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39 Years

# 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*

Novatech File: 121193
Ref: R-2021-124

NOVATECH
Engineers, Planners & Landscape Architects

March 25, 2022

City of Ottawa
Planning and Growth Management Department
110 Laurier Ave. W., 4th 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**

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. This revised TIA has been prepared to reflect changes in the site plan and address City comments.

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, B.Sc.
E.I.T. | Transportation/Traffic



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# TIA Plan Reports

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

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

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

**CERTIFICATION**

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

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

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Dated at ____Ottawa____ this __25th__ day of _____March_____, 2022.
(City)

Name: _____Brad Byvelds, P.Eng._____
(Please Print)

Professional Title: _____Project Coordinator, Transportation/Traffic_____

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

| **Office Contact Information (Please Print)** | |
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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 has frontage on Richmond Road which is designated as a Traditional Mainstreet on Schedule B 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, in areas designated Traditional Mainstreet in the Official Plan.'

The proposed development will replace the existing commercial retail building, restaurant, and single residential unit with a nine-storey condo building containing 87 dwelling units, approximately 390 square metres of retail space and 240 square metres of restaurant space. The development is anticipated to be constructed in a single phase with full occupancy in the year 2023. 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. In addition, the development has proposed 96 underground parking spaces and 18 electric vehicle charging stations.

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 2022. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2022 and horizon year 2027.

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 194 bicycle parking spaces will be provided within the underground parking garage. In total, 196 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 2 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 has frontage on Richmond Road which is designated as a Traditional Mainstreet on Schedule B 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, in areas designated Traditional Mainstreet in the Official Plan.'

The proposed development will replace the existing commercial retail building, restaurant, and single residential unit with a nine-storey condo building containing 87 dwelling units, approximately 390 square metres of retail space and 240 square metres of restaurant space. The development is anticipated to be constructed in a single phase with full occupancy in the year 2023. 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 96 underground parking spaces and 18 electric vehicle charging stations. Additionally, two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 194 will be provided within the underground parking garage. In total, 196 bicycle parking spaces will be provided.

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

### 1.3 Screening Form

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

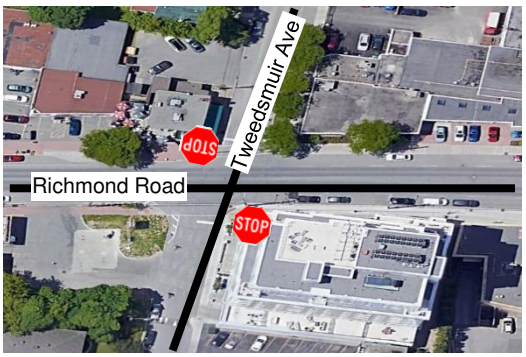
### 2.1.2 Study Area Intersections

*Richmond Road/Athlone Avenue*

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



*Richmond Road/McRae Road*

- Signalized four-legged intersection
- North/South/East Approaches: one left-turn/through/ right-turn shared lane
- West Approach: one left-turn/through/right-turn shared 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 (future Light Rail Transit station) is located north of Scott Street at 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, 73, 74, 75, 82, 87, 153, 164, 258, 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 |
| **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 |

| Route | From ↔ To | Frequency |
|---|---|---|
| **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 |
| **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 |
| **258** | Grandview ↔ Tunney's Pasture | 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 |

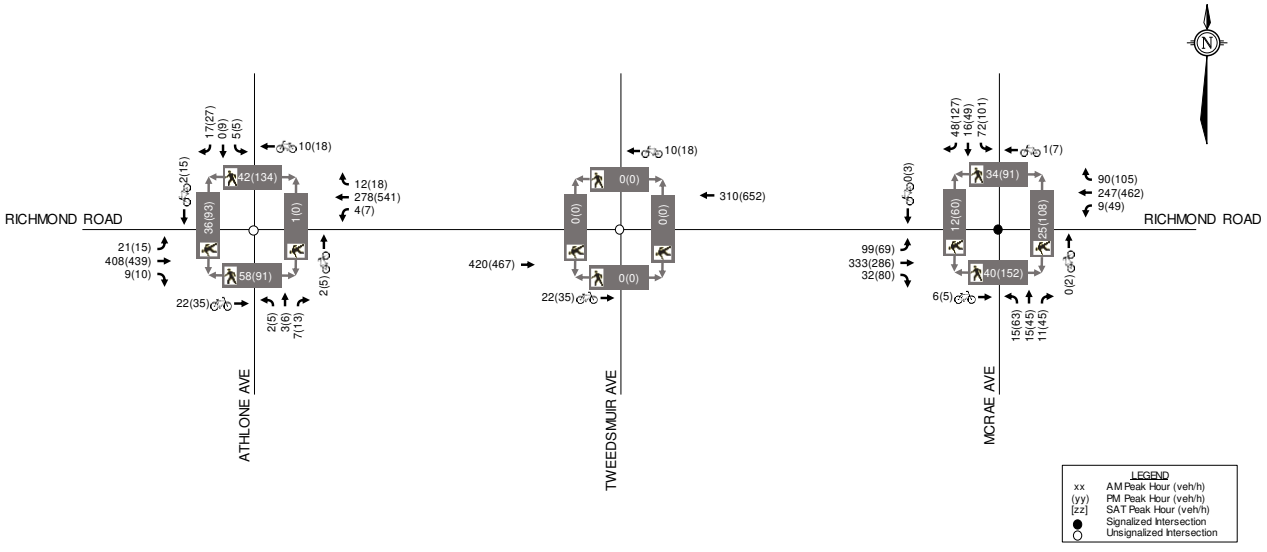
### 2.1.7 Existing Traffic Volumes

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**.

**Figure 3: Existing Traffic Volumes**



### 2.1.8 Collision Records

Historical collision data from the last five years was obtained from the City's Public Works and Service Department for the study area intersections. 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**.

**Table 2: Collision History Summary**

| Intersection/Road Segment | Impact Types | | | | | Total |
|---|---|---|---|---|---|---|
| | Angle | Rear-end | Sideswipe | Turning | SMV[1]/ 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:

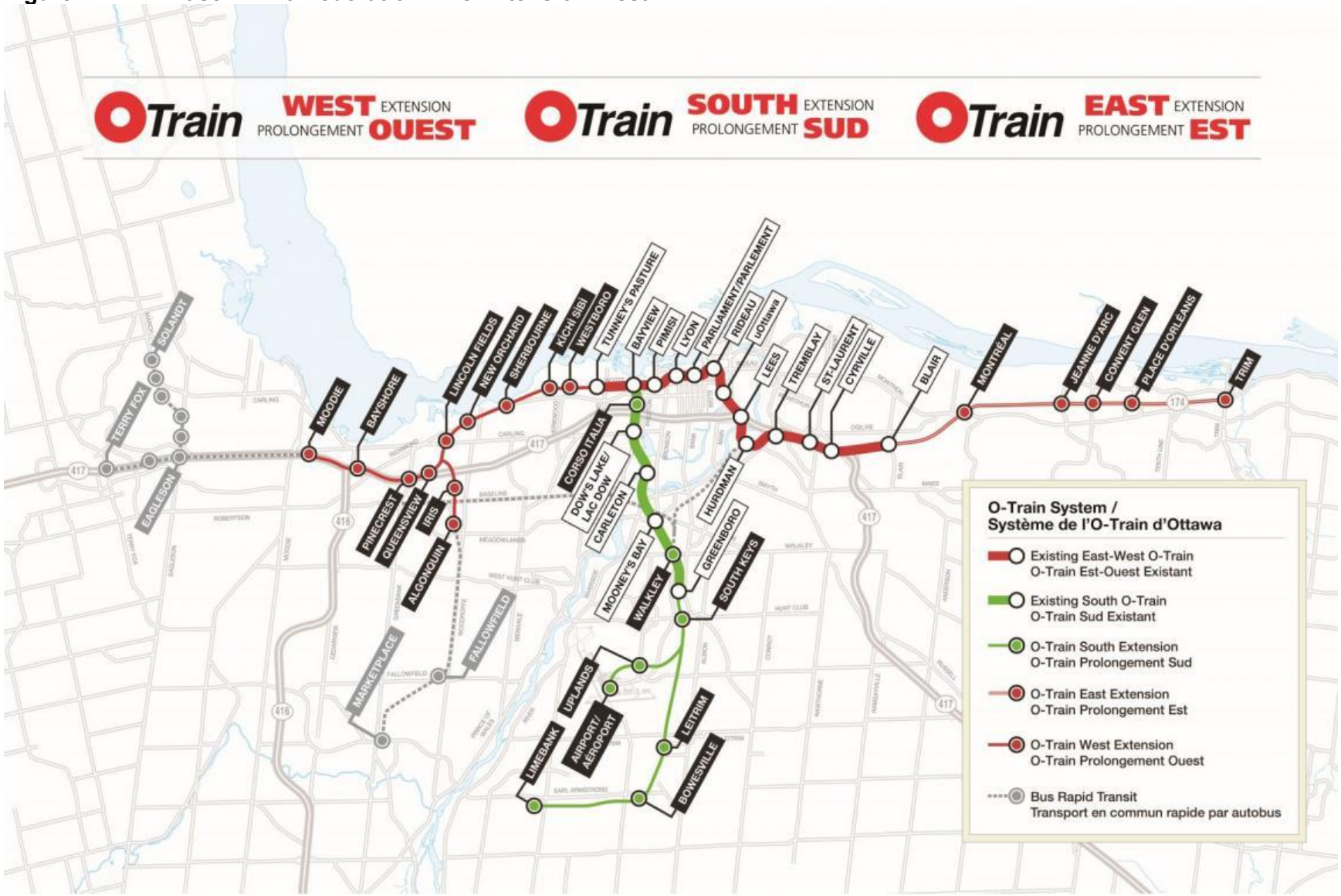
- *114 Richmond Road*: nine storey addition consisting of an apartment building and conversion of the convent into a mixed-use building.
- *175 Richmond Road*: nine-storey mixed-use building to accommodate commercial uses on the main floors and residential uses above. There are 241 residential units proposed and approximately 675 m² 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.

