 766, 770, 774, 790, 794, 798, 802, 806, 810 & 814 Smyth Road

#### **Edgecombe St/Halstead St, East Side**

- Four driveways to residences at 722, 728 & 732 Halstead Street, and 1801 Edgecombe Street

#### **Edgecombe St/Halstead St, West Side**

- 14 driveways to residences at 707, 711, 715, 719, 723 & 729 Halstead Street, and 1804, 1810, 1814, 1828, 1832, 1838, 1846, 1850 & 1854 Edgecombe Street

### 2.1.4 Pedestrian and Cycling Facilities

Asphalt sidewalks are provided on both sides of Smyth Road and Haig Drive (south of Smyth Road), and on one side of Dauphin Road, Haig Drive (north of Smyth Road), and Edgecombe Street (between Smyth Road and Hastings Avenue).

In the City of Ottawa's primary cycling network, Smyth Road is classified as a Spine Route, and Botsford Street South, Dauphin Road, and Haig Drive are classified as Local Routes. Edgecombe Street has no cycling route designation. A multi-use pathway (MUP) connects the northern terminus of Botsford Street South and the southern terminus of Botsford Street (north of the study area). No study area roadways have any dedicated cycling facilities.

### 2.1.5 Area Traffic Management

The Haig Drive Traffic Calming Study is a neighbourhood traffic management study that is currently underway. The study will consider traffic calming measures on Haig Drive between Smyth Road and Kilborn Avenue. Based on resident feedback, the most common concerns include vehicle speeds, pedestrian/cyclist safety, and traffic volumes.

Some neighbourhood traffic management measures have been implemented throughout the study area. School zone signage and pavement markings are included on Smyth Road and Dauphin Road, vehicle speed boards have been installed on Dauphin Road (south of Hamlet Road, for southbound vehicles) and Haig Drive (west of Saunderson Drive, for westbound vehicles), and a municipal speed camera was installed in front of Vincent Massey School in July 2020, enforcing vehicle speeds on Smyth Road.

### 2.1.6 Transit

The locations of OC Transpo bus stops in vicinity of the subject site are described in **Table 1**, and are shown in **Figure 3**. A summary of the routes which serve the study area is included in **Table 2**. Detailed route maps and an excerpt from OC Transpo's system map are included in **Appendix C**.

**Table 1: OC Transpo Transit Stops**

Stop	Location	Routes Served
#3343	North side of Smyth Road at Franco-Cité High School	645
#7242	South side of Smyth Road, west of Roger Guindon Avenue	55, 609
#7243	South side of Smyth Road, west of Dauphin Road	55, 609
#7244	North side of Smyth Road, east of Roger Guindon Avenue	55, 609, 645
#7245	North side of Smyth Road, west of Haig Drive	55, 609
#7246	South side of Smyth Road, east of Saunderson Drive	55, 609
#8358	South side of Smyth Road, east of Haig Drive	55, 609
#8563	North side of Smyth Road, west of Botsford Street South	55, 609
#8568	North side of Smyth Road, east of Saunderson Drive	55, 609

**Table 2: OC Transpo Route Information**

Route	From ↔ To	Frequency
<b>55</b>	Elmvale ↔ Westgate	All day service, seven days a week; 15- to 30-minute headways
<b>609</b>	Elmvale ↔ De La Salle H.S.	Service at select times on school days only
<b>645</b>	Hurdman ↔ Franco-Cité H.S.	Service at select times on school days only

Figure 3: OC Transpo Bus Stop Locations



### 2.1.7 Existing Traffic Volumes

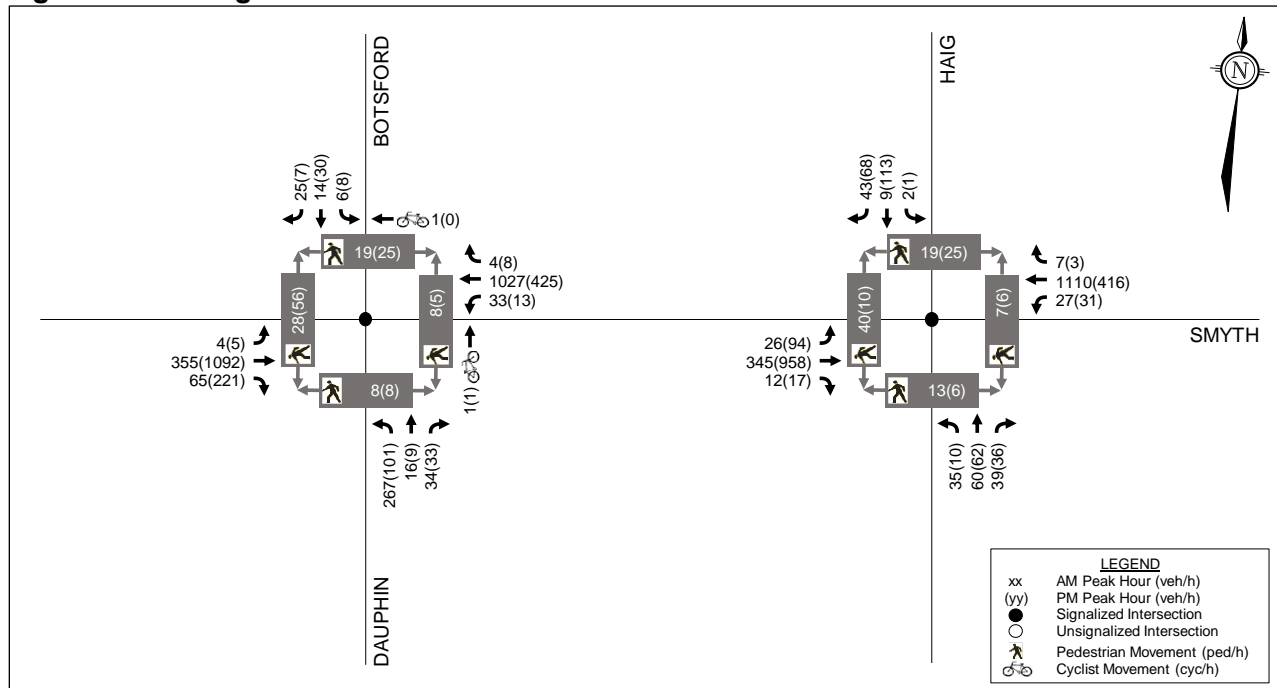
Weekday traffic counts completed by the City of Ottawa were used to determine the existing pedestrian, cyclist, and vehicular traffic volumes at the study area intersections. These counts were completed on the dates listed below:

- Smyth Road/Botsford Street South/Dauphin Road                      January 8, 2019
- Smyth Road/Haig Drive    February 13, 2018

Based on the 2019 count, Smyth Road east of Botsford Street South/Dauphin Road has an average annual daily traffic (AADT) of approximately 20,200 vehicles per day (vpd).

Traffic count data for the study area intersections is included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 4**.

Figure 4: Existing Traffic Volumes



2.1.8 Collision Records

Historical collision data from the last five years available was obtained from the City’s Public Works and Service Department for the study area intersections and midblock segments. Copies of the collision summary reports are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the 2017 TIA Guidelines as ‘more than six collisions in five years’ for any one movement. The number of collisions at each intersection from January 1, 2016 to December 31, 2020 is summarized in **Table 3**.

Table 3: Reported Collisions

Intersection or Segment	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning Movement	SMV <sup>(1)</sup> /Other	
Smyth Road/ Botsford Street S./Dauphin Road	-	3	5	1	3	2	14
Smyth Road/ Haig Drive	-	9	4	1	18	-	32
Smyth Road btwn Botsford Street S. & Haig Drive	-	-	-	1	1	1	3

1. SMV = Single Motor Vehicle

Smyth Road/Botsford Street South/Dauphin Road

A total of 14 collisions were reported at this intersection over the last five years, of which there were three angle impacts, five rear-end impacts, one sideswipe impact, three turning movement impacts, and two single vehicle/other impacts. Three of the 13 collisions resulted in injuries, but none caused fatalities. Six of the collisions occurred under poor driving conditions. No collisions involved cyclists, and one involved a pedestrian and a northbound left-turning vehicle.



### Smyth Road/Haig Drive

A total of 32 collisions were reported at this intersection over the last five years, of which there were nine angle impacts, four rear-end impacts, one sideswipe impact, and 18 turning movement impacts. Eleven of the 32 collisions resulted in injuries, but none caused fatalities. Six of the collisions occurred under poor driving conditions. No collisions involved cyclists or pedestrians.

Of the nine angle impacts, four involved a northbound vehicle and an eastbound vehicle, four involved a southbound vehicle and a westbound vehicle, and one involved a southbound vehicle and an eastbound vehicle.

Of the 18 turning movement impacts, ten involved an eastbound left-turning vehicle and a westbound through vehicle, one involved an eastbound right-turning vehicle and an eastbound through vehicle, six involved a westbound left-turning vehicle and an eastbound through vehicle, and one involved a westbound right-turning vehicle and a westbound through vehicle.

The conflict between eastbound left turns and westbound throughs meet the City's threshold of an identifiable collision pattern. As auxiliary left turn lanes are not provided on Smyth Road in either direction, visibility for left-turning drivers is compromised, particularly when there are drivers attempting to turn left in both directions simultaneously. Providing auxiliary left turn lanes for the eastbound and westbound directions is likely to mitigate this type of collisions, but would require a widening of Smyth Road in vicinity of the intersection with Haig Drive.

### Smyth Road between Botsford Street South/Dauphin Road and Haig Drive

A total of three collisions were reported along this segment over the last five years, including one at the intersection of Smyth Road/Edgecombe Street. The three collisions consisted of one sideswipe impact, one turning movement impact, and one single vehicle/other impact. One of the three collisions resulted in injuries, but did not cause any fatalities. One of the collisions occurred under poor driving conditions. No collisions involved cyclists or pedestrians.

## **2.2 Planned Conditions**

### **2.2.1 Planned Transportation Projects**

In the City's 2013 Transportation Master Plan (TMP), the Alta Vista Transportation Corridor is identified in the 2031 Roadway Network Concept as a new four-lane roadway (including two peak-period bus lanes) between the Ottawa Health Services Centre and Walkley Road at Conroy Road. The new roadway, as well as Smyth Road between the new roadway and St. Laurent Boulevard are also designated in the 2031 Rapid Transit and Transit Priority (RTTP) Network Concept as Transit Priority Corridors with Isolated Measures, and will include transit signal priority and queue jump lanes. These measures will improve transit access to the Ottawa Hospital, CHEO, and the Canadian Forces Health Care Centre. The new roadway is anticipated to address capacity deficiencies and the Environmental Assessment (EA) is complete. While this corridor is part of the City's 2031 Network Concept, it will not be implemented prior to 2031.

The 2013 Ottawa Cycling Plan does not identify any upcoming cycling infrastructure in the study area. North and west of the study area, the Cycling Plan identified the Hospital Link Crosstown Bikeway as a Phase 1 (2014-2019) project. This bikeway was recently constructed and consists of multi-use pathways on the west side of Roger Guindon Avenue and travelling through the Ottawa Hospital Campus to connect to shared-use lanes along Station Boulevard.

The 2013 Ottawa Pedestrian Plan does not identify any upcoming pedestrian infrastructure projects in vicinity of the study area.

### 2.2.2 Other Area Developments

A review of the City’s Development Application search tool has been conducted. There are multiple applications east of the study area that are in the approval process, for the following properties:

- 355 Everest Private (D07-12-19-0135);
- 700 Coronation Avenue (D07-12-20-0152);
- 1740, 1754, and 1760 St. Laurent Boulevard (D07-12-21-0177);
- 1804 St. Laurent Boulevard (D02-02-21-0153);
- 1971 and 1975 St. Laurent Boulevard (D07-12-22-0044);
- 2025 Othello Avenue (D02-02-21-0131).

Upon review of the transportation impact assessments prepared in support of those developments, the cumulative traffic impacts are anticipated to result in negligible traffic impacts on Smyth Road.

### 2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Smyth Road and Edgecombe Street, as well as the following intersections:

- Smyth Road/Botsford Street South/Dauphin Road
- Smyth Road/Haig Drive

The selected time periods for this TIA are the weekday AM and PM peak hours, as they represent the ‘worst case’ combination of site generated traffic and adjacent street traffic. The buildout year 2023 and horizon year 2028 will be considered.

### 2.4 Exemptions Review

This module reviews possible exemptions from the final Transportation Impact Assessment, as outlined in the 2017 TIA Guidelines. The applicable exemptions for this site are shown in **Table 4**.

**Table 4: TIA Exemptions**

Module	Element	Exemption Criteria	Status
<b>Design Review Component</b>			
<b>4.1</b> Development Design	4.1.2 Circulation and Access	• Only required for site plans	Not Exempt
	4.1.3 New Street Networks	• Only required for plans of subdivision	Exempt
<b>4.2</b> Parking	4.2.1 Parking Supply	• Only required for site plans	Not Exempt
	4.2.2 Spillover Parking	• Only required for site plans where parking supply is 15% below unconstrained demand	Exempt

As this proposed project will not result in any additional trip generation, the Trip Generation Trigger has not been met, and therefore all Network Impact components are exempt from this TIA. Further, as no new trips will be generated, the Development-Generated Travel Demand section (including Trip Generation, Distribution, and Assignment) will not be included in this TIA. Based on the foregoing, the following modules will be included in the TIA report:

#### **Design Review Component**

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Design

### **3.0 FORECASTING**

#### **3.1 Development-Generated Travel Demand**

The proposed modifications to the staff parking lot and the addition of a bus loop on Smyth Road is not anticipated to generate any new trips. Therefore, further review of this module is not included in this TIA.

#### **3.2 Background Traffic**

A review of snapshots of the City's *Strategic Long-Range Model* and *Intersection Traffic Growth Rates (2000-2016)* has been conducted. Both resources are included in **Appendix F**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes, the *Strategic Long-Range Model* generally suggests negligible growth on Smyth Road. The *Intersection Traffic Growth Rates* figures, which determine growth rates based on total vehicular volumes entering the intersection, identify the growth rates of -0.2% to +0.2% at Smyth Road/Botsford Street South/Dauphin Road, and +0.2% to +2.0% at Smyth Road/Haig Drive between 2000 and 2016.

For the purposes of this study, an annual growth rate of 1% has been conservatively applied to the through traffic volumes on Smyth Road. It is assumed that this growth rate will capture traffic generated by the other area developments included in Section 2.2.2.

Background traffic volumes in 2023 are shown in **Figure 5**, and background traffic volumes in 2028 are shown in **Figure 6**.

