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Proposed Mixed-Use Development

357-363 Preston Street, Ottawa

Transportation Impact Assessment

Engineering excellence. Planning progress. Liveable landscapes.

Proposed Mixed-Use Development
357, 361, and 363 Preston Street

Transportation Impact Assessment

Prepared By:

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

Dated: September 2022
Revised: December 2024

Novatech File: 121183
Ref: R-2022-015

NOVATECH
Engineers, Planners & Landscape Architects

December 18, 2024

City of Ottawa
Planning, Development, and Building Services Department
110 Laurier Ave. W., 4th Floor,
Ottawa, Ontario K1P 1J1

Attention: **Mr. Wally Dubyk**
Transportation Project Manager, Infrastructure Approvals

Dear Mr. Dubyk:

Reference: **357, 361, and 363 Preston Street**
Revised Transportation Impact Assessment
Novatech File No. 121183

We are pleased to submit the following revised Transportation Impact Assessment (TIA), in support of Zoning By-Law Amendment and Site Plan Control applications at 357, 361, and 363 Preston Street, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa's *Transportation Impact Assessment Guidelines*.

The original TIA prepared in support of this development was dated September 2022, and has since been revised to reflect updates to the Site Plan and address City comments.

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

Yours truly,

NOVATECH

Joshua Audia, P.Eng.
Project Engineer | Transportation

Suite 200, 240 Michael Cowpland Drive, Ottawa ON K2M 1P6 Tel: 613.254.9643 Fax: 613.254.5867 www.novatech-eng.com

Certification Form for Transportation Impact Assessment (TIA) Study Program Manager

TIA Plan Reports

On April 14, 2022, the Province's Bill 109 received Royal Assent providing legislative direction to implement the More Homes for Everyone Act, 2022 aiming to increase the supply of a range of housing options to make housing more affordable. Revisions have been made to the TIA guidelines to comply with Bill 109 and streamline the process for applicants and staff.

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 they meet the four criteria listed below.

Certification

- ☑ 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 (Update Effective July 2023);
- ☑ 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;
- ☑ 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

City of Ottawa
Transportation Engineering Services
Planning, Real Estate and Economic Development
110 Laurier Avenue West, 4th fl.
Ottawa, ON K1P 1J1
Tel. : 613-580-2424
Fax: 613-560-6006

☑ I am either a licensed or registered[1] professional in good standing, whose field of expertise [check ✓ appropriate field(s)]:

- ☑ is either transportation engineering
- ☐ or transportation planning.

Dated at Ottawa (City) this 18th day of December, 20 24.

Name: Jennifer Luong, P.Eng.

Professional Title: Senior Project Manager

_____

Signature of Individual certifier that they meet the above four criteria

Office Contact Information (Please Print)	
Address:	240 Michael Cowpland Drive, Suite 200
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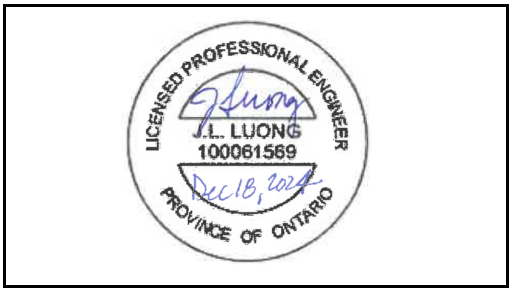
Stamp



[1] 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.

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EXECUTIVE SUMMARY

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment and Site Plan Control applications for the property located at 357, 361, and 363 Preston Street. The subject site is approximately 0.21 acres in size, and is currently occupied by a salad bar, dry cleaner, and small public parking lot. The subject site is currently served by one driveway to Aberdeen Street, approximately 20m east of Preston Street, and two driveways to Preston Street, approximately 13m and 22m south of Aberdeen Street.

The subject site is surrounded by the following:

- Aberdeen Street, followed by commercial and residential uses to the north,
- Commercial and residential uses, followed by Beech Street to the south,
- A public parking lot, followed by Rochester Street to the east, and
- Preston Street, followed by commercial and residential uses to the west.

The proposed development consists of a single six-storey mid-rise building, with 45 apartment dwellings and approximately 3,830 ft^2 gross floor area (GFA) of ground-floor commercial space. A total of nine vehicle parking spaces will be provided in an underground parking garage, and 35 bicycle parking spaces will be provided in designated areas within the parking garage. Access to the parking garage will be provided via a single driveway to Aberdeen Street. The development will be constructed in a single phase, with a buildout year of 2026.

The subject site is designated as 'Mixed Use Centre' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Traditional Mainstreet' (TM), and the site is within the Preston-Carling District Secondary Plan and Preston Traditional Mainstreet Design Priority Area (DPA). Both the zoning and the Secondary Plan permit a six-storey mixed-use building. The zoning by-law amendment seeks relief from the required setbacks.

The study area for this report includes the boundary roadways Preston Street and Aberdeen Street, as well as the following intersections:

- Preston Street/Aberdeen Street
- Rochester Street/Aberdeen Street

The selected time periods for this study are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The 2026 buildout year and 2031 horizon year have been considered.

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

Forecasting

- The proposed development is anticipated to generate approximately 23 person trips (including four vehicle trips) in the AM peak hour and 36 person trips (including five vehicle trips) in the PM peak hour.

Development Design

- Widened sidewalks will be provided along the subject site's frontages to Preston Street and Aberdeen Street. The two proposed commercial units will have entrances to Preston Street, and the proposed dwellings will have a lobby entrance to Aberdeen Street and an emergency access to Preston Street.

- Bicycle parking will be provided in designated areas within the underground parking garage.

- Stops #6653, #6654, #6655, #6656, #6657, and #8003 are within 400m walking distance of the entrances to the proposed development, and Dow's Lake O-Train Station is within 600m walking distance. The proposed development is therefore served by OC Routes 2 and 85.

- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the TDM checklist are met.

Parking

- The proposed number of vehicle and bicycle parking spaces meet all requirements of the City's *Zoning By-Law* (ZBL).

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
    - Neither boundary street meets the target pedestrian level of service (PLOS);
    - Neither boundary street meets the target bicycle level of service (BLOS);
    - Preston Street achieves a transit level of service (TLOS) F, but does not have a TLOS target;
    - Preston Street meets the target truck level of service (TkLOS).

- Preston Street currently achieves a PLOS E. The best possible score is a PLOS C without changing the operating speed of the roadway. To achieve a PLOS C, sidewalks with a minimum width of 2.0m and minimum boulevard width of 2.0m are required. This is identified for the City's consideration. Along the east side of Preston Street, a sidewalk width of 2.0m is proposed with a boulevard of approximately 3.0m as part of this development application. The best possible PLOS C can be achieved with this configuration.

- Aberdeen Street currently achieves a PLOS F. For roadways with daily curb lane volumes less than 3,000 vpd and an operating speed of 60 km/h or slower, the target PLOS A can be achieved by providing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration. Along the south side of Aberdeen Street, a sidewalk width of 2.0m is proposed as part of this development application. This achieves a PLOS C and fails to meet the target PLOS A, however the additional space for landscaping at the back of sidewalk is considered a reasonable trade-off.

- Preston Street currently achieves a BLOS F. Streets with an operating speed of 60 km/h can only achieve the target BLOS B if physically separated bikeways are provided. This is identified for the City's consideration.

- Aberdeen Street currently achieves a BLOS F. Streets with an operating speed of 60 km/h can achieve the target BLOS D if bike lanes are provided.

Access Design

- The proposed driveway meets most of the relevant requirements of the City's *Private Approach By-Law* (PABL) and ZBL, and the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads*.

- Within the first 6m of the property line, the proposed driveway has a maximum grade of 3-5%. As this is not anticipated to create a traffic hazard or negatively impact sightlines, the General Manager has flexibility to approve the proposed grade, per Section 24(3) of the PABL.

Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures:
    - Display local area maps with walking/cycling access routes and key destinations at major entrances;
    - Display relevant transit schedules and route maps at entrances;
    - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit;
    - Unbundle parking cost from monthly rent.

Neighbourhood Traffic Management

- No neighbourhood traffic management measures are recommended as part of the proposed development.

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

1.0 SCREENING

1.1 Introduction

This Transportation Impact Assessment (TIA) has been prepared in support of Zoning By-Law Amendment and Site Plan Control applications for the property located at 357, 361, and 363 Preston Street. The subject site is approximately 0.21 acres in size, and is currently occupied by a salad bar, dry cleaner, and small public parking lot. The subject site is currently served by one driveway to Aberdeen Street, approximately 20m east of Preston Street, and two driveways to Preston Street, approximately 13m and 22m south of Aberdeen Street.

The subject site is surrounded by the following:

- Aberdeen Street, followed by commercial and residential uses to the north,
- Commercial and residential uses, followed by Beech Street to the south,
- A public parking lot, followed by Rochester Street to the east, and
- Preston Street, followed by commercial and residential uses to the west.

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

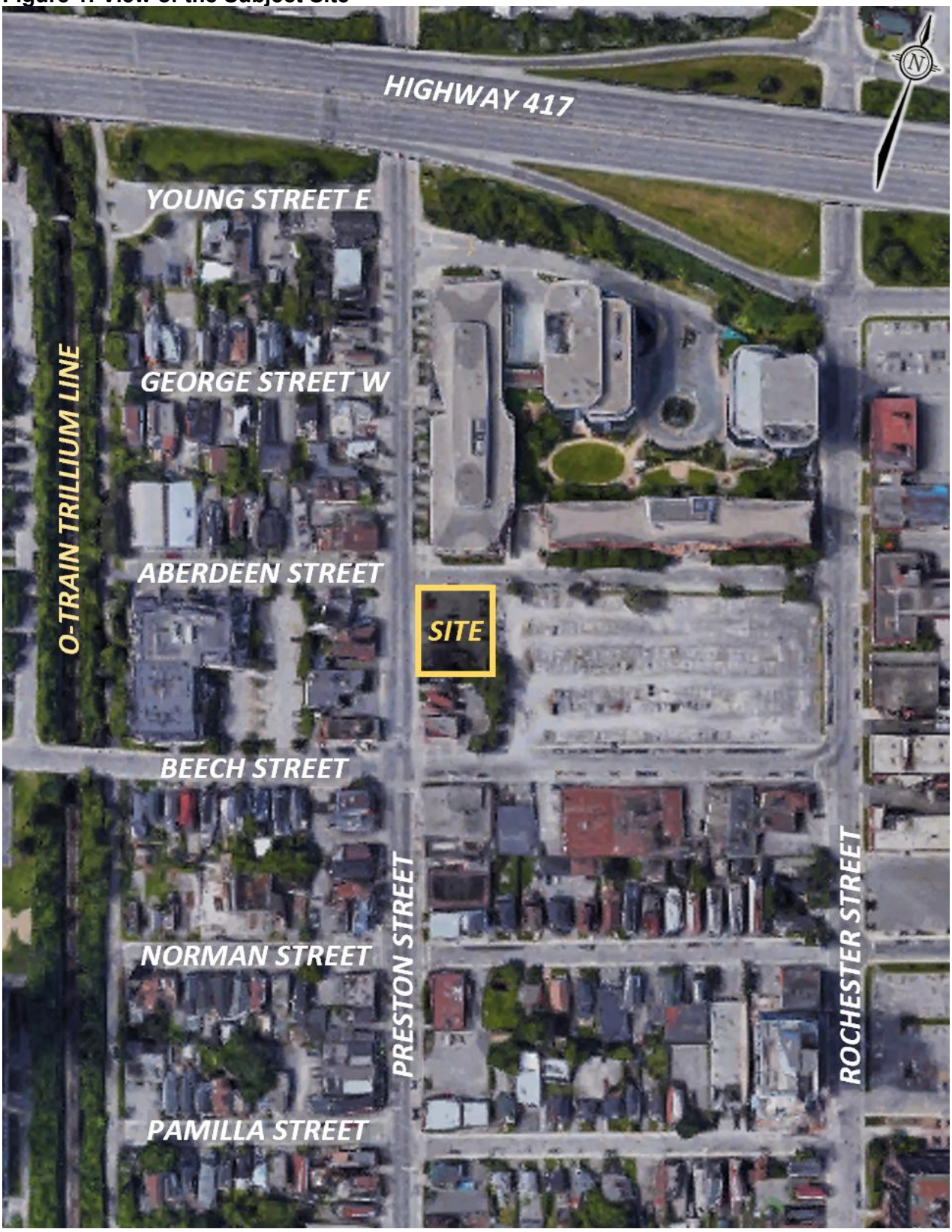
1.2 Proposed Development

The proposed development consists of a single six-storey mid-rise building, with 45 apartment dwellings and approximately 3,830 ft^2 gross floor area (GFA) of ground-floor commercial space. A total of nine vehicle parking spaces will be provided in an underground parking garage, and 35 bicycle parking spaces will be provided in designated areas within the parking garage. Access to the parking garage will be provided via a single driveway to Aberdeen Street. The development will be constructed in a single phase, with a buildout year of 2026.

The subject site is designated as 'Mixed Use Centre' on Schedule B of the City of Ottawa's Official Plan. The implemented zoning for the property is 'Traditional Mainstreet' (TM), and the site is within the Preston-Carling District Secondary Plan and Preston Traditional Mainstreet Design Priority Area (DPA). Both the zoning and the Secondary Plan permit a six-storey mixed-use building. The zoning by-law amendment seeks relief from the required setbacks.

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

Figure 1: View of the Subject Site



1.3 Screening Form

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

- Trip Generation Trigger – The development is not anticipated to generate over 60 peak hour person trips; further assessment is **not required** based on this trigger.

- Location Triggers – The development is located within a Design Priority Area, and within 600m of a rapid transit station; further assessment is **required** based on this trigger.

- Safety Triggers – The proposed driveway will be within 150m of the existing signal at Rochester Street/Aberdeen Street; further assessment is **required** based on this trigger.

2.0 SCOPING

2.1 Existing Conditions

2.1.1 Roadways

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

Preston Street is an arterial roadway that generally runs on a north-south alignment between Albert Street and Prince of Wales Drive. Within the study area, Preston Street has a two-lane undivided urban cross-section, sidewalks on both sides, and an unposted regulatory speed limit of 50 km/h. Preston Street is classified as a truck route allowing full loads. On-street parking lanes are provided in select locations on both sides of Preston Street, north of Carling Avenue. The right-of-way (ROW) of Preston Street is approximately 20m along the subject site's frontage. A widening may be required along the site frontage, as the City's Official Plan identifies a ROW protection of 23m on Preston Street between Albert Street and Carling Avenue.

Rochester Street runs on a north-south alignment between Carling Avenue and north of Primrose Avenue. It is classified as a major collector roadway between Carling Avenue and Gladstone Avenue, where it continues north as a local roadway. Within the study area, Rochester Street has a four-lane undivided urban cross-section north of Beech Street to Raymond Street, a two-lane undivided urban cross-section south of Beech Street to Carling Avenue, sidewalks on both sides, and a regulatory speed limit of 50km/h. Rochester Street is classified as a truck route allowing full loads between Carling Avenue and Gladstone Avenue. One- or two-hour on-street parking spaces are provided in select locations on the east side of Rochester Street, south of Aberdeen Street.

Aberdeen Street is a local roadway that runs on an east-west alignment between Rochester Street and west of Preston Street. Aberdeen Street has a two-lane undivided cross-section, sidewalks on the north side, and an unposted regulatory speed limit of 50 km/h. Aberdeen Street is not classified as a truck route. West of Preston Street, on-street parking is permitted on the north side of Aberdeen Street. East of Preston Street, two-hour on-street parking is permitted on the south side of Aberdeen Street until the formation of an auxiliary eastbound left turn lane at Rochester Street. The ROW of Aberdeen Street is approximately 15.5m along the subject site's frontage. As the City's Official Plan does not identify a ROW protection for Aberdeen Street, no widening is required.

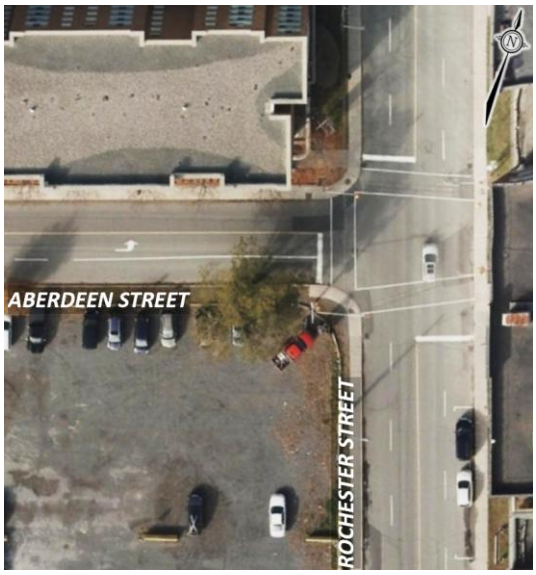
2.1.2 Intersections

Preston Street/Aberdeen Street

- Unsignalized four-legged intersection
- Stop-controlled on east and west approaches
- North/South Approaches (Preston Street): one shared left turn/through/right turn lane
- East/West Approaches (Aberdeen Street): one shared left turn/through/right turn lane
- Textured crosswalks on east and west approaches

Rochester Street/Aberdeen Street

- Signalized three-legged intersection
- North Approach (Rochester Street): one through lane and one shared through/right turn lane
- South Approach (Rochester Street): one shared left turn/through lane and one through lane
- West Approach (Aberdeen Street): one left turn lane and one right turn lane
- Standard crosswalks are provided on all approaches



2.1.3 Driveways

A review of adjacent driveways along the boundary roads is summarized as follows:

Preston Street, East Side:

- Two accesses to commercial uses at 333 and 399 Preston Street
- Two accesses to residences at 367 and 369 Preston Street
- One access to public parking at 425 Preston Street

Preston Street, West Side:

- Six accesses to commercial uses at 338, 344, 348, 350, 358, 402, 412, 420, 422½ Preston Street
- Two accesses to residences at 354½, 410, 432 Preston Street

Aberdeen Street, North Side:

- Five accesses to residences at 17, 67, 69, 71, & 73 Aberdeen Street
- Two accesses to commercial uses at 360 Preston Street
- One access to public parking at 333 Preston Street

Aberdeen Street, South Side:

- Two accesses to residences/commercial uses at 80 Aberdeen Street and 95 Beech Street
- One access to commercial uses at 402 Preston Street

2.1.4 Pedestrian and Cycling Facilities

Concrete sidewalks are provided on both sides of Preston Street and Rochester Street, and on the north side of Aberdeen Street. An asphalt multi-use pathway is provided on the east side of the Trillium Rail Corridor, referred to as the Trillium Pathway.

In the City of Ottawa's primary cycling network, Preston Street is classified as a Local Route, and the Trillium Pathway is classified as a Crosstown Bikeway. Rochester Street and Aberdeen Street do not have any cycling route designations.

2.1.5 Transit

Locations of the transit stops that would be utilized by new riders travelling to/from the proposed development are shown in **Figure 2**, and described in **Table 1**. A summary of the 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

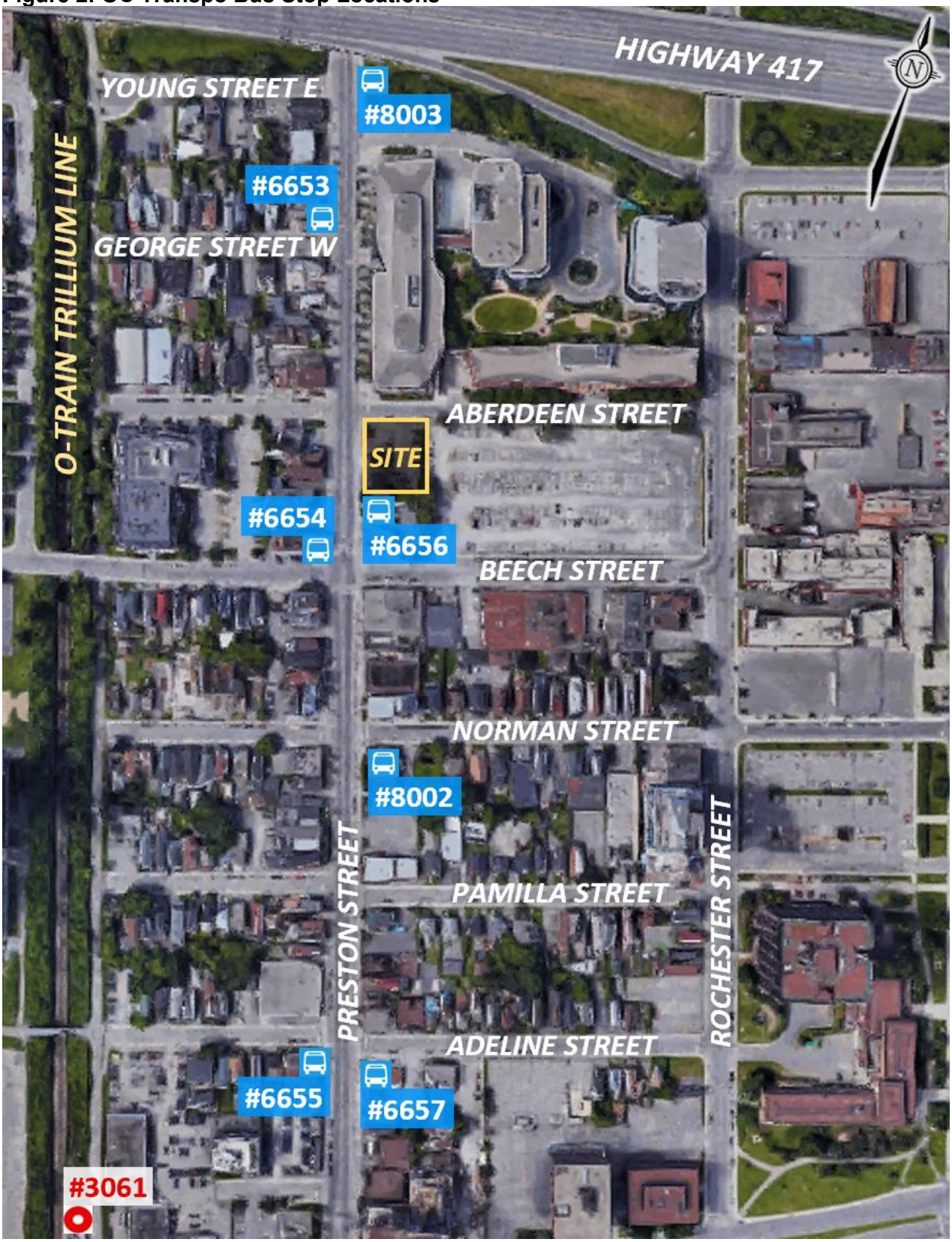
Stop	Location	Routes Serviced
#3061	Dow's Lake LRT Station, north of Carling Avenue between Champagne Avenue and Preston Street	2(1)
#6653	West side of Preston Street, north of George Street West	85
#6654	West side of Preston Street, north of Beech Street	85
#6655	West side of Preston Street, south of Adeline Street	2(2)
#6656	East side of Preston Street, between Beech Street and Aberdeen Street	85
#6657	East side of Preston Street, south of Adeline Street	2(2), 85
#8002	East side of Preston Street, south of Norman Street	85
#8003	East side of Preston Street, directly opposite Young Street East	85

1. LRT service of OC Route 2 is currently unavailable, due to Trillium Line expansion
2. Bus replacement service of OC Route 2 is currently provided on Preston Street

Table 2: OC Transpo Route Information

Route	From ↔ To	Frequency
2	Bayview ↔ South Keys	All day service, seven days a week; 5- to 15-minute headways
85	Gatineau ↔ Bayshore	All day service, seven days a week; 15- to 30-minute headways

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. Traffic calming measures and signage indicating that drivers are entering a traffic calmed neighbourhood have been installed on roadways in proximity of the subject site, such as Beech Street, Booth Street, and Rochester Street.

