

NOVATECH

Engineers, Planners & Landscape Architects

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

84 and 100 Gloucester Street Transportation Impact Assessment

Engineering excellence.

Planning progress.

Liveable landscapes.

**Proposed Residential Development
84 and 100 Gloucester Street
Transportation Impact Assessment**

Prepared By:

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

January 2023
Revised July 2023

Novatech File: 122173
Ref: R-2022-161

July 12, 2023

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

Attention: Mr. Wally Dubyk
Project Manager, Transportation Review

Dear Mr. Dubyk:

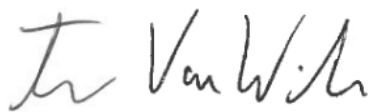
Reference: 84 and 100 Gloucester Street
Transportation Impact Assessment
Novatech File No. 122173

We are pleased to submit the following Transportation Impact Assessment, in support of a Site Plan Control application at 84 and 100 Gloucester Street, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa 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



Trevor Van Wiechen, M.Eng.
E.I.T. | 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 licensed¹ or registered² 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 12 day of July, 2023 .
(City)

Name: Brad Byvelds
(Please Print)

Professional Title: P. Eng. - Project Manager

B. Byvelds

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

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

TABLE OF CONTENTS

EXECUTIVE SUMMARYI

1.0 SCREENING.....3

1.1 INTRODUCTION 3

1.2 PROPOSED DEVELOPMENT..... 3

1.3 SCREENING FORM 4

2.0 SCOPING.....4

2.1 EXISTING CONDITIONS 4

2.1.1 Roadways.....4

2.1.2 Intersections5

2.1.3 Driveways.....7

2.1.4 Pedestrian and Cycling Facilities8

2.1.5 Transit8

2.1.6 Area Traffic Management9

2.1.7 Existing Traffic Volumes9

2.1.8 Collision Records.....11

2.2 PLANNED CONDITIONS 14

2.2.1 Planned Transit and Roadway Projects14

2.2.2 Other Area Developments14

2.3 STUDY AREA AND TIME PERIODS 15

2.4 EXEMPTIONS REVIEW..... 15

3.0 FORECASTING16

3.1 DEVELOPMENT-GENERATED TRAVEL DEMAND..... 16

3.1.1 Trip Generation.....16

3.1.2 Trip Distribution.....20

3.2 BACKGROUND TRAFFIC 20

3.2.1 Other Area Developments20

3.2.2 General Background Growth Rate.....21

4.0 ANALYSIS22

4.1 DEVELOPMENT DESIGN 22

4.1.1 Design for Sustainable Modes22

4.1.2 Circulation and Access23

4.2 PARKING 23

4.2.1 Parking Supply23

4.2.2 Spillover Parking.....24

4.3 BOUNDARY STREETS 25

4.3.1 Pedestrian Level of Service (PLOS).....25

4.3.2 Bicycle Level of Service (BLOS)25

4.3.3 Transit Level of Service (TLOS).....25

4.3.4 Truck Level of Service (TkLOS).....26

4.3.5 Segment MMLOS Summary26

4.4 ACCESS INTERSECTIONS..... 26

4.4.1 Access Design.....26

4.5 TRANSPORTATION DEMAND MANAGEMENT 26

4.5.1 Context for TDM26

4.5.2 Need and Opportunity.....26

4.5.3 TDM Program27

5.0 CONCLUSIONS AND RECOMMENDATIONS27

Figures

Figure 1: Site Location 3
 Figure 2: OC Transpo Bus Stop Locations 9
 Figure 3: Existing Traffic Volumes..... 10
 Figure 4: 2025/2030 Background Traffic Volumes..... 22

Tables

Table 1: OC Transpo Transit Stops..... 8
 Table 2: OC Transpo Route Information 8
 Table 3: Reported Collisions 11
 Table 4: TIA Exemptions 15
 Table 5: Person Trips Generated by Existing Development 17
 Table 6: Existing Development - Peak Hour Person Trips 17
 Table 7: Trips Generated by the Proposed Retail Development..... 18
 Table 8: Proposed Development – Peak Hour Person Trips 18
 Table 9: Trips Generated by the Proposed Residential Development 18
 Table 10: TRANS and TOD Mode Share Comparison 19
 Table 11: Peak Period Person Trips by Modal Share 19
 Table 12: Peak Hour Person Trips by Mode Share 19
 Table 13: Net Person Trip Generation..... 20
 Table 14: Parking Requirements..... 23
 Table 15: PLOS Segment Analysis 25
 Table 16: BLOS Segment Analysis 25
 Table 17: Segment MMLOS Summary..... 26

Appendices

Appendix A: Proposed Site Plan
 Appendix B: TIA Screening Form
 Appendix C: OC Transpo Route Maps
 Appendix D: Traffic Count Data
 Appendix E: Collision Records
 Appendix F: Table 14-1 of the *ITE Trip Generation Handbook, 5th Edition*
 Appendix G: Other Area Developments
 Appendix H: Strategic Long-Range Model and Intersection Growth Rate Figures
 Appendix I: Transportation Demand Management Checklists

EXECUTIVE SUMMARY

This TIA has been prepared for the property located at 84 and 100 Gloucester Street, in support of a Site Plan Control application. The subject site is located on Gloucester Street on the south side midblock between O'Connor Street and Metcalfe Street. Currently the site is occupied by a seven-floor office/commercial building and a public parking lot.

The subject site is surrounded by the following:

- Gloucester Street and commercial land uses to the north,
- Residential land uses followed by Nepean Street to the south,
- Residential and commercial land uses followed by Metcalfe Street to the east, and
- Residential and commercial land uses followed by O'Connor Street to the west.

The proposed development will replace the existing seven-storey commercial/office building at 84 Gloucester and the public parking lot at 100 Gloucester Street. At full buildout, the proposed development will consist of 315 dwellings and approximately 1,550 ft² GFA of ground-floor retail, and will be built in one phase. A total of 95 parking spaces will be provided in three levels of underground parking. Access to the proposed development will be provided via a driveway to an existing underground parking lot at 70 Gloucester Street/89-91 Nepean Street. For the purposes of this report, the development is assumed to be built out by 2025.

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

Forecasting

- The proposed residential development is expected to generate a net increase of 34 person trips in the AM peak hour and a net decrease of 8 person trips in the PM peak hour.

Development Design

- Pathway connections will be provided between the building entrances and existing sidewalk along Gloucester Street. A mid-block pathway will also be provided at the ground level between the exiting sidewalk along Gloucester Street and a rear amenity area.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.
- Garbage bins will be wheeled from a garbage room on the ground floor down a pathway west of the proposed building for curbside collection along Gloucester Street. The fire route for the development is curbside along Gloucester Street.

Parking

- A total of 30 visitor parking spaces are proposed, adhering to the requirements of the ZBL. However, the proposed 65 resident parking spaces equates to approximately 50% of the ZBL requirement.
- A total of 315 bicycle parking spaces are proposed, exceeding the requirements of the ZBL.

- As the anticipated spillover parking demand can be accommodated by the public parking use at 70 Gloucester Street/89-91 Nepean Street, and to limit the oversupply of parking in the downtown area, the proposed parking reduction is recommended.

Boundary Street Design

- The target Pedestrian Level of Service (PLOS) A is not achieved along Gloucester Street. The sidewalk will be widened to 2m in width along the sites frontage, achieving a PLOS B.
- The target Bicycle Level of Service (BLOS) D is achieved within the study area along Gloucester Street.

Access Design

- The development proposes no new access and will utilize the access located at 70 Gloucester Street. As the 70 Gloucester Street access was approved as part of a previous application, a further review of this access has not been completed.

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium);
 - Display relevant transit schedules and route maps at entrances (multi-family, condominium);
 - Unbundle parking cost from purchase price (condominium); and
 - Provide a multimodal travel option information package to new residents.

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared for the property located at 84 and 100 Gloucester Street, in support of a Site Plan Control application. The subject site is located on Gloucester Street on the south side midblock between O'Connor Street and Metcalfe Street. Currently the site is occupied by a seven-floor office/commercial building and a public parking lot.

The subject site is surrounded by the following:

- Gloucester Street and commercial land uses to the north,
- Residential land uses followed by Nepean Street to the south,
- Residential and commercial land uses followed by Metcalfe Street to the east, and
- Residential and commercial land uses followed by O'Connor Street to the west.

An aerial photo of the subject site is provided in **Figure 1** below.

Figure 1: Site Location



1.2 Proposed Development

Pursuant to the City of Ottawa's Official Plan (2021, Council Adopted), the subject site is located within the Downtown Core Transect, has an 'Evolving Neighbourhood' overlay, and a 'Hub' designation on Schedule B1.

The proposed development will replace the existing seven-storey commercial/office building at 84 Gloucester and the public parking lot at 100 Gloucester Street. At full buildout, the proposed development will consist of 315 dwellings and approximately 1,550 ft² GFA of ground-floor retail, and will be built in one phase. A total of 95 parking spaces will be provided in three levels of underground parking. Access to the proposed development will be provided via a driveway to an existing underground parking lot at 70 Gloucester Street/89-91 Nepean Street. For the purposes of this report, the development is assumed to be built out by 2025.

The proposed 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 expected to generate a net additional 60 person trips/peak hour; further assessment **is not required** based on this trigger.
- Location Triggers – The development is located in a Design Priority Area and Transit-Oriented Development (TOD) zone; further assessment **is required** based on this trigger.
- Safety Triggers – The development proposes no new access and does not flag any safety triggers; further assessment **is not 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.

O'Connor Street is a one-way arterial roadway that runs in a southbound direction between Wellington Street and Fifth Avenue. Within the study area, it has a three-lane urban cross-section, concrete sidewalks on both sides, a two-way protected bike lane on the east side, and an unposted regulatory speed limit of 50 km/h. On-street parking is permitted with the western curbside lane.

Metcalf Street is a one-way arterial roadway that runs in a northbound direction between Wellington Street and Monkland Avenue. Within the study area, it has a three-lane urban cross-section, concrete sidewalks on both sides, and an unposted regulatory speed limit of 50 km/h. Off-peak on-street parking is permitted within the eastern curbside lane.

Gloucester Street is a one-way local roadway that runs in a westbound direction between Elgin Street and Bronson Avenue. Within the study area, it has a single lane with an urban cross-section, concrete sidewalks on both sides, and an unposted regulatory speed limit of 50km/hr. On-street parking is permitted on both sides of the roadway.

Nepean Street is a one-way local roadway that generally runs in an eastbound direction between Elgin Street and Bay Street. Within the study area, it has a single lane with an urban cross-section,

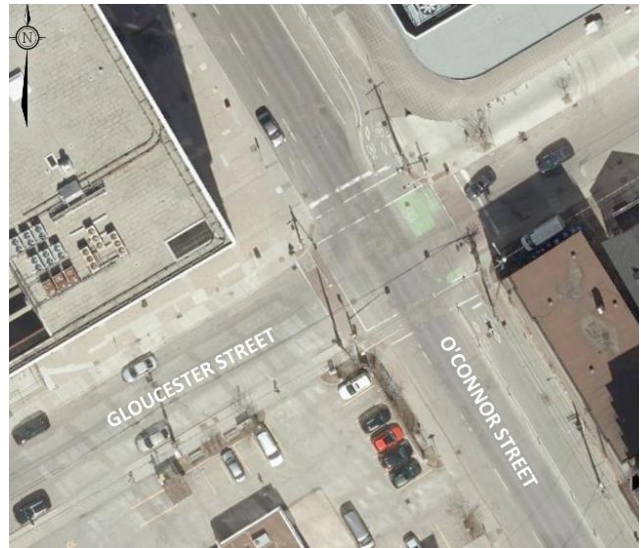
concrete sidewalks on both sides, and an unposted regulatory speed limit of 50km/hr. On-street parking is permitted on both sides of the roadway.

Laurier Avenue is an arterial roadway that generally runs in an east-west direction between Charlotte Street and Cambridge Street. Within the study area, it has a three-lane undivided urban cross-section, concrete sidewalks on both sides, and protected bike lanes on both sides of the road.

2.1.2 Intersections

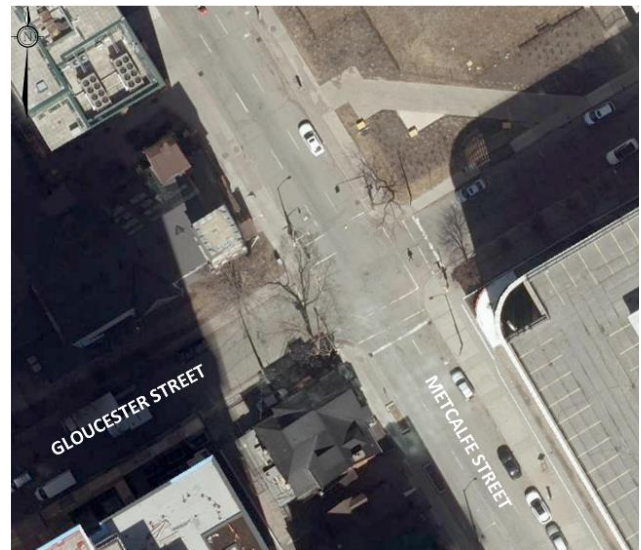
O'Connor Street/Gloucester Street

- Signalized four-legged intersection
- Southbound Approach (O'Connor Street): two through lanes, one shared through/right turn lane, protected two-way cycle lane
- Westbound Approach (Gloucester Street): one shared through/left turn lane
- Red brick crosswalks on both sides of O'Connor Street
- Standard crosswalks are provided on Gloucester Street
- A left-turn on red prohibition is in place on the westbound approach



Metcalfe Street/Gloucester Street

- Signalized four-legged intersection
- Northbound Approach (Metcalfe Street): two through lanes, one shared through/left turn lane
- Westbound Approach (Gloucester Street): One shared through/right turn lane
- Standard crosswalks are provided on all approaches



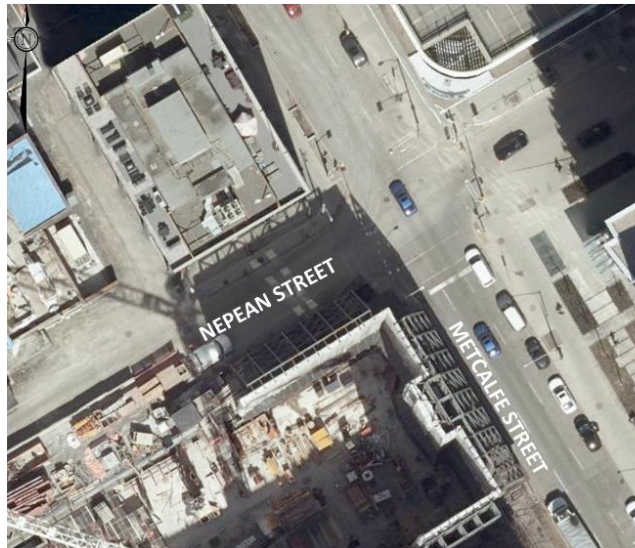
O'Connor Street/Nepean Street

- Side street stop-controlled intersection
- Southbound Approach (O'Connor Street): two through lanes, one shared through/right turn lane, one protected two-way cycle lane
- Eastbound Approach (Nepean Street): one right turn lane
- Red brick crosswalk on east side and standard crosswalk on the west side of O'Connor Street
- Planters and signage have been installed to prohibit the eastbound through movement (bicycles excepted)



Metcalfe Street/Nepean Street

- Signalized four-legged intersection
- Northbound Approach (Metcalfe Street): two through lanes, one shared through/right turn lane
- Eastbound Approach (Nepean Street): one shared through/left lane
- Standard crosswalks are provided on all approaches
- A left turn on red prohibition is in place on the eastbound approach



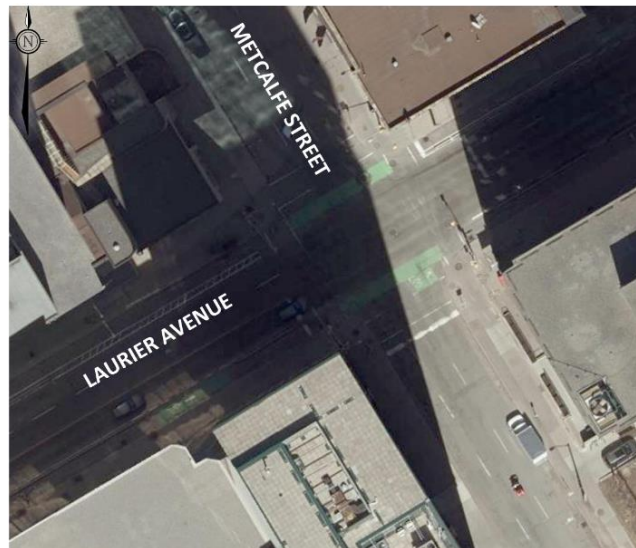
O'Connor Street/Laurier Avenue

- Southbound (O'Connor Street): one shared through/right turn lane, one through lane, one shared through/left turn lane and one protected two-way cycle lane
- Eastbound (Laurier Avenue): one shared through/right turn lane and one protected bike lane.
- Westbound (Laurier Avenue): one through lane, one left turn lane, and one protected bike lane.
- A right-turn on red prohibition is in place on the eastbound and southbound approaches.
- Standard crosswalks are provided on all approaches.



Metcalfe Street/Laurier Avenue

- Northbound (Metcalfe Street): one shared through/right turn lane, one through lane, and one shared through/left turn lane
- Eastbound (Laurier Avenue): one shared through/left turn lane and one protected bike lane
- Westbound (Laurier Avenue): one through lane, one shared through/right turn lane, and one protected bike lane
- A right-turn on red prohibition is in place on the westbound and northbound approaches
- A weekday peak period left turn prohibition is in place on the eastbound approach
- Standard crosswalks are provided on all approaches



2.1.3 Driveways

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

Gloucester Street, North Side:

- One driveway to a church at 152 Metcalfe Street
- One driveway for above ground public parking for 97-99 Gloucester Street
- Two one-way driveways to a commercial building with public parking at 234 Laurier Avenue

Gloucester Street, South Side:

- One driveway to takeout restaurant/residence for 160 Metcalfe Street
- One driveway for underground parking to a residential development at 70 Gloucester Street/89-91 Nepean Street

2.1.4 Pedestrian and Cycling Facilities

Sidewalks are provided on both sides of Gloucester Street, Nepean Street, Laurier Avenue, O'Connor Street, and Metcalfe Street.

In the City of Ottawa's primary cycling network, Laurier Avenue, O'Connor Street and Metcalfe Street are classified as Spine Routes. Laurier Avenue and O'Connor Street are designated as Cross-Town Bikeway 2 and 5 respectively. Along the east side of O'Connor Street there is a protected two-way bike lane. Along both sides of Laurier Avenue protected bike lanes are provided.

2.1.5 Transit

The closest OC Transpo bus stops in the vicinity of the subject site are described in **Table 1** and are shown in **Figure 2**. A summary of various routes which serve the study area is included in **Table 2**. Detailed route information and an excerpt from the OC Transpo System Map are included in **Appendix C**.

Table 1: OC Transpo Transit Stops

Stop	Location	Routes Served
#2484	East side of Bank Street, south of Gloucester Street	6, 7, 11
#2486	West side of Bank Street, north of Gloucester Street	6, 7, 11
#3008	South of Slater Street, between Metcalfe Street and Elgin Street	16, 19
#3052	South of Queen Street, between Bank Street and O'Connor Street	1, 6, 7, 11, 15, 16, 19, 57, 61, 75, 616
#7675	East of Elgin Street, South of Nepean Street	5, 14, 114
#8465	West of Elgin Street, North of Nepean Street	5, 14, 114

Table 2: OC Transpo Route Information

Route	From ↔ To	Frequency
1	Blair ↔ Tunney's Pasture	5-minute headways, 7-days per week
5	Billings Bridge ↔ uOttawa	30-minute headways, all-day service, 7-days per week
6	Greenboro ↔ Rockcliffe	15-minute headways, 7-days per week
7	Carleton ↔ St-Laurent	15-minute headways, 7-days per week
11	Lincoln Fields/Bayshore ↔ Laurier	15-minute headways, all-day service 7-days per week
14	St-Laurent ↔ Tunney's Pasture	15-minute headways, 7-days per week
15	Blair ↔ Parliament/Gatineau	10-minute headways, all-day service, 7-days per week
16	Main ↔ Tunney's Pasture/Westboro	15-minute headways, all-day service, 7-days per week
19	St-Laurent/Hurdman ↔ Parliament	30-minute headways, all-day service, 7-days per week
57	Bayshore/Crystal Bay ↔ Tunney's Pasture	Three times overnight
61	Terry Fox/Stittsville ↔ Tunney's Pasture/Gatineau	Three times overnight
75	Cambrian/Barrhaven Centre ↔ Tunney's Pasture/Gatineau	30-minute headways, all-day and limited overnight service, 7-days per week

Route	From ↔ To	Frequency
114	Carlington ↔ Rideau	Twice in the mornings Monday to Friday
616	Gloucester High School ↔ Parliament	Once per day in the direction of peak travel while the Montréal Road Revitalization Project is ongoing

Figure 2: OC Transpo Bus Stop Locations



2.1.6 Area Traffic Management

There are no Area Traffic Management (ATM) studies within the study area that have been completed or are currently in progress. There are speed bumps and posted advisory speed limit of 30km/h on Gloucester Street and Nepean Street.

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:

- Laurier Avenue/O'Connor Street November 22, 2018
- Laurier Avenue/Metcalfe Street November 22, 2018
- Gloucester Street/O'Connor Street March 21, 2017

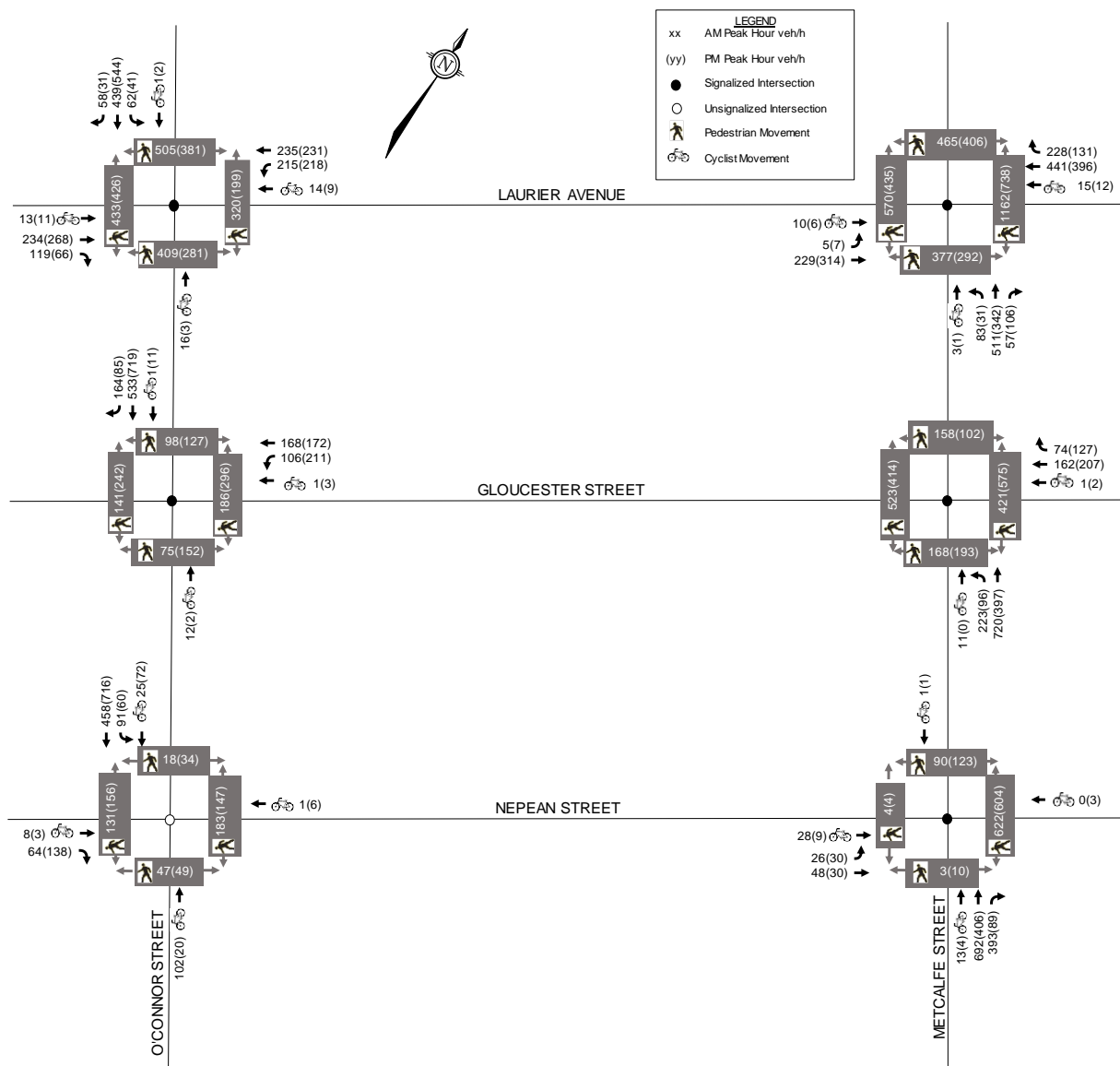
- Gloucester Street/Metcalf Street
- Nepean Street/O'Connor Street
- Nepean Street/Metcalf Street

April 4, 2017
 August 29, 2018
 September 19, 2019

It is noteworthy that since the 2018/2019 traffic counts along Nepean Street, the eastbound through movement at O'Connor Street has been prohibited. For the purposes of this report, it has been assumed that 50% of the eastbound through traffic at the O'Connor Street/Nepean Street have been rerouted to Laurier Avenue while the remaining have been rerouted to Cooper Street (outside the study area). Eastbound through and left turning volumes at Metcalfe Street/Nepean Street have also been reduced accordingly.

Observed weekday AM and PM peak hour traffic volumes at the study area intersections are shown in **Figure 3**. Peak hour summary sheets of the above traffic counts are included in **Appendix D**.

Figure 3: Existing Traffic Volumes



2.1.8 Collision Records

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

The collision data have been evaluated to identify collision patterns, which are defined in the 2017 TIA Guidelines as more than six collisions in five years for any one movement. **Table 3** summarizes the number of collisions at each intersection from January 1, 2016 to December 31, 2020. During the five-year period there were no reported fatal collisions in the analyzed area.

Table 3: Reported Collisions

Intersection/ Street Segment	Impact Types						Total
	Approaching	Angle	Sideswipe	Rear End	Turning Movement	SMV ⁽¹⁾ /Other	
Gloucester Street/Metcalfe Street	-	-	4	1	-	1	6
Gloucester Street/O'Connor Street	1	1	1	-	-	5	8
Gloucester Street between Metcalfe Street and O'Connor Street	-	-	1	-	-	3	4
Laurier Avenue/O'Connor Street	-	2	6	7	10	2	27
Laurier Avenue between Metcalfe Street and O'Connor Street	-	2	-	-	1	4	7
Metcalfe Street/Laurier Avenue	-	5	8	7	3	4	27
Metcalfe Street/Nepean Street	-	4	1	4	-	1	10
Nepean Street/O'Connor Street	-	10	5	1	1	2	19
Nepean Street between Metcalfe Street and O'Connor Street	-	-	3	-	1	3	7

1. SMV = Single Motor Vehicle

Gloucester Street/Metcalfe Street

A total of six collisions were reported at this intersection over the last five years, of which there were one rear-end impact, four sideswipe impact, and one single-vehicle/other impacts. All collisions resulted in property damage only. None of the collisions involved cyclists, and none involved a pedestrian.

Of the six collisions at this location, six of them occurred during clear conditions where weather was not a factor. Additionally, of the six collisions, five of them occurred during daylight hours.

As there are less than six collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Gloucester Street and Metcalfe Street.

Gloucester Street/O'Connor Street

A total of eight collisions were reported at this intersection over the last five years, of which there were one angle collision, one sideswipe impact, one approaching collision, and five single-vehicle/other impacts. Only three of the collisions at this location caused injuries, but none caused fatalities. None of the collisions involved cyclists, and three involved a pedestrian.

Of the eight collisions at this location, five of them occurred during clear conditions where weather was not a factor and three occurred during rainy conditions. Additionally, of the eight collisions, four of them occurred during daylight hours.

As there are less than 6 collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Gloucester Street and O'Connor Street.

Gloucester Street between Metcalfe Street and O'Connor Street

A total of four collisions were reported at this location over the last five years, of which there were one sideswipe impact, and three single-vehicle/other impacts. None of the collisions at this location caused injuries or fatalities. None of the collisions involved cyclists or pedestrians.

All the collisions occurred during clear conditions where weather was not a factor. Additionally, of the four collisions, two of them occurred during daylight hours.

As there are less than six collisions of any specific impact type, there are no identifiable collision patterns at Gloucester Street between Metcalfe Street and O'Connor Street.

Laurier Avenue/O'Connor Street

A total of twenty-seven collisions were reported at this intersection over the last five years, of which there were two angle collision, six sideswipe impact, seven rear end collisions, ten turning movement collisions, and two single-vehicle/other impacts.

Ten of the collisions at this location caused injuries, but none caused fatalities. Seven of the collisions involved cyclists, and one involved a pedestrian. All seven of the collisions involving cyclists involved cyclists travelling east and vehicles making an improper turn or failing to yield right-of-way, five of the vehicles were traveling east and turning right and two of the vehicles were traveling west and turning left. The number of cyclist collisions at this intersection is a result of high cyclist and vehicle turning volumes. The intersection has green pavement markings delineating bike paths within the intersection and bicycle signals at each approach. On the eastbound approach right turn on red lights are illegal and signage noting that right turning vehicles must yield to cyclists are present, additionally the stop bar for vehicles is setback roughly 5m from the cyclist stop bar. No further mitigation measures are identified.

