

## Engineering

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- Commercial & Institutional
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## **Proposed Residential Development 249-255 Richmond Road & 372 Tweedsmuir Avenue, Ottawa**

### Transportation Impact Assessment

**Proposed Residential Development  
249-255 Richmond Road & 372 Tweedsmuir Avenue  
Transportation Impact Assessment**

Prepared By:

**NOVATECH**

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

Dated: October 2021  
*Revised: March 2022*  
*Revised: April 2023*

Novatech File: 121193  
Ref: R-2021-124

April 18, 2023

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

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

Dear Mr. Dubyk:

**Reference: 249-255 Richmond Road & 372 Tweedsmuir Avenue**  
**Revised Transportation Impact Assessment**  
**Novatech File No. 121193**

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We are pleased to submit the following revised Transportation Impact Assessment Report in support of Zoning By-law Amendment and Site Plan Control applications for the above noted properties, for your review and signoff. The structure and format of this report is in accordance with the City of Ottawa Transportation Impact Assessment Guidelines (June 2017).

The original TIA in support of this development was submitted in October 2021, and a revised TIA was submitted in March 2022. This revised TIA has been prepared to reflect changes in the site plan.

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

Yours truly,

**NOVATECH**



Joshua Audia, P.Eng.  
Project Engineer | Transportation



## **TIA Plan Reports**

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

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

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

### **CERTIFICATION**

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

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

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Dated at Ottawa this 18th day of April, 2023.  
(City)

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

Professional Title: Project Coordinator, Transportation/Traffic

*B. Byvelds*

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

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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 subject property at 249-255 Richmond Road and 372 Tweedsmuir Avenue located in Ward 15, Kitchissippi, in Ottawa. Currently, the site has an area of approximately 0.22 hectares (0.54 acres) and is occupied by a commercial retail building, a restaurant, and a single-family dwelling.

The subject site is surrounded by the following:

- Residential properties to the north;
- Existing commercial developments and Tweedsmuir Avenue to the east;
- Gas station, existing residential properties and Richmond Road to the south;
- Existing commercial developments and Athlone Avenue to the west.

The subject site is designated as 'Corridor – Mainstreet' (Richmond Road) on Schedule B2 of the City of Ottawa's Official Plan. The implemented zoning for the property is part of the Mixed Use/Commercial Zones, and more specifically the 'Traditional Mainstreet' zone (TM), which allows for a broad range of uses including retail, service commercial, office, residential and institutional uses, including mixed-use buildings but excluding auto-related uses.

The proposed development will replace the existing commercial retail building, restaurant, and single residential unit with a nine-storey condo building containing 104 dwelling units, approximately 390 square metres of retail space, and 189 square metres of restaurant space. The development is anticipated to be constructed in a single phase with full occupancy in the year 2024. Access will be provided via the existing commercial driveway to Tweedsmuir Avenue. An existing residential driveway to Tweedsmuir Avenue will be removed, as well as two existing driveways to Richmond Road. The development has proposed 94 underground vehicle parking spaces. Additionally, two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 188 will be provided within the underground parking garage. In total, 190 bicycle parking spaces will be provided.

The study area for this report includes the boundary street Richmond Road, and the study area intersections at Richmond Road/Athlone Avenue, Richmond Road/Tweedsmuir Avenue, and Richmond Road/McRae Avenue.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the 'worst case' combination of site-generated traffic and adjacent street traffic. The proposed development is expected to be completed with full occupancy by the year 2024. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2024 and horizon year 2029.



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

#### Development Design

- Sidewalk connections will be provided between the building entrance and Richmond Road and Tweedsmuir Avenue.
- Sidewalks will be depressed and continuous across the parking garage access in accordance with City standards.
- Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 188 bicycle parking spaces will be provided within the underground parking garage. In total, 190 bicycle parking spaces will be provided.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.
- Garbage bins will be wheeled up the parking ramp for curbside private pick-up on Tweedsmuir Avenue. The fire route for the development is curbside along Richmond Road and Tweedsmuir Avenue.
- No changes to the existing signage are proposed along the subject site's frontage.

#### Parking

- The proposed vehicular and bicycle parking spaces adhere to the requirements of the City's *Zoning By-law (ZBL)*.

#### Boundary Street Design

- Richmond Road and Tweedsmuir Avenue have been evaluated using the targets set for arterial and local roadways within 600m of a rapid transit stop.
- The target pedestrian level of service (PLOS) is not achieved on either Richmond Road or Tweedsmuir Avenue. To achieve the target PLOS A along Richmond Road, either a reduction in the posted speed or Annual Average Daily Traffic (AADT) volumes is required. To achieve the target PLOS A along Tweedsmuir Avenue, a 2m sidewalk and boulevard greater than 0.5m is required. The proposed development will provide a 2.0m sidewalk adjacent to the curb with planters behind the sidewalk.
- The proposed patio creates a 2.6m-wide 'pinch point' along the site's frontage to Richmond Road. This results in a PLOS B based on the crowding criteria, which corresponds to an 'occasional need to adjust path to avoid conflict.' Since the PLOS analysis above identifies that Richmond Road cannot achieve a PLOS A without reducing the AADT or posted speed limit, and the anticipated number of pedestrians is anticipated to remain well below 250 per peak hour, achieving a PLOS B from a crowding perspective is considered acceptable.
- The target bicycle level of service (BLOS) is not achieved on either Richmond Road or Tweedsmuir Avenue. To achieve the target BLOS C along Richmond Road, bike lanes are required. To achieve the target BLOS D along Tweedsmuir Avenue, a reduction in the operating speed is required. This is identified for the City's consideration.

- The target transit level of service (TLOS) is not achieved on Richmond Road. To achieve the target TLOS D along Richmond Road, a reduction in parking/driveway friction is required.
- The target truck level of service (TkLOS) target of E is met on Richmond Road due to lanes that measure more than 3.7m.

Access Intersections

- The width of the proposed access adheres to the requirements of the City's *Private Approach By-law* (PABL) and ZBL.
- The location of the proposed access adheres to the requirements of the PABL.
- A maximum grade of 5% will be provided for a distance of 11.4m behind the sidewalk and 9m within the private property. As the proposed grading meets the TAC recommendations, and adequate sightlines for pedestrians crossing the access will be maintained, a waiver to Section 25 (1)(u) of the PABL is recommended.
- For drivers exiting the property, adequate sightlines turning left and right out of the proposed access can also be provided, as long as any proposed trees and shrubs are trimmed and maintained.

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
  - Display local area maps with walking/cycling access routes and key destinations at major entrances;
  - Display relevant transit schedules and route maps at entrances;
  - Provide real-time arrival information display at entrances;
  - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/ move-in, to encourage residents to use resident;
  - Unbundle parking cost from purchase price;
  - Provide a multimodal travel option information package to new residents;
  - The proposed development will provide bicycle parking spaces at a rate of over 1.8 spaces per unit.
- 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 subject property at 249-255 Richmond Road and 372 Tweedsmuir Avenue located in Ward 15, Kitchissippi, in Ottawa. Currently, the site has an area of approximately 0.22 hectares (0.54 acres) and is occupied by a commercial retail building, a restaurant, and a single-family dwelling.

The subject site is surrounded by the following:

- Residential properties to the north;
- Existing commercial developments and Tweedsmuir Avenue to the east;
- Gas station, existing residential properties and Richmond Road to the south;
- Existing commercial developments and Athlone Avenue to the west.

A view of the subject site and study area is provided in **Figure 1**.

**Figure 1: Study Area**



### 1.2 Proposed Development

The subject site is designated as 'Corridor – Mainstreet' (Richmond Road) on Schedule B2 of the City of Ottawa's Official Plan. The implemented zoning for the property is part of the Mixed Use/Commercial Zones, and more specifically the 'Traditional Mainstreet' zone (TM), which allows

for a broad range of uses including retail, service commercial, office, residential and institutional uses, including mixed-use buildings but excluding auto-related uses.

The proposed development will replace the existing commercial retail building, restaurant, and single residential unit with a nine-storey condo building containing 104 dwelling units, approximately 390 square metres of retail space and 189 square metres of restaurant space. The development is anticipated to be constructed in a single phase with full occupancy in the year 2024. Access will be provided via the existing commercial driveway to Tweedsmuir Avenue. An existing residential driveway to Tweedsmuir Avenue will be removed, as well as two existing driveways to Richmond Road. The development has proposed 94 underground vehicle parking spaces. Additionally, two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 188 will be provided within the underground parking garage. In total, 190 bicycle parking spaces will be provided.

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

### 1.3 Screening Form

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

- Trip Generation Trigger – The net traffic generated by the site development is anticipated to generate marginally over 60 person trips/peak hour; after discussion with City staff, it has been determined that further assessment is **not required** based on this trigger.
- Location Triggers – The proposed development is located within a 'Design Priority Area and/or Transit-Oriented Development Zone;' further assessment is **required** based on this trigger.
- Safety Triggers – The proposed development does not flag any safety triggers; further assessment is **not required** based on this trigger.

A copy of the TIA Screening Form is included in **Appendix B**.

## 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.

**Richmond Road** is an arterial roadway that runs on an east-west alignment between Baseline Road and Island Park Drive. East of Island Park Drive, Richmond Road continues as Wellington Street and West of Baseline Road, Richmond Road continues as Robertson Road. Within the study area, Richmond Road has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and a regulatory speed limit of 50 km/h under the Highway Traffic Act. Richmond Road is classified as a full-load truck route within the study area. On-street parking is permitted on both sides of the road with a maximum 90-minute time restriction between 7:00AM and 7:00PM.

The City of Ottawa’s Official Plan does not identify any ROW protection on Richmond Road adjacent to the site.

**Athlone Avenue** is a local roadway that runs on a north-south alignment between Scott Street and south of Wesley Avenue. North of Richmond Road, Athlone Avenue has a two-lane undivided urban cross-section, sidewalks on the west side of the roadway. South of Richmond Road, it has a two-lane undivided rural cross section and has an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Within the study area, Athlone Avenue is not classified as a truck route and prohibits trucks from entering the road. On-street parking is permitted on the east side of the road, with a maximum 60-minute time restriction between 7:00AM and 7:00PM on weekdays.

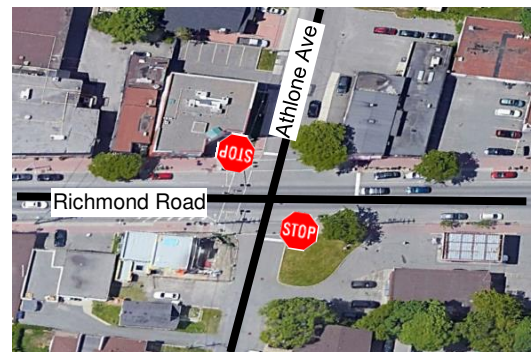
**Tweedsmuir Avenue** is a local roadway that runs on a north-south alignment between Scott Street and Currell Avenue. Within the study area, Tweedsmuir Avenue has a two-lane undivided urban cross-section, sidewalks on the eastern side of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. Tweedsmuir Avenue is not classified as a truck route and prohibits trucks from entering the road. On-street parking is permitted only on the western side of the road.

**McRae Avenue** is a local roadway that runs on a north-south alignment between Scott Street and Richmond Road. Within the study area, McRae Avenue typically has a two-lane undivided urban cross-section, sidewalks on both sides of the roadway, and an unposted regulatory speed limit of 50 km/h under the Highway Traffic Act. McRae Avenue is classified as a restricted load truck route. On-street parking is not permitted on both sides of the road.

**2.1.2 Study Area Intersections**

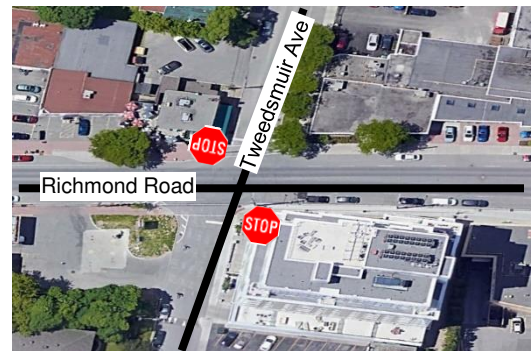
Richmond Road/Athlone Avenue

- Unsignalized (two-way stop-controlled) four-legged intersection
- All Approaches: one shared left turn/through/right turn lane
- Additional Information: an intersection pedestrian signal is provided on the west approach and standard pedestrian crossings on the north and south approaches



Richmond Road/Tweedsmuir Avenue

- Unsignalized (two-way stop-controlled) four-legged intersection
- All Approaches: one shared left turn/through/right turn lane
- Additional Information: standard pedestrian crossings on the north and south approaches



Richmond Road/McRae Road

- Signalized four-legged intersection
- North Approach: one shared left turn/through/right turn lane
- South/East/West Approaches: one left turn lane and one shared through/right turn lane
- Additional Information: standard pedestrian crossings on all approaches

**2.1.3 Driveways**

In accordance with the City's *2017 TIA Guidelines*, a review of driveways on the boundary streets within 200m of the proposed development is provided as follows:

**Richmond Road, North Side:**

- One driveway to businesses at 205 Richmond Road
- Two driveways to a car dealership at 225 Richmond Road
- One driveway to businesses at 277 Richmond Road

**Richmond Road, South Side:**

- Two driveways to a gas station at 256 Richmond Road
- One driveway to a business at 274 Richmond Road
- One driveway to a bank at 288 Richmond Road

**Tweedsmuir Avenue, North of Richmond Road:**

- One driveway to businesses at the car dealership
- 12 and 20 driveways to residences on the east and west sides of the roadway, respectively

**2.1.4 Pedestrian and Cycling Facilities**

Concrete and/or unit paver sidewalks are provided on both sides of Richmond Road, McRae Avenue, and on one side of Tweedsmuir Avenue and Athlone Avenue north of Richmond Road.

In the City of Ottawa's existing cycling network, Richmond Road is classified as a suggested bike route. Scott Street, and Byron Avenue, north and south of the study area, have bicycle lanes throughout the corridor. In the City of Ottawa's ultimate cycling network, Richmond Road is classified as a spine route.

**2.1.5 Area Traffic Management**

The following Transportation Management Implementation Plan was developed by the City of Ottawa and will have an impact on the proposed development:

- *Richmond Road/Westboro Transportation Management Implementation Plan*: this long-term plan identifies a set of programs, policies, and infrastructure improvements that promote a shift to more sustainable modes of transport.

In addition, the following has been completed as part of the area traffic management:

- Richmond Road eastbound has lane hatch markings on the curb at the intersection with Athlone Avenue and Tweedsmuir Avenue to prevent drivers from using it as a turn lane.
- No Heavy Trucks (Rb-62) signs are implemented on Athlone Avenue and Tweedsmuir Avenue north of Richmond Road.
- Athlone Avenue north of Richmond Road has a playground ahead (Wc-3) sign in advance of the pedestrian connection to Lion's Park.
- Tweedsmuir Avenue, south of Richmond Road, has a speed bump, mid-block and intersection narrowings.

### 2.1.6 Transit

The Westboro Transit Station (a future Light Rail Transit station) is currently operating using temporary bus platforms on Scott Street at Athlone Avenue and Tweedsmuir Avenue, at a walking distance of approximately 300m from the subject site. This station currently services bus routes 16, 50, 57, 61, 62, 63, 64, 66, 67, 73, 74, 75, 82, 87, 153, 164, 252, 256, 257, 258, 261, 262, 263, 264, 265, 267, 268, 282, and 404.

There are several other bus stops within 400 m of the subject site. A summary of the closest bus stops and routes along Richmond Road is provided as follows:

#### Richmond Road/Kirkwood Avenue

- Stop #2389: Services bus routes 11, 81, 153
- Stop #6929: Services bus routes 51, 81
- Stop #6930: Services bus route 51

#### Richmond Road/McRae Avenue

- Stop #4863: Services bus route 11
- Stop #2356: Services bus routes 11, 81, 153
- Stop #7377: Services bus routes 81, 153

#### Richmond Road/Eden Avenue

- Stop #4864: Services bus route 11

#### Richmond Road/Edgewood Avenue

- Stop #4865: Services bus route 11

#### Richmond Road/Churchill Avenue

- Stop #4987: Services bus routes 50, 153
- Stop #5616: Services bus routes 50, 153
- Stop #4870: Services bus route 11
- Stop #4876: Services bus routes 11, 153

Location of these transit stops are shown in **Figure 2**. A summary of the various routes which serve the study area is included in **Table 1**. OC Transpo maps for the routes outlined above and a portion of the OC Transpo System Map are included in **Appendix C**.

Figure 2: OC Transpo Bus Stop Locations



Table 1: OC Transpo Route Information

Route	From ↔ To	Frequency
11	Lincoln Fields / Westboro ↔ Laurier	15-minute headways, 7 days per week, all day service
16	Main ↔ Tunney's Pasture / Westboro	30-minute headways, 7 days per week, all day service
50	Tunney's Pasture ↔ Lincoln Fields	30-minute headways, Mon-Sat
51	Tunney's Pasture ↔ Britannia	15-minute headways, 7 days per week, all day service
57	Tunney's Pasture ↔ N Rideau	30-minute headways, 7 days per week, all day service
61	Terry Fox / Stittsville ↔ Tunney's Pasture / Gatineau	20-minute headways, 7 days per week, all day service
62	Terry Fox / Stittsville ↔ Tunney's Pasture	30-minute headways, 7 days per week, all day service
63	Briarbrook ↔ Tunney's Pasture / Gatineau	5- to 10-minute headways during peak periods, 7 days per week, all day service
64	Morgan's Grant ↔ Tunney's Pasture	15-minute headways during peak periods, Mon-Fri, all day service
66	Kanata / Solandt ↔ Gatineau/Tunney's Pasture	15-minute headways, Mon-Fri, peak periods only
67	Terry Fox / Tunney's Pasture ↔ Cope	30-minute headways, Mon-Fri, all day service
73	Leikin ↔ Tunney's Pasture	30-minute headways, Mon-Fri, peak periods only
74	Nepean Woods ↔ Tunney's Pasture	30-minute headways, 7 days per week, all day service
75	Tunney's Pasture / Gatineau ↔ Barrhaven Centre / Cambrian	15-minute headways, 7 days per week, all day service
81	Tunney's Pasture ↔ Clyde	30-minute headways, 7 days per week, no evening service on weekends
82	Lincoln Fields / Tunney's Pasture ↔ Bayshore	30-minute headways, 7 days per week, all day service



Route	From ↔ To	Frequency
87	Tunney's Pasture ↔ Baseline	15-minute headways, 7 days per week, all day service
153	Tunney's Pasture / Carlingwood ↔ Lincoln Fields	60-minute headways, 7 days per week, select time periods
164	Hope Side ↔ Terry Fox	60-minute headways, Mon-Fri, peak periods only
252	Tunney's Pasture ↔ Templeford	30 minute headways, Mon-Fri, peak periods only
256	Tunney's Pasture ↔ Bridlewood	30 minute headways, Mon-Fri, peak periods only
257	Tunney's Pasture ↔ Bridlewood	30 minute headways, Mon-Fri, peak periods only
258	Grandview ↔ Tunney's Pasture	30-minute headways, Mon-Fri, peak periods only
261	Tunney's Pasture ↔ Stittsville Main	30-60 minute headways, Mon-Fri, peak periods only
262	Tunney's Pasture ↔ West Ridge	30 minute headways, Mon-Fri, peak periods only
263	Tunney's Pasture ↔ Stanley Corners	60 minute headways, Mon-Fri, peak periods only
264	Tunney's Pasture ↔ Terry Fox	60 minute headways, Mon-Fri, peak periods only
265	Tunney's Pasture ↔ Beaverbrook	60 minute headways, Mon-Fri, peak periods only
267	Tunney's Pasture ↔ Glen Cairn	30 minute headways, Mon-Fri, peak periods only
268	Tunney's Pasture ↔ Kanata Lakes	30 minute headways, Mon-Fri, peak periods only
282	Trend-Arlington ↔ Tunney's Pasture	30-minute headways, Mon-Fri, peak periods only
404	Canadian Tire Centre ↔ Tunney's Pasture	5- to 20-minute headways, only during periods before or after events at the Canadian Tire Centre

### 2.1.7 Existing Traffic Volumes

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

- Richmond Road/Athlone Avenue July 18, 2019
- Richmond Road/McRae Avenue January 23, 2020

It is noted that the City does not have any traffic counts at the Richmond Road/Tweedsmuir Avenue intersection. Through traffic volumes along Richmond Road have been estimated based on the January 2020 traffic count at Richmond Road/Athlone Avenue. Traffic count data is included in **Appendix D**. Traffic volumes within the study area are shown in **Figure 3**.

### 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. Copies of the collision summary reports are included in **Appendix E**.

The collision data has been evaluated to determine if there are any identifiable collision patterns, which are defined in the 2017 TIA Guidelines as 'more than six collisions in five years' for any one movement. The number of collisions at each intersection from January 1, 2015 to December 31, 2019 is summarized in **Table 2**.

Figure 3: Existing Traffic Volumes

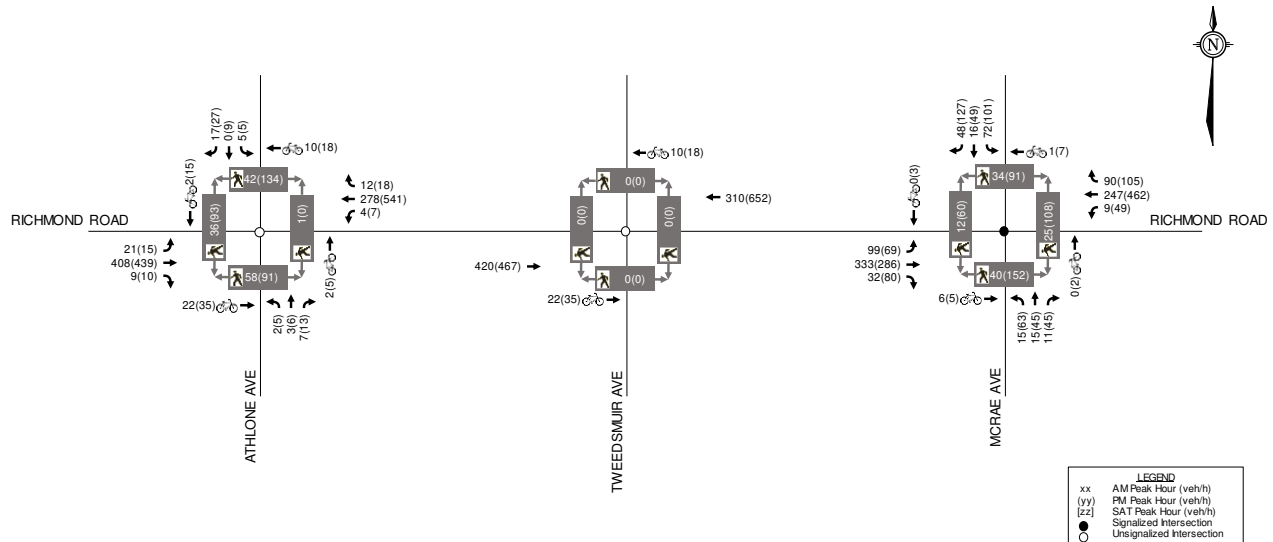


Table 2: Collision History Summary

Intersection/Road Segment	Impact Types					Total
	Angle	Rear-end	Sideswipe	Turning	SMV <sup>1</sup> /Other	
Richmond Road/ Athlone Avenue	5	1	1	-	1	8
Richmond Road/ Tweedsmuir Avenue	4	1	-	1	1	7
Richmond Road/ McRae Avenue	2	6	1	1	4	14
Richmond Road btwn Athlone Avenue and Tweedsmuir Avenue	4	-	1	-	1	6
Richmond Rd btwn Tweedsmuir Avenue and McRae Avenue	-	-	-	-	2	2

1. SMV: Single Motor Vehicle

Richmond Road/Athlone Avenue

A total of 8 collisions were reported at this intersection over the last five years, of which there were one rear-end impact, one sideswipe impact, five angle impacts, and one single-vehicle/other impacts. Only one of the collisions at this location caused injuries, but none caused fatalities. None of the collisions involved cyclists, and none involved a pedestrian.

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

As there are less than 6 collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Richmond Road and Athlone Avenue.

Richmond Road/Tweedsmuir Avenue

A total of 7 collisions were reported at this intersection over the last five years, of which there were one rear-end impact, one turning movement impact, four angle impacts, and one single-vehicle/other impacts. Three of the collisions caused injuries, but none caused fatalities. One of the collisions involved cyclists, and none involved a pedestrian.