2.1.7 Existing Traffic Volumes

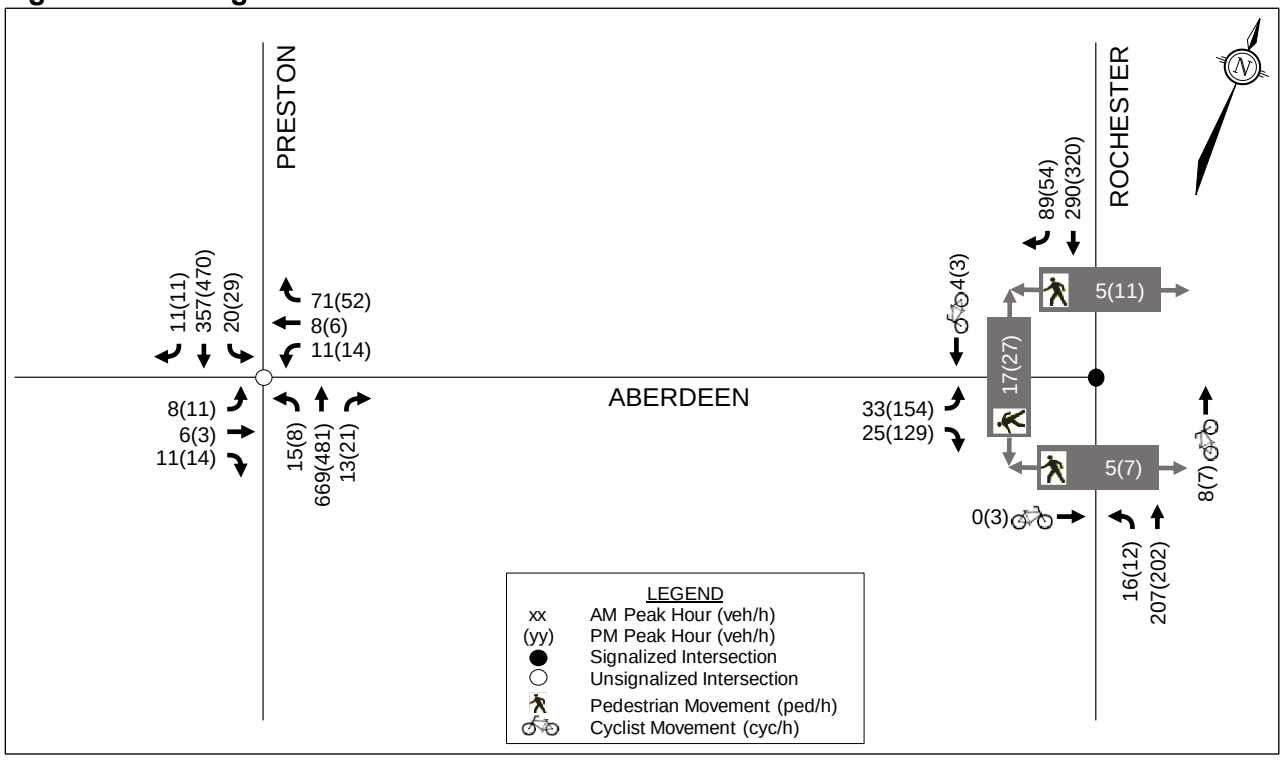
Weekday traffic counts were completed by the City of Ottawa, or coordinated by Parsons in support of a previous development application at 450 Rochester Street, which is discussed further in Section 2.2.2. These counts have been used to determine the existing peak hour vehicular traffic volumes at the study area intersections. Peak hour pedestrian and cyclist count data was also available for the Rochester Street/Aberdeen Street intersection. Traffic counts for each study area intersection were completed on the dates listed below:

- Preston Street/Aberdeen Street July 10, 2019 (Parsons)
- Rochester Street/Aberdeen Street November 16, 2016 (City)

From the counts conducted at Rochester Street/Aberdeen Street, the average annual daily traffic (AADT) of Aberdeen Street is approximately 2,440 vehicles per day (vpd).

All traffic count data previously discussed are included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 3**.

Figure 3: Existing Traffic Volumes



2.1.8 Collision Records

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

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the *TIA Guidelines* as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2015 to December 31, 2019 is summarized in **Table 3**.

Table 3: Reported Collisions

Intersection/ Street Segment	Impact Types						Total
	Approach	Angle	Rear End	Sideswipe	Turning Movement	SMV(1)/ Other	
Preston Street/ Aberdeen Street	-	5	3	-	1	2	**11**
Rochester Street/ Aberdeen Street	-	-	1	-	1	-	**2**
Aberdeen Street btwn Preston Street & Rochester Street	1	-	-	1	-	1	**3**

1. SMV = Single Motor Vehicle

Preston Street/Aberdeen Street
A total of 11 collisions were reported at this intersection over the last five years, of which there were five angle impacts, three rear-end impacts, one turning movement impacts, and two single vehicle/other impacts. One of the 11 collisions resulted in personal injuries, but none caused fatalities. Seven of the collisions occurred under poor driving conditions. No collisions involved cyclists or pedestrians.

Rochester Street/Aberdeen Street
A total of two collisions were reported at this intersection over the last five years, of which there was one rear-end impact and one turning movement impact. No collisions resulted in personal injuries or fatalities. One of the collisions occurred in poor driving conditions. No collisions involved cyclists or pedestrians.

Aberdeen Street between Preston Street and Rochester Street
A total of three collisions were reported along this segment over the last five years, of which there was one approaching impact, one sideswipe impact, and one single vehicle/other impact. No collisions resulted in personal injuries or fatalities, occurred in poor driving conditions, or involved cyclists or pedestrians.

2.2 Planned Conditions

2.2.1 Planned Transportation Projects

In the greater area surrounding the subject site, the 2013 Ottawa Cycling Plan identifies two Phase 1 (2014-2019) projects and a Phase 3 (2026-2031) project. The Phase 1 projects have been implemented, and include shared use lanes on Sherwood Drive, Fairmont Avenue, and Gladstone Avenue. The Phase 3 project, the Centretown Neighbourhood Bikeway, includes shared use lanes on Booth Street, Arlington Avenue, Arthur Street/Arthur Lane North, Primrose Avenue, and Cambridge Street North. The 2013 Ottawa Pedestrian Plan does not identify any improvements within the study area.

The City's 2013 Transportation Master Plan (TMP) identifies the extension of Preston Street from Albert Street to Vimy Place as a Phase 3 (2026-2031) roadway project in its Affordable Road Network. The Gladstone Avenue and Carling Avenue Transit Priority projects are identified in the 2013 TMP as improvements in the Affordable Rapid Transit and Transit Priority (RTTP) Networks. These projects are located immediately north and south of the study area, respectively.

The TMP indicates that on Gladstone Avenue, transit signal priority will be provided between the future Corso Italia O-Train Station and Elgin Street. This may also include the conversion of parking lanes in the immediate vicinity of select intersections.

The TMP indicates that on Carling Avenue, exclusive bus lanes will be made available via reallocation of existing traffic lanes between Lincoln Fields Station and Dow's Lake O-Train Station. Between Dow's Lake O-Train Station and Bronson Avenue, transit signal priority and queue jump lanes will be implemented at select intersections. The preliminary functional design of the Carling Avenue Transit Priority Measures project for the section within the study area is shown in **Figure 4**.

Construction for Phase 2 of the LRT began in 2019. Phase 2 of LRT will extend the Confederation Line east and west and will extend the Trillium Line south. The Trillium Line extension will continue the Trillium Line from Greenboro Station to Limebank Road in Riverside South, along with a link to the Ottawa Macdonald-Cartier International Airport. Revenue service for this extension is planned to start in January 2025. A map of the planned Phase 2 LRT extensions are shown in **Figure 5**.

2.2.2 Other Area Developments

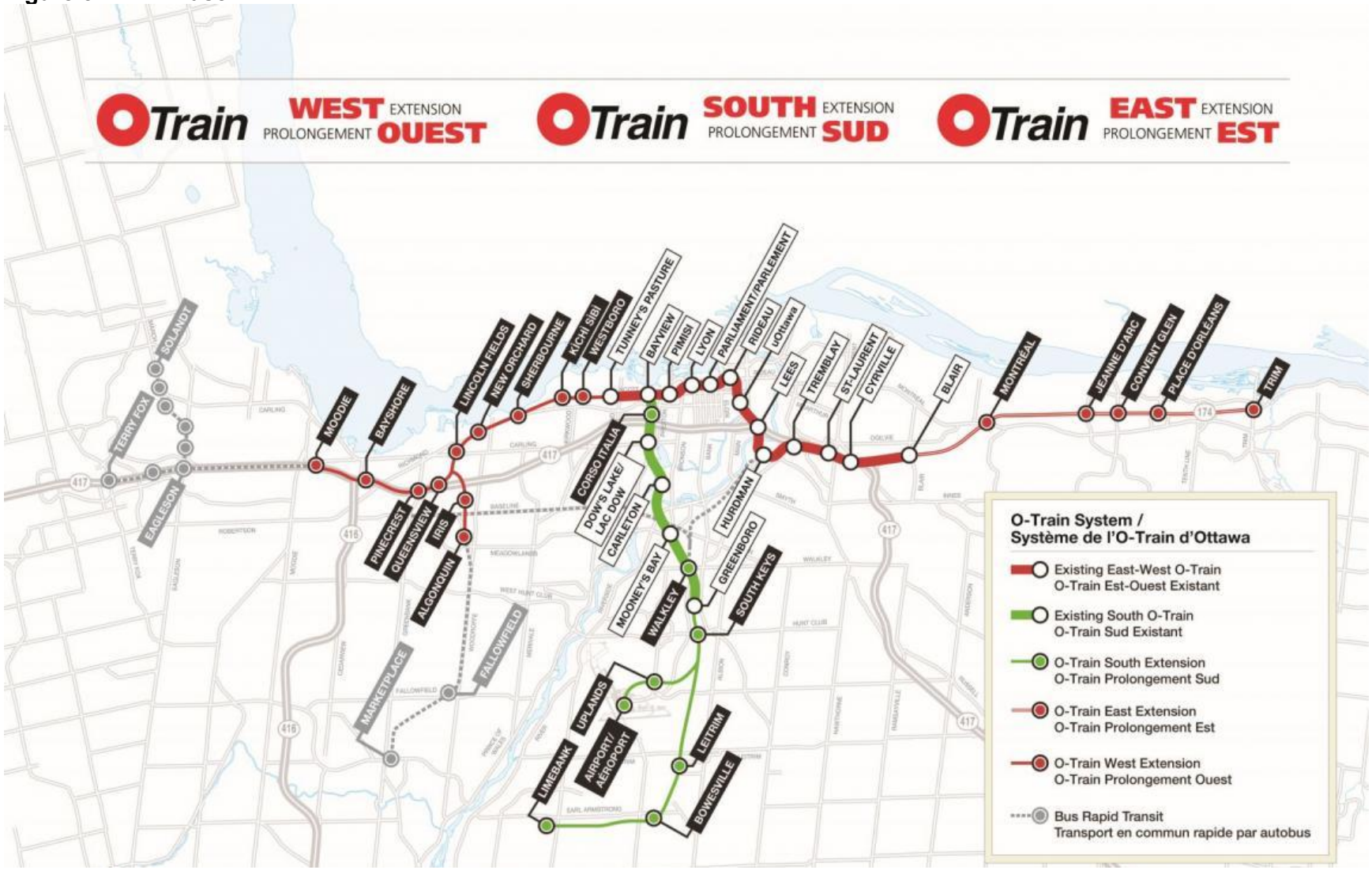
In proximity of the proposed development, there are multiple other residential and mixed-use developments are under construction, approved, or in the approval process. Other developments in proximity of the subject site include the following:

17 Aberdeen Street
A residential expansion with 197 dwellings is proposed for 17 Aberdeen Street. A Transportation Overview dated August 2016 was prepared by IBI Group in support of this development.

552 Booth Street
A mixed-use development containing 1,000 residential units and 142,200 ft^2 of commercial space is proposed at 552 Booth Street. A TIA dated December 2018 was prepared by Parsons in support of a Zoning By-law Amendment and Official Plan Amendment application for this development.

Figure 4: Carling Avenue Transit Priority Measures – Functional Design

Figure 5: LRT Phase 2



829 Carling Avenue
A mixed-use development containing 459 residential units and approximately 2,792 ft^2 of retail space is proposed for 829 Carling Avenue. A TIA dated May 2021 was prepared by Novatech in support of this development.

845 Carling Avenue
A mixed-use development containing 1,123 units and 16,255 ft^2 of commercial space is proposed at 845 Carling Avenue. A Community Transportation Study/Transportation Impact Study was prepared by Delcan in support of a zoning application for this development in April 2013.

90 Champagne Avenue
A residential development containing 236 units is proposed at 90 Champagne Avenue. A TIA dated November 2019 was prepared by Novatech in support of this development.

101-105 Champagne Avenue
Two high-rise residential towers containing a combined 540 units has recently been constructed at 101 and 105 Champagne Avenue. A Transportation Overview dated November 2011 and Parking Study dated November 2015 were prepared by Delcan/Parsons in support of this development.

93-105 Norman Street
A residential development containing 121 units is proposed for 93-105 Norman Street. A TIA dated January 2021 was prepared by Delcan in support of this application.

500 Preston Street
A mixed-use development containing 280 residential units and 10,441 ft^2 of commercial space is currently under construction at 500 Preston Street. A Community Transportation Study dated June 2011, Addendum dated July 2013, and Addendum 2 dated October 2013 were prepared by Delcan in support of this application.

505 Preston Street
A mixed-use development containing 252 residential units, 4,786 ft^2 of retail space, and 16,047 ft^2 of office space is currently under construction at 505 Preston Street. A Community Transportation Study dated December 2012 and Transportation Overview dated May 2013 were prepared by IBI Group in support of this development.

450 Rochester Street
A mixed-use development containing 540 residential units and 59,182 ft^2 of commercial space was previously proposed at 450 Rochester Street and 367-371 Preston Street. A TIA dated May 2021 was prepared by Parsons in support of this development. Based on correspondence with City staff in June 2024, it is understood that this development application has been withdrawn.

New Civic Development
The New Civic Development of the Ottawa Civic Hospital is planned at 930 Carling Avenue (north and west of Prince of Wales Drive, south of Carling Avenue, and east of Birch Drive). Opening day of the development is estimated to occur in 2028, and will include approximately 6,600 full-time staff and 770 patient beds, with a gross floor area of approximately 2,400,000 ft^2. Ultimate buildout of the New Civic Development is estimated to occur in 2048 (i.e. beyond the timeframe of this study), consisting of three towers with office, commercial, and residential uses. The ultimate development will also include an expansion of the hospital, such that the entire hospital consists of approximately 10,500 full-time staff, 1,250 patient beds, and a gross floor area of approximately 4,900,000 ft^2. TIA reports were prepared by Parsons in July 2021 and December 2021, in support of this development.

The location of the other area development applications previously listed are included in **Figure 6**.

Figure 6: Other Area Developments

2.3 Study Area and Time Periods

The study area for this report includes the boundary roadways Preston Street and Aberdeen Street, as well as the following intersections:

- Preston Street/Aberdeen Street
- Rochester Street/Aberdeen Street

The selected time periods for this study are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site generated traffic and adjacent street traffic. The 2026 buildout year and 2031 horizon year have been considered.

2.4 Exemptions Review

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

Table 4: TIA Exemptions

Module	Element	Exemption Criteria	Status
4.1 Development Design	*4.1.2* Circulation and Access	• Required for site plan control and zoning by-law amendment applications	Not Exempt
	4.1.3 New Street Networks	• Required for draft plan of subdivision applications	Exempt
4.2 Parking	*All elements*	• Required for site plan control and zoning by-law amendment applications	Not Exempt
4.6 Neighbourhood Traffic Calming	*All elements*	• If all of the following criteria are met: 1. Access is provided to a collector or local roadway 2. Application is for zoning by-law amendment or draft plan of subdivision 3. Proposed development generated more than 75 vehicle trips 4. Site trip infiltration is expected, and site-generated traffic will increase peak hour volumes by 50% or more along the route between the site and an arterial roadway 5. The subject street segment is adjacent to two or more of the following significant sensitive land uses: ○ School (within 250m walking distance) ○ Park ○ Retirement/older adult facility ○ Licensed child care centre ○ Community centre ○ 50+% of adjacent properties along the route(s) are occupied by residential lands and at least ten dwellings are occupied	Exempt

Module	Element	Exemption Criteria	Status
4.7 Transit	*4.7.1* Transit Route Capacity	• Required when proposed development generates more than 75 transit trips	Exempt
	4.7.2 Transit Priority Requirements	• Required when proposed development generates more than 75 vehicle trips	Exempt
4.8 Network Concept	*All elements*	• 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
4.9 Intersection Design	*All elements*	• Required when proposed development generates more than 75 vehicle trips	Exempt

City staff requested that Module 4.5: Transportation Demand Management and Module 4.6: Neighbourhood Traffic Management be included in this TIA. Therefore, the following modules will be included in the TIA report:

- Module 4.1: Development Design
- Module 4.2: Parking
- Module 4.3: Boundary Streets
- Module 4.4: Access Design
- Module 4.5: Transportation Demand Management
- Module 4.6: Neighbourhood Traffic Management

3.0 FORECASTING

3.1 Development-Generated Traffic

As stated in Section 1.3, the proposed development is not anticipated to meet the trip generation trigger of 60 net new person trips during the peak hour. The trip generation estimates below serve to confirm that this trigger is not met. Only new trips generated by the proposed development are included below, and any trips generated by the existing uses (i.e. the salad bar, dry cleaner, and public parking lot) have not been subtracted to determine the net addition in peak hour person trips. The proposed development will include 45 apartment dwellings and 3,830 ft^2 GFA of ground-floor commercial space. Trips generated by the proposed residences have been estimated using the relevant rates provided in the *TRANS Trip Generation Manual Summary Report*, prepared in October 2020 by WSP Global Inc. The manual includes data to estimate the trip generation and mode shares for residential uses, divided into single-family detached housing, low-rise multifamily housing (one to two storeys), and high-rise multifamily housing (three or more storeys). Trips generated by the proposed commercial uses have been estimated using the *ITE Trip Generation Manual, 11th Edition*, specific to the Shopping Centre land use (code 820).

The peak hour person trips generated by the proposed development are summarized in **Table 5**. The peak hour person trips generated by the proposed residences are based on the High-Rise Multifamily Housing rates for the Ottawa Inner Area district, and the peak hour person trips generated by the proposed commercial uses have been calculated by multiplying the Shopping Centre land use rates by a factor of 1.28 (the ITE Trip to Person Trip Factor outlined in the *TIA Guidelines*).

Table 5: Proposed Development – Peak Hour Trip Generation

Land Use	Units/GFA	AM Peak Hour (pph[1])			PM Peak Hour (pph)		
		IN	OUT	TOT	IN	OUT	TOT
High-Rise Multifamily Housing	45 units	6	13	*19*	11	8	*19*
Shopping Centre	3,830 ft^2	2	2	*4*	8	9	*17*
Total		**8**	**15**	***23***	**19**	**17**	***36***

1. pph: Person Trips per Hour

From the previous table, the proposed development is anticipated to generate 23 person trips during the AM peak hour and 36 person trips during the PM peak hour.

The *TRANS Trip Generation Manual Summary Report*, prepared in October 2020 by WSP, includes data to estimate the mode shares for commercial trip generators (in Table 13 of the manual) and high-rise multifamily housing (in Table 8 of the manual) for the AM and PM peak periods, based on district. The *TRANS Trip Generation Manual* identifies the subject site as being located within the Ottawa Inner Area district, and outlines the following mode shares for commercial and residential developments in the Ottawa Inner Area.

Residential Mode Shares

- Auto Driver: 26% AM, 25% PM
- Auto Passenger: 6% AM, 8% PM
- Transit: 28% AM, 21% PM
- Cyclist: 5% AM, 6% PM
- Pedestrian: 34% AM, 39% PM

Commercial Mode Shares

- Auto Driver: 39% AM, 22% PM
- Auto Passenger: 2% AM, 4% PM
- Transit: 16% AM, 12% PM
- Cyclist: 3% AM, 4% PM
- Pedestrian: 40% AM, 58% PM

As the site is located within 600m of the Dow's Lake O-Train Station, the proposed development is considered a Transit-Oriented Development (TOD). In TOD zones, the transit share is assumed to increase significantly compared to any TRANS O-D district. The City has outlined sustainable mode share targets for transit-oriented developments, which can be summarized as follows:

- Auto Driver: 15% during peak periods;
- Auto Passenger: 5% during peak periods;
- Transit: 65% during peak periods;
- Non-Auto (Active): 15% during peak periods.

Given the subject site's proximity to amenities and destinations on Preston Street, the assumed mode shares for the proposed land uses reflect a higher non-auto mode share and a lower transit share than the TOD mode share targets described above. The assumed mode shares can be summarized as follows:

- Auto Driver: 15% during peak periods;
- Auto Passenger: 5% during peak periods;
- Transit: 40% during peak periods;
- Cyclist: 5% during peak periods;
- Pedestrian: 35% during peak periods.

A breakdown of the estimated site-generated trips for each mode is included in **Table 6**.

Table 6: Proposed Development – Peak Hour Trips by Mode Share

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		IN	OUT	TOT	IN	OUT	TOT
Residential Person Trips		**6**	**13**	***19***	**11**	**8**	***19***
Auto Driver	15%	1	2	*3*	2	1	*3*
Auto Passenger	5%	-	1	*1*	1	-	*1*
Transit	40%	2	5	*7*	4	3	*7*
Cyclist	5%	1	-	*1*	-	1	*1*
Pedestrian	35%	2	5	*7*	4	3	*7*
Commercial Person Trips		**2**	**2**	***4***	**8**	**9**	***17***
Auto Driver	15%	1	-	*1*	1	1	*2*
Auto Passenger	5%	-	-	*0*	-	1	*1*
Transit	40%	1	1	*2*	3	4	*7*
Cyclist	5%	-	-	*0*	1	-	*1*
Pedestrian	35%	-	1	*1*	3	3	*6*
Total Person Trips		**8**	**15**	***23***	**19**	**17**	***36***
Auto Driver		2	2	*4*	3	2	*5*
Auto Passenger		-	1	*1*	1	1	*2*
Transit		3	6	*9*	7	7	*14*
Cyclist		1	-	*1*	1	1	*2*
Pedestrian		2	6	*8*	7	6	*13*

From the previous table, the proposed development is estimated to generate four vehicle trips during the AM peak hour and five vehicle trips during the PM peak hour.

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. The traffic studies prepared in support of proposed developments at 17 Aberdeen Street and 93-105 Norman Street did not distribute new trips to the road network, as traffic impacts were deemed to be negligible. Therefore, these developments have not been considered in this review.

Traffic generated by the following other area developments that under construction, approved, or are in the approval process have been considered for this report. Relevant excerpts of the traffic studies associated with the developments below are included in **Appendix G**.

552 Booth Street

A mixed-use development including 1,000 dwellings and 142,200 ft^2 GFA of retail/office space is proposed at 552 Booth Street. A TIA was prepared by Parsons in December 2018, in support of Official Plan and Zoning By-Law Amendment applications for the development. The TIA presented trip generation projections for the 2025 buildout year using existing mode shares and the 2030 horizon year using target mode shares to reflect the City's initiative to increase transit ridership. In the 2030 horizon year, the development is projected to generate approximately 175 vph during the peak hours. For the purposes of this TIA, the 2030 trip generation projections associated with the target mode shares have been added to the 2031 background volumes.

829 Carling Avenue
A mixed-use development including 459 dwellings and approximately 2,792 ft^2 GFA of ground-floor retail space is proposed at 829 Carling Avenue. A TIA was prepared by Novatech in May 2021, in support of Official Plan Amendment, Zoning By-Law Amendment, and Site Plan Control applications for the development. The TIA presented trip generation projections for a 2028 buildout year. For the purposes of this TIA, traffic generated by this development has been added to the 2031 background volumes.

845 Carling Avenue
A mixed-use development including 1,123 dwellings and 16,000 ft^2 GFA of ground-floor retail is proposed at 845 Carling Avenue. A Community Transportation Study/Transportation Impact Study (CTS/TIS) was prepared by Delcan in April 2013, in support of a Zoning By-Law Amendment application for the development. The CTS/TIS identified that the development would generate a net increase of approximately 150 vph during the AM peak hour and 175 vph during the PM peak hour. The study identified that construction of the development would be phased over a 15 to 20 year period, and the project has not advanced to the Site Plan Control stage. For the purposes of this TIA, 50% of traffic generated by this development has been added to the 2031 background volumes.

90 Champagne Avenue
A residential development including 236 dwellings is proposed at 90 Champagne Avenue. A TIA was prepared by Novatech in November 2019, in support of Zoning By-Law Amendment and Site Plan Control applications for the development. The TIA identified that the development would generate an increase of approximately 25 vph during the AM and PM peak hours. Traffic generated by this development has been added to the 2026 and 2031 background volumes.

101-105 Champagne Avenue
A residential development including 540 dwellings has been recently constructed at 101 and 105 Champagne Avenue. A Transportation Overview and Parking Requirements Study were prepared by Delcan/Parsons in November 2011 and November 2015, respectively, in support of Official Plan Amendment, Zoning By-Law Amendment, and Site Plan Control applications for the development. The studies identified that the development would generate a net increase of approximately 55 vph during the peak hours. Traffic generated by this development has been added to the 2026 and 2031 background volumes.