Of the twenty-seven collisions at this location, twenty-four of them occurred during clear conditions where weather was not a factor and three occurred during snowy conditions. Additionally, of the twenty-seven collisions, twenty-four of them occurred during daylight hours.

Of the six sideswipe collisions, three involved westbound vehicles, two involved southbound vehicles, and one involved an eastbound vehicle.

Of the seven rear end impacts, three involved westbound vehicles, two involved southbound vehicles, and two involved eastbound vehicles.

Of the ten turning movement collisions, six involved eastbound vehicles, two involved southbound vehicles, and two involved westbound vehicles. The ten turning movement collisions include the seven collisions involving cyclists that were previously discussed.

Laurier Avenue between Metcalfe Street and O'Connor Street

A total of seven collisions were reported at this intersection over the last five years, of which there were two angle collisions, one turning movement collisions, and four single-vehicle/other impacts. Only two of the collisions at this location caused injuries, but none caused fatalities. One of the collisions involved a cyclist, and one involved a pedestrian.

All of the collisions occurred during clear conditions where weather was not a factor. Additionally, of the seven collisions, five of them occurred during daylight hours.

As there are less than six collisions of any specific impact type, there are no identifiable collision patterns at the location of Laurier Avenue between Metcalfe Street and O'Connor Street.

Metcalfe Street/Laurier Avenue

A total of twenty-seven collisions were reported at this intersection over the last five years, of which there were seven rear-end impact, eight sideswipe impacts, five angle collisions, three turning movement collisions, and four single-vehicle/other impacts. Only three of the collisions at this location caused injuries, but none caused fatalities. Two of the collisions involved cyclists, and none involved a pedestrian.

Of the twenty-seven collisions at this location, twenty-two of them occurred during clear conditions where weather was not a factor, two occurred in snowy conditions, two occurred in rainy conditions, and one occurred during freezing rain conditions. Additionally, of the twenty-seven collisions, eighteen of them occurred during daylight hours, six occurred during dark lighting, and three in dusk/dawn lighting.

Of the eight sideswipe impacts four involved northbound vehicles, two involved westbound vehicles, and two involved eastbound vehicles.

Of the seven rear end impacts three involved eastbound vehicles, two involved westbound vehicles, and two involved northbound vehicles.

As there are less than six collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Metcalfe Street and Laurier Avenue.

Metcalfe Street/Nepean Street

A total of ten collisions were reported at this intersection over the last five years, of which there were four rear-end impact, one sideswipe impacts, four angle collisions, and one single-vehicle/other impacts. Only one of the collisions at this location caused injuries, but none caused fatalities. None of the collisions involved cyclists or pedestrians.

Of the ten collisions, nine occurred during clear conditions where weather was not a factor and one occurred in rainy conditions. Additionally, of the ten collisions, seven of them occurred during daylight hours.

As there are less than six collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Metcalfe Street and Nepean Street.

Nepean Street/O'Connor Street

A total of nineteen collisions were reported at this intersection over the last five years, of which there were one rear-end impact, five sideswipe impacts, ten angle collisions, one turning movement collisions, and two single-vehicle/other impacts. Six of the collisions at this location caused injuries, but none caused fatalities. Four of the collisions involved cyclists, and two involved a pedestrian.

Of the nineteen collisions at this location, eighteen of them occurred during clear conditions where weather was not a factor and one occurred during snowy conditions. Additionally, of the eighteen collisions, fifteen of them occurred during daylight hours.

Of the ten angle impacts, eight involved an eastbound through traveling vehicle colliding with a southbound vehicle, one involved an eastbound right turning vehicle colliding with a southbound vehicle, and one involved a westbound vehicle (traveling the wrong way) colliding with a southbound vehicle. In 2020, the City implemented planters and signage to prohibit the eastbound through movement attributing to the above collision pattern. No further mitigation measures are identified.

Nepean Street between Metcalfe Street and O'Connor Street

A total of seven collisions were reported at this intersection over the last five years, of which there were three sideswipe impacts, one turning movement impact, and three single-vehicle/other impacts. None of the collisions at this location caused injuries or fatalities. None of the collisions involved cyclists, and none involved a pedestrian.

Of the seven collisions at this location, all of them occurred during clear conditions where weather was not a factor. Additionally, of the seven collisions, six of them occurred during daylight hours.

As there are less than six collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Nepean Street between Metcalfe Street and O'Connor Street.

2.2 Planned Conditions

2.2.1 Planned Transit and Roadway Projects

The City's 2013 Transportation Master Plan (TMP) does not identify any roadway or transit projects within the study area.

2.2.2 Other Area Developments

In proximity of the proposed development, there are multiple other developments that are approved, or in the approval process. Other developments in the area include:

- 96 Nepean Street – A revised Community Transportation Study/Transportation Impact Study (CTS/TIS) was prepared by Novatech in 2012 in support of a 27-storey residential building containing 201 units and 161 parking spaces. The study estimated that the full development would generate 59 and 57 two-way vehicle trips during the AM and PM peak hours, respectively. The CTS assumed a buildout year of 2013 however recent satellite imagery shows the building has not been completed.
- 180 Metcalfe Street – A TIA Strategy Report was prepared by Parsons in 2018 in support of a 27-storey apartment building containing 303 units and 490m² of retail. The redevelopment is expected to be completed in 2022 or 2023. The TIA Strategy Report estimated that the development would generate 58 and 74 two-way vehicle trips during the AM and PM peak hours, respectively.
- 108 Nepean Street and 257 Lisgar Street - A TIA Strategy Report was prepared by Parsons in 2021 in support of a 27-storey residential building containing 295 units. The development is anticipated to be complete by 2022. The TIA Strategy Report estimated that the development would generate 31 vehicle trips during both the AM and PM peak hours.

- 142-148 Nepean Street– Currently occupied by a low-rise apartment building at 142 Nepean Street the subject site would be redeveloped as a surface level parking lot with 30 parking spaces. A TIA was not prepared for this development
- 70 Gloucester and 89-91 Nepean – A TIA was prepared by Novatech in 2019 in support of the addition of a 253-space parking garage to a previously approved tower developments that included a total of 488 dwellings and 121m² of retail space. Full buildout is planned in 2023. The TIA estimated that the site would generate 260 and 283 net new two-way vehicle trips during the AM and PM peak hours, respectively.

2.3 Study Area and Time Periods

The study area for this report includes the boundary roadway Gloucester Street as well as the following intersections:

- O’Connor Street/Laurier Avenue
- O’Connor Street/Gloucester Street
- O’Connor Street/Nepean Street
- Metcalfe Street/Laurier Avenue
- Metcalfe Street/Gloucester Street
- Metcalfe Street/Nepean Street

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the ‘worst case’ combination of site generated traffic and adjacent street traffic. Analysis will be completed for the 2025 build-out year and 2030 horizon year.

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
Design Review Component			
4.1 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
4.2 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	Not Exempt

Module	Element	Exemption Criteria	Status
Network Impact Component			
4.5 Transportation Demand Management	<i>All elements</i>	<ul style="list-style-type: none"> Not required for non-residential site plans expected to have fewer than 60 employees and/or students on location at any given time 	Not Exempt
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	<ul style="list-style-type: none"> Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds 	Exempt
4.8 Network Concept	<i>All elements</i>	<ul style="list-style-type: none"> Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning 	Exempt

As confirmed by City staff, the TIA report is limited to the Design Review components, as well as Module 4.5 (Transportation Demand Management).

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

Network Impact Component

- Module 4.5: Transportation Demand Management

3.0 FORECASTING

3.1 Development-Generated Travel Demand

3.1.1 Trip Generation

As a building containing office space and commercial uses and a public parking lot currently exist at 84 and 100 Gloucester Street the net increase of person trips was studied. The existing commercial gross floor area (GFA) and public parking spaces have been estimated based on aerial photography. For the purposes of this analysis, the existing development is assumed to consist of 20,450ft² of office, 8,180ft² of retail, and 60 public parking spaces. The proposed redevelopment will include a high-rise apartment building with 315 units and 1,550ft² of ground floor retail.

Gloucester Street forms the border between the Ottawa Centre (north side) and Ottawa Inner Area (south side). Although the proposed development is located within the Ottawa Inner Area, the development proposes reduced parking and increased bicycle parking in line with the City's initiatives for the Ottawa Centre. As such, modal shares for the Ottawa Centre were reviewed for the purposes of this report.

Existing Development

The number of vehicle trips generated by the existing public parking use has been estimated using typical peak hour rates (conservatively taken as the lower of range) presented in the ITE *Traffic Engineering Handbook, 5th Edition*. Each vehicle trip generated by the public parking use has been

conservatively assumed as one person trip. Relevant excerpts from the ITE *Traffic Engineering Handbook, 5th Edition* are shown in **Appendix F**.

Person trips generated by the existing commercial uses have been estimated using relevant rates in the *ITE Trip Generation Manual, 11th Edition*, and converted to person trips using a 1.28 factor.

Peak hour person trips for the existing commercial uses are summarized in the following table:

Table 5: Person Trips Generated by Existing Development

Land Use	ITE Code	Units/GFA	AM Peak Period (pph ⁽¹⁾)			PM Peak Period (pph)		
			IN	OUT	TOT	IN	OUT	TOT
Office	710	20,450 ft ²	49	6	55	9	47	56
Retail	822	8,180 ft ²	14	10	24	43	44	87
Public Parking	-	60 spaces	24	6	30	6	24	30
TOTAL			87	22	109	58	115	173

1. PPH=Person Trips per Hour

The modal shares for the existing office and retail development are assumed to be consistent with the modal shares outlined in the 2020 TRANS Trip Generation Manual, specific to the Ottawa Centre Area region. The modal shares for the office use have been assumed to follow Table 12 within the 2020 TRANS Trip Generation Manual as an employment generator and the AM peak hour modal share is assumed to be representative of the PM peak hour. As the AM peak hour commercial modal shares shown in Table 13 of the TRANS Trip Generation Manual are based on a small sample size, the PM peak hour modal shares were carried for the purposes of this analysis. For the purposes of this report, the modal shares have been rounded to the nearest 5%. All person trips generated by the public parking use are assumed to be vehicle trips. A full breakdown of the existing trips by modal share is shown in **Table 6**.

Table 6: Existing Development - Peak Hour Person Trips

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Office Person Trips		49	6	55	9	47	56
Auto Driver	25%	12	2	14	2	12	14
Auto Passenger	5%	3	0	3	0	2	2
Transit	55%	27	3	30	5	26	31
Cyclist	5%	2	0	2	1	2	3
Pedestrian	10%	5	1	6	1	5	6
Retail Person Trips		14	10	24	43	44	87
Auto Driver	20%	3	2	5	9	9	18
Auto Passenger	10%	1	1	2	4	5	9
Transit	30%	4	3	7	13	13	26
Cyclist	5%	1	0	1	2	2	4
Pedestrian	35%	5	4	9	15	15	30
Public Parking Person Trips		24	6	30	6	24	30
Auto Driver	100%	24	6	30	6	24	30
TOTAL PERSON TRIPS		87	22	109	58	115	173
AUTO DRIVER		39	10	49	17	45	62
AUTO PASSENGER		4	1	5	4	7	11
TRANSIT		31	6	37	18	39	57
CYCLIST		3	0	3	3	4	7
PEDESTRIAN		10	5	15	16	20	36

From the previous tables, the existing development is estimated to generate 109 person trips (including 49 vehicle trips) during the AM Peak Hour and 173 person trips (including 62 vehicle trips) during the PM peak hour).

Proposed Retail Development

Consistent with the existing development, trips generated by the ground floor retail have been calculated using the *ITE Trip Generation Manual, 11th Edition*, and converted to person trips using a 1.28 factor.

Peak hour person trips for the proposed retail development are summarized in the following table:

Table 7: Trips Generated by the Proposed Retail Development

Land Use	ITE Code	GFA	AM Peak Hour (pph ⁽¹⁾)			PM Peak Hour (pph)		
			IN	OUT	TOT	IN	OUT	TOT
Retail	822	1,550ft ²	3	2	5	13	14	17

1. PPH=Person Trips per Hour

The mode share used for the retail component of the proposed development was assumed to be the same as the one used for the retail portion of the existing development. A full breakdown of the projected person trips by modal share is shown in **Table 8**.

Table 8: Proposed Development – Peak Hour Person Trips

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Commercial Person Trips		3	2	5	13	14	17
Auto Driver	20%	1	0	1	3	2	5
Auto Passenger	10%	0	0	0	2	1	3
Transit	30%	1	1	2	4	4	8
Cyclist	5%	0	0	0	1	1	2
Pedestrian	35%	1	1	2	5	4	9

Proposed Residential Development

For the residential component of the proposed development person trips have been estimated using the City’s 2020 TRANS Trip Generation Manual, prepared in 2020 by WSP Canada. The trip generation rates are taken from Table 3 and correspond to High-Rise Residential. The directional split between inbound and outbound trips are based on the blended splits presented in Table 9 of the report. The person trips generated during the peak period are presented in the following table.

Table 9: Trips Generated by the Proposed Residential Development

Land Use	TRANS Rate	Units	AM Peak Period (ppp ⁽¹⁾)			PM Peak Period (ppp)		
			IN	OUT	TOT	IN	OUT	TOT
High-Rise Apartments	AM: 0.80 PM: 0.90	315	78	174	252	165	119	284

1. PPP=Person Trips per Period

The 2020 TRANS Trip Generation Manual provides modal shares for residential developments within the Ottawa Centre Area. However, developments within 600m of rapid transit stations can be considered as Transit Oriented Developments (TOD). In TOD zones, the transit share is assumed to increase significantly compared to any TRANS O-D District. A summary of the TRANS residential mode shares, TOD mode shares, and assumed residential mode shares is provided in **Table 10**.

Table 10: TRANS and TOD Mode Share Comparison

	Auto Driver	Auto Passenger	Transit	Cycling	Walking
TRANS	18%	5%	24%	1%	52%
TOD	15%	5%	65%	5%	10%
Proposed	15%	5%	35%	5%	40%

To account for the development’s proximity to the Parliament Transit Station the walking and driver mode shares of the Ottawa Centre Area have been adjusted downwards.

Using the trips generated in **Table 9** and the proposed mode share from **Table 10** trips generated during the peak period were broken down by modal share in **Table 11**. After breaking down the trips by modal shares in **Table 11** adjustment factors were applied to convert the peak period trips to peak hour trips in **Table 12**.

Table 11: Peak Period Person Trips by Modal Share

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
Residential Person Trips		78	174	252	165	119	284
Auto Driver	15%	12	26	38	25	18	43
Auto Passenger	5%	4	9	13	8	6	14
Transit	35%	27	61	88	57	42	99
Cyclist	5%	4	9	13	8	6	14
Pedestrian	40%	31	69	101	66	48	114

Table 12: Peak Hour Person Trips by Mode Share

Travel Mode	Adjustment Factor		AM Peak Hour			PM Peak Hour		
	AM	PM	In	Out	Total	In	Out	Total
Residential Person Trips			43	95	138	79	59	138
Auto Driver	0.48	0.44	6	12	18	11	8	19
Auto Passenger	0.48	0.44	2	4	6	3	3	6
Transit	0.55	0.47	15	33	48	27	20	47
Cyclist	0.58	0.48	2	6	8	4	3	7
Pedestrian	0.58	0.52	18	40	58	34	25	59

Net Trip Generation

A full breakdown of the net person trips generated by modal share is shown in **Table 13**.

Table 13: Net Person Trip Generation

Travel Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
<i>Existing Development</i>						
Auto Driver	39	10	49	17	45	62
Auto Passenger	4	1	5	4	7	11
Transit	31	6	37	18	39	57
Cyclist	3	0	3	3	4	7
Pedestrian	10	5	15	16	20	36
Total	87	22	109	58	115	173
<i>Proposed Development</i>						
Auto Driver	7	12	19	14	10	24
Auto Passenger	2	4	6	5	4	9
Transit	16	34	50	31	24	55
Cyclist	2	6	8	5	4	9
Pedestrian	19	41	60	39	29	68
Total	46	97	143	94	71	165
<i>Net Trips</i>						
Auto Driver	-32	2	-30	-3	-35	-38
Auto Passenger	-2	3	1	1	-3	-2
Transit	-15	28	13	13	-15	-2
Cyclist	-1	6	5	2	0	2
Pedestrian	9	36	45	23	9	32
Total	-41	75	34	36	-44	-8

3.1.2 Trip Distribution

As the trip generation trigger is not met, trip distribution assumptions have not been included.

3.2 Background Traffic

3.2.1 Other Area Developments

A review of other area development traffic has been conducted, per the developments listed in Section 2.2.2. Traffic generated by these developments have been considered in this analysis and added to the future background traffic volumes, as they are currently under construction, approved, or in the approval process. Relevant excerpts of the traffic studies associated with the developments below are included in **Appendix G**.

96 Nepean Street

Traffic generated by the proposed 201 apartment units has been added to the background traffic volumes.

180 Metcalfe Street

Traffic generated by the proposed 303 apartment units and 490m² of retail has been added to the background traffic volumes.

108 Nepean Street and 257 Lisgar Street

Traffic generated by the proposed 295 apartment units has been added to the background traffic volumes.

142-148 Nepean Street

As a TIA was not prepared for this development, traffic generated by this site has not been added to the background traffic volumes.

70 Gloucester and 89-91 Nepean

Traffic generated by the proposed 488 apartment units, 121m² of retail, and 253 space public parking garage has been added to the background traffic volumes.

3.2.2 General Background Growth Rate

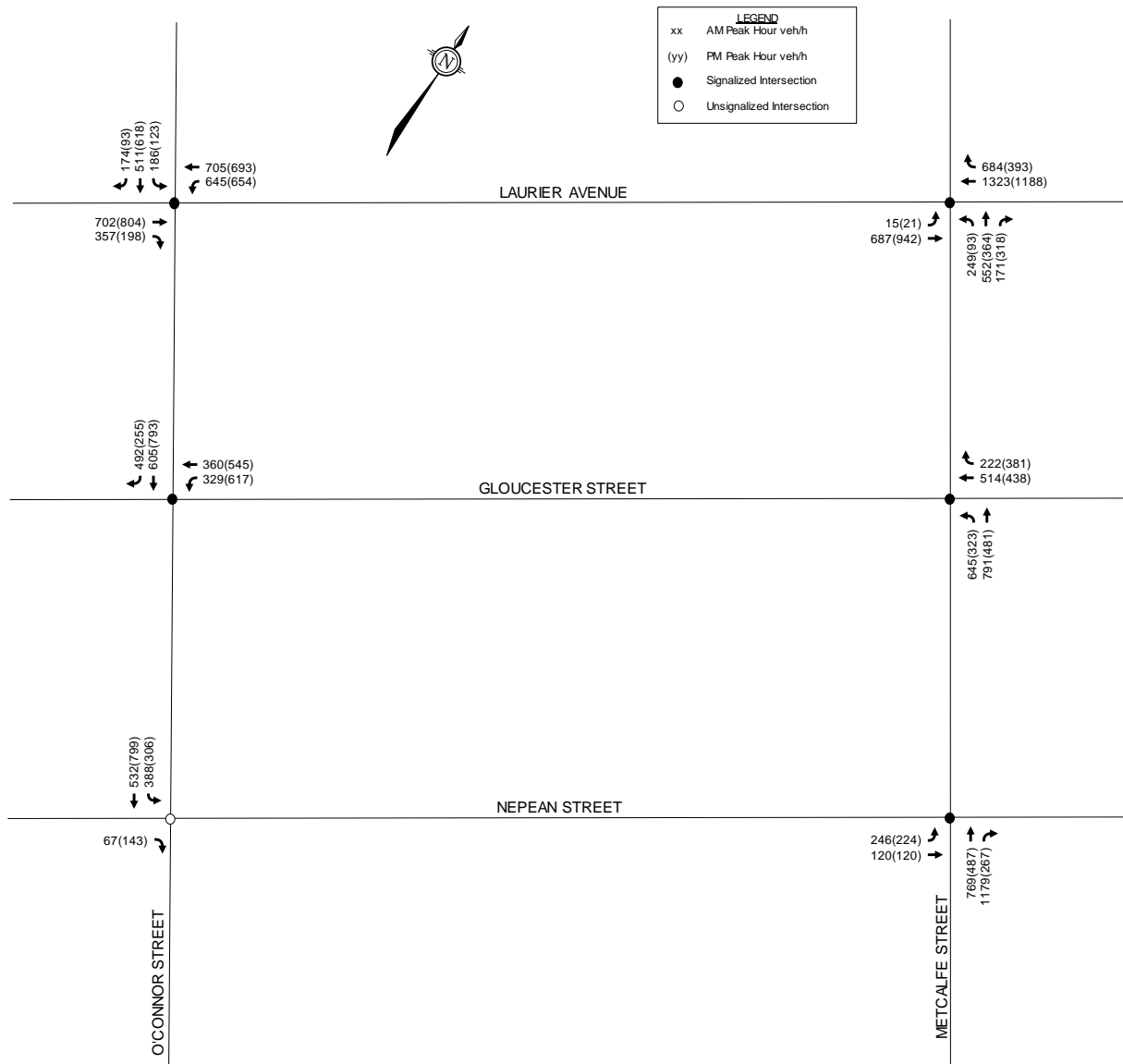
A rate of background growth has been established through a review of the city of Ottawa's Strategic Long-Range Model (comparing snapshots of 2011 and 2031 AM peak volumes) from the O'Connor Street and Metcalfe Street corridor. On the roadways within and around the study area, the snapshots suggest a growth rate of roughly -2% and +1% per annum.

A background growth rate of 0% per annum has been applied to traffic within the study area based on the snapshots from the City's Strategic Long-Range Model. Growth within the study area is assumed to be covered through the addition of nearby development traffic.

Snapshots of the city of Ottawa's Strategic Long-Range Model for the 2011 and 2031 AM peak volumes can be found in **Appendix H**.

The background traffic volumes for the 2025 buildout year and 2030 horizon year are shown in **Figure 4**.

Figure 4: 2025/2030 Background Traffic Volumes



4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

Pathway connections will be provided between the building entrances and existing sidewalk along Gloucester Street. A mid-block pathway will also be provided at the ground level between the exiting sidewalk along Gloucester Street and a rear amenity area.

A total of 292 bicycle parking spaces will be provided within the parking garage and an additional 23 will be provided around the exterior of the building. A further review of the parking provisions with respect to the City’s *Zoning By-law* (ZBL) is provided in the subsequent section.

The nearest bus stops to the subject site are discussed in Section 2.1.5 and shown in **Figure 2**. OC Transpo’s service design guidelines for peak period service is to provide service within a five-minute (400m) walk of home, work, or school for 95% of urban residents. All of the transit stops outlined in Section 2.1.5 are within the 400m distance and provide service to transit routes #1, #5, #6, #7, #11, #14, #15, #16, #19, #57, #61, #75, #114, and #616.

A review of the City’s *Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist* has been conducted. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. A copy of this checklist is included in **Appendix I**. In addition to the required measures, the proposed development also meets the following ‘basic’ or ‘better’ measures as defined in the *TDM-Supportive Development Design and Infrastructure Checklist*.

- Locate building close to the street, and do not locate parking areas between the street and building entrances;
- Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations;
- Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort;
- Provide safe, direct, and attractive walking routes from building entrances to nearby transit stops;
- Provide lighting, landscaping, and benches along walking and cycling routes between building entrances and streets, sidewalks, and trails.

4.1.2 Circulation and Access

Garbage bins will be wheeled from a garbage room on the ground floor down a pathway west of the proposed building for curbside collection along Gloucester Street. The fire route for the development is curbside along Gloucester Street.

4.2 Parking

4.2.1 Parking Supply

The subject site is located in Area B of Schedule 1 and Area X of Schedule 1A of the City’s ZBL, and is completely located within 600m of the rapid transit corridor shown in Schedule 2A of the City’s ZBL.

The vehicle and bicycle parking requirements for the proposed development, as identified in Sections 101, 102, 103, and 111 of the ZBL, are summarized in **Table 14**.

Table 14: Parking Requirements

Land Use	Rate	Units/GFA	Required
<i>Minimum Vehicle Parking Requirements</i>			
Apartment, High-Rise	0.5 spaces per unit (residents) excluding the first 12 units	315 units	137 ⁽¹⁾
	0.1 per unit up to a max of 30 spaces per building (visitors) excluding the first 12 units		30
Retail	No off-street parking required for commercial uses <200 m ² located entirely within a residential building	144 m ²	0
Minimum Required			167
Total Parking Proposed			95

Land Use	Rate	Units/GFA	Required
Maximum Vehicle Parking Requirements			
Apartment, Mid-Rise	1.75 spaces per dwelling unit (combined total of resident and visitor parking)	315 units	551
Retail Store	3.6 spaces per 100 m ² GFA	144 m ²	5
Maximum Permitted			556
Total Parking Proposed			95
Minimum Bicycle Parking Requirements			
Apartment, Mid-Rise	0.5 per dwelling unit	315 units	158
Retail Store	1.0 per 250 m ² GFA	144 m ²	1
Minimum Required			159
Total Bicycle Parking Proposed			315

1. As per Section 101(6)(c) where all parking for a development is provided below grade with the same building the required parking may be reduced by the lesser of either 10 per cent of the required parking spaces or 20 parking spaces

A total of 30 visitor parking spaces are proposed, adhering to the requirements of the ZBL. However, the proposed 65 resident parking spaces equates to approximately 50% of the ZBL requirement.

A total of 315 bicycle parking spaces are proposed, exceeding the requirements of the ZBL.

The Accessibility for Ontarians with Disabilities Act states that organizations providing services to the public must provide accessible parking. As there are 30 visitor parking spaces provided a minimum of one Type A and one Type B accessible parking space would be required. As one Type A and one Type B barrier free parking spaces are provided this requirement is met.

4.2.2 Spillover Parking

The proposed development provides approximately 50% of the required resident parking spaces identified by the City’s ZBL. As such, a review of the potential spillover parking has been conducted.

As part of the 70 Gloucester Street/89-91 Nepean Street development, 328 parking spaces were constructed for the 488 units. According to recent data from the proponent, 177 spaces are currently rented by the tenants. This equates to a rate of approximately 0.36 spaces rented per unit for the 488 units. Applying the same usage factor to the proposed development results in a need for 113 spaces for the 315 units. The proposed 65 resident parking spaces for the proposed development is 48 spaces short of the anticipated demand.

Based on the TIA prepared for 70 Gloucester Street/89-91 Nepean Street, the City’s ZBL identifies a requirement of 257 parking spaces for the 488 units. The surplus parking beyond the ZBL requirement is permitted as a public parking use. As 328 parking spaces were constructed for this development, this equates to 71 parking spaces being available for public parking. The available public parking spaces at 70 Gloucester Street/89-91 Nepean Street exceeds the proposed parking shortfall, should the parking demand for the subject development be similar to the adjacent building. Should the parking demand at the proposed development exceed the proposed parking supply, additional parking spaces can be leased individually from the public parking use at 70 Gloucester Street/89-91 Nepean Street.

Additionally, the subject site borders Area Z of Schedule 1A as the north side of Gloucester Street falls within Area Z and Section 101(2) of the City’s ZBL identifies that no off-street motor vehicle parking is required to be provided within Area Z. Although a rate of 0.36 spaces per unit were rented

for the 488 units at 70 Gloucester Street/89-91 Nepean Street, the sites proximity to Area Z of the City’s ZBL suggests the parking demand may vary.

As the anticipated spillover parking demand can be accommodated by the public parking use at 70 Gloucester Street/89-91 Nepean Street, and to limit the oversupply of parking in the downtown area, the proposed parking reduction is recommended.

4.3 Boundary Streets

This section provides a review of the boundary street, Gloucester Street, using complete streets principles. The Multi-Modal Level of Service (MMLOS) guidelines produced by IBI Group in October 2015 have been used to evaluate the LOS of boundary roadways for each mode of transportation.

The roadway is located within 600m of the Parliament Transit Station. Gloucester Street is classified as a local road. While Gloucester Street has an unposted regulatory speed limit of 50km/h the operational speed of the road has been assumed to be 40km/h, this is due to the presence of speed bumps and the advisory speed limit signs of 30km/h.

4.3.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of Gloucester Street. Exhibit 22 of the MMLOS guidelines suggests a target PLOS A for all roadways within 600m of a rapid transit station. The results of the segment PLOS analysis are summarized in **Table 15**.

Table 15: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed ¹	PLOS
Gloucester Street (north curb)					
1.5m	0m	< 3,000 vpd	Yes	40 km/h	E
Gloucester Street (south curb)					
1.5m	0m	< 3,000 vpd	Yes	40 km/h	E

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

4.3.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment BLOS of Gloucester Street. Exhibit 22 of the MMLOS guidelines suggests a target BLOS D for Gloucester Street. The results of the segment BLOS analysis are summarized in **Table 16**.

Table 16: BLOS Segment Analysis

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	BLOS
Gloucester Street					
Local	No Class	Mixed Traffic	1	40 km/h	A

4.3.3 Transit Level of Service (TLOS)

Gloucester Street does not provide transit service; therefore the transit level of service (TLOS) has not been evaluated.