## 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 2022. As such, this TIA considers the weekday AM and PM peak hours for the buildout year 2022 and horizon year 2027.

**Figure 4: LRT Phase 2 – Confederation Line Extension West**



## 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 |
|---|---|---|---|
| **Design Review Component** | | | |
| **4.1** Development Design | *4.1.2* Circulation and Access | • Only required for site plans | Not Exempt |
| | *4.1.3* New Street Networks | • Only required for plans of subdivision | Exempt |
| **4.2** Parking | *4.2.1* Parking Supply | • Only required for site plans | Not Exempt |
| | *4.2.2* Spillover Parking | • Only required for site plans where parking supply is 15% below unconstrained demand | Exempt |
| **Network Impact Component** | | | |
| **4.5** Transportation Demand Management | *All elements* | • Not required for site plans expected to have fewer than 60 employees and/or students on location at any given time | Not Exempt |
| **4.6** Neighbourhood Traffic Management | *4.6.1* Adjacent Neighbourhoods | • Only required when the development relies on local or collector streets for access and total volumes exceed ATM capacity thresholds | Exempt |
| **4.8** Network Concept | *All elements* | • Only required when proposed development generates more than 200 person-trips during the peak hour in excess of the equivalent volume permitted by the established zoning | Exempt |

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

# 3.0 FORECASTING

## 3.1 Development-Generated Travel Demand

### 3.1.1 Trip Generation

*Trips Generated from Existing Development*

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, 10th 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)[1] | | | PM Peak Hour (PPH)[1] | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| Shopping Centre | 820 | 7,000 ft$^2$ | 6 | 3 | *9* | 17 | 18 | *35* |
| High-Turnover Restaurant | 932 | 4,000 ft$^2$ | 0 | 0 | *0* | 31 | 19 | *50* |
| | | **Total** | **6** | **3** | ***9*** | **48** | **37** | ***85*** |

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 |
| **Shopping Centre Person Trips** | | **6** | **3** | ***9*** | **17** | **18** | ***35*** |
| Auto Driver | 50% | 3 | 2 | *5* | 8 | 9 | *17* |
| Auto Passenger | 15% | 1 | 0 | *1* | 3 | 2 | *5* |
| Transit | 10% | 1 | 0 | *1* | 2 | 2 | *4* |
| Cyclist | 5% | 0 | 0 | *0* | 1 | 1 | *2* |
| Pedestrian | 20% | 1 | 1 | *2* | 3 | 4 | *7* |
| **Restaurant Person Trips** | | **0** | **0** | ***0*** | **31** | **19** | ***50*** |
| Auto Driver | 35% | 0 | 0 | *0* | 11 | 7 | *18* |
| Auto Passenger | 10% | 0 | 0 | *0* | 3 | 2 | *5* |
| Transit | 5% | 0 | 0 | *0* | 2 | 1 | *3* |
| Cyclist | 5% | 0 | 0 | *0* | 2 | 1 | *3* |
| Pedestrian | 45% | 0 | 0 | *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.

*Trips Generated from Proposed Residential Development*

The proposed redevelopment will include 87 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 TRANS Trip Generation Manual, prepared in 2020 by WSP Canada. The trip generation rates are taken from Table 3 and correspond to High-Rise Residential 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)[1] | | | PM Peak Period (PPP)[1] | | |
|---|---|---|---|---|---|---|---|---|
| | | | In | Out | Total | In | Out | Total |
| High-Rise Residential, Ottawa West | AM: 0.80<br>PM: 0.90 | 87 units | 22 | 48 | 70 | 45 | 33 | 78 |

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% |
| **Proposed** | **25%** | **10%** | **40%** | **5%** | **20%** |

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 |
| **Residential Person Trips** | | **22** | **48** | ***70*** | **45** | **33** | ***78*** |
| Auto Driver | 25% | 6 | 12 | *18* | 11 | 9 | *20* |
| Auto Passenger | 10% | 2 | 5 | *7* | 5 | 3 | *8* |
| Transit | 40% | 9 | 18 | *27* | 18 | 12 | *30* |
| Cyclist | 5% | 1 | 3 | *4* | 2 | 2 | *4* |
| Pedestrian | 20% | 4 | 10 | *14* | 9 | 7 | *16* |

Table 4 of the 2020 O-D 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 |
| **Residential Person Trips** | | | **12** | **25** | ***37*** | **21** | **16** | ***37*** |
| Auto Driver | 0.48 | 0.44 | 3 | 6 | *9* | 5 | 4 | *9* |
| Auto Passenger | 0.48 | 0.44 | 1 | 2 | *3* | 2 | 2 | *4* |
| Transit | 0.55 | 0.47 | 5 | 10 | *15* | 8 | 6 | *14* |
| Cyclist | 0.58 | 0.48 | 1 | 1 | *2* | 1 | 1 | *2* |
| Pedestrian | 0.58 | 0.52 | 2 | 6 | *8* | 5 | 3 | *8* |

From the previous tables, the proposed residential uses are estimated to generate 37 person trips (including nine vehicle trips) during the AM Peak Hour and 37 person trips (including nine vehicle trips) during the PM peak hour.

*Trips Generated from Proposed Commercial Development*

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 2,550 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$^2$ | 3 | 2 | *5* | 11 | 11 | *22* |
| High-Turnover Restaurant | 932 | 2,550 ft$^2$ | 18 | 15 | *33* | 20 | 12 | *32* |
| | | **Total** | **21** | **17** | ***38*** | **31** | **23** | ***54*** |

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 |
| **Shopping Centre Person Trips** | | **3** | **2** | ***5*** | **11** | **11** | ***22*** |
| Auto Driver | 50% | 2 | 0 | *2* | 5 | 7 | *12* |
| Auto Passenger | 15% | 0 | 1 | *1* | 2 | 1 | *3* |
| Transit | 10% | 0 | 1 | *1* | 1 | 1 | *2* |
| Cyclist | 5% | 0 | 0 | *0* | 1 | 0 | *1* |
| Pedestrian | 20% | 1 | 0 | *1* | 2 | 2 | *4* |
| **Restaurant Person Trips** | | **18** | **15** | ***33*** | **20** | **12** | ***32*** |
| Auto Driver | 35% | 6 | 6 | *12* | 7 | 4 | *11* |
| Auto Passenger | 10% | 2 | 1 | *3* | 2 | 1 | *3* |
| Transit | 5% | 1 | 1 | *2* | 1 | 1 | *2* |
| Cyclist | 5% | 1 | 1 | *2* | 1 | 1 | *2* |
| Pedestrian | 45% | 8 | 6 | *14* | 9 | 5 | *14* |