Figure 5: 2023 Background Volumes

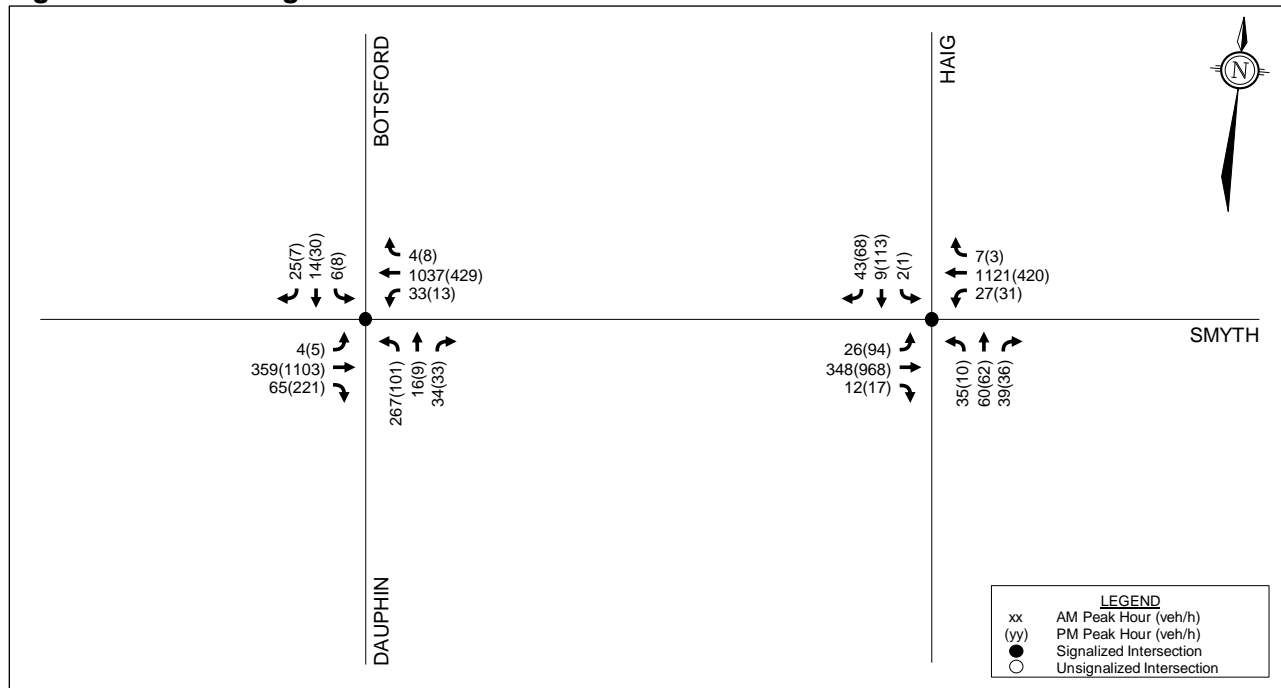
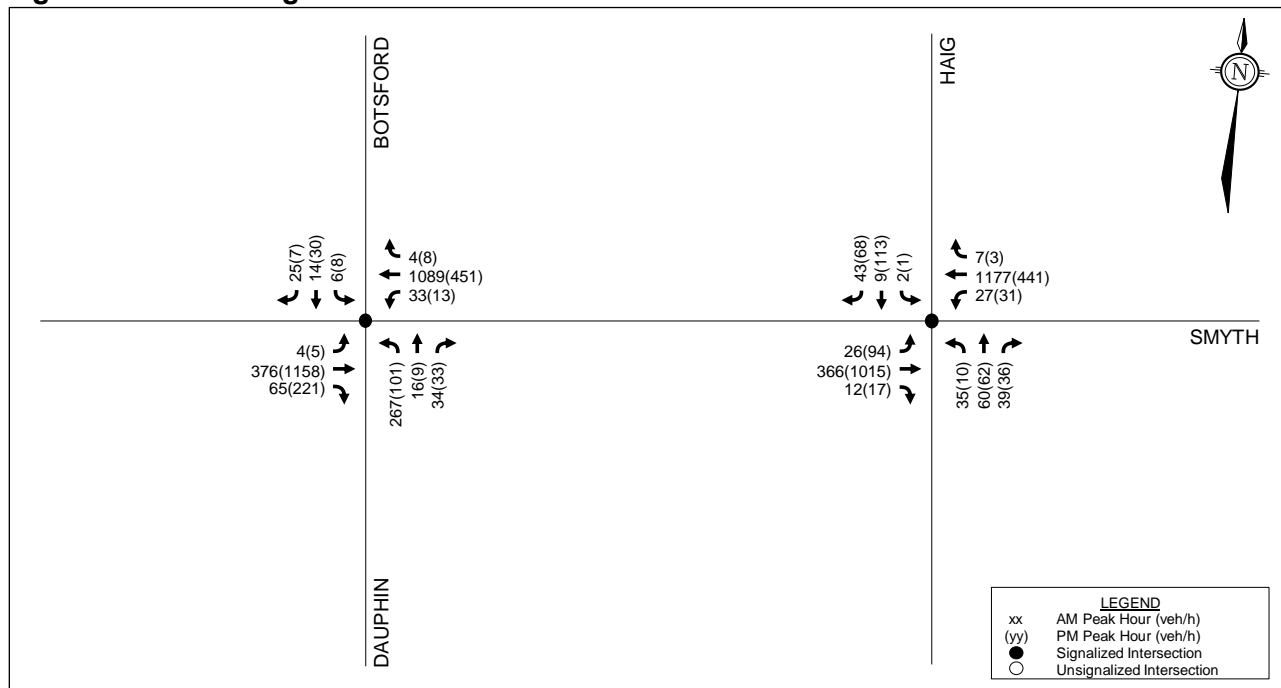


Figure 6: 2028 Background Volumes



### 3.3 Demand Rationalization

Based on the City's 2017 TIA Guidelines, the Demand Rationalization module includes identifying any locations and approaches where total auto demand is projected to exceed capacity, and what reduction in peak hour volumes are required for demand to meet capacity. However, determining whether any approach has volumes that exceed capacity requires intersection analysis. Since the Trip Generation Trigger has not been met, all Network Impacts modules (including intersection analysis) are outside the scope of this study.

## 4.0 ANALYSIS

### 4.1 Development Design

#### 4.1.1 Design for Sustainable Modes

Pedestrian walkways are provided between the existing sidewalk along Smyth Road and the school entrances, and between the staff parking lot and the westernmost entrance. A new 2.5m-wide sidewalk is proposed on the north side of the new bus loop, and a new 2.0m-wide sidewalk is proposed through the landscaped island formed by the proposed bus loop. Sidewalks across the proposed accesses to Smyth Road will be continuous, per City standards.

Bicycle parking is proposed adjacent to the northeast corner of the existing parking lot, and at the western and central entrances to the school. In total, approximately 75 bicycle parking spaces are proposed. A review of the proposed bicycle parking and the minimum requirements is included in Section 4.2.

Bus stops #7243, #7245, #8358, and #8563 are within 400m walking distance of the school's main entrance. A 400m walking distance is equivalent to a five-minute walk, per OC Transpo's service design guidelines. Transit riders travelling to/from the site would do so at these stops using OC Route 55. School buses provide transit for students, who currently board and alight the school buses from the westbound curbside lane on Smyth Road. The proposed on-site bus loop will allow students to arrive and depart the school in a safer manner.

As no changes are proposed to the existing school, a review of the City's *Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist* has not been conducted.

The proposed on-site bus loop and parking lot modifications will alter the existing curbside traffic regulations along the subject site's frontages to Smyth Road and Edgcombe Street. Existing and proposed signage plans for Smyth Road and Edgcombe Street are included in **Appendix G**.

#### 4.1.2 Circulation and Access

A double-wide on-site bus loop is proposed with ingress and egress on Smyth Road. The proposed bus loop will have a width of 7.5m and a parallel length of approximately 70m. The width of the bus loop allows for two rows of buses to queue within the site and wait for students to load. Once all students are loaded onto the buses, the buses will depart one at a time. The 2.5m-wide sidewalk previously described will follow the entire northern curblines of the bus loop.

Garbage collection currently takes place in the northeastern corner of the existing parking lot. No changes to the route for garbage trucks are proposed.

The on-site fire route will include the proposed bus loop along Smyth Road.

## 4.2 Parking

The subject site is located in Area B on Schedules 1 and 1A of the City’s *Zoning By-Law* (ZBL). Minimum vehicle parking and bicycle parking rates for the school as identified in Sections 101 and 111 of the ZBL, minimum accessible parking rates as identified in the City’s *Accessibility Design Standards*, and the proposed number of parking spaces after modifications to the staff parking lot, are summarized in **Table 5**.

**Table 5: Required and Proposed Parking**

Land Use	Rate	Units	Required	Proposed
<i>Minimum Vehicle Parking</i>				
School, other <sup>(1)</sup>	1.5 spaces per classroom (including portables)	36 rooms	54	75
<i>Minimum Accessible Parking</i>				
-	3 spaces when parking supply totals 51 to 75	75 spaces	3	3
<i>Minimum Bicycle Parking</i>				
School	1.0 spaces per 100 m <sup>2</sup> of gross floor area	5,985 m <sup>2</sup>	60	75

1. Per Table 101 of the ZBL, school uses are divided into ‘secondary’ or ‘other.’

Based on the previous table, the proposed number of vehicle parking spaces after parking lot modifications and the existing number of bicycle parking spaces meet the minimum requirements of the ZBL and *Accessibility Design Standards*.

The *Accessibility Design Standards* outline that when three accessible spaces are required, a minimum of one Type A space (minimum width of 3.4m) must be included, while the other two may be Type B (minimum width of 2.4m). Each space must also be adjacent to a 1.5m-wide access aisle. The proposed accessible spaces have been designed to meet these standards.

## 4.3 Boundary Streets

This section provides a review of the boundary streets Smyth Road and Edgecombe Street, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines* produced by IBI Group in October 2015 were used to evaluate the levels of service for the boundary roadways for each mode of transportation, based on existing conditions. Targets for the pedestrian level of service (PLOS), bicycle level of service (BLOS), transit level of service (TLOS), and truck level of service (TkLOS) adhere to the targets for roadways within 300m of a school, as outlined in Exhibit 22 of the *MMLOS Guidelines*.

A summary of the MMLOS review is included in **Table 6**, and the detailed MMLOS review is included in **Appendix H**.

**Table 6: Segment MMLOS Summary**

Segment	PLOS		BLOS		TLOS		TKLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Smyth Road	E	A	F	B	D	D	A	D
Edgecombe Street	F		B	D	-	-	-	-

Based on the results of the segment MMLOS analysis:

- Both Smyth Road and Edgecombe Street do not meet the target PLOS A;
- Edgecombe Street meets the target BLOS D and Smyth Road does not meet the target BLOS B;
- Smyth Road meets the target TLOS D;
- Smyth Road meets the target TkLOS D.

#### Pedestrian Level of Service

Smyth Road achieves a PLOS E. Based on Exhibit 4 of the *MMLOS Guidelines*, Smyth Road can only achieve the best-possible PLOS C by implementing sidewalks with a minimum width of 2.0m and boulevard width of 2.0m. The existing 1.5m asphalt sidewalk will be removed and replaced with a 2m-wide concrete sidewalk, achieving the maximum PLOS C, for the limits of the proposed bus loop.

Edgecombe Street achieves a PLOS C on the east side and PLOS F on the west side, as a sidewalk is only provided on the east side from Smyth Road to Hastings Avenue. The target PLOS A can be achieved by implementing 2.0m sidewalks with a minimum boulevard width of 0.5m, or 1.8m sidewalks with a minimum boulevard width of 2.0m. This is identified for the City's consideration.

#### Bicycle Level of Service

Smyth Road achieves a BLOS F. For roadways with an AADT greater than 10,000 vpd and an operating speed of 60 km/h, the *Ontario Traffic Manual (OTM) – Book 18* states that a 'separated facility' is appropriate (per the selection tool included in *OTM Book 18*). The selection tool used in *OTM Book 18* is shown in **Figure 7**. Based on Exhibit 11 of the *MMLOS Guidelines*, a separated facility is the only way to achieve the target BLOS B, based on the operating speed. This is identified for the City's consideration.

### **4.4 Access Design**

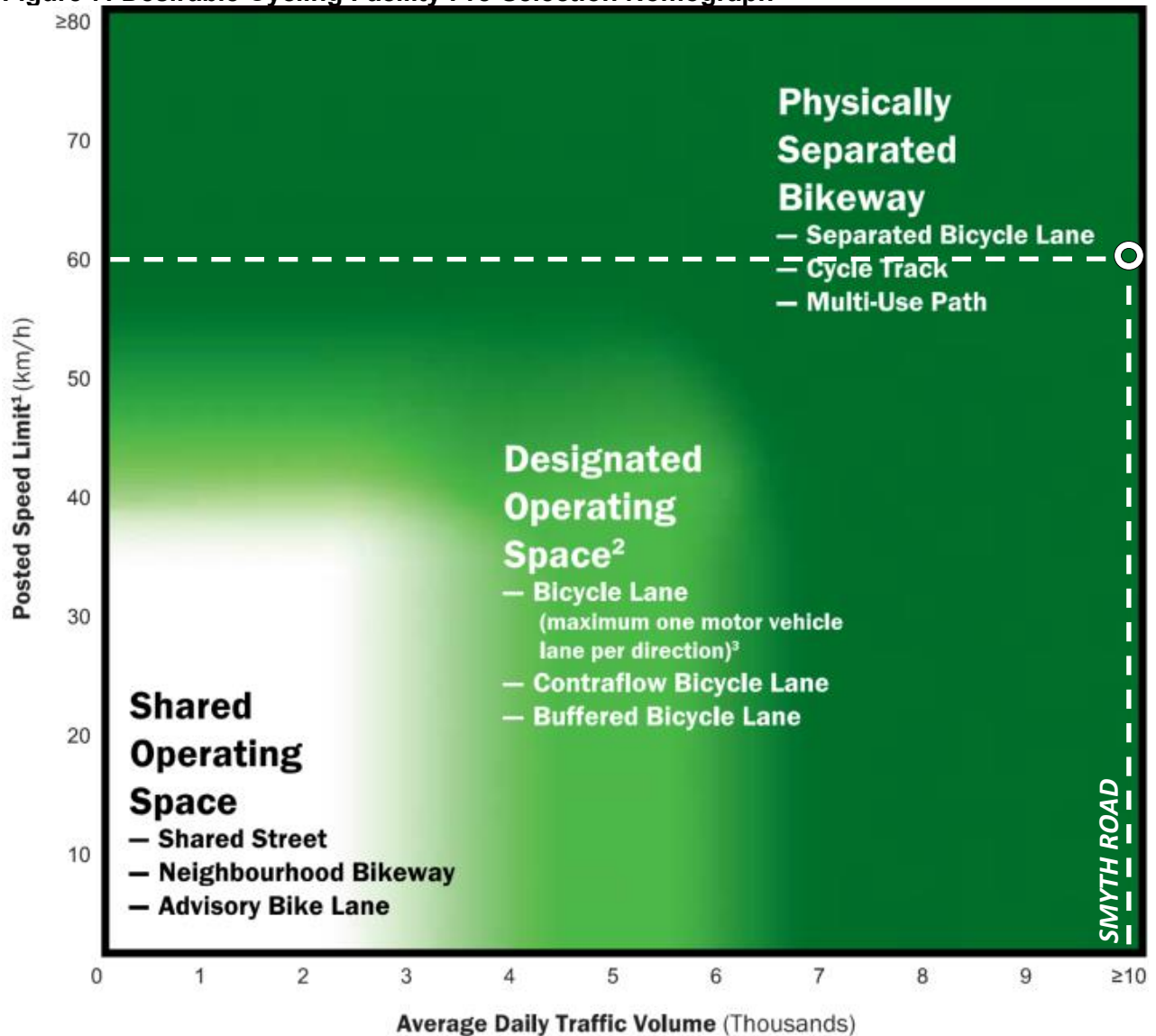
The parking lot will be modified to be served by a single full-movement access to Edgecombe Street. Signage at the existing egress to Edgecombe Street will be removed to adjust the driveway to a two-way access. No changes to the access itself are required, as it is wide enough to accommodate two-way traffic. Therefore, the characteristics of this access have not been evaluated against the provisions of the City's *Private Approach By-Law (PABL)*.