4.3.4 Truck Level of Service (TkLOS)

Gloucester Street is not a truck route and Exhibit 22 of the MMLOS guidelines does not suggest a target truck level of service (TkLOS) for Gloucester; therefore the TkLOS has not been evaluated.

4.3.5 Segment MMLOS Summary

A summary of the results of the segment MMLOS analysis for the boundary roads is provided in **Table 17**.

Table 17: Segment MMLOS Summary

Segment	PLOS	BLOS	TLOS	TkLOS
Gloucester Street	E	A	-	-
Target	A	D	-	-

The target PLOS A is not achieved along Gloucester Street. The sidewalk will be widened to 2m in width along the sites frontage, achieving a PLOS B.

The target BLOS D is achieved within the study area along Gloucester Street.

4.4 Access Intersections

4.4.1 Access Design

The development proposes no new access and will utilize the access located at 70 Gloucester Street. As the 70 Gloucester Street access was approved as part of a previous application, a further review of this access has not been completed.

4.5 Transportation Demand Management

4.5.1 Context for TDM

The proposed development consists of a total of 315 residential units. The unit breakdown is summarized as follows:

- Studio: 24 units
- One Bedroom: 186 units; and
- Two Bedroom: 105 units.

4.5.2 Need and Opportunity

As the proposed development is located within a TOD zone, the Ottawa Centre modal shares presented in the 2020 TRANS Trip Generation Manual have been adjusted to reflect a slightly higher transit mode share. The assumed modal shares for the development decrease the auto modal share from 18% (Ottawa Centre) to 15%. Should the development only meet the TRANS modal shares, the development is anticipated to generate an additional 3-4 vehicle trips during the AM and PM peak hours. However, as the proposed development is located in close proximity to the Parliament LRT station, vehicle parking will be slightly undersupplied, and the development will provide a suite of TDM measures described in the following section, the development is anticipated to meet the target modal shares.

4.5.3 TDM Program

A review of the Transportation Demand Management (TDM) – Measures Checklist has been conducted. A copy of the TDM checklist is included in **Appendix I**.

The following measures will be implemented upon completion of the proposed development:

- Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium);
- Display relevant transit schedules and route maps at entrances (multi-family, condominium);
- Unbundle parking cost from purchase price (condominium); and
- Provide a multimodal travel option information package to new residents.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

- The proposed residential development is expected to generate a net increase of 34 person trips in the AM peak hour and a net decrease of 8 person trips in the PM peak hour.

Development Design

- Pathway connections will be provided between the building entrances and existing sidewalk along Gloucester Street. A mid-block pathway will also be provided at the ground level between the exiting sidewalk along Gloucester Street and a rear amenity area.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.
- Garbage bins will be wheeled from a garbage room on the ground floor down a pathway west of the proposed building for curbside collection along Gloucester Street. The fire route for the development is curbside along Gloucester Street.

Parking

- A total of 30 visitor parking spaces are proposed, adhering to the requirements of the ZBL. However, the proposed 65 resident parking spaces equates to approximately 50% of the ZBL requirement.
- A total of 315 bicycle parking spaces are proposed, exceeding the requirements of the ZBL.
- As the anticipated spillover parking demand can be accommodated by the public parking use at 70 Gloucester Street/89-91 Nepean Street, and to limit the oversupply of parking in the downtown area, the proposed parking reduction is recommended.

Boundary Street Design

- The target Pedestrian Level of Service (PLOS) A is not achieved along Gloucester Street. The sidewalk will be widened to 2m in width along the sites frontage, achieving a PLOS B.

- The target Bicycle Level of Service (BLOS) D is achieved within the study area along Gloucester Street.

Access Design

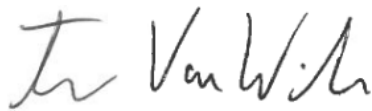
- The development proposes no new access and will utilize the access located at 70 Gloucester Street. As the 70 Gloucester Street access was approved as part of a previous application, a further review of this access has not been completed.

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
 - Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium);
 - Display relevant transit schedules and route maps at entrances (multi-family, condominium);
 - Unbundle parking cost from purchase price (condominium); and
 - Provide a multimodal travel option information package to new residents.

NOVATECH

Prepared by:



Trevor Van Wiechen, M.Eng.
E.I.T.,
Transportation

Reviewed by:



Brad Byvelds, P.Eng.
Project Coordinator,
Transportation

APPENDIX A

Proposed Site Plan



100 GLOUCESTER-CLARIDGE HOMES

100 Gloucester St, Ottawa K2P 0A4

DRAWING LIST	
A-000	COVER SHEET
A-010	SITE PLAN
A-020	SHADOW ANALYSIS
A-021	EXISTING SHADOW ANALYSIS
A-030	MODEL VIEWS
A-031	MODEL VIEWS
A-032	MODEL VIEWS
A-090	UNDERGROUND FLOOR PLAN - P1
A-091	UNDERGROUND FLOOR PLAN - P2 & P3
A-100	GROUND FLOOR PLAN
A-101	FLOOR PLANS
A-102	FLOOR PLANS
A-102	FLOOR PLANS
A-200	SECTION CUTS
A-300	ELEVATIONS
A-301	ELEVATIONS

CLIENT: **CLARIDGE HOMES**
 210 Gladstone Avenue
 OTTAWA, ONTARIO K2P 0Y6
 T: (613) 233-6030 F: (613) 233-8290

ARCHITECTS: **EVOQ**
 1435, RUE SAINT-ALEXANDRE, BUREAU 1000
 MONTRÉAL (QUÉBEC) H3A 2G4
 T: 514-933-9400 F: 514-933-9498
 info@evoqarchitecture.com

LANDSCAPE ARCHITECTS:

STRUCTURAL ENGINEERS:

CIVIL ENGINEERS: **NOVATECH ENGINEERING CONSULTANTS LTD.** URBAN DESIGN CONSULTANTS:
 ENGINEERS & PLANNERS
 Suite 200, 260 Michael Cowpland Dr.
 Ottawa, Ontario, Canada K2M 0R6
 Telephone: (613) 254-9643
 Facsimile: (613) 254-9667
 Email: novan@novatech-eng.com

TOPOGRAPHICAL SURVEYOR: **Annis O'Sullivan, Vollebakk Ltd., Ontario Land Surveyors**
 14 Concourse Gate, Suite 500
 Nepean, Ontario, K2E 7S6
 Tel: (613) 727-0850
 email: nepean@anniso.com

KEY PLAN:

PROJECT SUMMARY	
PROJECT STATISTICS	
SITE AREA (m ²)	1 832
BUILDING HEIGHT (STOREYS)	27
UNIT SUMMARY	
TOWNHOME (A)	0
STUDIO (B)	24
1 BEDROOM (C)	193
2 BEDROOMS (D)	91
3 BEDROOMS (E)	7
TOTAL	315
PARKING SUMMARY	
RESIDENT CAR PARKING PROVIDED	68
VISITOR CAR PARKING PROVIDED	30
TOTAL CAR PARKING PROVIDED	95
BICYCLE STORAGE PROVIDED (INTERIOR)	292
BICYCLE STORAGE PROVIDED (EXTERIOR)	23
BICYCLE STORAGE PROVIDED (TOTAL)	315
TYPICAL FLOOR AREA (m ²)	1541,40
BUILDING HEIGHT (m)	27 storeys (84,85)
BUILDING FOOTPRINT (PROJECTION) (m ²)	1015,00
BUILDING FOOTPRINT (GROUND FLOOR) (m ²)	802,91
GROSS FLOOR AREA TOTAL (m ²)	16566,75
GROSS AREA (residential, m ²)	16422,75
GROSS LEASABLE AREA (commercial, m ²)	144,00
SITE OCCUPANCY (%)	55%
DENSITY (FSI)	9,04
LANDSCAPE AREA (m ²)	985,09
LANDSCAPED AREA (%)	54%
RESIDENTIAL UNITS	315
CARETAKER UNITS	1
COMMON AMENITIES (m ²)	1040
PRIVATE AMENITIES (m ²)	1494,25
VERIFICATION 3m ² /unit	4,74
TOTAL AMENITIES (m ²)	2534,25
VERIFICATION 6m ² /unit	8,05
*Site area based on surveyor cad drawing	

Floor	GFA	AREA (m ²)		UNITS						AMENITIES (m ²)		
		GLA (Residential)	GLA (Commercial)	Townhome	Studio	1BR	2BR	3BR	Total	Common	Balconies/private terraces	Total
G	803	137,00	144	0	0	1	2	0	3	757	66,00	823
2	823	647,86	0	0	2	6	4	0	12	57	63,60	120,6
3	919	748,82	0	0	4	8	4	0	16	0	61,00	61
4	919	748,82	0	0	4	8	4	0	16	0	61,00	61
5	919	748,82	0	0	4	8	4	0	16	0	61,00	61
6	966	796,98	0	0	5	7	4	0	16	0	72,68	72,68
7	888	731,79	0	0	5	8	3	0	16	0	104,00	104
8	750	596,42	0	0	0	7	4	0	11	0	88,79	88,79
9	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
10	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
11	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
12	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
13	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
14	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
15	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
16	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
17	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
18	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
19	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
20	750	592,96	0	0	0	7	4	0	11	0	48,22	48,22
21	750	592,96	0	0	0	8	2	1	11	0	48,22	48,22
22	750	592,96	0	0	0	8	2	1	11	0	48,22	48,22
23	750	592,96	0	0	0	8	2	1	11	0	48,22	48,22
24	750	592,96	0	0	0	8	2	1	11	0	48,22	48,22
25	750	592,96	0	0	0	8	2	1	11	0	48,22	48,22
26	750	592,96	0	0	0	8	2	1	11	0	48,22	48,22
27	750	592,96	0	0	0	8	2	1	11	0	48,22	48,22
Roof / MPH	700	0,00	0	0	0	0	0	0	0	226	0,00	226
TOTAL	21938,2	16422,75	144	0	24	193	91	7	315	1040	1 494,25	2534,25

PARKING LEVELS									
Floor	AREA (m ²)	PARKING				Bicycle Storage			
		Standard	Small	Accessible	TOTAL	Horizontal	Vertical	Exterior	TOTAL
G								23	23
P1	1541	24	3	2	29	64	20		84
P2	1541	31	2	0	33	61	43		104
P3	1541	31	2	0	33	61	43		104
TOTAL	4623	86	7	2	95	186	106	0	315

ISSUED FOR SITE PLAN APPROVAL - REVISED 2023-06-21

ISSUED FOR SITE PLAN APPROVAL - REVISED 2023-03-23

ISSUED FOR SITE PLAN APPROVAL 2023-01-23

REVISION:

THE GENERAL CONTRACTOR:

- SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS ON SITE TO ENSURE COMPLIANCE WITH THE DIMENSIONS GIVEN ON THE DRAWINGS.
- SHALL BE RESPONSIBLE TO IMMEDIATELY SUBMIT A REPORT TO THE ARCHITECT OR ENGINEER OUTLINING ANY INACCURACIES.
- SHALL NOT TAKE SCALED MEASUREMENTS OFF THE DRAWINGS.
- ANY INDIVIDUAL OR FIRM THAT HAVE RECEIVED ELECTRONIC DOCUMENT SHALL USE THEM AT THEIR OWN RISK. ONLY ORIGINAL DRAWINGS, STAMPED BY THE ARCHITECT, MAY BE USED FOR CONSTRUCTION.

SEAL © 2018, EVOQ Architecture inc.

Intellectual property rights relating to this document belong exclusively to EVOQ Architecture inc. This document may not be forwarded to others, transmitted, downloaded, reproduced nor adapted in any format, whether print or electronic, without the prior written authorization of EVOQ Architecture inc. All ideas and other information in this document are specific to this project and may not be used elsewhere without the written authorization of EVOQ Architecture inc.

PROJECT: **100 GLOUCESTER**

DRAWING TITLE: **COVER SHEET**

DESIGN: NG APPROVED: XX

DRAWN: MF DATE: 2022-12-16

VERIFIED: XX SCALE:

PROJECT#: **9531-22** DRAWING#: **A-1_000**

NO.	DESCRIPTION	BY	DATE
	ISSUED FOR SITE PLAN APPROVAL - REVISED		2023-06-21
	ISSUED FOR SITE PLAN APPROVAL - REVISED		2023-03-23
	ISSUED FOR SITE PLAN APPROVAL		2023-01-23

REVISION / REVISION	DATE

L'ENTREPRENEUR GÉNÉRAL DEVRA / THE GENERAL CONTRACTOR -
 1. VÉRIFIER / VERIFY THE GENERAL CONTRACTOR -
 2. LE PAQUET DE CONSTRUCTION / THE CONSTRUCTION PACKAGE -
 3. LE PLAN DE CONSTRUCTION / THE CONSTRUCTION PLAN -
 4. LE PLAN DE CONSTRUCTION / THE CONSTRUCTION PLAN -

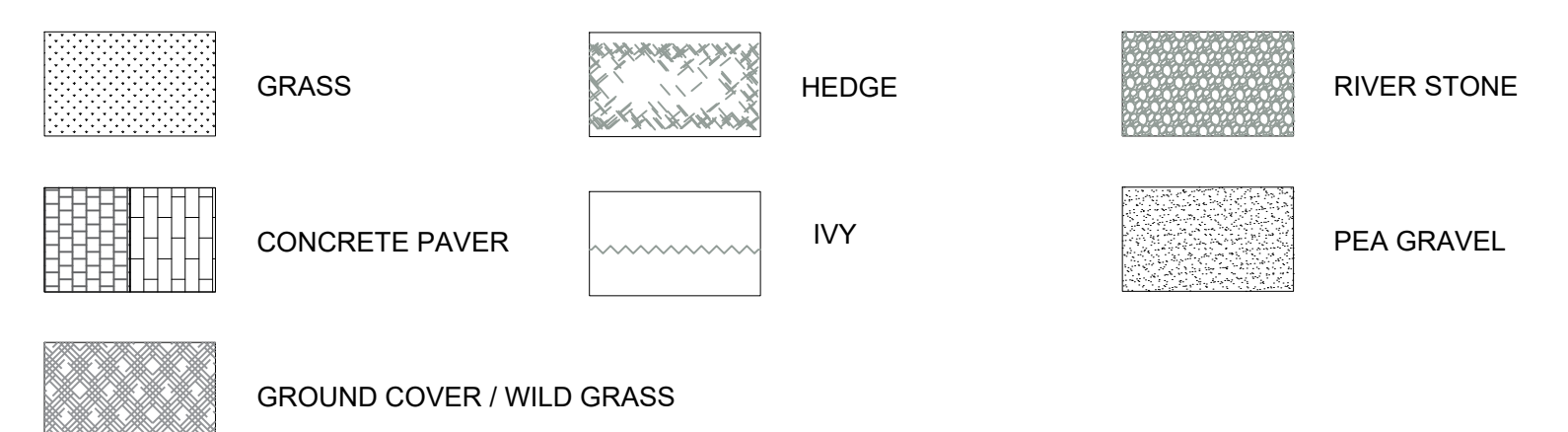
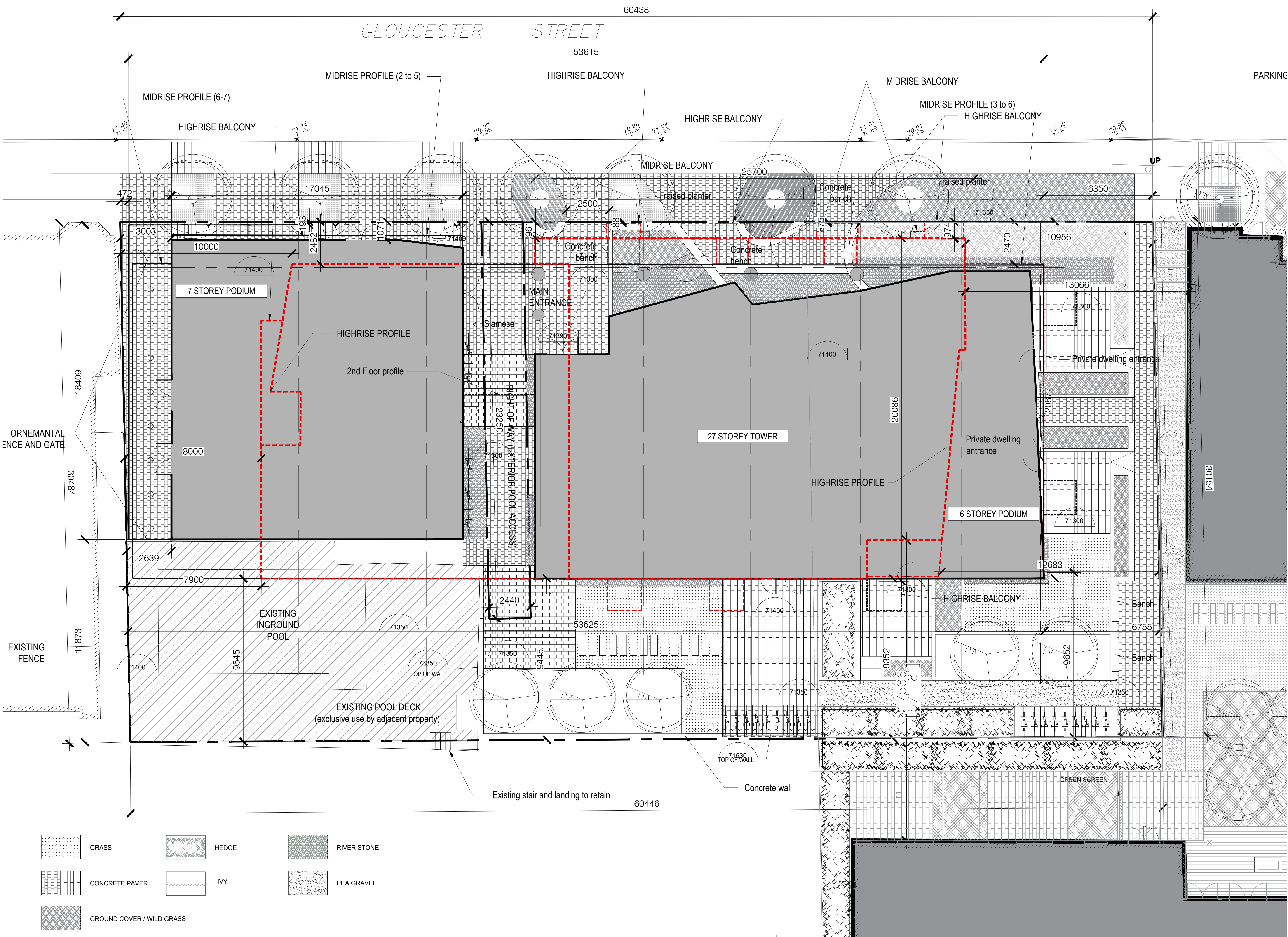
© 2018, EVOOQ Architecture Inc.
 Les droits de propriété intellectuelle de ce présent document
 sont réservés à EVOOQ Architecture Inc. Toute réimpression
 ou utilisation non autorisée sans la permission écrite de
 EVOOQ Architecture Inc. est formellement interdite. Toute
 violation de ces droits de propriété intellectuelle sera
 poursuivie devant les tribunaux et entraînera des
 poursuites judiciaires. Toute réimpression ou utilisation
 non autorisée sans la permission écrite de EVOOQ
 Architecture Inc. est formellement interdite.

PROJET / PROJECT: **INDOOR RESERVE PROJECT NAME**

DATE / DESIGN / DRAWING TITLE: **SITE PLAN**

DESIGN: NG APPROUVÉ / APPROVED: XX
 DRAWN: MF DATE: 2022-12-16
 VERIFIÉ / VERIFIED: XX ÉCHELLE / SCALE: 1:100

PROJET / PROJECT NO: **9531-22** DRESSING / DRAWING NO: **A-1 010**



APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines Screening Form

1. Description of Proposed Development

Municipal Address	84 & 100 Gloucester Street
Description of Location	South side of Gloucester Street mid-block between Metcalfe Street and O'Connor Street
Land Use Classification	High-Rise Multifamily Housing with Ground Floor Retail
Development Size (units)	324 Housing Units
Development Size (m ²)	128m² Retail
Number of Accesses and Locations	One existing at 70 Gloucester Street
Phase of Development	One
Buildout Year	2025

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 ²
Industrial	5,000 m ²
Fast-food restaurant or coffee shop	100 m ²
Destination retail	1,000 m ²
Gas station or convenience market	75 m ²

** 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?		X
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?		X
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?		X
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)?		X
Is the proposed driveway within auxiliary lanes of an intersection?		X
Does the proposed driveway make use of an existing median break that serves an existing site?		X
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		X
Does the development include a drive-thru facility?		X

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?		X
Does the development satisfy the Location Trigger?	✓	
Does the development satisfy the Safety Trigger?		X



Transportation Impact Assessment Screening Form

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

 EAST
EST

○ Blair



○ Cyrville

○ St-Laurent

○ Tremblay
■ VIA

○ Hurdman  SOUTH
SUD → 

○ Lees

24 min. ○ uOttawa

○ Rideau

○ Parliament
Parlement

○ Lyon

○ Pimisi

○ Bayview **2**

○ Tunney's Pasture

 WEST
OUEST

5

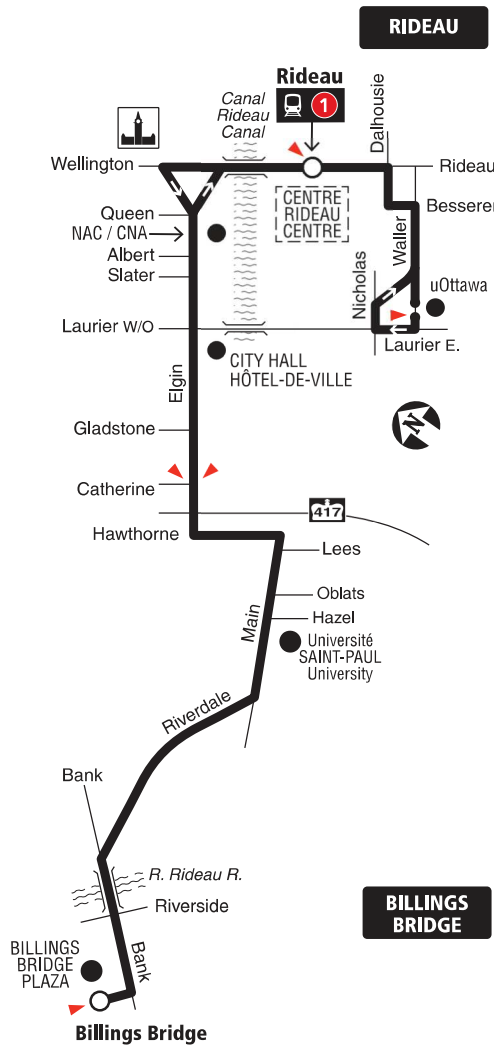
BILLINGS BRIDGE RIDEAU

Local

7 days a week / 7 jours par semaine

All day service

Service toute la journée



○ Station
▲ Timepoint / Heures de passage

2020.08



Schedule / Horaire.....613-560-1000

Text / Texto560560

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

Customer Service
Service à la clientèle 613-741-4390

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

Security / Sécurité..... 613-741-2478

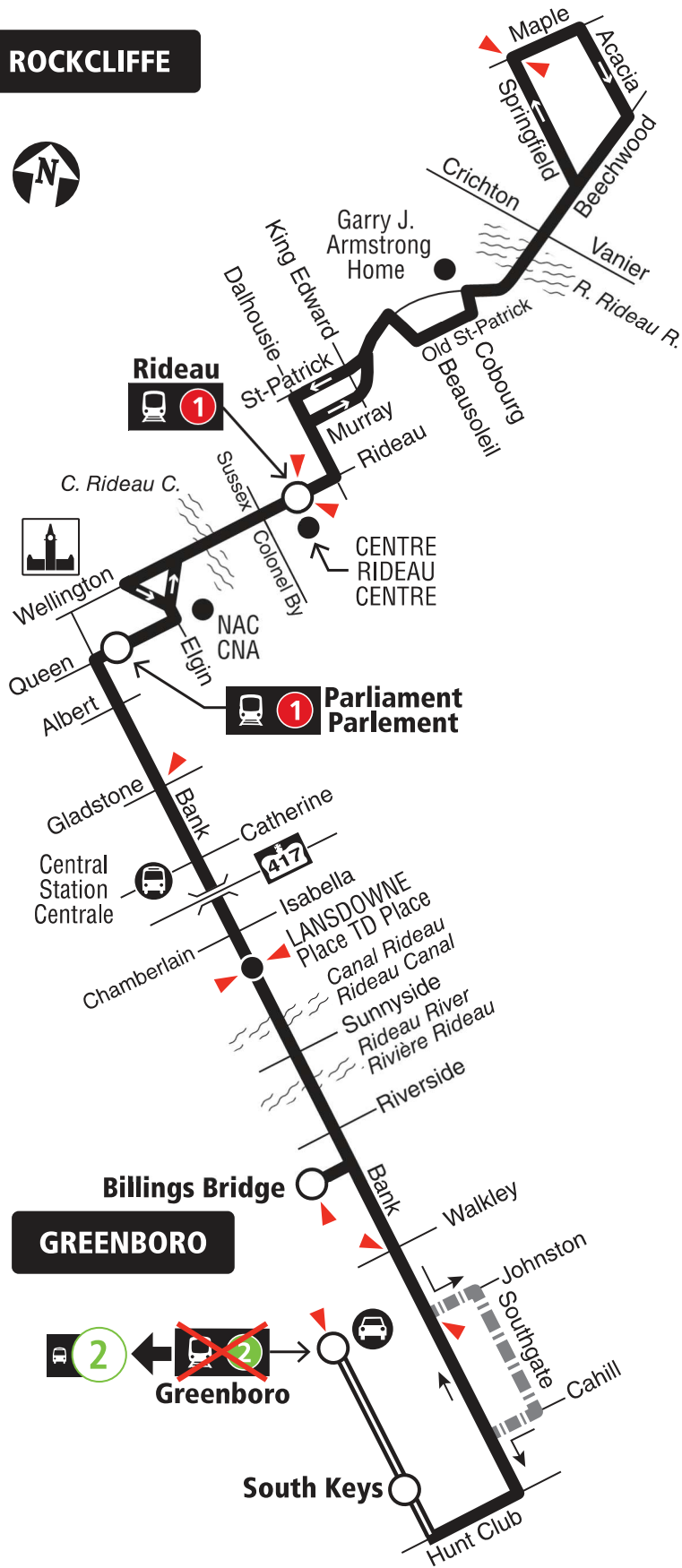
Effective April 26, 2020

En vigueur 26 avril 2020



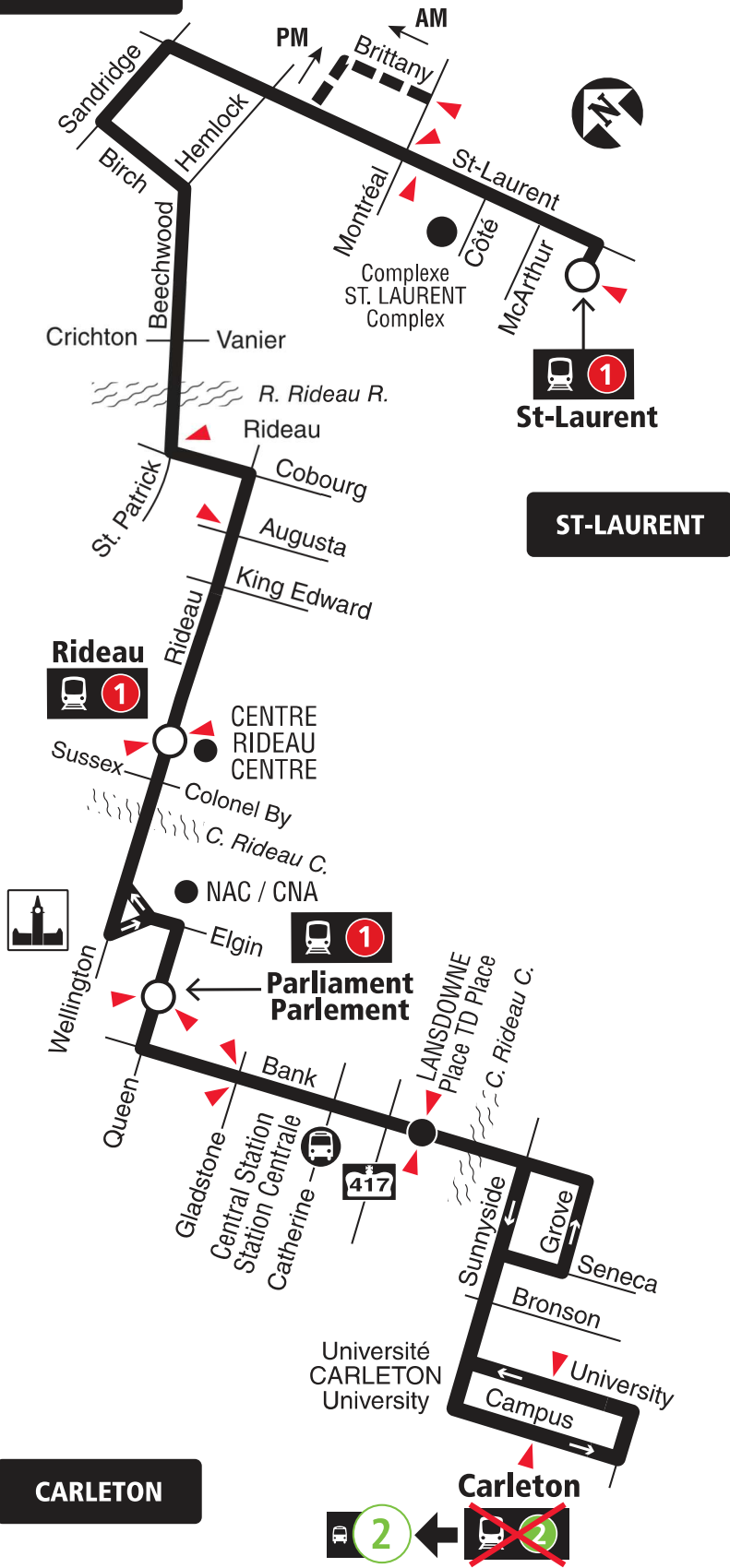
INFO 613-741-4390
octranspo.com




ROCKCLIFFE



- Transitway & Station
- No early morning service /
Aucun service matinal
- Park & Ride / Parc-o-Bus
- Timepoint / Heures de passage