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

As there are less than 6 collisions of any specific impact type, there are no identifiable collision patterns at the intersection of Richmond Road and Tweedsmuir Avenue.

*Richmond Road/McRae Avenue*

A total of 14 collisions were reported at this intersection over the last five years, of which there were six rear-end impacts, one sideswipe impact, one turning movement impact, two angle impacts, and four single-vehicle/other impacts. Four of the collisions caused injuries, but none caused fatalities. None of the collisions involved cyclists, and three involved a pedestrian.

Of the 14 collisions at this location, eleven of them occurred during clear conditions where weather was not a factor. Additionally, of the 14 collisions, twelve of them occurred during daylight hours.

Of the six rear-end collisions, three involved westbound vehicles, two involved eastbound vehicles, and one involved southbound vehicle. All of the rear-end impacts were a result of vehicles following too close, speeding too fast for conditions, or lost control.

As there are less than 6 collisions of any other specific impact type, there are no other identifiable collision patterns at the Richmond Road segment between Richmond Road and McRae Avenue.

*Richmond Road between Athlone Avenue and Tweedsmuir Avenue*

A total of 6 collisions were reported at this intersection over the last five years, of which there were four angle impacts, one sideswipe impacts, and one single-vehicle/other impacts. Two of the collisions caused injuries, but none caused fatalities. One of the collisions involved cyclists, and none involved a pedestrian. All of the collisions occurred during clear environment and four of the collisions occurred during daylight hours.

As there are less than 6 collisions of any specific impact type, there are no identifiable collision patterns at the Richmond Road segment between Athlone Avenue and Tweedsmuir Avenue.

*Richmond Road between Tweedsmuir Avenue and McRae Avenue*

A total of 2 collisions were reported at this intersection over the last five years, of which both were four single-vehicle/other impacts. One of the collisions caused injuries, but none caused fatalities. None of the collisions involved cyclists, and none involved a pedestrian.

As there are less than 6 collisions of any specific impact type, there are no identifiable collision patterns at the Richmond Road segment between Tweedsmuir Avenue and McRae Avenue.

**2.2 Planned Conditions**

**2.2.1 Transportation Projects**

The City of Ottawa's Cycling Plan and Pedestrian Plan do not show any planned cycling or pedestrians projects within the study area. North of the study area, cycle tracks are proposed on the south side of Scott Street, as it is designated a Crosstown Bikeway in the City's 2013 Transportation Master Plan (TMP).

As identified in the 2013 TMP, the 2031 Affordable Rapid Transit and Transit Priority (RTTP) Networks identify the implementation of transit signal priority and queue jump lanes at select intersections along Richmond Road, Wellington Street West, and Somerset Street. In addition, the affordable RTTP Network identifies the extension of Light Rail Transit (LRT) to the east, west, and south (Phase 2).

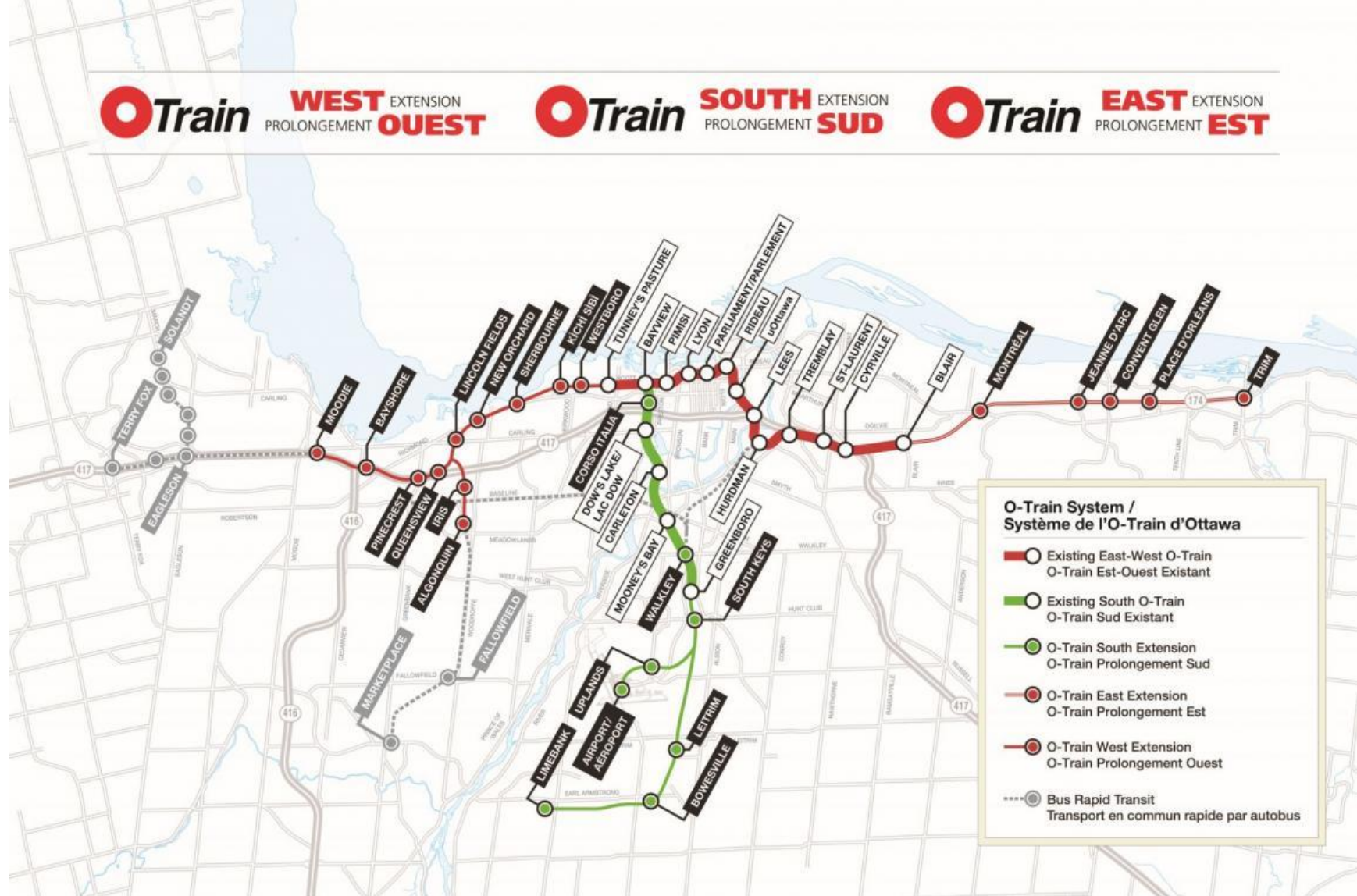
Construction for Phase 2 of the LRT (i.e. the Confederation Line Extension West) began in 2019, and is anticipated to be completed in 2025. This project involves extending the western LRT terminus from Tunney's Pasture Station to both Moodie Station and Algonquin College. As part of this project, the Westboro Transit Station will be converted to Westboro LRT Station. Assuming the same frequency as the existing Confederation Line, trains serving Westboro Station will operate on five-minute headways (i.e. 12 trains per hour). The proposed Confederation Line Extension West extension is shown in **Figure 4**.

## 2.2.2 Other Area Developments

The Ottawa Development Application search tool allows review of any applications that have been submitted to the City of Ottawa. Upon examining the applications, the following developments are proposed in close proximity to the study area of 255 Richmond Road:

- *114 Richmond Road*: nine storey addition consisting of an apartment building and conversion of the convent into a mixed-use building.
- *175 Richmond Road*: nine-storey mixed-use building to accommodate commercial uses on the main floors and residential uses above. There are 241 residential units proposed and approximately 675 m<sup>2</sup> of retail commercial along Richmond Road.
- *319-327 Richmond Road*: a nine-storey mixed-use building with ground floor commercial units and approximately 185 dwelling units on the upper storeys.
- *70 Richmond*: nine-storey mixed-use building with 60 residential units and a retail use at grade.
- *316-332 Clifton Road*: low-rise planned unit development consisting of 29 dwelling units, comprising of townhouses and back-to-back townhouses and an internal private road.
- *398-406 Roosevelt Avenue*: redevelopment of the site for a six-storey mixed-use building including two commercial units, 35 dwelling units, underground parking and rear surface parking.
- *349 Danforth Avenue*: three-storey mixed-use building with 13 residential units and 2 commercial, ground-floor units.
- *335 Roosevelt Avenue*: two high-rise residential buildings, three low-rise residential buildings with common underground parking lot with a total of 361 units and with 343 parking spaces.
- *397-399 Winston Avenue*: seven-storey mixed use development with a commercial use on the ground floor and 42 residential units above and two levels of underground parking with 18 parking spaces.

Figure 4: LRT Phase 2 – Confederation Line Extension West



### 2.3 Study Area and Time Periods

The study area for this report includes the boundary street Richmond Road, and the study area intersections at Richmond Road/Athlone Avenue, Richmond Road/Tweedsmuir Avenue, and Richmond Road/McRae Avenue.

The selected time periods for the analysis are the weekday AM and PM peak hours, as they represent the ‘worst case’ combination of site-generated traffic and adjacent street traffic. The proposed development is expected to be completed with full occupancy by the year 2024. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2024 and horizon year 2029.

### 2.4 Exemptions Review

This section reviews possible exemptions from the TIA, as outlined in the *2017 TIA Guidelines*. The applicable exemptions for the site are shown in **Table 3**.

**Table 3: TIA Exemptions**

Module	Element	Exemption Criteria	Status
<b>Design Review Component</b>			
4.1 Development Design	4.1.2 Circulation and Access	<ul style="list-style-type: none"> <li>Only required for site plans</li> </ul>	Not Exempt
	4.1.3 New Street Networks	<ul style="list-style-type: none"> <li>Only required for plans of subdivision</li> </ul>	Exempt
4.2 Parking	4.2.1 Parking Supply	<ul style="list-style-type: none"> <li>Only required for site plans</li> </ul>	Not Exempt
	4.2.2 Spillover Parking	<ul style="list-style-type: none"> <li>Only required for site plans where parking supply is 15% below unconstrained demand</li> </ul>	Exempt
<b>Network Impact Component</b>			
4.5 Transportation Demand Management	<i>All elements</i>	<ul style="list-style-type: none"> <li>Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time</li> </ul>	Not Exempt
4.6 Neighbourhood Traffic Management	4.6.1 Adjacent Neighbourhoods	<ul style="list-style-type: none"> <li>Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds</li> </ul>	Exempt
4.8 Network Concept	<i>All elements</i>	<ul style="list-style-type: none"> <li>Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning</li> </ul>	Exempt

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

### 3.0 FORECASTING

#### 3.1 Development-Generated Travel Demand

##### 3.1.1 Trip Generation

###### Existing Trip Generation

Currently, the subject site is occupied by a retail building, and a high turnover restaurant, with a total gross floor area of approximately 11,000 square feet (approximated using aerial photography). Trips generated by the existing development has been estimated using the rates outlined in the *ITE Trip Generation Manual, 10<sup>th</sup> Edition* for the Shopping Centre (Land Use 820) and High-Turnover Restaurant (Land Use 932) land uses. Note that the High-Turnover Restaurant use has only been considered in the PM peak hour, as it is not open during the AM peak hour. The person trips generated by the existing development are summarized in **Table 4**.

**Table 4: Person Trips Generated by Existing Development**

Land Use	ITE Code	GFA	AM Peak Hour (PPH) <sup>1</sup>			PM Peak Hour (PPH) <sup>1</sup>		
			In	Out	Total	In	Out	Total
Shopping Centre	820	7,000 ft <sup>2</sup>	6	3	9	17	18	35
High-Turnover Restaurant	932	4,000 ft <sup>2</sup>	-	-	0	31	19	50
<b>Total</b>			<b>6</b>	<b>3</b>	<b>9</b>	<b>48</b>	<b>37</b>	<b>85</b>

1. PPH = Persons Trips per Hour - Calculated using an ITE Trip to Person Trip factor of 1.28, consistent with the 2017 TIA Guidelines

The modal shares for the existing retail development are assumed to be consistent with the modal shares outlined in the *2020 TRANS Trip Generation Manual*, specific to the Ottawa West Area region. The assumed modal shares have been taken as the average of the TRANS AM and PM peak hour modal shares. As the modal shares presented in the 2020 TRANS report do not include restaurants, the modal shares for the existing restaurant have been estimated based on the 2011 TRANS O-D Survey Report. The modal share values applied to the existing restaurant development are based on all observed trips within the Ottawa West Area during the AM peak hour and PM peak hour. A full breakdown of the existing trips by modal share is shown in **Table 5**.

**Table 5: Existing Development – Peak Hour Person Trips**

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
<b>Shopping Centre Person Trips</b>		<b>6</b>	<b>3</b>	<b>9</b>	<b>17</b>	<b>18</b>	<b>35</b>
Auto Driver	50%	3	2	5	8	9	17
Auto Passenger	15%	1	-	1	3	2	5
Transit	10%	1	-	1	2	2	4
Cyclist	5%	-	-	0	1	1	2
Pedestrian	20%	1	1	2	3	4	7
<b>Restaurant Person Trips</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>31</b>	<b>19</b>	<b>50</b>
Auto Driver	35%	-	-	0	11	7	18
Auto Passenger	10%	-	-	0	3	2	5
Transit	5%	-	-	0	2	1	3
Cyclist	5%	-	-	0	2	1	3
Pedestrian	45%	-	-	0	13	8	21

From the previous tables, the existing development is estimated to generate nine person trips (including five vehicle trips) during the AM peak hour, and 85 person trips (including 35 vehicle trips) during the PM peak hour.

Proposed Residential Trip Generation

The proposed redevelopment will include 104 residential units. Trips generated by the proposed residential units during the AM and PM peak period have been estimated using the recommended rates from the 2020 TRANS Trip Generation Manual. The trip generation rates are taken from Table 3 and correspond to High-Rise Residential in the Ottawa West Area. The directional split between inbound and outbound trips are based on the blended splits presented in Table 9 of the report.

The estimated number of trips generated by the proposed residential units is shown in **Table 6**.

**Table 6: Trips Generated by Proposed Residential Development**

Land Use	TRANS Rate	Units	AM Peak Period (PPP) <sup>1</sup>			PM Peak Period (PPP) <sup>1</sup>		
			In	Out	Total	In	Out	Total
High-Rise Residential, Ottawa West	AM: 0.80 PM: 0.90	104 units	26	57	83	55	39	94

1. PPP = Person Trips per Period

The 2020 TRANS Trip Generation Manual provides modal shares for residential developments within the Ottawa West Area. However, developments within 600m of rapid transit stations can be considered as Transit Oriented Developments (TOD). In TOD zones, the transit share is assumed to increase significantly compared to any TRANS O-D District. A summary of the TRANS residential mode shares, TOD mode shares, and assumed residential mode shares is provided in **Table 7**.

**Table 7: TRANS and TOD Mode Share Comparison**

	Auto Driver	Auto Passenger	Transit	Cycling	Walking
TRANS	30%	10%	35%	5%	20%
TOD	15%	5%	65%	5%	10%
<b>Proposed</b>	<b>25%</b>	<b>10%</b>	<b>40%</b>	<b>5%</b>	<b>20%</b>

The proposed residential modal shares reflect a 5% reduction in auto trips compared to the Ottawa Inner Area to account for the development’s proximity to the Westboro Transit Station. A full breakdown of the projected person trips by modal share is shown in **Table 8**.

**Table 8: Proposed Residential Development – Peak Period Person Trips**

Travel Mode	Mode Share	AM Peak Period			PM Peak Period		
		In	Out	Total	In	Out	Total
<b>Residential Person Trips</b>		<b>26</b>	<b>57</b>	<b>83</b>	<b>55</b>	<b>39</b>	<b>94</b>
Auto Driver	25%	7	14	21	14	10	24
Auto Passenger	10%	3	6	9	5	4	9
Transit	40%	10	23	33	22	16	38
Cyclist	5%	1	3	4	3	1	4
Pedestrian	20%	5	11	16	11	8	19

Table 4 of the 2020 TRANS Trip Generation Manual includes adjustment factors to convert the estimated number of trips generated for each mode from peak period to peak hour. A breakdown of the peak hour trips by mode is shown in **Table 9**.



**Table 9: Proposed Residential Development – Peak Hour Person Trips**

Travel Mode	Adjustment Factor		AM Peak Period			PM Peak Period		
	AM	PM	In	Out	Total	In	Out	Total
<b>Residential Person Trips</b>			<b>14</b>	<b>32</b>	<b>46</b>	<b>25</b>	<b>18</b>	<b>43</b>
Auto Driver	0.48	0.44	3	7	10	6	4	10
Auto Passenger	0.48	0.44	1	3	4	2	2	4
Transit	0.55	0.47	6	13	19	10	7	17
Cyclist	0.58	0.48	1	2	3	1	1	2
Pedestrian	0.58	0.52	3	7	10	6	4	10

From the previous tables, the proposed residential uses are estimated to generate 46 person trips (including ten vehicle trips) during the AM peak hour, and 43 person trips (including ten vehicle trips) during the PM peak hour.

Proposed Commercial Trip Generation

The proposed redevelopment will also include two retail units with a combined gross floor area of approximately 4,200 square feet and a restaurant with a gross floor area of approximately 2,040 square feet. Consistent with the existing development, trips generated by the commercial uses have been calculated using the Shopping Centre (LU 820) and High-Turnover Sit Down Restaurant (LU 932) land uses in the *ITE Trip Generation Manual, 10th Edition*. The proposed restaurant is conservatively assumed to operate during both peak hours.

The estimated number of trips generated by the proposed commercial development is shown in **Table 10**.

**Table 10: Trips Generated by Proposed Commercial Development**

Land Use	ITE Code	GFA	AM Peak Hour (PPH)			PM Peak Hour (PPH)		
			In	Out	Total	In	Out	Total
Shopping Centre	820	4,200 ft <sup>2</sup>	3	2	5	11	11	22
High-Turnover Restaurant	932	2,040 ft <sup>2</sup>	14	12	26	14	9	23
<b>Total</b>			<b>17</b>	<b>14</b>	<b>31</b>	<b>25</b>	<b>20</b>	<b>45</b>

The modal shares for the proposed commercial development are anticipated to be consistent with the modal shares outlined for the existing commercial developments.

A full breakdown of the projected person trips by modal share is shown in **Table 11**.

**Table 11: Proposed Commercial Development – Peak Hour Person Trips**

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
<b>Shopping Centre Person Trips</b>		<b>3</b>	<b>2</b>	<b>5</b>	<b>11</b>	<b>11</b>	<b>22</b>
Auto Driver	50%	2	-	2	5	7	12
Auto Passenger	15%	-	1	1	2	1	3
Transit	10%	-	1	1	1	1	2
Cyclist	5%	-	-	0	1	-	1
Pedestrian	20%	1	-	1	2	2	4

Travel Mode	Mode Share	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
<b>Restaurant Person Trips</b>		<b>14</b>	<b>12</b>	<b>26</b>	<b>14</b>	<b>9</b>	<b>23</b>
Auto Driver	35%	5	4	9	5	3	8
Auto Passenger	10%	2	1	3	1	1	2
Transit	5%	1	-	1	1	-	1
Cyclist	5%	-	1	1	-	1	1
Pedestrian	45%	6	6	12	7	4	11

Based on the previous table, the proposed commercial uses are projected to generate 31 person trips during the AM peak period and 45 person trips during the PM peak period. Of the trips generated, 11 and 20 are expected to be vehicle trips during the AM and PM peak periods, respectively.

Net Trip Generation

A full breakdown of the net person trips generated by modal share is shown in **Table 12**.

**Table 12: Net Person Trip Generation**

Travel Mode	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
<i>Existing Development</i>						
Auto Driver	3	2	5	19	16	35
Auto Passenger	1	-	1	6	4	10
Transit	1	-	1	4	3	7
Cyclist	-	-	0	3	2	5
Pedestrian	1	1	2	16	12	28
<b>Total</b>	<b>6</b>	<b>3</b>	<b>9</b>	<b>48</b>	<b>37</b>	<b>85</b>
<i>Proposed Development</i>						
Auto Driver	10	11	21	16	14	30
Auto Passenger	3	5	8	5	4	9
Transit	7	14	21	12	8	20
Cyclist	1	3	4	2	2	4
Pedestrian	10	13	23	15	10	25
<b>Total</b>	<b>31</b>	<b>46</b>	<b>77</b>	<b>50</b>	<b>38</b>	<b>88</b>
<i>Net Trips</i>						
Auto Driver	7	9	16	-3	-2	-5
Auto Passenger	2	5	7	-1	-	-1
Transit	6	14	20	8	5	13
Cyclist	1	3	4	-1	-	-1
Pedestrian	9	12	21	-1	-2	-3
<b>Total</b>	<b>25</b>	<b>43</b>	<b>68</b>	<b>2</b>	<b>1</b>	<b>3</b>

Based on the previous table, the vehicle trip generation for the proposed development is expected to increase by 16 vehicle trips during the AM peak hours and is anticipated to decrease by five vehicle trips during the PM peak hour. The proposed development is expected to generate an additional 20 and 13 transit trips during the AM and PM peak hours, respectively, compared to the existing development.

### 3.1.2 Trip Distribution

For this report, trip distribution assumptions have not been included.

## 3.2 Background Traffic

### 3.2.1 Other Area Developments

A description of other study area developments is included in Section 2.2.

A review of traffic studies for the following study area developments suggest that traffic generated by these developments is expected to have a negligible impact on the adjacent roadways:

- *114 Richmond Road*: nine storey addition consisting of an apartment building and conversion of the convent into a mixed-use building.
- *70 Richmond*: nine-storey mixed-use building with 60 residential units and a retail use at grade.
- *316-332 Clifton Road*: low-rise planned unit development consisting of 29 dwelling units, comprising of townhouses and back-to-back townhouses and an internal private road.
- *398-406 Roosevelt Avenue*: redevelopment of the site for a six-storey mixed-use building including two commercial units, 35 dwelling units, underground parking and rear surface parking.
- *349 Danforth Avenue*: three-storey mixed-use building with 13 residential units and 2 commercial, ground-floor units.
- *397-399 Winston Avenue*: seven-storey mixed use development with a commercial use on the ground floor and 42 residential units above and two levels of underground parking with 18 parking spaces.

The projected traffic volumes generated by the following developments have been added to the background traffic at all relevant intersections within the study area:

- *175 Richmond Road*: nine-storey mixed-use building to accommodate commercial uses on the main floors and residential uses above. There are 241 residential units proposed and approximately 675 m<sup>2</sup> of retail commercial along Richmond Road.
- *335 Roosevelt Avenue*: two high-rise residential buildings, three low-rise residential buildings with common underground parking lot with a total of 361 units and with 343 parking spaces
- *319-327 Richmond Road*: a nine-storey mixed-use building with ground floor commercial units and approximately 185 dwelling units on the upper storeys.

Excerpts of the transportation studies in support of the above developments are included in **Appendix F**.