Based on the previous table, the proposed commercial uses are projected to generate 38 person trips during the AM peak period and 54 person trips during the PM peak period. Of the trips generated, 14 and 23 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 |
| *Existing Development* | | | | | | |
| Auto Driver | 3 | 2 | *5* | 19 | 16 | *35* |
| Auto Passenger | 1 | 0 | *1* | 6 | 4 | *10* |
| Transit | 1 | 0 | *1* | 4 | 3 | *7* |
| Cyclist | 0 | 0 | *0* | 3 | 2 | *5* |
| Pedestrian | 1 | 1 | *2* | 16 | 12 | *28* |
| **Total** | **6** | **3** | ***9*** | **48** | **37** | ***85*** |
| *Proposed Development* | | | | | | |
| Auto Driver | 11 | 12 | *23* | 17 | 15 | *32* |
| Auto Passenger | 3 | 4 | *7* | 6 | 4 | *10* |
| Transit | 6 | 12 | *18* | 10 | 8 | *18* |
| Cyclist | 2 | 2 | *4* | 3 | 2 | *5* |
| Pedestrian | 11 | 12 | *23* | 16 | 10 | *26* |
| **Total** | **33** | **42** | ***75*** | **52** | **39** | ***91*** |
| *Net Trips* | | | | | | |
| Auto Driver | 8 | 10 | *18* | -2 | -1 | *-3* |
| Auto Passenger | 2 | 4 | *6* | 0 | 0 | *0* |
| Transit | 5 | 12 | *17* | 6 | 5 | *11* |
| Cyclist | 2 | 2 | *4* | 0 | 0 | *0* |
| Pedestrian | 10 | 11 | *21* | 0 | -2 | *-2* |
| **Total** | **27** | **39** | ***66*** | **4** | **2** | ***6*** |

Based on the previous table, the vehicle trip generation for the proposed development is expected to increase by eight vehicle trips during the AM peak hours and is anticipated to decrease by two vehicle trips during the PM peak hour. The proposed development is expected to generate an additional 14 and 11 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 m² 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 2022 and 2027 is shown in **Figure 5** and **Figure 6**.

**Figure 5: 2022 Background Traffic Volumes**

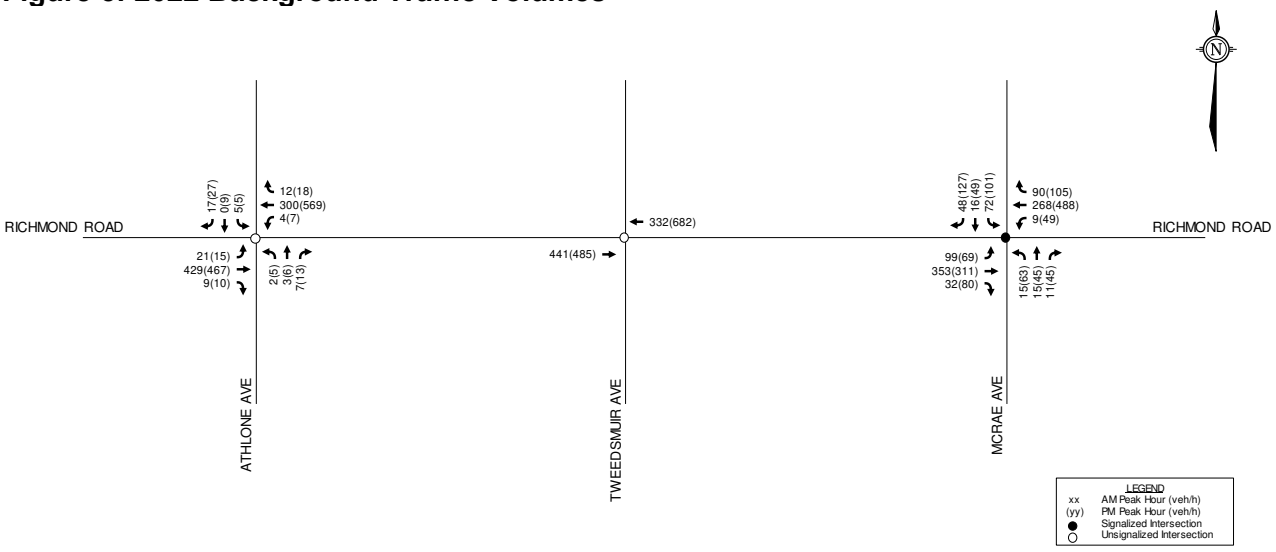
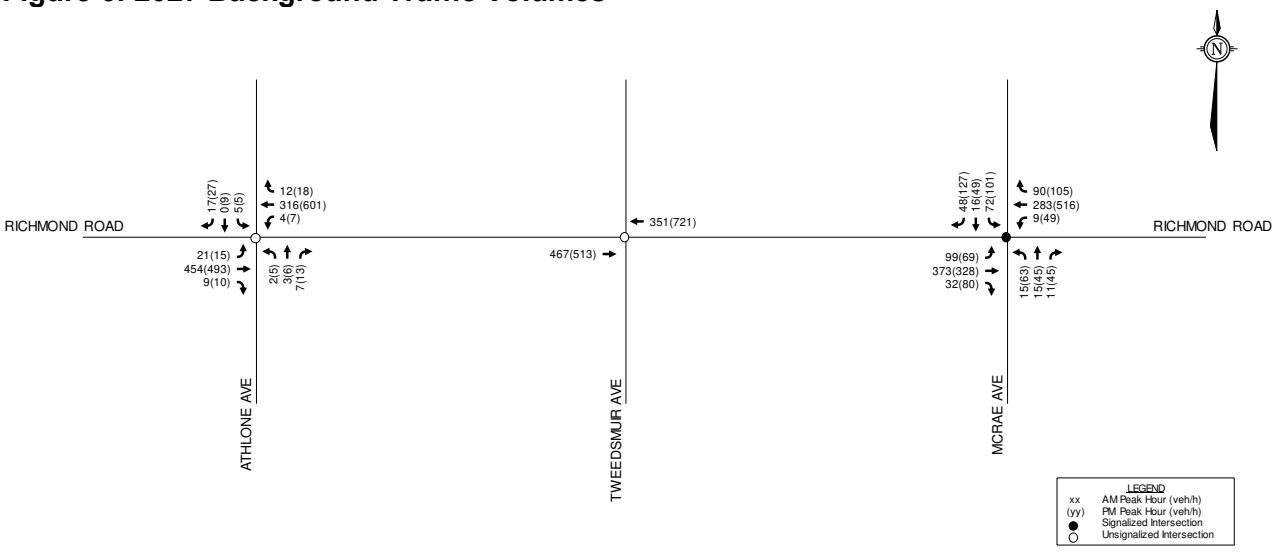



**Figure 6: 2027 Background Traffic Volumes**




# 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.

Charging stations for electric vehicles will be provided on each level of the underground parking garage. In total, 18 charging stalls will be provided. These will be short-term stalls meant for charging electric vehicles, not permanent parking spots.

Two bicycle parking spaces will be provided at-grade near the Richmond Road building entrance and 194 will be provided within the underground parking garage. In total, 196 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.