BRITTANY



-  Station
-  Peak periods only / Périodes de pointe seulement
-  Timepoint / Heures de passage



11

LINCOLN FIELDS BAYSHORE

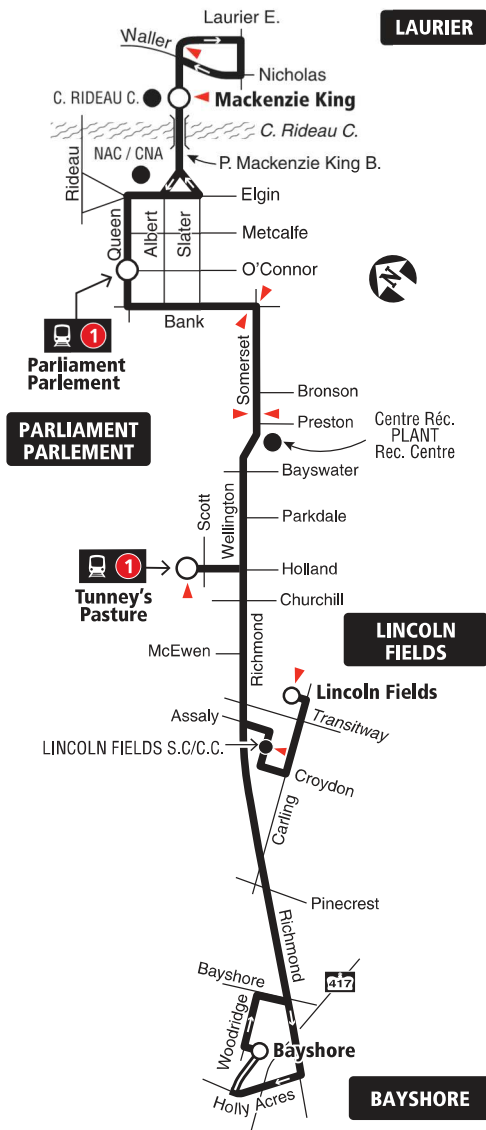
LAURIER

Fréquent

7 days a week / 7 jours par semaine

All day service

Service toute la journée



Transitway & Station
 Timepoint / Heures de passage

2021.09

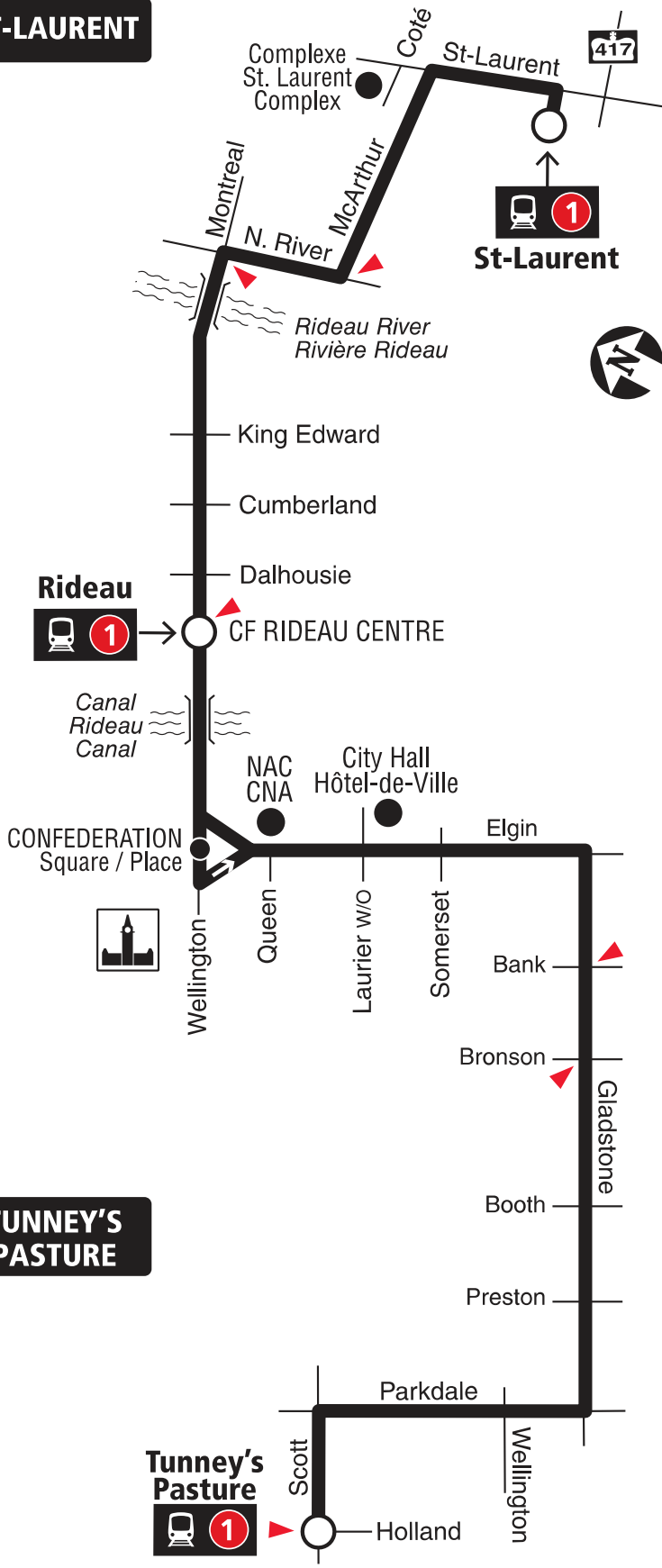
Schedule / Horaire 613-560-1000
Text / Texto* 560560
plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres
*Standard message rates may apply / Les tarifs réguliers de messagerie texte peuvent s'appliquer

- Customer Service / Service à la clientèle 613-560-5000
- Lost and Found / Objets perdus 613-563-4011
- Security / Sécurité 613-741-2478

Effective September 5, 2021
En vigueur 5 septembre 2021

ST-LAURENT

TUNNEY'S PASTURE



- Station
- ▲ Timepoint / Heures de passage

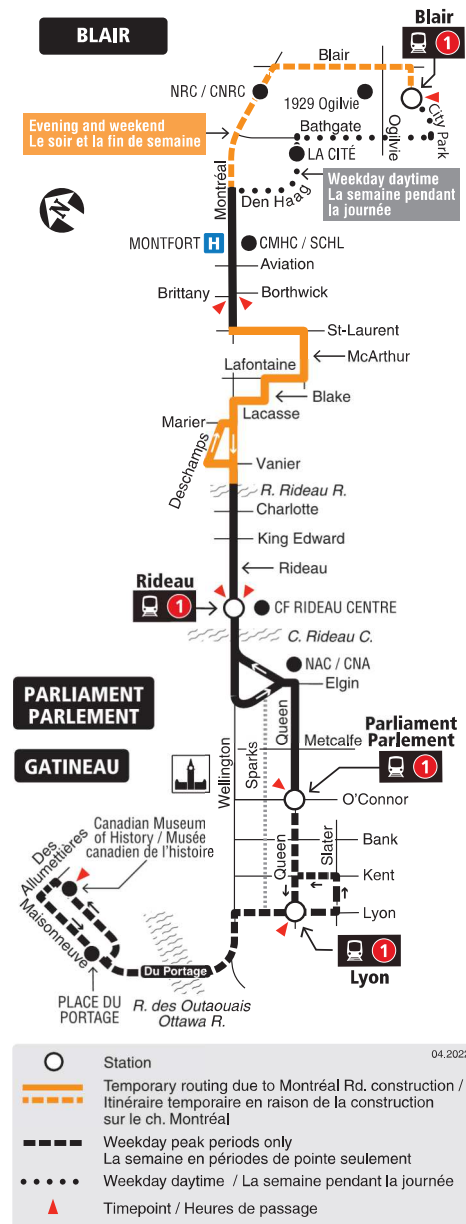
15

PARLIAMENT PARLEMENT GATINEAU BLAIR

Fréquent

7 days a week / 7 jours par semaine

All day service
Service toute la journée



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

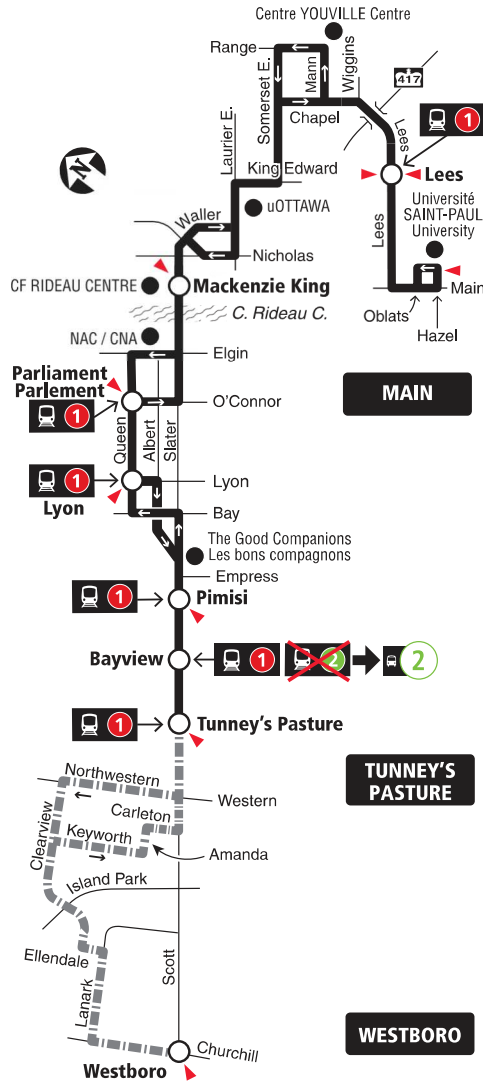


INFO 613-560-5000
octranspo.com

16

MAIN TUNNEY'S PASTURE WESTBORO

7 days a week / 7 jours par semaine
All day service
Service toute la journée



- Station
- No Sunday service / Aucun service le dimanche
- Timepoint / Heures de passage

2020.04

Schedule / Horaire.....613-560-1000
Text / Texto560560
plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

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

Effective May 3, 2020
En vigueur 3 mai 2020



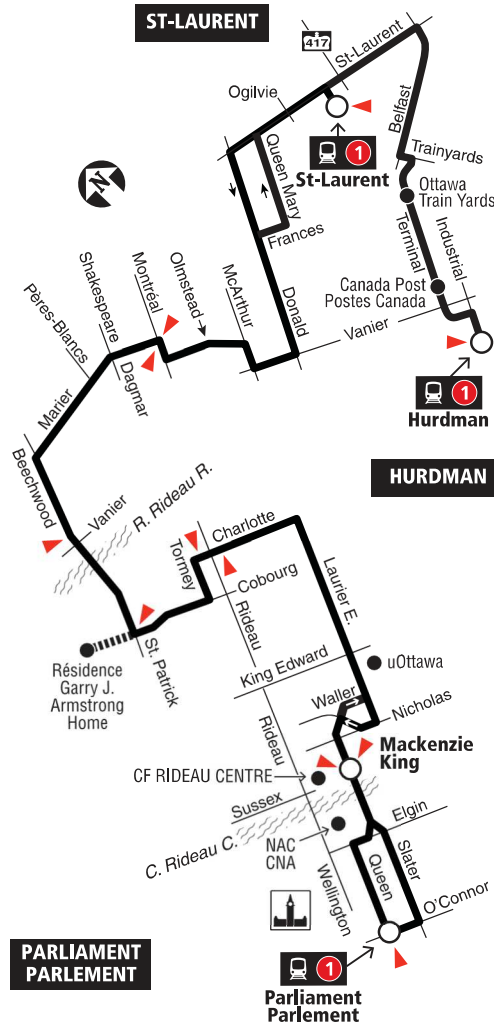
19

ST-LAURENT HURDMAN PARLIAMENT/ PARLEMENT

Local

7 days a week / 7 jours par semaine

All day service
Service toute la journée



- Station
- On request / Sur demande
- 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

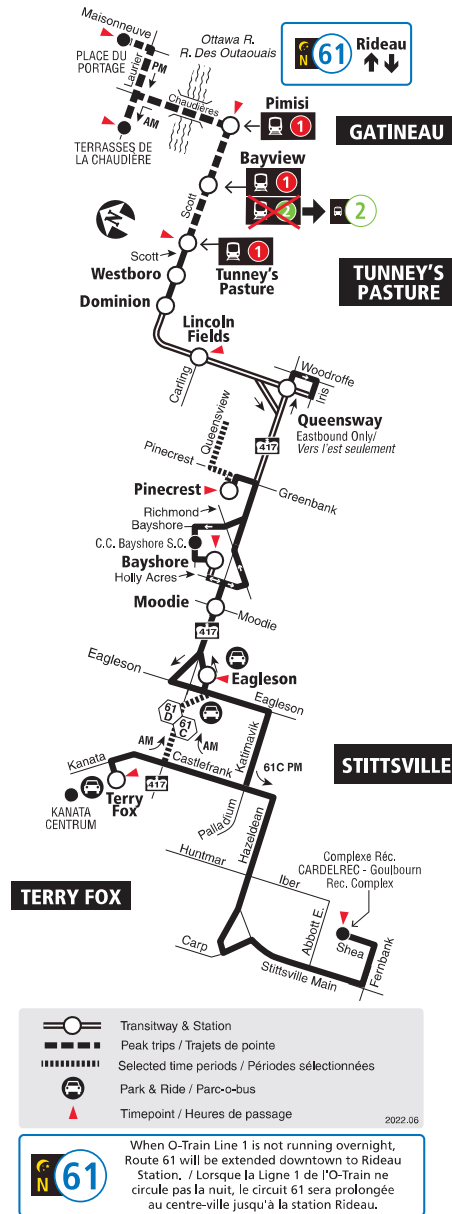


TERRY FOX STITTSVILLE TUNNEY'S PASTURE GATINEAU

Rapide

7 days a week / 7 jours par semaine

All day service and limited overnight
Service toute la journée et limité la nuit



2022.06

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 **613-560-5000**
 Lost and Found / Objets perdus **613-563-4011**
 Security / Sécurité **613-741-2478**

Effective June 26, 2022
En vigueur 26 juin 2022

OC Transpo INFO 613-560-5000
 octranspo.com



BAYSHORE CRYSTAL BAY TUNNEY'S PASTURE

Rapid^e

7 days a week / 7 jours par semaine

All day and limited overnight service
Service toute la journée et limité la nuit

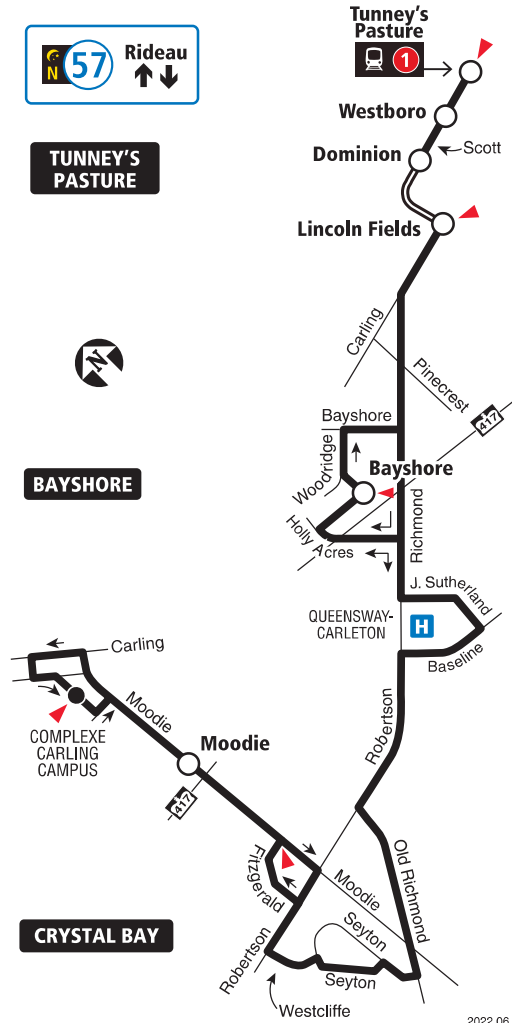


TUNNEY'S PASTURE



BAYSHORE

CRYSTAL BAY



2022.06

- Transitway & Station
- Timepoint | Heures de passage

When O-Train Line 1 is not running overnight, Route 57 will be extended downtown to Rideau Station. / Lorsque la Ligne 1 de l'O-Train ne circule pas la nuit, le circuit 57 sera prolongée au centre-ville jusqu'à la station Rideau.

2022.06

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 613-560-5000

Lost and Found / Objets perdus 613-563-4011

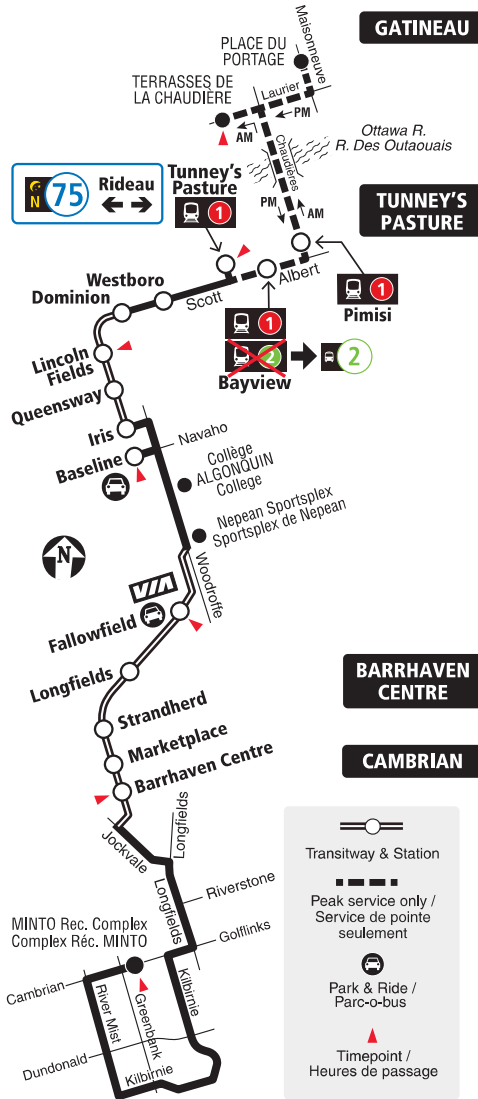
Security / Sécurité 613-741-2478

Effective June 26, 2022
En vigueur 26 juin 2022



**CAMBRIAN
BARRHAVEN C.
TUNNEY'S PASTURE
GATINEAU**

7 days a week / 7 jours par semaine
All day service and limited overnight
Service toute la journée et limité la nuit



When O-Train Line 1 is not running overnight, Route 75 will be extended downtown to Rideau Station. / Lorsque la Ligne 1 de l'O-Train ne circule pas la nuit, le circuit 75 sera prolongée au centre-ville jusqu'à la station Rideau.

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 June 26, 2022
En vigueur 26 juin 2022

OC Transpo INFO 613-560-5000
 octranspo.com

114

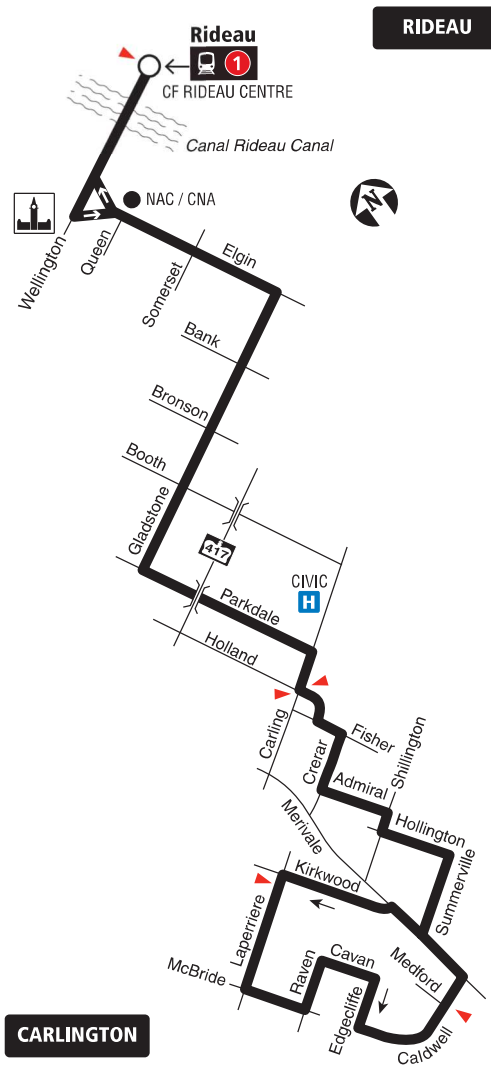
CARLINGTON RIDEAU

Local

Monday to Friday / Lundi au vendredi

Selected trips only

Trajets sélectionnés seulement



- Station
- ▲ Timepoint / Heures de passage

2020.08

Schedule / Horaire.....613-560-1000
Text / Texto560560
plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres

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

Lost and Found / Objets perdus..... **613-563-4011**
 Security / Sécurité..... **613-741-2478**

Effective Fall 2020
En vigueur automne 2020

OC Transpo INFO 613-560-5000
 octranspo.com

TakeTransit

FREE FOR TICKET HOLDERS

☎ LANSLOWNE ☎

Prenez l'autobus

SERVICE GRATUIT POUR LES DÉTENTEURS DE BILLET

☎ LANSLOWNE ☎

Park & Shuttle routes travel directly to Lansdowne for major events, including all REDBLACKS games.

Le service Parc-o-navettes effectue directement le lien vers Lansdowne lors des événements importants, dont tous les matches des ROUGE et NOIR.

Free shuttle parking / Stationnement gratuit de navette

- 452**
- 454 455**
- 456**
- STO** to/vers Gatineau
- 450** on Bank Street / sur la rue Bank
- Major transfer point / Points de correspondance majeurs
- 451**
- Transit station with direct service to Lansdowne / Station desservie par un service de transport direct vers Lansdowne

Routes 6 and 7 travel directly to Lansdowne every day

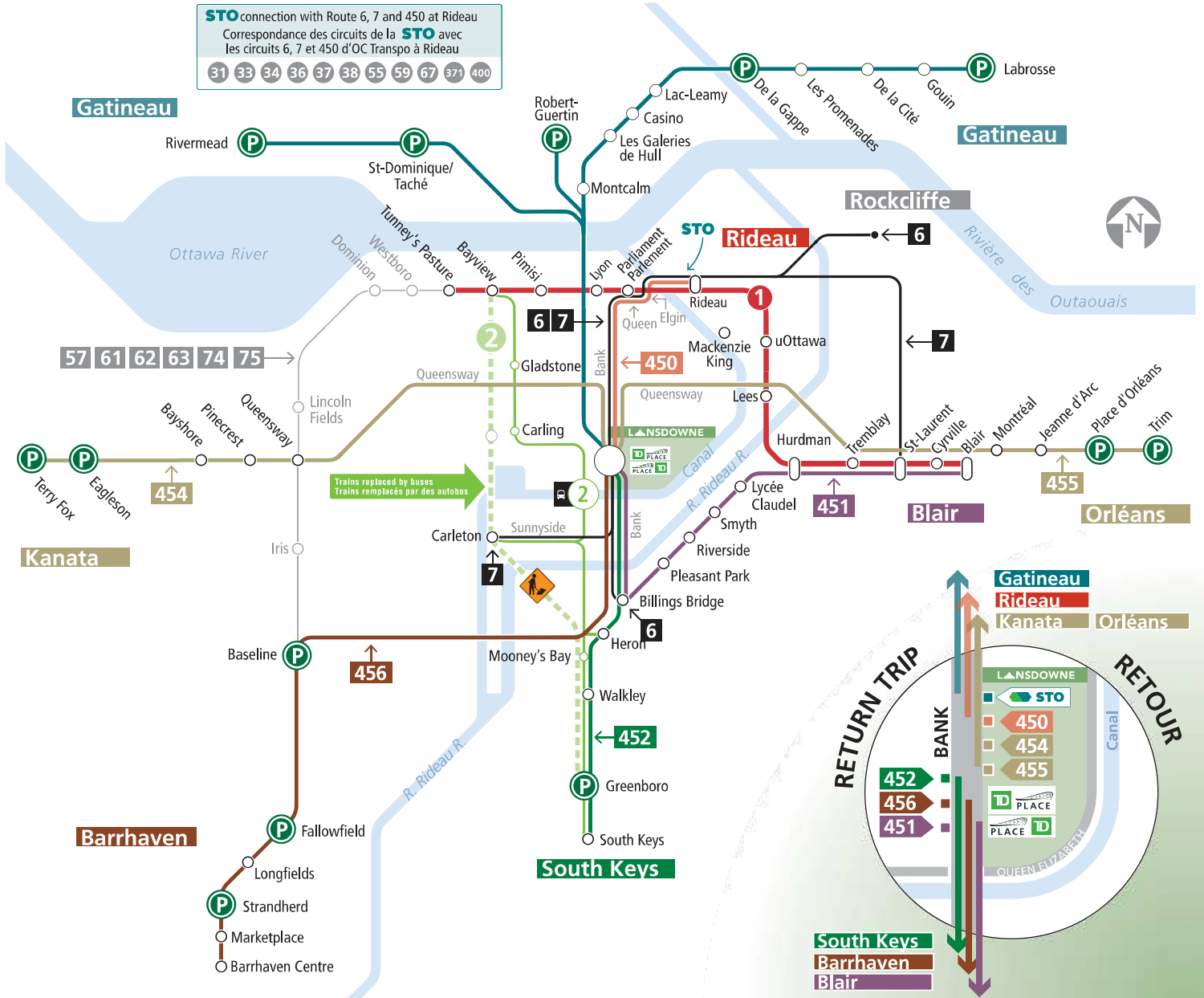
Les circuits 6 et 7 se rendent directement à Lansdowne tous les jours

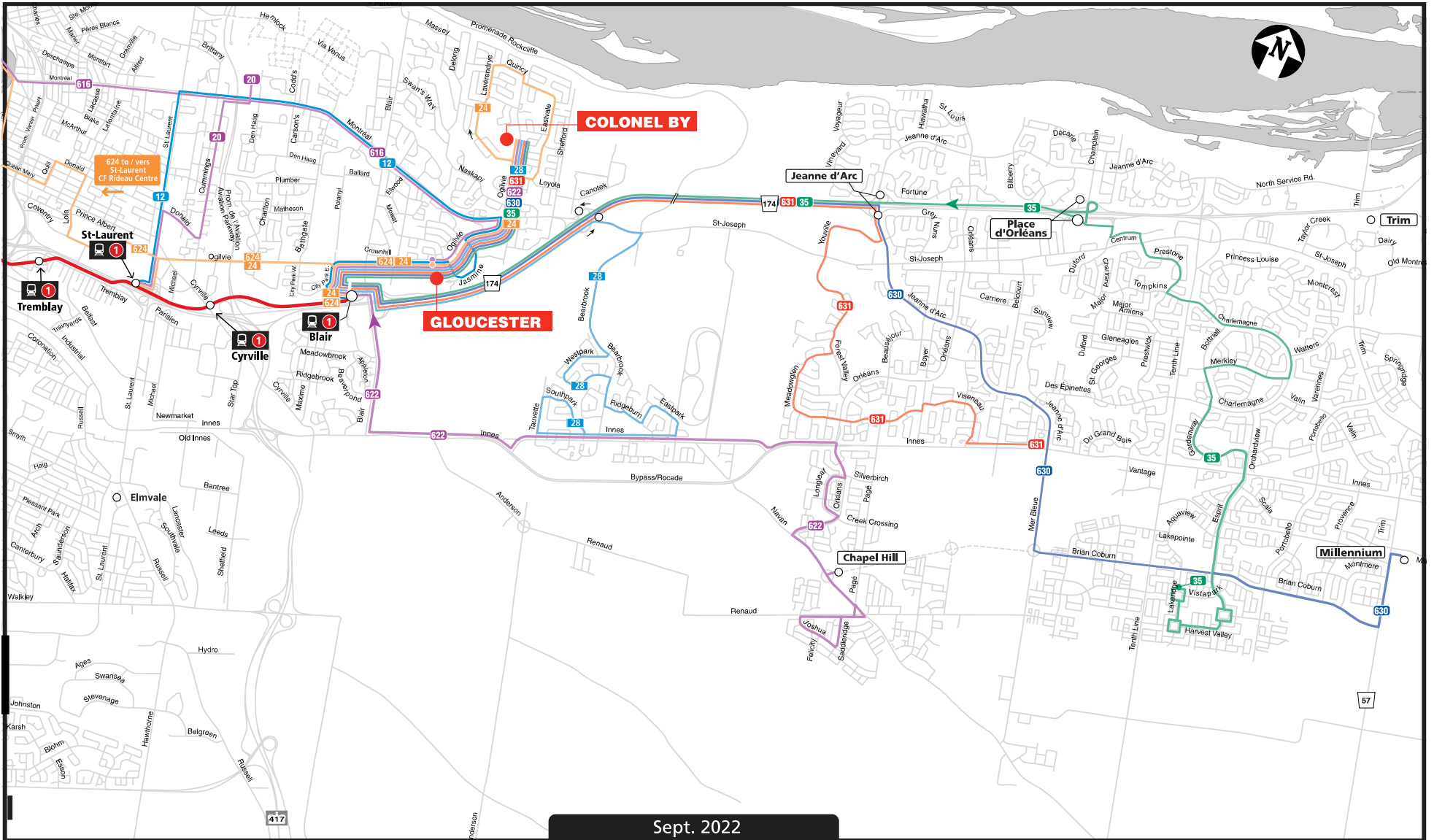
Other connecting transit service / Autre service de liaison du transport en commun

OSEG Shuttles (1-844-326-4636) to Lansdowne depart from various locations. Visit OSEG.CA

Les navettes de l'OSEG (1-844-326-4636) vers le parc Lansdowne partiront de divers endroits. Visitez OSEG.CA.