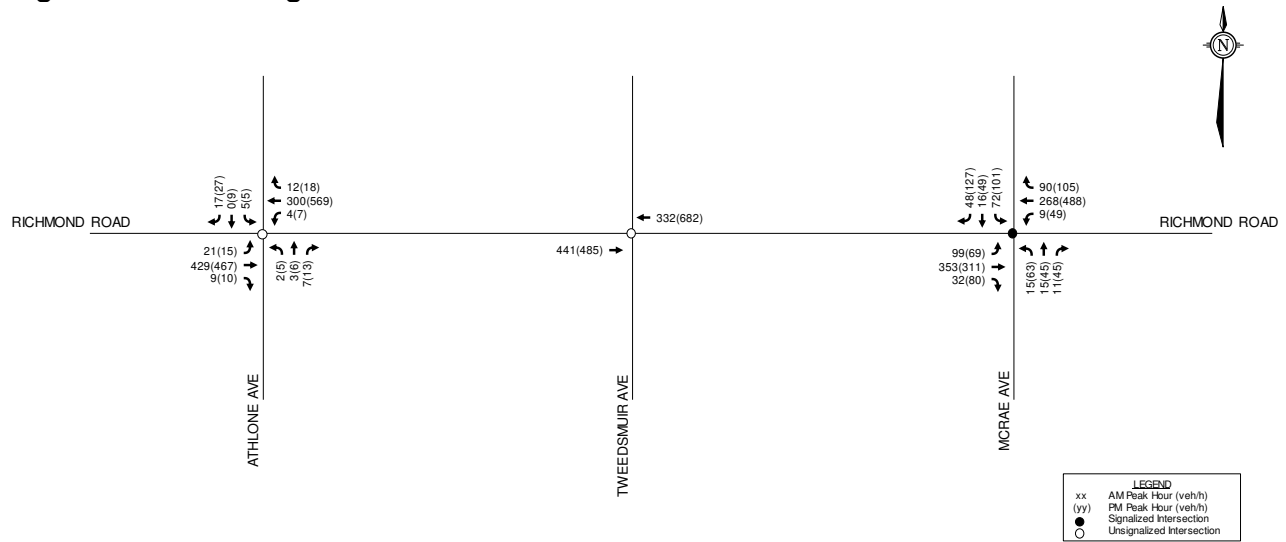
### 3.2.2 General Background Growth Rate

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

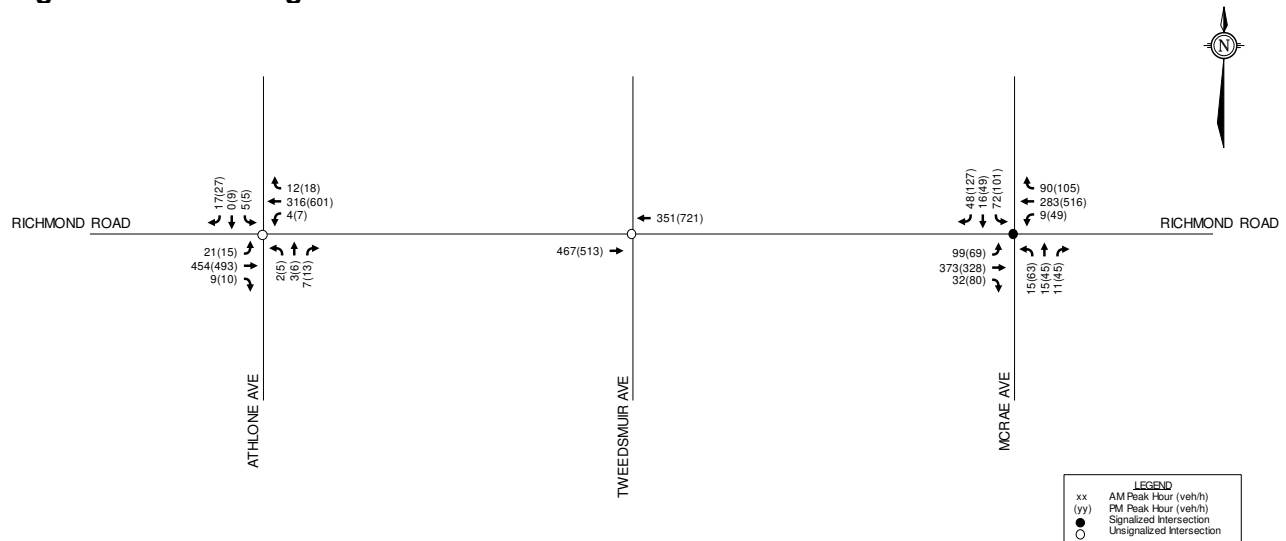
A background growth rate of 1% per annum has been conservatively applied to through traffic along Richmond Road based on the snapshots from the City's Strategic Long-Range Model.

The background traffic volumes in 2024 and 2029 is shown in **Figure 5** and **Figure 6**.

**Figure 5: 2024 Background Traffic Volumes**



**Figure 6: 2029 Background Traffic Volumes**



## 4.0 ANALYSIS

### 4.1 Development Design

#### 4.1.1 Design for Sustainable Modes

Sidewalk connections will be provided between the building entrance and Richmond Road and Tweedsmuir Avenue. Sidewalks will be depressed and continuous across the parking garage access in accordance with City standards.

Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 188 will be provided within the underground parking garage. In total, 190 bicycle parking spaces will be provided. Further review of the number of bicycle parking spaces is included in Section 4.2: Parking.

OC Transpo guidelines recommend that all developments within the vicinity of a bus route should have at least one bus stop within a walking distance of 400m, roughly a five-minute walk. All of the transit stops outlined in Section 2.1.6 are within the 400m distance. The stops within 400m walking distance of the subject site provide service to routes 11, 50, 51, 81, and 153.

A review of the *Transportation Demand Management (TDM)-Supportive Development Design and Infrastructure Checklist* has been conducted. A copy of the TDM checklist is included in **Appendix G**. All required TDM-supportive design and infrastructure measures in the TDM checklist are met. In addition to the required measures, the proposed development also meets the following 'basic' or 'better' measures as defined on 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.
- Ensure that walking routes to transit stops are secure, visible, lighted, shaded and wind-protected wherever possible.
- Provide lighting, landscaping and benches along walking and cycling routes between building entrances and streets, sidewalks and trails.

Garbage bins will be wheeled up the parking ramp for curbside private pick-up on Tweedsmuir Avenue. The fire route for the development is curbside along Richmond Road and Tweedsmuir Avenue.

An existing pavement markings and signage figure, which also includes the proposed site plan and both sides of Richmond Road, Tweedsmuir Avenue, and Athlone Avenue in the immediate vicinity of the subject site, is shown in **Figure 7**. No changes to the existing signage are proposed along the subject site's frontage.

## 4.2 Parking

The subject site is located in Area B of Schedule 1 and Area Y of Schedule 1A of the City of Ottawa’s Zoning By-Law (ZBL), and is located within 600m of a rapid transit station. Sections 101, 102, 103, and 111 of the ZBL summarize the minimum vehicle parking space rates, maximum vehicle parking space rates, and minimum bicycle parking space rates for various land uses. The parking space requirements for the proposed development are summarized in **Table 13**.

**Table 13: Minimum Parking Requirements**

Land Use	Rate	Units/GFA	Required
<i>Minimum Vehicle Parking</i>			
Residential	Resident: 0.5 per dwelling, after the first 12 units	104 units	46
	Visitor: 0.1 per dwelling, after the first 12 units		9
Commercial	Retail: No parking required when GFA < 500 m <sup>2</sup>	390 m <sup>2</sup>	0
	Restaurant: No parking required when GFA < 350 m <sup>2</sup>	189 m <sup>2</sup>	0
		<b>Minimum Provided</b>	<b>46</b>
			<b>94</b>
<i>Maximum Vehicle Parking</i>			
Residential	Resident + Visitor: 1.75 per dwelling	104 units	182
Commercial	Retail: 1 per 250 m <sup>2</sup> GFA	390 m <sup>2</sup>	2
		<b>Maximum Provided</b>	<b>184</b>
			<b>94</b>
<i>Minimum Bicycle Parking</i>			
Residential	Resident: 0.5 per dwelling	104 units	52
Commercial	Retail: 1 per 250 m <sup>2</sup> GFA	390 m <sup>2</sup>	2
	Restaurant: 1 per 250 m <sup>2</sup> GFA	189 m <sup>2</sup>	1
		<b>Minimum Provided</b>	<b>55</b>
			<b>190</b>

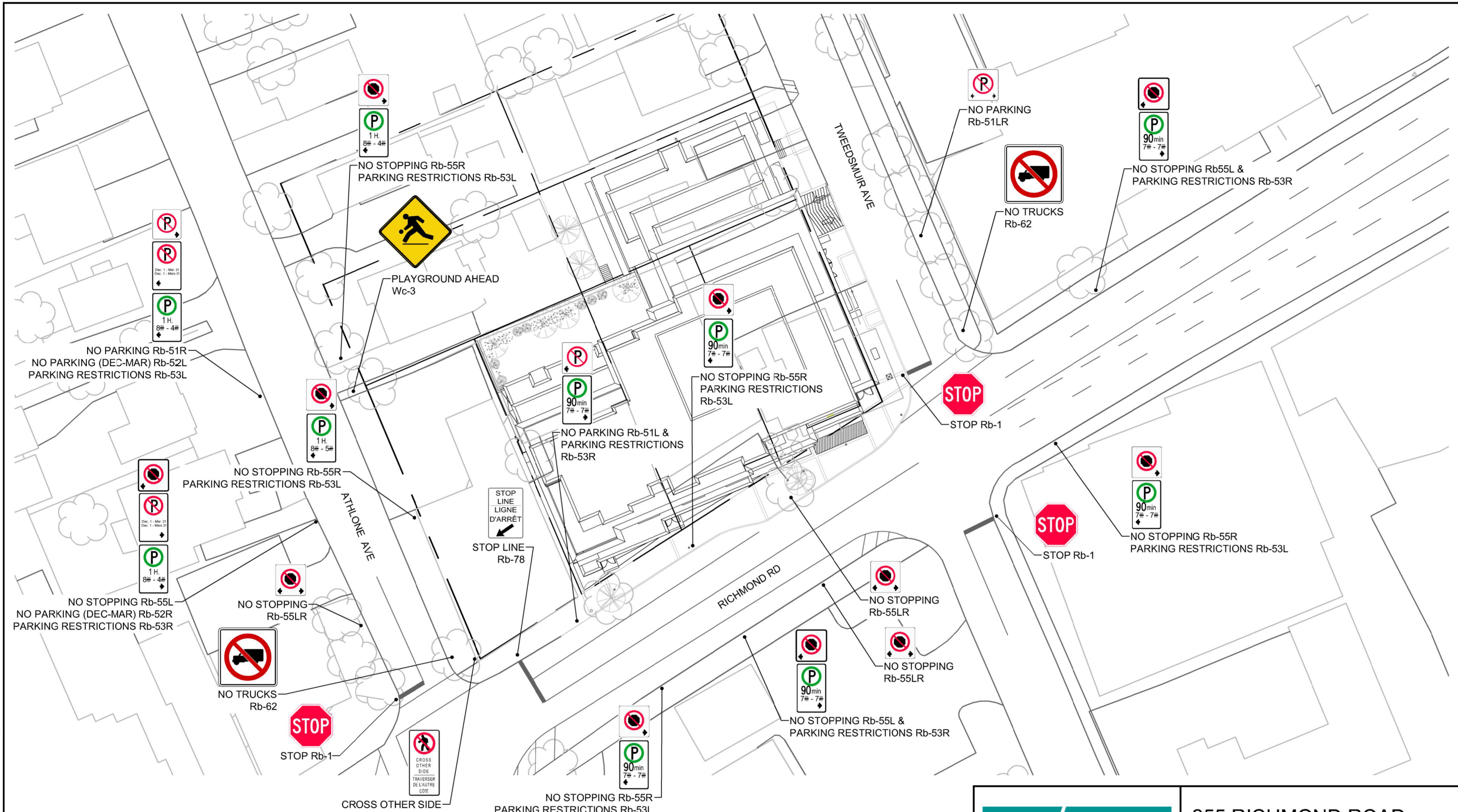
Based on the previous tables, the amount of vehicle and bicycle parking provided meets the requirements of the City of Ottawa ZBL.

## 4.3 Boundary Streets

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

Both roadways are located within 600m of the Westboro Transit Station. Richmond Road is classified as an arterial roadway and Tweedsmuir Avenue is classified as a local roadway.

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DATE MAR 2022 JOB 121193 FIGURE FIGURE 7

### 4.3.1 Pedestrian Level of Service (PLOS)

Exhibit 4 of the MMLOS guidelines has been used to evaluate the segment PLOS of Richmond Road and Tweedsmuir Avenue. Exhibit 22 of the MMLOS guidelines suggests a target PLOS A for all roadways within 600m of a rapid transit station. The results of the segment PLOS analysis are summarized in **Table 14**.

**Table 14: PLOS Segment Analysis**

Sidewalk Width	Boulevard Width	Avg. Daily Curb Lane Traffic Volume	Presence of On-Street Parking	Operating Speed <sup>1</sup>	PLOS
<b>Richmond Road (north curb)</b>					
> 2.0m	> 2.0m	> 3,000 vpd	Yes	60 km/h	<b>B</b>
<b>Richmond Road (south curb)</b>					
> 2.0m	0.5 to 2.0m	> 3,000 vpd	Yes	60 km/h	<b>C</b>
<b>Tweedsmuir Avenue (east curb)</b>					
> 2.0m	> 2.0m	< 3,000 vpd	No	60 km/h	<b>A</b>
<b>Tweedsmuir Avenue (west curb)</b>					
No sidewalk		< 3,000 vpd	Yes	60 km/h	<b>F</b>

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

### 4.3.2 Bicycle Level of Service (BLOS)

Exhibit 11 of the MMLOS guidelines has been used to evaluate the segment BLOS of Richmond Road and Tweedsmuir Avenue. Exhibit 22 of the MMLOS guidelines suggests a target BLOS C for Richmond Road and BLOS D for Tweedsmuir Avenue. The results of the segment BLOS analysis are summarized in **Table 15**.

**Table 15: BLOS Segment Analysis**

Road Class	Bike Route	Type of Bikeway	Travel Lanes	Operating Speed	BLOS
<b>Richmond Road</b>					
Arterial	Spine	Mixed Traffic	2	60 km/h	<b>F</b>
<b>Tweedsmuir Avenue</b>					
Local	No Class	Mixed Traffic	2	60 km/h	<b>F</b>

### 4.3.3 Transit Level of Service (TLOS)

Exhibit 15 of the MMLOS guidelines has been used to evaluate the segment TLOS of Richmond Road. Exhibit 22 of the MMLOS guidelines suggests a target TLOS D for arterial roadways along a transit priority corridor (isolated measures). Since Tweedsmuir Avenue does not provide transit service, the transit level of service (TLOS) has not been evaluated. The results of the segment TLOS analysis are summarized in **Table 16**.

**Table 16: TLOS Segment Analysis**

Facility Type	Exposure to Congestion Delay, Friction, and Incidents			TLOS
	Congestion	Friction	Incident Potential	
<b>Richmond Road</b>				
Mixed Traffic – Frequent Parking/Driveway Friction	Yes	High	High	<b>F</b>



#### 4.3.4 Truck Level of Service (TkLOS)

Exhibit 20 of the MMLOS guidelines has been used to evaluate the segment TkLOS of Richmond Road and Tweedsmuir Avenue. Exhibit 22 of the MMLOS guidelines suggests a target TkLOS D for Richmond Road and no target for Tweedsmuir Avenue. The results of the segment TkLOS analysis are summarized in **Table 17**.

**Table 17: TkLOS Segment Analysis**

Curb Lane Width	Number of Travel Lanes Per Direction	TkLOS
<b>Richmond Road</b>		
> 3.7m	1	B
<b>Tweedsmuir Avenue</b>		
> 3.7m	1	B

#### 4.3.5 Segment MMLOS Summary

A summary of the results of the segment MMLOS analysis for the boundary roads is provided in **Table 18**.

**Table 18: Segment MMLOS Summary**

Segment	PLOS	BLOS	TLOS	TkLOS
Richmond Road	C	F	F	B
<b>Target</b>	<b>A</b>	<b>C</b>	<b>D</b>	<b>E</b>
Tweedsmuir Avenue	F	F	-	B
<b>Target</b>	<b>A</b>	<b>B</b>	<b>D</b>	<b>N/A</b>

The target **PLOS** is not achieved in either segment. To achieve the target PLOS A along Richmond Road, either a reduction in the posted speed or Annual Average Daily Traffic (AADT) volumes is required. To achieve the target PLOS A along Tweedsmuir Avenue, a 2m sidewalk and boulevard greater than 0.5m is required. The proposed development will provide a 2.0m sidewalk adjacent to the curb on Tweedsmuir Avenue with planters behind the sidewalk.

Sidewalk crowding criteria has been considered to determine if the proposed patio near the southeastern corner of the site creates too narrow of a ‘pinch point’ on the Richmond Road sidewalk. This ‘pinch point’ results in a minimum sidewalk width of approximately 2.6m along the site’s frontage to Richmond Road. Per Table 1 of the City’s *Addendum to the MMLOS Guidelines*, a minimum sidewalk width of 3.0m is required to achieve the target PLOS A when the number of peak hour pedestrians is 250 pedestrians or less. Based on the existing pedestrian volumes shown in **Figure 3**, the north crosswalk at Richmond Road/Athlone Avenue serves approximately 45 pedestrians during the AM peak hour and 135 pedestrians during the PM peak hour. Since the ‘pinch point’ results in a sidewalk width of 2.6m, this results in a PLOS B, which corresponds to an ‘occasional need to adjust path to avoid conflict.’ Since the PLOS analysis above identifies that Richmond Road cannot achieve a PLOS A without reducing the AADT or posted speed limit, and the anticipated number of pedestrians is anticipated to remain well below 250 per peak hour, achieving a PLOS B from a crowding perspective is considered acceptable.

The target **BLOS** is not achieved in either segment. To achieve the target BLOS D along Tweedsmuir Avenue, a reduction in the operating speed is required. To achieve the target BLOS C along Richmond Road, bike lanes are required. This is identified for the City’s consideration.

The target **TLOS** is not achieved on the Richmond Road Segment. To achieve the target TLOS D along Richmond Road, a reduction in parking/driveway friction is required.

The target **TkLOS** is met on Richmond Road due to lanes that measure more than 3.7 metres.

#### 4.4 Access Intersections

The proposed redevelopment will be served by a two-way underground parking garage access along Tweedsmuir Avenue. The proposed underground parking ramp will have a width of approximately 6.0m and will be located approximately 26m from the Richmond Road right-of-way limit and 14m from the northern property line.

Section 25 (1)(c) of the Private Approach By-law (PABL) states that two-way accesses to have a width no greater than 9m, as measured at the street line. Furthermore, the City of Ottawa's ZBL identifies a minimum width of 6.0m and maximum width of 6.7m for a two-way driveway leading to an underground parking garage with more than 50 spaces. The width of the proposed driveway adheres to the requirements of the PABL and ZBL.

Section 25 (1)(m)(ii) of the PABL states where a property abuts an arterial roadway and has less than 100 parking spaces, that the distance between private approach and nearest intersecting street line be 18 metres. Section 25 (1)(p) of the PABL identifies a minimum spacing requirement of 3.0m between the nearest limit of a private approach and the property line, as measured at the street line. The location of the proposed driveway adheres to section 25 (1)(m)(ii) and 25 (1)(p) of the PABL.

Section 25 (1)(u) of the PABL identifies a maximum grade of 2% for a distance of 9m within the property, where the access leads to 50 or more parking spaces. A distance of 6.1m with a grade of 1.4% sloping towards the roadway will be provided between the back of sidewalk and the garage door. At the garage door, the slope transitions to a 5% grade in the direction of the property for approximately 5.3m, before transitioning to a 12.5% grade. Within the first 9m of the property line, the proposed grades are therefore 1.4% for approximately 3.7m and 5% for approximately 5.3m. By limiting the maximum grade to 5% for the first 9m, and including a 1.4% slope for approximately 6.1m between the garage door and the back of sidewalk, it is anticipated that drivers exiting the subject site will have adequate sightlines to pedestrians walking along Tweedsmuir Avenue.

Further, the Transportation Association of Canada (TAC)'s *Geometric Design Guidelines for Canadian Roads* identifies a maximum recommended downgrade of 7% for low volume driveways on local roadways in Section 8.9.11. Based on the proposed grading identified above, a maximum grade of 5% will be provided for a distance of 13.7m behind the sidewalk and 9m within the private property. As the proposed grading meets the TAC recommendations, a waiver to the requirement of Section 25 (1)(u) of the PABL is recommended.

Tables 9.9.4 and 9.9.6 of the *Geometric Design Guide* identifies minimum stopping sight distance (SSD) and intersection sight distance (ISD) requirements, based on the roadway grade and design speed (taken as the speed limit plus 10 km/h). Assuming level grade and a design speed of 60 km/h, the SSD requirement is 85m and the ISD requirements are 130m for left turning vehicles and 110m for right turning vehicles. As Tweedsmuir Avenue is a straight roadway, adequate SSD can be provided at the proposed access. Based on the landscape plan, short shrubs and honey locust trees with a high canopy are proposed on either side of the access. Adequate sightlines for drivers turning left and right out of the proposed access can also be provided, as long as any proposed trees and shrubs are trimmed and maintained.

## 4.5 Transportation Demand Management

### 4.5.1 Context for TDM

The proposed development consists of a total of 104 residential units. The unit breakdown is summarized as follows:

- One Bedroom: 34 units;
- One Bedroom and Den: 26 units;
- Two Bedroom: 43 units;
- Three Bedroom: 1 unit.

### 4.5.2 Need and Opportunity

As the proposed development is located within a TOD zone, the Ottawa West modal shares presented in the 2020 TRANS Trip Generation Manual have been adjusted to reflect a slightly higher transit mode share. The assumed modal shares for the development decrease the auto modal share from 30% (Ottawa West) to 25%. Should the development only meet the TRANS modal shares, the development is anticipated to generate an additional three vehicle trips two-way during the peak hours. However, as the proposed development is located in close proximity to the future Westboro LRT station, bicycle parking will be provided at a rate of approximately two spaces per unit, and the development will provide a suite of TDM measures described in the following section, the development is anticipated to meet the target modal shares.

### 4.5.3 TDM Program

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

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

- Display local area maps with walking/cycling access routes and key destinations at major entrances (multi-family, condominium);
- Display relevant transit schedules and route maps at entrances (multi-family, condominium);
- Provide real-time arrival information display at entrances (multi-family, condominium);
- Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/move-in, to encourage residents to use resident;
- Unbundle parking cost from purchase price (condominium);
- Provide a multimodal travel option information package to new residents.

In addition to the above, bicycle parking will be provided at a rate of over 1.8 spaces per unit, which is over triple of the minimum zoning requirement.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

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

### Development Design

- Sidewalk connections will be provided between the building entrance and Richmond Road and Tweedsmuir Avenue.
- Sidewalks will be depressed and continuous across the parking garage access in accordance with City standards.
- Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 188 bicycle parking spaces will be provided within the underground parking garage. In total, 190 bicycle parking spaces will be provided.
- All required Transportation Demand Management (TDM)-supportive design and infrastructure measures in the checklist are met.
- Garbage bins will be wheeled up the parking ramp for curbside private pick-up on Tweedsmuir Avenue. The fire route for the development is curbside along Richmond Road and Tweedsmuir Avenue.
- No changes to the existing signage are proposed along the subject site's frontage.

### Parking

- The proposed vehicular and bicycle parking spaces adhere to the requirements of the City's *Zoning By-law* (ZBL).

### Boundary Street Design

- Richmond Road and Tweedsmuir Avenue have been evaluated using the targets set for arterial and local roadways within 600m of a rapid transit stop.
- The target pedestrian level of service (PLOS) is not achieved on either Richmond Road or Tweedsmuir Avenue. To achieve the target PLOS A along Richmond Road, either a reduction in the posted speed or Annual Average Daily Traffic (AADT) volumes is required. To achieve the target PLOS A along Tweedsmuir Avenue, a 2m sidewalk and boulevard greater than 0.5m is required. The proposed development will provide a 2.0m sidewalk adjacent to the curb with planters behind the sidewalk.
- The proposed patio creates a 2.6m-wide 'pinch point' along the site's frontage to Richmond Road. This results in a PLOS B based on the crowding criteria, which corresponds to an 'occasional need to adjust path to avoid conflict.' Since the PLOS analysis above identifies that Richmond Road cannot achieve a PLOS A without reducing the AADT or posted speed limit, and the anticipated number of pedestrians is anticipated to remain well below 250 per peak hour, achieving a PLOS B from a crowding perspective is considered acceptable.

- The target bicycle level of service (BLOS) is not achieved on either Richmond Road or Tweedsmuir Avenue. To achieve the target BLOS C along Richmond Road, bike lanes are required. To achieve the target BLOS D along Tweedsmuir Avenue, a reduction in the operating speed is required. This is identified for the City's consideration.
- The target transit level of service (TLOS) is not achieved on Richmond Road. To achieve the target TLOS D along Richmond Road, a reduction in parking/driveway friction is required.
- The target truck level of service (TkLOS) target of E is met on Richmond Road due to lanes that measure more than 3.7m.

Access Intersections

- The width of the proposed access adheres to the requirements of the City's *Private Approach By-law* (PABL) and ZBL.
- The location of the proposed access adheres to the requirements of the PABL.
- A maximum grade of 5% will be provided for a distance of 11.4m behind the sidewalk and 9m within the private property. As the proposed grading meets the TAC recommendations, and adequate sightlines for pedestrians crossing the access will be maintained, a waiver to Section 25 (1)(u) of the PABL is recommended.
- For drivers exiting the property, adequate sightlines turning left and right out of the proposed access can also be provided, as long as any proposed trees and shrubs are trimmed and maintained.