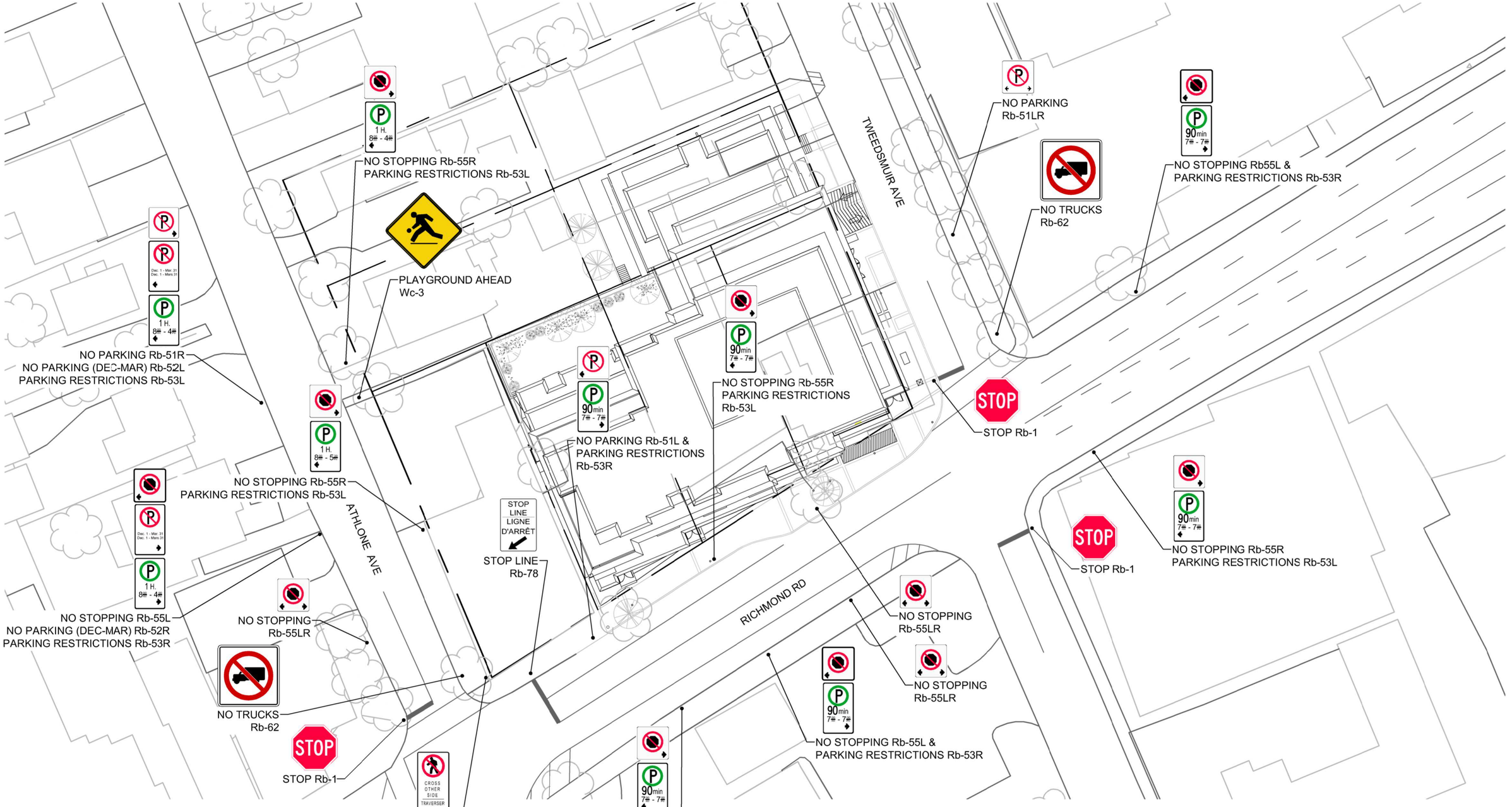
Garbage bins will be wheeled up the parking ramp for curbside private pick-up on Tweedsmuir Avenue. The fire route for the development is curbside along Richmond Road and Tweedsmuir Avenue.

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**.

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# 255 RICHMOND ROAD

## PAVEMENT MARKING & SIGNAGE

SCALE 1 : 500 (0, 5m, 10m, 20m)

DATE MAR 2022 | JOB 121193 | FIGURE FIGURE 7

SHT11X17.DWG - 279mmX432mm

**Table 13: Minimum Parking Requirements**

| Land Use | Rate | Units/GFA | Required |
|---|---|---|---|
| *Minimum Vehicle Parking* | | | |
| Residential | Resident: 0.5 per dwelling, after the first 12 units | 87 units | 38 |
| | Visitor: 0.1 per dwelling, after the first 12 units | | 8 |
| Commercial | Retail: No parking required when GFA < 500 $m^2$ | 390 $m^2$ | 0 |
| | Restaurant: No parking required when GFA < 350 $m^2$ | 240 $m^2$ | 0 |
| | | **Minimum** | **46** |
| | | **Provided** | **96** |
| *Maximum Vehicle Parking* | | | |
| Residential | Resident + Visitor: 1.75 per dwelling | 87 units | 152 |
| Commercial | Retail: 1 per 250 $m^2$ GFA | 390 $m^2$ | 2 |
| | | **Maximum** | **154** |
| | | **Provided** | **96** |
| *Minimum Bicycle Parking* | | | |
| Residential | Resident: 0.5 per dwelling | 87 units | 44 |
| Commercial | Retail: 1 per 250 $m^2$ GFA | 390 $m^2$ | 2 |
| | Restaurant: 1 per 250 $m^2$ GFA | 240 $m^2$ | 0 |
| | | **Minimum** | **46** |
| | | **Provided** | **196** |

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

As described in Section 4.1, 18 charging stations for electric vehicles will be provided in the underground parking garage. These will be short-term charging stations, not permanent parking spots.

## 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.

### 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[1] | PLOS |
|---|---|---|---|---|---|
| **Richmond Road (north curb)** | | | | | |
| > 2.0m | > 2.0m | > 3,000 vpd | Yes | 60 km/h | **B** |
| **Richmond Road (south curb)** | | | | | |
| > 2.0m | 0.5 to 2.0m | > 3,000 vpd | Yes | 60 km/h | **C** |
| **Tweedsmuir Avenue (east curb)** | | | | | |
| > 2.0m | > 2.0m | < 3,000 vpd | No | 60 km/h | A |
| **Tweedsmuir Avenue (west curb)** | | | | | |
| No sidewalk | | < 3,000 vpd | Yes | 60 km/h | **F** |

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 |
|---|---|---|---|---|---|
| **Richmond Road** | | | | | |
| Arterial | Spine | Mixed Traffic | 2 | 60 km/h | **F** |
| **Tweedsmuir Avenue** | | | | | |
| Local | No Class | Mixed Traffic | 2 | 60 km/h | **F** |

### 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 | |
| **Richmond Road** | | | | |
| Mixed Traffic – Frequent Parking/Driveway Friction | Yes | High | High | **F** |

### 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 |
|---|---|---|
| **Richmond Road** | | |
| > 3.7m | 1 | B |
| **Tweedsmuir Avenue** | | |
| > 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 |
| **Target** | **A** | **C** | **D** | **E** |
| Tweedsmuir Avenue | F | F | - | B |
| **Target** | **A** | **B** | **D** | **N/A** |

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 87 residential units. The unit breakdown is summarized as follows:

- One Bedroom: 16 units
- One Bedroom and Den: 27 units;
- Two Bedroom: 35 units;
- Two Bedroom and Den: 9 units.

### 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 two per unit, four times 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 194 bicycle parking spaces will be provided within the underground parking garage. In total, 196 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 2 spaces per unit.

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

**NOVATECH**

Prepared by:

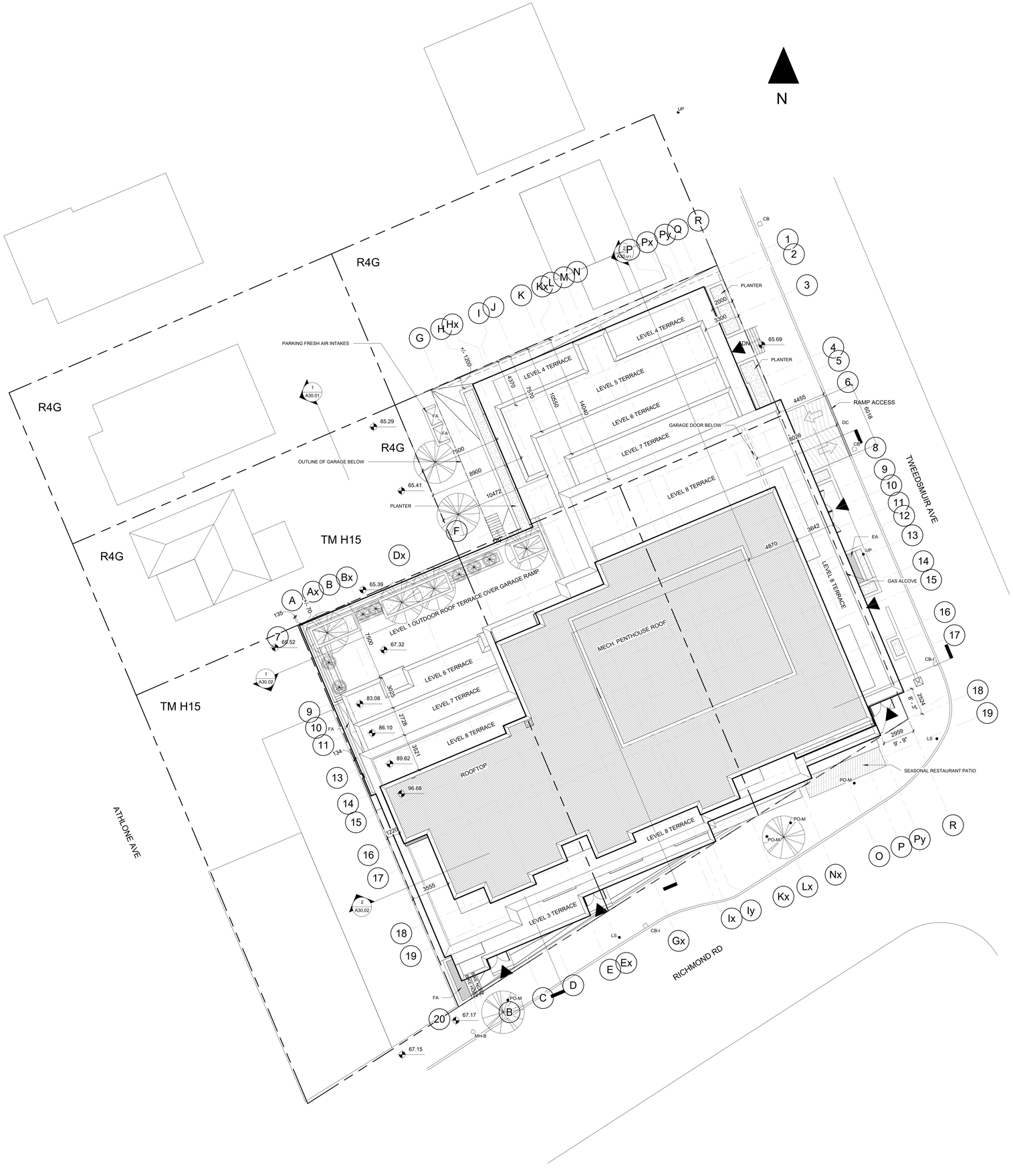
Joshua Audia, B.Sc.
E.I.T.,
Transportation/Traffic