Map not to scale / Carte non à l'échelle 01/2020





Sept. 2022

APPENDIX D

Traffic Count Data

Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

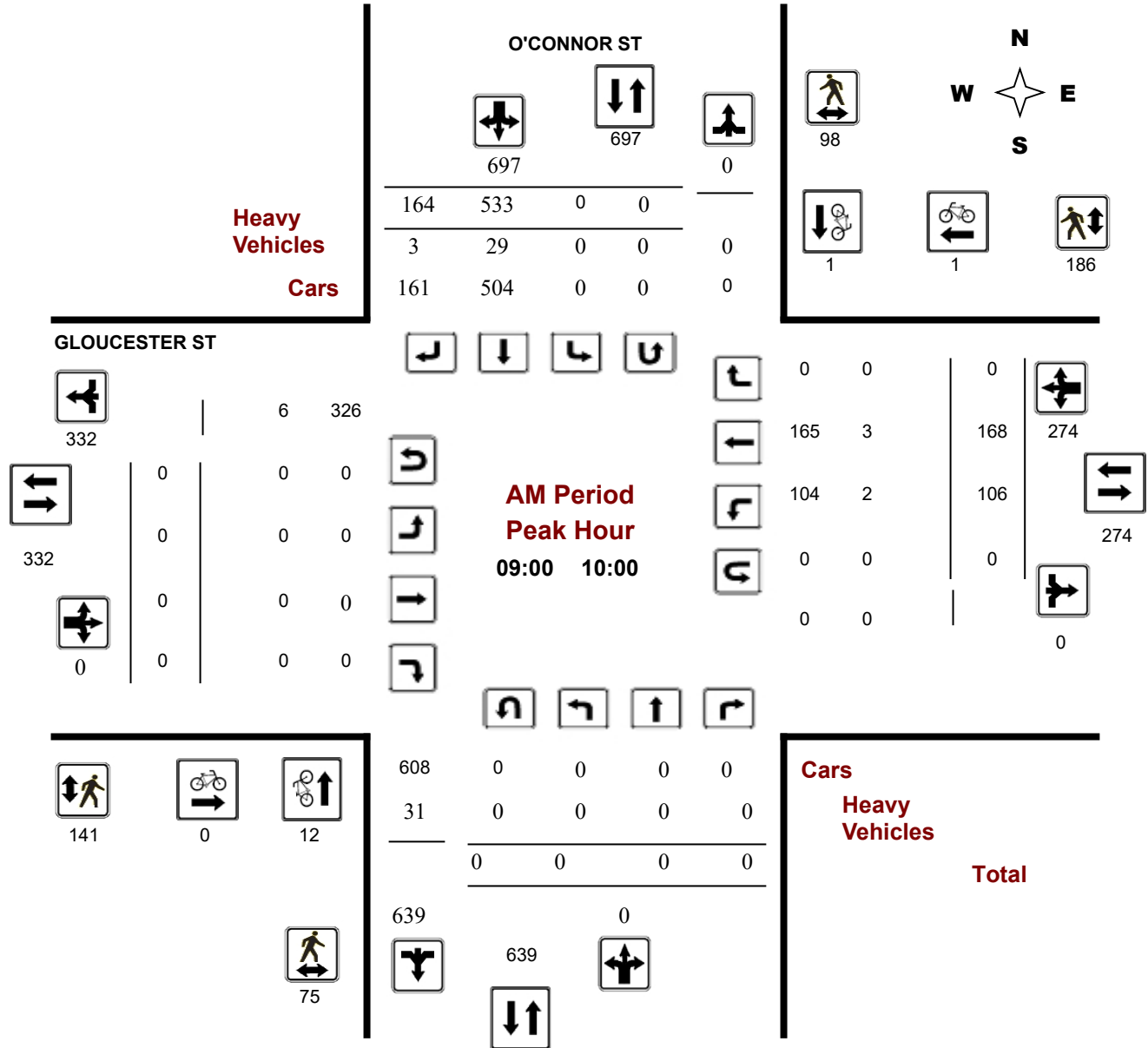
GLOUCESTER ST @ O'CONNOR ST

Survey Date: Tuesday, March 21, 2017

WO No: 36782

Start Time: 07:00

Device: Miovision



Turning Movement Count - Peak Hour Diagram

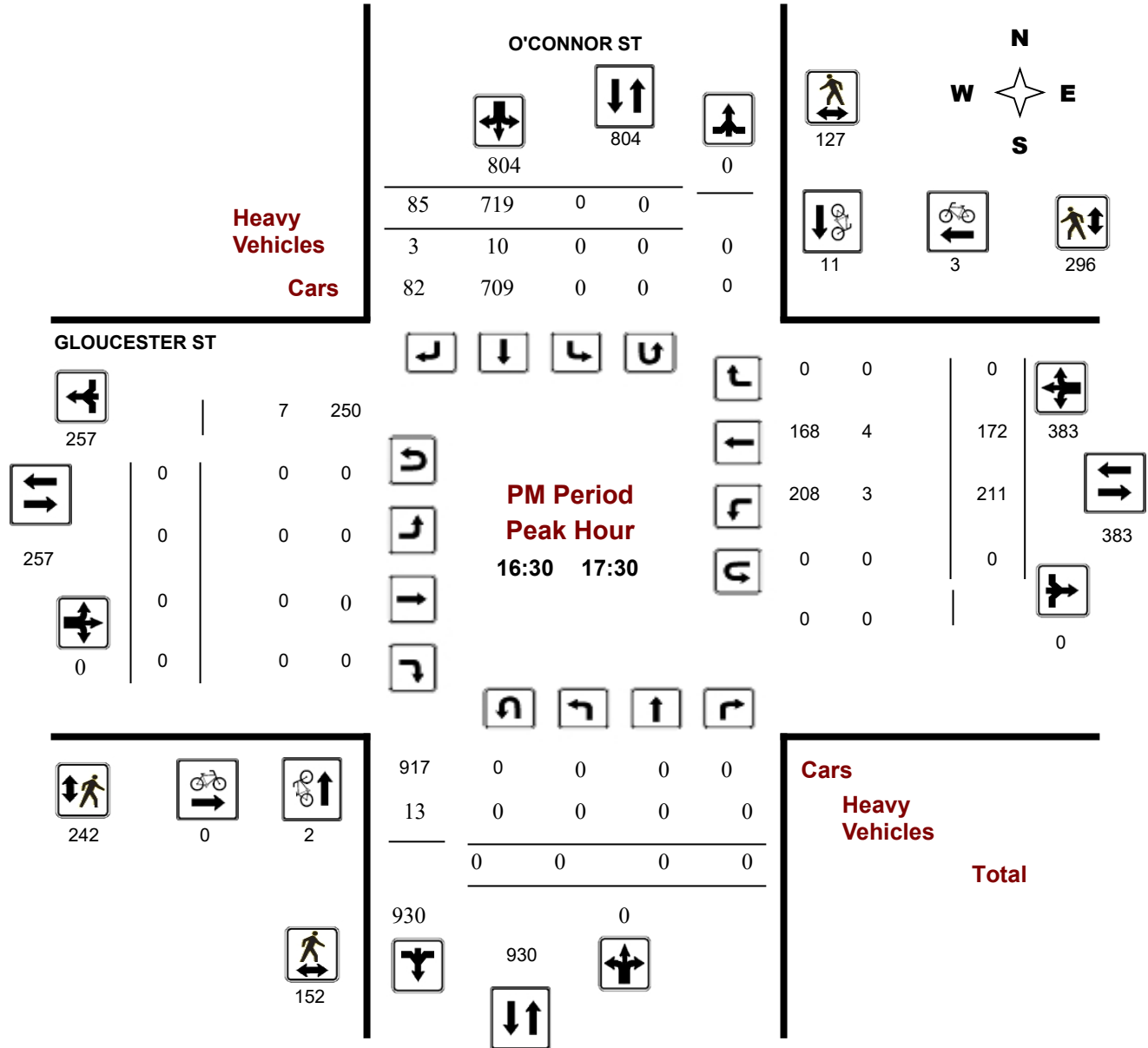
GLOUCESTER ST @ O'CONNOR ST

Survey Date: Tuesday, March 21, 2017

Start Time: 07:00

WO No: 36782

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

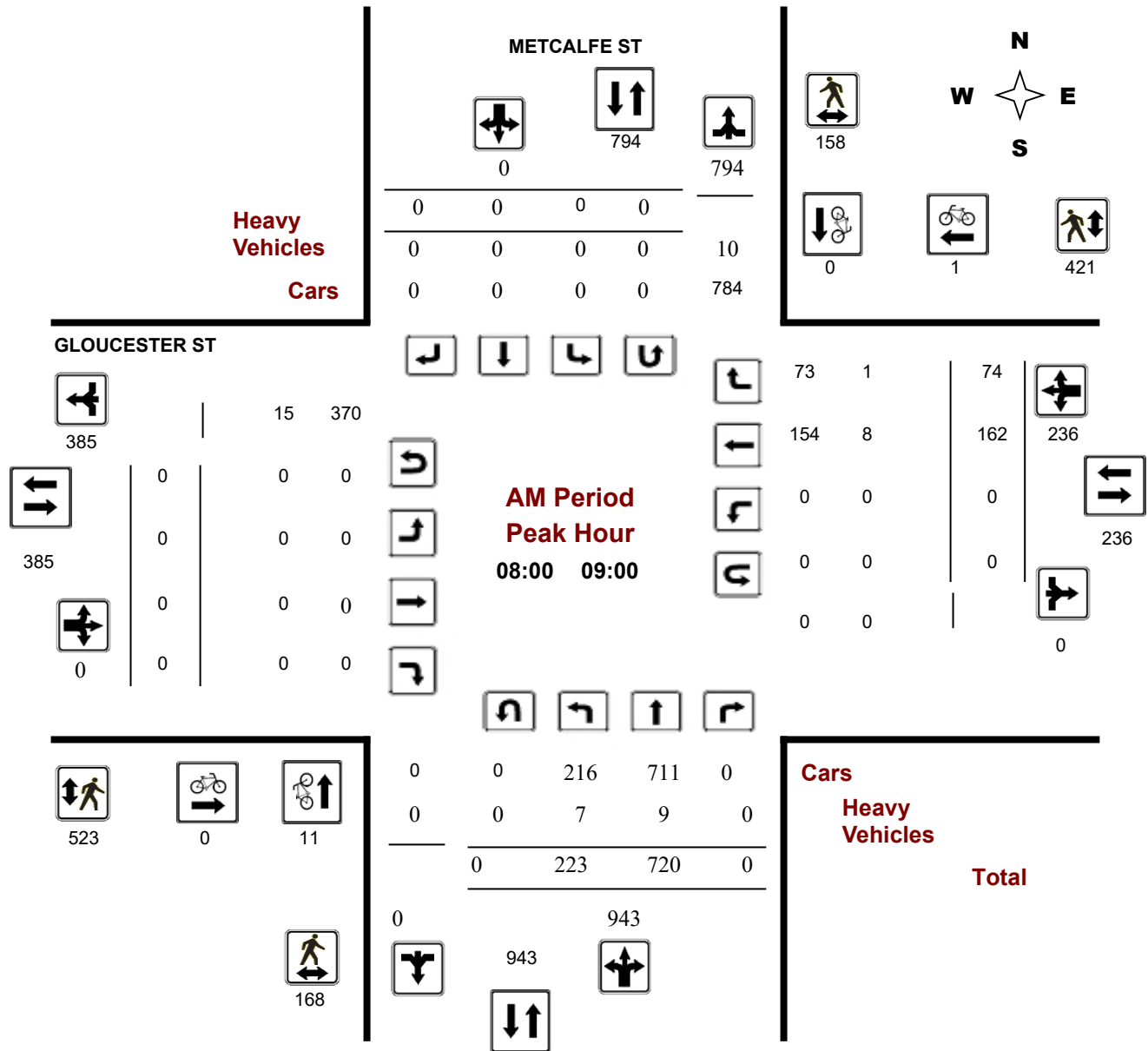
GLOUCESTER ST @ METCALFE ST

Survey Date: Tuesday, April 04, 2017

Start Time: 07:00

WO No: 36839

Device: Miovision



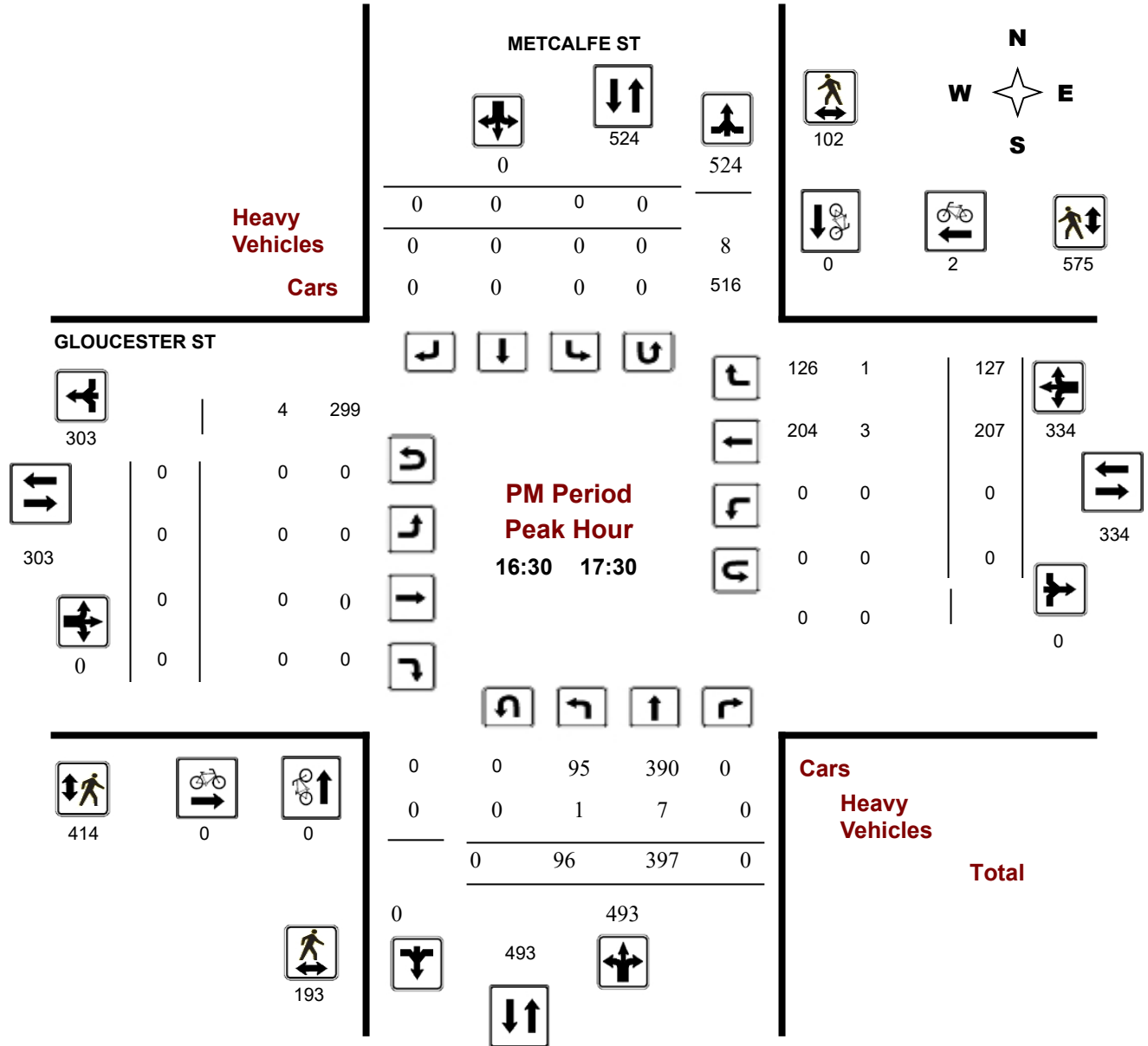


Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram GLOUCESTER ST @ METCALFE ST