Transportation Demand Management

- The following measures will be implemented upon completion of the proposed development:
  - Display local area maps with walking/cycling access routes and key destinations at major entrances;
  - Display relevant transit schedules and route maps at entrances;
  - Provide real-time arrival information display at entrances;
  - Offer PRESTO cards preloaded with one monthly transit pass on residence purchase/ move-in, to encourage residents to use resident;
  - Unbundle parking cost from purchase price;
  - Provide a multimodal travel option information package to new residents;
  - The proposed development will provide bicycle parking spaces at a rate of over 1.8 spaces per unit.

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

**NOVATECH**

Prepared by:

Reviewed by:



Joshua Audia, P.Eng.  
Project Engineer | Transportation

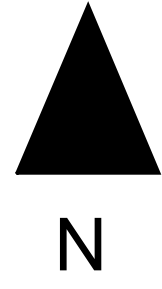


Brad Byvelds, P.Eng.  
Project Manager | Transportation

## **APPENDIX A**

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Site Plan



**ZONING INFORMATION**

**ZONE DESIGNATION**

TM H(15)

**ZONING REQUIREMENTS**

NOTE:

MIN. LOT WIDTH REQUIRED:	NO MINIMUM
LOT WIDTH PROVIDED (NORTH PROPERTY LINE):	48.8M
LOT WIDTH PROVIDED (SOUTH PROPERTY LINE):	49.6M
MIN. LOT AREA REQUIRED (M <sup>2</sup> ):	NO MINIMUM
LOT AREA PROVIDED:	2181.2M <sup>2</sup>
MAX BUILDING HEIGHT:	15.0M
BUILDING HEIGHT FROM AVG GRADE:	31.0M
MAX FRONT YARD SETBACK:	2M
FRONT YARD SETBACK (RETAIL) (VARIES AT GRADE):	0M
FRONT YARD SETBACK (RESIDENTIAL):	2M
MIN. REAR YARD SETBACK:	7.5M
REAR YARD SETBACK (FORMER R4 ZONE):	1.2M
REAR YARD SETBACK (AMENITY AREA):	0.07M
REAR YARD SETBACK (BUILDING ABOVE GRADE):	7.5M
MAX INTERIOR SIDE YARD SETBACK:	3M
INTERIOR SIDE YARD SETBACK (FORMER R4 ZONE):	7.5M
INTERIOR SIDE YARD SETBACK (TM ZONE):	0.135M
INTERIOR SIDE YARD SETBACK (WEST):	1.2M
MIN. CORNER YARD SETBACK (EAST):	3M
MIN. CORNER YARD SETBACK (ABOVE 15M):	2M
CORNER YARD SETBACK (EAST) PROVIDED:	0M
CORNER YARD SETBACK (ABOVE 15M) PROVIDED:	2.9M
MIN. DRIVEWAY AISLE WIDTH:	6.7M
DRIVEWAY AISLE WIDTH:	9M

**DEVELOPMENT INFORMATION**

**PROPOSED:**

GROUND FLOOR G.F.A. (UNITS-RETAIL):	268.64M <sup>2</sup>
SECOND FLOOR G.F.A.:	694.15M <sup>2</sup>
THIRD FLOOR G.F.A.:	1185.07M <sup>2</sup>
FOURTH FLOOR G.F.A.:	1195.86M <sup>2</sup>
FIFTH FLOOR G.F.A.:	1101.14M <sup>2</sup>
SIXTH FLOOR G.F.A.:	1071.04M <sup>2</sup>
SEVENTH FLOOR G.F.A.:	897.20M <sup>2</sup>
EIGHTH FLOOR G.F.A.:	872.04M <sup>2</sup>
NINTH FLOOR G.F.A.:	821.02M <sup>2</sup>
TOTAL G.F.A. (RETAIL):	579.78M <sup>2</sup>
TOTAL G.F.A. (RESIDENTIAL):	8206.57M <sup>2</sup>
TOTAL BUILDING G.F.A.:	8786.35M <sup>2</sup>

PROPOSED # UNIT (RETAIL):	3 UNITS
PROPOSED # UNITS (RESIDENTIAL):	104 UNITS

**PARKING REQUIREMENTS**

MIN. RESIDENT PARKING STALLS REQUIRED:	0.5
(STALLS/SWELLING UNIT AFTER FIRST 12 UNITS)	
MIN. VISITOR PARKING STALLS REQUIRED:	0.1
(STALLS/SWELLING UNIT AFTER FIRST 12 UNITS)	
MIN. REQUIRED PARKING STALLS @ (104-12 = 92 X 0.5):	46
MIN. REQUIRED VISITOR PARKING STALLS @ (104-12 = 92 X 0.1 - 10%):	8

**PROPOSED PARKING**

DRIVE AISLE WIDTH (RETAIL AND VISITOR PARKING SHARED):	6.0M
PINCH POINT IN GARAGE:	5.2M
PROPOSED RETAIL PARKING:	0
PROPOSED RESIDENTIAL PARKING:	86
PROPOSED VISITOR PARKING:	8
TOTAL OF PROPOSED PARKING:	94
CONFORMING STALLS (2.4 X 5.2M):	45
CONFORMING SHORT CAR STALLS (2.4 X 4.6M MIN.):	49

**PROPOSED BICYCLE PARKING**

REQUIRED RETAIL BICYCLE PARKING:	2
REQUIRED RESIDENTIAL BICYCLE PARKING (@ 1.UNIT):	104
SUB-TOTAL OF REQUIRED BICYCLE PARKING:	106
PROVIDED RESIDENTIAL BICYCLE PARKING:	1.8SUITE
BICYCLE PARKING PROVIDED (UNDERGROUND):	188
BICYCLE PARKING PROVIDED (EXTERIOR):	2
BICYCLE PARKING PROVIDED (TOTAL):	190

**AMENITY AREA CALCULATIONS - PROPOSED**

NOTE: CALCULATIONS DONE IN ACCORDANCE WITH CITY OF OTTAWA BY-LAW 2008-250, SECTION 137 - AMENITY AREA

RESIDENTIAL TOTAL REQUIRED AMENITY AREA (MIN.) (104 UNITS @ 6.0M <sup>2</sup> /UNIT)	624.0M <sup>2</sup>
COMMUNAL AREA (MIN.) (50% OF REQ'D TOTAL AMENITY AREA)	312.0M <sup>2</sup>
<b>TOTAL RESIDENTIAL AMENITY AREA REQUIRED:</b>	<b>624M<sup>2</sup></b>
TOTAL AMENITY AREA PROVIDED:	
BALCONY AREA (104 UNITS):	705.00M <sup>2</sup>
INDOOR AMENITY AREA (COMMUNAL):	151.63M <sup>2</sup>
OUTDOOR AMENITY AREA (COMMUNAL):	286.51M <sup>2</sup>
<b>TOTAL RESIDENTIAL AMENITY AREA PROVIDED:</b>	<b>1,123.14M<sup>2</sup></b>
LANDSCAPED AREA REQUIRED:	NON MINIMUM
LANDSCAPED AREA PROVIDED:	400.00M <sup>2</sup>
MINIMUM WIDTH OF LANDSCAPE AREA ABUTTING A RESIDENTIAL ZONE:	1.0M WITH FENCE
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (FORMER R4 REAR YARD):	1.2M WITH FENCE
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (FORMER R4 SIDE YARD):	7.5M
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (TM ZONE REAR YARD):	0.070M
WIDTH OF LANDSCAPE AREA PROVIDED ABUTTING RESIDENTIAL ZONE (TM ZONE ABOVE GARAGE RAMP):	7.5M

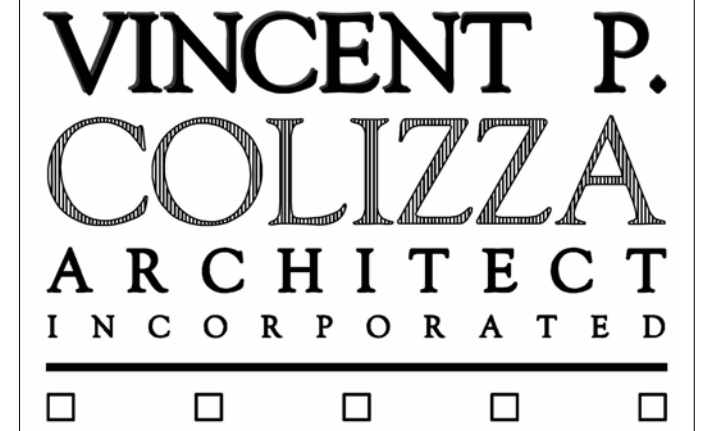
No.	DESCRIPTION	DATE	CHD
3	Re-issued for Zoning Amendment	2023.04.14	
2	Re-issued for Zoning Amendment	2023.04.04	
1	Issued for Zoning Amendment	2023.04.03	

**REVISIONS**

CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY OMISSIONS OR DISCREPANCIES TO THE ARCHITECT BEFORE PROCEEDING WITH THE WORK.

**DO NOT SCALE THE DRAWINGS**

THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE ARCHITECT	
DATE	04/03/2023
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DATE	04/03/2023
CHECKED	VPC
DATE PRINTED	2023-04-13 9:30:11 PM



255 Richmond Road

Ottawa, ON

DWG. TITLE  
Site Plan

SCALE	DWG. NO.
As indicated	A01.00
PROJ. NO.	2219



Gross Constructable Building Area		
Name	Area (Sqm)	Area (Sqft)
P3 Parking	1472.85 m <sup>2</sup>	15853.67 ft <sup>2</sup>
P2 Parking	2092.79 m <sup>2</sup>	22526.65 ft <sup>2</sup>
P1 Parking	2093.27 m <sup>2</sup>	22531.77 ft <sup>2</sup>
Level 1	1626.48 m <sup>2</sup>	17507.32 ft <sup>2</sup>
Level 2	1596.67 m <sup>2</sup>	17186.44 ft <sup>2</sup>
Level 3	1510.50 m <sup>2</sup>	16258.89 ft <sup>2</sup>
Level 4	1510.19 m <sup>2</sup>	16255.57 ft <sup>2</sup>
Level 5	1410.16 m <sup>2</sup>	15178.82 ft <sup>2</sup>
Level 6	1319.94 m <sup>2</sup>	14207.75 ft <sup>2</sup>
Level 7	1229.61 m <sup>2</sup>	13235.42 ft <sup>2</sup>
Level 8	1077.53 m <sup>2</sup>	11598.47 ft <sup>2</sup>
Level 9	1014.29 m <sup>2</sup>	10917.69 ft <sup>2</sup>
Mech Penthouse	229.01 m <sup>2</sup>	2465.01 ft <sup>2</sup>
	18183.30 m <sup>2</sup>	195723.45 ft <sup>2</sup>



Level 1 Area Summary					
Level	Name	Number	Area Designation	Area (Sqm)	Area (Sqft)
Level 1	Amenity	108	Amenity	81.31 m <sup>2</sup>	875.24 ft <sup>2</sup>
Level 1	E-Commerce	111-A	Amenity	18.17 m <sup>2</sup>	195.63 ft <sup>2</sup>
Level 1	Fitness Center	150	Amenity	52.82 m <sup>2</sup>	568.50 ft <sup>2</sup>
Level 1	Overall Lobby	111	Amenity	197.07 m <sup>2</sup>	2121.22 ft <sup>2</sup>
Amenity: 4				349.37 m <sup>2</sup>	3760.59 ft <sup>2</sup>
Level 1	Corridor	100C-A	Corridors	99.36 m <sup>2</sup>	1069.52 ft <sup>2</sup>
Level 1	Corridor	100C-B	Corridors	21.86 m <sup>2</sup>	235.26 ft <sup>2</sup>
Corridors: 2				121.22 m <sup>2</sup>	1304.78 ft <sup>2</sup>
Level 1	Outdoor Amenity	100	Outdoor Amenity	156.62 m <sup>2</sup>	1685.79 ft <sup>2</sup>
Level 1	Outdoor Amenity	106	Outdoor Amenity	110.18 m <sup>2</sup>	1185.94 ft <sup>2</sup>
Outdoor Amenity: 2				266.79 m <sup>2</sup>	2871.73 ft <sup>2</sup>
Level 1	Balcony	129O	Outdoor Private Amenity	4.23 m <sup>2</sup>	45.54 ft <sup>2</sup>
Level 1	Balcony	131OA	Outdoor Private Amenity	3.74 m <sup>2</sup>	40.26 ft <sup>2</sup>
Level 1	Balcony	131OB	Outdoor Private Amenity	4.45 m <sup>2</sup>	47.93 ft <sup>2</sup>
Level 1	Balcony	132O	Outdoor Private Amenity	4.54 m <sup>2</sup>	48.91 ft <sup>2</sup>
Level 1	Balcony	151-O	Outdoor Private Amenity	15.03 m <sup>2</sup>	161.75 ft <sup>2</sup>
Outdoor Private Amenity: 5				32.00 m <sup>2</sup>	344.39 ft <sup>2</sup>
Level 1	Restaurant	101	Retail	189.20 m <sup>2</sup>	2036.53 ft <sup>2</sup>
Level 1	Retail	103	Retail	196.57 m <sup>2</sup>	2115.84 ft <sup>2</sup>
Level 1	Retail	104	Retail	193.96 m <sup>2</sup>	2087.82 ft <sup>2</sup>
Retail: 3				579.73 m <sup>2</sup>	6240.19 ft <sup>2</sup>
Level 1	One Bedroom	129	Unit	56.87 m <sup>2</sup>	612.15 ft <sup>2</sup>
Level 1	One Bedroom	131	Unit	48.57 m <sup>2</sup>	522.81 ft <sup>2</sup>
Level 1	One Bedroom	132	Unit	45.55 m <sup>2</sup>	490.25 ft <sup>2</sup>
Level 1	One Bedroom	133	Unit	62.78 m <sup>2</sup>	675.75 ft <sup>2</sup>
Level 1	One Bedroom	151	Unit	54.87 m <sup>2</sup>	590.64 ft <sup>2</sup>
Unit: 5				268.64 m <sup>2</sup>	2891.60 ft <sup>2</sup>

No.	DESCRIPTION	DATE	CHD
3	Re-issued for Zoning Amendment	2023.04.14	
2	Re-issued for Zoning Amendment	2023.04.04	
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REVISIONS	
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DO NOT SCALE THE DRAWINGS	
THIS DRAWING SHALL NOT BE USED FOR CONSTRUCTION PURPOSES UNTIL SIGNED BY THE ARCHITECT	
DATE	04/03/2023
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DATE	04/03/2023
CHECKED	VPC
DATE PRINTED	2023-04-13 9:30:16 PM

**VINCENT P. COLIZZA ARCHITECT INCORPORATED**

255 Richmond Road  
Ottawa, ON

DWG. TITLE: Level 01 Floor Plan

SCALE: 1 : 100  
PROJ. NO.: 2219

DWG. NO.: A10.03

## **APPENDIX B**

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TIA Screening Form

## City of Ottawa 2017 TIA Guidelines Screening Form

### 1. Description of Proposed Development

Municipal Address	<b>249-255 Richmond Road &amp; 372 Tweedsmuir Avenue</b>
Description of Location	<b>Approximately 0.54 acres in area, located north of Richmond Road and west of Tweedsmuir Avenue</b>
Land Use Classification	<b>Mid-Rise Residential with Ground-Floor Retail</b>
Development Size (units)	<b>104 dwellings</b>
Development Size (m <sup>2</sup> )	<b>579 m<sup>2</sup> (6,240 ft<sup>2</sup>) of retail or restaurant space</b>
Number of Accesses and Locations	<b>One proposed access to Tweedsmuir Avenue</b>
Phase of Development	<b>1</b>
Buildout Year	<b>2024</b>

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

### 2. Trip Generation Trigger

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

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

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

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

### 3. Location Triggers

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

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

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

### 4. Safety Triggers

	Yes	No
Are posted speed limits on a boundary street are 80 km/hr or greater?		✓
Are there any horizontal/vertical curvatures on a boundary street limiting sight lines at a proposed driveway?		✓
Is the proposed driveway within the area of influence of an adjacent traffic signal or roundabout (i.e. within 300 m of intersection in rural conditions, or within 150 m of intersection in urban/suburban conditions)?		✓
Is the proposed driveway within auxiliary lanes of an intersection?		✓
Does the proposed driveway make use of an existing median break that serves an existing site?		✓
Is there is a documented history of traffic operations or safety concerns on the boundary streets within 500 m of the development?		✓
Does the development include a drive-thru facility?		✓

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

### 5. Summary

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

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

## **APPENDIX C**

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OC Transpo Route Maps



# 11

## LINCOLN FIELDS BAYSHORE

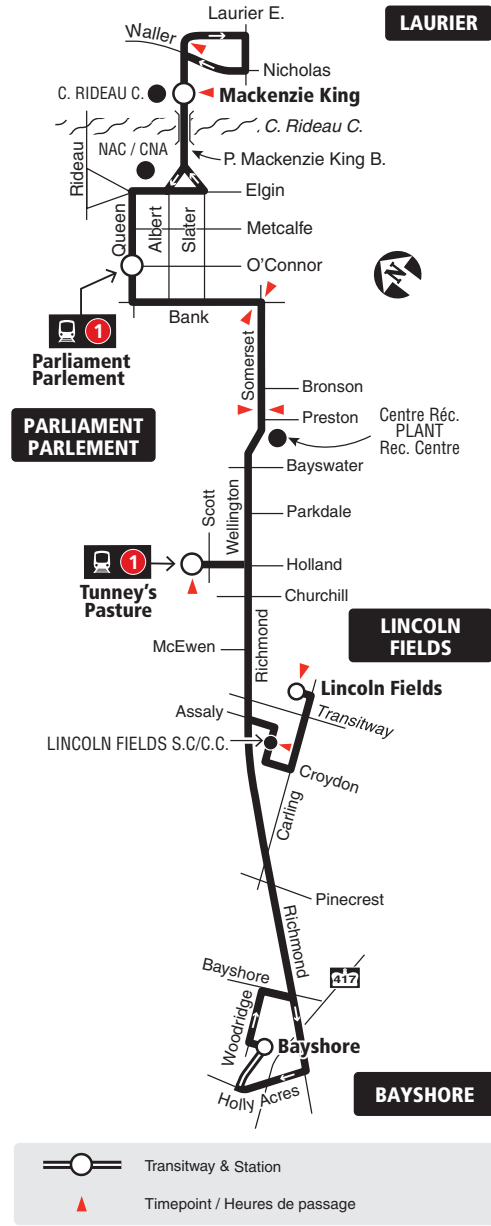
### LAURIER

*Fréquent*

**7 days a week / 7 jours par semaine**

All day service

Service toute la journée



2021.09



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

**Text / Texto\* ..... 560560**

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

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

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

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

Security / Sécurité ..... **613-741-2478**

**Effective September 5, 2021**

**En vigueur 5 septembre 2021**

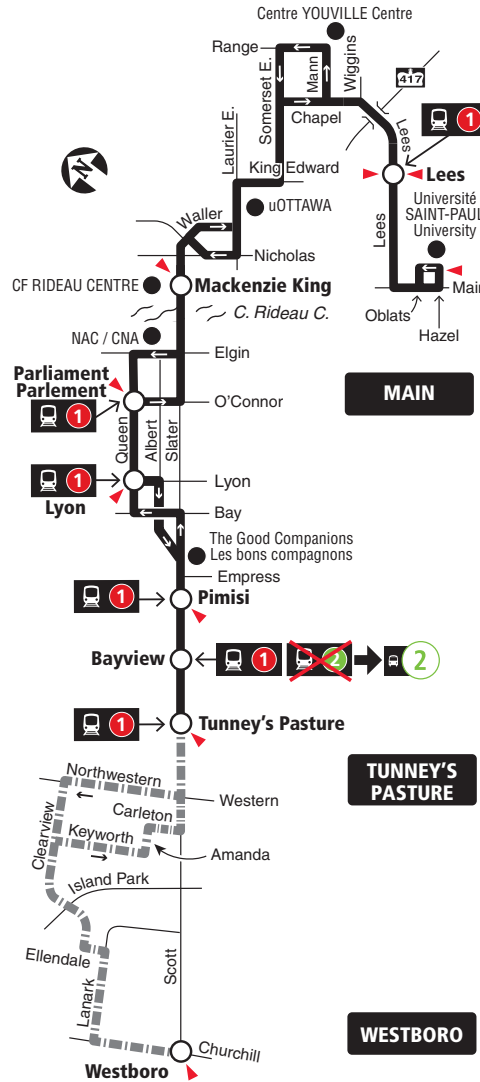


**INFO 613-560-5000**  
octranspo.com

# 16

## MAIN TUNNEY'S PASTURE WESTBORO

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



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

2020.04

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



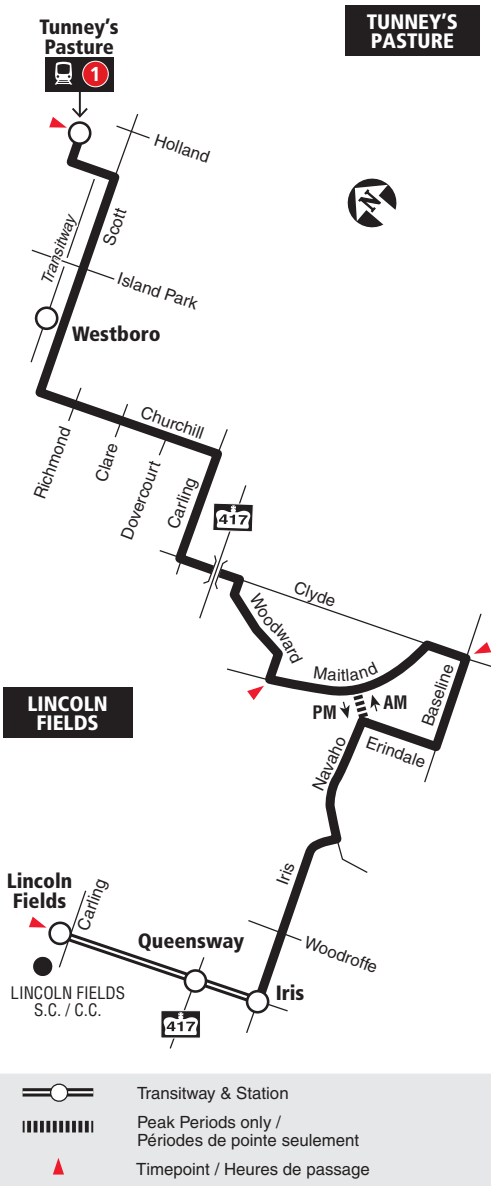
# 50

## LINCOLN FIELDS TUNNEY'S PASTURE

Local

Monday to Saturday / Lundi au samedi

No service Sat. eve. or all day Sunday / Aucun service le soir le sam. ou toute la journée dimanche