Reviewed by:


Brad Byvelds, P.Eng.
Project Manager,
Transportation/Traffic

# APPENDIX A

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 ($M^2$): | NO MINIMUM |
| LOT AREA PROVIDED: | 2181.2$M^2$ |
| 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, AT L2) | 1.1M |
| MIN. REAR YARD SETBACK: | 7.5M |
| REAR YARD SETBACK (FORMER R4 ZONE): | 1.2M |
| REAR YARD SETBACK (AMENITY AREAS): | 0.070M |
| 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: | 2.5M |
| MIN. DRIVEWAY AISLE WIDTH: | 6.7M |
| DRIVEWAY AISLE WIDTH: | 6M |

# DEVELOPMENT INFORMATION

## PROPOSED:

| | |
|---|---|
| GROUND FLOOR G.F.A. (RETAIL/RESIDENTIAL LOBBY/RAMP): | 1661.64$M^2$ |
| SECOND FLOOR GFA: | 1640.02$M^2$ |
| THIRD FLOOR GFA: | 1550.32$M^2$ |
| FOURTH FLOOR GFA: | 1479.74$M^2$ |
| FIFTH FLOOR GFA: | 1394.35$M^2$ |
| SIXTH FLOOR GFA: | 1289.20$M^2$ |
| SEVENTH FLOOR GFA: | 1180.68$M^2$ |
| EIGHTH FLOOR GFA: | 854.94$M^2$ |
| NINTH FLOOR GFA: | 854.89$M^2$ |
| TOTAL GFA (RETAIL/LOBBY/RAMP): | 1661.64$M^2$ |
| TOTAL GFA (RESIDENTIAL): | 16287.56$M^2$ |
| TOTAL BUILDING GFA: | 17949.20$M^2$ |
| PROPOSED # UNIT (RETAIL): | 3 UNITS |
| PROPOSED # UNITS (RESIDENTIAL): | 87 UNITS |

## PARKING REQUIREMENTS

NOTE:

| | |
|---|---|
| MIN. RESIDENT PARKING STALLS REQUIRED: (STALLS/DWELLING UNIT) | 0.5 |
| MIN. VISITOR PARKING STALLS REQUIRED: (STALLS/DWELLING UNIT) | 0.1 |
| MIN. REQUIRED PARKING STALLS @ 87 UNITS: | 52 |

## PROPOSED PARKING

| | |
|---|---|
| DRIVE AISLE WIDTH (RETAIL AND VISITOR PARKING SHARED) | 6.0M |
| PINCH POINT IN GARAGE: | 5.2M |
| PROPOSED RETAIL PARKING: | 1 |
| PROPOSED RESIDENTIAL PARKING (@ 1/UNIT): | 87 |
| PROPOSED VISITOR PARKING (@ 0.1/UNIT): | 8 |
| SUBTOTAL OF PROPOSED PARKING: | 96 |

## PROPOSED BICYCLE PARKING

| | |
|---|---|
| REQUIRED RETAIL BICYCLE PARKING: | 2 |
| REQUIRED RESIDENTIAL BICYCLE PARKING (@ 1/UNIT): | 87 |
| SUB-TOTAL OF REQUIRED BYCYCLE PARKING: | 89 |
| PROVIDED RESIDENTIAL BICYCLE PARKING | 2.2/SUITE |
| BICYCLE PARKING PROVIDED (UNDERGROUND): | 194 |
| BICYCLE PARKING PROVIDED (EXTERIOR): | 2 |
| BICYCLE PARKING PROVIDED (TOTAL): | 196 |

## 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.): (87 UNITS @ 6.0$M^2$/UNIT | 522.0$M^2$ |
| COMMUNAL AREA (MIN.): (50% OF REQ'D TOTAL AMENITY AREA) | 261.0$M^2$ |
| **TOTAL RESIDENTIAL AMENITY AREA REQUIRED:** | **783.0$M^2$** |
| TOTAL AMENITY AREA PROVIDED: | |
| BALCONY AREA (87 UNITS): | 944.9$M^2$ |
| INDOOR AMENITY AREA (COMMUNAL): | 497.3$M^2$ |
| OUTDOOR AMENITY AREA (COMMUNAL): | 367.9$M^2$ |
| **TOTAL RESIDENTIAL AMENITY AREA PROVIDED:** | **1,810.1$M^2$** |
| LANDSCAPED AREA REQUIRED: | NON MINIMUM |
| LANDSCAPED AREA PROVIDED: | 471.2$M^2$ |
| 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 |
|---|---|---|---|

REVISIONS

CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ANY OMMISSIONS 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 05/09/21

DRAWN SH

DATE 05/09/21

CHECKED VPC

DATE PRINTED 2022-02-23 4:06:11 PM

VINCENT P. COLIZZA ARCHITECT INCORPORATED

255 Richmond Road

Ottawa, ON

DWG. TITLE

Site Plan

SCALE As indicated

DWG. NO. A01.00

PROJ. NO. 2219

| Gross Constructable Building Area | | |
|---|---|---|
| Name | Area (Sqm) | Area (Sqft) |
| P3 Parking | 2080.47 m² | 22394.02 ft² |
| P2 Parking | 2075.62 m² | 22341.83 ft² |
| P1 Parking | 2077.14 m² | 22358.10 ft² |
| Level 1 | 1661.64 m² | 17885.73 ft² |
| Level 2 | 1640.02 m² | 17652.98 ft² |
| Level 3 | 1550.32 m² | 16687.54 ft² |
| Level 4 | 1479.74 m² | 15927.84 ft² |
| Level 5 | 1394.35 m² | 15008.62 ft² |
| Level 6 | 1289.20 m² | 13876.79 ft² |
| Level 7 | 1180.68 m² | 12708.70 ft² |
| Level 8 | 854.94 m² | 9202.47 ft² |
| Level 9 | 854.89 m² | 9202.00 ft² |
| Mech Penthouse | 229.01 m² | 2465.01 ft² |
| | 18368.01 m² | 197711.63 ft² |