Survey Date: Tuesday, April 04, 2017
Start Time: 07:00

WO No: 36839
Device: Miovision



Turning Movement Count - Peak Hour Diagram

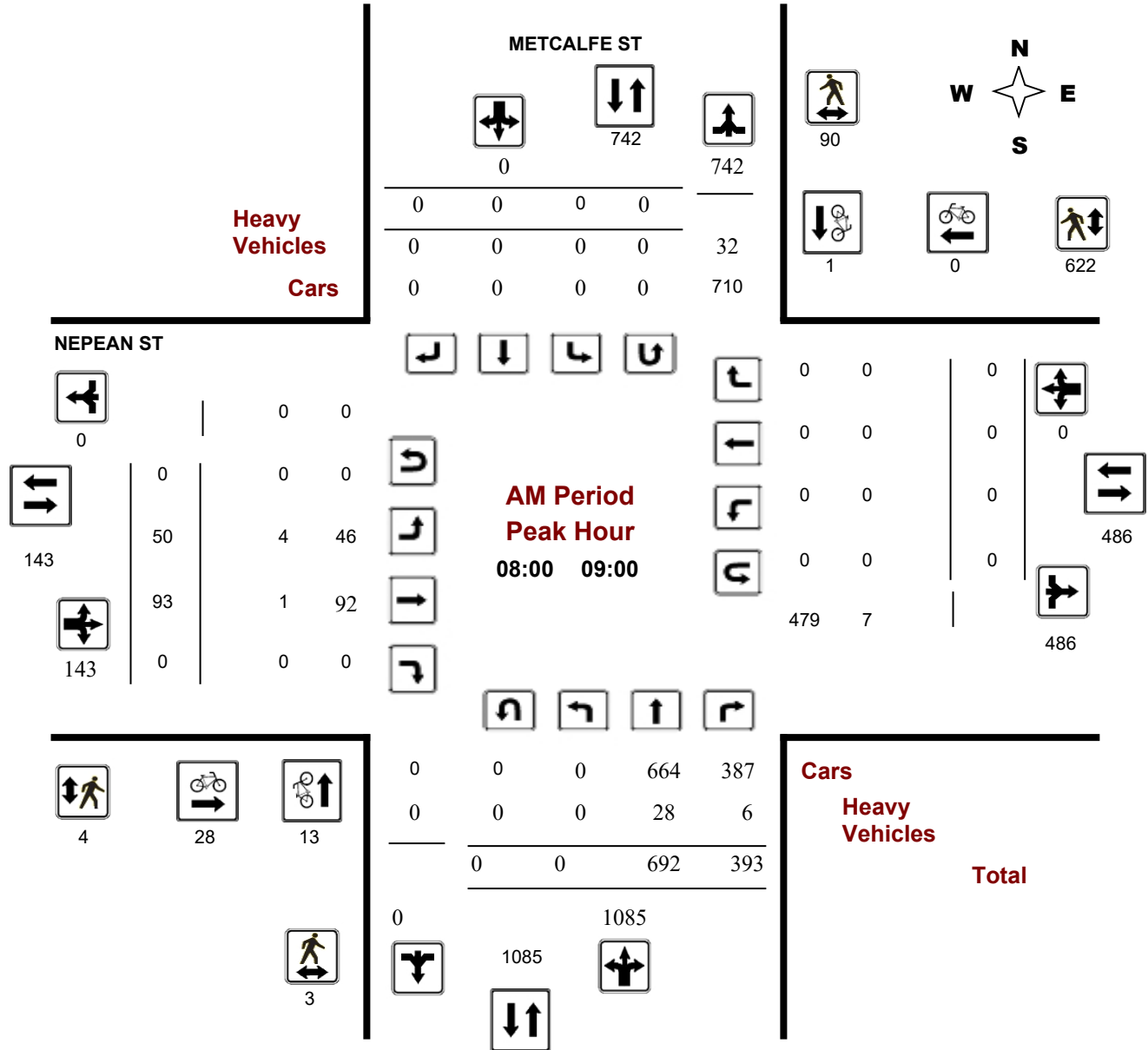
METCALFE ST @ NEPEAN ST

Survey Date: Thursday, September 19, 2019

Start Time: 07:00

WO No: 38771

Device: Miovision



Turning Movement Count - Peak Hour Diagram

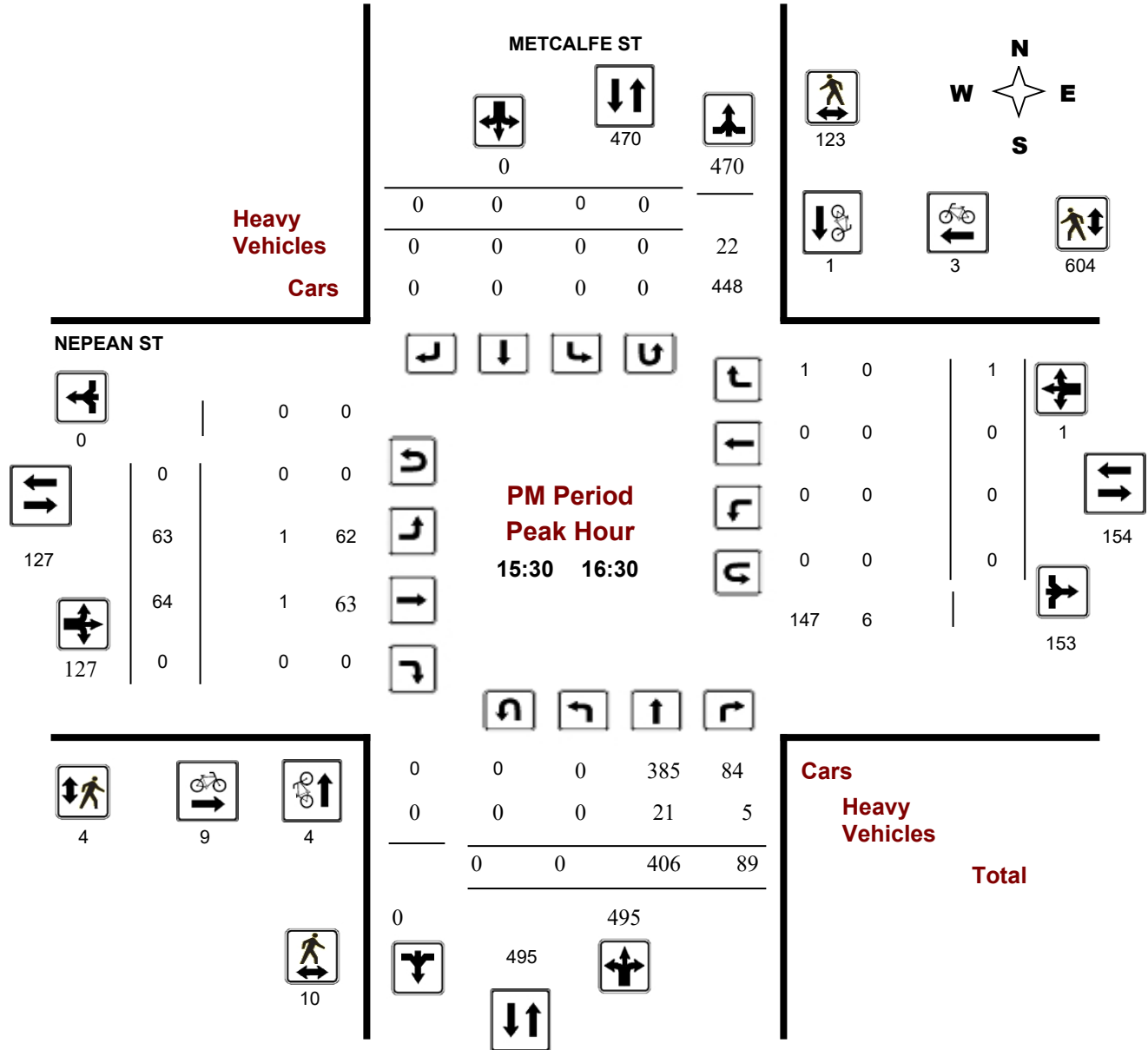
METCALFE ST @ NEPEAN ST

Survey Date: Thursday, September 19, 2019

Start Time: 07:00

WO No: 38771

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

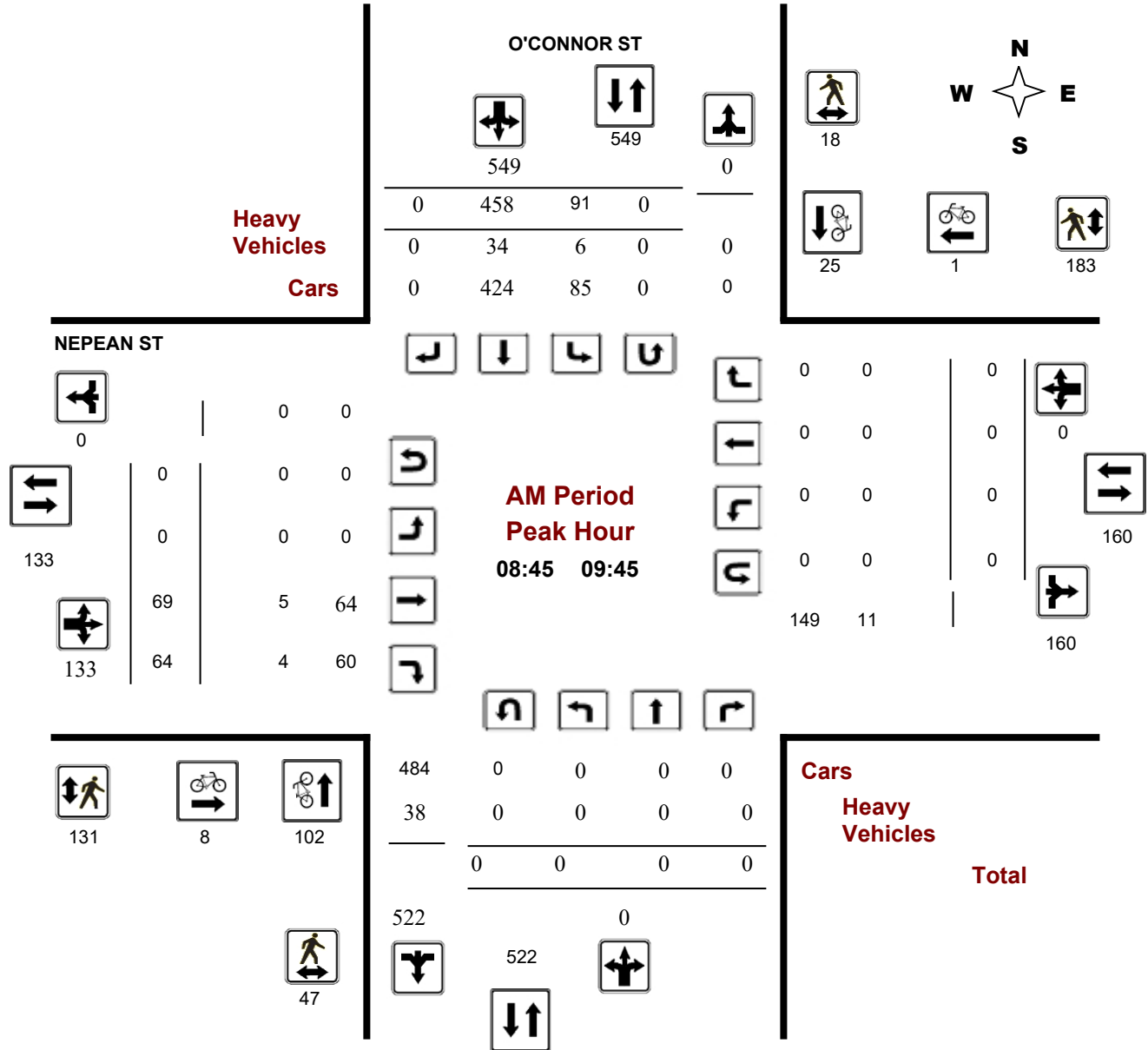
NEPEAN ST @ O'CONNOR ST

Survey Date: Wednesday, August 29, 2018

Start Time: 07:00

WO No: 38034

Device: Miovision



Comments

Turning Movement Count - Peak Hour Diagram

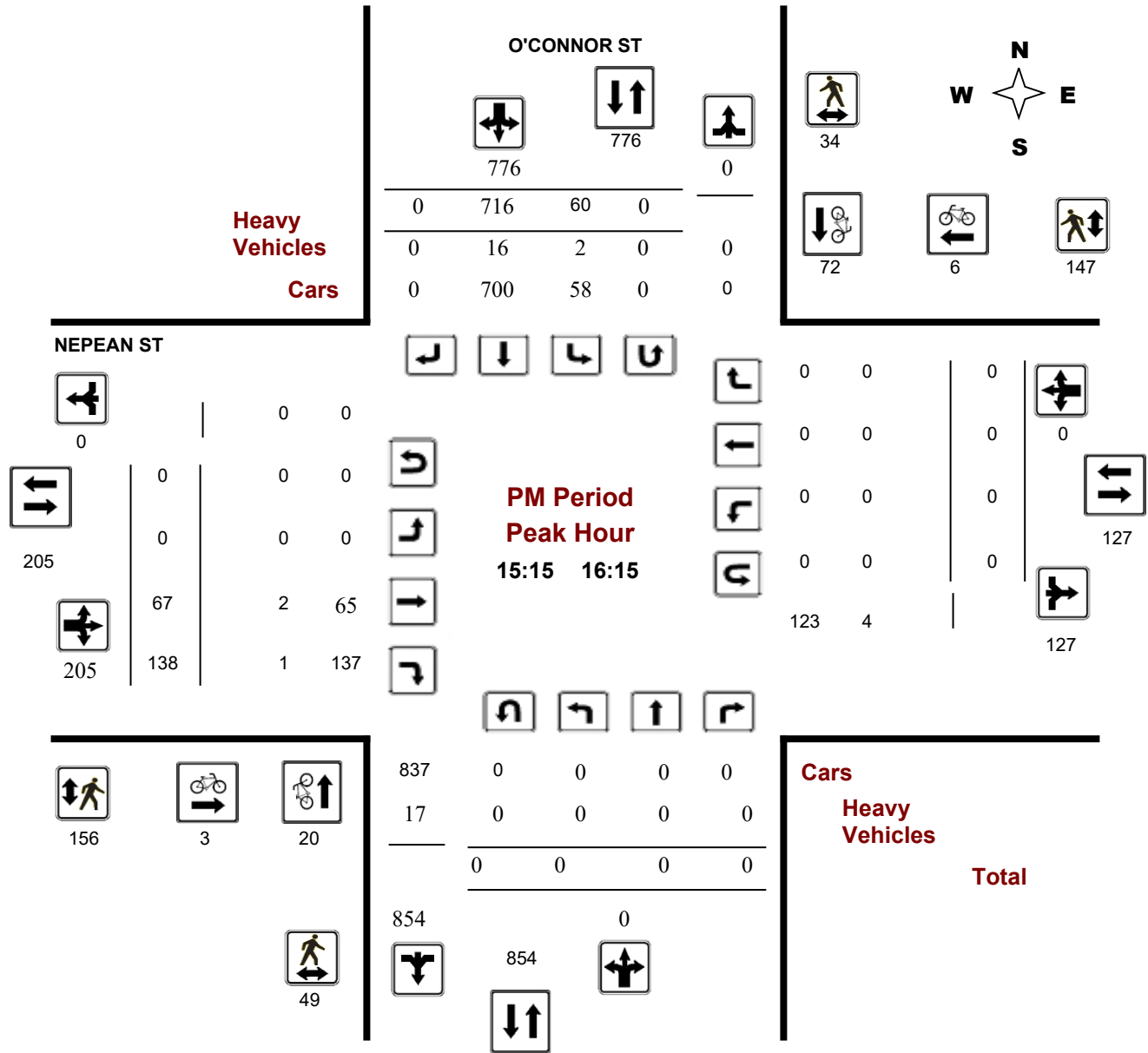
NEPEAN ST @ O'CONNOR ST

Survey Date: Wednesday, August 29, 2018

Start Time: 07:00

WO No: 38034

Device: Miovision



Comments

Turning Movement Count - Study Results

METCALFE ST @ LAURIER AVE

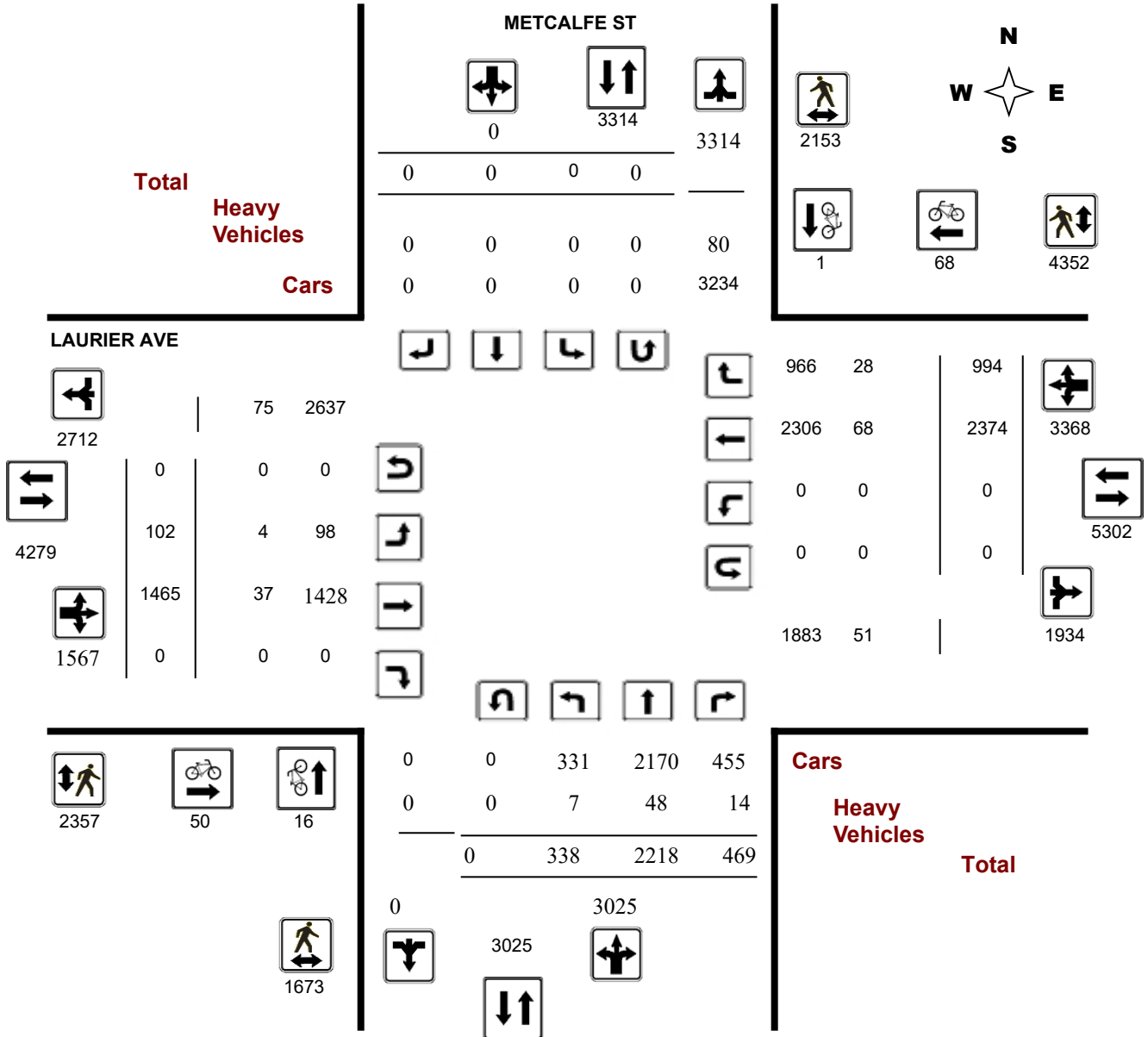
Survey Date: Thursday, November 22, 2018

WO No: 38157

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

METCALFE ST @ LAURIER AVE

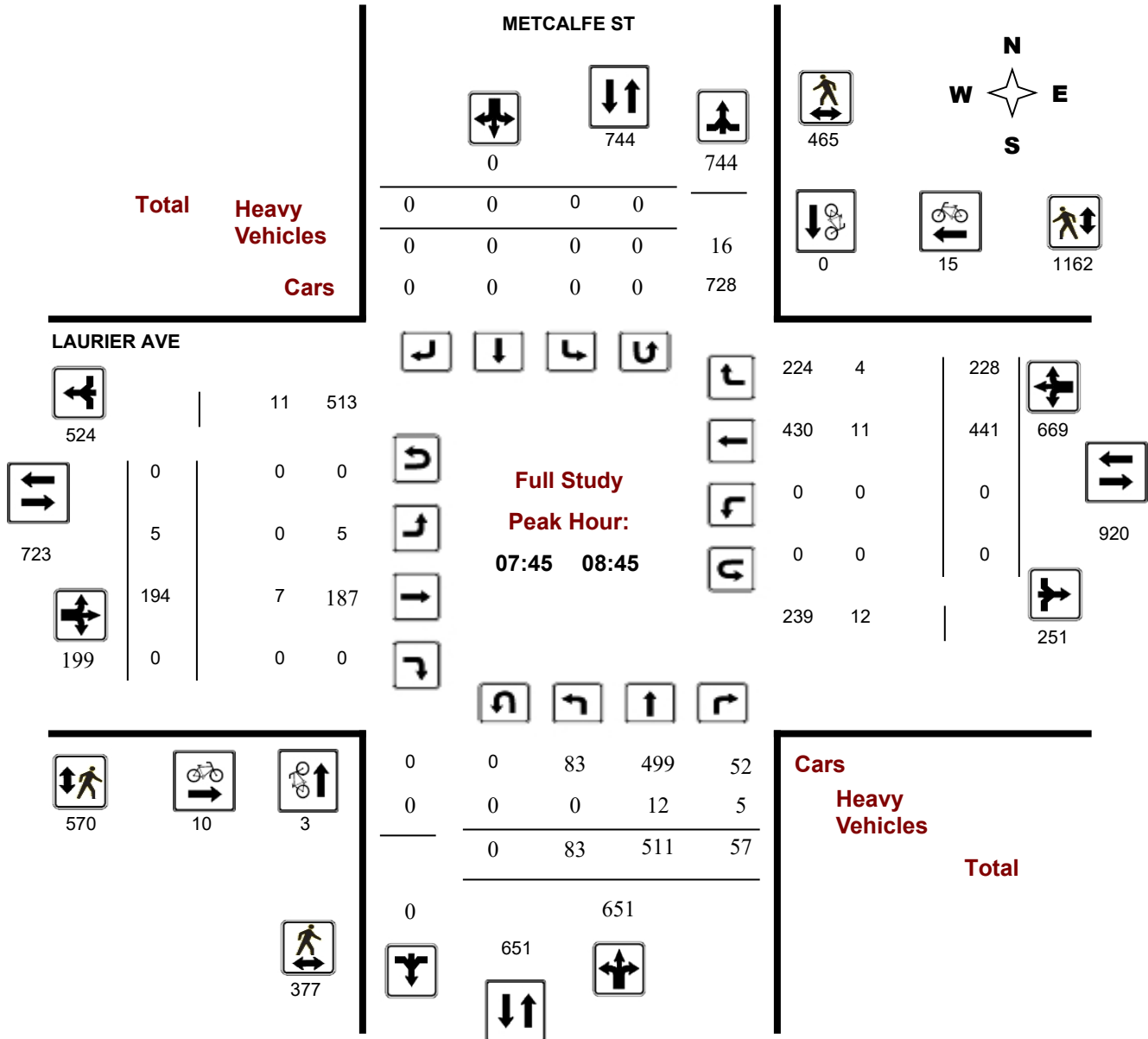
Survey Date: Thursday, November 22, 2018

WO No: 38157

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram





Transportation Services - Traffic Services

Turning Movement Count - Study Results

METCALFE ST @ LAURIER AVE

Survey Date: Thursday, November 22, 2018

WO No: 38157

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

METCALFE ST

LAURIER AVE

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	16	78	9	103	0	0	0	0	103	1	51	0	52	0	86	42	128	180	283
07:15 07:30	20	109	6	135	0	0	0	0	135	1	63	0	64	0	99	56	155	219	354
07:30 07:45	27	105	14	146	0	0	0	0	146	0	55	0	55	0	113	48	161	216	362
17:45 18:00	12	77	20	109	0	0	0	0	109	9	67	0	76	0	93	31	124	200	309
07:45 08:00	16	124	16	156	0	0	0	0	156	0	53	0	53	0	119	55	174	227	383
08:00 08:15	20	116	15	151	0	0	0	0	151	0	50	0	50	0	108	58	166	216	367
08:15 08:30	26	143	9	178	0	0	0	0	178	3	45	0	48	0	109	55	164	212	390
08:30 08:45	21	128	17	166	0	0	0	0	166	2	46	0	48	0	105	60	165	213	379
08:45 09:00	22	108	15	145	0	0	0	0	145	3	44	0	47	0	115	57	172	219	364
09:00 09:15	15	104	16	135	0	0	0	0	135	11	47	0	58	0	118	42	160	218	353
09:15 09:30	26	87	20	133	0	0	0	0	133	13	61	0	74	0	118	38	156	230	363
09:30 09:45	18	75	21	114	0	0	0	0	114	8	63	0	71	0	87	43	130	201	315
09:45 10:00	16	83	11	110	0	0	0	0	110	11	58	0	69	0	74	35	109	178	288
15:00 15:15	9	78	15	102	0	0	0	0	102	7	77	0	84	0	106	33	139	223	325
15:15 15:30	4	70	25	99	0	0	0	0	99	9	75	0	84	0	78	30	108	192	291
15:30 15:45	7	84	29	120	0	0	0	0	120	2	66	0	68	0	90	35	125	193	313
15:45 16:00	6	73	29	108	0	0	0	0	108	3	67	0	70	0	98	33	131	201	309
16:00 16:15	8	75	28	111	0	0	0	0	111	1	59	0	60	0	78	32	110	170	281
16:15 16:30	8	72	26	106	0	0	0	0	106	0	61	0	61	0	104	42	146	207	313
16:30 16:45	4	82	29	115	0	0	0	0	115	1	74	0	75	0	101	42	143	218	333
16:45 17:00	7	88	25	120	0	0	0	0	120	3	56	0	59	0	96	27	123	182	302
17:00 17:15	10	77	20	107	0	0	0	0	107	0	78	0	78	0	97	32	129	207	314
17:15 17:30	10	95	32	137	0	0	0	0	137	3	72	0	75	0	102	30	132	207	344
17:30 17:45	10	87	22	119	0	0	0	0	119	11	77	0	88	0	80	38	118	206	325
Total:	338	2218	469	3025	0	0	0	0	3025	102	1465	0	1567	0	2374	994	3368	4935	7,960

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

METCALFE ST @ LAURIER AVE

Survey Date: Thursday, November 22, 2018

WO No: 38157

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

Time Period	METCALFE ST			LAURIER AVE			Grand Total
	Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	
07:00 07:15	1	0	1	1	3	4	5
07:15 07:30	0	0	0	0	5	5	5
07:30 07:45	0	0	0	5	2	7	7
17:45 18:00	1	0	1	5	0	5	6
07:45 08:00	0	0	0	1	7	8	8
08:00 08:15	1	0	1	2	2	4	5
08:15 08:30	1	0	1	2	2	4	5
08:30 08:45	1	0	1	5	4	9	10
08:45 09:00	1	0	1	3	7	10	11
09:00 09:15	0	0	0	0	4	4	4
09:15 09:30	0	0	0	2	2	4	4
09:30 09:45	1	0	1	0	1	1	2
09:45 10:00	1	0	1	0	1	1	2
15:00 15:15	1	1	2	1	1	2	4
15:15 15:30	1	0	1	1	1	2	3
15:30 15:45	1	0	1	2	2	4	5
15:45 16:00	1	0	1	3	1	4	5
16:00 16:15	0	0	0	3	3	6	6
16:15 16:30	2	0	2	4	5	9	11
16:30 16:45	0	0	0	0	5	5	5
16:45 17:00	0	0	0	2	6	8	8
17:00 17:15	1	0	1	0	1	1	2
17:15 17:30	0	0	0	4	0	4	4
17:30 17:45	1	0	1	4	3	7	8
Total	16	1	17	50	68	118	135



Transportation Services - Traffic Services

Turning Movement Count - Study Results

METCALFE ST @ LAURIER AVE

Survey Date: Thursday, November 22, 2018

WO No: 38157

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

METCALFE ST

LAURIER AVE

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	28	35	63	48	101	149	212
07:15 07:30	42	67	109	58	145	203	312
07:30 07:45	66	67	133	86	164	250	383
17:45 18:00	48	68	116	67	122	189	305
07:45 08:00	80	98	178	126	216	342	520
08:00 08:15	73	115	188	103	217	320	508
08:15 08:30	123	123	246	199	403	602	848
08:30 08:45	101	129	230	142	326	468	698
08:45 09:00	82	135	217	184	282	466	683
09:00 09:15	75	86	161	85	189	274	435
09:15 09:30	76	61	137	95	137	232	369
09:30 09:45	75	68	143	71	141	212	355
09:45 10:00	66	71	137	61	103	164	301
15:00 15:15	60	97	157	77	138	215	372
15:15 15:30	57	76	133	73	128	201	334
15:30 15:45	71	72	143	86	134	220	363
15:45 16:00	56	97	153	79	138	217	370
16:00 16:15	74	105	179	108	193	301	480
16:15 16:30	80	115	195	113	178	291	486
16:30 16:45	70	113	183	98	178	276	459
16:45 17:00	60	98	158	104	179	283	441
17:00 17:15	77	103	180	133	225	358	538
17:15 17:30	85	92	177	100	156	256	433
17:30 17:45	48	62	110	61	159	220	330
Total	1673	2153	3826	2357	4352	6709	10535



Transportation Services - Traffic Services

Turning Movement Count - Study Results

METCALFE ST @ LAURIER AVE

Survey Date: Thursday, November 22, 2018

WO No: 38157

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

METCALFE ST

LAURIER AVE

Northbound

Southbound

Eastbound

Westbound

Time Period	Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00 07:15	0	2	1	3	0	0	0	5	8	1	4	0	7	0	2	2	9	16	12
07:15 07:30	1	3	0	4	0	0	0	5	9	0	3	0	7	0	3	2	8	15	12
07:30 07:45	0	2	1	3	0	0	0	2	5	0	3	0	7	0	4	0	8	15	10
17:45 18:00	0	1	0	1	0	0	0	2	3	0	1	0	2	0	1	1	3	5	4
07:45 08:00	0	1	1	2	0	0	0	1	3	0	4	0	9	0	5	0	10	19	11
08:00 08:15	0	3	1	4	0	0	0	4	8	0	1	0	5	0	4	1	7	12	10
08:15 08:30	0	2	0	2	0	0	0	3	5	0	2	0	3	0	1	1	4	7	6
08:30 08:45	0	6	3	9	0	0	0	8	17	0	0	0	1	0	1	2	6	7	12
08:45 09:00	0	2	1	3	0	0	0	4	7	1	0	0	8	0	7	1	9	17	12
09:00 09:15	0	4	1	5	0	0	0	7	12	0	2	0	5	0	3	3	9	14	13
09:15 09:30	0	3	0	3	0	0	0	4	7	0	4	0	8	0	4	1	9	17	12
09:30 09:45	0	5	2	7	0	0	0	7	14	1	3	0	9	0	5	1	11	20	17
09:45 10:00	2	1	1	4	0	0	0	2	6	1	4	0	12	0	5	0	10	22	14
15:00 15:15	0	2	1	3	0	0	0	3	6	0	2	0	5	0	3	1	7	12	9
15:15 15:30	0	1	0	1	0	0	0	1	2	0	2	0	3	0	1	0	3	6	4
15:30 15:45	1	1	0	2	0	0	0	1	3	0	0	0	1	0	0	0	0	1	2
15:45 16:00	2	2	0	4	0	0	0	4	8	0	1	0	5	0	2	2	5	10	9
16:00 16:15	1	0	1	2	0	0	0	3	5	0	0	0	3	0	2	3	6	9	7
16:15 16:30	0	1	0	1	0	0	0	2	3	0	0	0	1	0	1	1	2	3	3
16:30 16:45	0	2	0	2	0	0	0	4	6	0	0	0	5	0	5	2	7	12	9
16:45 17:00	0	1	0	1	0	0	0	2	3	0	0	0	5	0	5	1	6	11	7
17:00 17:15	0	1	0	1	0	0	0	2	3	0	0	0	1	0	1	1	2	3	3
17:15 17:30	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	2	1
17:30 17:45	0	2	0	2	0	0	0	4	6	0	0	0	3	0	3	2	5	8	7
Total: None	7	48	14	69	0	0	0	80	149	4	37	0	116	0	68	28	147	263	206



Transportation Services - Traffic Services

Turning Movement Count - Study Results

METCALFE ST @ LAURIER AVE

Survey Date: Thursday, November 22, 2018

WO No: 38157

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

METCALFE ST

LAURIER AVE

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	0	0	0	0
15:45	16:00	0	0	0	0	0
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	0	0	0
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
Total		0	0	0	0	0

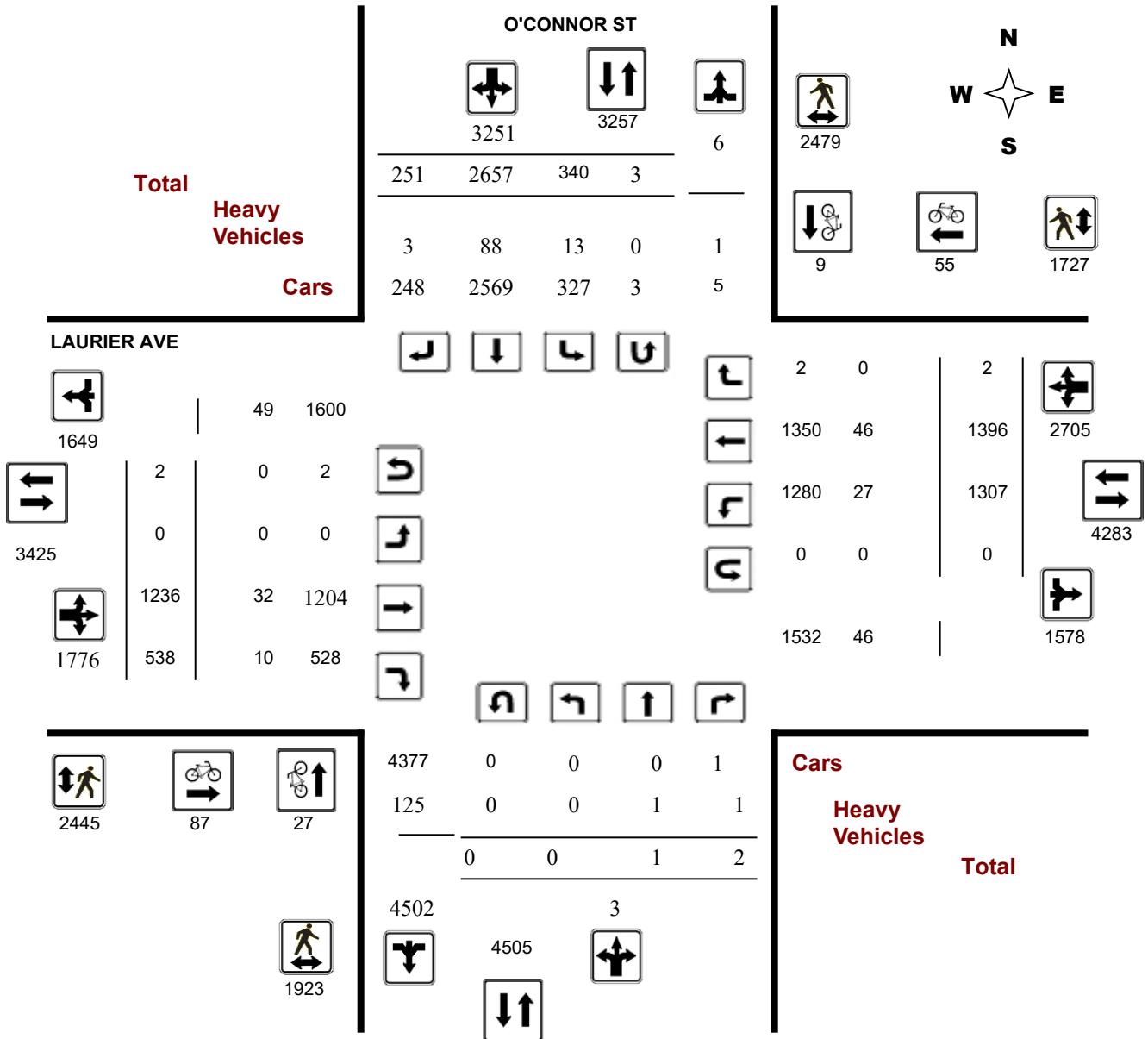
Survey Date: Thursday, November 22, 2018

WO No: 38156

Start Time: 07:00

Device: Miovision

Full Study Diagram



Turning Movement Count - Study Results

LAURIER AVE @ O'CONNOR ST

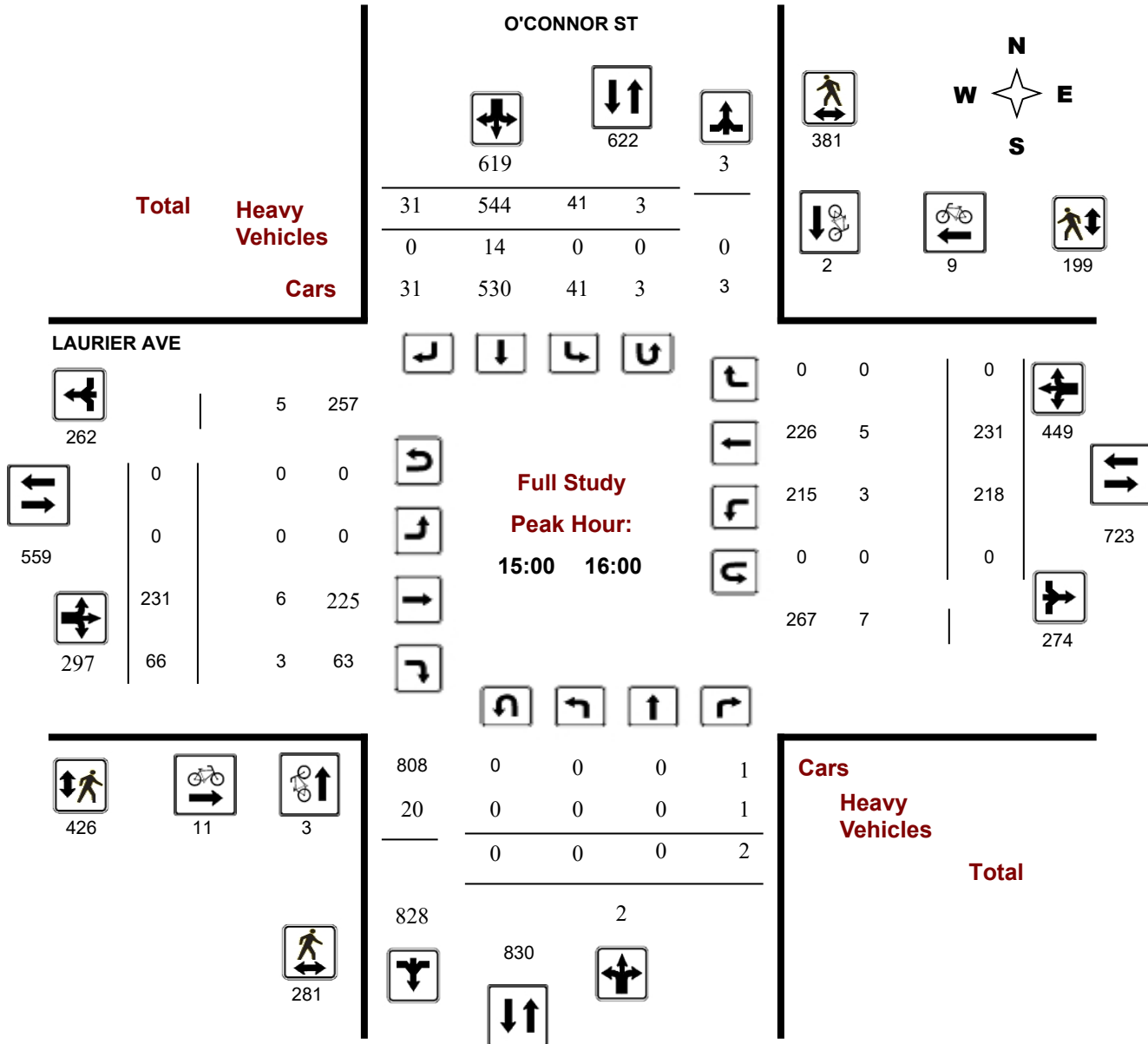
Survey Date: Thursday, November 22, 2018

WO No: 38156

Start Time: 07:00

Device: Miovision

Full Study Peak Hour Diagram





Transportation Services - Traffic Services

Turning Movement Count - Study Results

LAURIER AVE @ O'CONNOR ST

Survey Date: Thursday, November 22, 2018

WO No: 38156

Start Time: 07:00

Device: Miovision

Full Study 15 Minute Increments

O'CONNOR ST

LAURIER AVE

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	0	0	0	0	21	81	16	118	118	0	48	30	78	29	57	0	86	164	282
07:15 07:30	0	0	0	0	10	78	10	98	98	0	60	24	84	41	56	0	97	181	279
07:30 07:45	0	0	0	0	12	93	12	117	117	0	41	34	75	47	64	0	111	186	303
07:45 08:00	0	0	0	0	13	83	11	107	107	0	51	31	82	47	61	0	108	190	297
08:00 08:15	0	0	0	0	14	86	13	113	113	0	51	25	76	42	65	0	107	183	296
08:15 08:30	0	0	0	0	15	114	13	142	142	0	57	25	82	39	67	0	106	188	330
08:30 08:45	0	0	0	0	11	120	16	147	147	0	43	29	72	34	72	0	106	178	325
08:45 09:00	0	0	0	0	19	105	11	135	135	0	44	33	77	53	57	0	110	187	322
09:00 09:15	0	0	0	0	14	110	11	135	135	0	56	26	82	62	40	0	102	184	319
09:15 09:30	0	0	0	0	18	104	20	142	142	0	56	31	87	66	66	0	132	219	361
09:30 09:45	0	0	0	0	16	111	13	140	140	0	52	21	73	35	60	0	95	168	308
09:45 10:00	0	1	0	1	18	93	9	120	121	0	54	20	74	49	46	0	95	169	290
15:00 15:15	0	0	0	0	12	150	5	167	167	0	57	15	72	61	61	0	122	194	361
15:15 15:30	0	0	2	2	13	112	12	137	139	0	62	19	81	55	43	0	98	179	318
15:30 15:45	0	0	0	0	9	151	5	166	166	0	53	21	74	45	68	0	113	187	353
15:45 16:00	0	0	0	0	7	131	9	149	149	0	59	11	70	57	59	0	116	186	335
16:00 16:15	0	0	0	0	7	98	7	112	112	0	47	17	64	66	46	1	113	177	289
16:15 16:30	0	0	0	0	14	131	12	157	157	0	46	22	70	74	60	1	135	205	362
16:30 16:45	0	0	0	0	14	129	9	152	152	0	51	20	71	60	55	0	115	186	338
16:45 17:00	0	0	0	0	14	101	10	125	125	0	48	14	62	75	80	0	155	217	342
17:00 17:15	0	0	0	0	14	98	6	118	118	0	39	14	53	64	54	0	118	171	289
17:15 17:30	0	0	0	0	19	132	10	161	161	0	49	16	65	81	49	0	130	195	356
17:30 17:45	0	0	0	0	21	110	2	133	133	0	64	17	81	58	62	0	120	201	334
17:45 18:00	0	0	0	0	15	136	9	160	160	0	48	23	71	67	48	0	115	186	346
Total:	0	1	2	3	340	2657	251	3251	3254	0	1236	538	1776	1307	1396	2	2705	4481	7,735

Note: U-Turns are included in Totals.