500 Preston Street
A mixed-use development including 280 dwellings and 10,000 ft^2 GFA of ground-floor retail is currently under construction at 500 Preston Street. A CTS dated June 2011, and subsequent addenda dated December 2012 and October 2013, were prepared by Delcan in support of a Site Plan Control for the development. The reports identified that the development would generate a net increase of approximately 95 vph during the AM peak hour and 110 vph during the PM peak hour. Traffic generated by this development has been added to the 2026 and 2031 background volumes.

505 Preston Street
A mixed-use development including 252 dwellings and 20,800 ft^2 GFA of office/retail uses is currently under construction at 505 Preston Street. A CTS dated December 2012, and Transportation Overview dated May 2013, were prepared by IBI Group in support of Zoning By-Law Amendment and Site Plan Control applications for the development. The studies identified that the development would generate a net increase of approximately 50 vph during the AM peak hour and 60 vph during the PM peak hour. Traffic generated by this development has been added to the 2026 and 2031 background volumes.

450 Rochester Street
A mixed-use development including 540 dwellings and 59,182 ft^2 GFA of commercial space was previously proposed at 450 Rochester Street. A TIA was prepared in May 2021 by Parsons, in support of a Site Plan Control application for the development. The TIA identified that the development would generate a net increase of approximately 260 vph during the peak hours. The application has since been withdrawn.

New Civic Development
The New Civic Development of the Ottawa Civic Hospital is planned at 930 Carling Avenue. Phase 1 of the development is anticipated to include approximately 770 beds, 6,600 full-time staff, and 2,400,000 ft^2 GFA of floor area. Buildout of Phase 1 is anticipated to occur in 2028. Ultimate buildout of the New Civic Development is anticipated to occur in 2048, beyond the timeframe of this study. The estimated traffic generated by Phase 1 (i.e. approximately 990 to 1,120 vehicles per hour during the weekday peak hours) has been considered in the 2031 background volumes.

3.2.2 General Background Growth Rate

A review of snapshots of the City's *Strategic Long-Range Model* and *Intersection Traffic Growth Rates (2000-2016)* has been conducted. Both resources are included in **Appendix F**. Comparing snapshots of the 2011 and 2031 AM peak hour traffic volumes, the *Strategic Long-Range Model* generally suggests positive growth on Preston Street and Rochester Street, ranging between 0.5% and 2.0% per annum.

The *Intersection Traffic Growth Rates* figures, which determine growth rates based on total vehicular volumes entering the intersection, identify the following growth rates between 2000 and 2016:

- Carling Avenue/Preston Street
  - AM Peak Hour: negative growth between -0.2% and -2% per annum;
  - PM Peak Hour: negative growth between -0.2% and -2% per annum.
- Preston Street/Beech Street
  - AM Peak Hour: negative growth between -0.2% and -2% per annum;
  - PM Peak Hour: negative growth between -0.2% and -2% per annum.
- Preston Street/Gladstone Avenue
  - AM Peak Hour: no growth (i.e. between -0.2% and +0.2% per annum);
  - PM Peak Hour: negative growth between -0.2% and -2% per annum.
- Rochester Street/Raymond Street
  - AM Peak Hour: negative growth between -2% and -4% per annum;
  - PM Peak Hour: negative growth between -2% and -4% per annum.

It is anticipated that background growth along the study area roadways will be captured through the addition of traffic generated by other area developments, as described in the previous section. Therefore, no general background growth rates have been applied to the study area roadways.

3.3 Future Traffic Conditions

Other area development-generated traffic volumes in 2026 and 2031 are shown in **Figure 7** and **Figure 8**, respectively. Background traffic volumes in 2026 and 2031 are shown in **Figure 9** and **Figure 10**, respectively.

Figure 7: 2026 Other Area Development Traffic Volumes

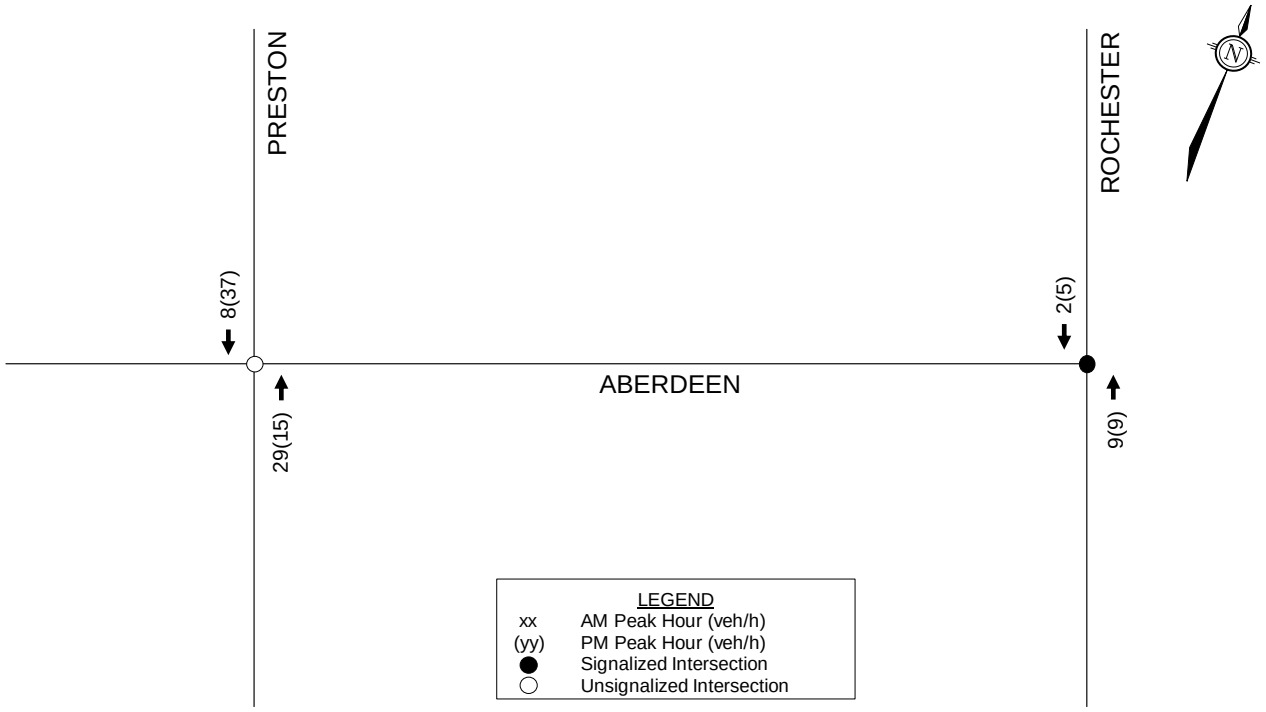


Figure 8: 2031 Other Area Development Traffic Volumes

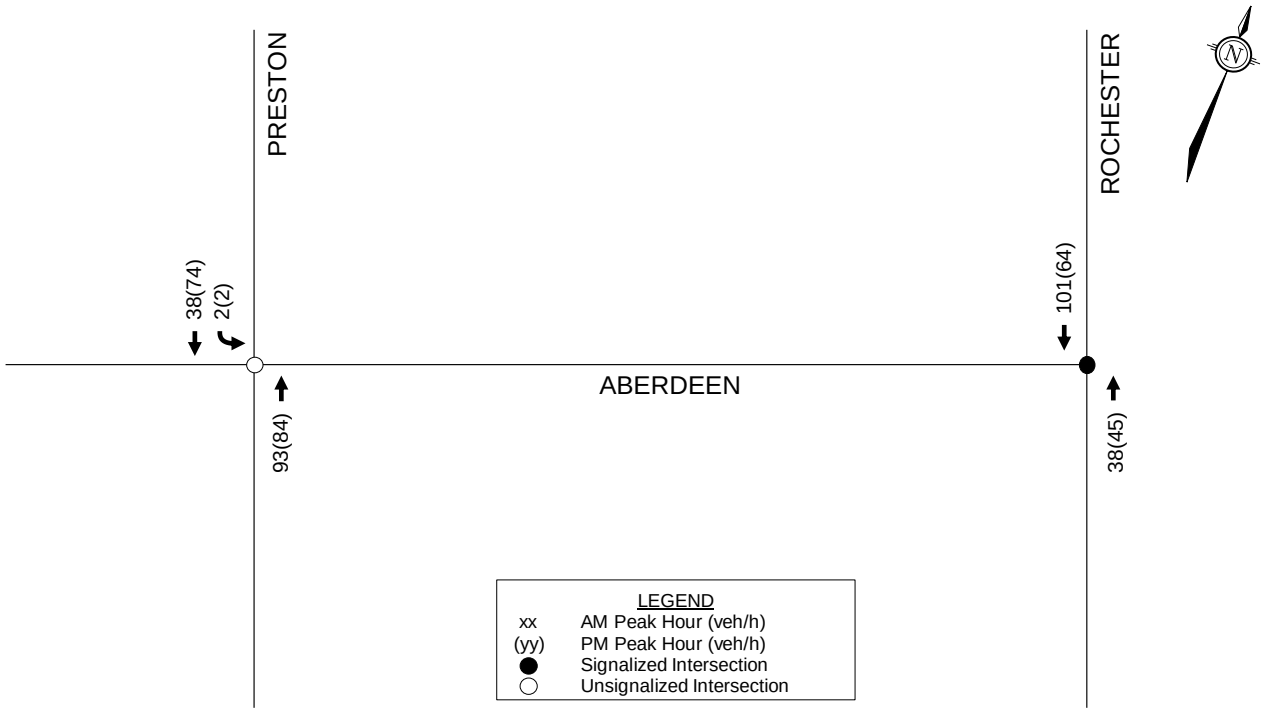


Figure 9: 2026 Background Traffic Volumes

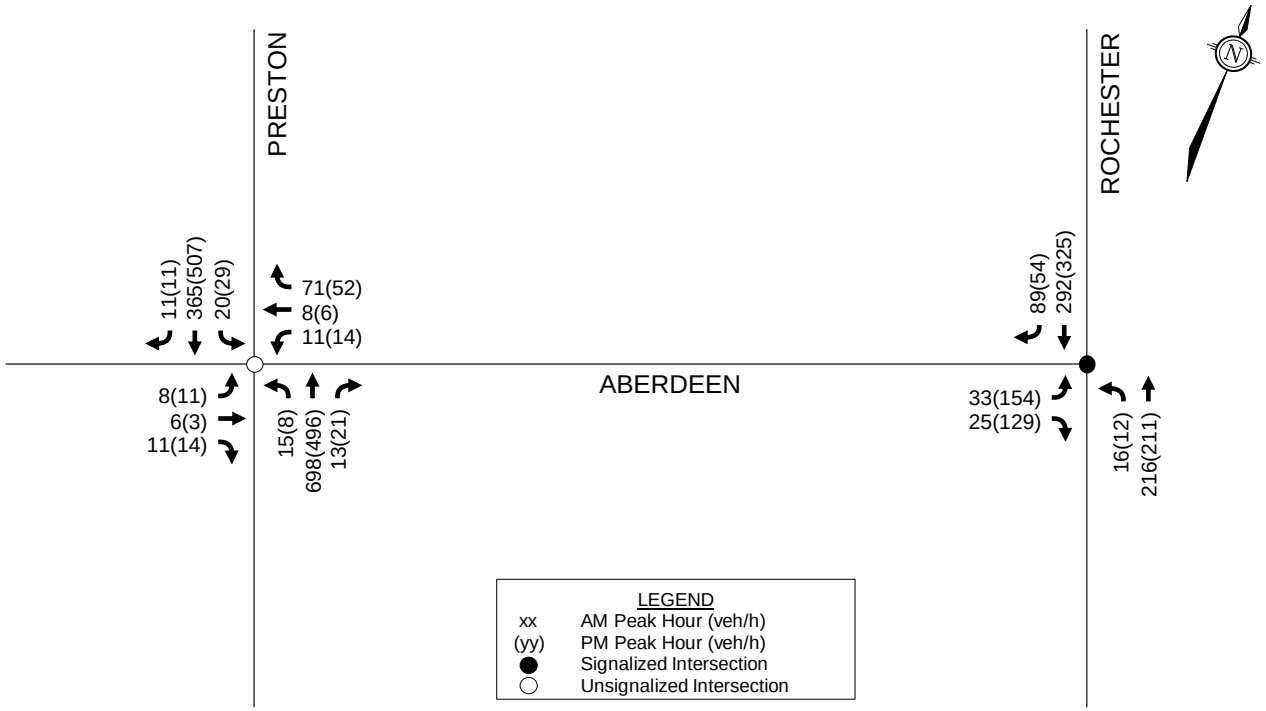
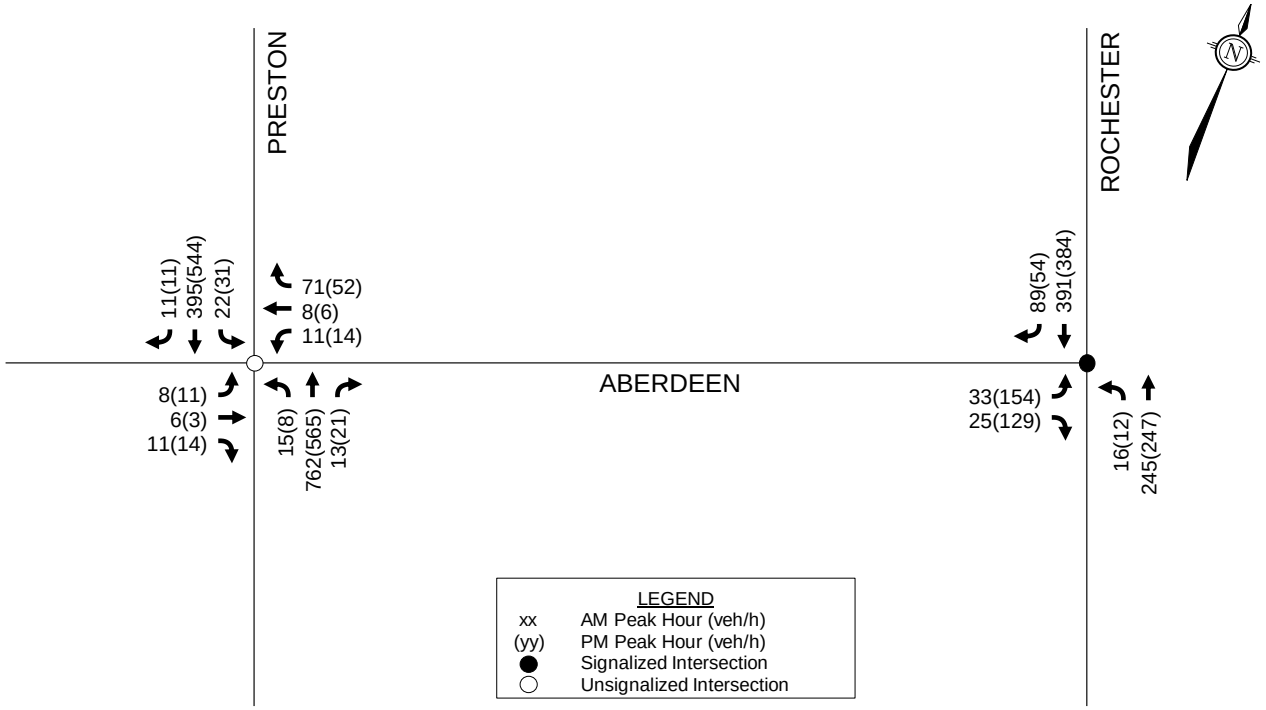


Figure 10: 2031 Background Traffic Volumes



3.4 Demand Rationalization

Based on the *TIA Guidelines*, the Demand Rationalization module includes identifying any locations and approaches where total auto demand is projected to exceed capacity, and what reductions in peak hour volumes are required for demand to meet capacity. However, determining whether any approach at any study area intersection has volumes that exceed capacity requires intersection analysis. Since the proposed development does not meet the trip generation trigger, this is outside the scope of this study.

4.0 ANALYSIS

4.1 Development Design

4.1.1 Design for Sustainable Modes

Widened sidewalks will be provided along the subject site's frontages to Preston Street and Aberdeen Street, as shown on the ground floor plan. The proposed commercial units will have entrances to Preston Street, and the proposed dwellings will have a lobby entrance to Aberdeen Street and an emergency access to Preston Street.

Bicycle parking will be provided in designated areas within the underground parking garage. The number of proposed bicycle parking spaces versus the parking requirements per the City's *Zoning By-Law* (ZBL) is reviewed in Section 4.2.

All bus stops discussed in Section 2.1.5 (and shown in **Figure 2**) are within 400m walking distance of the entrances to the proposed development. These stops are served by OC Route 85 and the bus replacement service for OC Route 2. A walking distance of 400m is equivalent to a five-minute walk, per OC Transpo's service design guidelines. The proposed development is also within 600m walking distance of Dow's Lake O-Train Station, which will resume LRT service for OC Route 2 when the Trillium Line extension is complete.

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 H**. 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

Pick-ups and drop-offs, garbage collection, and the fire route for the proposed development will all be accommodated curbside on Aberdeen Street. For collection, garbage will be wheeled out to the curb from a room adjacent to the lobby.

4.2 Parking

The subject site is located in Area B of Schedule 1 and Area Z of Schedule 1A of the City's ZBL. Vehicular and bicycle parking requirements for the proposed development are identified in Sections 101, 102, 103, and 111 of the ZBL, and are summarized in **Table 7**.

Table 7: Parking Requirements

Land Use	Rate	Units/GFA	Required
Minimum Vehicle Parking Requirements			
Dwelling, Mixed-Use Building	0.1 per dwelling unit after the first 12 units, up to a maximum of 30 spaces (visitors only)	45 units	4
Retail Store	No spaces required (Area Z)	356 m^2	0
		Minimum Required	**4**
		Total Parking Proposed	**9**
Maximum Vehicle Parking Requirements			
Dwelling, Mixed-Use Building	1.75 per dwelling unit (combined total of resident and visitor parking)	45 units	79
Retail Store	3.6 per 100 m^2 GFA	356 m^2	13
		Maximum Permitted	**92**
		Total Parking Proposed	**9**
Minimum Bicycle Parking Requirements			
Dwelling, Mixed-Use Building	0.5 per dwelling unit	45 units	23
Retail Store	1.0 per 250 m^2 GFA	356 m^2	2
		Minimum Required	**25**
		Total Bicycle Parking Proposed	**35**

Based on the previous table, the proposed number of vehicle and bicycle parking spaces meet all requirements of the ZBL.

4.3 Boundary Streets

This section provides a review of the boundary streets Preston Street and Aberdeen Street, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on Preston Street and Aberdeen Street.

Schedule B of the City's Official Plan identifies the boundary streets are located within the 'Mixed Use Centre' land use designation, and Preston Street is a Traditional Main Street. However, due to the subject site's proximity to Dow's Lake O-Train Station, Preston Street and Aberdeen Street have been evaluated against the targets outlined for the 'Within 600m of a Rapid Transit Station' policy area, based on existing conditions.

A detailed MMLOS review of the boundary streets is included in **Appendix I**. A summary of the results of the segment MMLOS analysis for Preston Street and Aberdeen Street are provided in **Table 8**.

Table 8: Segment MMLOS Summary

Segment	PLOS		BLOS		TLOS		TkLOS	
	Actual	Target	Actual	Target	Actual	Target	Actual	Target
Preston Street	**E**	A	**F**	B	F	-	B	D
Aberdeen Street	**F**	A	**F**	D	-	-	-	-

The results of the segment MMLOS analysis can be summarized as follows:

- Neither boundary street meets the target pedestrian level of service (PLOS);
- Neither boundary street meets the target bicycle level of service (BLOS);
- Preston Street achieves a transit level of service (TLOS) F, but does not have a TLOS target;
- Preston Street meets the target truck level of service (TkLOS).

A Road Modification Approval (RMA) report was previously included as part of the development application for 450 Rochester Street. The proposed roadway modifications for that development included multiple lay-bys on both Aberdeen Street and Beech Street, as well as a new sidewalk on the south side of Aberdeen Street between Preston Street and Rochester Street. A figure of the previously proposed roadway modifications is included in **Appendix G**.

Preston Street currently achieves a PLOS E. The best possible score is a PLOS C without changing the operating speed of the roadway (i.e. roadways with a curb lane AADT greater than 3,000 vpd and no on-street parking can only achieve a PLOS A if the operating speed is 30 km/h). To achieve a PLOS C, sidewalks with a minimum width of 2.0m and minimum boulevard width of 2.0m are required. This is identified for the City's consideration. Along the east side of Preston Street, a sidewalk width of 2.0m is proposed with a boulevard of approximately 3.0m as part of this development application. The best possible PLOS C can be achieved with this configuration.

Aberdeen Street currently achieves a PLOS F. For roadways with a curb lane AADT less than 3,000 vpd and an operating speed of 60 km/h or slower, the target PLOS A can be achieved by providing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration. Along the south side of Aberdeen Street, a sidewalk width of 2.0m is proposed as part of this development application. This achieves a PLOS C and fails to meet the target PLOS A, however the additional space for landscaping at the back of sidewalk is considered a reasonable trade-off.

Preston Street currently achieves a BLOS F. Based on Exhibit 11 of the *MMLOS Guidelines*, streets with an operating speed of 60 km/h can only achieve the target BLOS B if physically separated bikeways are provided. This is identified for the City's consideration.

Aberdeen Street currently achieves a BLOS F. Based on Exhibit 11 of the *MMLOS Guidelines*, streets with an operating speed of 60 km/h can achieve the target BLOS D if bike lanes are provided.

4.4 Access Design

The proposed access to the subject site has been evaluated based on the relevant requirements of the City's ZBL and *Private Approach By-Law* (PABL), and the Transportation Association of Canada (TAC)'s *Geometric Design Guide for Canadian Roads*.

Section 25(a) of the PABL identifies that a maximum of one two-way private approach to a given roadway is permitted when a site's frontage is between 20m and 34m to that roadway. Therefore, this requirement is met, as the subject site has approximately 28m of frontage to Aberdeen Street.

Section 107(1)(a)(iii) of the ZBL identifies that, in the case of a parking garage for apartments, a maximum width of 3.6m is permitted when leading to fewer than 20 parking spaces. Therefore, the proposed driveway width of 3.6m meets this requirement.

Section 25(p) of the PABL identifies a minimum separation requirement of 3.0m between the nearest edge of a private approach and the closest property line, as measured at the street line. This section also includes a provision that the minimum separation may be reduced to a minimum of 0.3m, provided that the proposed access is located a safe distance from the access serving the adjacent property, in a manner that there are adequate sightlines for vehicles exiting the property, and in a manner that no traffic hazards are created. The proposed driveway is located approximately 0.3m from the eastern property line, thereby maximizing the distance between the driveway and Preston Street. Based on the previous plans for the development at 450 Rochester Street, the proposed driveway would have been adjacent to a loading access. However, this application has been withdrawn.

Section 25(t) of the PABL identifies a requirement that any private approach serving a parking area with fewer than 50 parking spaces shall not have a grade exceeding 2% for the first 6m inside the property line. Within the first 6m of the property line, the proposed driveway has a maximum grade of 3-5%. As this is not anticipated to create a traffic hazard or negatively impact sightlines, the General Manager has flexibility to approve the proposed grade, per Section 24(3) of the PABL.

TAC's *Geometric Design Guide* identifies a minimum corner clearance requirement of 15m for accesses to local roadways, measuring between the nearest edge of the private approach and the nearest edge of the intersecting roadway. The proposed driveway to Aberdeen Street is approximately 28m from Preston Street, and therefore this requirement is met.

For accesses to local roadways, it is generally recommended that a minimum clear throat length of 8m be provided between the ends of the driveway curb radii to the first point of conflict. This requirement will be met, as it is anticipated that approximately 18m of clear throat length will be provided between the garage door and the ends of the driveway curb radii.

4.5 Transportation Demand Management

4.5.1 Context for TDM

A breakdown of the residential dwellings by type can be summarized as follows:

- 13 studio dwellings;
- 29 one-bedroom dwellings;
- 3 two-bedroom dwellings.

The proposed development will also include two ground-floor commercial units, which will have gross floor areas of approximately 2,252 ft^2 and 1,578 ft^2. Given the small size of these units, these units are assumed to be small trip generators with few employees. Therefore, the *TDM Measures Checklist* has not been reviewed for the commercial units, as it is not required.

4.5.2 Need and Opportunity

The subject site is located in the Preston-Carling District Secondary Plan area, and is designated as 'Mixed Use Centre' in Schedule B of the City's Official Plan. The subject site is also within 600m of the existing Dow's Lake O-Train Station and the future Corso Italia O-Train Station.

Based on the 2020 *TRANS Trip Generation Manual*, the Ottawa Inner Area district has observed commercial driver shares of 39% in the AM peak hour and 22% in the PM peak hour, and residential driver shares of 26% in the AM peak hour and 25% in the PM peak hour. Comparing these driver shares with the assumed TOD driver share of 15%, the proposed development would generate approximately six vehicle trips rather than four vehicle trips during the AM peak hour, and eight vehicle trips rather than five vehicle trips during the PM peak hour.