The proposed bus loop will include an ingress and an egress to Smyth Road. The ingress and egress have been evaluated using the relevant provisions of the PABL and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

Section 25(a) of the PABL identifies that a minimum of 20m of frontage to a roadway is required to permit two one-way private approaches to that roadway. As the subject site has approximately 190m of frontage to Smyth Road, the proposed bus loop meets this requirement.

Section 25(d) of the PABL identifies a maximum width requirement of 7.5m for any one-way private approach, as measured at the street line. Since the proposed bus loop accesses are 7.5m in width at the street line, this requirement is met.

Figure 7: Desirable Cycling Facility Pre-Selection Nomograph



- 1 Operating speeds are assumed to be similar to posted speeds. If evidence suggests this is not the case, practitioners may consider using 85th percentile speeds or implementing measures to reduce operating speeds.
- 2 Physically separated bikeways may always be considered in the designated operating space area of the nomograph.
- 3 On roadways with two or more lanes per direction (including multi-lane one-way roadways), a buffered bicycle lane should be considered the minimum with a typical facility being a physically separated bikeway.

Section 25(h) of the PABL identifies a minimum separation distance of 2m between any two one-way private approaches to the same property, as measured at the street line. Since the proposed bus loop accesses are approximately 80m apart at the street line, this requirement is met.



Section 25(m) of the PABL identifies that, when a property abuts or is within 46m of an arterial roadway, there shall be minimum distances between the nearest edge of a private approach and the nearest intersecting street line, and between the nearest edges of any two private approaches to the same property. For properties with a public use and a parking lot with 50 to 99 parking spaces, a minimum distance of 30m is required between a private approach and the nearest intersecting street line. As the nearest edge of the western bus loop access is approximately 45m from the ROW of Edgecombe Street, this requirement is met.

Section 25(p) of the PABL identifies a minimum separation distance of 3m between the nearest edge of a private approach and the property line, as measured at the street line. The nearest edge of the eastern bus loop access is approximately 50m from the eastern property line. Therefore, this requirement is met.

TAC's *Geometric Design Guide* identifies minimum corner clearance distances between the nearest edge of a private approach and the nearest edge of an intersecting roadway. When accessing an arterial roadway, TAC identifies minimum corner clearance requirements of 70m to the nearest intersecting roadway at a signalized intersection, and 25m to the nearest intersecting roadway at an unsignalized intersection. The proposed bus loop ingress meets the 70m requirement, as the nearest edge is approximately 93m west of Haig Drive. The proposed bus loop egress meets the 25m requirement, as the nearest edge is approximately 52m east of Edgecombe Street.

The proposed clear throat lengths of the parking lot access and the bus loop ingress are both approximately 6m. TAC's *Geometric Design Guide* does not identify minimum clear throat length requirements for schools or accesses to local roadways. There are no concerns with the proposed clear throat length of the parking lot access or the bus loop, as the bus loop is only intended for pick-ups/drop-offs and will not operate as a parking area.

A review of stopping sight distance (SSD) and intersection sight distance (ISD) at the proposed bus loop has been conducted, in accordance with the minimum requirements outlined in TAC's *Geometric Design Guide*. For the purposes of this review, an operating speed of 60 km/h has been assumed for Smyth Road (i.e. 10 km/h greater than the posted speed limit of 50 km/h). Therefore, TAC outlines the following SSD and ISD requirements for the bus loop accesses to Smyth Road:

- SSD: 85m required;
- ISD, looking right to turn left out of bus loop egress: 130m required;
- ISD, looking left to turn right out of bus loop egress: 110m required.

As Smyth Road does not have any vertical or horizontal curves that impact sightlines at the subject site, the required sight distances are met.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the foregoing, the conclusions and recommendations of this TIA can be summarized as follows:

### Development Design and Parking

- Pedestrian walkways are provided between the existing sidewalk along Smyth Road and the school entrances, and between the staff parking lot and the westernmost entrance. A new 2.5m-wide sidewalk is proposed on the north side of the new bus loop, and a new 2.0m-wide sidewalk is proposed through the landscaped island formed by the proposed bus loop. Sidewalks across the proposed accesses to Smyth Road will be continuous, per City standards.
- Bicycle parking is proposed adjacent to the northeast corner of the existing parking lot, and at the western and central entrances to the school. In total, approximately 75 bicycle parking spaces are proposed.
- Bus stops #7243, #7245, #8358, and #8563 are within 400m walking distance of the school's main entrance. Transit riders travelling to/from the site would do so at these stops using OC Route 55. The proposed on-site bus loop will allow students to arrive and depart the school in a safer manner.
- A double-wide on-site bus loop is proposed with ingress and egress on Smyth Road. The proposed bus loop will have a width of 7.5m and a parallel length of approximately 70m. The width of the bus loop allows for two rows of buses to queue within the site and wait for students to load. Once all students are loaded onto the buses, the buses will depart one at a time.
- Garbage collection currently takes place in the northeastern corner of the existing parking lot. No changes to the route for garbage trucks are proposed. The on-site fire route will include the proposed bus loop along Smyth Road.
- The proposed number of vehicle parking spaces after parking lot modifications and the existing number of bicycle parking spaces meet the minimum requirements of the ZBL and *Accessibility Design Standards*.

### Boundary Streets

- Based on the results of the segment MMLOS analysis:
  - Both Smyth Road and Edgecombe Street do not meet the target pedestrian level of service (PLOS) A;
  - Edgecombe Street meets the target bicycle level of service (BLOS) D and Smyth Road does not meet the target BLOS B;
  - Smyth Road meets the target transit level of service (TLOS) D;
  - Smyth Road meets the target truck level of service (TkLOS) D.
- Smyth Road can only achieve the best-possible PLOS C by implementing sidewalks with a minimum width of 2.0m and boulevard width of 2.0m. The existing 1.5m asphalt sidewalk will be removed and replaced with a 2m-wide concrete sidewalk, achieving the maximum PLOS C, for the limits of the proposed bus loop.

- Edgcombe Street achieves a PLOS C on the east side and PLOS F on the west side, as a sidewalk is only provided on the east side from Smyth Road to Hastings Avenue. The target PLOS A can be achieved by implementing 2.0m sidewalks with a minimum boulevard width of 0.5m, or 1.8m sidewalks with a minimum boulevard width of 2.0m. This is identified for the City’s consideration.
- Smyth Road achieves a BLOS F. A separated facility is the only way to achieve the target BLOS B, based on the operating speed of 60 km/h. This is identified for the City’s consideration.

Access Design

- The parking lot will be modified to be served by a single full-movement access to Edgcombe Street. Signage at the existing egress to Edgcombe Street will be removed to adjust the driveway to a two-way access. No changes to the access itself are required, as it is wide enough to accommodate two-way traffic.
- The proposed bus loop will include an ingress and an egress to Smyth Road. The ingress and egress meet all relevant provisions of the *Private Approach By-Law (PABL)* and the Transportation Association of Canada (TAC)’s *Geometric Design Guide for Canadian Roads*.

Based on the foregoing, the proposed development is recommended from a transportation perspective.

**NOVATECH**

Prepared by:

Reviewed by:



Joshua Audia, P.Eng.  
Project Engineer | Transportation

Brad Byvelds, P.Eng.  
Project Manager | Transportation

## **APPENDIX A**

---

Preliminary Site Plan



OTTAWA-CARLETON DISTRICT SCHOOL BOARD

LEGENDS

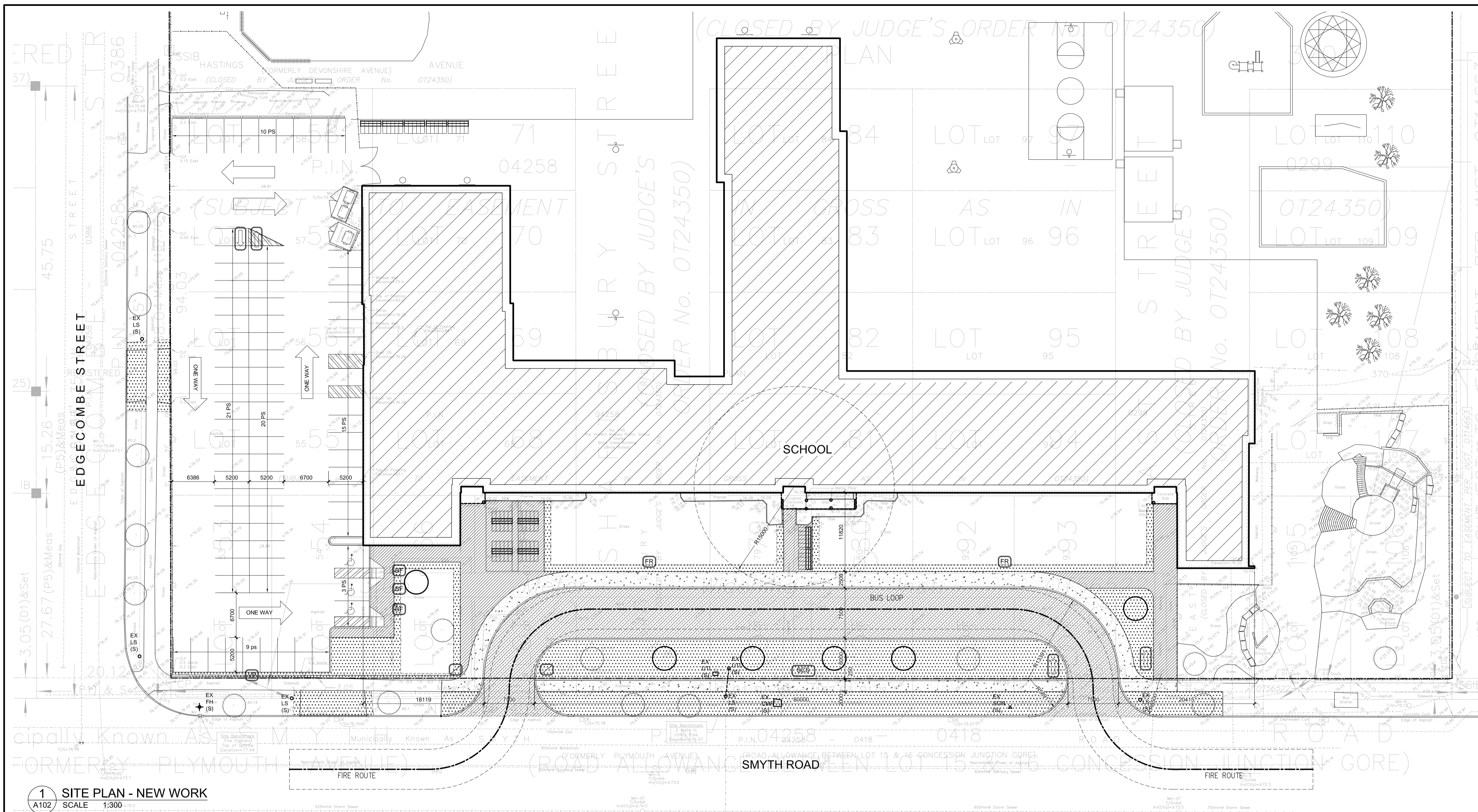
SIGNAGE LEGEND:

- FIRE ROUTE
- BF PARKING
- ONE WAY
- VISITOR PARKING
- SCHOOL SIGN
- NO ENTRY

SYMBOL LEGEND:

- EXHYD EXISTING FIRE HYDRANT
- FP FLAG POLE
- EXLS EXISTING LIGHT STANDARD
- R-EXLS RELOCATED EXISTING LIGHT STANDARD
- LS LIGHT STANDARD - SEE ELECTRICAL
- EXCB EXISTING CATCH BASIN
- CB CATCH BASIN - SEE CIVIL
- CBMH CATCH BASIN/MANHOLE - SEE CIVIL
- STMH STORM MANHOLE - SEE CIVIL
- BUILDING ENTRANCE/EXIT
- EXTRNSF EXISTING TRANSFORMER
- FDC FIRE DEPARTMENT CONNECTION
- DC NEW DEPRESSED CURB
- NEW CURB
- PROPERTY LINE
- NEW CHAIN LINK FENCE