2019.06

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 ..... 613-842-3600

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

Security / Sécurité ..... 613-741-2478

Effective April 24, 2017

En vigueur 24 avril 2017



INFO 613-741-4390  
octranspo.com





# 51

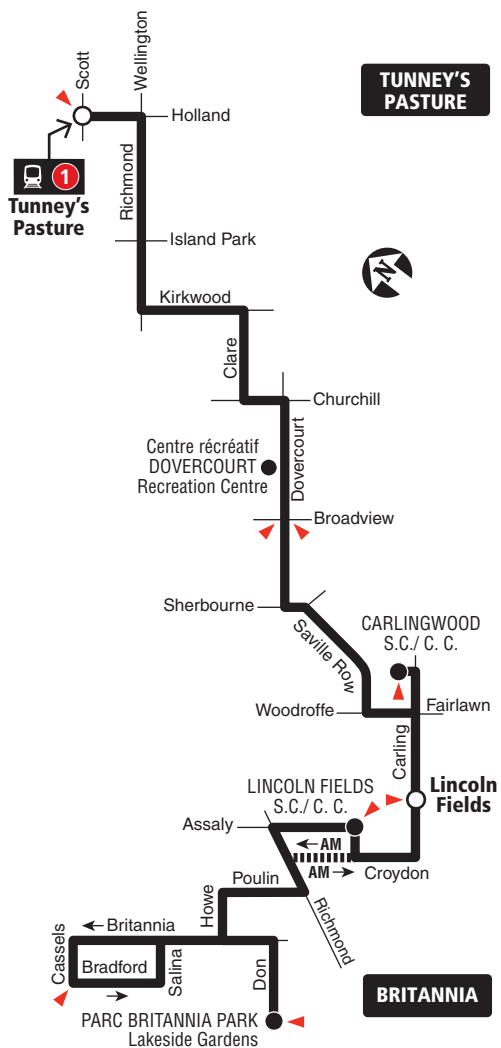
## BRITANNIA TUNNEY'S PASTURE

*Fréquent*

**7 days a week / 7 jours par semaine**

All day service

Service toute la journée



- Station
- Some trips / Quelques trajets
- ▲ Timepoint / Heures de passage

2019.07

**Future route after O-Train Line 1 is open**  
**Trajet du circuit après l'ouverture de la Ligne 1 de l'O-Train**

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

**INFO 613-741-4390**  
 octranspo.com



# BAYSHORE CRYSTAL BAY TUNNEY'S PASTURE

Rapid<sup>e</sup>

7 days a week / 7 jours par semaine

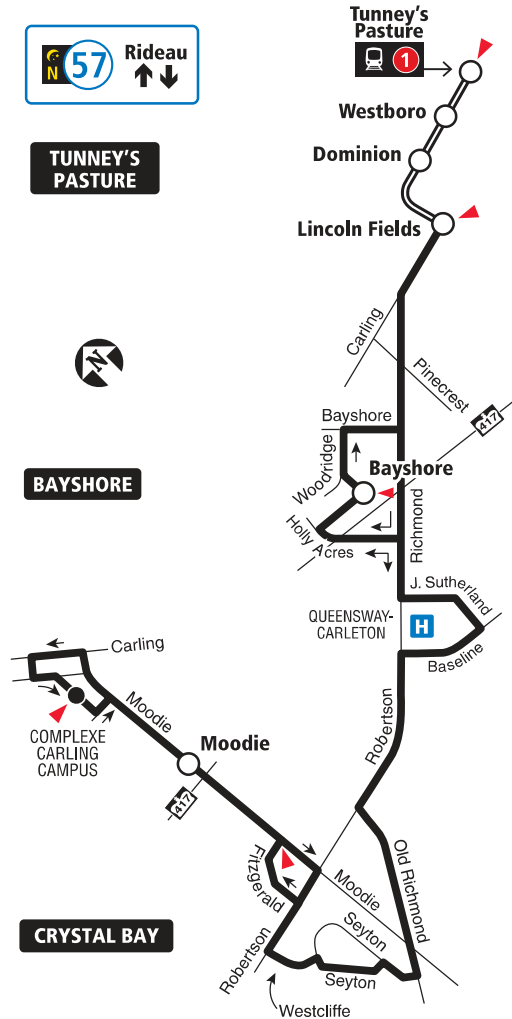
All day and limited overnight service  
Service toute la journée et limité la nuit



TUNNEY'S PASTURE

BAYSHORE

CRYSTAL BAY



- Transitway & Station
- Timepoint | Heures de passage

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

2021.09

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

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

**Effective September 5, 2021**  
**En vigueur 5 septembre 2021**

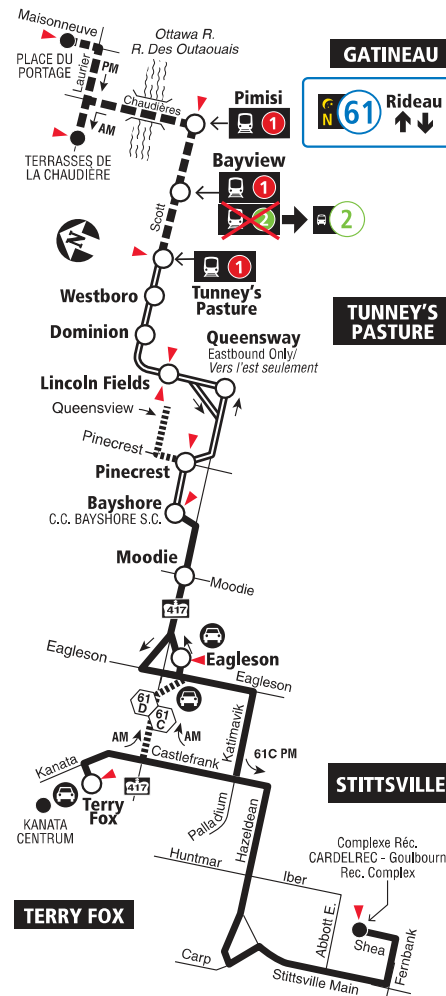


**TERRY FOX  
STITTSVILLE**  
**TUNNEY'S PASTURE  
GATINEAU**

**Rapid<sup>e</sup>**

**7 days a week / 7 jours par semaine**

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



- Transitway & Station
- Peak trips / Trajets de pointe
- Selected time periods / Périodes sélectionnées
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

**61** When O-Train Line 1 is not running overnight, Route 61 will be extended downtown to Rideau Station. / Lorsque la Ligne 1 de l'O-Train ne circule pas la nuit, le circuit 61 sera prolongée au centre-ville jusqu'à la station Rideau.

2021.09

**Schedule / Horaire ..... 613-560-1000**  
**Text / Texto\* ..... 560560**  
*plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres*

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

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

**Effective September 5, 2021**  
**En vigueur 5 septembre 2021**

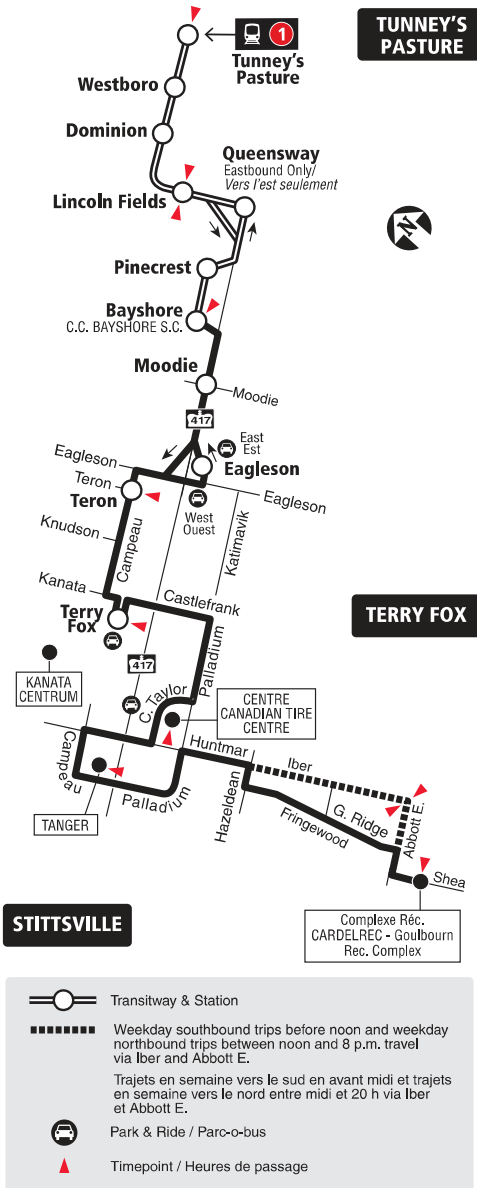


**TERRY FOX  
STITTSVILLE  
TUNNEY'S PASTURE**

**TUNNEY'S PASTURE**

**TERRY FOX**

**STITTSVILLE**



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

2021.09

**Schedule / Horaire ..... 613-560-1000**  
**Text / Texto\* ..... 560560**  
*plus your four digit bus stop number / plus votre numéro d'arrêt à quatre chiffres*

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

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

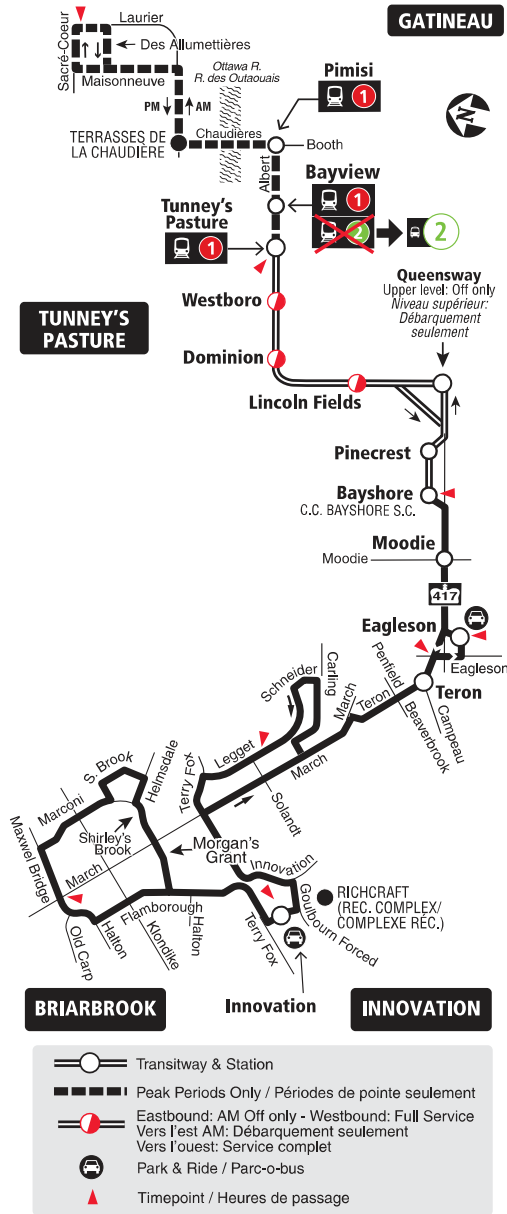
**Effective September 5, 2021**  
**En vigueur 5 septembre 2021**

**OC Transpo** INFO 613-560-5000  
octranspo.com



**INNOVATION  
BRIARBROOK  
TUNNEY'S PASTURE  
GATINEAU**

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



2021.09

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

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

**Effective September 5, 2021**  
**En vigueur 5 septembre 2021**

**OC Transpo** INFO 613-560-5000  
 octranspo.com



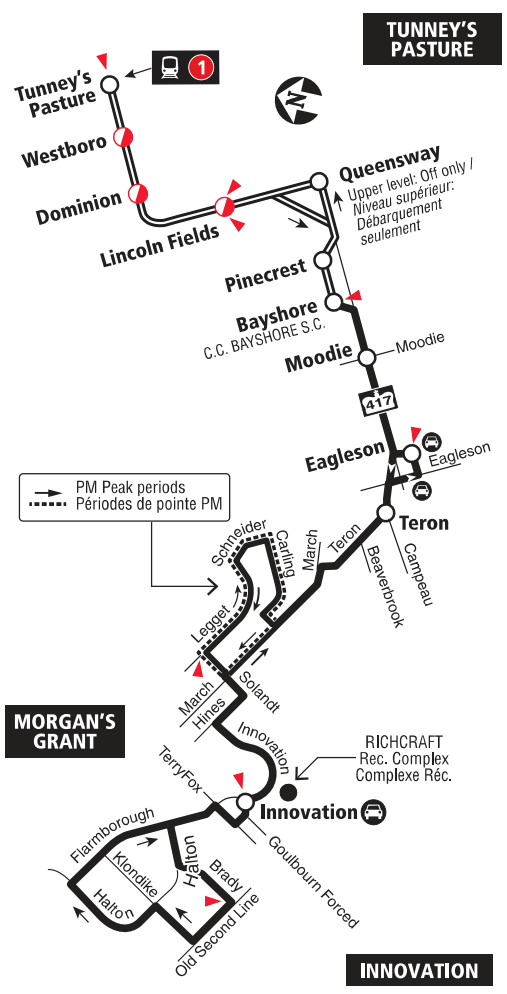
# 64

## MORGAN'S GRANT INNOVATION TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

All day service  
Service toute la journée



- Transitway & Station
- Eastbound: AM Off only - Westbound: Full Service  
Vers l'est AM: Débarquement seulement  
Vers l'ouest: Service complet
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

2021.09

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

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

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

Security / Sécurité ..... **613-741-2478**

**Effective September 5, 2021**  
**En vigueur 5 septembre 2021**

# 66

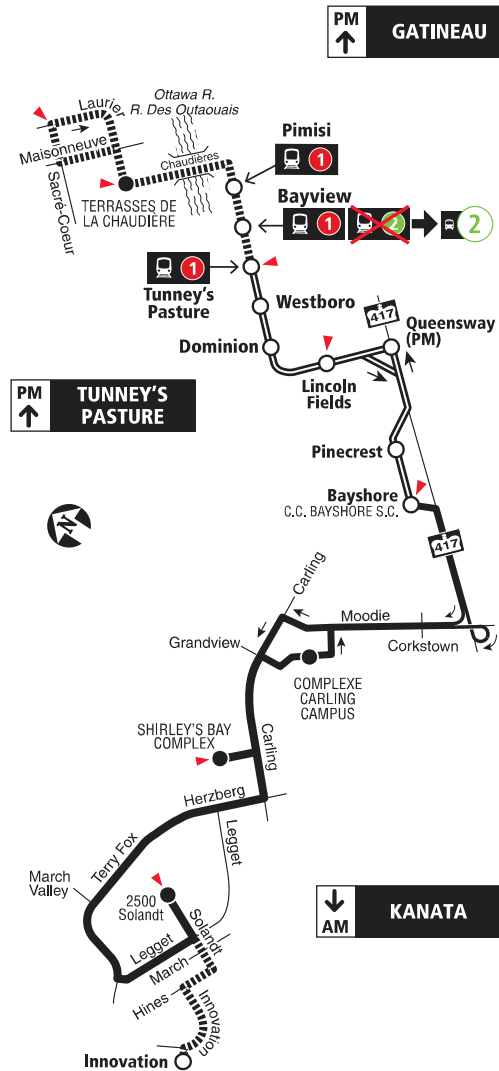
## KANATA TUNNEY'S PASTURE GATINEAU

### Local

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



2021.09



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

**Text / Texto\* ..... 560560**

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

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

Customer Service

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

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

Security / Sécurité ..... **613-741-2478**

**Effective September 5, 2021**

**En vigueur 5 septembre 2021**



INFO 613-560-5000  
octranspo.com



# 73

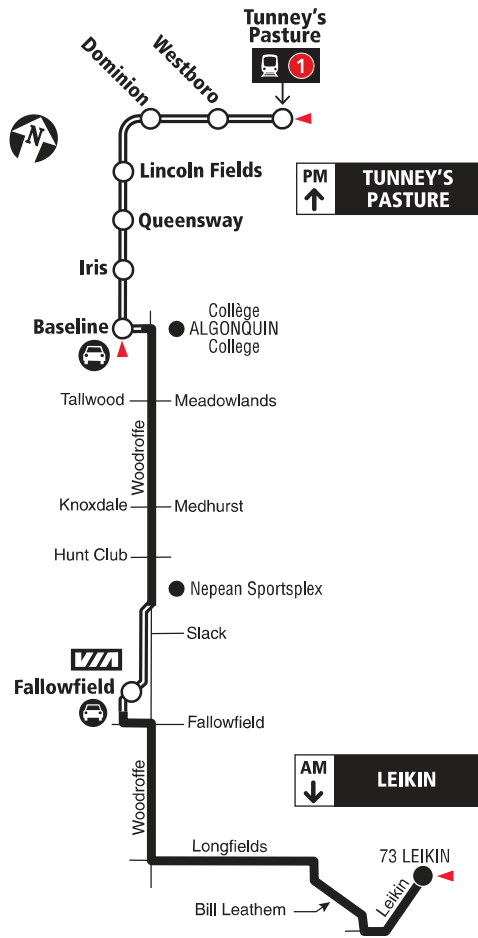
## LEIKIN TUNNEY'S PASTURE

Local

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



	Transitway & Station
	Park & Ride / Parc-o-bus
	Timepoint / Heures de passage

2019.07

**Future route after O-Train Line 1 is open**  
**Trajet du circuit après l'ouverture de la Ligne 1 de l'O-Train**

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

INFO 613-741-4390  
octranspo.com



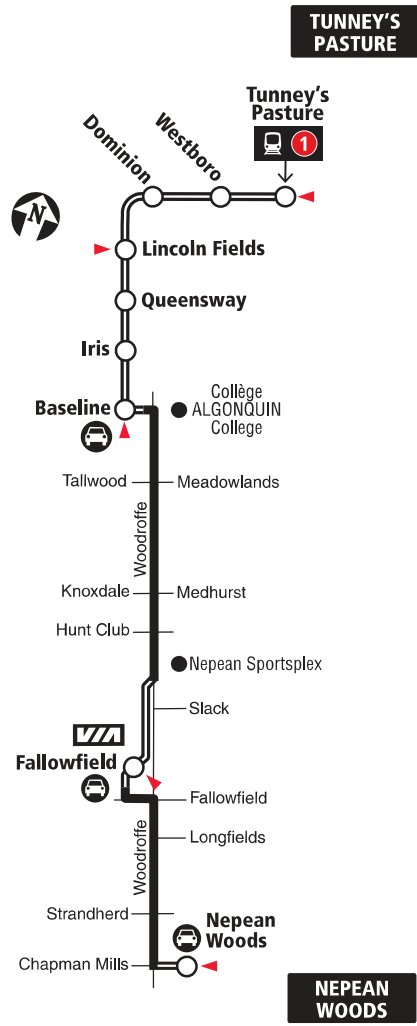


**NEPEAN WOODS  
TUNNEY'S PASTURE**

**Rapid**

**7 days a week / 7 jours par semaine**

All day service  
Service toute la journée



2021.06

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

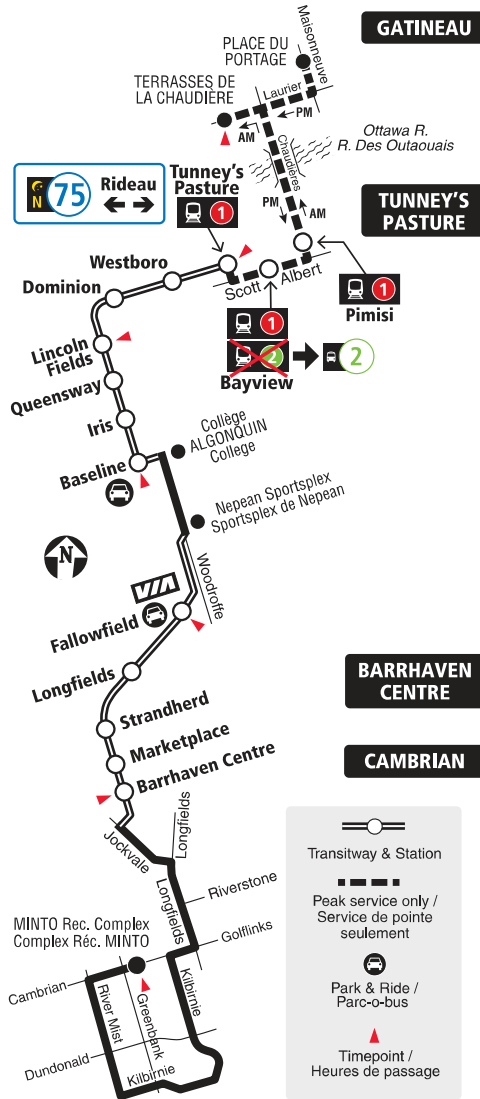
- Customer Service / Service à la clientèle ..... 613-560-5000
- Lost and Found / Objets perdus ..... 613-563-4011
- Security / Sécurité ..... 613-741-2478

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



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

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



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

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**



**INFO 613-741-4390**  
**octranspo.com**



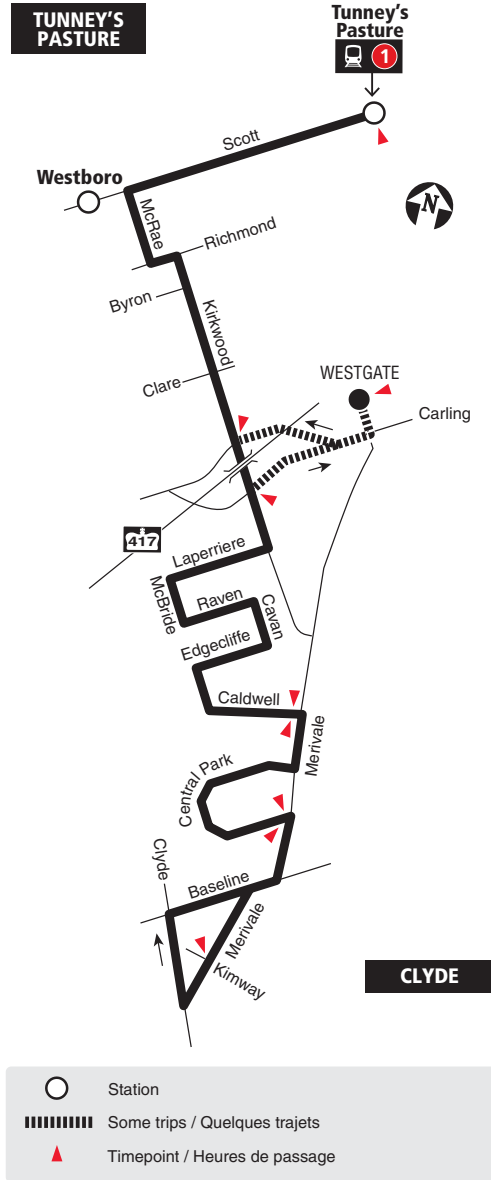
# 81

## CLYDE TUNNEY'S PASTURE

*Local*

**7 days a week / 7 jours par semaine**

No service in the evening on weekends  
Aucun service le soir les fins de semaine



2019.07



**Future route after O-Train Line 1 is open  
Trajet du circuit après l'ouverture  
de la Ligne 1 de l'O-Train**

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



INFO 613-741-4390  
octranspo.com



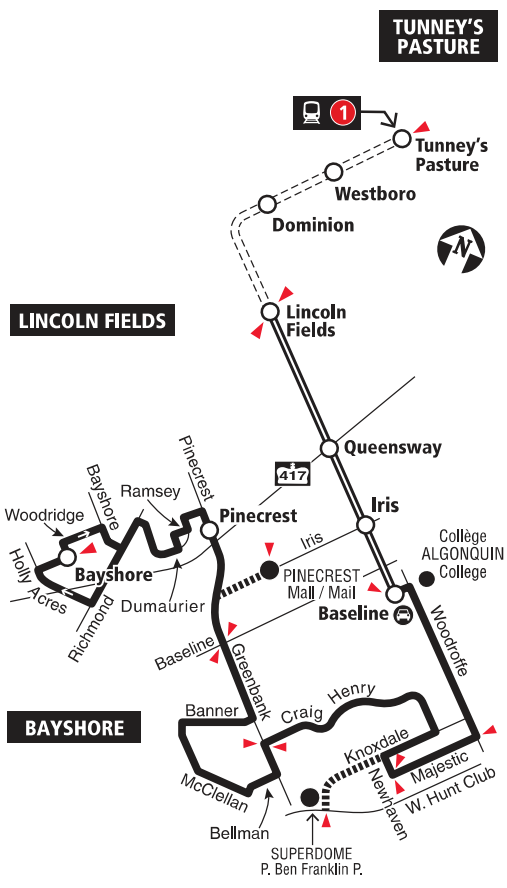
# 82

## BAYSHORE LINCOLN FIELDS TUNNEY'S PASTURE

Local

7 days a week / 7 jours par semaine

All day service  
Service toute la journée



- Transitway & Station
- Transitway & Station (Peak periods / périodes de pointe)
- Park & Ride / Parc-o-bus
- Some trips / Quelques trajets
- Timepoint / Heures de passage