It is not anticipated that the proposed development will exceed the driver shares discussed above, as the subject site is located in close proximity to many retail and commercial spaces on Preston Street, existing bus stops on Preston Street as well as the Trillium LRT Line to the west, and is well-connected to existing pedestrian and cyclist networks (including the Trillium Pathway).

4.5.3 TDM Program

A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures:

- Display local area maps with walking/cycling access routes and key destinations at major entrances;
- Display relevant transit schedules and route maps at entrances;
- Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit;
- Unbundle parking cost from monthly rent.

A copy of the residential checklist is included in **Appendix H**.

4.6 Neighbourhood Traffic Management

The *TIA Guidelines* identify two-way peak hour traffic volume thresholds for considering when a Neighbourhood Traffic Management (NTM) plan should be developed, when a site relies on local or collector roadways for access. The proposed development relies on Aberdeen Street (i.e. a local roadway) to be the only roadway to provide direct vehicular access. For local roadways, the NTM two-way volume threshold is 120 vph, or 60 vph in each direction. This threshold is marginally exceeded in existing and future conditions for the section of Aberdeen Street between Preston Street and Rochester Street.

The typical lane capacities shown in the City's TRANS Long-Range Transportation Model have been used to estimate the capacity of Aberdeen Street at 400 vph per direction, as this is the typical capacity of a local roadway. The NTM threshold of 60 vph per direction for local roadways represents only 15% of the estimated directional capacity and this threshold is sufficiently low, since any roadways operating at 60% capacity or less are considered to be operating at the best possible vehicular level of service (Auto LOS) A.

No neighbourhood traffic management measures are recommended as part of the proposed development.

5.0 CONCLUSIONS AND RECOMMENDATIONS

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

Forecasting

- The proposed development is anticipated to generate approximately 23 person trips (including four vehicle trips) in the AM peak hour and 36 person trips (including five vehicle trips) in the PM peak hour.

Development Design

- Widened sidewalks will be provided along the subject site's frontages to Preston Street and Aberdeen Street. The two proposed commercial units will have entrances to Preston Street, and the proposed dwellings will have a lobby entrance to Aberdeen Street and an emergency access to Preston Street.

- Bicycle parking will be provided in designated areas within the underground parking garage.

- Stops #6653, #6654, #6655, #6656, #6657, and #8003 are within 400m walking distance of the entrances to the proposed development, and Dow's Lake O-Train Station is within 600m walking distance. The proposed development is therefore served by OC Routes 2 and 85.

- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the TDM checklist are met.

Parking

- The proposed number of vehicle and bicycle parking spaces meet all requirements of the City's *Zoning By-Law* (ZBL).

Boundary Streets

- The results of the segment MMLOS analysis can be summarized as follows:
    - Neither boundary street meets the target pedestrian level of service (PLOS);
    - Neither boundary street meets the target bicycle level of service (BLOS);
    - Preston Street achieves a transit level of service (TLOS) F, but does not have a TLOS target;
    - Preston Street meets the target truck level of service (TkLOS).

- Preston Street currently achieves a PLOS E. The best possible score is a PLOS C without changing the operating speed of the roadway. To achieve a PLOS C, sidewalks with a minimum width of 2.0m and minimum boulevard width of 2.0m are required. This is identified for the City's consideration. Along the east side of Preston Street, a sidewalk width of 2.0m is proposed with a boulevard of approximately 3.0m as part of this development application. The best possible PLOS C can be achieved with this configuration.

- Aberdeen Street currently achieves a PLOS F. For roadways with daily curb lane volumes less than 3,000 vpd and an operating speed of 60 km/h or slower, the target PLOS A can be achieved by providing sidewalks with a minimum width of 2.0m and a minimum boulevard width of 2.0m. This is identified for the City's consideration. Along the south side of Aberdeen Street, a sidewalk width of 2.0m is proposed as part of this development application. This achieves a PLOS C and fails to meet the target PLOS A, however the additional space for landscaping at the back of sidewalk is considered a reasonable trade-off.

- Preston Street currently achieves a BLOS F. Streets with an operating speed of 60 km/h can only achieve the target BLOS B if physically separated bikeways are provided. This is identified for the City's consideration.

- Aberdeen Street currently achieves a BLOS F. Streets with an operating speed of 60 km/h can achieve the target BLOS D if bike lanes are provided.

Access Design

- The proposed driveway meets most of the relevant requirements of the City's *Private Approach By-Law* (PABL) and ZBL, and the Transportation Association of Canada's *Geometric Design Guide for Canadian Roads*.

- Within the first 6m of the property line, the proposed driveway has a maximum grade of 3-5%. As this is not anticipated to create a traffic hazard or negatively impact sightlines, the General Manager has flexibility to approve the proposed grade, per Section 24(3) of the PABL.

Transportation Demand Management

- A review of the City's *TDM Measures Checklist* has been conducted by the proponent, who has committed to providing the following TDM measures:
    - Display local area maps with walking/cycling access routes and key destinations at major entrances;
    - Display relevant transit schedules and route maps at entrances;
    - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use transit;
    - Unbundle parking cost from monthly rent.

Neighbourhood Traffic Management

- No neighbourhood traffic management measures are recommended as part of the proposed development.

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

NOVATECH

Prepared by:

Joshua Audia, P.Eng.
Project Engineer | Transportation

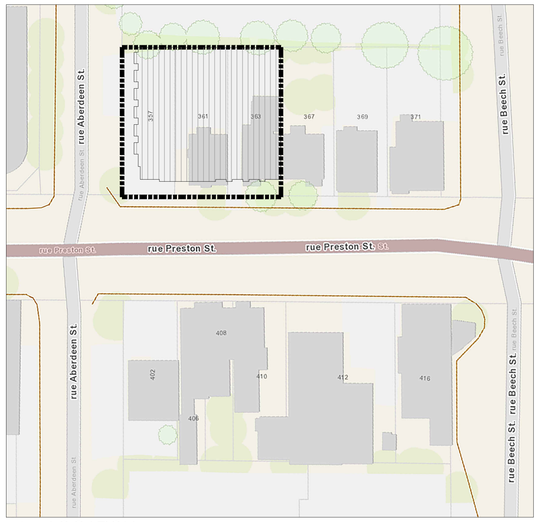
Reviewed by:

Jennifer Luong, P.Eng.
Senior Project Manager | Transportation

APPENDIX A

Site Plan

1 SITE PLAN
SCALE: 1:75



2 LOCATION
SCALE: NTS

	MECHANICAL ROOM @22.75m		BUILDING FOOTPRINT
	6 STOREY @19.6m		EXTENT OF BASEMENT
	4 STOREY @13.3m		PROPERTY LINE
	3 STOREY @10.15m	ENTRANCE	BUILDING ENTRANCE
	1 STOREY @3.85m		

3 LEGEND
SCALE: NTS

ZONING INFORMATION:		
TM (78) MATURE NEIGHBOURHOOD OVERLAY		
DWELLING TYPE - 45 UNIT MIXED USE BUILDING		
LOT COVERAGE:	646 sq m/841 sqm= 76.81%	
PROJECT INFORMATION		
MIN. ZONING STANDARD	**REQUIRED**	**PROVIDED**
LOT AREA	N/A	841.00 sq m
LOT WIDTH	N/A	29.90 m
MAX BUILDING HEIGHT	20m not more than 6 storeys	19.60 m
FRONT YARD	Max. 2 m	3.45 m
INTERIOR SIDE YARD SETBACKS	Max. 3m between a nonresidential use building or a mixed-use building and another non-residential use building or mixed-use building	0.00 m
	Min. = No Minimum	
MINIMUM CORNER SIDE YARD SETBACK	3 m, except for any part of a building above 15 metres for which an additional 2 metre setback must be provided	3m below 15m
		5m above 15m
MINIMUM REAR YARD	No Minimum	0.00 m

AMENITY AREA		
MIN. ZONING STANDARD	**REQUIRED**	**PROVIDED**
6 sq m PER UNIT	270.00 m2	
ROOFTOP		135.50 m2
BALCONIES		137.15 m2
TOTAL AMENITY PROVIDED		**272.65 m2**

BICYCLE PARKING				
MIN. ZONING STANDARD	**REQUIRED**		**PROVIDED**	
.5/DWELLING	22.50	un	35.00	un
.5/250sqm for 355.88sqm RETAIL SPACE	2.00	un		

CAR PARKING SPACES (AREA "Z")			
MIN. ZONING STANDARD	**REQUIRED**	**PROVIDED**	
NO PARKING REQUIRED	0.00 un	9	un
VISITOR PARKING REQUIRED 0.1 /UNIT AFTER THE FIRST 12 UNITS	3.30 un		

GROSS BUILDING AREA		
LEVEL	**AREA**	
BASEMENT	744.00	m2
1	610.00	m2
2	605.00	m2
3	605.00	m2
4	568.00	m2
5	529.00	m2
6	529.00	m2
TOTAL BUILDING AREA	**4,190.00**	**m2**

UNIT TYPOLOGY	
TYPE	**TOTAL UNITS/TYPE**
STUDIO	13
1 BEDROOM	22
1 BEDROOM B.F.	7
2 BEDROOM B.F.	3
TOTAL	**45**

4 PROJECT INFORMATION
SCALE: NTS

CLIENT:
1503839 Ontario Inc.
489 Preston Street, Ottawa, ON K1S 4N7

KEY PLAN

PROJECT ADDRESS:
357 361 363 Preston Street, Ottawa, ON K1S 4M8

ALL CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL CODES AND BYLAWS AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.

DO NOT SCALE DRAWINGS.

THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

#	DESCRIPTION	DATE
1	ISSUED FOR REVIEW	2021-02-21
2	ISSUED FOR REVIEW	2021-05-24
3	ISSUED FOR REVIEW	2021-10-28
4	ISSUED FOR CONSULTANTS	2022-08-11
5	ISSUED FOR APPROVAL	2022-11-21
6	ISSUED FOR COORDINATION	2024-05-08
7	ISSUED FOR COORDINATION	2024-06-19
8	LANDSCAPE REVISED	2024-07-30
9	LANDSCAPE, PROJECT INFO REVISED	2024-09-10
10	PROJECT INFO REVISED	2024-10-17
11	LANDSCAPE COORDINATION	2024-10-31
12	CIVIL COORDINATION	2024-11-01

WOODMAN ARCHITECT & ASSOCIATES LTD.
4 BEECHWOOD, SUITE 201 OTTAWA, ONTARIO, CANADA K1L 8L9
TEL: 613 228 9850 • FAX 613 223 9848 • mailbox@woodmanarchitect.com

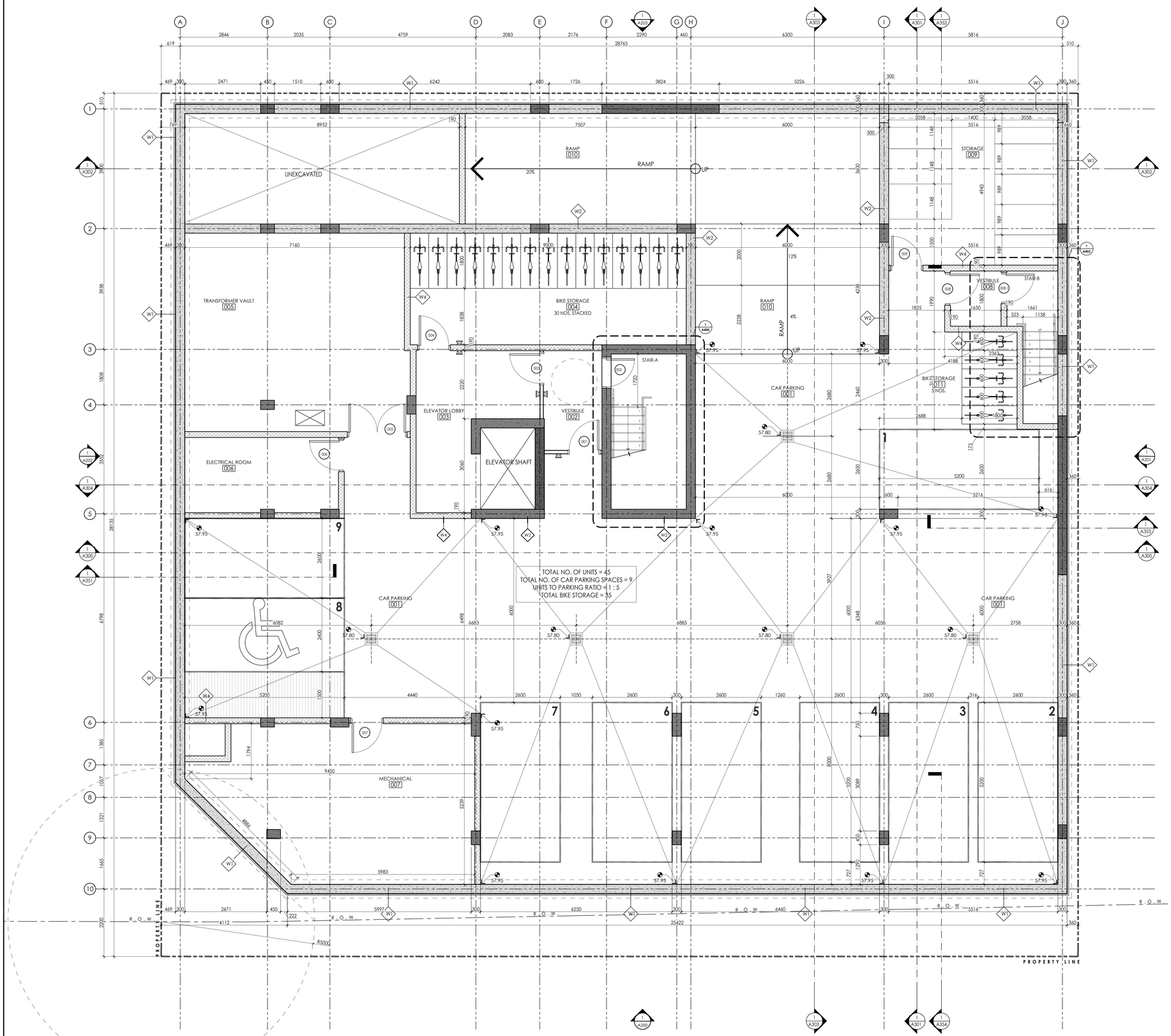
CONSULTANTS:
PLANNER - NOVATECH ENGINEERS, PLANNERS & DEVELOPMENT
STRUCTURAL - D+M STRUCTURAL LTD
MECHANICAL - JAIN CONSULTANTS
CIVIL - WSP GLOBAL INC.
ELECTRICAL - AIN CONSULTANTS
LANDSCAPING - NOVATECH ENGINEERS, PLANNERS & DEVELOPMENT
ENVIRONMENTAL - PATERSON GROUP

PROJECT:
357-361-363
PRESTON ST
Ottawa, ON K1S 4M8

DRAWING:
SITE PLAN

DATE	2021-01-27	JOB NO.	2018
SCALE	1:75	DRAWING NO.	SP01
DRAWN BY	AS		
REVIEWED BY	TT		

D07-12-22-0165



1 BASEMENT FLOOR PLAN

SCALE 1:50

CLIENT:

1503839 Ontario Inc.

489 Preston Street, Ottawa, ON K1S 4N7

KEY PLAN

PROJECT ADDRESS:

357 361 363 Preston Street, Ottawa, ON K1S 4M8

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#	DESCRIPTION	DATE
1	ISSUED FOR COORDINATION	2023-08-03
2	ISSUED FOR REVIEW	2023-08-08
3	ISSUED FOR REVIEW	2024-05-28
4	ISSUED FOR COORDINATION	2024-06-19
5	UDRP PACKAGE	2024-10-17

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ASSOCIATES LTD.
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CIVIL - WSP GLOBAL INC.
ELECTRICAL - JAIN CONSULTANTS
LANDSCAPING - NOVATECH ENGINEERS, PLANNERS & DEVELOPMENT
ENVIRONMENTAL - PATERSON GROUP

PROJECT

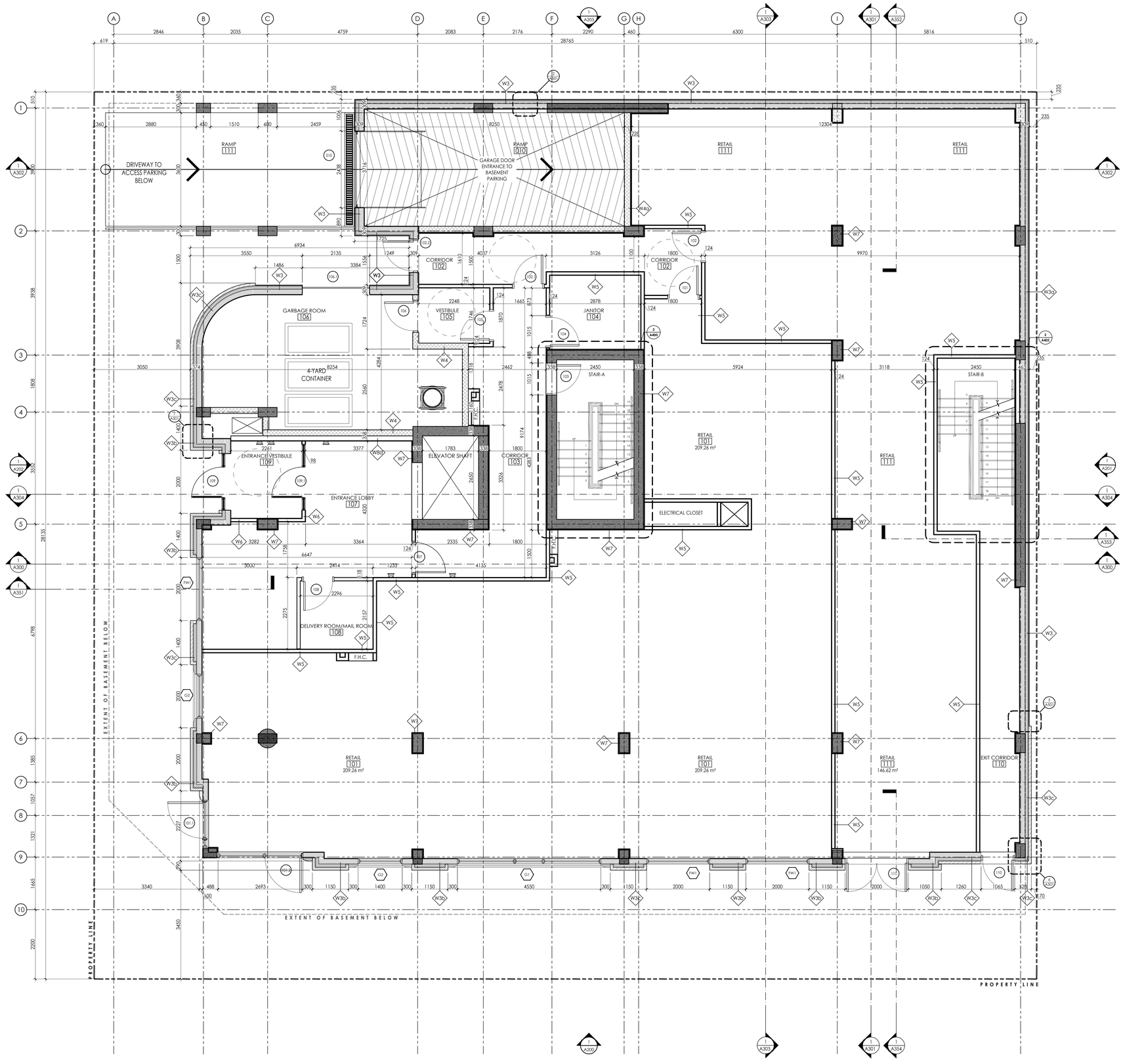
357-361-363 PRESTON ST

DRAWING:

BASEMENT

DATE	2023-07-25
SCALE	1 : 50
DRAWN BY	ASH
REVIEWED BY	RW
JOB NO.	2018
DRAWING NO.	A101

D07-12-22-0165



1 FIRST FLOOR PLAN
SCALE 1:50

CLIENT:

1503839 Ontario Inc.
489 Preston Street, Ottawa, ON K1S 4N7

KEY PLAN

PROJECT ADDRESS:
357 361 363 Preston Street, Ottawa, ON K1S 4M8

ALL CONTRACTORS TO VERIFY ALL DIMENSIONS ON SITE AND TO REPORT ALL ERRORS AND/OR OMISSIONS TO THE ARCHITECT.

ALL CONTRACTORS MUST COMPLY WITH ALL CODES AND BYLAWS AND OTHER AUTHORITIES HAVING JURISDICTION OVER THE WORK.

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THIS DRAWING MAY NOT BE USED FOR CONSTRUCTION UNTIL SIGNED BY THE ARCHITECT.

#	DESCRIPTION	DATE
1	ISSUED FOR COORDINATION	2023-08-03
2	ISSUED FOR REVIEW	2023-08-08
3	ISSUED FOR REVIEW	2024-05-28
4	ISSUED FOR COORDINATION	2024-06-19
5	UDRP PACKAGE	2024-10-17

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CIVIL - WSP GLOBAL INC.
ELECTRICAL - JAIN CONSULTANTS
LANDSCAPING - NOVATECH ENGINEERS, PLANNERS & DEVELOPMENT
ENVIRONMENTAL - PATERSON GROUP

PROJECT

357-361-363 PRESTON ST

DRAWING:

FIRST FLOOR

DATE: 2023-07-25	JOB NO.: 2018
SCALE: 1 : 50	DRAWING NO.: A102
DRAWN BY: ASH	
REVIEWED BY: RW	

D07-12-22-0165

APPENDIX B

TIA Screening Form

City of Ottawa 2017 TIA Guidelines TIA Screening

1. Description of Proposed Development

Municipal Address	357-363 Preston Street
Description of Location	South of Aberdeen St, east of Preston St
Land Use Classification	Mixed-use (ground-floor retail + mid-rise residential)
Development Size (units)	45 dwellings
Development Size square metre (m^2)	356 m2 (3,830 ft2) GFA of retail space
Number of Accesses and Locations	1 (to Aberdeen)
Phase of Development	1
Buildout Year	2026

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.

Table notes:

1. Table 2, Table 3 & Table 4 TRANS Trip Generation Manual
2. Institute of Transportation Engineers (ITE) Trip Generation Manual 11.1 Ed.

Land Use Type	Minimum Development Size
Single-family homes	**60 units**
Multi-Use Family (Low-Rise)[1]	**90 units**
Multi-Use Family (High-Rise)[1]	**150 units**
Office[2]	**1,400 m^2**
Industrial[2]	**7,000 m^2**
Fast-food restaurant or coffee shop[2]	**110 m^2**
Destination retail[2]	**1,800 m^2**
Gas station or convenience market[2]	**90 m^2**

If the proposed development size is equal to or 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 Transit Priority Network, Rapid Transit network or Cross-Town Bikeways?	☐	☑
Is the development in a Hub, a Protected Major Transit Station Area (PMTSA), or a Design Priority Area (DPA)?[2]	☑	☐

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 kilometers per hour (km/h) or greater?	☐	☑
Are there any horizontal/vertical curvatures on a boundary street limits sight lines at a proposed driveway?	☐	☑
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 metre [m] of intersection in rural conditions, or within 150 m of intersection in urban/ suburban conditions)?	☑	☐
Is the proposed driveway within auxiliary lanes of an intersection?	☐	☑
Does the proposed driveway make use of an existing median break that serves an existing site?	☐	☑

[2] Hubs are identified in Schedules B1 to B8 of the City of Ottawa Official Plan. PMTSAs are identified in Schedule C1 of the Official Plan. DPAs are identified in Schedule C7A and C7B of the Official. See Chapter 4 for a list of City of Ottawa Planning and Engineering documents that support the completion of TIA.