2		
1	ISSUED FOR SITE PLAN CONTROL	XXXXXX
no.	revision	date



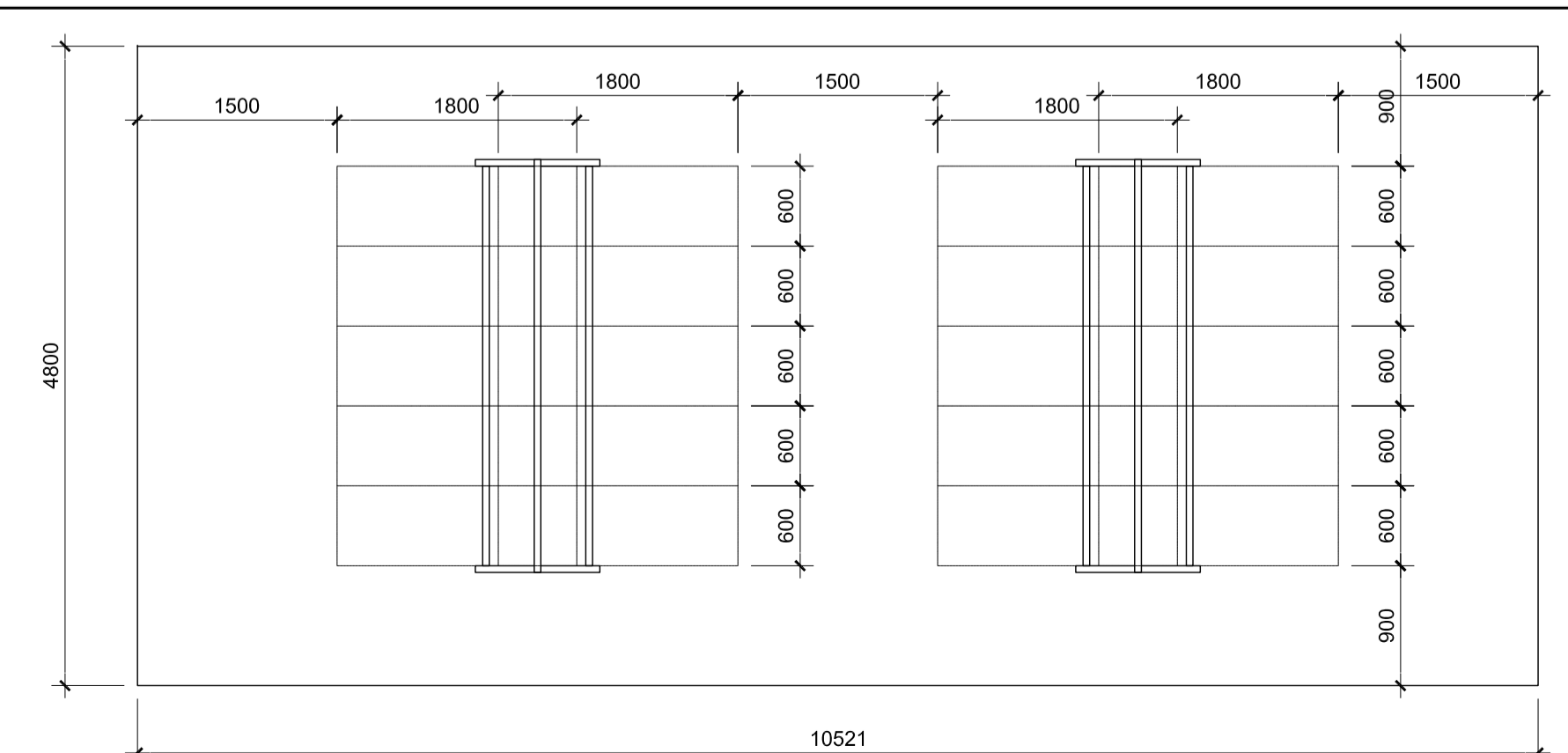
1 SITE PLAN - NEW WORK  
A102 SCALE 1:300

ZONING INFORMATION

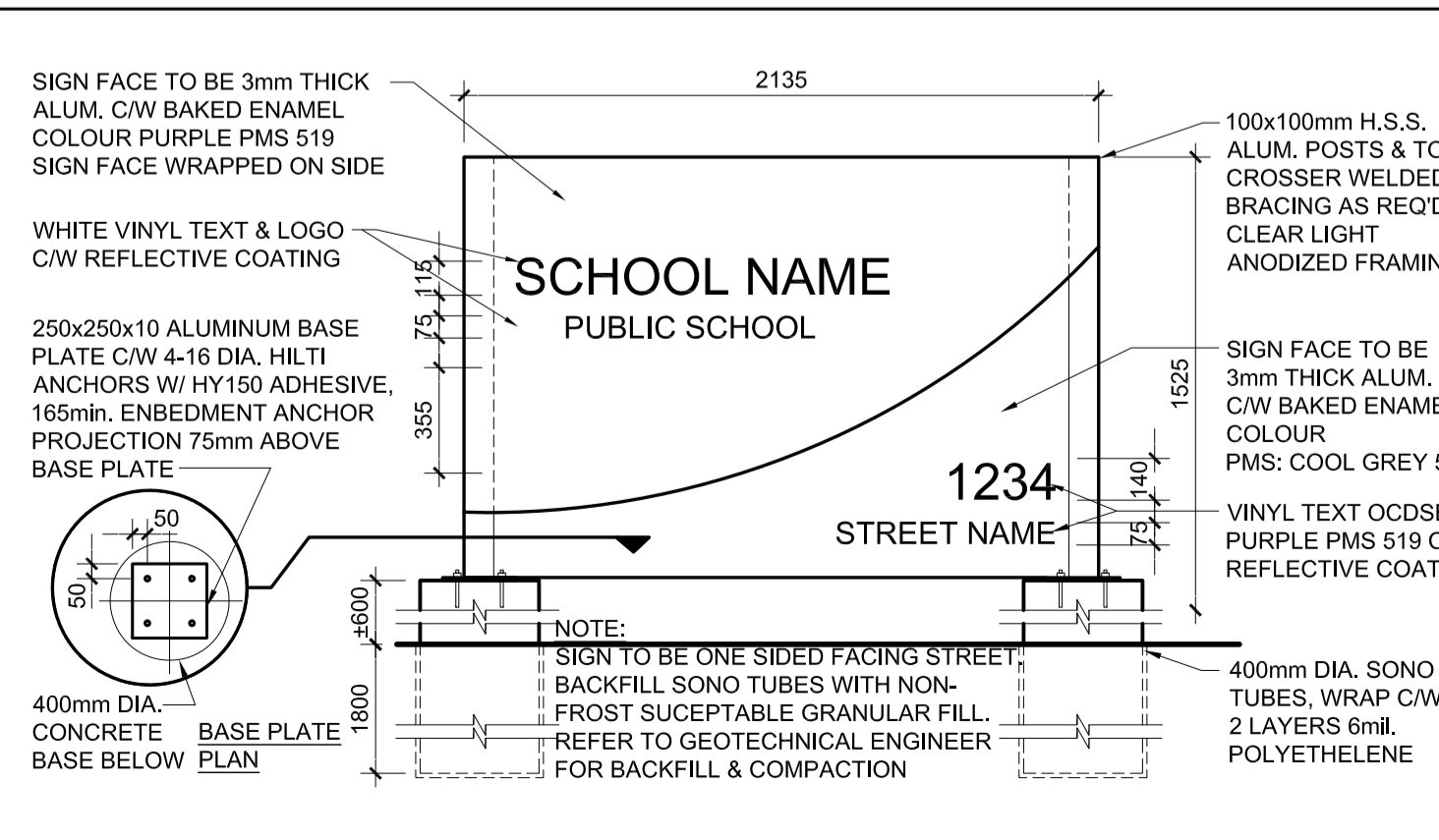
NOTE: ALL ZONING DEFINITIONS AND REQUIREMENTS AS PER CITY OF OTTAWA ZONING BY-LAW 2008-250

ZONING MECHANISM	REQUIRED	PROVIDED
DEFINITION	11A MINOR INSTITUTIONAL ZONE	SCHOOL, DAY CARE
MIN. LOT WIDTH	15.0 m	136.36 m
MIN. LOT AREA	400 m <sup>2</sup>	28,365 m <sup>2</sup> (± 7 Acres)
MIN. FRONT YARD SETBACK	7.5 m	7.5 m
MIN. REAR YARD SETBACK	7.5 m	66 m ?
MIN. INTERIOR SIDE YARD SETBACK	7.5 m	n/o
MIN. CORNER SIDE YARD SETBACK	4.5 m	5 m
MAX. BUILDING HEIGHT	15.0 m	8.5 m
MAX. FLOOR SPACE INDEX	1.0	0.15
MIN. WIDTH OF LANDSCAPED AREA	ABUTTING A STREET = 3m	> 3 m
PARKING LANDSCAPE BUFFER	FOR A PARKING LOT CONTAINING 100+ SPACES: ABUTTING A STREET = 3 m NOT ABUTTING A STREET = 3 m	ABUTTING A STREET 3 m NOT ABUTTING A STREET 3 m
PRIVATE APPROACH PROVISIONS:	15.0 m, AS PER OTTAWA ZONING BY-LAW 2003-447, ITEM (1)(i), FOR A PARKING LOT CONTAINING 20-99 SPACES	24.0 m
STANDARD PARKING SPACE	2.6m WIDTH x 5.2m LENGTH	2.6m WIDTH x 5.2m LENGTH
PARALLEL PARKING SPACE	2.6m WIDTH x 6.7m LENGTH	2.6m WIDTH x 6.7m LENGTH
ACCESSIBLE PARKING SPACE	3.66m WIDTH x 5.2m LENGTH	3.66m WIDTH x 5.2m LENGTH
PARKING REQUIREMENTS	TOTAL EXISTING = 67 PARKING SPACES	75 PARKING SPACES
BARRIER FREE ACCESSIBLE	AS PER CITY OF OTTAWA ACCESSIBILITY DESIGN STANDARDS, PARAGRAPH 3.1.2, TABLE 3 2 TYPE 'A', 1 TYPE 'B'	3 ACCESSIBLE PARKING SPACES (2xTYPE 'A' + 1xTYPE 'B')
BICYCLE PARKING RATE	SCHOOL 72 (1/100m <sup>2</sup> )	75 BICYCLE SPACES

4 ZONING MATRIX  
A102 SCALE NTS



2 BIKE RACKS DETAIL  
A102 SCALE 1:25



3 EXTERIOR SIGN DETAIL  
A102 SCALE 1:25

project  
**VINCENT MASSEY PS  
BUS LOOP**

745 SMYTH ROAD  
OTTAWA, ON, K1G 1N9

project north	seal
---------------	------

drawing title  
**SITE PLAN - NEW WORK**

scale AS NOTED	drawn by NF
date JUNE 2022	checked by VP
project number 20-570	drawing number <b>A-102</b>
CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ARCHITECT OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.	
revision -	

**N45 ARCHITECTURE INC.**  
71 Bank Street, 7th floor - Ottawa, Ontario, K1P 5N2  
tel. 613.224.0095 fax 613.224.9811

## **APPENDIX B**

---

TIA Screening Form

## City of Ottawa 2017 TIA Guidelines Screening Form

### 1. Description of Proposed Development

Municipal Address	<b>745 Smyth Road</b>
Description of Location	<b>Northeast corner of Smyth Road/Edgecombe Street</b>
Land Use Classification	<b>Elementary School</b>
Development Size (units)	-
Development Size (m <sup>2</sup> )	-
Number of Accesses and Locations	<b>Two new accesses to Smyth Road and one existing access to Edgecombe Street; removal of one access to Smyth Road and one access to Edgecombe Street</b>
Phase of Development	<b>1</b>
Buildout Year	

If available, please attach a sketch of the development or site plan to this form.

### 2. Trip Generation Trigger

Considering the Development's Land Use type and Size (as filled out in the previous section), please refer to the Trip Generation Trigger checks below.

Land Use Type	Minimum Development Size
Single-family homes	40 units
Townhomes or apartments	90 units
Office	3,500 m <sup>2</sup>
Industrial	5,000 m <sup>2</sup>
Fast-food restaurant or coffee shop	100 m <sup>2</sup>
Destination retail	1,000 m <sup>2</sup>
Gas station or convenience market	75 m <sup>2</sup>

*\* If the development has a land use type other than what is presented in the table above, estimates of person-trip generation may be made based on average trip generation characteristics represented in the current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual.*

**If the proposed development size is greater than the sizes identified above, the Trip Generation Trigger is satisfied.**

### 3. Location Triggers

	Yes	No
Does the development propose a new driveway to a boundary street that is designated as part of the City's Transit Priority, Rapid Transit or Spine Bicycle Networks?	✓	
Is the development in a Design Priority Area (DPA) or Transit-oriented Development (TOD) zone?*		✓

\*DPA and TOD are identified in the City of Ottawa Official Plan (DPA in Section 2.5.1 and Schedules A and B; TOD in Annex 6). See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA).

**If any of the above questions were answered with 'Yes,' the Location Trigger is satisfied.**

### 4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street limiting sight lines at a proposed driveway?		✓
Is the proposed driveway 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)?	✓	
Is the proposed driveway within auxiliary lanes of an intersection?		✓
Does the proposed driveway make use of an existing median break that serves an existing site?		✓
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		✓
Does the development include a drive-thru facility?		✓

**If any of the above questions were answered with 'Yes,' the Safety Trigger is satisfied.**

### 5. Summary

	Yes	No
Does the development satisfy the Trip Generation Trigger?		✓
Does the development satisfy the Location Trigger?	✓	
Does the development satisfy the Safety Trigger?	✓	

**If none of the triggers are satisfied, the TIA Study is complete. If one or more of the triggers is satisfied, the TIA Study must continue into the next stage (Screening and Scoping).**