Transportation Services - Traffic Services

Turning Movement Count - Study Results

LAURIER AVE @ O'CONNOR ST

Survey Date: Thursday, November 22, 2018

WO No: 38156

Start Time: 07:00

Device: Miovision

Full Study Cyclist Volume

		O'CONNOR ST			LAURIER AVE			
Time Period		Northbound	Southbound	Street Total	Eastbound	Westbound	Street Total	Grand Total
07:00	07:15	0	0	0	2	0	2	2
07:15	07:30	0	0	0	0	0	0	0
07:30	07:45	1	0	1	1	1	2	3
07:45	08:00	0	0	0	3	1	4	4
08:00	08:15	2	0	2	10	4	14	16
08:15	08:30	4	0	4	6	3	9	13
08:30	08:45	6	0	6	5	1	6	12
08:45	09:00	8	0	8	4	1	5	13
09:00	09:15	2	0	2	3	10	13	15
09:15	09:30	0	1	1	1	2	3	4
09:30	09:45	0	1	1	1	4	5	6
09:45	10:00	1	0	1	0	3	3	4
15:00	15:15	0	0	0	1	1	2	2
15:15	15:30	0	0	0	1	3	4	4
15:30	15:45	1	0	1	4	5	9	10
15:45	16:00	2	2	4	5	0	5	9
16:00	16:15	0	0	0	3	2	5	5
16:15	16:30	0	0	0	4	3	7	7
16:30	16:45	0	1	1	2	8	10	11
16:45	17:00	0	0	0	5	2	7	7
17:00	17:15	0	0	0	7	0	7	7
17:15	17:30	0	1	1	7	1	8	9
17:30	17:45	0	0	0	8	0	8	8
17:45	18:00	0	3	3	4	0	4	7
Total		27	9	36	87	55	142	178



Transportation Services - Traffic Services

Turning Movement Count - Study Results

LAURIER AVE @ O'CONNOR ST

Survey Date: Thursday, November 22, 2018

WO No: 38156

Start Time: 07:00

Device: Miovision

Full Study Pedestrian Volume

O'CONNOR ST

LAURIER AVE

Time Period	NB Approach (E or W Crossing)	SB Approach (E or W Crossing)	Total	EB Approach (N or S Crossing)	WB Approach (N or S Crossing)	Total	Grand Total
07:00 07:15	49	44	93	53	49	102	195
07:15 07:30	48	61	109	65	49	114	223
07:30 07:45	62	66	128	63	68	131	259
07:45 08:00	80	109	189	128	80	208	397
08:00 08:15	102	109	211	116	106	222	433
08:15 08:30	121	189	310	137	111	248	558
08:30 08:45	100	146	246	96	107	203	449
08:45 09:00	122	129	251	149	94	243	494
09:00 09:15	96	120	216	111	60	171	387
09:15 09:30	91	110	201	77	59	136	337
09:30 09:45	60	90	150	57	68	125	275
09:45 10:00	50	99	149	51	47	98	247
15:00 15:15	76	111	187	94	62	156	343
15:15 15:30	57	82	139	91	43	134	273
15:30 15:45	69	86	155	114	47	161	316
15:45 16:00	79	102	181	127	47	174	355
16:00 16:15	114	121	235	163	99	262	497
16:15 16:30	87	144	231	156	84	240	471
16:30 16:45	87	126	213	128	107	235	448
16:45 17:00	104	104	208	125	97	222	430
17:00 17:15	86	124	210	135	94	229	439
17:15 17:30	66	78	144	80	63	143	287
17:30 17:45	68	74	142	60	49	109	251
17:45 18:00	49	55	104	69	37	106	210
Total	1923	2479	4402	2445	1727	4172	8574



Transportation Services - Traffic Services

Turning Movement Count - Study Results

LAURIER AVE @ O'CONNOR ST

Survey Date: Thursday, November 22, 2018

WO No: 38156

Start Time: 07:00

Device: Miovision

Full Study Heavy Vehicles

O'CONNOR ST

LAURIER AVE

Northbound

Southbound

Eastbound

Westbound

Time Period	Northbound			N TOT	Southbound			S TOT	STR TOT	Eastbound			E TOT	Westbound			W TOT	STR TOT	Grand Total
	LT	ST	RT		LT	ST	RT			LT	ST	RT		LT	ST	RT			
07:00 07:15	0	0	0	4	2	2	0	4	8	0	3	1	5	1	1	0	7	12	10
07:15 07:30	0	0	0	5	0	2	0	2	7	0	4	1	7	2	2	0	8	15	11
07:30 07:45	0	0	0	7	3	6	1	10	17	0	2	1	8	0	4	0	9	17	17
07:45 08:00	0	0	0	4	1	2	0	3	7	0	2	0	5	2	3	0	8	13	10
08:00 08:15	0	0	0	9	0	5	0	5	14	0	0	2	3	2	1	0	3	6	10
08:15 08:30	0	0	0	10	1	10	0	11	21	0	2	0	5	0	3	0	6	11	16
08:30 08:45	0	0	0	9	0	9	0	9	18	0	0	0	1	0	1	0	1	2	10
08:45 09:00	0	0	0	8	1	4	0	5	13	0	0	0	2	4	2	0	7	9	11
09:00 09:15	0	0	0	10	0	8	0	8	18	0	3	1	5	1	1	0	5	10	14
09:15 09:30	0	0	0	7	3	5	2	10	17	0	1	0	5	2	2	0	8	13	15
09:30 09:45	0	0	0	6	1	6	0	7	13	0	3	0	7	0	4	0	8	15	14
09:45 10:00	0	1	0	14	1	8	0	10	24	0	2	1	6	4	3	0	10	16	20
15:00 15:15	0	0	0	5	0	4	0	4	9	0	2	1	5	0	2	0	4	9	9
15:15 15:30	0	0	1	7	0	4	0	4	11	0	2	0	2	2	0	0	5	7	9
15:30 15:45	0	0	0	6	0	4	0	4	10	0	0	2	3	0	1	0	1	4	7
15:45 16:00	0	0	0	3	0	2	0	2	5	0	2	0	4	1	2	0	5	9	7
16:00 16:15	0	0	0	1	0	0	0	0	1	0	1	0	3	1	2	0	4	7	4
16:15 16:30	0	0	0	2	0	1	0	1	3	0	0	0	0	1	0	0	1	1	2
16:30 16:45	0	0	0	2	0	1	0	1	3	0	1	0	4	1	3	0	5	9	6
16:45 17:00	0	0	0	3	0	2	0	2	5	0	0	0	5	1	5	0	6	11	8
17:00 17:15	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	2	1
17:15 17:30	0	0	0	1	0	0	0	0	1	0	1	0	2	1	1	0	3	5	3
17:30 17:45	0	0	0	1	0	0	0	0	1	0	0	0	1	1	1	0	2	3	2
17:45 18:00	0	0	0	3	0	3	0	3	6	0	1	0	2	0	1	0	2	4	5
Total: None	0	1	1	127	13	88	3	105	232	0	32	10	91	27	46	0	119	210	221



Transportation Services - Traffic Services

Turning Movement Count - Study Results

LAURIER AVE @ O'CONNOR ST

Survey Date: Thursday, November 22, 2018

WO No: 38156

Start Time: 07:00

Device: Miovision

Full Study 15 Minute U-Turn Total

O'CONNOR ST

LAURIER AVE

Time Period		Northbound U-Turn Total	Southbound U-Turn Total	Eastbound U-Turn Total	Westbound U-Turn Total	Total
07:00	07:15	0	0	0	0	0
07:15	07:30	0	0	0	0	0
07:30	07:45	0	0	0	0	0
07:45	08:00	0	0	0	0	0
08:00	08:15	0	0	0	0	0
08:15	08:30	0	0	0	0	0
08:30	08:45	0	0	0	0	0
08:45	09:00	0	0	0	0	0
09:00	09:15	0	0	0	0	0
09:15	09:30	0	0	0	0	0
09:30	09:45	0	0	0	0	0
09:45	10:00	0	0	0	0	0
15:00	15:15	0	0	0	0	0
15:15	15:30	0	0	0	0	0
15:30	15:45	0	1	0	0	1
15:45	16:00	0	2	0	0	2
16:00	16:15	0	0	0	0	0
16:15	16:30	0	0	2	0	2
16:30	16:45	0	0	0	0	0
16:45	17:00	0	0	0	0	0
17:00	17:15	0	0	0	0	0
17:15	17:30	0	0	0	0	0
17:30	17:45	0	0	0	0	0
17:45	18:00	0	0	0	0	0
Total		0	3	2	0	5

APPENDIX E

Collision Records



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: GLOUCESTER ST @ METCALFE ST

Traffic Control: Traffic signal

Total Collisions: 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-May-15, Mon,18:00	Clear	Sideswipe	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-15, Fri,10:31	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Delivery van	Other motor vehicle	
2017-Sep-15, Fri,14:08	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2018-Jan-25, Thu,06:50	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Unknown	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jun-14, Thu,17:25	Clear	Rear end	P.D. only	Dry	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Delivery van	Other motor vehicle	
2019-Oct-21, Mon,13:18	Clear	Sideswipe	P.D. only	Dry	North	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Bus (other)	Other motor vehicle	

Location: GLOUCESTER ST @ O'CONNOR ST

Traffic Control: Traffic signal

Total Collisions: 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Mar-31, Thu,11:30	Rain	SMV other	Non-fatal injury	Wet	West	Turning left	Pick-up truck	Pedestrian	1
2016-Jun-27, Mon,02:20	Rain	Angle	P.D. only	Wet	North	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Sep-20, Wed,09:03	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Nov-27, Mon,17:29	Rain	SMV other	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Pedestrian	1
2018-Mar-16, Fri,15:37	Clear	Approaching	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	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: GLOUCESTER ST @ O'CONNOR ST

Traffic Control: Traffic signal

Total Collisions: 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Mar-26, Mon,21:29	Clear	SMV unattended vehicle	P.D. only	Dry	South	Turning right	Construction equipment	Unattended vehicle	0
2018-Apr-27, Fri,10:50	Clear	SMV other	P.D. only	Dry	South	Turning left	Truck - dump	Pole (utility, power)	0
2020-Jan-10, Fri,17:15	Clear	SMV other	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Pedestrian	1

Location: GLOUCESTER ST btwn METCALFE ST & O'CONNOR ST

Traffic Control: No control

Total Collisions: 4

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Oct-02, Tue,15:55	Clear	Sideswipe	P.D. only	Dry	West	Pulling onto shoulder or toward curb	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-27, Sun,21:00	Clear	Other	P.D. only	Packed snow	East	Reversing	Pick-up truck	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-23, Fri,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2020-Mar-09, Mon,11:51	Clear	SMV unattended vehicle	P.D. only	Dry	East	Reversing	Truck - closed	Unattended vehicle	0

Location: LAURIER AVE W btwn METCALFE ST & O'CONNOR ST

Traffic Control: No control

Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2017-Feb-17, Fri,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2017-Apr-19, Wed,19:29	Clear	SMV other	Non-fatal injury	Wet	South	Turning left	Automobile, station wagon	Pedestrian	1
2017-Jun-22, Thu,17:49	Clear	Other	P.D. only	Dry	East	Reversing	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: LAURIER AVE W btwn METCALFE ST & O'CONNOR ST

Traffic Control: No control

Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2018-Jul-15, Sun,13:18	Clear	SMV unattended vehicle	P.D. only	Dry	North	Reversing	Truck - closed	Unattended vehicle	0
2018-Sep-21, Fri,10:21	Clear	Angle	P.D. only	Dry	South East	Reversing Stopped	Delivery van Automobile, station wagon	Other motor vehicle Other motor vehicle	0
2019-Apr-30, Tue,17:48	Clear	Angle	P.D. only	Dry	South East	Turning left Going ahead	Automobile, station wagon Automobile, station wagon	Other motor vehicle Other motor vehicle	0
2019-Aug-18, Sun,03:29	Clear	Turning movement	Non-fatal injury	Dry	East East	Turning right Going ahead	Automobile, station wagon Bicycle	Cyclist Other motor vehicle	0

Location: LAURIER AVE @ O'CONNOR ST

Traffic Control: Traffic signal

Total Collisions: 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jan-13, Wed,15:35	Clear	Turning movement	P.D. only	Loose snow	South South	Turning left Going ahead	Automobile, station wagon Pick-up truck	Other motor vehicle Other motor vehicle	0
2016-Jun-29, Wed,07:22	Clear	Turning movement	Non-fatal injury	Dry	East East	Turning right Going ahead	Automobile, station wagon Bicycle	Cyclist Other motor vehicle	0
2016-Aug-08, Mon,16:44	Clear	Turning movement	P.D. only	Dry	East East	Turning right Going ahead	Delivery van Bicycle	Cyclist Other motor vehicle	0
2016-Sep-09, Fri,15:34	Clear	Sideswipe	P.D. only	Dry	West West	Turning left Going ahead	Passenger van Automobile, station wagon	Other motor vehicle Other motor vehicle	0
2016-Oct-19, Wed,09:50	Clear	Sideswipe	P.D. only	Dry	East East	Stopped Going ahead	Automobile, station wagon Automobile, station wagon	Other motor vehicle Other motor vehicle	0
2016-Nov-05, Sat,10:45	Clear	Sideswipe	P.D. only	Dry	South South	Changing lanes Going ahead	Automobile, station wagon Truck and trailer	Other motor vehicle Other motor vehicle	0



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: LAURIER AVE @ O'CONNOR ST

Traffic Control: Traffic signal

Total Collisions: 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Nov-08, Tue,08:14	Clear	Sideswipe	P.D. only	Dry	West	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Unknown	Other motor vehicle	
2017-Jan-31, Tue,08:00	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-05, Sun,08:55	Snow	Angle	Non-fatal injury	Slush	West	Going ahead	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Mar-15, Wed,13:00	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Truck - closed	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Jul-18, Tue,17:43	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Delivery van	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2018-Feb-05, Mon,11:49	Clear	Rear end	P.D. only	Slush	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-07, Wed,17:11	Snow	Rear end	P.D. only	Loose snow	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Mar-16, Fri,22:30	Clear	Sideswipe	Non-fatal injury	Dry	South	Changing lanes	Passenger van	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Apr-20, Fri,20:20	Clear	Turning movement	P.D. only	Dry	South	Turning left	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-May-28, Mon,16:35	Clear	Turning movement	Non-fatal injury	Dry	East	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Cyclist	
2019-Feb-11, Mon,09:30	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Passenger van	Other motor vehicle	0
					South	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: LAURIER AVE @ O'CONNOR ST

Traffic Control: Traffic signal

Total Collisions: 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2019-Apr-02, Tue,23:29	Clear	Turning movement	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Automobile, station wagon	Other motor vehicle	
2019-May-07, Tue,16:08	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist	0
					East	Slowing or stopping	Bicycle	Other motor vehicle	
2019-Jun-12, Wed,07:02	Clear	Turning movement	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2019-Aug-08, Thu,18:30	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Sep-05, Thu,12:17	Clear	Turning movement	Non-fatal injury	Dry	East	Turning right	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2020-Feb-06, Thu,15:00	Clear	Other	P.D. only	Dry	West	Reversing	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-19, Wed,15:30	Clear	Rear end	P.D. only	Wet	South	Unknown	Unknown	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Feb-22, Sat,12:45	Clear	Rear end	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2020-Feb-26, Wed,09:15	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2020-Mar-05, Thu,08:55	Clear	SMV other	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Pedestrian	1

Location: METCALFE ST @ LAURIER AVE

Traffic Control: Traffic signal

Total Collisions: 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Jun-10, Fri,11:02	Clear	SMV unattended vehicle	P.D. only	Dry	North	Reversing	Pick-up truck	Unattended vehicle	0



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: METCALFE ST @ LAURIER AVE

Traffic Control: Traffic signal

Total Collisions: 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Sep-09, Fri,21:12	Clear	Turning movement	Non-fatal injury	Dry	East	Turning left	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2016-Dec-26, Mon,17:06	Freezing Rain	Angle	P.D. only	Ice	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Feb-16, Thu,12:00	Clear	SMV unattended vehicle	P.D. only	Slush	West	Unknown	Unknown	Unattended vehicle	0
2017-May-07, Sun,13:20	Rain	Sideswipe	P.D. only	Wet	East	Turning left	Unknown	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2017-Jul-20, Thu,18:01	Clear	Rear end	P.D. only	Dry	North	Stopped	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Aug-04, Fri,15:47	Clear	Angle	P.D. only	Dry	North	Turning left	Bus (other)	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Nov-08, Wed,15:25	Clear	Turning movement	P.D. only	Dry	West	Turning right	Automobile, station wagon	Cyclist	0
					West	Going ahead	Bicycle	Other motor vehicle	
2018-Feb-02, Fri,13:43	Clear	Sideswipe	P.D. only	Dry	North	Turning right	Delivery van	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2018-Jul-31, Tue,12:45	Clear	SMV other	P.D. only	Dry	West	Reversing	Police vehicle	Pole (utility, power)	0
2019-Jan-09, Wed,12:10	Clear	Sideswipe	P.D. only	Wet	North	Turning right	Unknown	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Mar-15, Fri,08:55	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jun-16, Sun,10:45	Clear	Rear end	P.D. only	Dry	East	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
					East	Unknown	Unknown	Other motor vehicle	



Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: METCALFE ST @ LAURIER AVE

Traffic Control: Traffic signal

Total Collisions: 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Jul-24, Wed,09:34	Clear	Sideswipe	P.D. only	Dry	North	Turning right	Truck - dump	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Jul-31, Wed,10:20	Clear	Rear end	P.D. only	Dry	West	Unknown	Unknown	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Aug-12, Mon,12:27	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Passenger van	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Sep-20, Fri,15:00	Clear	Sideswipe	P.D. only	Dry	West	Turning right	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Truck - open	Other motor vehicle	
2019-Oct-23, Wed,18:50	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-19, Tue,23:20	Clear	Angle	P.D. only	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Nov-27, Wed,17:17	Rain	Turning movement	P.D. only	Wet	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-12, Thu,16:20	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-17, Tue,16:15	Snow	Sideswipe	P.D. only	Slush	East	Going ahead	Unknown	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Dec-19, Thu,10:20	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Passenger van	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jan-19, Sun,04:59	Snow	Rear end	P.D. only	Packed snow	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: METCALFE ST @ LAURIER AVE

Traffic Control: Traffic signal

Total Collisions: 27

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2020-Jan-25, Sat,07:53	Clear	Other	P.D. only	Dry	South	Reversing	Police vehicle	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	
2020-Jul-03, Fri,09:03	Clear	Rear end	P.D. only	Dry	West	Going ahead	Truck - open	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2020-Sep-28, Mon,14:27	Clear	Angle	Non-fatal injury	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Passenger van	Other motor vehicle	

Location: METCALFE ST @ NEPEAN ST

Traffic Control: Stop sign

Total Collisions: 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jun-03, Fri,17:15	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	
2016-Oct-12, Wed,10:10	Clear	Angle	P.D. only	Dry	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Sep-15, Fri,09:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2018-Aug-28, Tue,16:59	Clear	Angle	Non-fatal injury	Dry	North	Going ahead	Police vehicle	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Oct-18, Thu,16:00	Clear	Sideswipe	P.D. only	Dry	North	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Feb-07, Thu,13:05	Clear	Rear end	P.D. only	Slush	North	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					North	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Feb-16, Sat,11:38	Clear	Rear end	P.D. only	Loose snow	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Automobile, station wagon	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

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

Location: METCALFE ST @ NEPEAN ST

Traffic Control: Traffic signal

Total Collisions: 10

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2019-Dec-02, Mon,16:45	Clear	Angle	P.D. only	Dry	East	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-14, Sat,17:39	Rain	Rear end	P.D. only	Wet	North	Going ahead	Passenger van	Other motor vehicle	0
					North	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Dec-14, Sat,19:20	Clear	Rear end	P.D. only	Wet	North	Slowing or stopping	Passenger van	Other motor vehicle	0
					North	Unknown	Unknown	Other motor vehicle	

Location: NEPEAN ST @ O'CONNOR ST

Traffic Control: Stop sign

Total Collisions: 19

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Jan-11, Mon,13:32	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Jan-20, Wed,13:28	Clear	Angle	P.D. only	Wet	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Feb-11, Thu,17:15	Snow	Angle	P.D. only	Loose snow	East	Turning right	Pick-up truck	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-May-12, Thu,17:29	Clear	Angle	P.D. only	Dry	East	Going ahead	Passenger van	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	
2016-Jun-22, Wed,16:20	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	
2016-Sep-22, Thu,09:00	Clear	Rear end	Non-fatal injury	Dry	East	Slowing or stopping	Police vehicle	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2017-Apr-15, Sat,12:55	Clear	Angle	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					South	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: NEPEAN ST @ O'CONNOR ST

Traffic Control: Stop sign

Total Collisions: 19

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-May-20, Sat,11:01	Clear	Angle	Non-fatal injury	Dry	South	Going ahead	Bicycle	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Cyclist	
2017-Jun-27, Tue,16:08	Clear	Turning movement	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Cyclist	0
					North	Going ahead	Bicycle	Other motor vehicle	
2017-Jul-18, Tue,10:20	Clear	SMV other	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Pedestrian	1
2017-Dec-14, Thu,21:27	Clear	Angle	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2017-Dec-20, Wed,08:30	Clear	Sideswipe	P.D. only	Loose snow	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Passenger van	Other motor vehicle	
2018-May-26, Sat,14:21	Clear	SMV other	P.D. only	Dry	West	Turning left	Unknown	Pedestrian	1
2018-May-28, Mon,09:04	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jun-11, Tue,06:40	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-Jun-11, Tue,15:39	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Automobile, station wagon	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2019-Jul-09, Tue,20:27	Clear	Angle	Non-fatal injury	Dry	East	Going ahead	Unknown	Cyclist	0
					South	Going ahead	Bicycle	Other motor vehicle	
2019-Aug-18, Sun,09:45	Clear	Sideswipe	P.D. only	Dry	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Dec-17, Tue,20:18	Clear	Sideswipe	P.D. only	Slush	South	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					South	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: NEPEAN ST btwn METCALFE ST & O'CONNOR ST

Traffic Control: No control

Total Collisions: 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuvre	Vehicle type	First Event	No. Ped
2016-Apr-12, Tue, 17:21	Clear	Sideswipe	P.D. only	Dry	East	Pulling away from shoulder or curb	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Passenger van	Other motor vehicle	
2016-Sep-20, Tue, 11:12	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0
2017-May-29, Mon, 12:44	Clear	Turning movement	P.D. only	Dry	East	Overtaking	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Delivery van	Other motor vehicle	
2018-Jun-26, Tue, 00:00	Clear	SMV unattended vehicle	P.D. only	Dry	East	Reversing	Automobile, station wagon	Unattended vehicle	0
2018-Jul-04, Wed, 09:39	Clear	SMV other	P.D. only	Dry	North	Reversing	Truck - dump	Pole (utility, power)	0
2018-Oct-12, Fri, 09:05	Clear	Sideswipe	P.D. only	Dry	East	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Truck - dump	Other motor vehicle	
2019-Aug-09, Fri, 14:37	Clear	Sideswipe	P.D. only	Dry	East	Pulling away from shoulder or curb	Truck - dump	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

APPENDIX F

Table 14-1 of the *ITE Trip Generation Handbook, 5th Edition*

Table 14-1 Typical Peak-Hour Volumes as a Percentage of the Total Parking Stalls

Type of Activity	A.M. Peak Hour		P.M. Peak Hour	
	In	Out	In	Out
Hotel-motel	30 - 50	30 - 50	30 - 60	10 - 30
Residential	5 - 10	30 - 50	30 - 50	10 - 30
Office	40 - 70	5 - 15	5 - 20	40 - 70
Medical Office	40 - 60	10 - 20	10 - 30	60 - 80
Hospital				
Visitor	30 - 40	10 - 50	40 - 60	50 - 75
Employee	60 - 75	5 - 10	10 - 15	60 - 75
Retail-commercial	10 - 30	10 - 20	30 - 60	40 - 65
Central business district	40 - 60	10 - 20	10 - 30	40 - 60
Airport All Traffic ^a	40 - 65	30 - 50	70 - 90	70 - 90
Short-term (0-3 hr)	50 - 75	80 - 100	90 - 100	90 - 100
Mid-term (4-24 hr)	10 - 30	5 - 10	10 - 30	10 - 30
Long-term (more than 24 hr)	5 - 10	5 - 10	5 - 10	5 - 10
Special events	Before event—(In)		After event—(Out)	
	80 - 100		85 - 200 ^b	

^aParking and bypass (loading-unloading).
^bMaximum assumes a 30-min departure.

Source: Adapted from Robert A. Weant and Herbert S. Levinson, *Parking*, Westport, Conn.: Eno Foundation for Transportation, Inc., 1990. Adapted from Robert W. Crommelin, *Entrance-Exit Design and Control for Major Parking Facilities*, a seminar presentation (Encino, Calif., 1972); and Anthony P. Chest, Mary S. Smith, and Sam Bhuyan, *Parking Structures Planning, Design, Construction, Maintenance and Repair* (New York: Van Nostrand Reinhold, 1989).

on the type of generator served, user characteristics (employee, shopper, etc.), and parking capacity. Volumes are typically expressed as a ratio of the number of vehicles to the number of parking stalls in the facility. Table 14-1 gives peak-hour ratios for a number of activities.

The number of vehicles that can enter (acceptance rate) or leave a parking facility, per lane, is related to the angle of approach (sharp turns have less capacity than straight-in runs), whether any control is used, the familiarity of the driver with the facility, the freedom of internal circulation (for entry), the amount of vehicular traffic on the streets (for exit) and the degree of conflict with pedestrians crossing the driveway. In general, for a self-parking facility with no control, the capacity per lane ranges up to 800 vph. One engineer has recommended a design value of 400 vph.⁵ Guidelines have been developed for considering capacities related to control methods, and also to street traffic (but not pedestrian sidewalk conflicts).⁶

Table 14-2 Vehicle Acceptance Rates of Large Parking Areas

Approach to Entrance	Number of Studies	Average Acceptance Rates Vehicles per Hour per Lane	
		Unfamiliar Entrance ¹	Familiar Entrance ²
Straight approach (no turn movement)	20	850	1,100
90° right turn	15	750	1,000
90° left turn	24	830	900
Oblique angle, right	8	650	1,000
Oblique angle, left	4	720	

¹ Includes racetracks, stadiums, and other facilities not frequently visited by the same individuals.
² Includes industrial plants, military bases, and other facilities where the same drivers enter daily.
³ No data available.