	Yes	No
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?	☐	☑
Does the development include a drive-thru facility?	☐	☑

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

5. Summary

Results of Screening	Yes	No
Does the development satisfy the Trip Generation Trigger?	☐	☑
Does the development satisfy the Location Trigger?	☑	☐
Does the development satisfy the Safety Trigger?	☑	☐

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

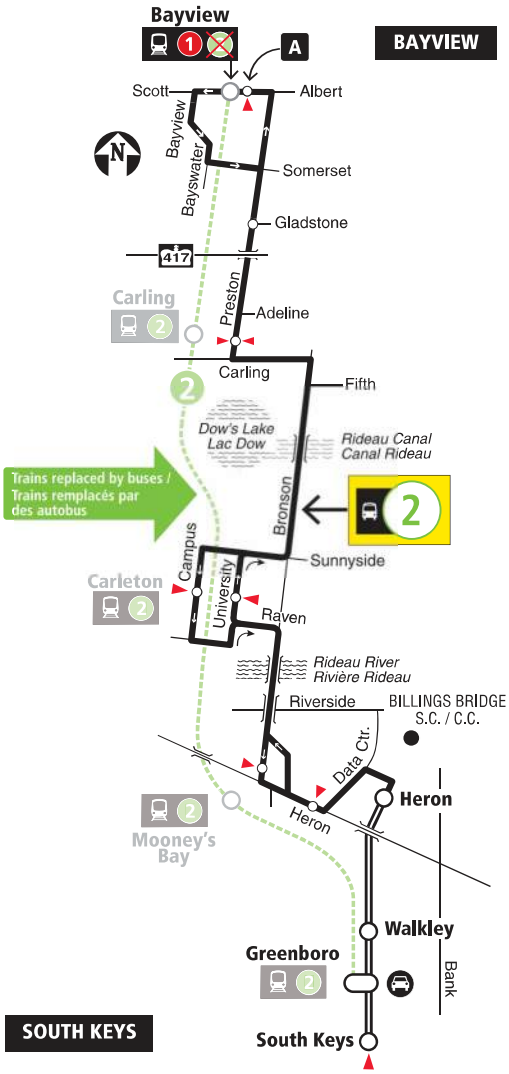
APPENDIX C

OC Transpo Route Maps

2 BAYVIEW
SOUTH KEYS

Bus service during
O-Train Line 2 expansion

Service d'autobus durant le
prolongement de la Ligne 2 de l'O-Train



Transitway & Station
Limited stops / Arrêts limités
Park & Ride / Parc-o-bus
Timepoint / Heures de passage

2020.09

Schedule / Horaire.....613-560-1000
Text / Texto 560560
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 Fall 2020
En vigueur automne 2020

OC Transpo
INFO 613-741-4390
octranspo.com

85 GATINEAU / BAYSHORE

Fréquent

7 days a week / 7 jours par semaine

All day service
Service toute la journée

Station

Timepoint / Heures de passage

2020.04

Schedule / Horaire.....613-560-1000
Text / Texto 560560

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

Customer Service
Service à la clientèle 613-741-4390

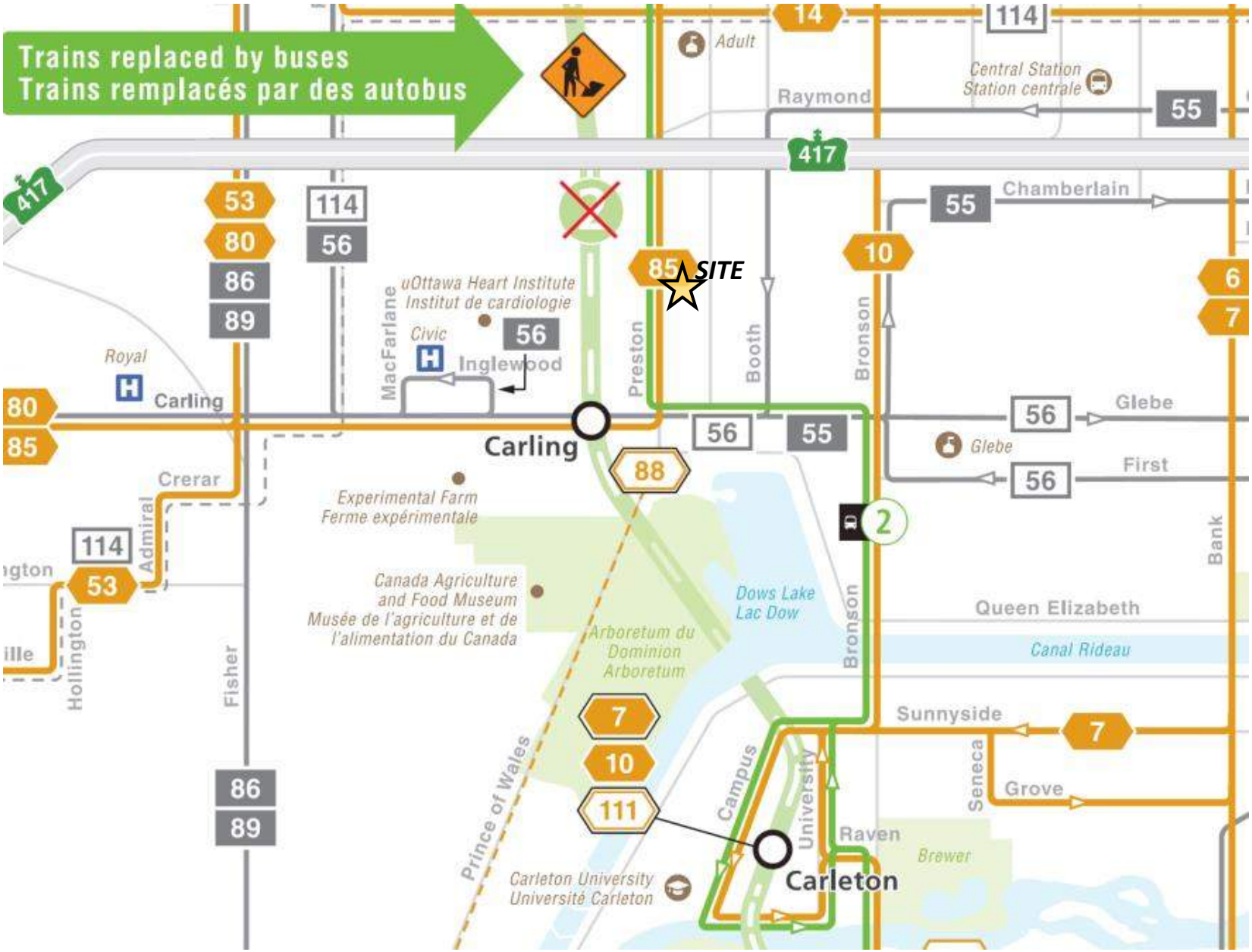
Lost and Found / Objets perdus.....613-563-4011

Security / Sécurité 613-741-2478

Effective May 3, 2020
En vigueur 3 mai 2020

OC Transpo

INFO 613-741-4390
octranspo.com


Trains replaced by buses
Trains remplacés par des autobus
SITE
Carling
Carleton
Raymond
Central Station
Station centrale
Chamberlain
Glebe
First
Queen Elizabeth
Canal Rideau
Sunnyside
Grove
Raven
Brewer
Inglewood
Civic
Royal
Crerar
Admiral
Hollington
Fisher
MacFarlane
Preston
Booth
Bronson
Bank
Seneca
University
Campus
Prince of Wales
Dows Lake
Lac Dow
Arboretum du Dominion Arboretum
Experimental Farm
Ferme expérimentale
Canada Agriculture and Food Museum
Musée de l'agriculture et de l'alimentation du Canada
uOttawa Heart Institute
Institut de cardiologie
Carleton University
Université Carleton
Adult
417
14
114
55
53
80
86
89
56
85
10
6
7
88
2
111

APPENDIX D

Traffic Count Data

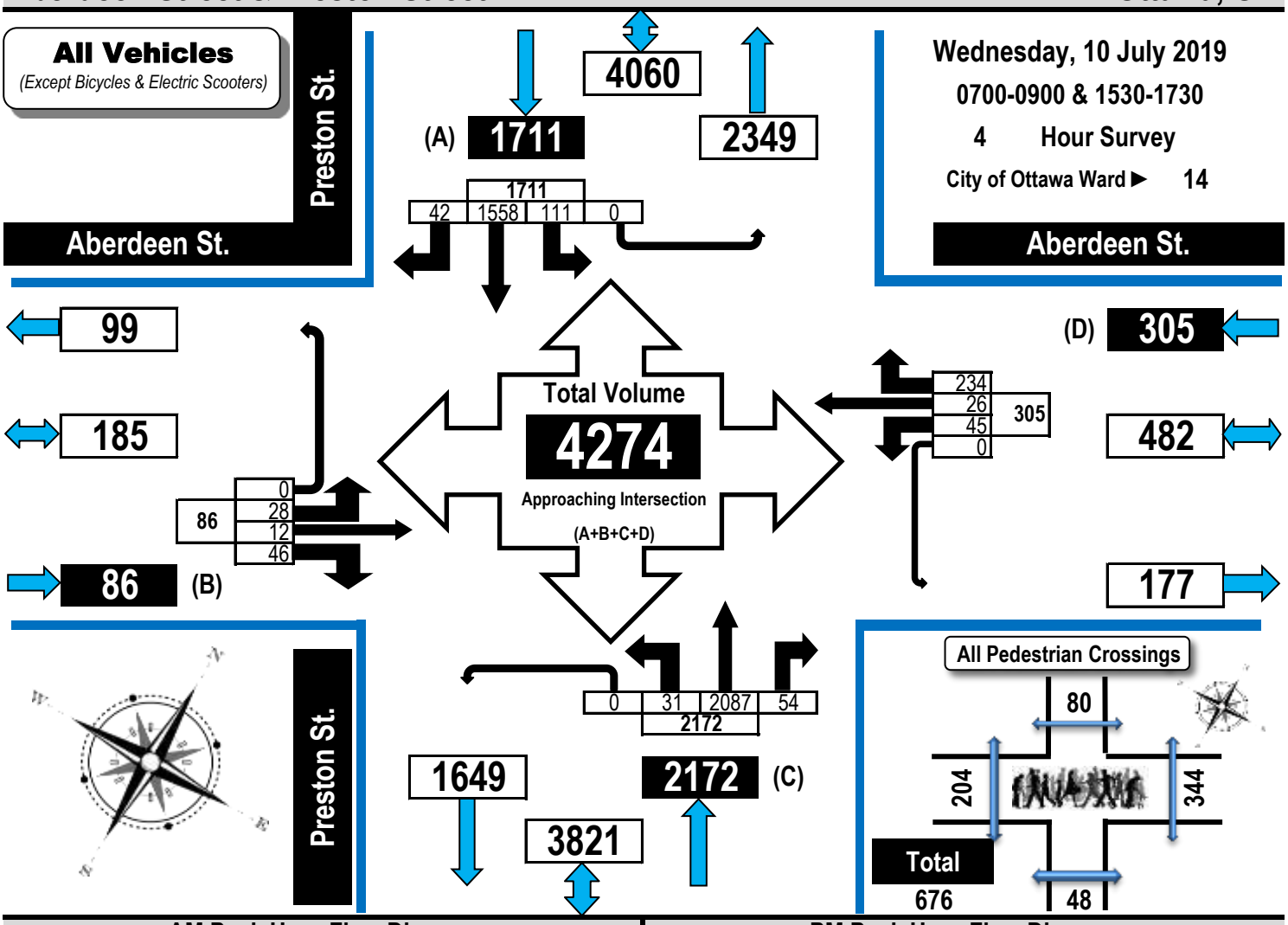
Turning Movement Count
Summary, AM and PM Peak Hour Flow Diagrams

Automobiles, Taxis, Light Trucks, Vans, SUV's, Motorcycles, Heavy Trucks, Buses, and School Buses

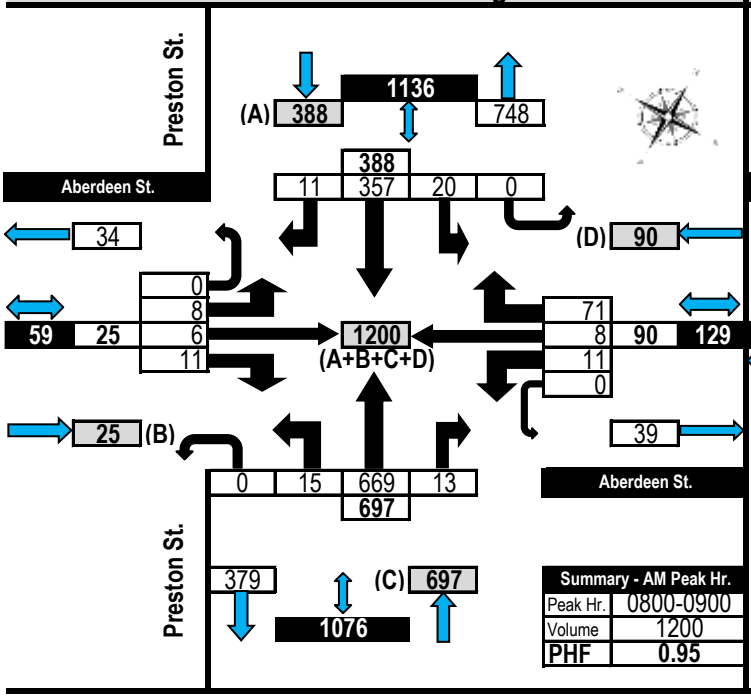
Aberdeen Street & Preston Street — Ottawa, ON

All Vehicles
(Except Bicycles & Electric Scooters)

Wednesday, 10 July 2019
0700-0900 & 1530-1730
4 Hour Survey
City of Ottawa Ward ► 14

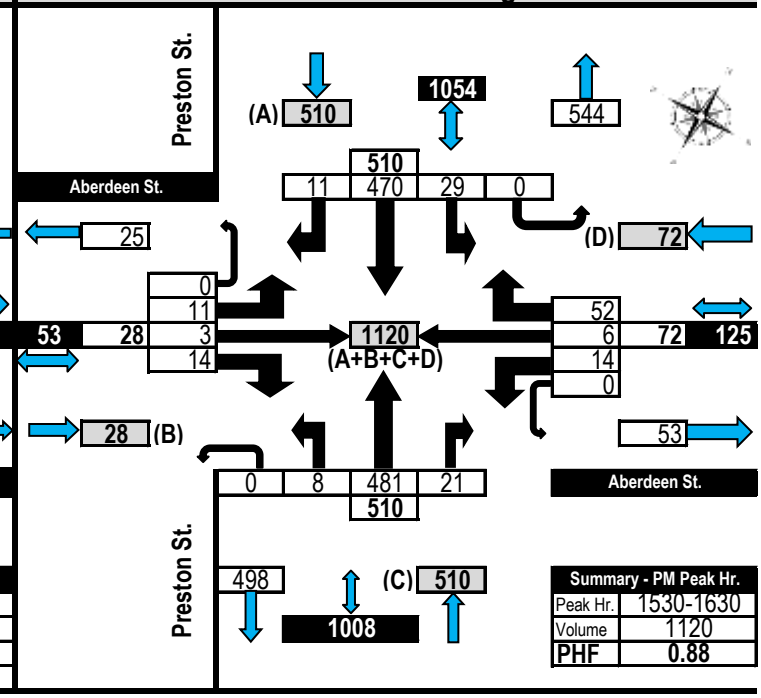


AM Peak Hour Flow Diagram



Summary - AM Peak Hr.	
Peak Hr.	0800-0900
Volume	1200
PHF	0.95

PM Peak Hour Flow Diagram



Summary - PM Peak Hr.	
Peak Hr.	1530-1630
Volume	1120
PHF	0.88

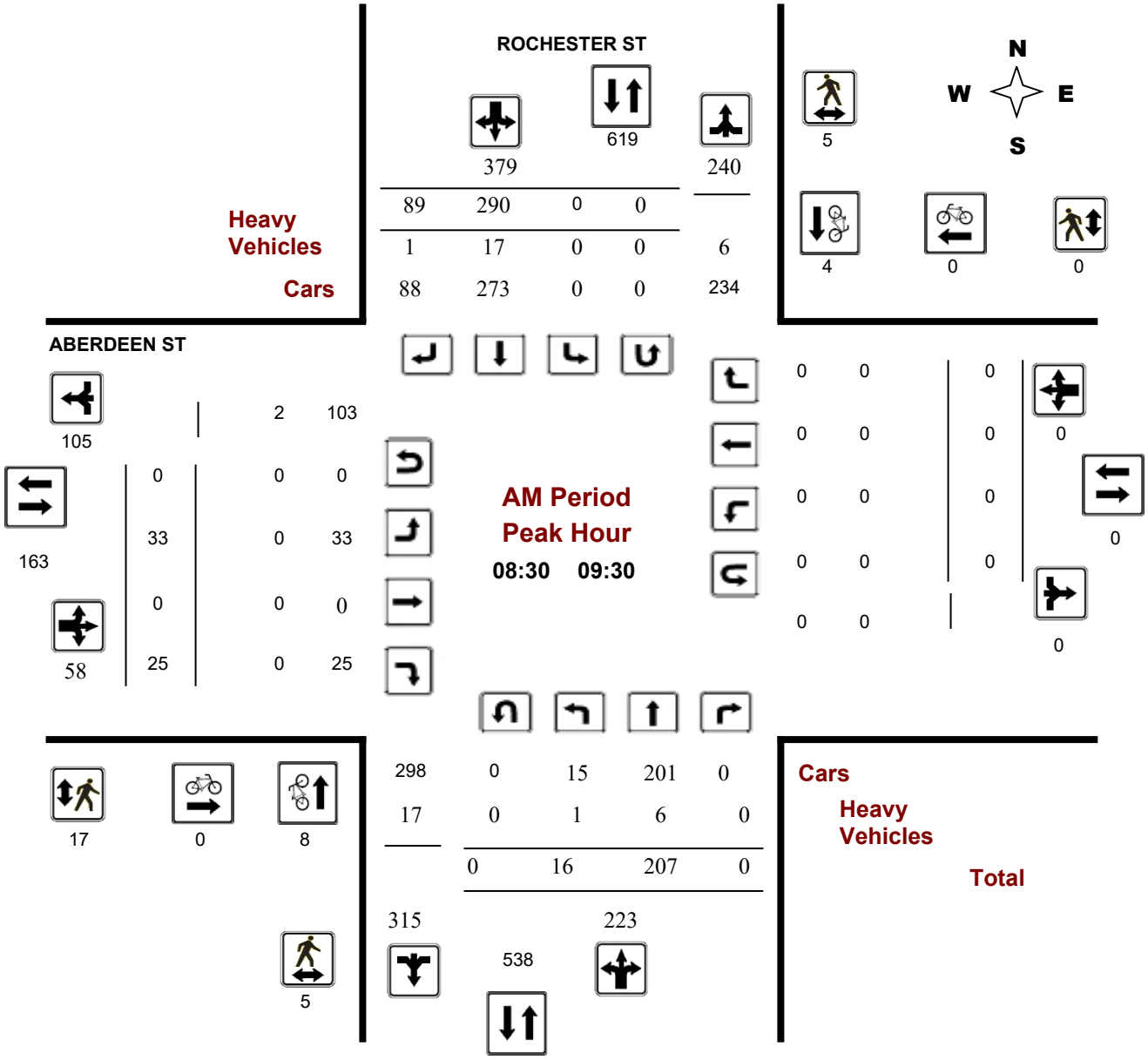
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ABERDEEN ST @ ROCHESTER ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36481

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



Comments

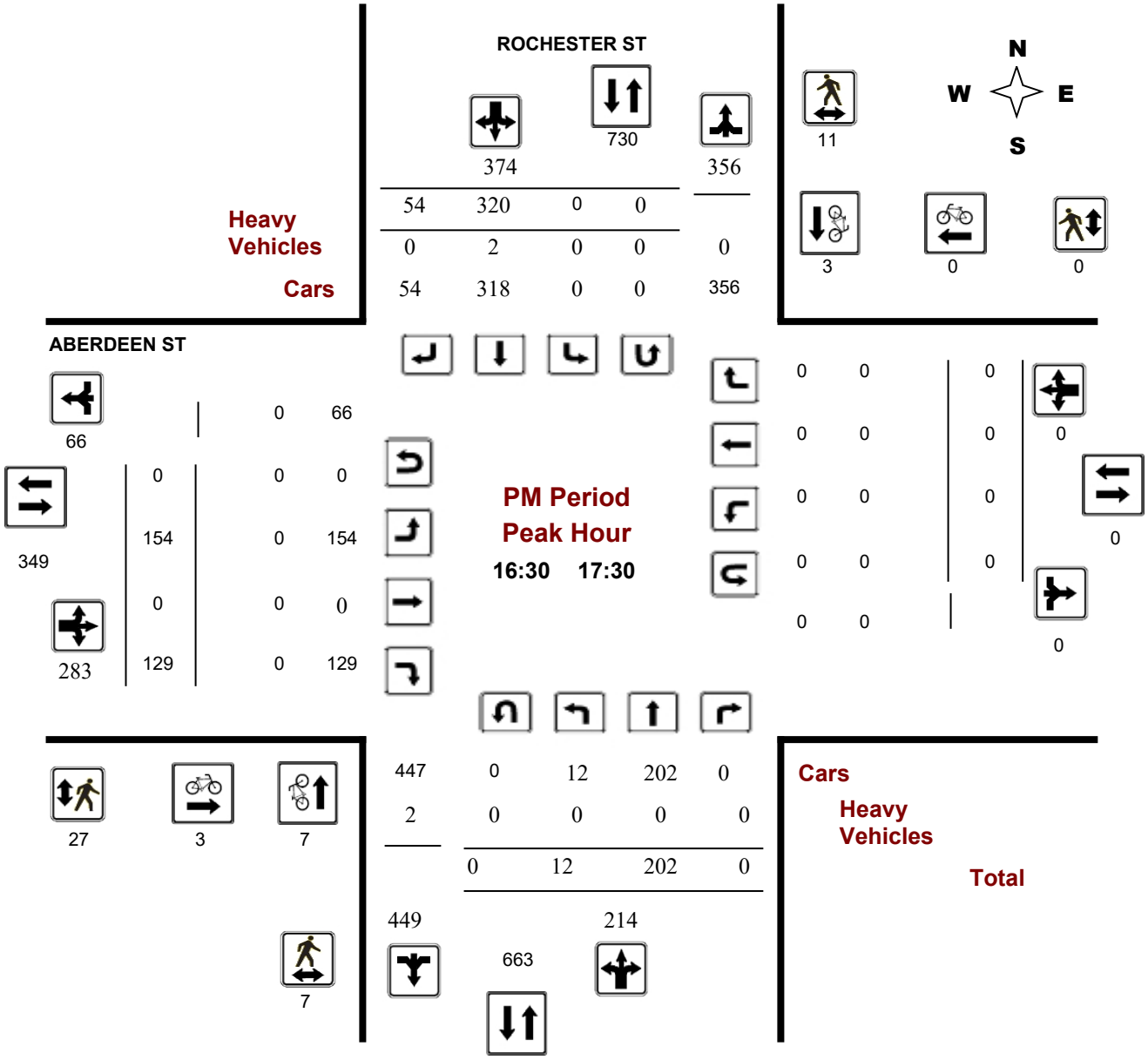
Transportation Services - Traffic Services

Turning Movement Count - Peak Hour Diagram

ABERDEEN ST @ ROCHESTER ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36481

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



Comments

Transportation Services - Traffic Services

Turning Movement Count - Study Results

ABERDEEN ST @ ROCHESTER ST

Survey Date: Wednesday, November 16, 2016 **WO No:** 36481

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

Full Study Summary (8 HR Standard)

Survey Date: Wednesday, November 16, 2016

Total Observed U-Turns

Northbound: 1 Southbound: 0

Eastbound: 0 Westbound: 0

AADT Factor

.90

	ROCHESTER ST								ABERDEEN ST									
	Northbound				Southbound					Eastbound				Westbound					
Period	LT	ST	RT	**NB TOT**	LT	ST	RT	**SB TOT**	**STR TOT**	LT	ST	RT	**EB TOT**	LT	ST	RT	**WB TOT**	**STR TOT**	**Grand Total**
07:00 08:00	8	122	0	**130**	0	227	72	**299**	**429**	18	0	12	**30**	0	0	0	**0**	**30**	**459**
08:00 09:00	10	210	0	**220**	0	275	83	**358**	**578**	33	0	21	**54**	0	0	0	**0**	**54**	**632**
09:00 10:00	12	159	0	**171**	0	265	87	**352**	**523**	31	0	19	**50**	0	0	0	**0**	**50**	**573**
11:30 12:30	10	151	0	**161**	0	191	58	**249**	**410**	59	0	35	**94**	0	0	0	**0**	**94**	**504**
12:30 13:30	9	128	0	**137**	0	199	43	**242**	**379**	39	0	37	**76**	0	0	0	**0**	**76**	**455**
15:00 16:00	11	195	0	**206**	0	168	40	**208**	**414**	79	0	51	**130**	0	0	0	**0**	**130**	**544**
16:00 17:00	10	194	0	**204**	0	320	46	**366**	**570**	166	0	116	**282**	0	0	0	**0**	**282**	**852**
17:00 18:00	14	169	0	**183**	0	326	52	**378**	**561**	103	0	102	**205**	0	0	0	**0**	**205**	**766**
Sub Total	84	1328	0	**1412**	0	1971	481	**2452**	**3864**	528	0	393	**921**	0	0	0	**0**	**921**	**4785**
U Turns	1			**1**	0			**0**	**1**	**0**			**0**	0			**0**	**0**	**1**
Total	85	1328	0	**1413**	0	1971	481	**2452**	**3865**	528	0	393	**921**	0	0	0	**0**	**921**	**4786**
EQ 12Hr	118	1846	0	**1964**	0	2740	669	**3409**	**5373**	734	0	546	**1280**	0	0	0	**0**	**1280**	**6653**
Note: These values are calculated by multiplying the totals by the appropriate expansion factor.														**1.39**					
AVG 12Hr	106	1661	0	**1767**	0	2466	602	**3068**	**4835**	661	0	491	**1152**	0	0	0	**0**	**1152**	**5987**
Note: These volumes are calculated by multiplying the Equivalent 12 hr. totals by the AADT factor.														**.90**					
AVG 24Hr	139	2176	0	**2315**	0	3230	789	**4019**	**6334**	866	0	643	**1509**	0	0	0	**0**	**1509**	**7843**
Note: These volumes are calculated by multiplying the Average Daily 12 hr. totals by 12 to 24 expansion factor.														**1.31**					