## **APPENDIX C**

---

OC Transpo Route Maps

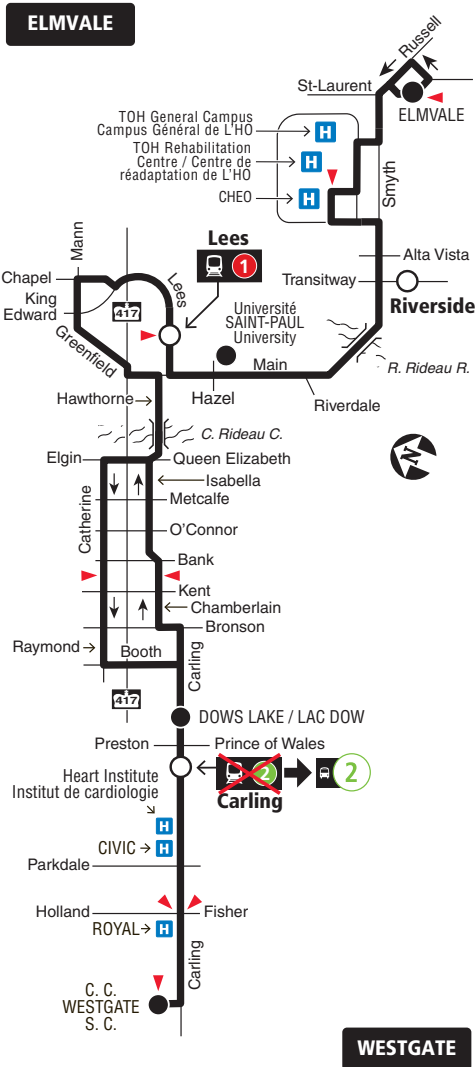


# 55

## ELMVALE WESTGATE

Local

7 days a week / 7 jours par semaine



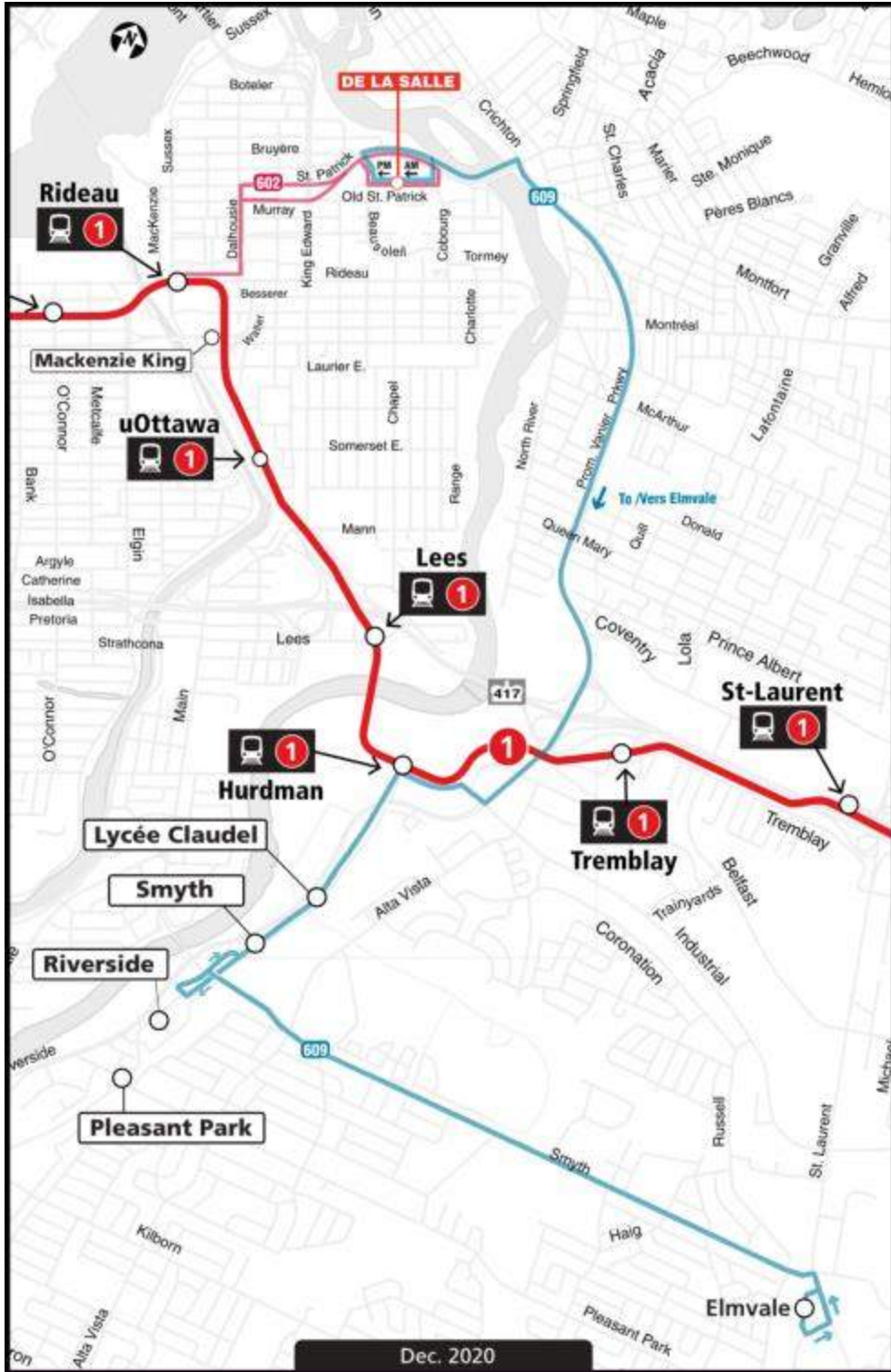
○ Stations  
▲ Timepoint / Heures de passage

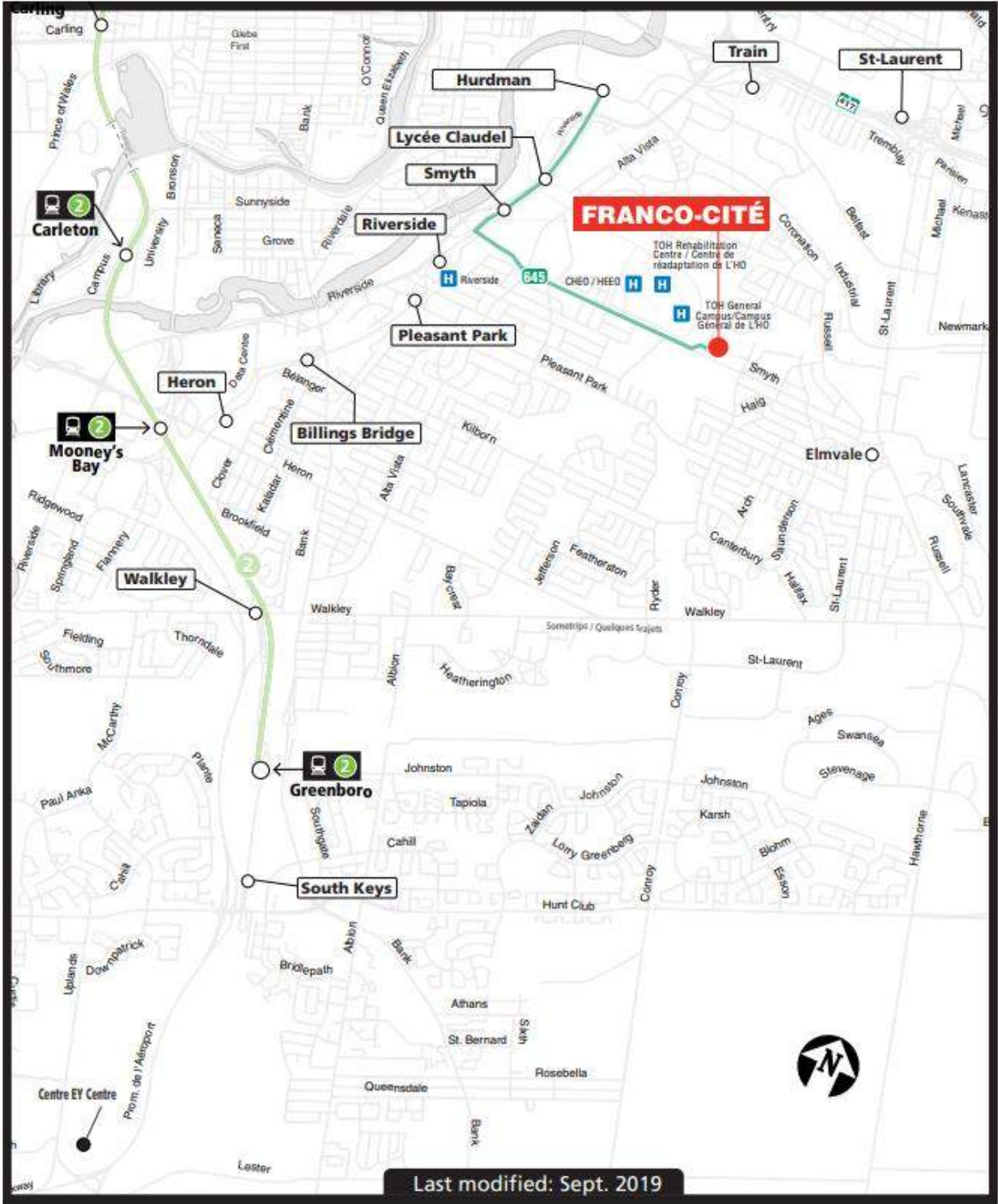
2021.06

**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

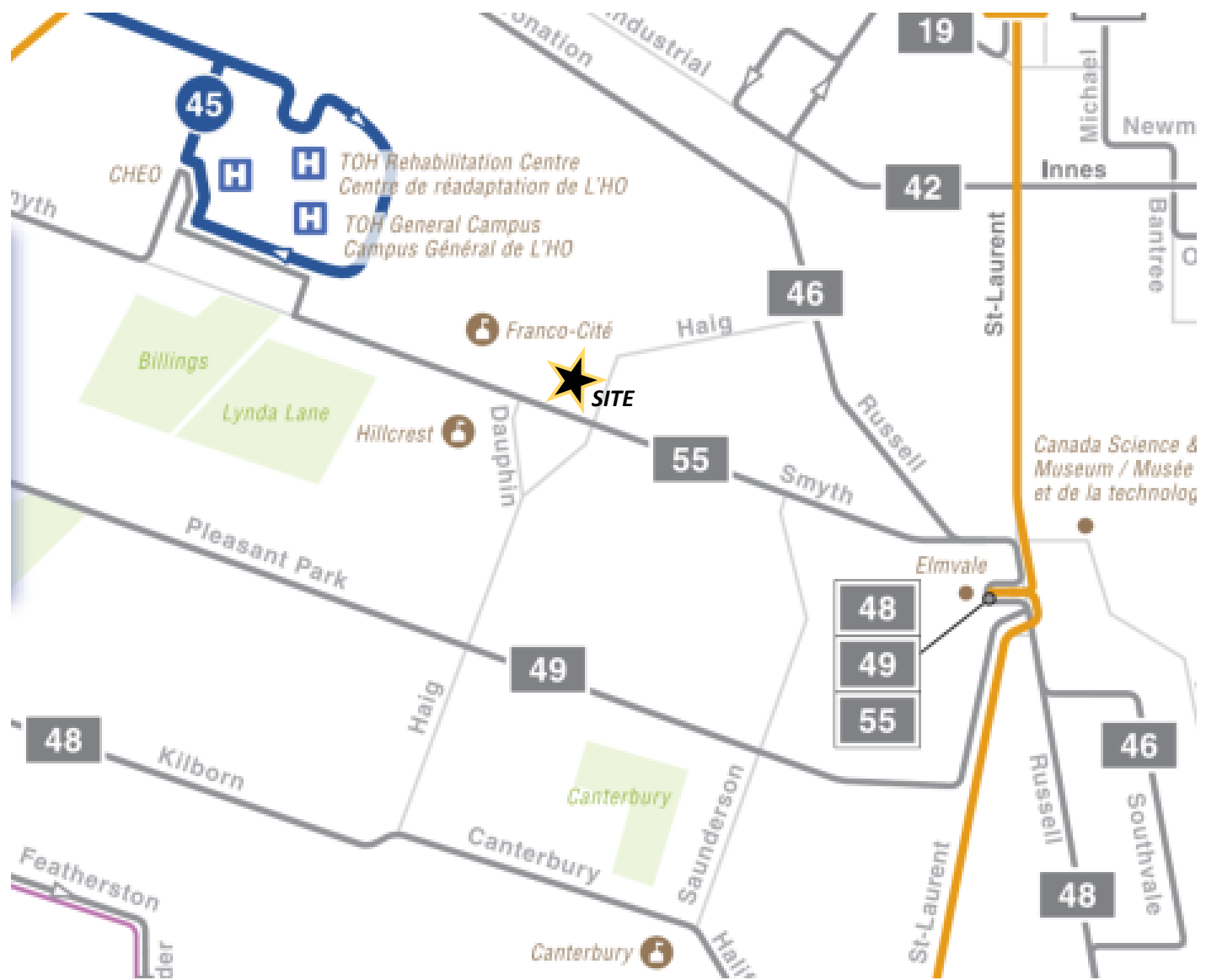
- Customer Service / Service à la clientèle ..... 613-741-4390
- Lost and Found / Objets perdus ..... 613-563-4011
- Security / Sécurité ..... 613-741-2478

**Effective June 20, 2021**  
**En vigueur 20 juin 2021**





Last modified: Sept. 2019



## **APPENDIX D**

---

### Traffic Count Data

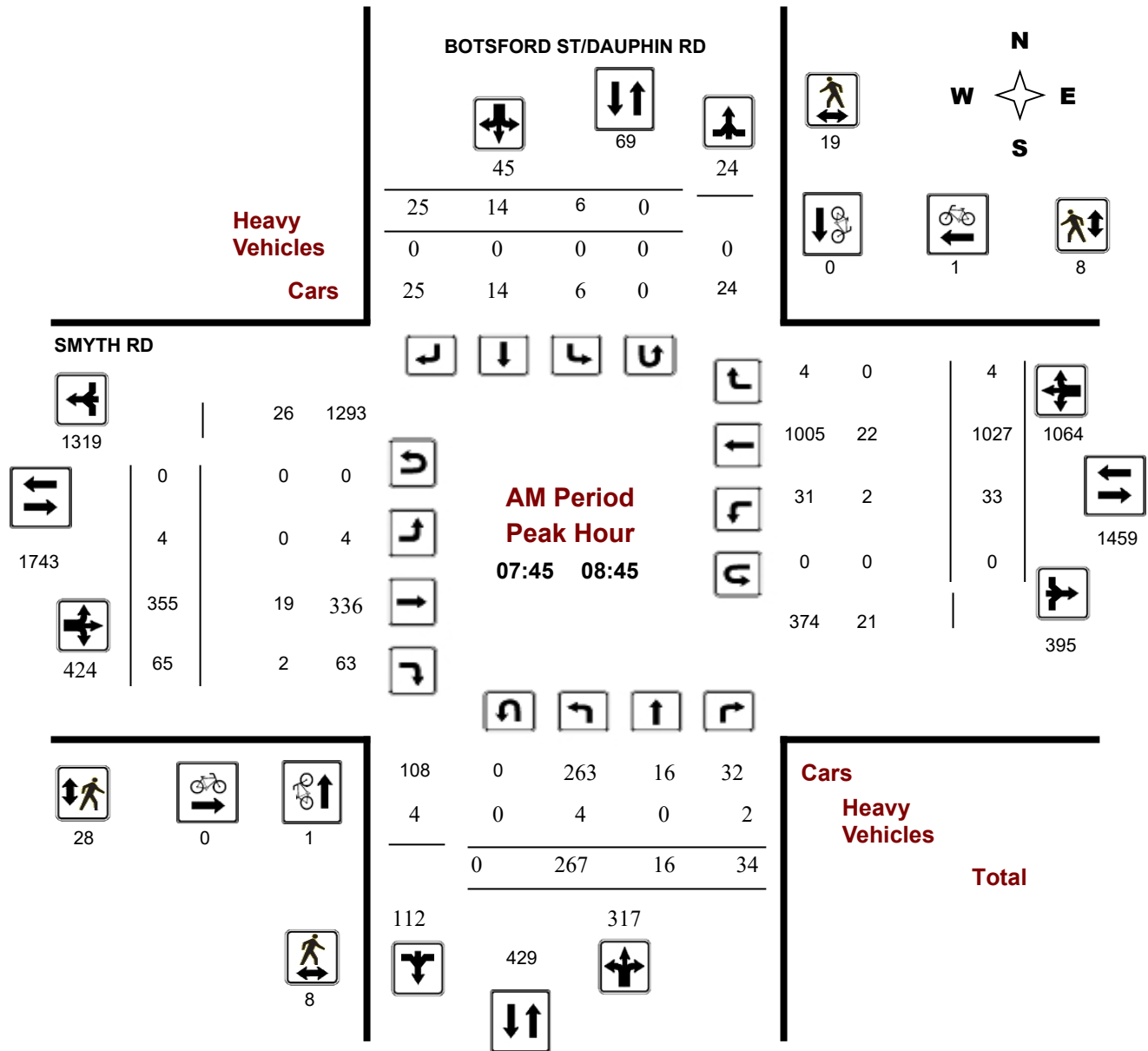
## Turning Movement Count - Peak Hour Diagram SMYTH RD @ BOTSFORD ST/DAUPHIN RD