| Level 1 Area Summary | | | | | |
|---|---|---|---|---|---|
| Level | Name | Number | Area Designation | Area (Sqm) | Area (Sqft) |
| Level 1 | Amenity | 108 | Amenity | 118.65 m² | 1277.17 ft² |
| Level 1 | Guest Suite | 109 | Amenity | 34.78 m² | 374.41 ft² |
| Level 1 | Overall Lobby | 111 | Amenity | 239.46 m² | 2577.54 ft² |
| Level 1 | Spa | 110 | Amenity | 55.97 m² | 602.46 ft² |
| Amenity: 4 | | | | 448.87 m² | 4831.59 ft² |
| Level 1 | Corridor | 100C-A | Corridors | 82.13 m² | 884.01 ft² |
| Level 1 | Corridor | 100C-B | Corridors | 23.94 m² | 257.74 ft² |
| Corridors: 2 | | | | 106.07 m² | 1141.75 ft² |
| Level 1 | Backyard | 106 | Outdoor Amenity | 119.44 m² | 1285.66 ft² |
| Level 1 | Public Rooftop Terrace | 100 | Outdoor Amenity | 171.64 m² | 1847.54 ft² |
| Outdoor Amenity: 2 | | | | 291.08 m² | 3133.20 ft² |
| Level 1 | Balcony | 129O | Outdoor Private Amenity | 4.23 m² | 45.54 ft² |
| Level 1 | Balcony | 131OA | Outdoor Private Amenity | 4.24 m² | 45.65 ft² |
| Level 1 | Balcony | 131OB | Outdoor Private Amenity | 4.45 m² | 47.93 ft² |
| Level 1 | Balcony | 132O | Outdoor Private Amenity | 4.54 m² | 48.91 ft² |
| Outdoor Private Amenity: 4 | | | | 17.47 m² | 188.03 ft² |
| Level 1 | Restaurant | 101 | Retail | 236.18 m² | 2542.21 ft² |
| Level 1 | Retail | 103 | Retail | 196.57 m² | 2115.84 ft² |
| Level 1 | Retail | 104 | Retail | 193.96 m² | 2087.82 ft² |
| Retail: 3 | | | | 626.71 m² | 6745.87 ft² |
| Level 1 | One Bedroom | 129 | Unit | 65.52 m² | 705.21 ft² |
| Level 1 | One Bedroom | 132 | Unit | 52.96 m² | 570.10 ft² |
| Level 1 | Two Bedroom | 131 | Unit | 125.52 m² | 1351.09 ft² |
| Unit: 3 | | | | 244.00 m² | 2626.40 ft² |

| No. | DESCRIPTION | DATE | CHD |
|---|---|---|---|

REVISIONS

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DATE 06/16/21

DRAWN SH

DATE 06/16/21

CHECKED VPC

DATE PRINTED 2022-02-23 4:06:16 PM


VINCENT P. COLIZZA ARCHITECT INCORPORATED


255 Richmond Road

Ottawa, ON

DWG. TITLE

Level 01 Floor Plan

SCALE 1 : 100

DWG. NO. A10.03

PROJ. NO. 2219

# APPENDIX B

---

TIA Screening Form

# City of Ottawa 2017 TIA Guidelines Screening Form

## 1. Description of Proposed Development

| | |
|---|---|
| Municipal Address | **249-255 Richmond Road & 372 Tweedsmuir Avenue** |
| Description of Location | **Approximately 0.54 acres in area, located north of Richmond Road and west of Tweedsmuir Avenue** |
| Land Use Classification | **Mid-Rise Residential with Ground-Floor Retail** |
| Development Size (units) | **102 dwellings** |
| Development Size ($m^2$) | **595 $m^2$ (6,405 $ft^2$) of retail space** |
| Number of Accesses and Locations | **One proposed access to Tweedsmuir Avenue** |
| Phase of Development | **1** |
| Buildout Year | **2022** |

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

## 2. Trip Generation Trigger

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

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

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

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

## 3. Location Triggers

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

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

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

## 4. Safety Triggers

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

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

## 5. Summary

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

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

# APPENDIX C

OC Transpo Route Maps

# 11

Fréquent

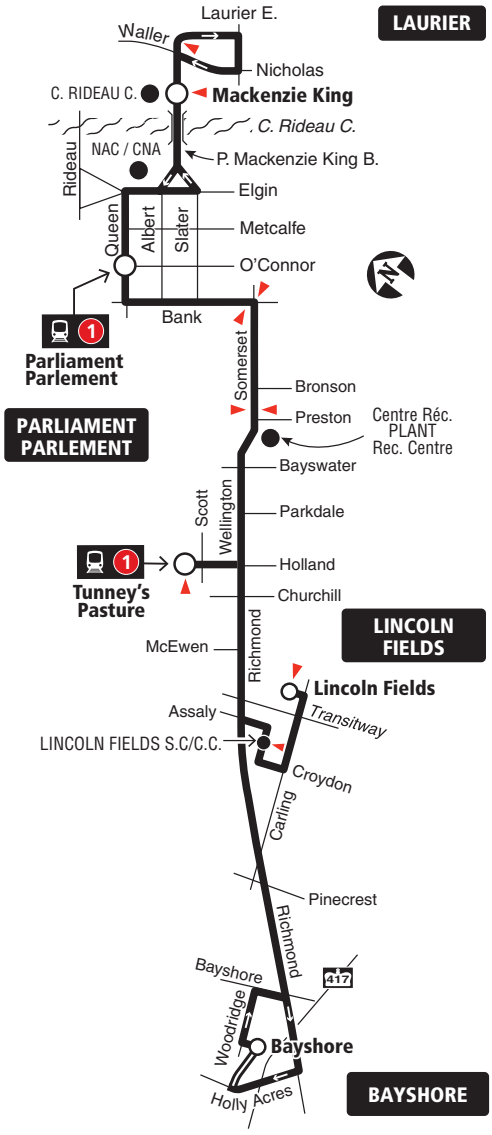
## LINCOLN FIELDS BAYSHORE

## LAURIER

**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

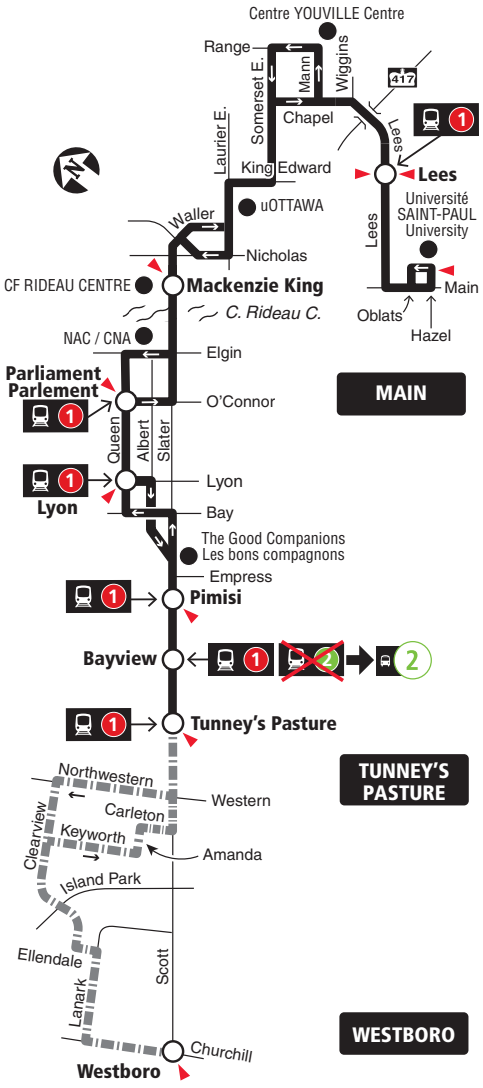
**INFO 613-560-5000**

**octranspo.com**

# 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**

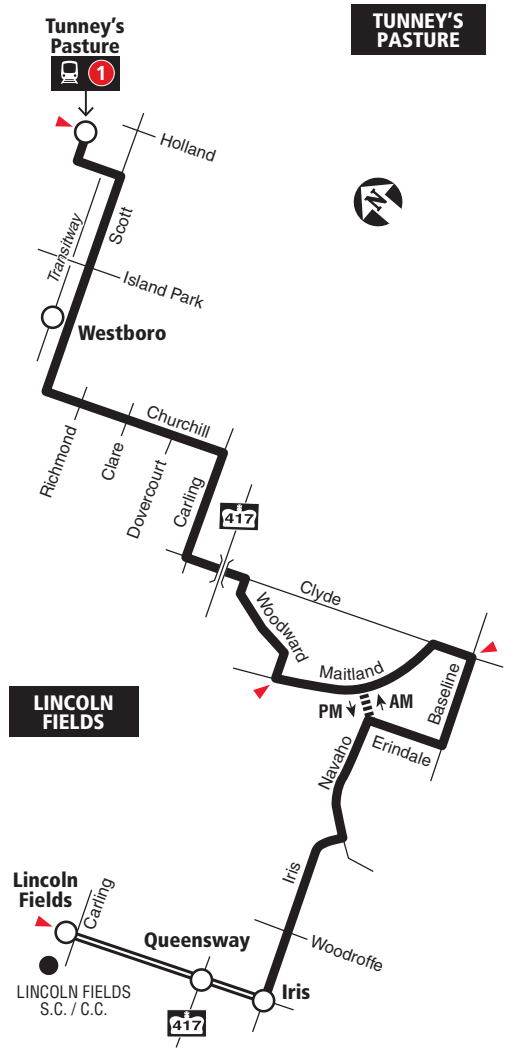
OC Transpo
**INFO 613-741-4390**
**octranspo.com**