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

APPENDIX E

Collision Records

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: ABERDEEN ST @ PRESTON ST

Traffic Control: Stop sign **Total Collisions:** 11

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-May-24, Sun,17:17	Clear	SMV unattended vehicle	P.D. only	Dry	East	Turning right	Pick-up truck	Unattended vehicle	0
2016-Feb-17, Wed,16:00	Snow	Angle	P.D. only	Slush	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Mar-24, Thu,13:36	Snow	Angle	Non-fatal injury	Slush	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-May-22, Sun,12:30	Clear	Rear end	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					North	Stopped	Pick-up truck	Other motor vehicle	
2016-Oct-02, Sun,12:13	Rain	Rear end	P.D. only	Wet	North	Slowing or stopping	Pick-up truck	Other motor vehicle	0
					North	Turning right	Pick-up truck	Other motor vehicle	
2016-Dec-16, Fri,19:55	Clear	Rear end	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Pick-up truck	Other motor vehicle	
2016-Dec-20, Tue,11:19	Snow	Turning movement	P.D. only	Slush	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					North	Going ahead	Pick-up truck	Other motor vehicle	
2017-Feb-15, Wed,00:00	Snow	SMV unattended vehicle	P.D. only	Loose snow	Unknown	Unknown	Unknown	Unattended vehicle	0
2017-Jun-17, Sat,11:15	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	
2018-Nov-16, Fri,20:09	Snow	Angle	P.D. only	Wet	West	Turning right	Snow plow	Other motor vehicle	0
					South	Turning left	Automobile, station wagon	Other motor vehicle	
2019-Sep-08, Sun,16:01	Clear	Angle	P.D. only	Dry	West	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Police vehicle	Other motor vehicle	
					North	Stopped	Pick-up truck	Other motor vehicle	

Transportation Services - Traffic Services

Collision Details Report - Public Version

From: January 1, 2015 **To:** December 31, 2019

Location: ABERDEEN ST @ ROCHESTER ST

Traffic Control: Traffic signal **Total Collisions:** 2

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2018-Feb-23, Fri,13:20	Freezing Rain	Rear end	P.D. only	Ice	South	Slowing or stopping	Automobile, station wagon	Skidding/sliding	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-14, Mon,17:43	Clear	Turning movement	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Automobile, station wagon	Other motor vehicle	

Location: ABERDEEN ST btwn PRESTON ST & ROCHESTER ST

Traffic Control: No control **Total Collisions:** 3

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Jul-03, Fri,19:09	Clear	Sideswipe	P.D. only	Dry	East	Stopped	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2016-Aug-07, Sun,10:57	Clear	Approaching	P.D. only	Dry	East	Unknown	Unknown	Other motor vehicle	0
					West	Going ahead	Pick-up truck	Other motor vehicle	
2019-Sep-01, Sun,12:00	Clear	Other	P.D. only	Dry	West	Reversing	Pick-up truck	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	

APPENDIX F

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

Carling Preston Area

2011 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb 2, 2020
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

N

Distance (m)

50 100 150 200 250

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

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

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

TRANS Regional Model

Version 2.15 - Assigned June 16, 2020

AM Peak Hour Total Traffic Volume

Carling Preston Area

2031 Model - Basecase

N/A

User Initials: TIMW
Plot Prepared: Feb 2, 2020
EMME Scenario: 21711

TRANS

Legend

AM Peak Hour Total Traffic Volume

1000 2000 3000 4000 5000

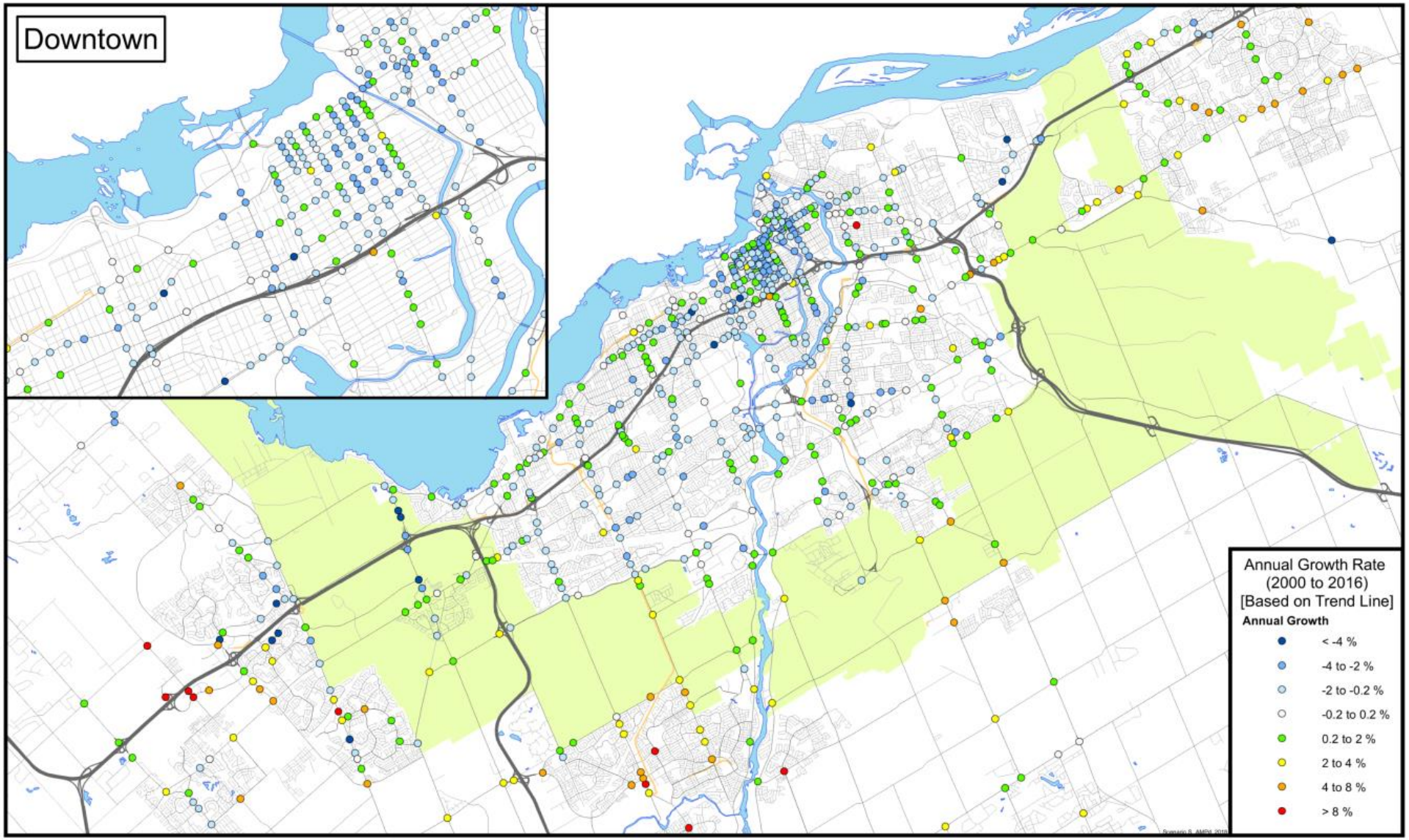
N

Distance (m)

50 100 150 200 250

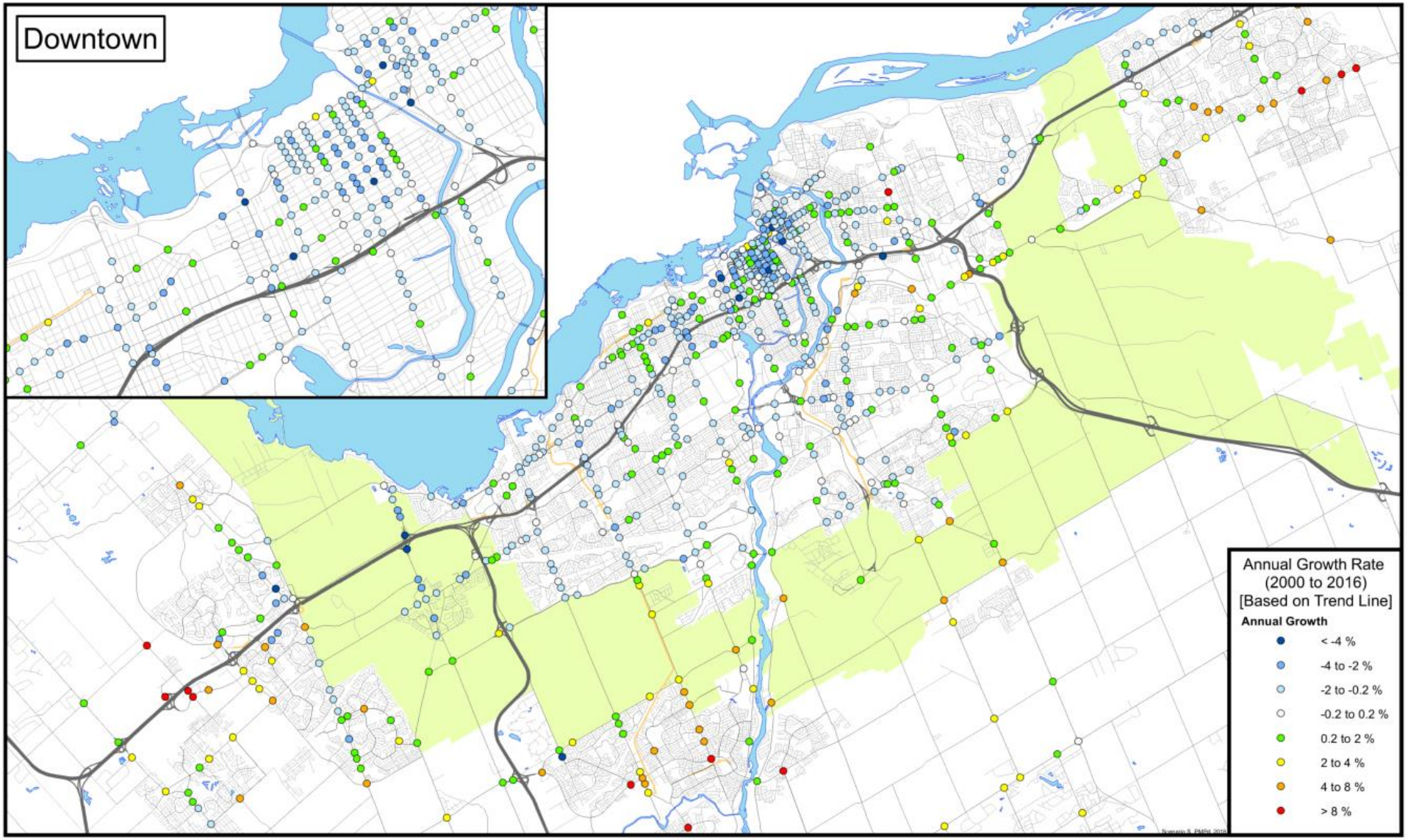
INTERSECTION TRAFFIC GROWTH RATE, AM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



INTERSECTION TRAFFIC GROWTH RATE, PM PEAK PERIOD

Total Vehicular Volume Entering the Intersection, 2000 to 2016



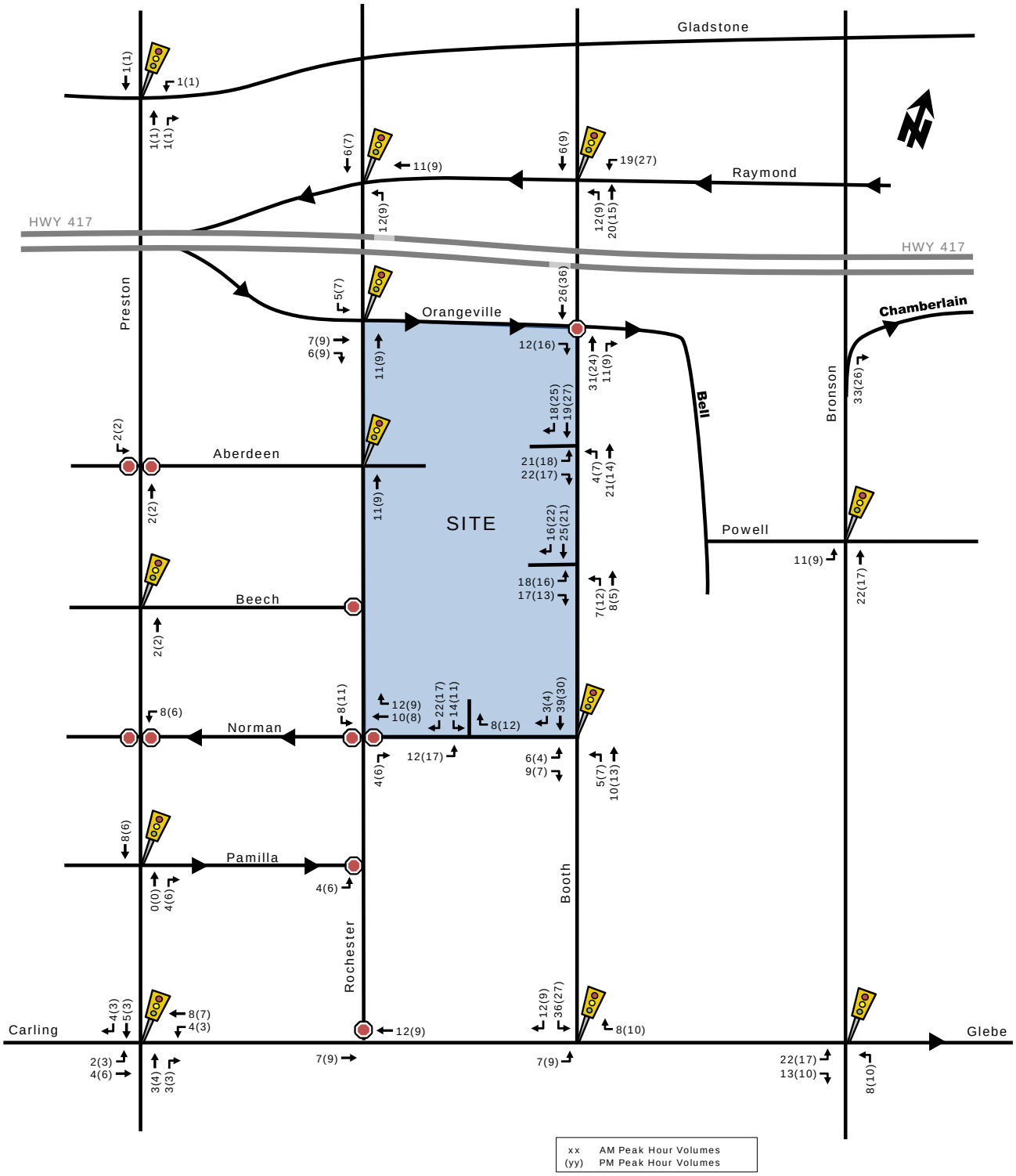
APPENDIX G

Other Area Developments

OTHER AREA DEVELOPMENTS

552 Booth Street

Figure 13: 'New' and 'Pass-by' 2030 Site-Generated Vehicle Traffic



3.2. BACKGROUND NETWORK TRAVEL DEMANDS

3.2.1. TRANSPORTATION NETWORK PLANS

Refer to Section 2.1.2 Planned Conditions.

OTHER AREA DEVELOPMENTS

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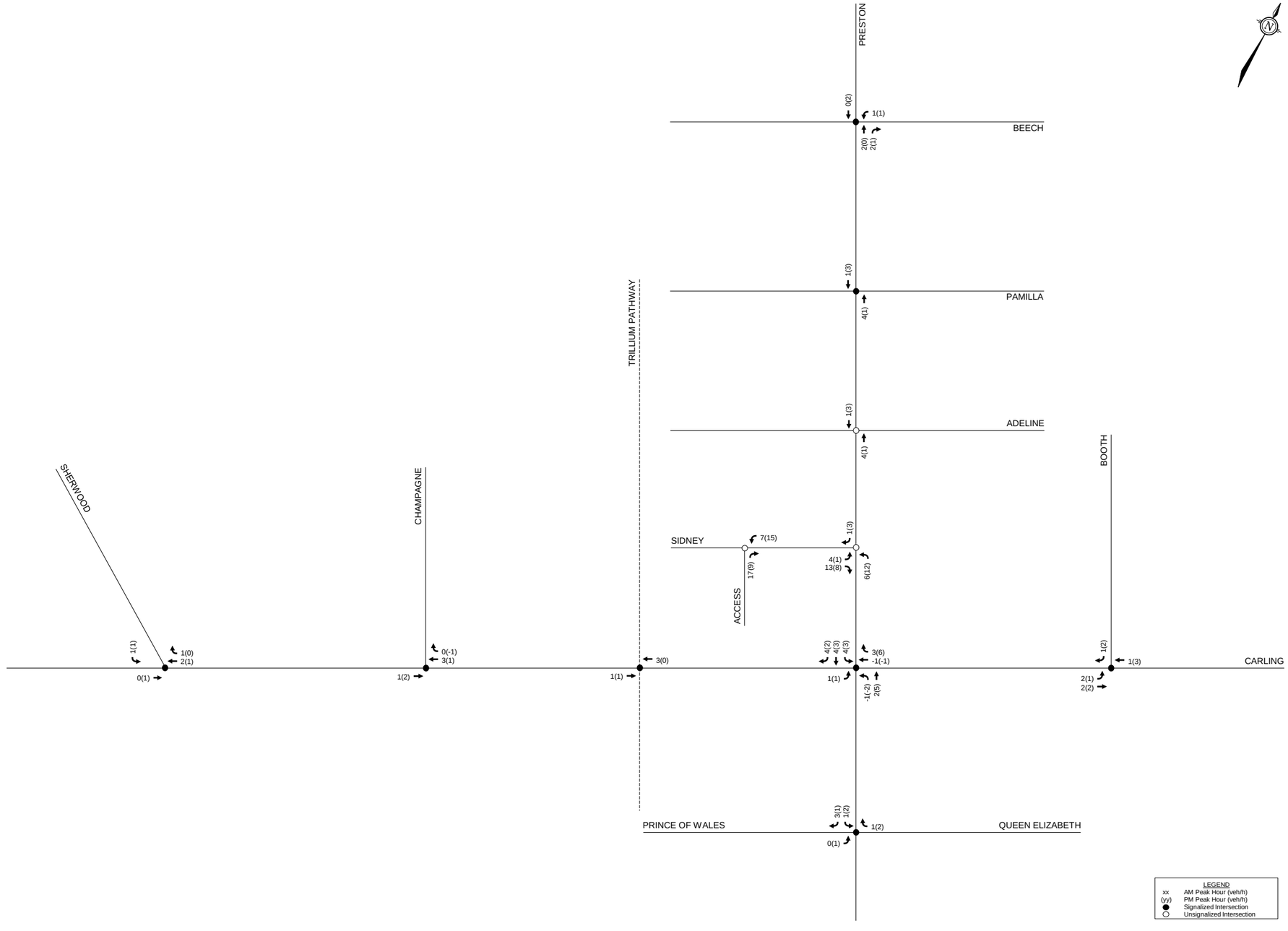
829 Carling Avenue

Figure 9: Net Site-Generated Traffic Volumes



OTHER AREA DEVELOPMENTS

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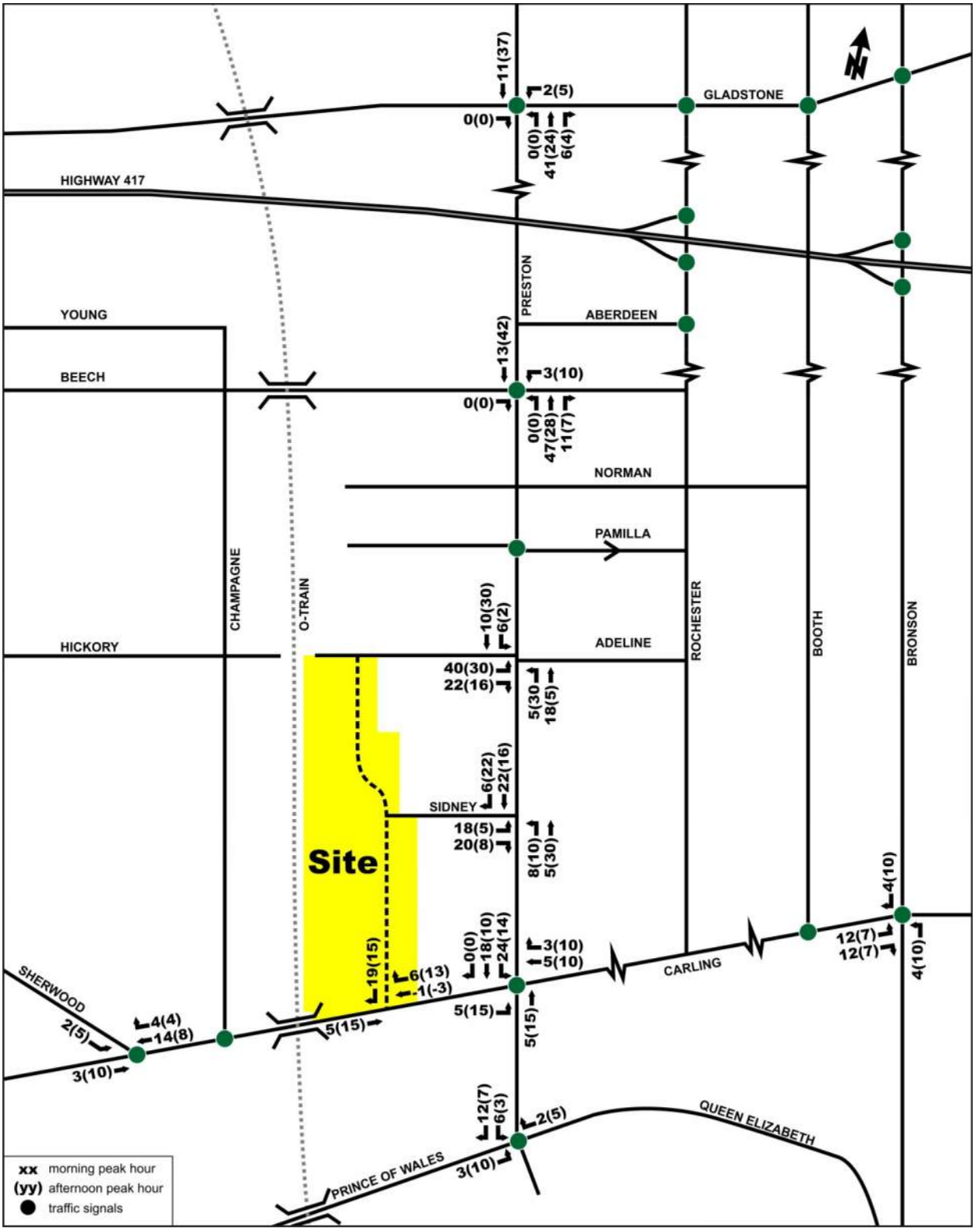
845 Carling Avenue