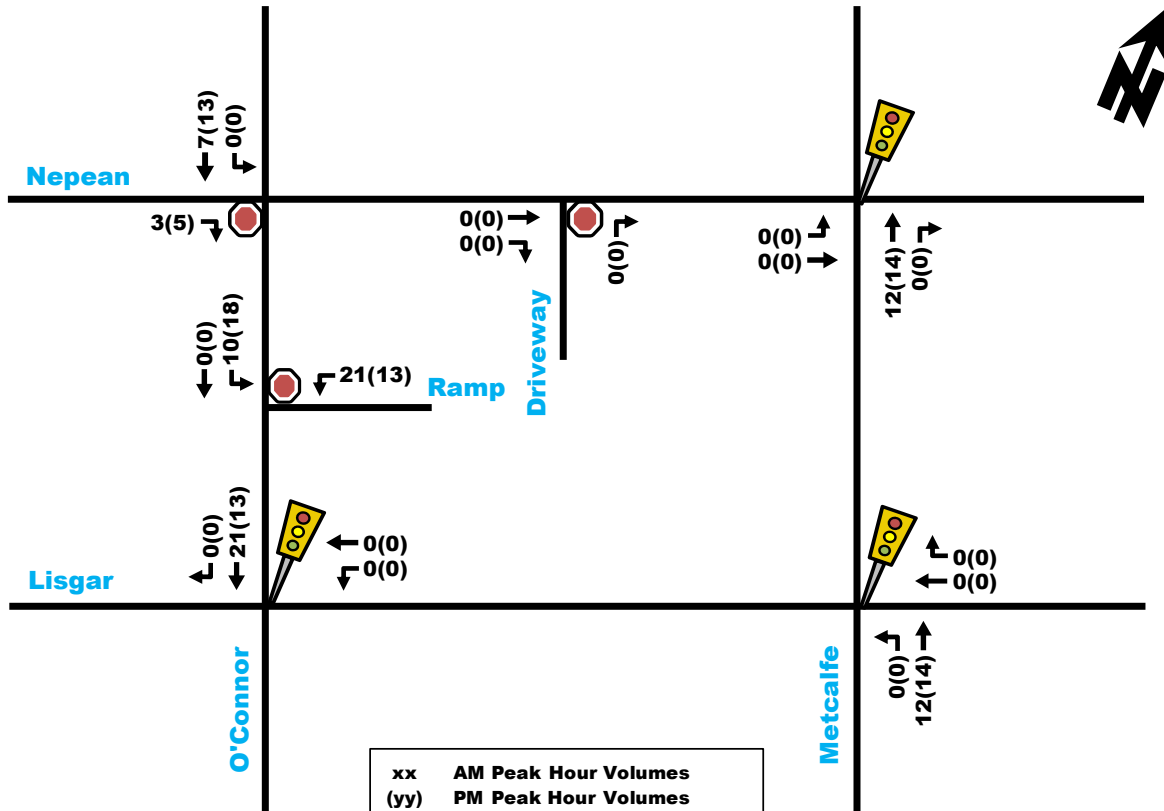
Source: A.A. Carter, Jr. "Vehicle Acceptance Rates of Parking Areas," *Public Roads* (Oct. 1959).

⁵ R.T. Hintersteiner, "Parking Control Guidelines for the Design of Parking Facility Portals," *ITE Journal* (Jan. 1989), p. 28-31.
⁶ J.M. Frantzeskakis, "Traffic Flow Analysis for Dimensioning Entrances-Exits and Reservoir Space for Off-Street Parking," *ITE Journal* (May 1981), pp. 16-24.

APPENDIX G

Other Area Developments

Figure 11: 2022 Site-Generated Traffic



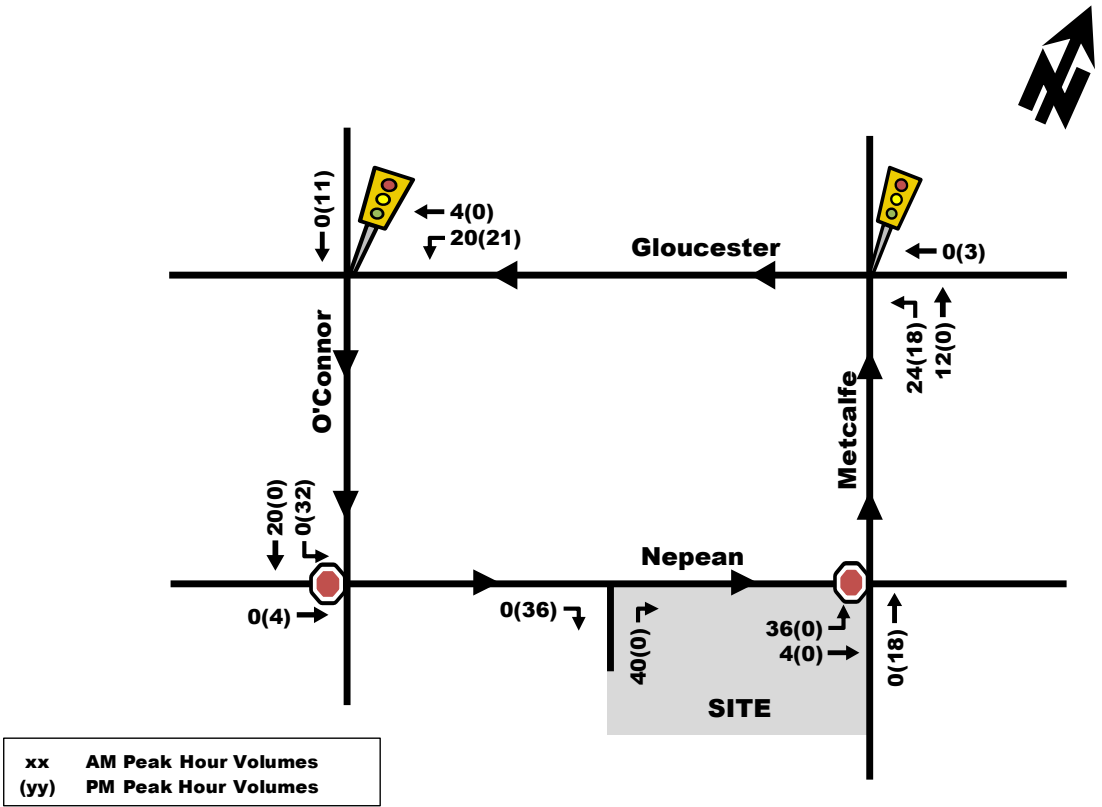
3.2. Background Network Traffic

3.2.1. Transportation network plans

Refer to Section 2.1.3: Planned Study Area Transportation Network Changes.

3.2.2. Background Growth

Given that the proposed development will be located in the well-developed core downtown area of the city of Ottawa, traffic along study area roadways is not anticipated to increase drastically within the future horizon years. Also, since the development is located in a TOD area, within 600m of LRT's Parliament Station, transit usage is expected to continuously increase, and auto usage is expected to decrease. Major other area developments within the study area are accounted for in Section 3.2.3. Nonetheless, a background growth rate of 1% has been applied to the study area roadways to account for trips that may be generated by future other area developments that are minor or located outside the scope of the study area. Figure 12 provides the future background traffic at 2022 and Figure 13 provides the future background traffic at 2027. Note that a traffic signal is anticipated to be constructed at the intersection of O'Connor/Nepean prior to the construction of the proposed development and the EBT movement is assumed to be reinstated as a result.



7.0 BACKGROUND TRAFFIC NETWORK

7.1 Transportation Network Changes

Recent/planned transportation network changes in the broader study area include:

- Replacement of the surface transit lanes on Albert and Slater with the below-grade LRT line (November 2018);
- Road modifications on Queen Street including wider sidewalks, raised intersections, and some reduction in turn lanes;
- Road modifications on Albert and Slater Streets with wider sidewalks and replacement of the bus-only lanes with a raised cycle track; and
- Reconstructing Elgin Street as a more “complete street” with wider sidewalks, reduced speed limit, some loss of on-street parking and loss of peak hour traffic lanes due to permanent on-street parking.

7.2 Background Traffic Growth

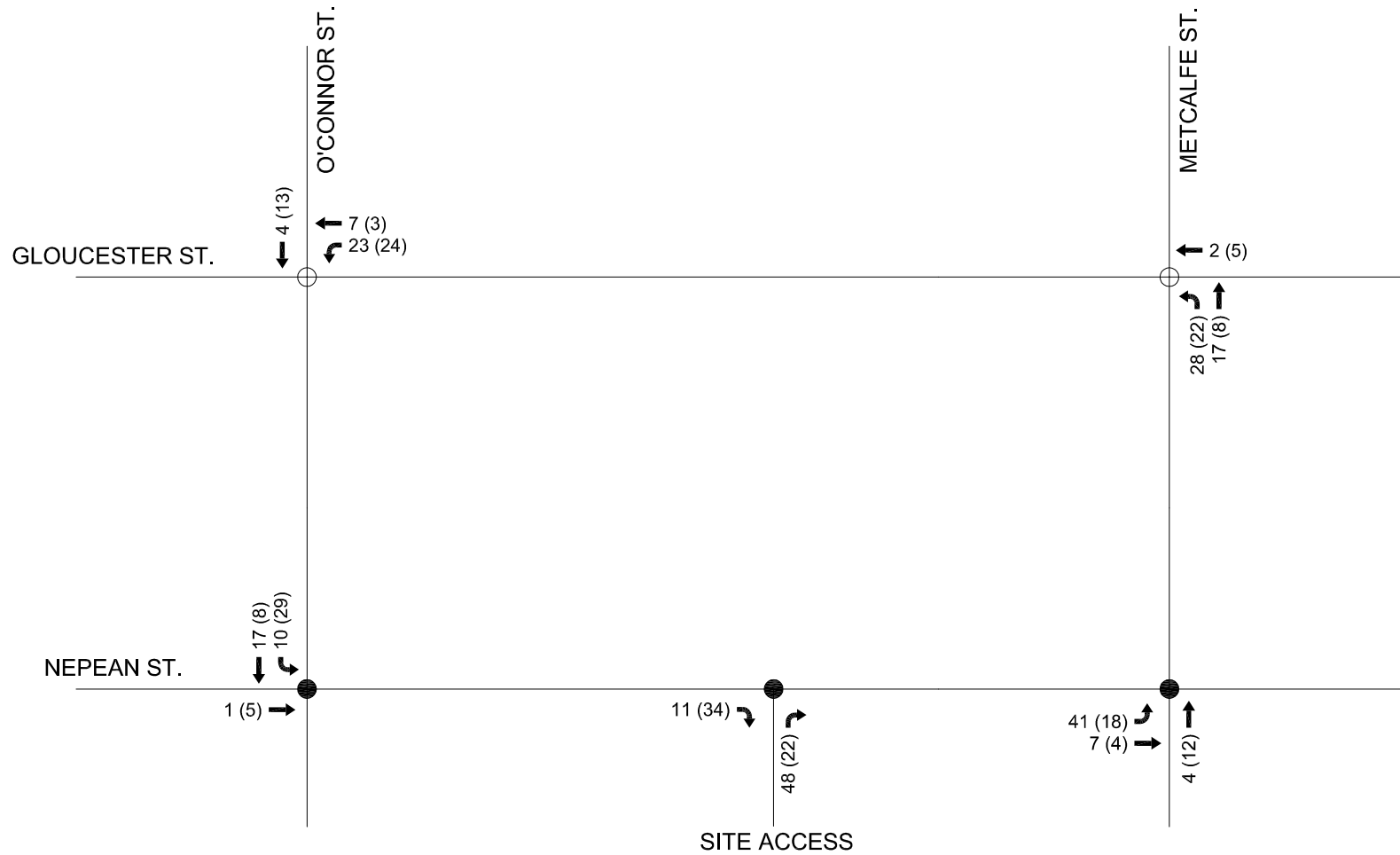
This is not applicable to new downtown developments.

7.3 Other Area Development

See Section 3.2.

8.0 FUTURE TRAFFIC OPERATIONS

M:\2011\11153\CAD\Design\Figures\Traffic\March 2012\FIGURES 6-14.dwg, Figure 12 - Primary Site Traffic, Mar 29, 2012 - 11:19am, goneill



NOVATECH

ENGINEERING CONSULTANTS LTD.

ENGINEERS & PLANNERS

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

Telephone: (613) 254-9643
Facsimile: (613) 254-5867
Email: novainfo@novatech-eng.com

LEGEND

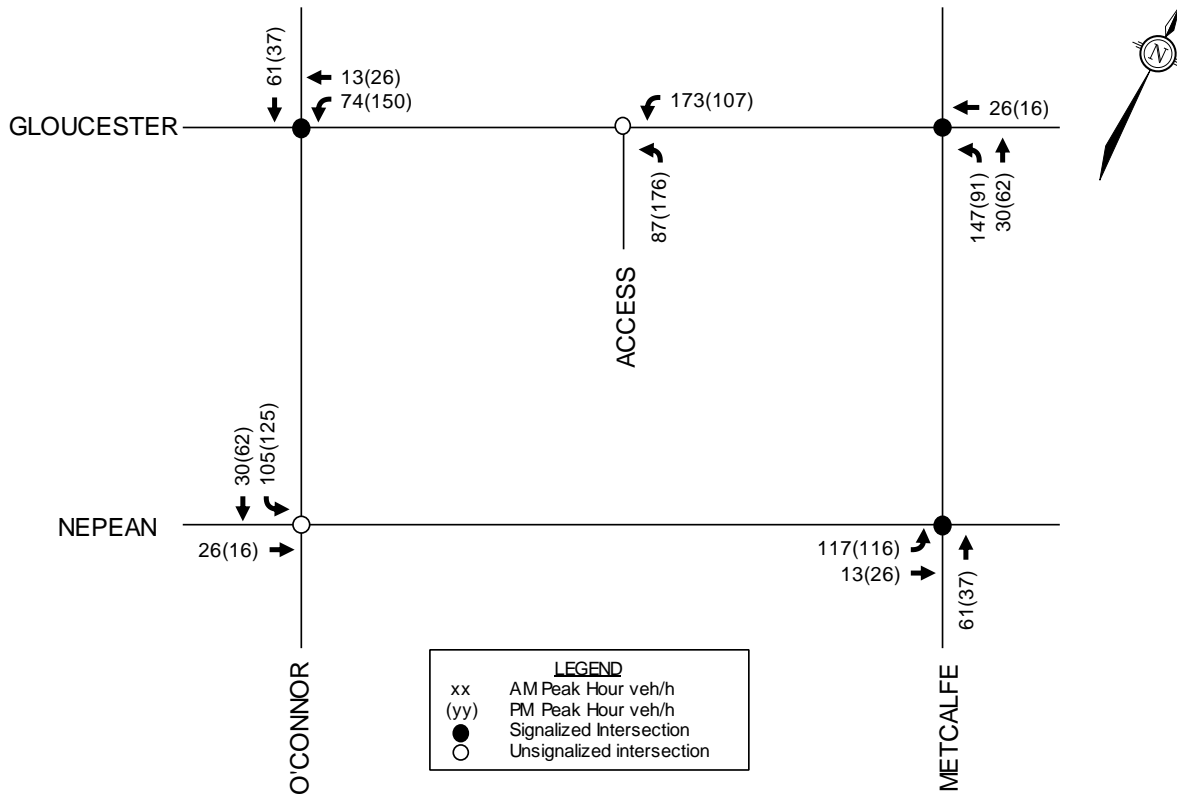
- Unsignalized Intersection
- Signalized Intersection
- xx VPH AM Peak Hour
- (xx) VPH PM Peak Hour

96 NEPEAN STREET

SITE TRAFFIC

MAR 2012 111153 FIGURE 12

Figure 4: Site Generated Traffic



4.2 Background Traffic

4.2.1 General Background Growth

With the opening of the Confederation Line, traffic within the study area is not anticipated to grow significantly within the horizon year. For the purposes of this analysis, traffic within the study area is anticipated to remain generally consistent with the existing condition. No growth rate has been applied to the existing traffic volumes within the study area.

4.2.2 Other Area Development Traffic

As identified in Section 3.4, the following developments are proposed in the vicinity of the subject site:

- 96 Nepean Street;
- 180 Metcalfe Street;

Traffic generated by these developments have been added to the study area roadways under the 2023 and 2028 background traffic conditions. Relevant excerpts from other developments are included in **Appendix H**.

Background traffic volumes within the study area are shown in **Figure 5**. Total traffic volumes within the study area are shown in **Figure 6**.

APPENDIX H

Strategic Long-Range Model and Intersection Growth Rate Figures

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Laurier and O'Connor Area

2011 Model - Basecase

N/A

User Initials: TIMW

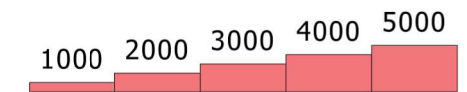
Plot Prepared: September, 2022

EMME Scenario: 21713

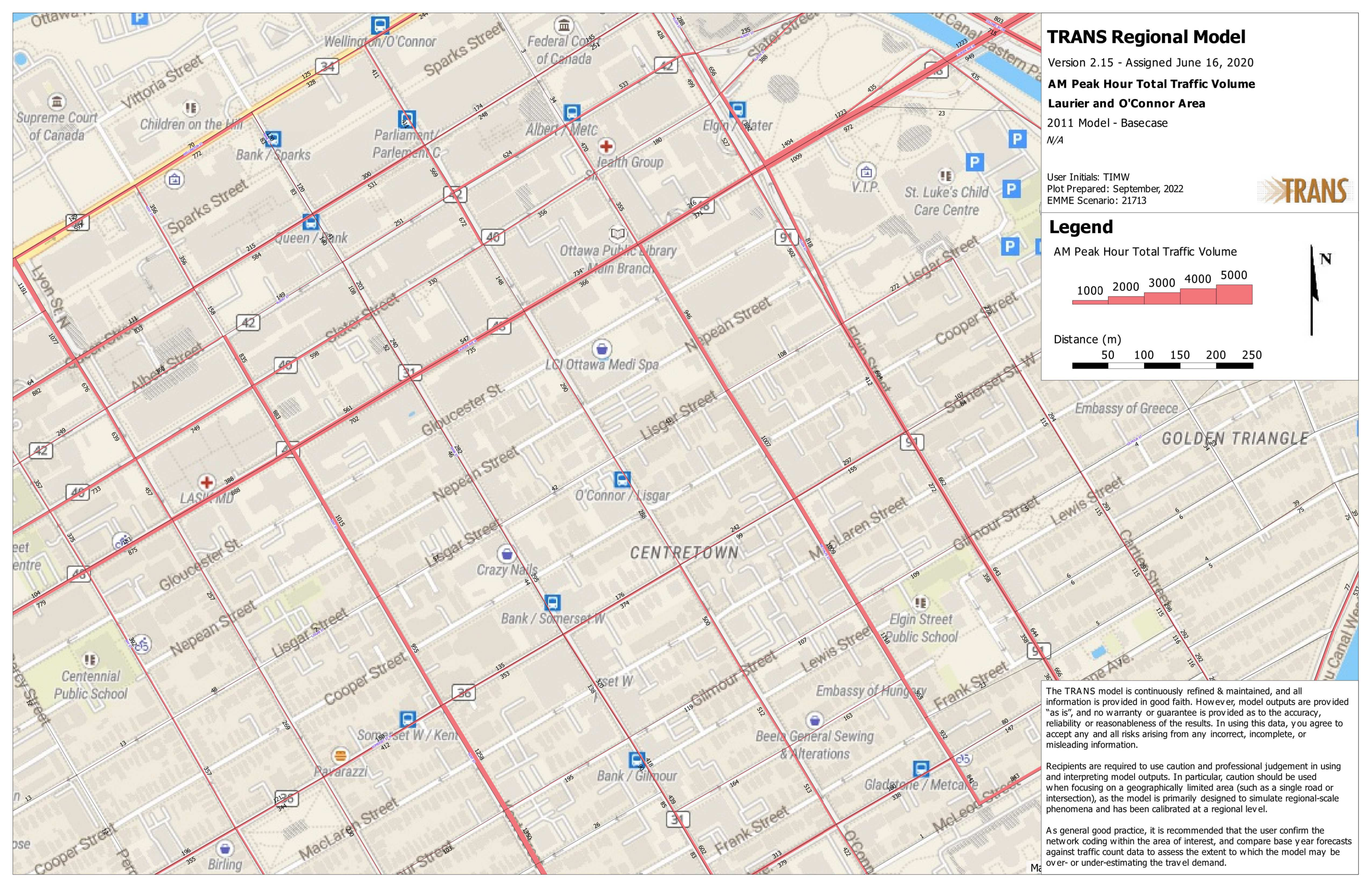
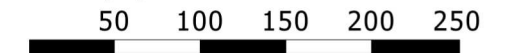


Legend

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 a 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

Laurier and O'Connor Area

2031 Model - Basecase

N/A

User Initials: TIMW

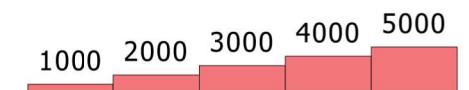
Plot Prepared: September, 2022

EMME Scenario: 21715

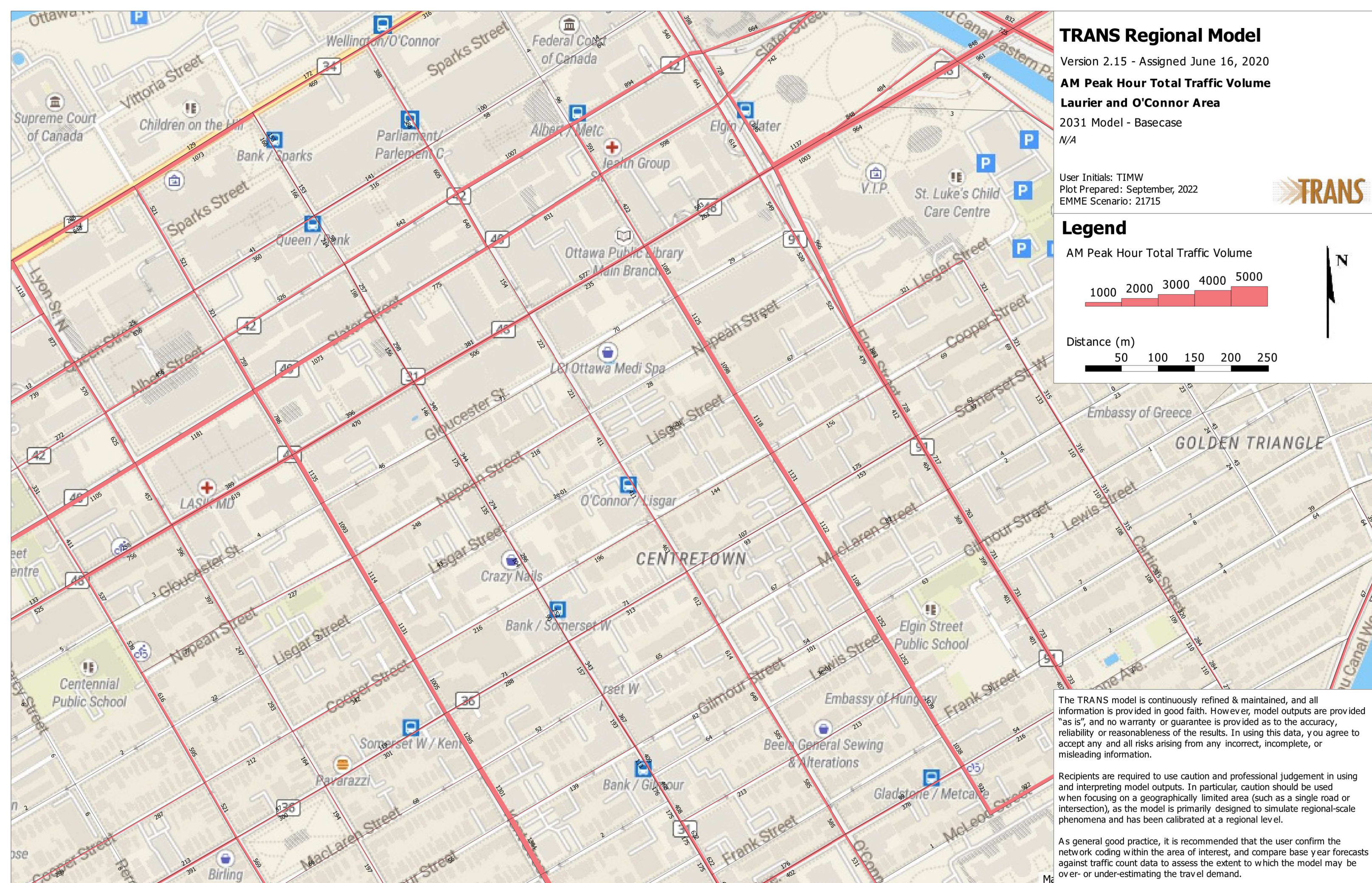
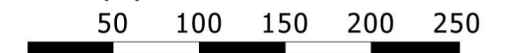


Legend

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.

APPENDIX I

TDM Checklists

TDM-Supportive Development Design and Infrastructure Checklist:
Residential Developments (multi-family or condominium)

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: <i>Residential developments</i>		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	<input checked="" type="checkbox"/>
BASIC	1.1.2 Locate building entrances in order to minimize walking distances to sidewalks and transit stops/stations	<input checked="" type="checkbox"/>
BASIC	1.1.3 Locate building doors and windows to ensure visibility of pedestrians from the building, for their security and comfort	<input checked="" type="checkbox"/>
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 <i>(see Official Plan policy 4.3.3)</i>	<input checked="" type="checkbox"/>
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 <i>(see Official Plan policy 4.3.12)</i>	<input checked="" type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		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 (<i>see Official Plan policy 4.3.10</i>)	<input checked="" type="checkbox"/>
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 (<i>see Official Plan policy 4.3.10</i>)	<input checked="" type="checkbox"/>
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 (<i>see Official Plan policy 4.3.11</i>)	<input checked="" type="checkbox"/>
BASIC	1.2.6 Provide safe, direct and attractive walking routes from building entrances to nearby transit stops	<input checked="" type="checkbox"/>
BASIC	1.2.7 Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible	<input checked="" type="checkbox"/>
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	<input type="checkbox"/>
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	<input type="checkbox"/>
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)	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		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 <i>Official Plan policy 4.3.6</i>)	<input checked="" type="checkbox"/>
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 <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
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 <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	<input type="checkbox"/>
2.2 Secure bicycle parking		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single residential 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 <i>Zoning By-law Section 111</i>)	<input checked="" type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	<input type="checkbox"/>
2.3 Bicycle repair station		
BETTER	2.3.1 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)	<input type="checkbox"/>
3. TRANSIT		
3.1 Customer amenities		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
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	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
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	<input type="checkbox"/>
5. CARSHARING & BIKESHARING		
5.1 Carshare parking spaces		
BETTER	5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses (see <i>Zoning By-law Section 94</i>)	<input type="checkbox"/>
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	<input type="checkbox"/>
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	<input checked="" type="checkbox"/> Proposed parking is less than ZBL. Zoning being applied for.
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	<input type="checkbox"/>
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 <i>Zoning By-law Section 104</i>)	<input type="checkbox"/>
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 <i>Zoning By-law Section 111</i>)	<input type="checkbox"/>
6.2 Separate long-term & short-term parking areas		
BETTER	6.2.1 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	<input type="checkbox"/>

TDM Measures Checklist:
Residential Developments (multi-family, condominium or subdivision)

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: 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	<input type="checkbox"/>
1.2 Travel surveys		
BETTER	1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	<input type="checkbox"/>
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 (<i>multi-family, condominium</i>)	<input checked="" type="checkbox"/>
2.2 Bicycle skills training		
BETTER	2.2.1 Offer on-site cycling courses for residents, or subsidize off-site courses	<input type="checkbox"/>

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
3. TRANSIT		
3.1 Transit information		
BASIC	3.1.1 Display relevant transit schedules and route maps at entrances (<i>multi-family, condominium</i>)	<input checked="" type="checkbox"/>
BETTER	3.1.2 Provide real-time arrival information display at entrances (<i>multi-family, condominium</i>)	<input type="checkbox"/>
3.2 Transit fare incentives		
BASIC ★	3.2.1 Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit	<input type="checkbox"/>
BETTER	3.2.2 Offer at least one year of free monthly transit passes on residence purchase/move-in	<input type="checkbox"/>
3.3 Enhanced public transit service		
BETTER ★	3.3.1 Contract with OC Transpo to provide early transit services until regular services are warranted by occupancy levels (<i>subdivision</i>)	<input type="checkbox"/>
3.4 Private transit service		
BETTER	3.4.1 Provide shuttle service for seniors homes or lifestyle communities (e.g. scheduled mall or supermarket runs)	<input type="checkbox"/>
4. CARSHARING & BIKESHARING		
4.1 Bikeshare stations & memberships		
BETTER	4.1.1 Contract with provider to install on-site bikeshare station (<i>multi-family</i>)	<input type="checkbox"/>
BETTER	4.1.2 Provide residents with bikeshare memberships, either free or subsidized (<i>multi-family</i>)	<input type="checkbox"/>
4.2 Carshare vehicles & memberships		
BETTER	4.2.1 Contract with provider to install on-site carshare vehicles and promote their use by residents	<input type="checkbox"/>
BETTER	4.2.2 Provide residents with carshare memberships, either free or subsidized	<input type="checkbox"/>
5. PARKING		
5.1 Priced parking		
BASIC ★	5.1.1 Unbundle parking cost from purchase price (<i>condominium</i>)	<input checked="" type="checkbox"/>
BASIC ★	5.1.2 Unbundle parking cost from monthly rent (<i>multi-family</i>)	<input type="checkbox"/>

TDM measures: <i>Residential developments</i>		Check if proposed & add descriptions
6. TDM MARKETING & COMMUNICATIONS		
6.1 Multimodal travel information		
BASIC ★	6.1.1 Provide a multimodal travel option information package to new residents	<input checked="" type="checkbox"/>
6.2 Personalized trip planning		
BETTER ★	6.2.1 Offer personalized trip planning to new residents	<input type="checkbox"/>