**Survey Date:** Tuesday, January 08, 2019

**Start Time:** 07:00

**WO No:** 38228

**Device:** Miovision



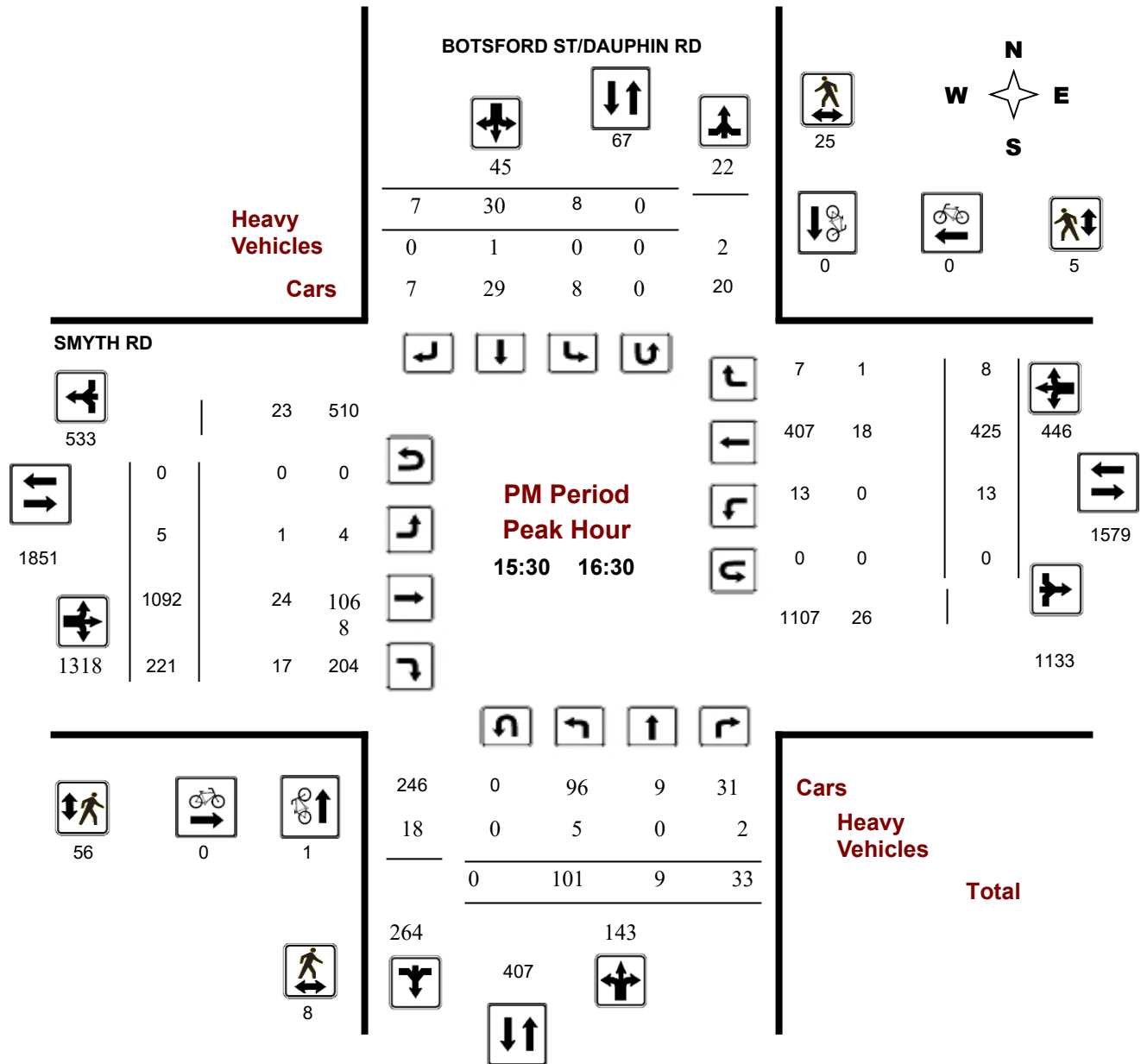
## Turning Movement Count - Peak Hour Diagram SMYTH RD @ BOTSFORD ST/DAUPHIN RD

**Survey Date:** Tuesday, January 08, 2019

**Start Time:** 07:00

**WO No:** 38228

**Device:** Miovision







# Transportation Services - Traffic Services

## Turning Movement Count - Study Results SMYTH RD @ BOTSFORD ST/DAUPHIN RD

**Survey Date:** Tuesday, January 08, 2019

**WO No:** 38228

**Start Time:** 07:00

**Device:** Miovision

### Full Study Summary (8 HR Standard)

**Survey Date:** Tuesday, January 08, 2019

**Total Observed U-Turns**

**AADT Factor**

Northbound: 1      Southbound: 0  
Eastbound: 0      Westbound: 0

1.10

**BOTSFORD ST/DAUPHIN RD**

**SMYTH RD**

Period	Northbound					Southbound					Eastbound					Westbound			STR TOT	Grand Total
	LT	ST	RT	NB TOT	STR TOT	LT	ST	RT	SB TOT	STR TOT	LT	ST	RT	EB TOT	STR TOT	WB TOT				
07:00 08:00	235	7	20	262	271	0	5	4	9	271	1	316	61	378	10	1018	4	1032	1410	1681
08:00 09:00	239	16	44	299	349	7	17	26	50	349	4	372	69	445	48	988	2	1038	1483	1832
09:00 10:00	164	8	25	197	205	0	4	4	8	205	2	388	79	469	18	698	6	722	1191	1396
11:30 12:30	55	8	29	92	104	3	2	7	12	104	4	461	77	542	16	450	1	467	1009	1113
12:30 13:30	81	3	16	100	113	4	3	6	13	113	2	444	58	504	12	531	4	547	1051	1164
15:00 16:00	108	13	36	157	219	12	33	17	62	219	6	971	186	1163	28	495	9	532	1695	1914
16:00 17:00	82	7	32	121	140	6	11	2	19	140	1	1060	234	1295	15	395	4	414	1709	1849
17:00 18:00	68	2	23	93	108	7	3	5	15	108	3	665	183	851	11	375	2	388	1239	1347
<b>Sub Total</b>	1032	64	225	1321	1509	39	78	71	188	1509	23	4677	947	5647	158	4950	32	5140	10787	12296
<b>U Turns</b>				1					0	1				0				0	0	1
<b>Total</b>	1032	64	225	1322	1510	39	78	71	188	1510	23	4677	947	5647	158	4950	32	5140	10787	12297

**EQ 12Hr** 1434 89 313 **1838** 54 108 99 **261** **2099** 32 6501 1316 **7849** 220 6880 44 **7145** **14994** **17093**  
 Note: These values are calculated by multiplying the totals by the appropriate expansion factor. **1.39**

**AVG 12Hr** 1577 98 344 **2022** 59 156 142 **287** **2309** 35 7151 1448 **8634** 242 7568 48 **7860** **16493** **18802**  
 Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor. **1.10**

**AVG 24Hr** 2066 128 451 **2649** 77 204 186 **376** **3025** 46 9368 1897 **11311** 317 9914 63 **10297** **21606** **24631**  
 Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor. **1.31**

Note: U-Turns provided for approach totals. Refer to 'U-Turn' Report for specific breakdown.

## Turning Movement Count - Peak Hour Diagram

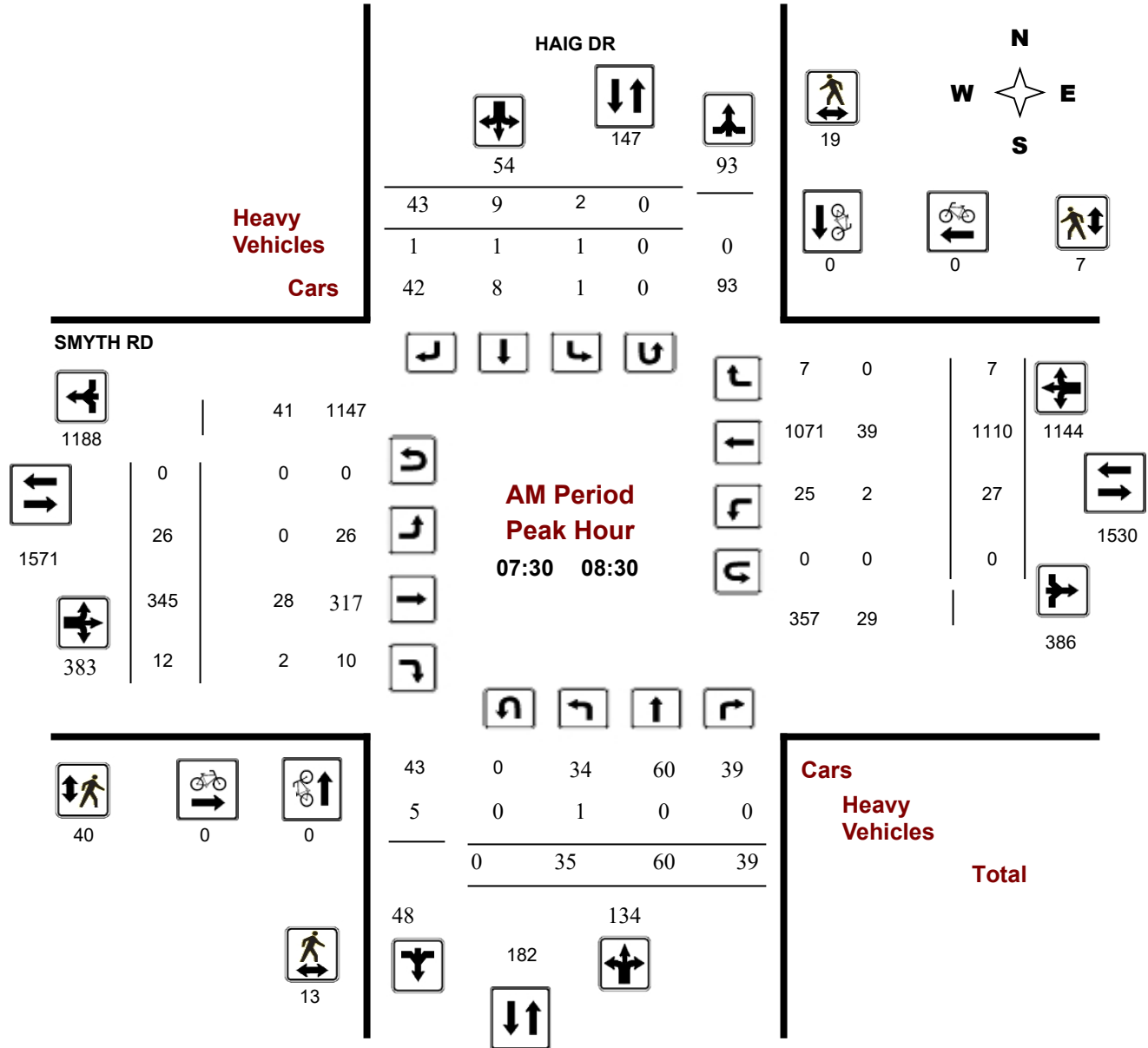
### HAIG DR @ SMYTH RD

**Survey Date:** Tuesday, February 13, 2018

**Start Time:** 07:00

**WO No:** 37526

**Device:** Miovision



## Turning Movement Count - Peak Hour Diagram

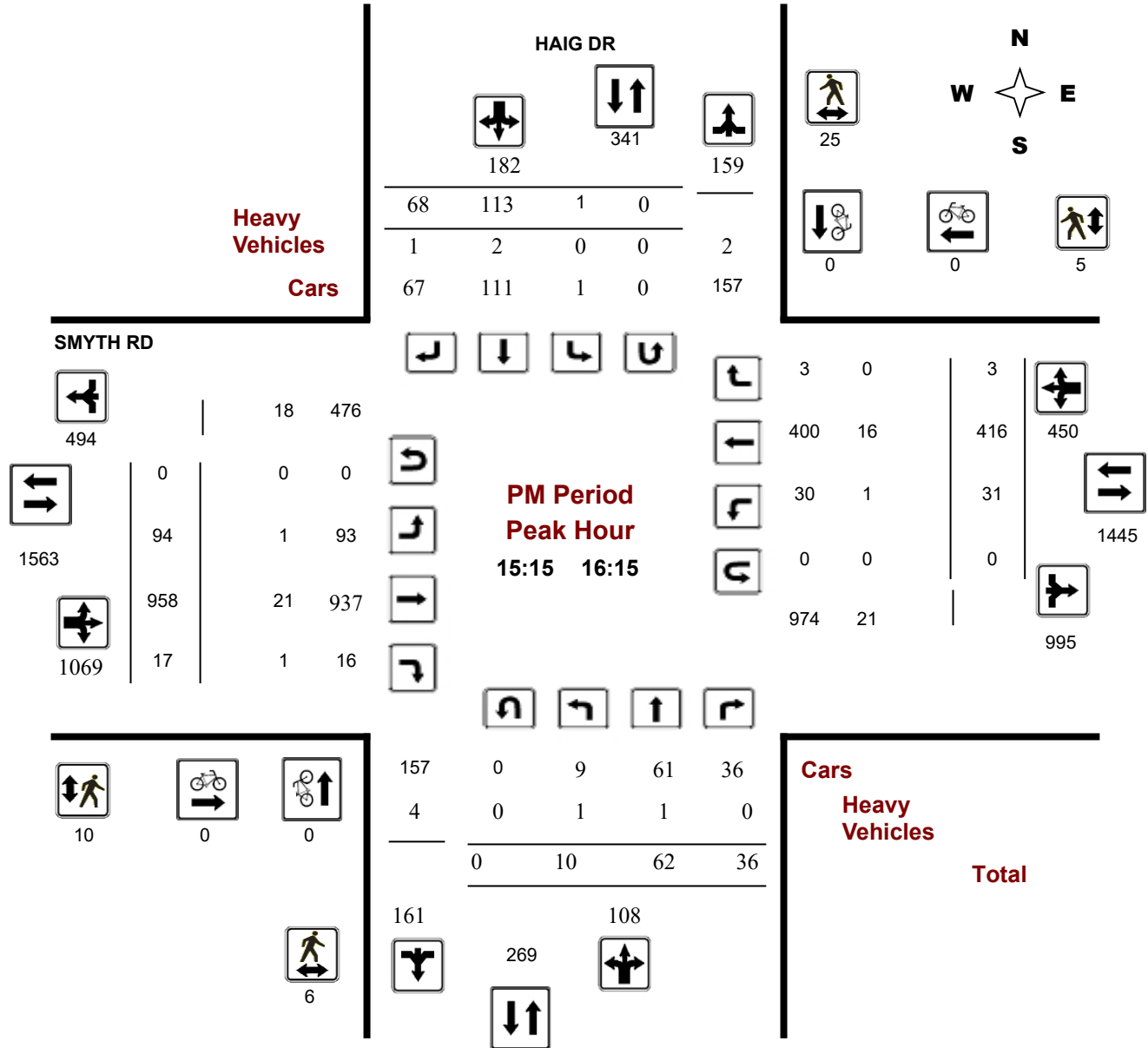
### HAIG DR @ SMYTH RD

**Survey Date:** Tuesday, February 13, 2018

**Start Time:** 07:00

**WO No:** 37526

**Device:** Miovision



**Comments**

## **APPENDIX E**

---

### Collision Records



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

**Location:** EDGECOMBE ST @ SMYTH RD

**Traffic Control:** Stop sign

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Jan-19, Thu,14:45	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Delivery van	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** HAIG DR @ SMYTH RD