# 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




Transitway & Station

Peak Periods only / Périodes de pointe seulement

Timepoint / Heures de passage

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**

OC Transpo

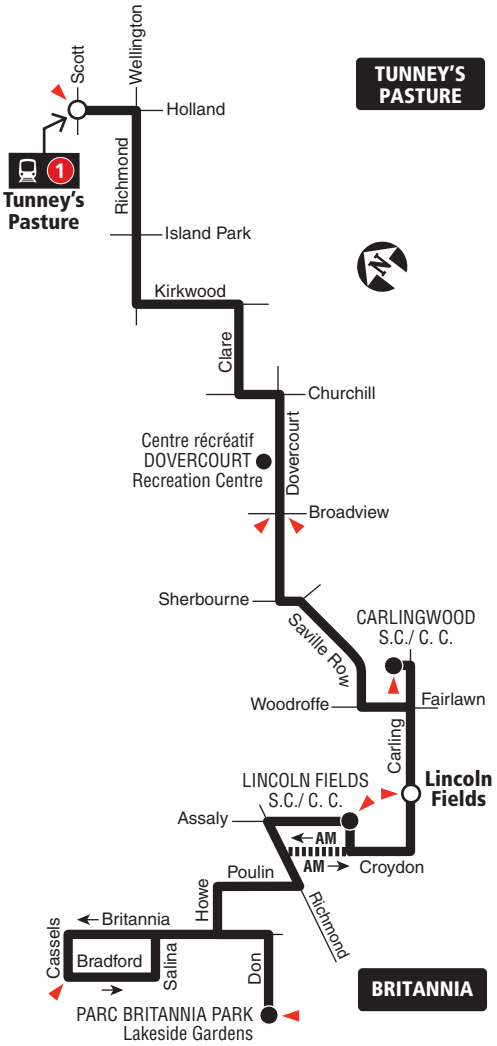
**INFO 613-741-4390**
**octranspo.com**

# 51 Fréquent

## BRITANNIA
## TUNNEY'S PASTURE

**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**

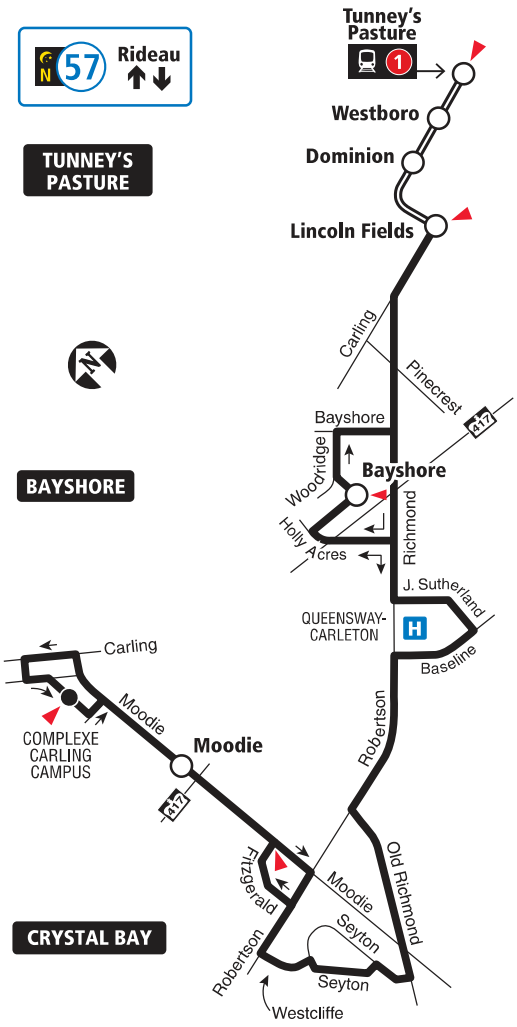
OC Transpo
**INFO 613-741-4390**
**octranspo.com**

# 57 Rapide

# BAYSHORE
# CRYSTAL BAY
# TUNNEY'S PASTURE

## 7 days a week / 7 jours par semaine

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




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**

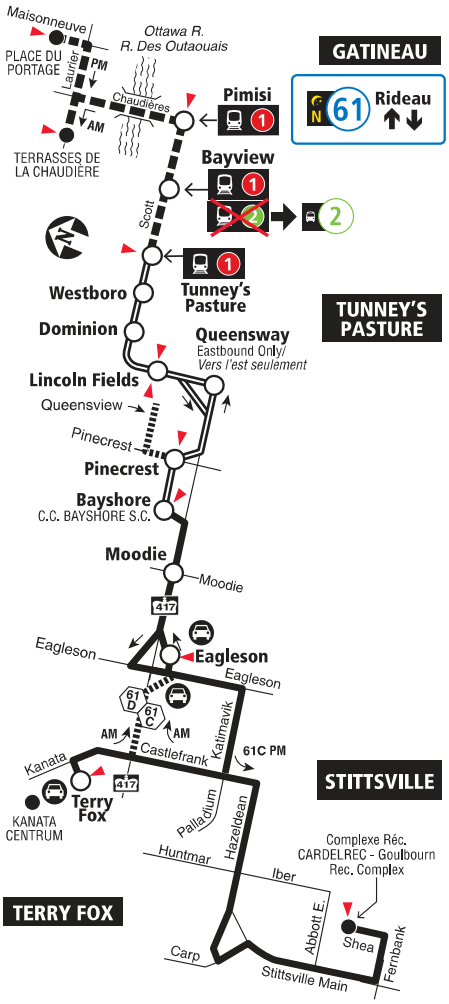
OC Transpo
INFO 613-560-5000
octranspo.com

# 61 Rapide

## TERRY FOX STITTSVILLE
## 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




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

N 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**

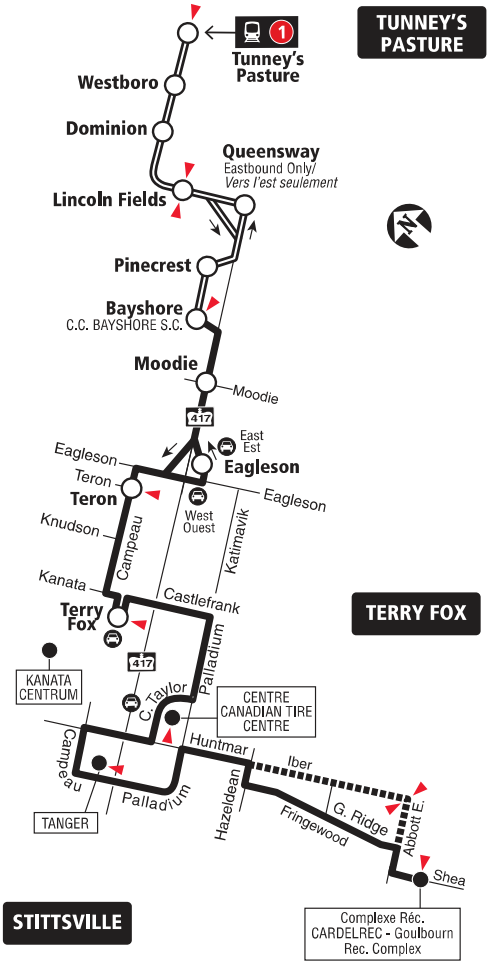
OC Transpo
**INFO 613-560-5000**
**octranspo.com**

# 62 Rapide

## TERRY FOX STITTSVILLE
## TUNNEY'S PASTURE

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

All day service
Service toute la journée




Transitway & Station

Weekday southbound trips before noon and weekday northbound trips between noon and 8 p.m. travel via Iber and Abbott E.

Trajets en semaine vers le sud en avant midi et trajets en semaine vers le nord entre midi et 20 h via Iber et Abbott E.