Figure 6: 'New' and 'Pass-by' Site-Generated Traffic Volumes



OTHER AREA DEVELOPMENTS

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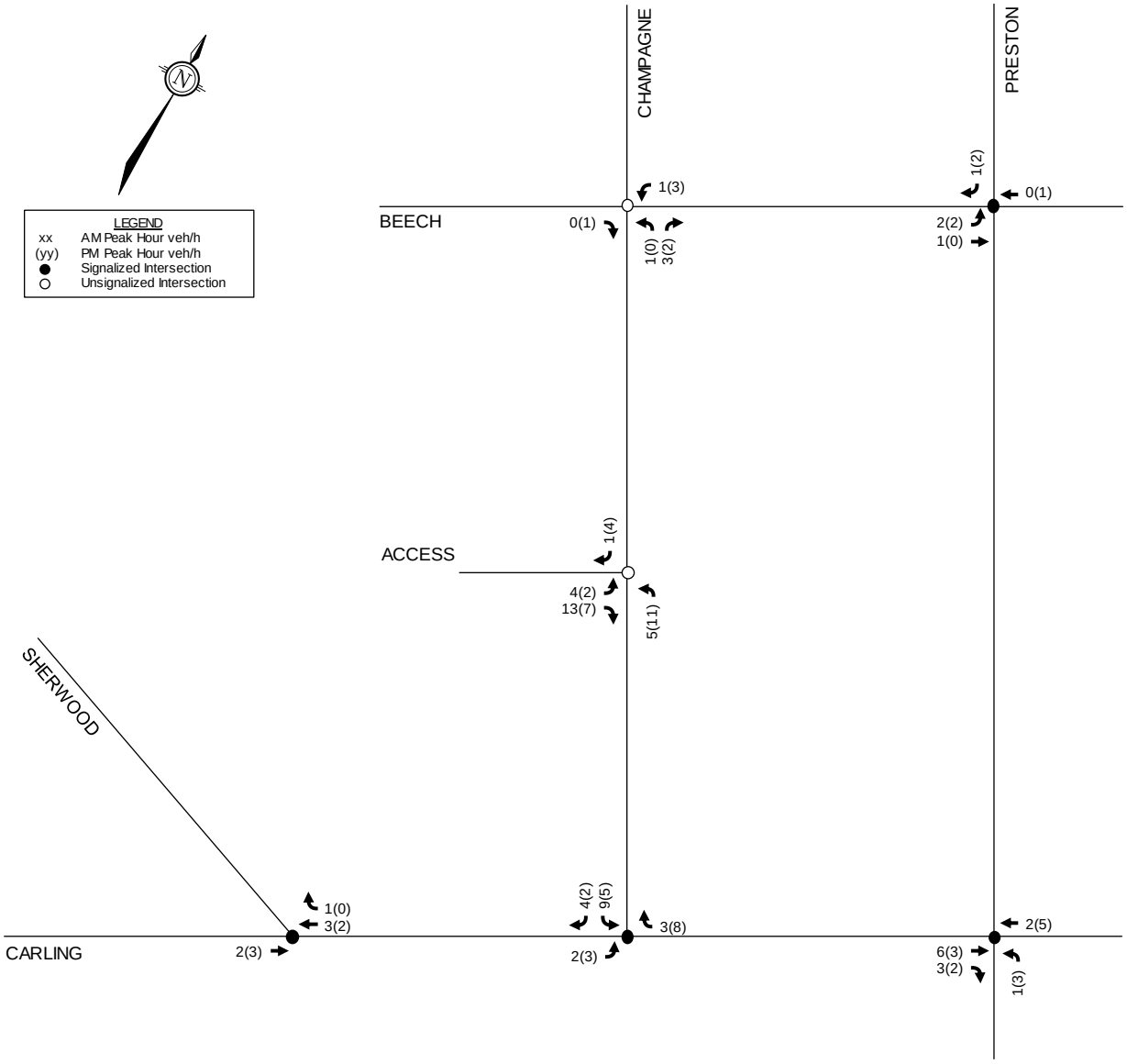
90 Champagne Avenue

Figure 6: Site Generated Traffic Volumes



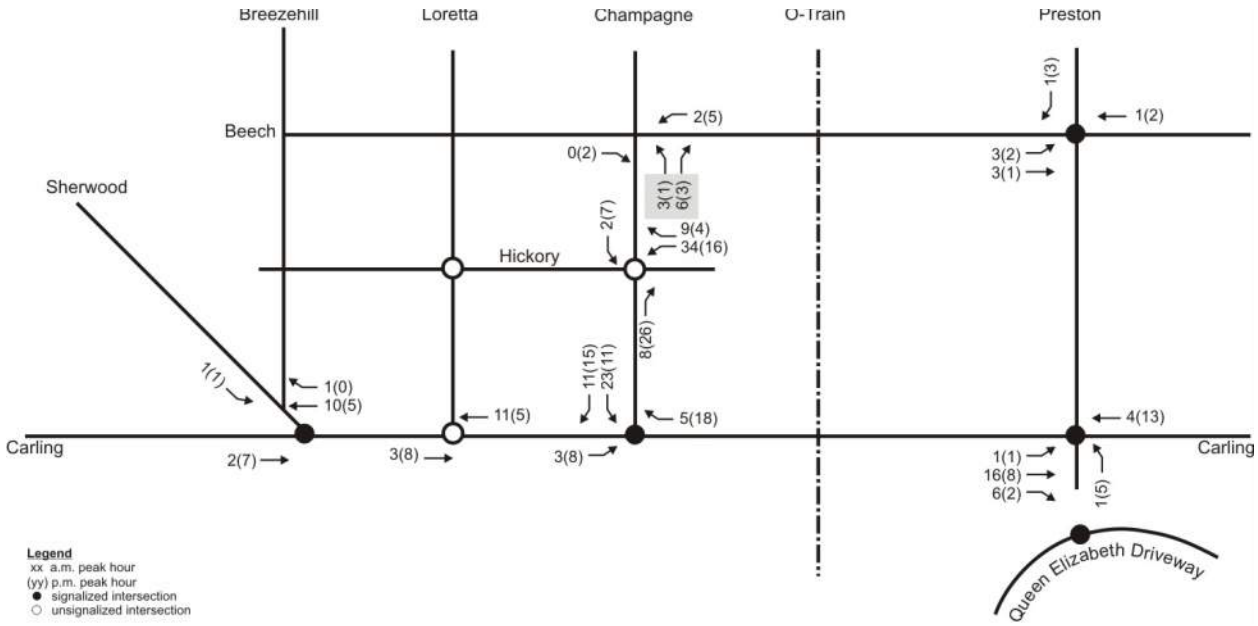
OTHER AREA DEVELOPMENTS

101-105 Champagne Avenue

Table 10: Site-Generated Traffic Summary of Study Area Development Projects Two-way Table (vph)

Development	Projected Net Traffic Generated vph			
	AM Peak	%	PM Peak	%
320/330 Loretta Avenue (Domicile)	+70	9%	+85	11%
855 Champagne Avenue (Arnon)	+502	62%	+438	55%
125 Hickory Street (Mastercraft Starwood)	+147	18%	+174	22%
100 Champagne Avenue (Domicile)	+40	5%	+50	6%
101 Champagne Avenue (Ashcroft)	+53	6%	+53	6%
TOTALS	**+812**	**100%**	**+800**	**100%**

Figure 10: Projected Peak Hour Ashcroft Site-Generated Traffic



6.4 Analysis of Projected Future Conditions

The combined site-generated traffic for the five aforementioned projects, superimposed on current volumes (Figure 5), is depicted in Figure 11.

6.4.1 Traffic Signal Warrants

The existing traffic signals at the Carling/Champagne intersection are not warranted based on recent City of Ottawa traffic counts (August: 2009: Appendix A) and were not judged to be warranted based on the projected impact of the Arnon development alone. However, as reported in the CTS for the Mastercraft Starwood proposed development at 125 Hickory Street, the signals were judged to be warranted based on the combined impact of the surrounding developments.

OTHER AREA DEVELOPMENTS

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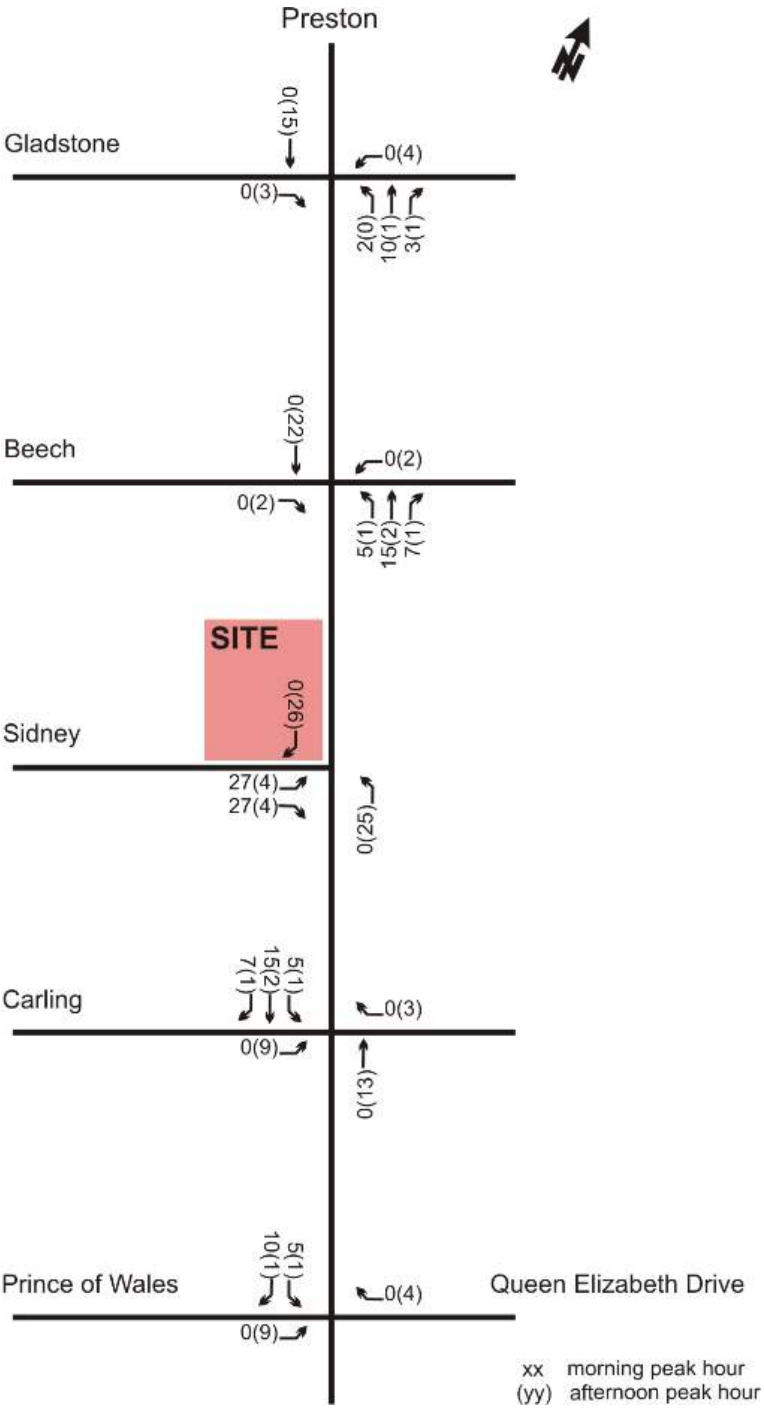
500 Preston Street

Figure 5: "Net" Increase in Site-Generated Traffic



OTHER AREA DEVELOPMENTS

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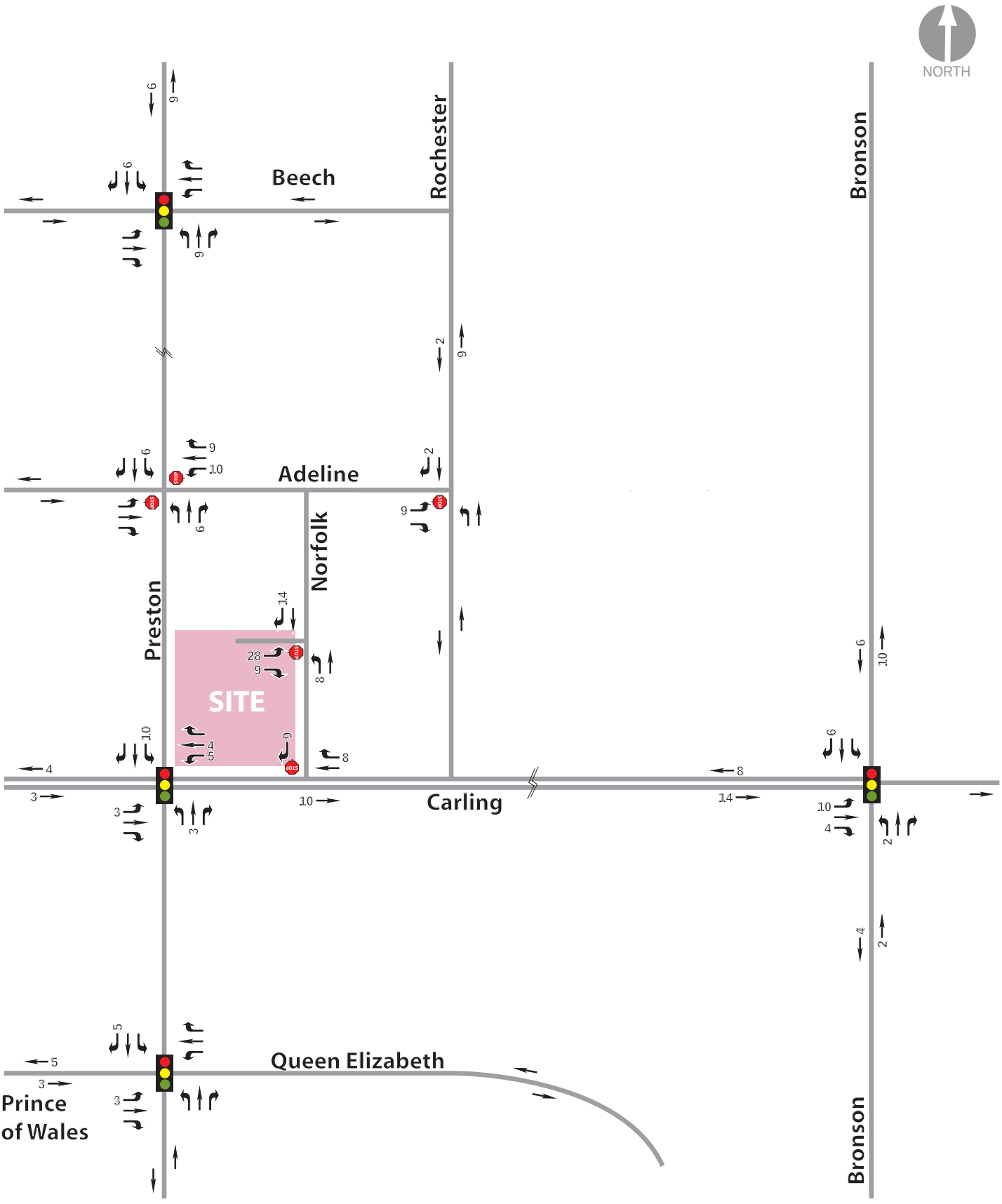
505 Preston Street

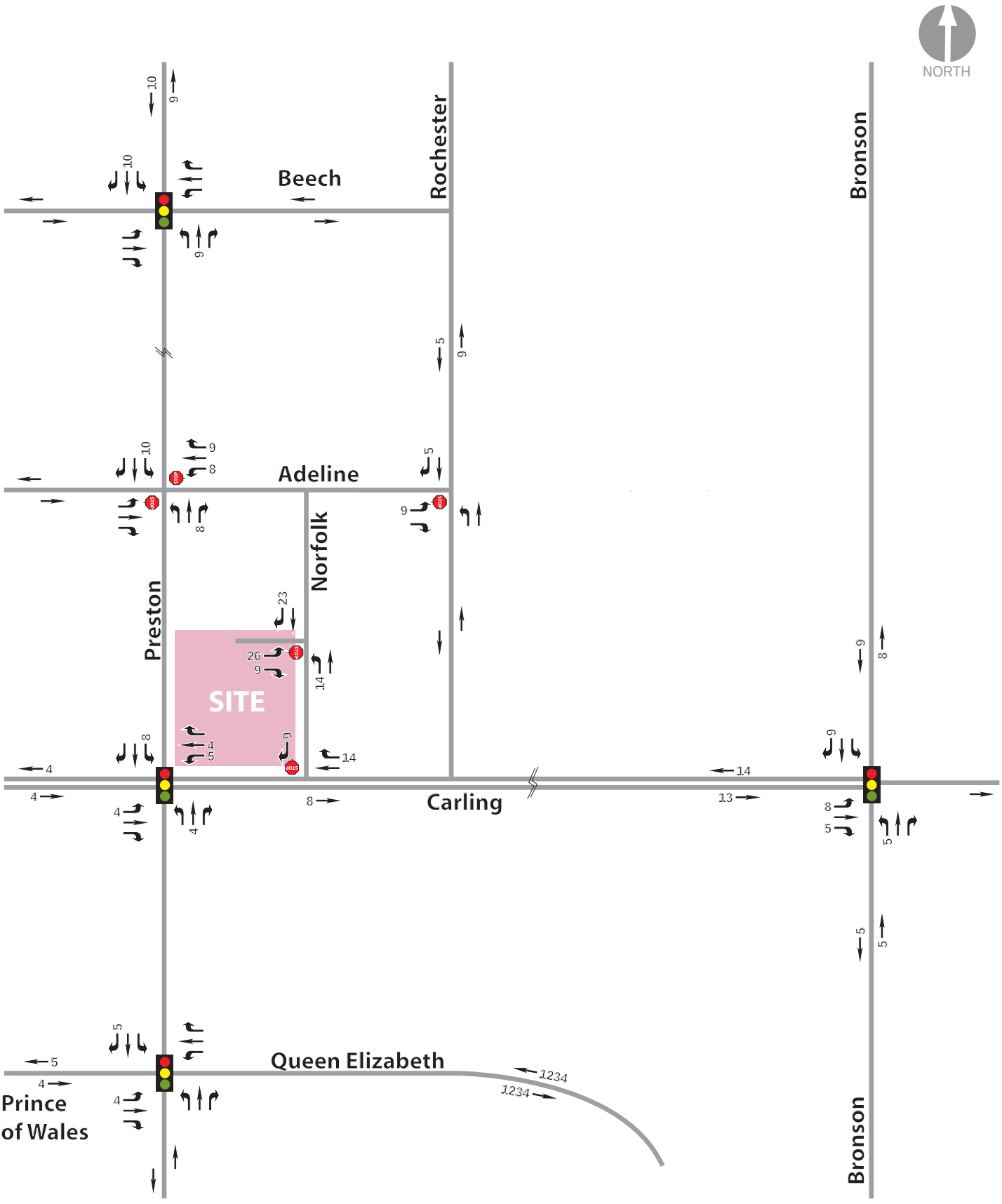


IBI GROUP

Mixed-Use Development - 505 Preston Street
Community Transportation Study

EXHIBIT 6A
Site-Generated Traffic
AM Peak Hour

PROJECT No. 31637
DATE: Dec. 2012
SCALE: N.T.S.
0m 0m 0m



IBI GROUP

Mixed-Use Development - 505 Preston Street
Community Transportation Study

EXHIBIT 6B
Site-Generated Traffic
PM Peak Hour

PROJECT No. 31637
DATE: Dec. 2012
SCALE: N.T.S.
0m 0m 0m

OTHER AREA DEVELOPMENTS

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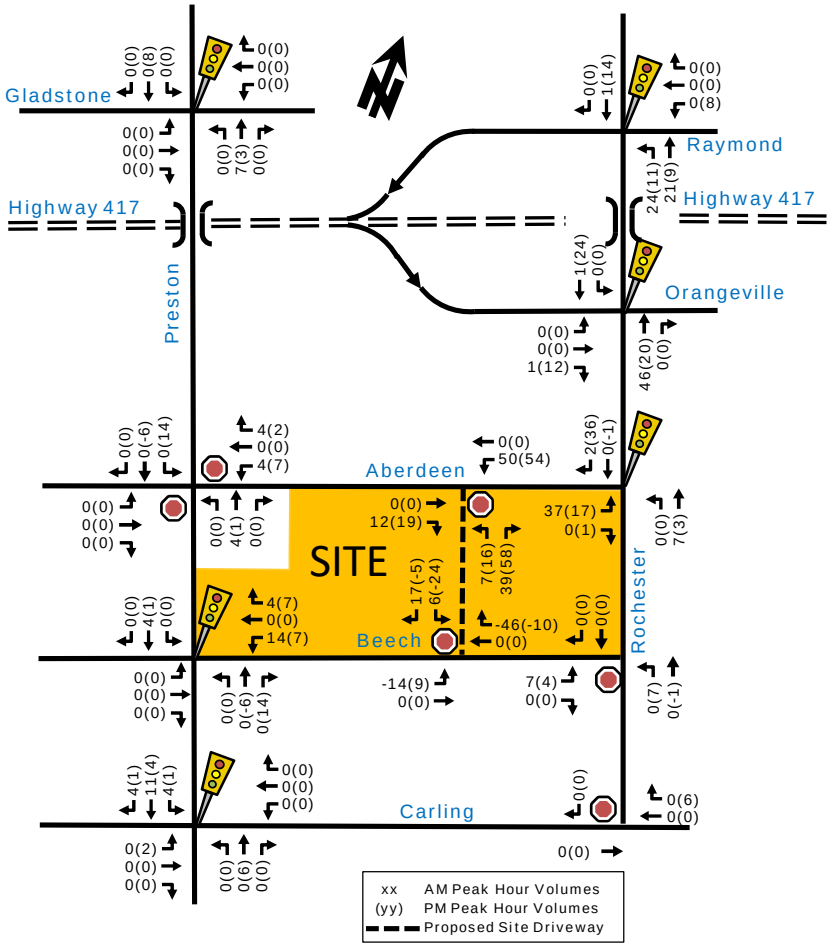
450 Rochester Street

Figure 11: Site-Generated Traffic at Full Buildout (Phase 1 & 2)



Note: negative traffic volumes reflect changes in routes based on pass-by trips or net change between trips generated, reduction in public parking lot spaces and the addition of a driveway along Aberdeen Street reducing the demand along Beech Street.

3.2. BACKGROUND NETWORK TRAVEL DEMAND

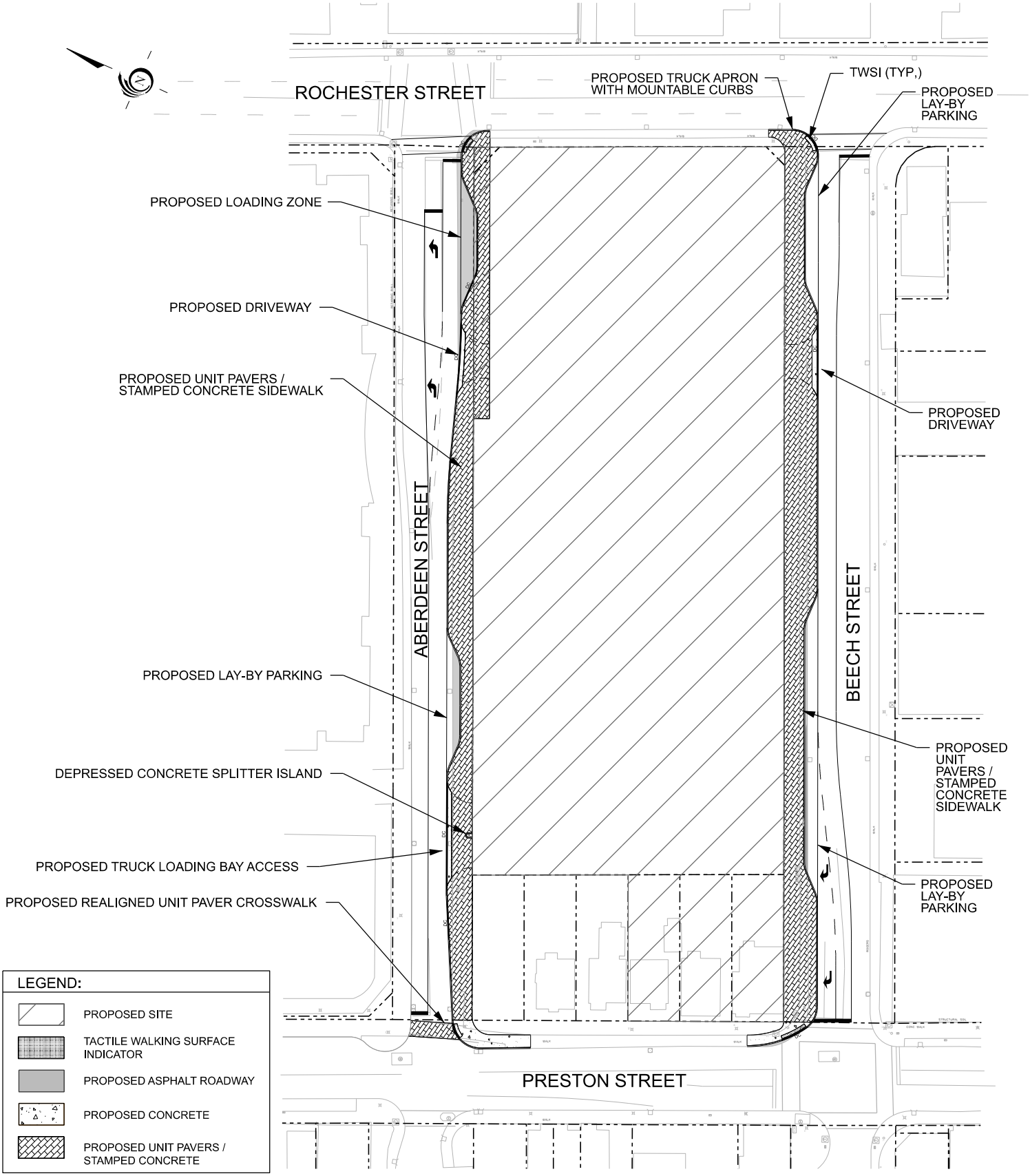
3.2.1. TRANSPORTATION NETWORK PLANS

The transportation network changes have been discussed within Section 2.1.3., and none were anticipated to impact the transportation analysis for this development.