**Traffic Control:** Traffic signal

**Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Apr-16, Sat,15:00	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-14, Sun,18:25	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Sep-28, Wed,19:39	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2016-Oct-03, Mon,16:00	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Delivery van	Other motor vehicle	
2016-Oct-19, Wed,08:53	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Nov-17, Thu,09:12	Clear	Rear end	Non-fatal injury	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Passenger van	Other motor vehicle	
2016-Nov-23, Wed,17:37	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Dec-16, Fri,16:16	Clear	Turning movement	P.D. only	Dry	East	Turning left	Passenger van	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-07, Tue,01:20	Snow	Turning movement	Non-fatal injury	Packed snow	East	Turning right	Fire vehicle	Other motor vehicle	0
					East	Going ahead	Municipal transit bus	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

**Location:** HAIG DR @ SMYTH RD

**Traffic Control:** Traffic signal

**Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-May-04, Thu,16:19	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jun-26, Mon,13:57	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Jul-05, Wed,20:20	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Motorcycle	Other motor vehicle	
2018-Jul-05, Thu,13:07	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-10, Fri,13:58	Clear	Angle	Non-fatal injury	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-03, Wed,08:16	Clear	Angle	P.D. only	Dry	South	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-30, Tue,12:13	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Stopped	Unknown	Other motor vehicle	
2018-Dec-07, Fri,20:29	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Apr-24, Wed,15:44	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-07, Fri,17:20	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-23, Tue,12:40	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

**Location:** HAIG DR @ SMYTH RD

**Traffic Control:** Traffic signal

**Total Collisions:** 32

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Sep-27, Fri,13:33	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-14, Thu,12:37	Clear	Turning movement	P.D. only	Loose snow	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-05, Thu,17:30	Clear	Rear end	P.D. only	Wet	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Delivery van	Other motor vehicle	
2019-Dec-17, Tue,12:30	Clear	Angle	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Jan-29, Wed,12:58	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Feb-19, Wed,13:10	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Mar-27, Fri,13:20	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Apr-17, Fri,17:51	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-May-09, Sat,19:32	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2020-Jul-31, Fri,15:10	Clear	Turning movement	P.D. only	Dry	West	Turning right	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Sep-29, Tue,16:05	Clear	Turning movement	P.D. only	Dry	East	Turning left	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2020-Nov-16, Mon,14:30	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

**Location:** SMYTH RD @ BOTSFORD ST/DAUPHIN RD

**Traffic Control:** Traffic signal

**Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jan-04, Mon,12:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2016-Dec-20, Tue,18:23	Snow	SMV other	Non-fatal injury	Wet	North	Turning left	Unknown	Pedestrian	1
2017-Jan-20, Fri,03:18	Clear	SMV other	P.D. only	Dry	West	Turning left	Pick-up truck	Other	0
2017-Feb-09, Thu,16:00	Clear	Rear end	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Feb-16, Thu,08:55	Clear	Angle	P.D. only	Loose snow	East	Slowing or stopping	Pick-up truck	Skidding/sliding	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2018-May-09, Wed,17:45	Clear	Rear end	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Nov-05, Mon,11:34	Clear	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-06, Wed,10:30	Freezing Rain	Turning movement	P.D. only	Wet	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Mar-12, Tue,16:00	Clear	Turning movement	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-07, Fri,16:05	Clear	Turning movement	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-19, Wed,17:30	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-04, Wed,10:23	Snow	Sideswipe	P.D. only	Loose snow	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	





# Transportation Services - Traffic Services

## Collision Details Report - Public Version

From: January 1, 2016 To: December 31, 2020

**Location:** SMYTH RD @ BOTSFORD ST/DAUPHIN RD

**Traffic Control:** Traffic signal

**Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Dec-18, Wed,13:32	Snow	Angle	Non-fatal injury	Loose snow	East	Going ahead	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Feb-09, Sun,19:18	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	

**Location:** SMYTH RD btwn BOTSFORD ST & EDGECOMBE ST

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Feb-02, Sat,15:17	Snow	Turning movement	Non-fatal injury	Loose snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Turning right	Pick-up truck	Other motor vehicle	

**Location:** SMYTH RD btwn EDGECOMBE ST & HAIG DR

**Traffic Control:** No control

**Total Collisions:** 1

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jan-13, Sat,08:06	Clear	SMV other	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Skidding/sliding	0

## **APPENDIX F**

---

Long-Range Model Snapshots and Intersection Growth Rate Figures

# TRANS Regional Model

Version 2.15 - Assigned May 5, 2021

**AM Peak Hour Total Traffic Volume**  
**Smyth Road / Dauphin Street/Haig Drive**  
2011 Model

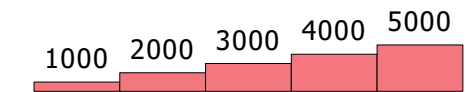
N/A

User Initials: TW  
Plot Prepared: Jan 3, 2023  
EMME Scenario: 21713

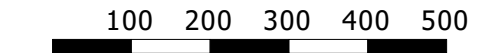


## Legend

AM Peak Hour Total Traffic Volume



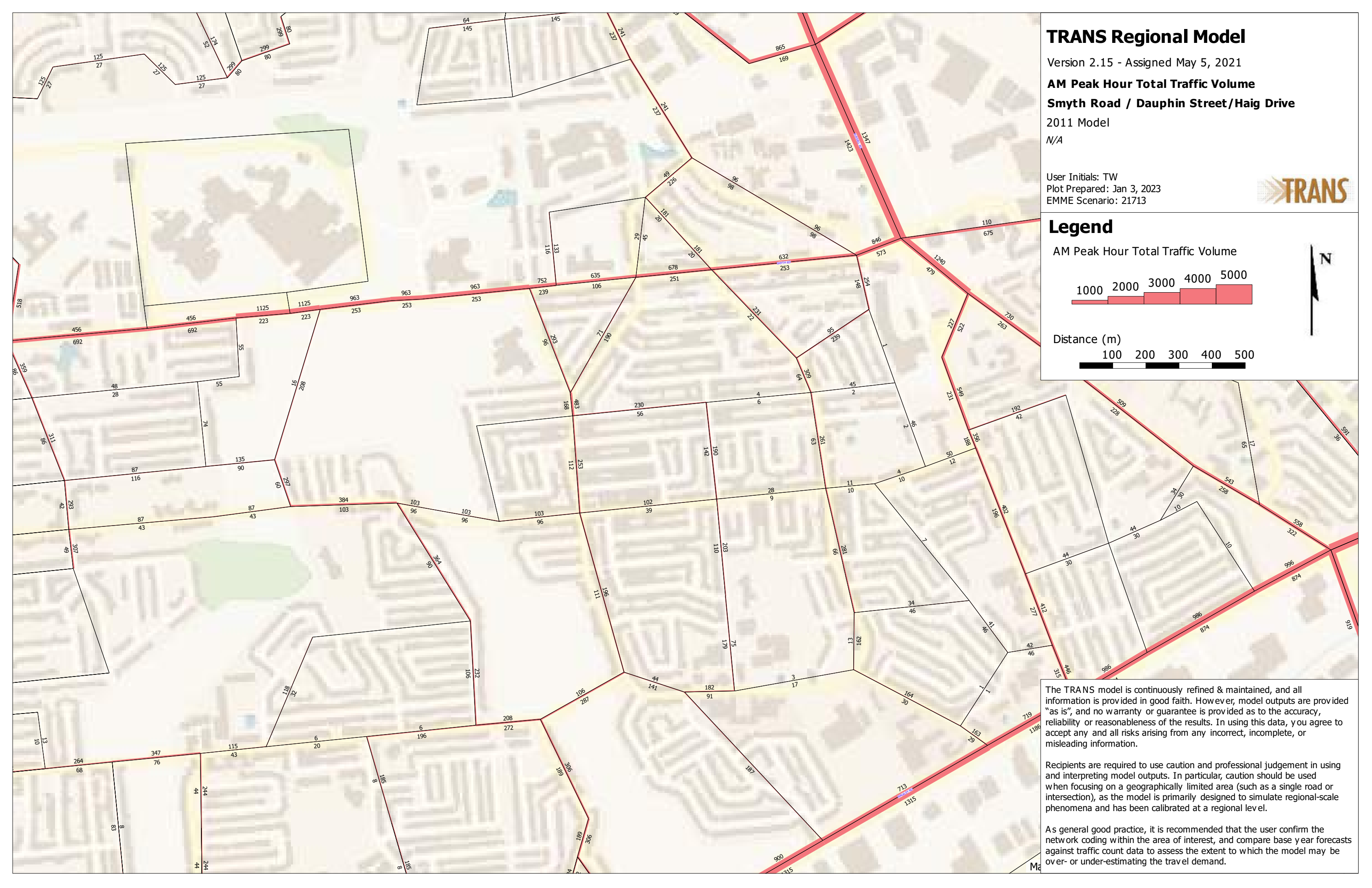
Distance (m)



The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.



# TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

## AM Peak Hour Total Traffic Volume Smyth Road / Dauphin Street/Haig Drive

2031 Model - Basecase

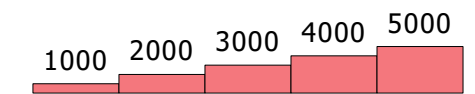
N/A

User Initials: TIMW  
Plot Prepared: Jan 3, 2023  
EMME Scenario: 21715

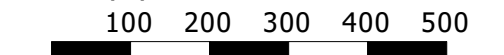


### Legend

AM Peak Hour Total Traffic Volume



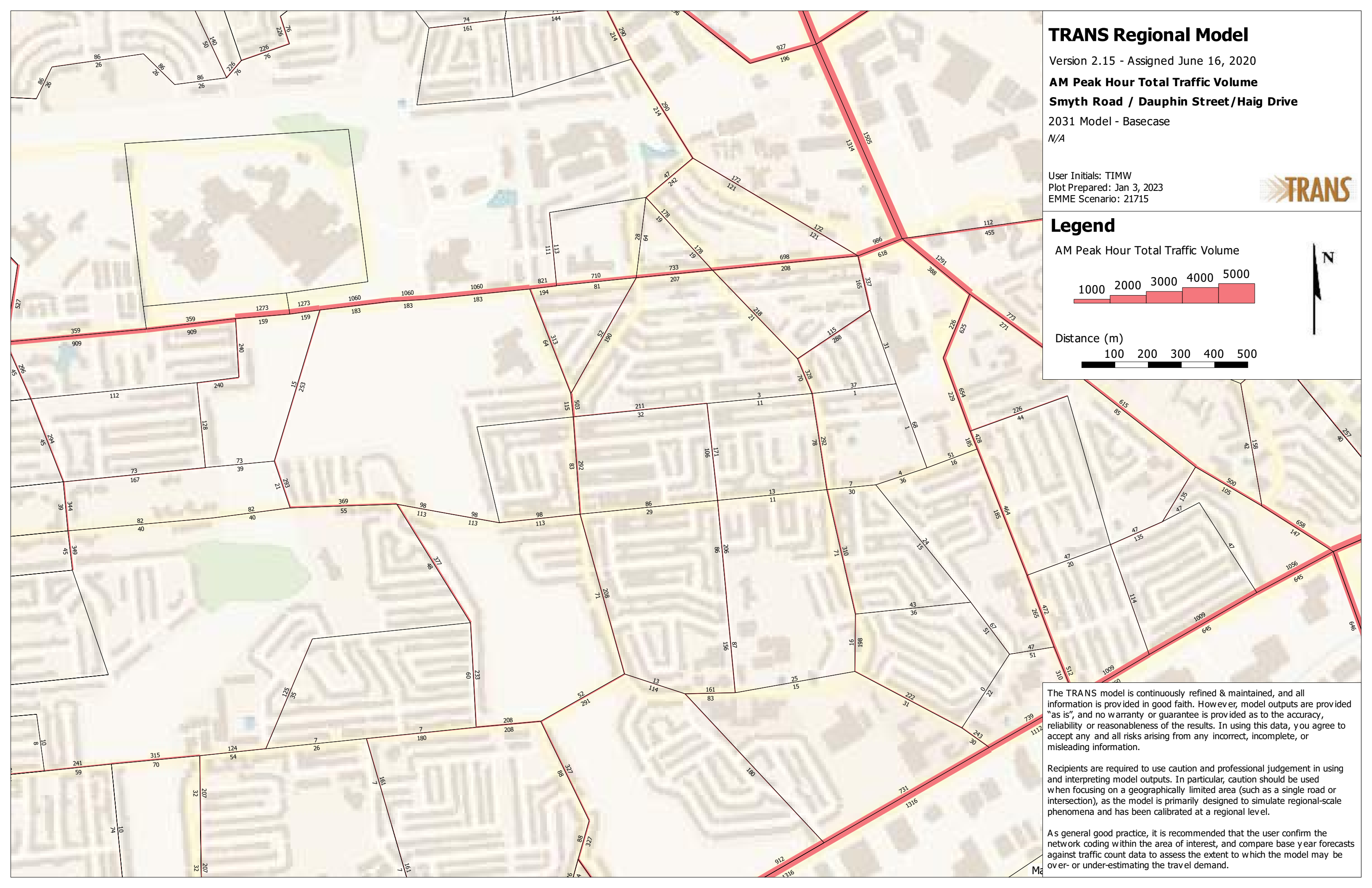
Distance (m)



The TRANS model is continuously refined & maintained, and all information is provided in good faith. However, model outputs are provided "as is", and no warranty or guarantee is provided as to the accuracy, reliability or reasonableness of the results. In using this data, you agree to accept any and all risks arising from any incorrect, incomplete, or misleading information.