2021.06

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

Customer Service  
Service à la clientèle ..... **613-741-4390**

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

Security / Sécurité ..... **613-741-2478**

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



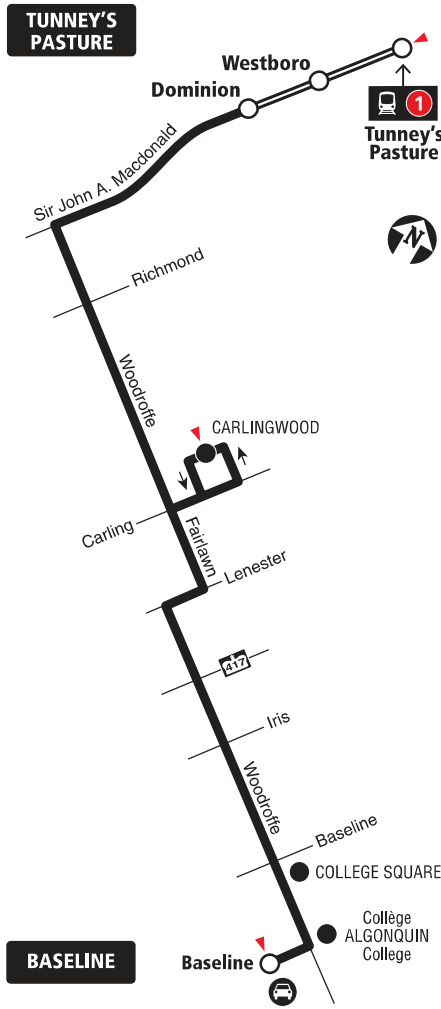
# 87

## BASELINE TUNNEY'S PASTURE

*Fréquent*

**7 days a week / 7 jours par semaine**

All day service  
Service toute la journée



- Transitway & Station
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

2019.07

**Future route after O-Train Line 1 is open**  
**Trajet du circuit après l'ouverture de la Ligne 1 de l'O-Train**

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

**OC Transpo** INFO 613-741-4390  
 octranspo.com



# 153

## LINCOLN FIELDS TUNNEY'S PASTURE CARLINGWOOD

### Local

**7 days a week / 7 jours par semaine**

Selected time periods only  
Périodes sélectionnées seulement



- Station
- ..... Some trips / Quelques trajets
- ▲ Timepoint / Heures de passage

2019.10



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

**Text / Texto .....560560**

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

Customer Relations  
Service à la clientèle ..... **613-842-3600**

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

Security / Sécurité ..... **613-741-2478**

**Effective October 6, 2019**

**En vigueur 6 octobre 2019**



**INFO 613-741-4390**  
octranspo.com



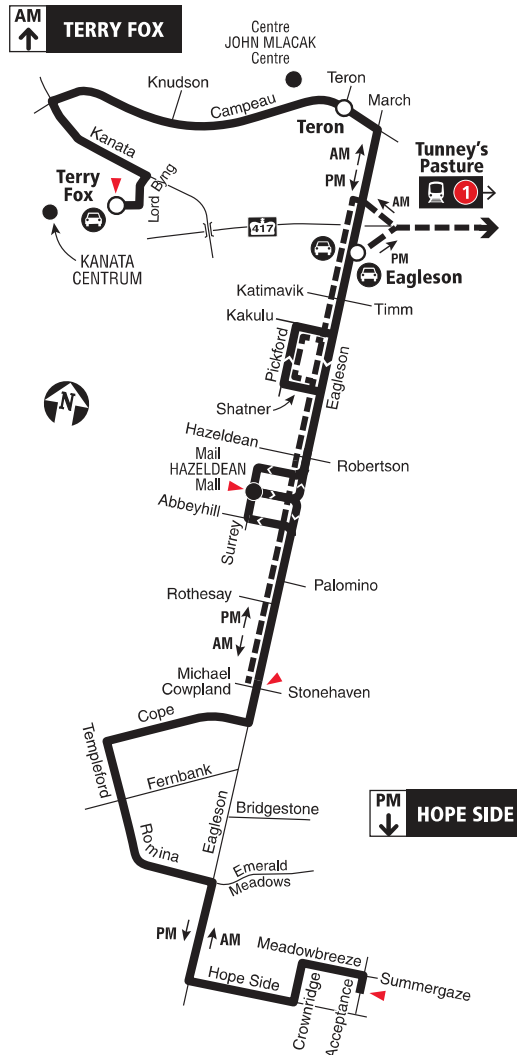
# 164

## TERRY FOX HOPE SIDE

Local

Monday to Friday/ Lundi au vendredi

Peak periods only  
Périodes de pointe seulement



- Transitway Station / Station du Transitway
- Peak Periods Only / Périodes de pointe seulement  
Some trips to / from Tunney's Pasture  
Quelques trajets de / vers Tunney's Pasture
- Park & Ride / Parc-o-bus
- Timepoint / Heures de passage

2020.12



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 December 21, 2020

En vigueur 21 décembre 2020



INFO 613-741-4390  
octranspo.com



# 252

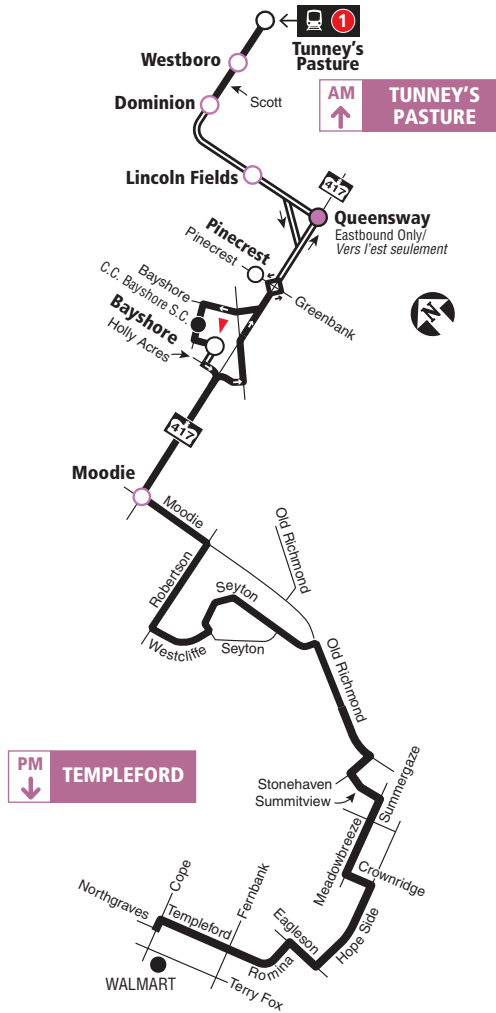
## TUNNEY'S PASTURE TEMPLEFORD

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



- Transitway & Station
- Limited stops: Off only in AM / No stop in PM  
Arrêts limités : débarquement en AM seul. / aucun arrêt en PM
- AM: Off only - PM: Full Service  
AM : débarquement seul. - PM : service complet

2022.06

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

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

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

Security / Sécurité ..... **613-741-2478**

**Effective June 26, 2022**  
**En vigueur 26 juin 2022**

**INFO 613-560-5000**  
 octranspo.com





# 256

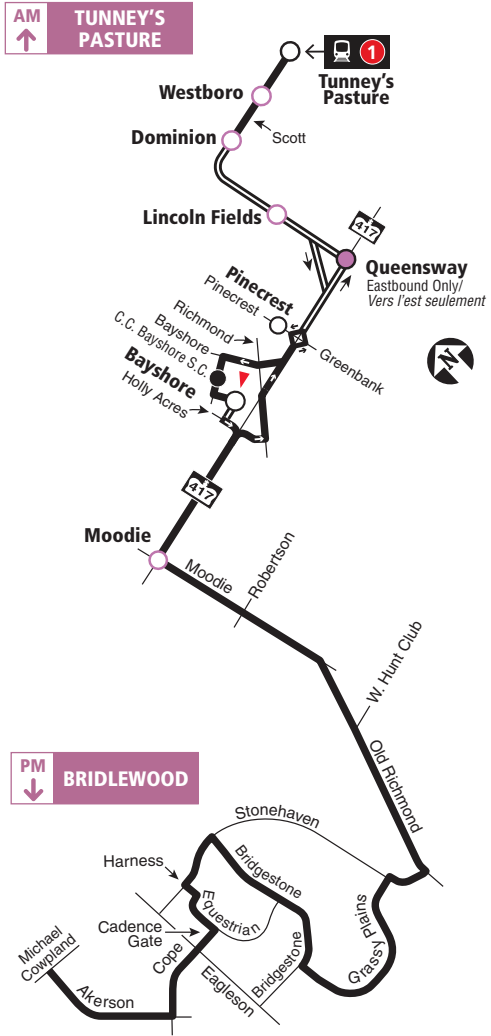
## BRIDLEWOOD TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



- Transitway & Station
- Limited stops: Off only in AM / No stop in PM  
Arrêts limités : débarquement en AM seulement / aucun arrêt en PM
- AM: Off only - PM: Full Service  
AM : débarquement seul. - PM : service complet

2022.06

2022.06

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

**Text / Texto\* ..... 560560**

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

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

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

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

Security / Sécurité ..... **613-741-2478**

**Effective June 26, 2022**  
**En vigueur 26 juin 2022**

**INFO 613-560-5000**  
**octranspo.com**



# 257

## BRIDLEWOOD TUNNEY'S PASTURE

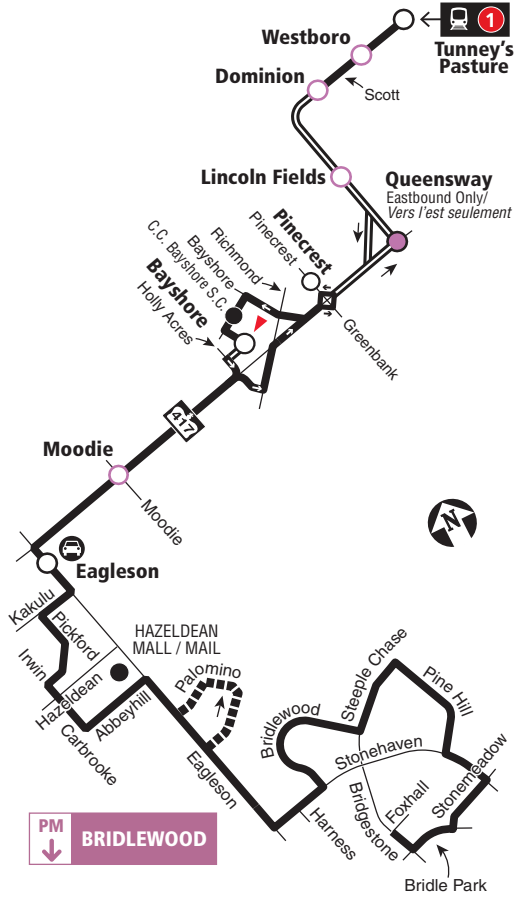
### Connexion

**Monday to Friday / Lundi au vendredi**

Peak periods only

Périodes de pointe seulement

**AM**  
↑  
**TUNNEY'S PASTURE**



**PM**  
↓  
**BRIDLEWOOD**

2022.06

- Transitway & Station
- Limited stops: Off only in AM / No stop in PM  
Arrêts limités : débarquement en AM seulement / aucun arrêt en PM
- AM: Off only - PM: Full Service  
AM : débarquement seul. - PM : service complet
- Limited service (AM only)  
Service limité (AM seulement)
- Park & Ride / Parc-o-bus

2022.06

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

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

**Effective June 26, 2022  
En vigueur 26 juin 2022**



# 258

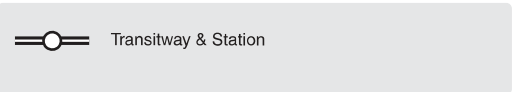
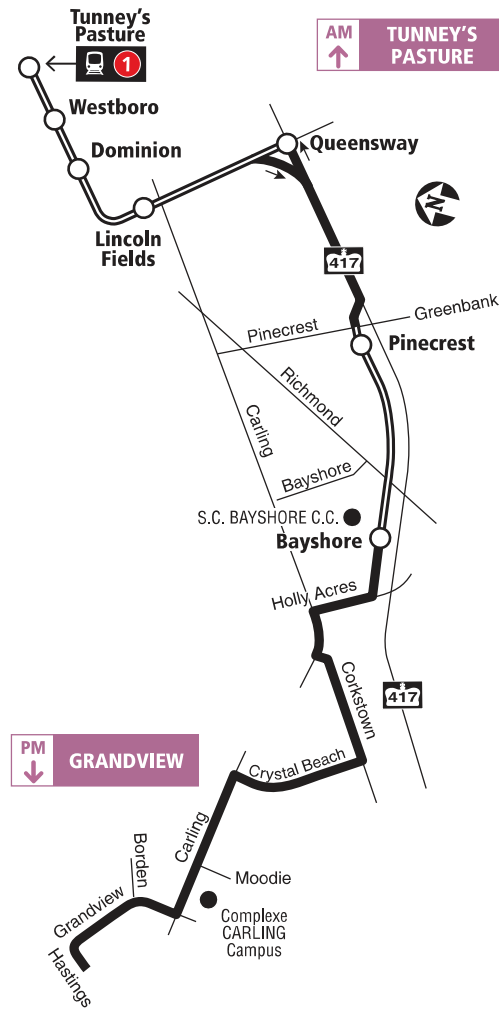
## GRANDVIEW TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



2020.01



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 January 5, 2020

En vigueur 5 janvier 2020



INFO 613-741-4390  
octranspo.com



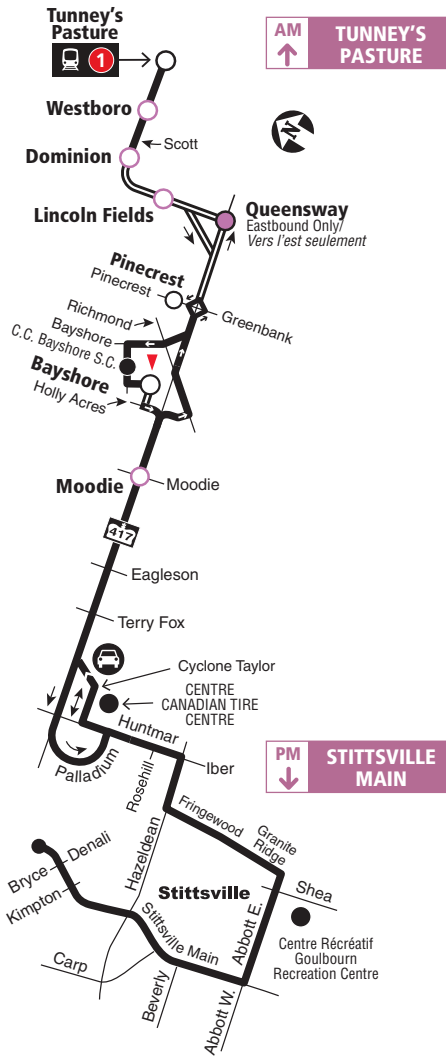
# 261

## STITTSVILLE MAIN TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only  
Périodes de pointe seulement



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

2022.06

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

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

Effective June 26, 2022  
En vigueur 26 juin 2022



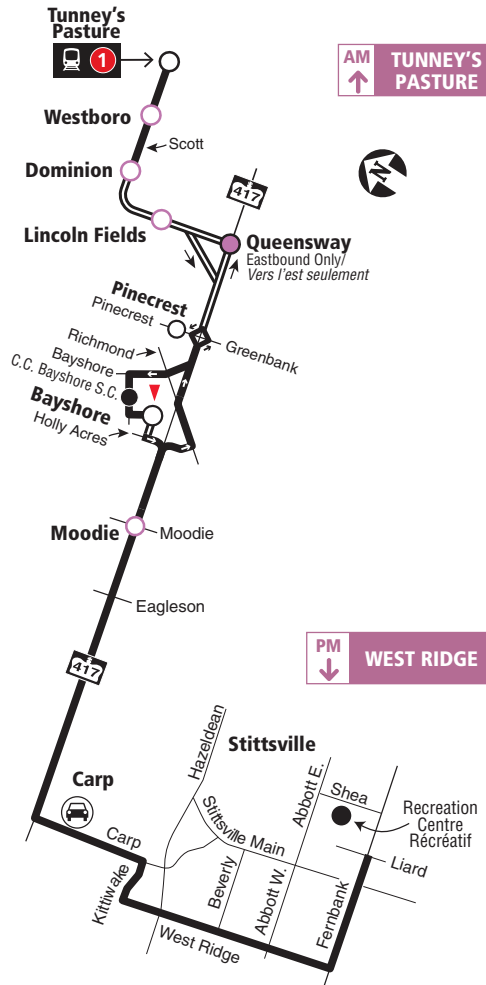
# 262

## WEST RIDGE TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only  
Périodes de pointe seulement



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

2022.06

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

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

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

Security / Sécurité ..... **613-741-2478**

**Effective June 26, 2022**  
**En vigueur 26 juin 2022**



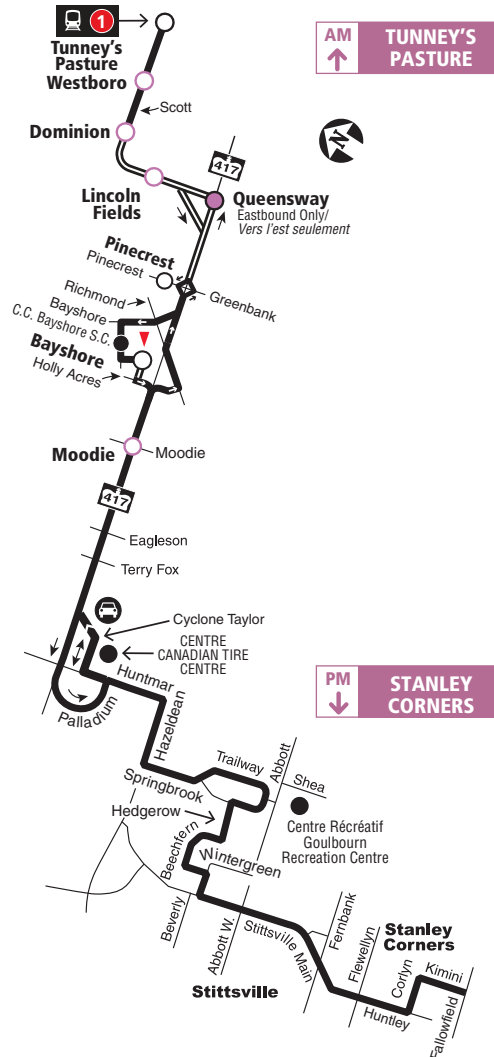
# 263

## STANLEY CORNERS TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only  
Périodes de pointe seulement



2022.06



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

**Text / Texto\* ..... 560560**

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

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

Customer Service

Service à la clientèle ..... 613-560-5000

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

Security / Sécurité ..... 613-741-2478

**Effective June 26, 2022**

**En vigueur 26 juin 2022**



**INFO 613-560-5000**  
octranspo.com



# 264

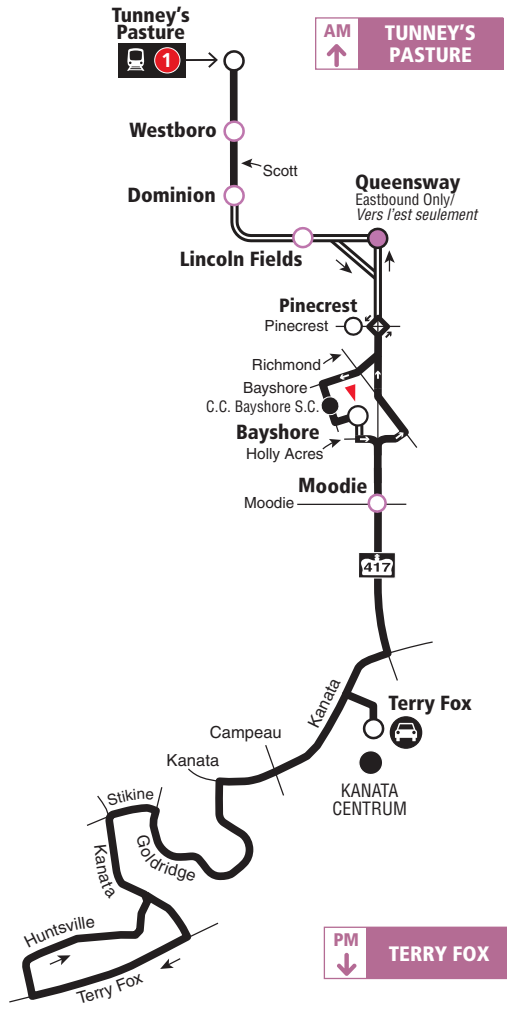
## TERRY FOX TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



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

2022.06

2022.06

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

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

**Effective June 26, 2022**  
**En vigueur 26 juin 2022**



# 265

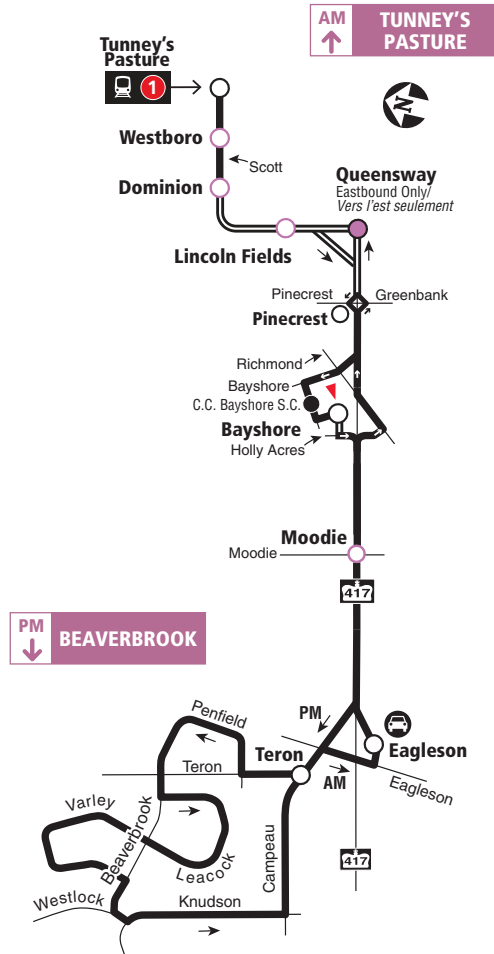
## BEAVERBROOK TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



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

2022.06

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

**Text / Texto\* ..... 560560**

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

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

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

**Effective June 26, 2022  
En vigueur 26 juin 2022**





# 267

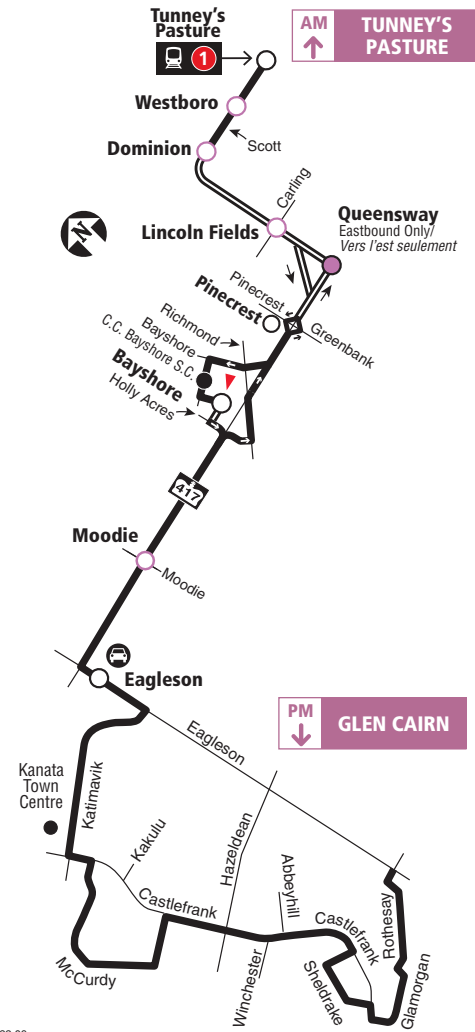
## GLEN CAIRN TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