3.2.2. BACKGROUND GROWTH

As the study area is developed, person trips in the area are expected to increase, which can be in the form of vehicle trips, transit ridership and active modes. As the roadways within the inner area approach capacity, a shift to more active and increased transit ridership will be required as there are no planned road widenings for the study area. There are capacity constraints experienced at some of the major study area intersections today (i.e. Carling/Preston intersection) and with the planned improvements to transit and active mode infrastructure in the area, it is expected that traffic volumes will have to stabilize within the area.

The future plans for Carling Avenue include median and curb side transit priority lanes. With the expansion of transit priority along Carling Avenue, the number of general-purpose vehicle travel lanes will be reduced from two/three lanes in each direction today to one/two lanes in each direction in the future.



Ottawa

TRANSPORTATION SERVICES DEPARTMENT

PROPOSED ROADWAY MODIFICATIONS

450 ROCHESTER

ABERDEEN STREET AND BEECH STREET BETWEEN ROCHESTER STREET AND PRESTON STREET

Transportation Engineering Services Branch

Approved By: _____	Drawing No.:
Completed By: PARSONS	RMA-2021-TPD-###-B
Scale: N.T.S.	Date: MAY 2021

D07-12-19-0186

#18064

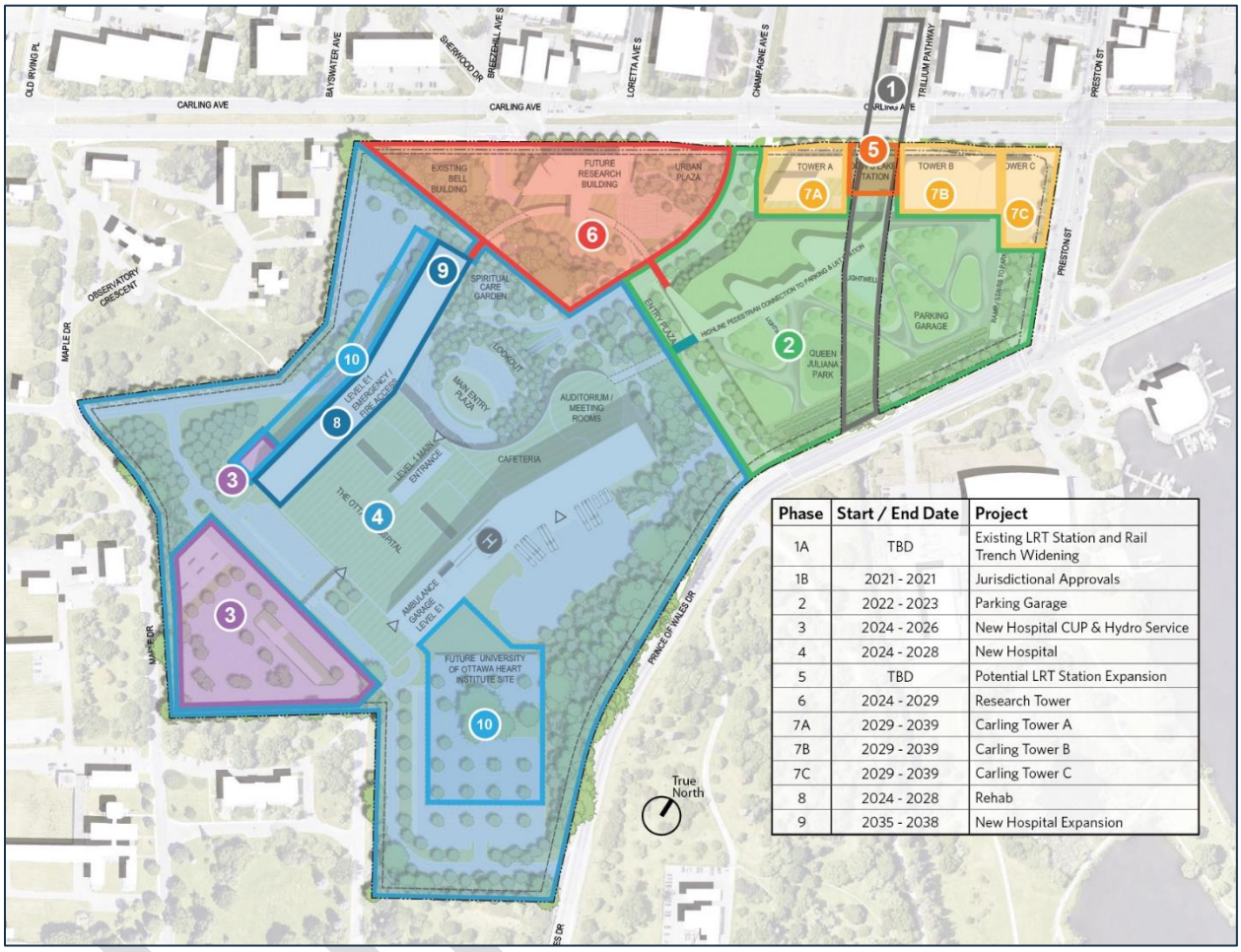
OTHER AREA DEVELOPMENTS

Ottawa Civic Hospital Expansion (930 Carling Avenue)

3.1.2 Phasing Plan

It is understood that the New Civic Development will be constructed gradually over the coming decades. The anticipated phasing plan has been summarized in **Figure 3.**

Figure 3: New Civic Development Phasing Plan



Phase	Start / End Date	Project
1A	TBD	Existing LRT Station and Rail Trench Widening
1B	2021 - 2021	Jurisdictional Approvals
2	2022 - 2023	Parking Garage
3	2024 - 2026	New Hospital CUP & Hydro Service
4	2024 - 2028	New Hospital
5	TBD	Potential LRT Station Expansion
6	2024 - 2029	Research Tower
7A	2029 - 2039	Carling Tower A
7B	2029 - 2039	Carling Tower B
7C	2029 - 2039	Carling Tower C
8	2024 - 2028	Rehab
9	2035 - 2038	New Hospital Expansion

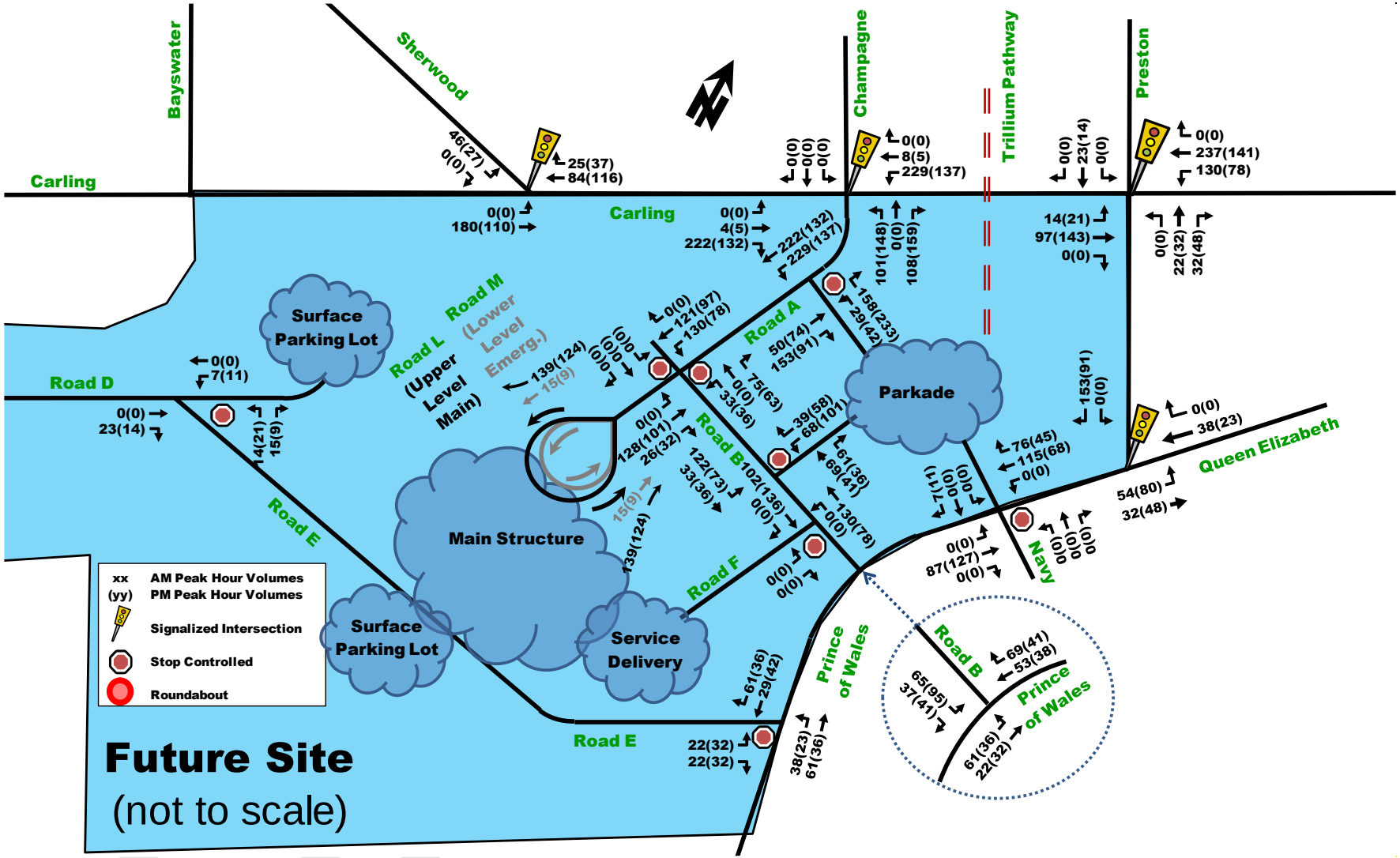
Opening day of New Civic Development is expected by 2028, operating with approximately 6,600 (full-time equivalent) staff and approximately 770 patient beds. The gross floor area at opening day is projected to be approximately 2.4M ft^2 with a total of 3,099 parking spaces, including an approximate 2,500 space parking garage to be constructed prior to opening day. The intent of constructing the parking garage in advance of the main hospital is to accommodate the parking demand of the construction workers and as a construction staging area for the New Civic Development.

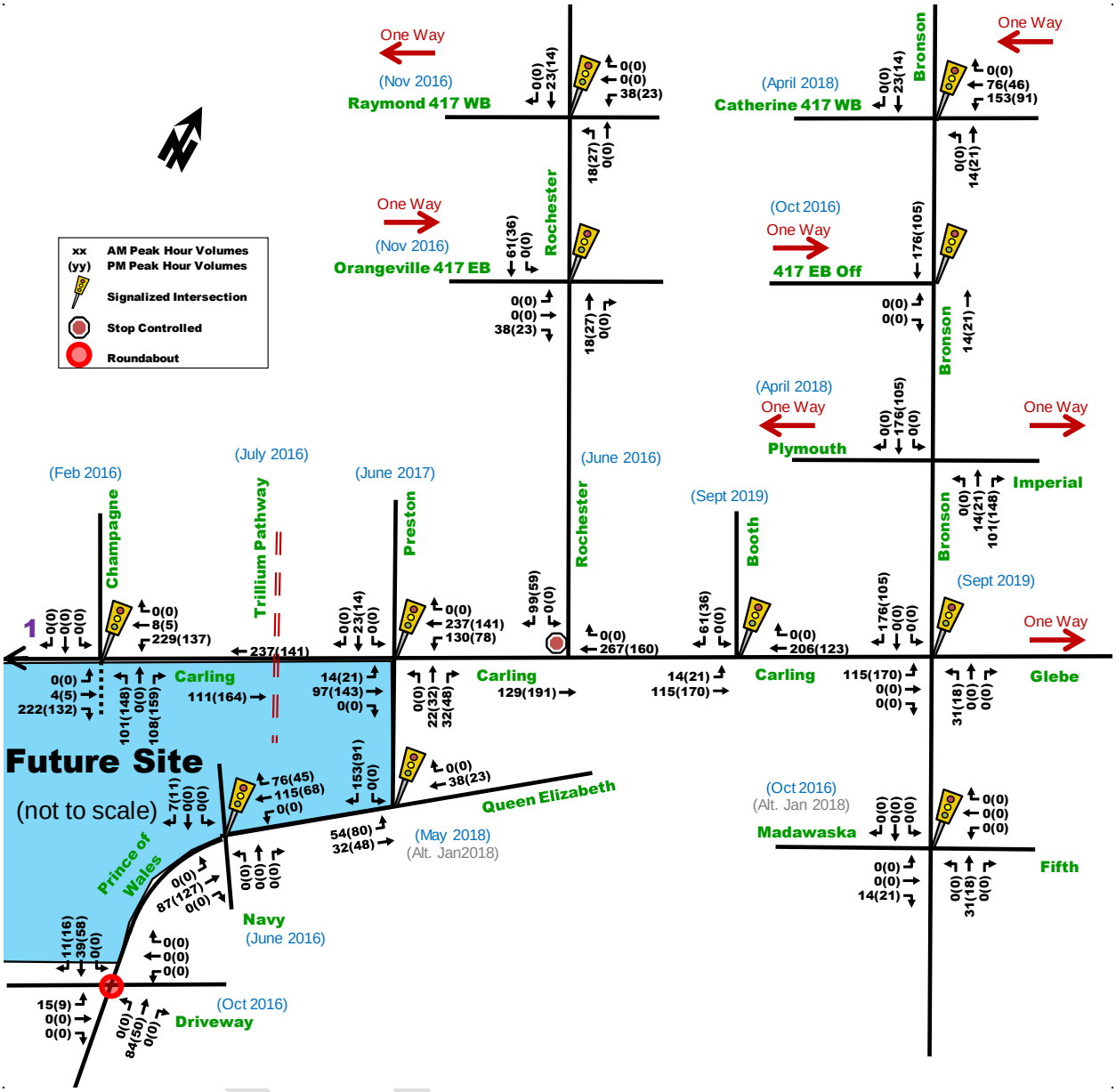
Full buildout of the New Civic Development is expected by 2048, which will include the expansion of the west 'arm' for the Rehabilitation Centre and additional programs, as well as the construction of the University of Ottawa Heart Institute (UOHI) Tower. By this time, staff projections are expected to increase to approximately 10,500 (full time equivalent) with approximately 1,250 beds.

In addition to the main hospital campus facilities, an adjoining development area referred to as Carling Village is envisioned by full buildout (situated along the south side of Carling Avenue, west of Preston Street, and serving as the active frontage of the parking garage). Carling Village is expected to consist of three towers comprised of ancillary office, commercial, and residential uses, with direct access to Dow's Lake LRT Station. The estimated gross floor area of the New Civic Development at full buildout is approximately 4.95M ft^2.

A summary of the phasing statistics by horizon year has been provided in **Table 2**.

Figure 22: 'New' Site Generated Traffic 2028




xx AM Peak Hour Volumes
(yy) PM Peak Hour Volumes
Signalized Intersection
Stop Controlled
Roundabout
Future Site
(not to scale)
Carling
Champagne
Trillium Pathway
Preston
Rochester
Booth
Bronson
Imperial
Glebe
Queen Elizabeth
Prince of Wales
Navy
(June 2016)
Driveway
(Oct 2016)
Madawaska
(Oct 2016)
(Alt. Jan 2018)
Fifth
(May 2018)
(Alt. Jan2018)
Raymond 417 WB
(Nov 2016)
Orangeville 417 EB
(Nov 2016)
Catherine 417 WB
(April 2018)
417 EB Off
(Oct 2016)
Plymouth
(April 2018)
(Feb 2016)
(July 2016)
(June 2017)
(June 2016)
(Sept 2019)
(Sept 2019)
One Way

APPENDIX H

Transportation Demand Management

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

Legend

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

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

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

		TDM-supportive design & infrastructure measures: *Non-residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
BASIC	2.1.4	Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	☐
BETTER	2.1.5	Provide bicycle parking spaces equivalent to the expected number of commuter and customer/visitor cyclists, plus an additional buffer (e.g. 25 percent extra) to encourage other cyclists and ensure adequate capacity in peak cycling season	☐
	2.2	**Secure bicycle parking**	
REQUIRED	2.2.1	Where more than 50 bicycle parking spaces are provided for a single office building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers *(see Zoning By-law Section 111)*	☐ - N/A
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met)	☐
	2.3	**Shower & change facilities**	
BASIC	2.3.1	Provide shower and change facilities for the use of active commuters	☐
BETTER	2.3.2	In addition to shower and change facilities, provide dedicated lockers, grooming stations, drying racks and laundry facilities for the use of active commuters	☐
	2.4	**Bicycle repair station**	
BETTER	2.4.1	Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	☐

	TDM-supportive design & infrastructure measures: *Non-residential developments*		Check if completed & add descriptions, explanations or plan/drawing references
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐
	4.	**RIDESHARING**	
	4.1	**Pick-up & drop-off facilities**	
BASIC	4.1.1	Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	☐
	4.2	**Carpool parking**	
BASIC	4.2.1	Provide signed parking spaces for carpools in a priority location close to a major building entrance, sufficient in number to accommodate the mode share target for carpools	☐
BETTER	4.2.2	At large developments, provide spaces for carpools in a separate, access-controlled parking area to simplify enforcement	☐
	5.	**CARSHARING & BIKESHARING**	
	5.1	**Carshare parking spaces**	
BETTER	5.1.1	Provide carshare parking spaces in permitted non-residential zones, occupying either required or provided parking spaces *(see Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐

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

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

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

		TDM-supportive design & infrastructure measures: *Residential developments*	Check if completed & add descriptions, explanations or plan/drawing references
	2.	**WALKING & CYCLING: END-OF-TRIP FACILITIES**	
	2.1	**Bicycle parking**	
REQUIRED	2.1.1	Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible *(see Official Plan policy 4.3.6)*	☑
REQUIRED	2.1.2	Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas *(see Zoning By-law Section 111)*	☑
REQUIRED	2.1.3	Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored *(see Zoning By-law Section 111)*	☑
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	☐
	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 Zoning By-law Section 111)*	☐ - N/A
BETTER	2.2.2	Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	☑
	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)	☐
	3.	**TRANSIT**	
	3.1	**Customer amenities**	
BASIC	3.1.1	Provide shelters, lighting and benches at any on-site transit stops	☐
BASIC	3.1.2	Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	☐
BETTER	3.1.3	Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	☐

		TDM-supportive design & infrastructure measures: *Residential developments*	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	☐
	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 Zoning By-law Section 94)*	☐
	5.2	**Bikeshare station location**	
BETTER	5.2.1	Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	☐
	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	☑
BASIC	6.1.2	Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	☐
BASIC	6.1.3	Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly *(see Zoning By-law Section 104)*	☐
BETTER	6.1.4	Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking *(see Zoning By-law Section 111)*	☐
	6.2	**Separate long-term & short-term parking areas**	
BETTER	6.2.1	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)	☐

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	☐
		1.2	**Travel surveys**	
BETTER		1.2.1	Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	☐
		2.	**WALKING AND CYCLING**	
		2.1	**Information on walking/cycling routes & destinations**	
BASIC		2.1.1	Display local area maps with walking/cycling access routes and key destinations at major entrances *(multi-family, condominium)*	☑
		2.2	**Bicycle skills training**	
BETTER		2.2.1	Offer on-site cycling courses for residents, or subsidize off-site courses	☐

			TDM measures: *Residential developments*	Check if proposed & add descriptions
		3.	**TRANSIT**	
		3.1	**Transit information**	
BASIC		3.1.1	Display relevant transit schedules and route maps at entrances *(multi-family, condominium)*	☑
BETTER		3.1.2	Provide real-time arrival information display at entrances *(multi-family, condominium)*	☐
		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	☑
BETTER		3.2.2	Offer at least one year of free monthly transit passes on residence purchase/move-in	☐
		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 *(subdivision)*	☐
		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)	☐
		4.	**CARSHARING & BIKESHARING**	
		4.1	**Bikeshare stations & memberships**	
BETTER		4.1.1	Contract with provider to install on-site bikeshare station (*multi-family)*	☐
BETTER		4.1.2	Provide residents with bikeshare memberships, either free or subsidized *(multi-family)*	☐
		4.2	**Carshare vehicles & memberships**	
BETTER		4.2.1	Contract with provider to install on-site carshare vehicles and promote their use by residents	☐
BETTER		4.2.2	Provide residents with carshare memberships, either free or subsidized	☐
		5.	**PARKING**	
		5.1	**Priced parking**	
BASIC	★	5.1.1	Unbundle parking cost from purchase price *(condominium)*	☐
BASIC	★	5.1.2	Unbundle parking cost from monthly rent *(multi-family)*	☑

TDM measures: *Residential developments*				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	☐
		6.2	**Personalized trip planning**	
BETTER	★	6.2.1	Offer personalized trip planning to new residents	☐

APPENDIX I

MMLOS Analysis

Segment MMLOS Analysis

This section provides a review of the boundary streets Preston Street and Aberdeen Street, using complete streets principles. The *Multi-Modal Level of Service (MMLOS) Guidelines*, produced by IBI Group in October 2015, were used to evaluate the levels of service for each alternative mode of transportation on the boundary streets, based on the targets for any roadways within 600m of a rapid transit station.

Exhibit 4 of the *MMLOS Guidelines* has been used to evaluate the segment pedestrian level of service (PLOS) of the boundary streets. Exhibit 22 of the *MMLOS Guidelines* suggest a target PLOS A for all roadways within 600m of a rapid transit station. The results of the segment PLOS analysis are summarized in **Table 1**.

Exhibit 11 of the *MMLOS Guidelines* has been used to evaluate the segment bicycle level of service (BLOS) of the boundary streets. Within 600m of a rapid transit station, Exhibit 22 of the *MMLOS Guidelines* suggest a target BLOS B for Local Cycling Routes (Preston Street) and a target D for roadways with no cycling designation (Aberdeen Street). The results of the segment BLOS analysis are summarized in **Table 2**.

Exhibit 15 of the *MMLOS Guidelines* has been used to evaluate the segment transit level of service (TLOS) of Preston Street. While Preston Street does not have a TLOS target, it has still been evaluated for TLOS since transit service is currently provided in both directions. The results of the segment TLOS analysis are summarized in **Table 3**.

Exhibit 20 of the *MMLOS Guidelines* has been used to evaluate the segment truck level of service (TkLOS) of Preston Street. Within 600m of a rapid transit station, Exhibit 22 of the *MMLOS Guidelines* suggest a target TkLOS D for arterial truck routes. The results of the segment TkLOS analysis are summarized in **Table 4**.

Table 1: PLOS Segment Analysis

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed[1]	PLOS
Preston Street (Aberdeen Street to Beech Street), east side					
≥ 2.0m	0m	> 3,000 vpd	No	60 km/h	**E**
Preston Street (Aberdeen Street to Beech Street), west side					
≥ 2.0m	0m	> 3,000 vpd	No	60 km/h	**E**
Aberdeen Street (Preston Street to Rochester Street), north side					
1.5m	0m	≤ 3,000 vpd	No	60 km/h	**F**
Aberdeen Street (Preston Street to Rochester Street), south side					
No sidewalk		≤ 3,000 vpd	Yes	60 km/h	**F**

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

Table 2: BLOS Segment Analysis

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	BLOS
Preston Street (Aberdeen Street to Beech Street)					
Arterial	Local Route	Mixed Traffic	2	60 km/h	**F**
Aberdeen Street (Preston Street to Rochester Street)					
Local	No Class	Mixed Traffic	2	60 km/h	**F**

Table 3: TLOS Segment Analysis

Facility Type	Exposure to Congestion Delay, Friction, and Incidents			TLOS
	Congestion	Friction	Incident Potential	
Preston Street (Aberdeen Street to Beech Street)				
Mixed Traffic – Frequent Parking/Driveway Friction	Yes	High	High	**F**

Table 4: TkLOS Segment Analysis

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
Preston Street (Aberdeen Street to Beech Street)		
> 3.7m	1	B