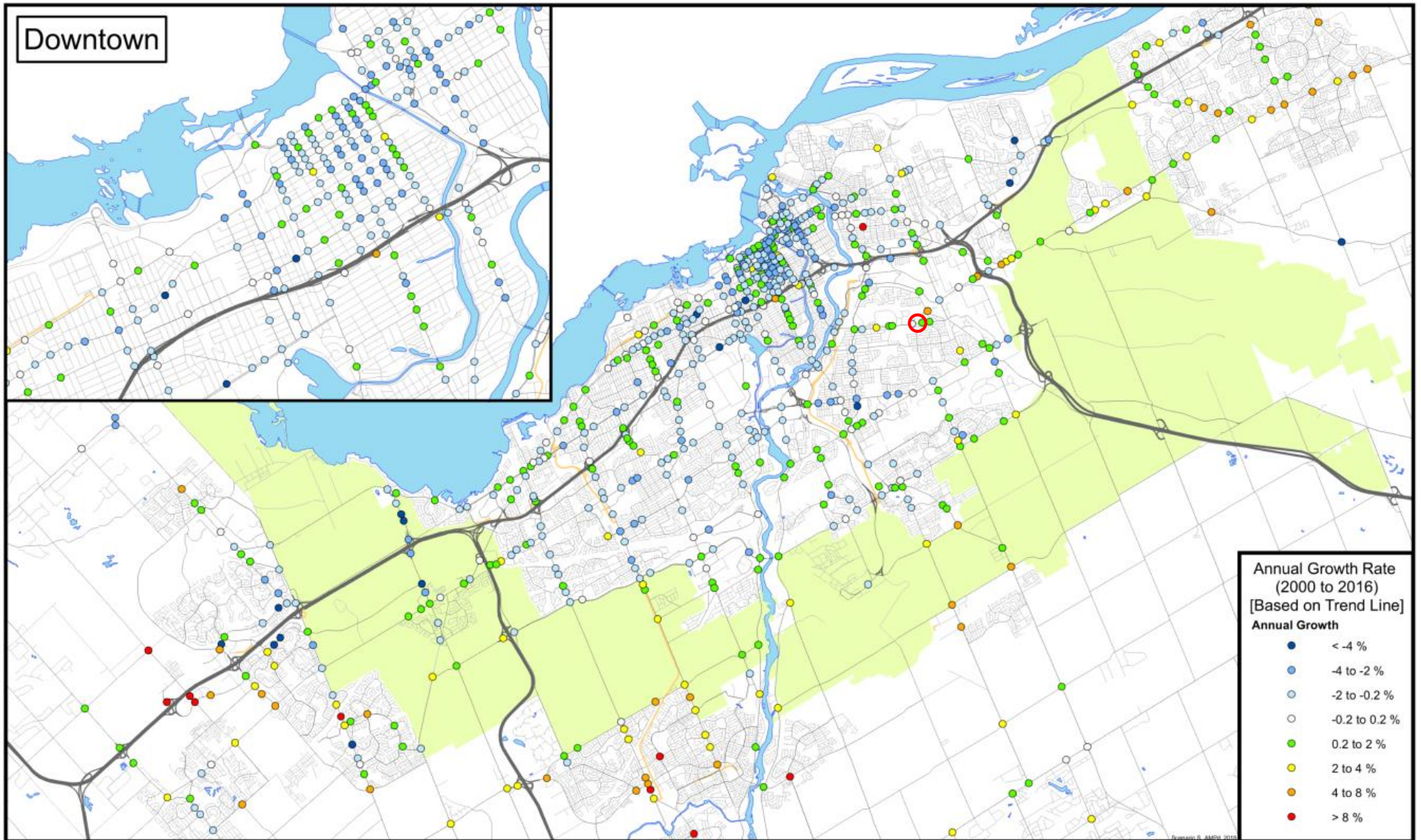
Recipients are required to use caution and professional judgement in using and interpreting model outputs. In particular, caution should be used when focusing on a geographically limited area (such as a single road or intersection), as the model is primarily designed to simulate regional-scale phenomena and has been calibrated at a regional level.

As general good practice, it is recommended that the user confirm the network coding within the area of interest, and compare base year forecasts against traffic count data to assess the extent to which the model may be over- or under-estimating the travel demand.



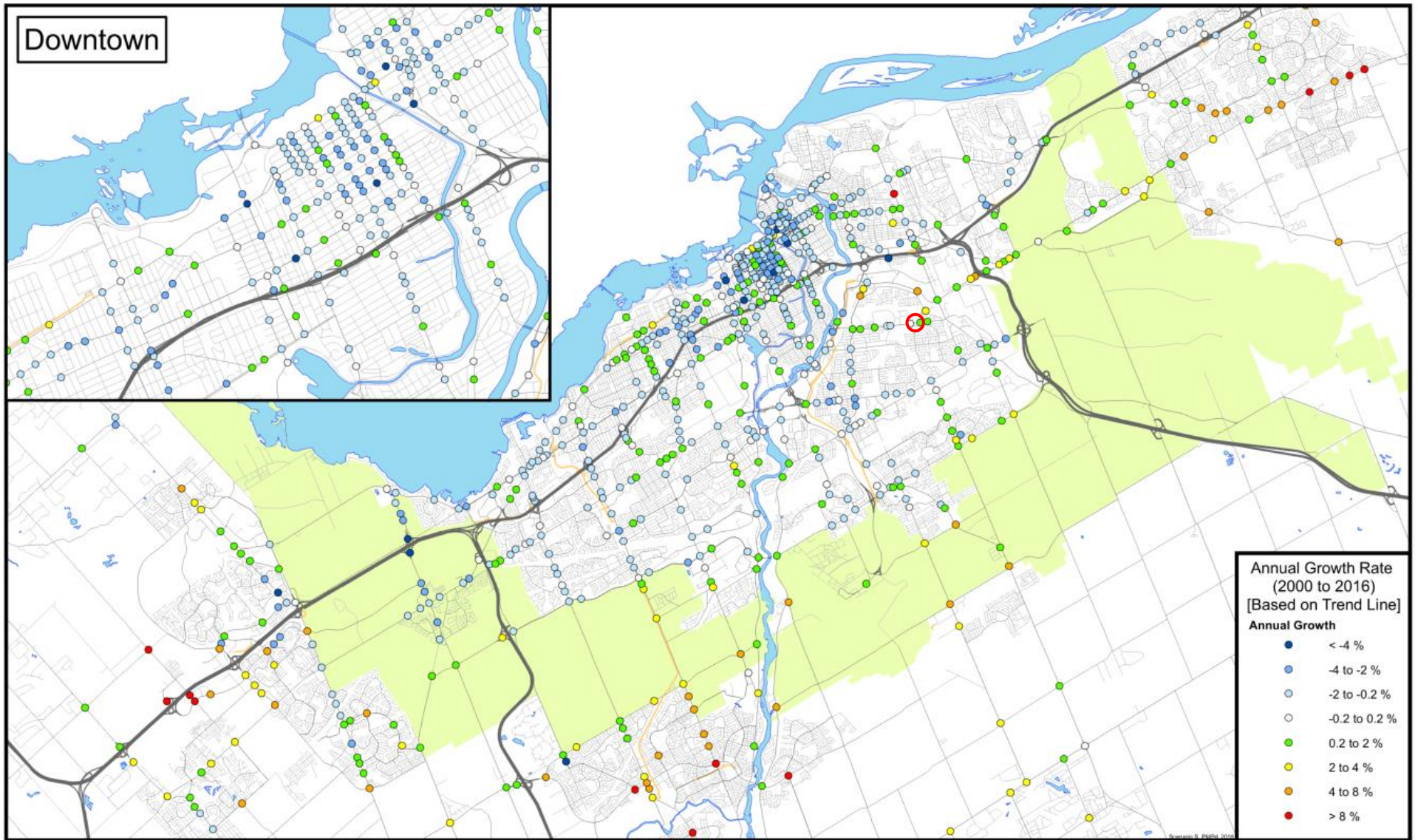
# INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



# INTERSECTION TRAFFIC GROWTH RATE, PM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



## **APPENDIX G**

---

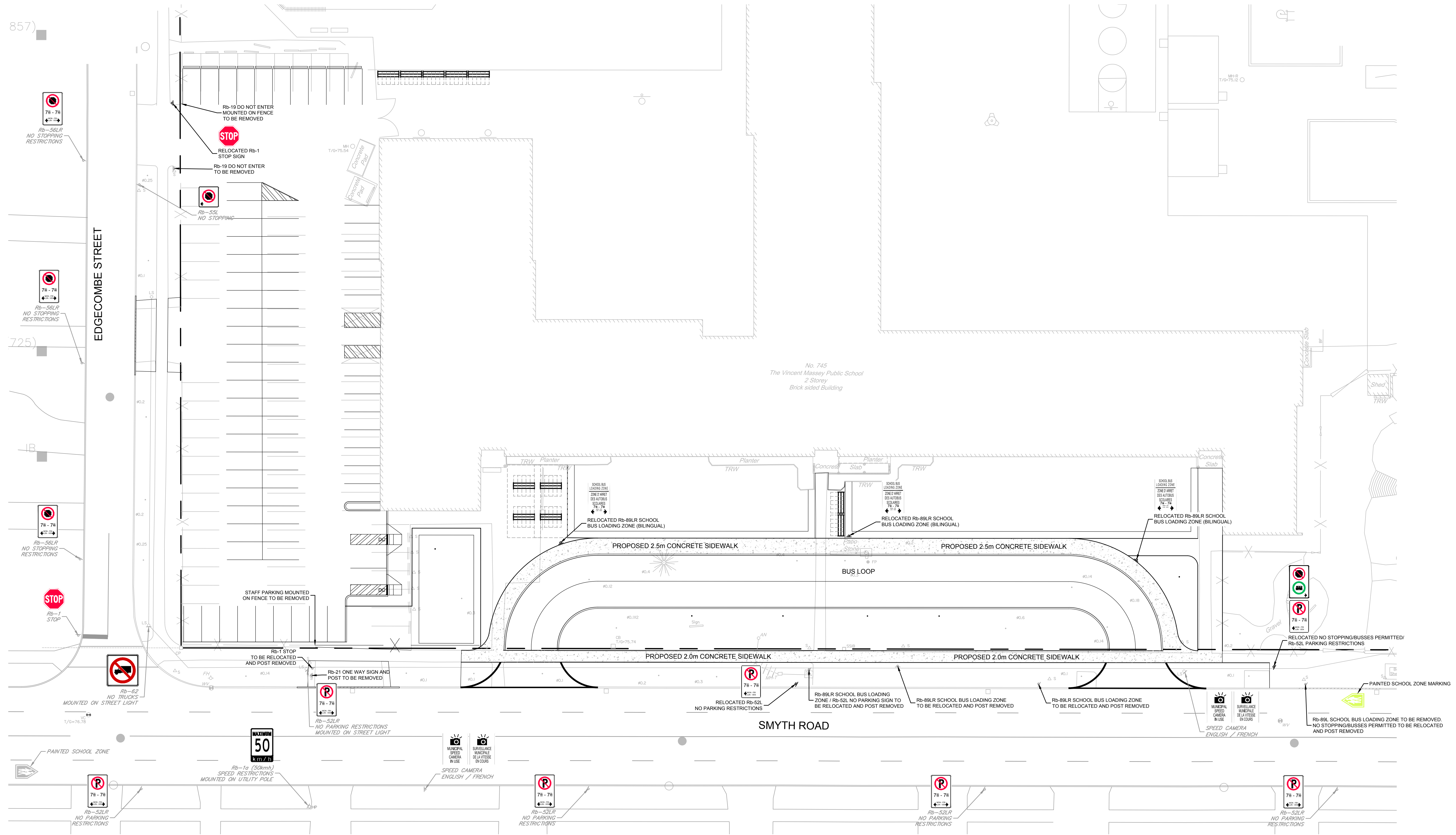
### Existing and Proposed Signage Plans





NORTH

KEY PLAN  
N.T.S.



NOTE:  
 THE POSITION OF ALL POLE LINES, CONDUITS,  
 WATERMANS, SEWERS AND OTHER  
 UNDERGROUND AND OVERGROUND UTILITIES AND  
 STRUCTURES IS NOT NECESSARILY SHOWN ON  
 THE CONTRACT DRAWINGS, AND WHERE SHOWN,  
 THE ACCURACY OF THE POSITION OF SUCH  
 UTILITIES AND STRUCTURES IS NOT GUARANTEED.  
 BEFORE STARTING WORK, DETERMINE THE EXACT  
 LOCATION OF ALL SUCH UTILITIES AND  
 STRUCTURES AND ASSUME ALL LIABILITY FOR  
 DAMAGE TO THEM.

PRELIMINARY

NOT FOR  
CONSTRUCTION

No.	REVISION	DATE	BY
1.	XXXX	JAN/10	XXX

SCALE	1:250
1:250	0 2 4 6 8 10

DESIGN	RCH
CHECKED	JRA
DRAWN	RCH
CHECKED	JRA
APPROVED	BJB

FOR REVIEW ONLY

**NOVATECH**  
 Engineers, Planners & Landscape Architects  
 Suite 200, 240 Michael Cowland Drive  
 Ottawa, Ontario, Canada K2M 1P6  
 Telephone (613) 254-9643  
 Facsimile (613) 254-5867  
 Website www.novatech-eng.com

LOCATION CITY OF OTTAWA 745 SMYTH ROAD	PROJECT No. 122204
DRAWING NAME PROPOSED PAVEMENT MARKING & SIGNAGE	REV # 1
	DRAWING No. 122204-PVMK2

## **APPENDIX H**

---

### MMLOS Analysis

This section provides a review of the boundary streets using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation, based on the targets for roadways 'within 300m of a school.'

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the segment pedestrian level of service (PLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* suggest a target PLOS A for all roadways within 300m of a school. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the segment bicycle level of service (BLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* suggest a target BLOS B for Spine Routes within 300m of a school (Smyth Road), and a target BLOS D for all roadways with no cycling designation within 300m of a school (Edgecombe Street). The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the segment transit level of service (TLOS) of Smyth Road. Exhibit 22 of the *MMLOS Guidelines* suggest a target TLOS D for Transit Priority Corridors (Isolated Measures) within 300m of a school. The results of the segment TLOS analysis are summarized in **Table 3**.

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the segment truck level of service (TkLOS) of Smyth Road only. Exhibit 22 of the *MMLOS Guidelines* suggest a target TkLOS D for arterial truck routes within 300m of a school. The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed <sup>(1)</sup>	PLOS
<b>Smyth Road (north side)</b>					
1.5m	> 2.0m	> 3,000 vpd	No	60 km/h	E
<b>Smyth Road (south side)</b>					
1.5m	> 2.0m	> 3,000 vpd	No	60 km/h	E
<b>Edgecombe Street (east side)</b>					
1.5m	> 2.0m	≤ 3,000 vpd	No	50 km/h	C
<b>Edgecombe Street (west side)</b>					
No sidewalk		≤ 3,000 vpd	No	50 km/h	F

1. Operating speed taken as the speed limit plus 10 km/h.

Table 2: BLOS Segment Analysis

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Centerline Type	Operating Speed	BLOS
<b>Smyth Road (Edgecombe Street to Haig Drive)</b>						
Arterial	Spine Route	Mixed Traffic	4	Marked Centerline	60 km/h	F
<b>Edgecombe Street (Smyth Road to Hastings Avenue)</b>						
Local	No Class	Mixed Traffic	2	No Marked Centerline	50 km/h	B

Table 3: TLOS Segment Analysis

Facility Type	Level of Congestion Delay, Friction and Incidents			TLOS
	Congestion	Friction	Incident Potential	
<b>Smyth Road (Edgecombe Street to Haig Drive)</b>				
Mixed Traffic – Limited Parking/Driveway Friction	Yes	Low	Medium	D

Table 4: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
<b>Smyth Road (Edgecombe Street to Haig Drive)</b>		
> 3.7m	2	A