2022.06

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

2022.06

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

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

**Effective June 26, 2022**  
**En vigueur 26 juin 2022**



# 268

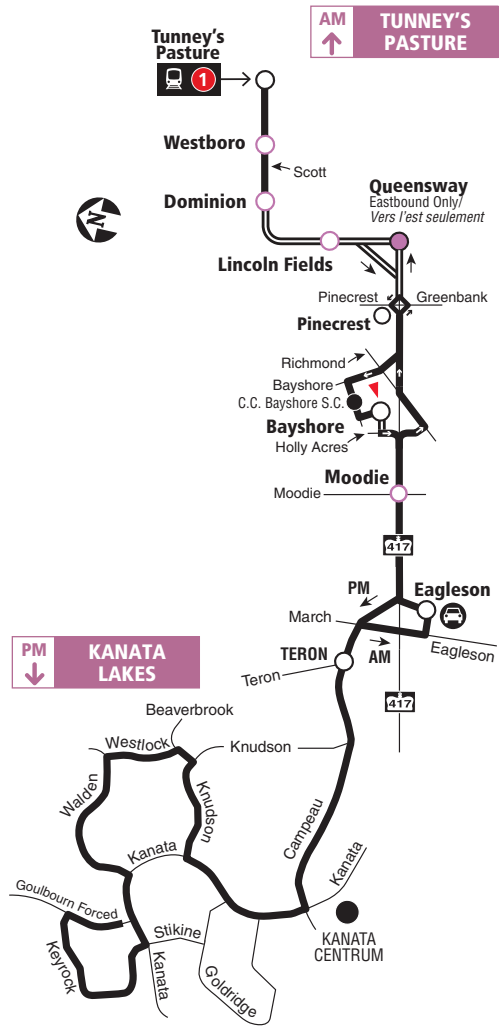
## KANATA LAKES TUNNEY'S PASTURE

### Connexion

Monday to Friday / Lundi au vendredi

Peak periods only

Périodes de pointe seulement



2022.06

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

2022.06

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

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

**Effective June 26, 2022**  
**En vigueur 26 juin 2022**



# 282

## TREND-ARLINGTON TUNNEY'S PASTURE

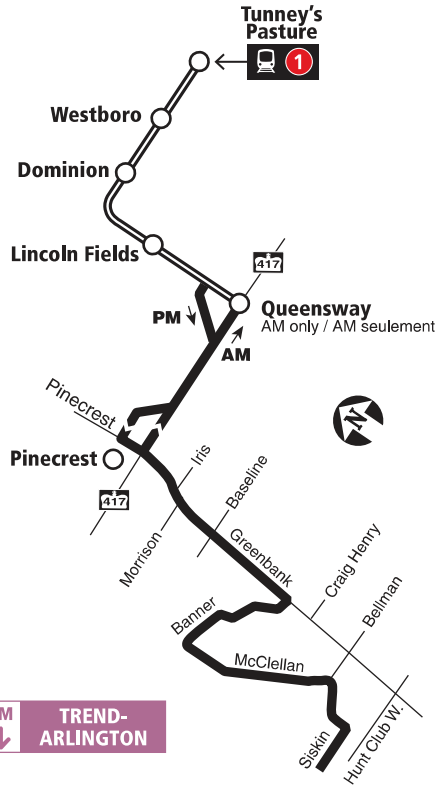
### Connexion

**Monday to Friday / Lundi au vendredi**

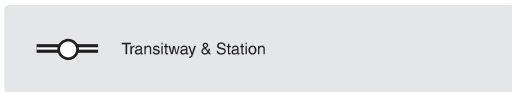
Peak periods only

Périodes de pointe seulement

**AM**  
↑  
**TUNNEY'S PASTURE**



**PM**  
↓  
**TREND-ARLINGTON**



2020.01



**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**

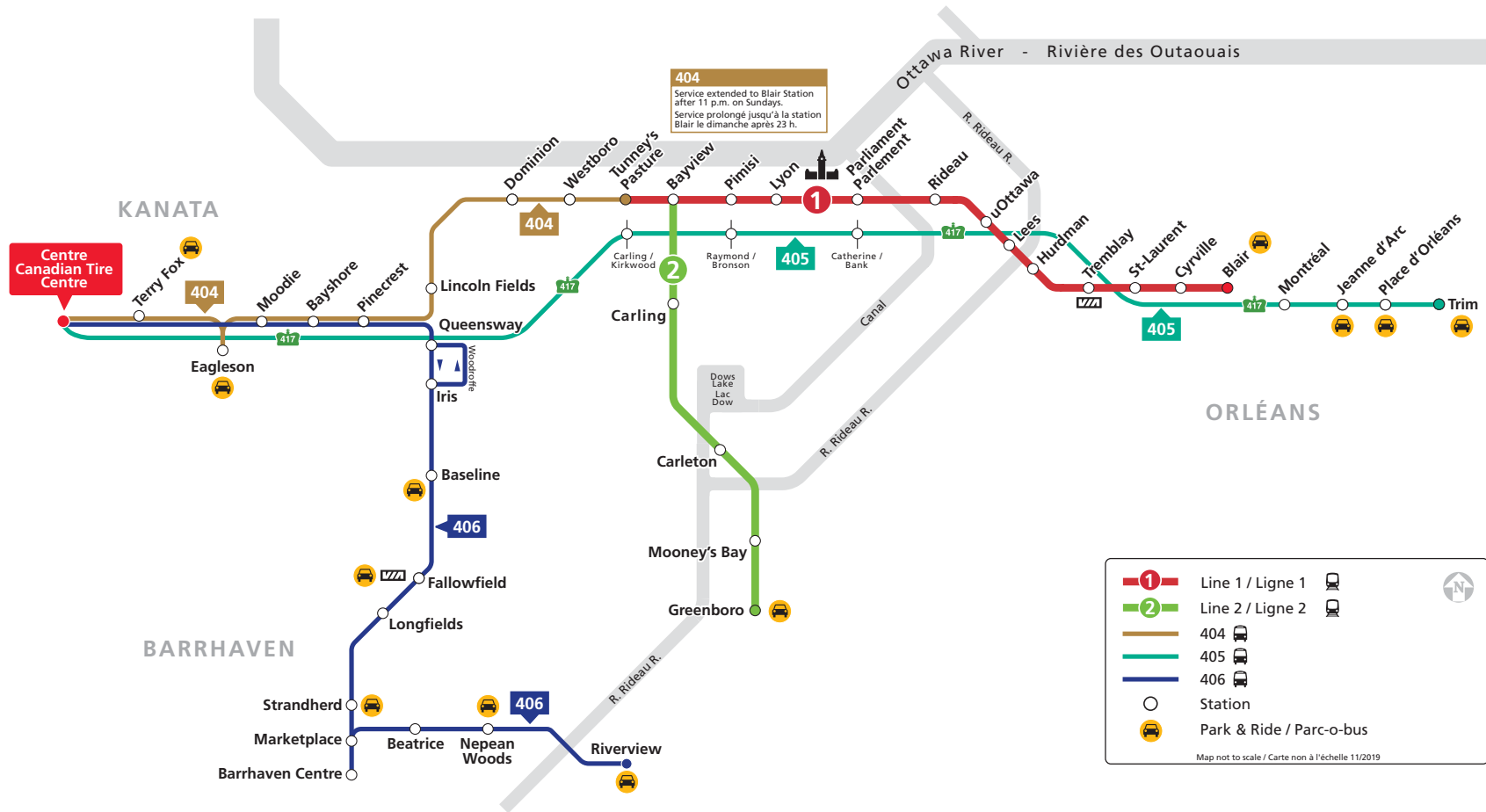
Security / Sécurité ..... **613-741-2478**

**Effective January 5, 2020**

**En vigueur 5 janvier 2020**



**INFO 613-741-4390**  
octranspo.com



**404**  
Service extended to Blair Station after 11 p.m. on Sundays.  
Service prolongé jusqu'à la station Blair le dimanche après 23 h.

**Centre Canadian Tire Centre**

**KANATA**

**BARRHAVEN**

**ORLÉANS**

	Line 1 / Ligne 1		
	Line 2 / Ligne 2		
	404		
	405		
	406		
	Station		
	Park & Ride / Parc-o-bus		

Map not to scale / Carte non à l'échelle 11/2019

Ottawa River  
riv. des Outaouais

Westboro Beach  
Plage Westboro

Rapides Remic Rapids

prom. Sir-John-A.-Macdonald

Dominion

Westboro

Tunney's Pasture

SITE

Trains replaced by buses  
Trains remplacés par des autobus



## **APPENDIX D**

---

Traffic Count Data



# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

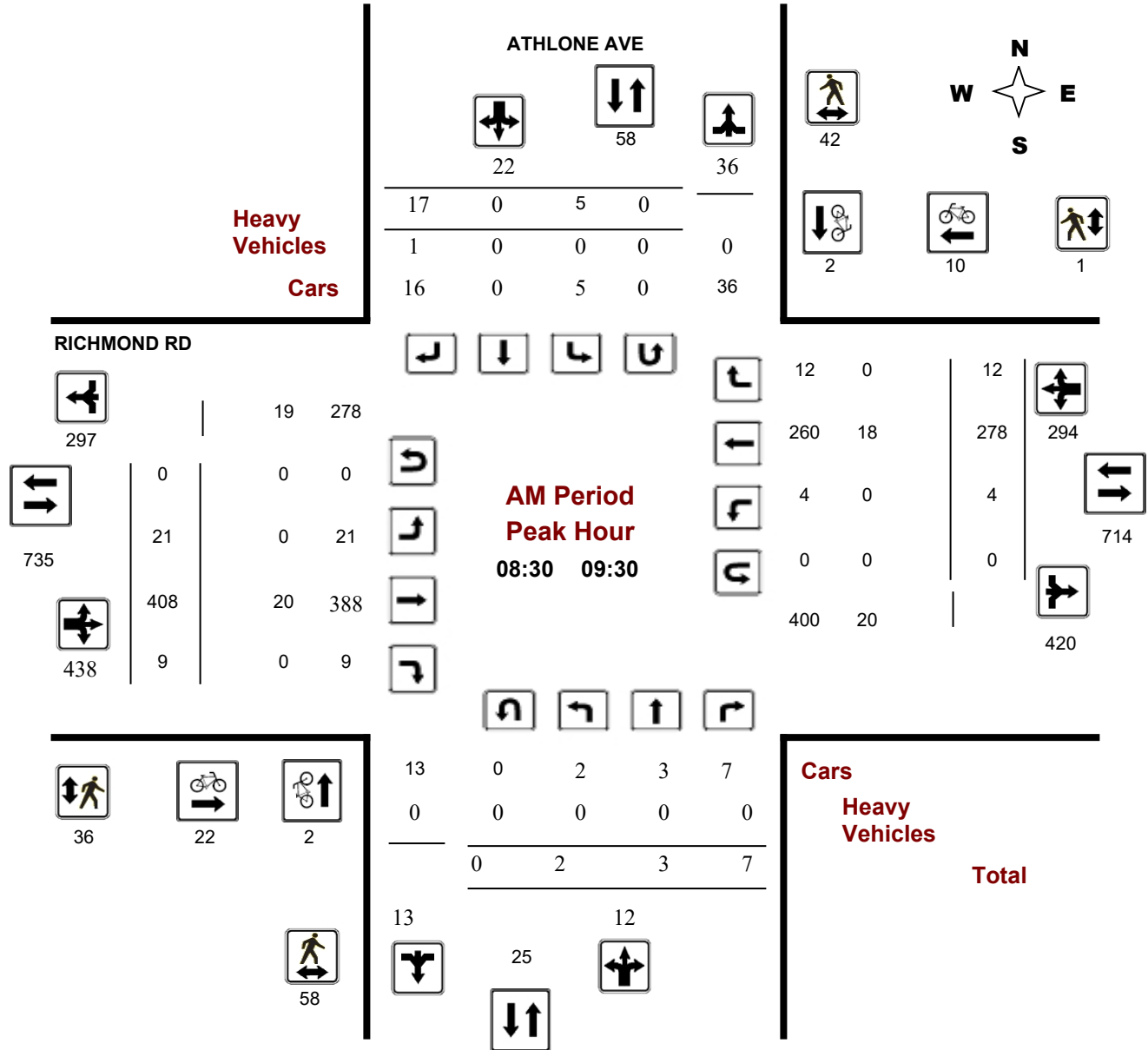
### ATHLONE AVE @ RICHMOND RD

**Survey Date:** Thursday, July 18, 2019

**Start Time:** 07:00

**WO No:** 38412

**Device:** Miovision



## Turning Movement Count - Peak Hour Diagram

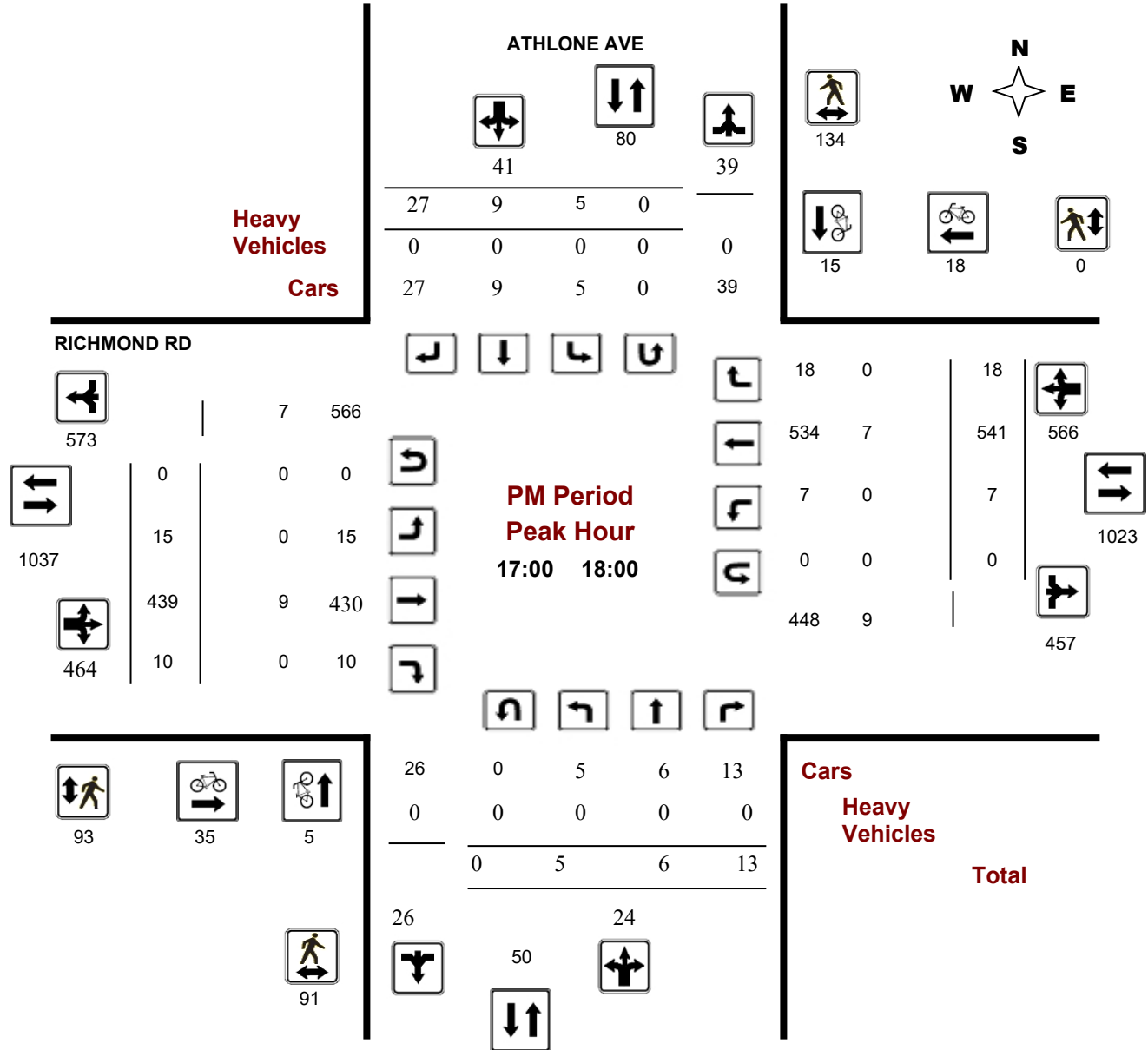
### ATHLONE AVE @ RICHMOND RD

**Survey Date:** Thursday, July 18, 2019

**Start Time:** 07:00

**WO No:** 38412

**Device:** Miovision



**Comments**





# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

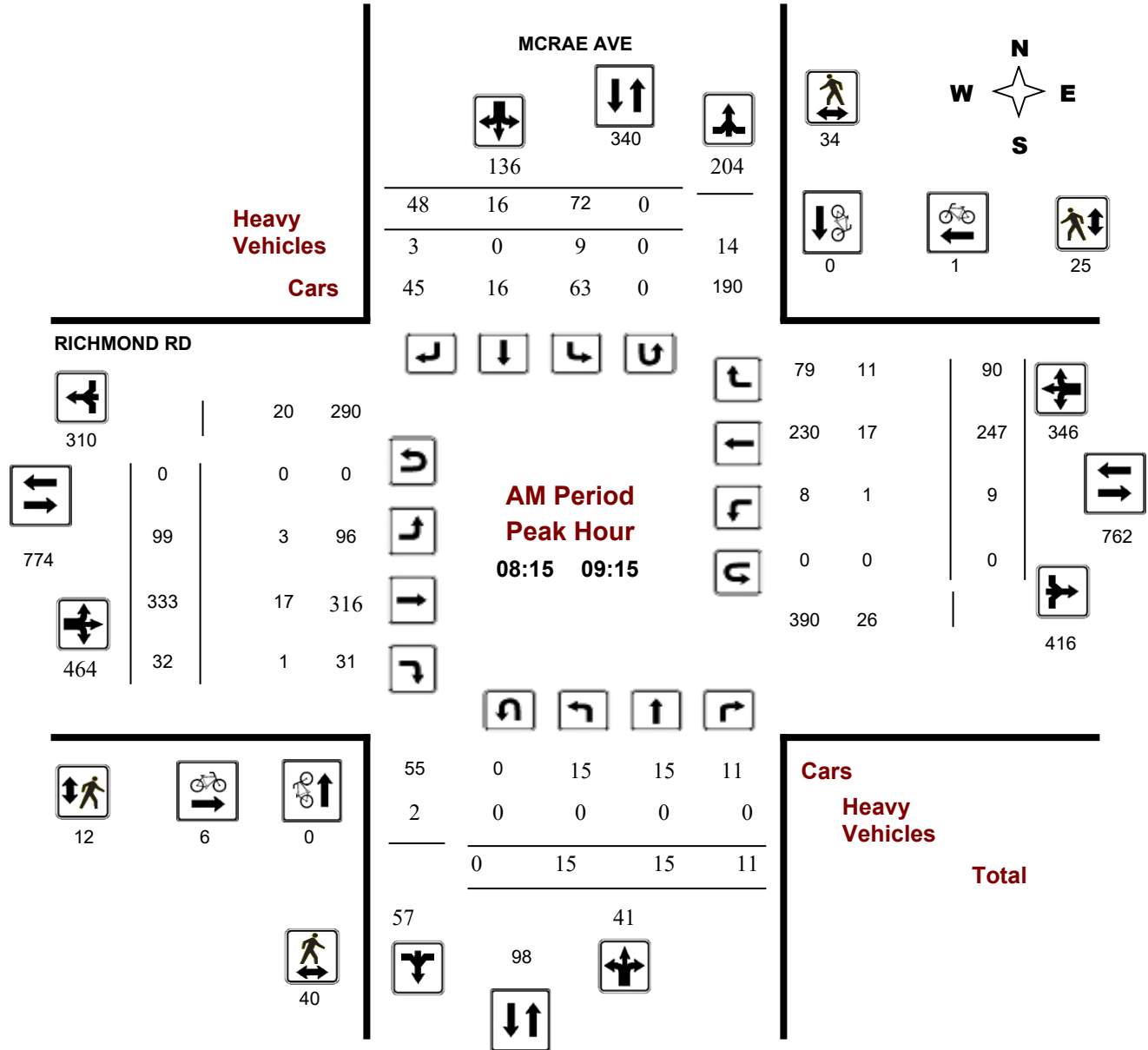
### MCRAE AVE @ RICHMOND RD

**Survey Date:** Thursday, January 23, 2020

**Start Time:** 07:00

**WO No:** 39388

**Device:** Miovision



**Comments** 5472206 - THU JAN 23, 2020 - 8HRS - LORETTA

## Turning Movement Count - Peak Hour Diagram

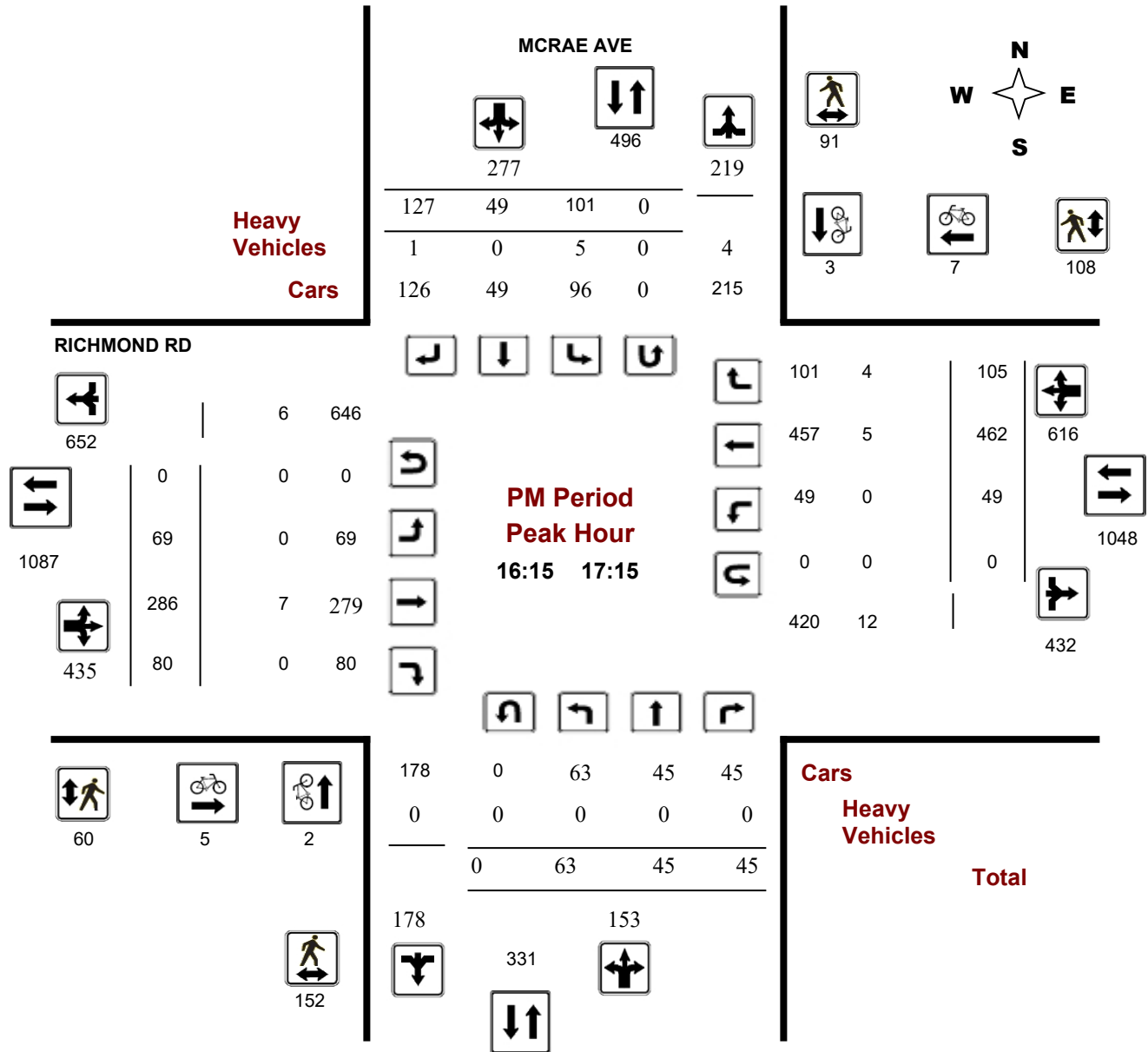
### MCRAE AVE @ RICHMOND RD

**Survey Date:** Thursday, January 23, 2020

**Start Time:** 07:00

**WO No:** 39388

**Device:** Miovision



**Comments** 5472206 - THU JAN 23, 2020 - 8HRS - LORETTA

## **APPENDIX E**

---

### Collision History Summary



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** ATHLONE AVE @ RICHMOND RD

**Traffic Control:** Traffic signal

**Total Collisions:** 8

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Mar-28, Sat,11:02	Clear	Angle	P.D. only	Dry	South	Going ahead	Pick-up truck	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Sep-16, Wed,15:32	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Nov-20, Fri,17:57	Clear	Rear end	P.D. only	Dry	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
					West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	
2018-Feb-17, Sat,21:15	Clear	Angle	Non-fatal injury	Dry	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Jul-09, Mon,12:20	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Aug-28, Tue,19:26	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Other motor vehicle	
2019-Feb-03, Sun,17:12	Snow	SMV unattended vehicle	P.D. only	Loose snow	East	Going ahead	Municipal transit bus	Unattended vehicle	0
2019-Nov-01, Fri,19:19	Rain	Angle	P.D. only	Wet	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** MCRAE AVE @ RICHMOND RD

**Traffic Control:** Traffic signal

**Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Aug-29, Sat,08:15	Clear	Rear end	P.D. only	Dry	East	Going ahead	Pick-up truck	Other motor vehicle	0
					East	Stopped	Pick-up truck	Other motor vehicle	
2015-Dec-12, Sat,08:55	Clear	Angle	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					South	Going ahead	Pick-up truck	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** MCRAE AVE @ RICHMOND RD

**Traffic Control:** Traffic signal

**Total Collisions:** 14

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2017-Jan-30, Mon,13:48	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Pedestrian	1
2017-Jul-15, Sat,13:28	Clear	SMV other	Non-fatal injury	Dry	West	Turning left	Automobile, station wagon	Pedestrian	1
2017-Dec-23, Sat,15:30	Snow	Rear end	P.D. only	Loose snow	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Feb-16, Fri,13:02	Clear	SMV other	Non-fatal injury	Wet	West	Turning left	Automobile, station wagon	Pedestrian	1
2018-Mar-11, Sun,16:28	Clear	Angle	P.D. only	Dry	South	Reversing	Automobile, station wagon	Other motor vehicle	0
					East	Turning left	Automobile, station wagon	Other motor vehicle	
2018-Apr-06, Fri,12:32	Clear	Rear end	P.D. only	Dry	West	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Apr-12, Thu,08:30	Freezing Rain	Rear end	P.D. only	Wet	East	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Stopped	Automobile, station wagon	Other motor vehicle	
2018-Jun-27, Wed,17:01	Clear	Sideswipe	P.D. only	Dry	West	Changing lanes	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	
2018-Nov-22, Thu,19:35	Clear	Turning movement	Non-fatal injury	Dry	East	Making "U" turn	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Pick-up truck	Other motor vehicle	
2019-Jan-12, Sat,10:00	Clear	Rear end	P.D. only	Packed snow	South	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					South	Stopped	Automobile, station wagon	Other motor vehicle	
					South	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Jan-19, Sat,16:30	Snow	Rear end	P.D. only	Loose snow	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Automobile, station wagon	Other motor vehicle	
2019-Feb-16, Sat,15:34	Clear	SMV unattended vehicle	P.D. only	Dry	East	Turning right	Truck and trailer	Unattended vehicle	0



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** RICHMOND RD @ TWEEDSMUIR AVE

**Traffic Control:** Stop sign

**Total Collisions:** 7

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Mar-03, Tue,18:55	Snow	Angle	P.D. only	Packed snow	South	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2015-Jun-10, Wed,12:17	Clear	Turning movement	Non-fatal injury	Dry	West	Going ahead	Bicycle	Other motor vehicle	0
					West	Turning right	Automobile, station wagon	Cyclist	
2015-Aug-22, Sat,14:58	Rain	SMV other	Non-fatal injury	Wet	West	Going ahead	Motorcycle	Skidding/sliding	0
2017-Sep-16, Sat,18:42	Clear	Angle	P.D. only	Dry	South	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-16, Tue,21:21	Clear	Angle	P.D. only	Dry	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Nov-15, Fri,13:30	Unknown	Rear end	P.D. only	Wet	West	Slowing or stopping	Automobile, station wagon	Other motor vehicle	0
					West	Stopped	Unknown	Other motor vehicle	
2019-Dec-29, Sun,03:11	Clear	Angle	Non-fatal injury	Wet	North	Going ahead	Automobile, station wagon	Other motor vehicle	0
					West	Going ahead	Automobile, station wagon	Other motor vehicle	

**Location:** RICHMOND RD btwn ATHLONE AVE & TWEEDSMUIR AVE

**Traffic Control:** No control

**Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-May-21, Thu,16:45	Clear	Angle	P.D. only	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					West	Turning left	Pick-up truck	Other motor vehicle	
2015-May-22, Fri,12:55	Clear	Other	P.D. only	Dry	West	Reversing	Automobile, station wagon	Other motor vehicle	0
					East	Slowing or stopping	Pick-up truck	Other motor vehicle	
2015-Oct-30, Fri,19:40	Clear	Angle	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	



# Transportation Services - Traffic Services

## Collision Details Report - Public Version

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

**Location:** RICHMOND RD btwn ATHLONE AVE & TWEEDSMUIR AVE

**Traffic Control:** No control

**Total Collisions:** 6

Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2016-Apr-28, Thu,19:30	Clear	Sideswipe	Non-fatal injury	Dry	East	Stopped	Automobile, station wagon	Cyclist	0
					East	Going ahead	Bicycle	Other motor vehicle	
2019-Jun-02, Sun,19:30	Clear	Angle	P.D. only	Dry	North	Turning right	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Automobile, station wagon	Other motor vehicle	
2019-Jul-24, Wed,18:08	Clear	Angle	Non-fatal injury	Dry	North	Turning left	Automobile, station wagon	Other motor vehicle	0
					East	Going ahead	Motorcycle	Other motor vehicle	

**Location:** RICHMOND RD btwn TWEEDSMUIR AVE & MCRAE AVE

**Traffic Control:** No control

**Total Collisions:** 2

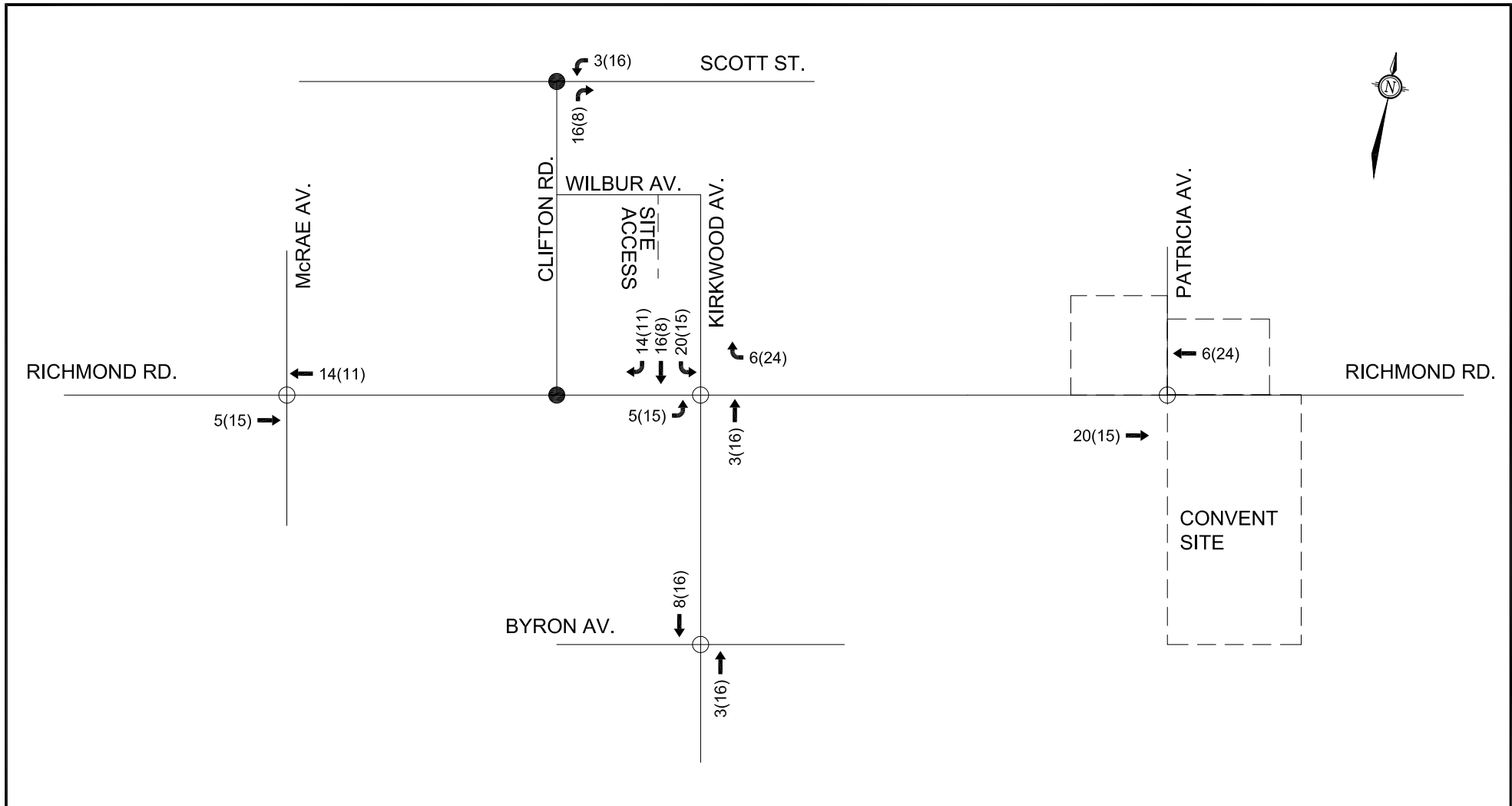
Date/Day/Time	Environment	Impact Type	Classification	Surface Cond'n	Veh. Dir	Vehicle Manoeuver	Vehicle type	First Event	No. Ped
2015-Sep-14, Mon,09:24	Clear	SMV unattended vehicle	Non-fatal injury	Dry	East	Going ahead	Passenger van	Unattended vehicle	0
2017-Jan-16, Mon,00:00	Clear	SMV unattended vehicle	P.D. only	Dry	Unknown	Unknown	Unknown	Unattended vehicle	0

## **APPENDIX F**

---

Other Area Developments





**NOVATECH**  
**ENGINEERING**  
**CONSULTANTS LTD.**

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

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

**LEGEND**

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

175 RICHMOND ROAD

PROPOSED SITE TRAFFIC

SEP 2011

111130

FIGURE 9

Figure 13: New Site Generation Auto Volumes

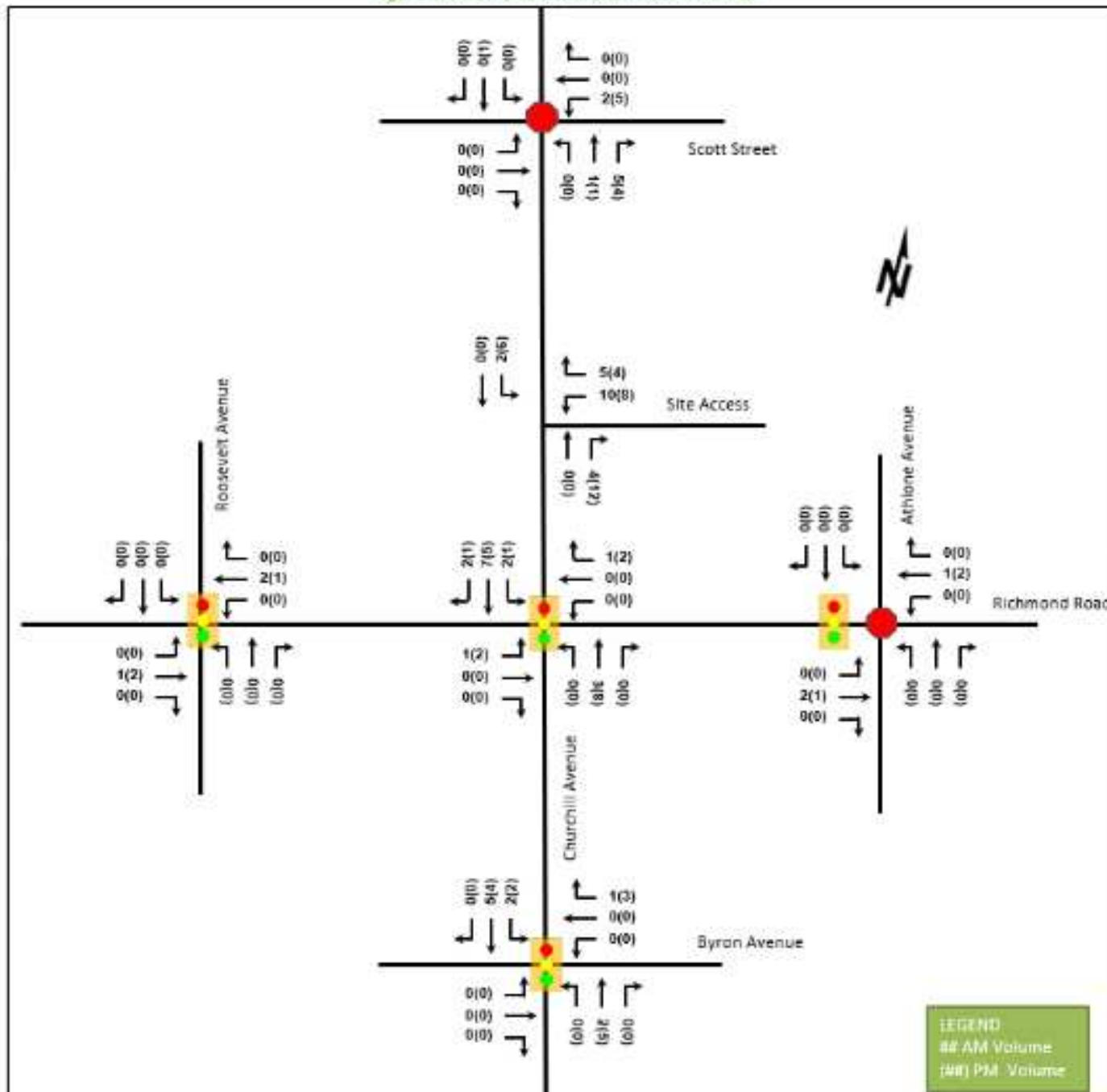
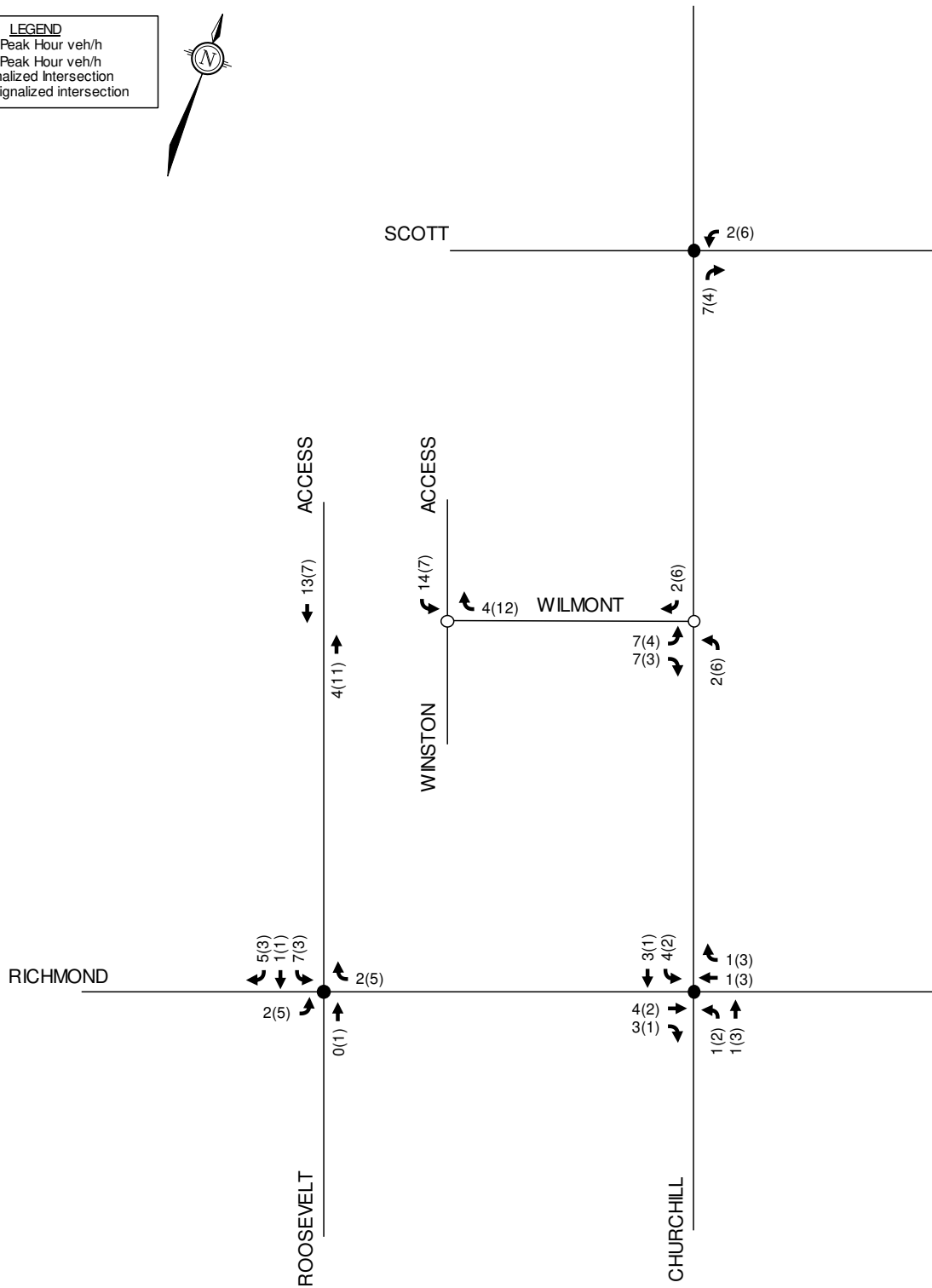


Figure 10: Site Generated Traffic

LEGEND	
xx	AM Peak Hour veh/h
(yy)	PM Peak Hour veh/h
●	Signalized Intersection
○	Unsignalized intersection



## **APPENDIX G**

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### TDM Checklists

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

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

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

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

TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of commuter cyclists (assuming the cycling mode share target is met), plus the expected peak number of customer/visitor cyclists	<input type="checkbox"/>
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	<input type="checkbox"/>
<b>2.2 Secure bicycle parking</b>		
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 <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
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)	<input type="checkbox"/>
<b>2.3 Shower &amp; change facilities</b>		
BASIC	2.3.1 Provide shower and change facilities for the use of active commuters	<input type="checkbox"/>
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	<input type="checkbox"/>
<b>2.4 Bicycle repair station</b>		
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)	<input type="checkbox"/>

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



TDM-supportive design & infrastructure measures: <i>Non-residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	<input checked="" type="checkbox"/>
<b>BASIC</b>	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<input type="checkbox"/>
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly ( <i>see Zoning By-law Section 104</i> )	<input type="checkbox"/>
<b>BETTER</b>	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 ( <i>see Zoning By-law Section 111</i> )	<input type="checkbox"/>
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	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)	<input type="checkbox"/>
<b>7. OTHER</b>		
<b>7.1 On-site amenities to minimize off-site trips</b>		
<b>BETTER</b>	7.1.1 Provide on-site amenities to minimize mid-day or mid-commute errands	<input type="checkbox"/>

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

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

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

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

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>2. WALKING &amp; CYCLING: END-OF-TRIP FACILITIES</b>		
<b>2.1 Bicycle parking</b>		
REQUIRED	2.1.1 Provide bicycle parking in highly visible and lighted areas, sheltered from the weather wherever possible (see <i>Official Plan policy 4.3.6</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.2 Provide the number of bicycle parking spaces specified for various land uses in different parts of Ottawa; provide convenient access to main entrances or well-used areas (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
REQUIRED	2.1.3 Ensure that bicycle parking spaces and access aisles meet minimum dimensions; that no more than 50% of spaces are vertical spaces; and that parking racks are securely anchored (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BASIC	2.1.4 Provide bicycle parking spaces equivalent to the expected number of resident-owned bicycles, plus the expected peak number of visitor cyclists	<input type="checkbox"/>
<b>2.2 Secure bicycle parking</b>		
REQUIRED	2.2.1 Where more than 50 bicycle parking spaces are provided for a single residential building, locate at least 25% of spaces within a building/structure, a secure area (e.g. supervised parking lot or enclosure) or bicycle lockers (see <i>Zoning By-law Section 111</i> )	<input checked="" type="checkbox"/>
BETTER	2.2.2 Provide secure bicycle parking spaces equivalent to at least the number of units at condominiums or multi-family residential developments	<input type="checkbox"/>
<b>2.3 Bicycle repair station</b>		
BETTER	2.3.1 Provide a permanent bike repair station, with commonly used tools and an air pump, adjacent to the main bicycle parking area (or secure bicycle parking area, if provided)	<input type="checkbox"/>
<b>3. TRANSIT</b>		
<b>3.1 Customer amenities</b>		
BASIC	3.1.1 Provide shelters, lighting and benches at any on-site transit stops	<input type="checkbox"/>
BASIC	3.1.2 Where the site abuts an off-site transit stop and insufficient space exists for a transit shelter in the public right-of-way, protect land for a shelter and/or install a shelter	<input type="checkbox"/>
BETTER	3.1.3 Provide a secure and comfortable interior waiting area by integrating any on-site transit stops into the building	<input type="checkbox"/>

TDM-supportive design & infrastructure measures: <i>Residential developments</i>		Check if completed & add descriptions, explanations or plan/drawing references
<b>4. RIDESHARING</b>		
<b>4.1 Pick-up &amp; drop-off facilities</b>		
<b>BASIC</b>	4.1.1 Provide a designated area for carpool drivers (plus taxis and ride-hailing services) to drop off or pick up passengers without using fire lanes or other no-stopping zones	<input type="checkbox"/>
<b>5. CARSHARING &amp; BIKESHARING</b>		
<b>5.1 Carshare parking spaces</b>		
<b>BETTER</b>	5.1.1 Provide up to three carshare parking spaces in an R3, R4 or R5 Zone for specified residential uses (see <i>Zoning By-law Section 94</i> )	<input type="checkbox"/>
<b>5.2 Bikeshare station location</b>		
<b>BETTER</b>	5.2.1 Provide a designated bikeshare station area near a major building entrance, preferably lighted and sheltered with a direct walkway connection	<input type="checkbox"/>
<b>6. PARKING</b>		
<b>6.1 Number of parking spaces</b>		
<b>REQUIRED</b>	6.1.1 Do not provide more parking than permitted by zoning, nor less than required by zoning, unless a variance is being applied for	<input checked="" type="checkbox"/>
<b>BASIC</b>	6.1.2 Provide parking for long-term and short-term users that is consistent with mode share targets, considering the potential for visitors to use off-site public parking	<input type="checkbox"/>
<b>BASIC</b>	6.1.3 Where a site features more than one use, provide shared parking and reduce the cumulative number of parking spaces accordingly (see <i>Zoning By-law Section 104</i> )	<input type="checkbox"/>
<b>BETTER</b>	6.1.4 Reduce the minimum number of parking spaces required by zoning by one space for each 13 square metres of gross floor area provided as shower rooms, change rooms, locker rooms and other facilities for cyclists in conjunction with bicycle parking (see <i>Zoning By-law Section 111</i> )	<input type="checkbox"/>
<b>6.2 Separate long-term &amp; short-term parking areas</b>		
<b>BETTER</b>	6.2.1 Provide separate areas for short-term and long-term parking (using signage or physical barriers) to permit access controls and simplify enforcement (i.e. to discourage residents from parking in visitor spaces, and vice versa)	<input type="checkbox"/>

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

<b>Legend</b>	
<b>BASIC</b>	The measure is generally feasible and effective, and in most cases would benefit the development and its users
<b>BETTER</b>	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

<b>TDM measures: Residential developments</b>		<b>Check if proposed &amp; add descriptions</b>
<b>1. TDM PROGRAM MANAGEMENT</b>		
<b>1.1 Program coordinator</b>		
<b>BASIC</b>	★ 1.1.1 Designate an internal coordinator, or contract with an external coordinator	<input type="checkbox"/>
<b>1.2 Travel surveys</b>		
<b>BETTER</b>	1.2.1 Conduct periodic surveys to identify travel-related behaviours, attitudes, challenges and solutions, and to track progress	<input type="checkbox"/>
<b>2. WALKING AND CYCLING</b>		
<b>2.1 Information on walking/cycling routes &amp; destinations</b>		
<b>BASIC</b>	2.1.1 Display local area maps with walking/cycling access routes and key destinations at major entrances ( <i>multi-family, condominium</i> )	<input checked="" type="checkbox"/>
<b>2.2 Bicycle skills training</b>		
<b>BETTER</b>	2.2.1 Offer on-site cycling courses for residents, or subsidize off-site courses	<input type="checkbox"/>

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

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