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**

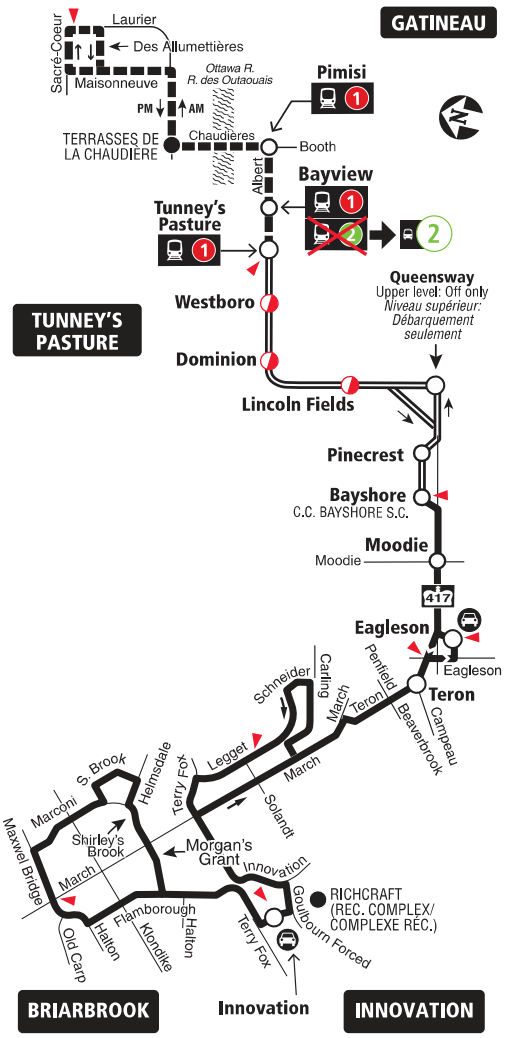
OC Transpo
**INFO 613-560-5000**
**octranspo.com**

# 63 Rapide

# INNOVATION BRIARBROOK TUNNEY'S PASTURE GATINEAU

## 7 days a week / 7 jours par semaine

All day service
Service toute la journée




Transitway & Station
Peak Periods Only / Périodes de pointe seulement
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**

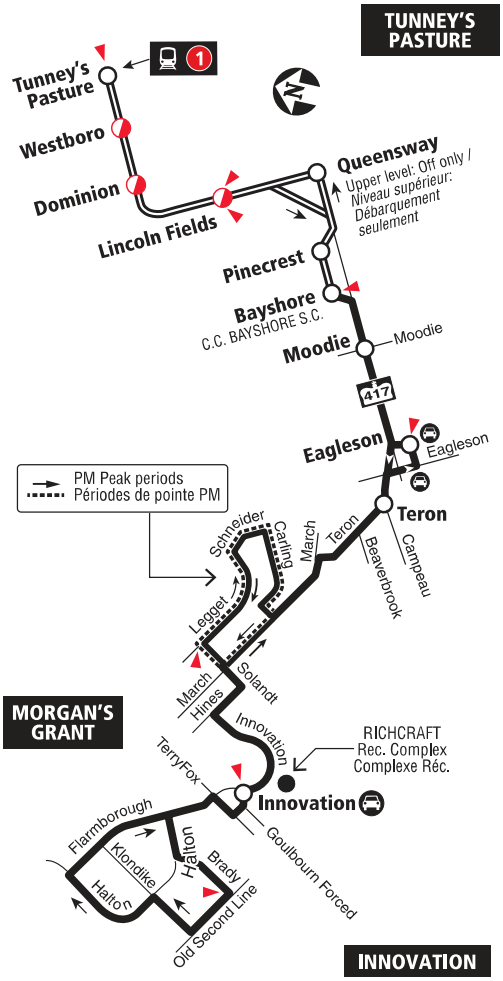
OC Transpo
INFO 613-560-5000
octranspo.com

# 64 Local

# MORGAN'S GRANT
# INNOVATION
# TUNNEY'S PASTURE

## 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**

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

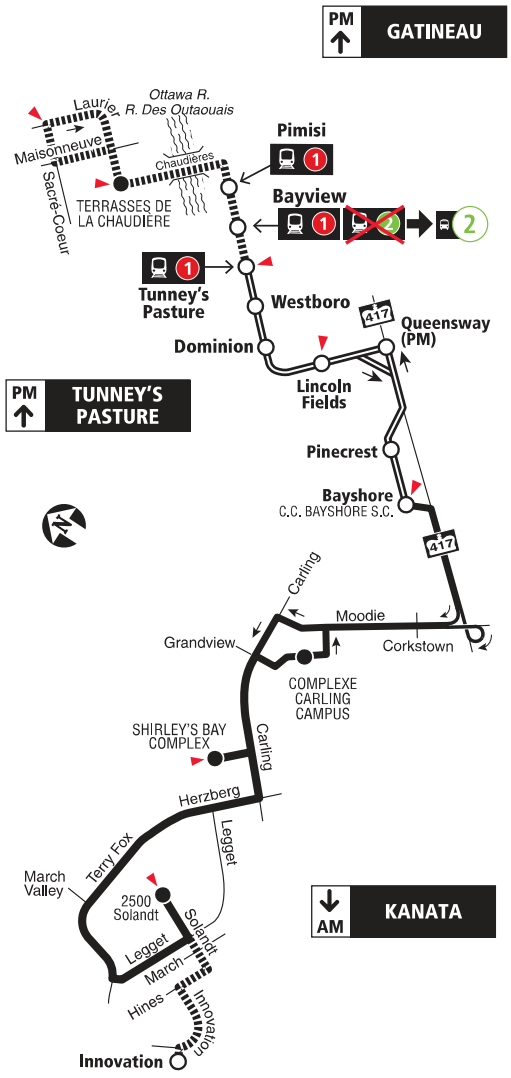
# 66 Local

## KANATA
## TUNNEY'S PASTURE
## GATINEAU

**Monday to Friday / Lundi au vendredi**

Peak periods only

Périodes de pointe seulement




Transitway & Station

Some trips / Quelques trajets

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**

OC Transpo

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

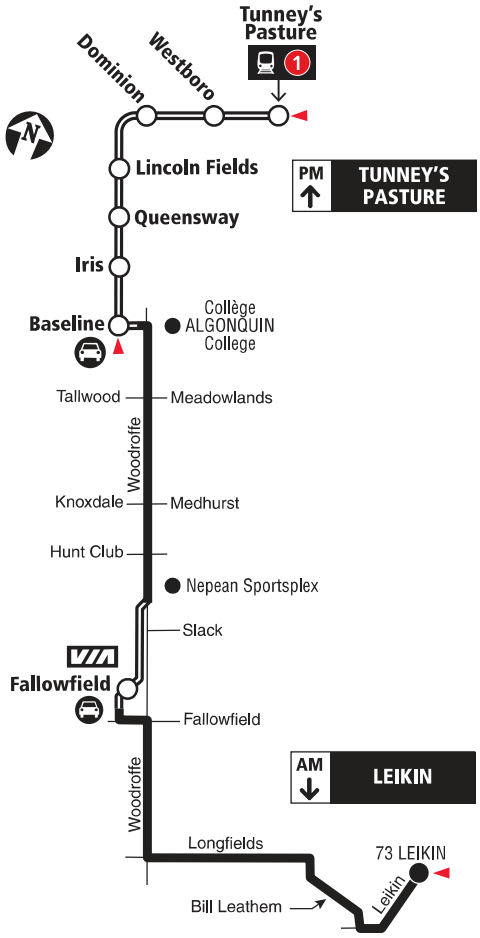
# 73 LEIKIN / TUNNEY'S PASTURE

*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

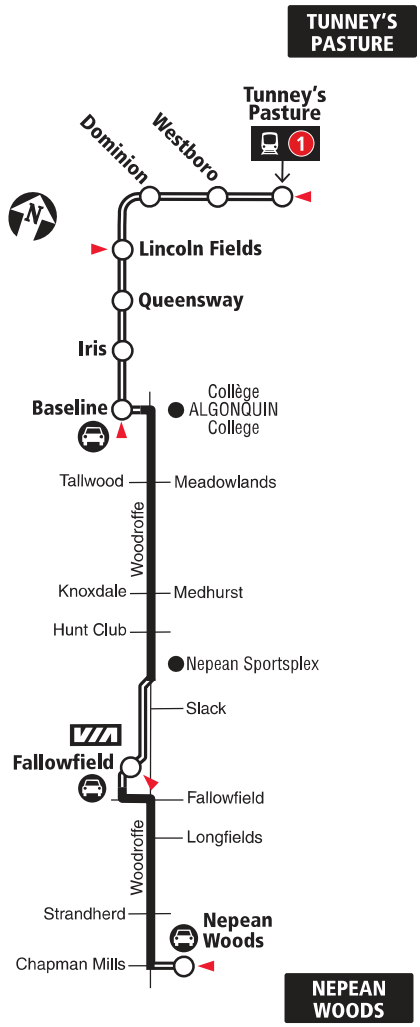
2019.07

# 74 Rapide

# NEPEAN WOODS
# TUNNEY'S PASTURE

**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

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**

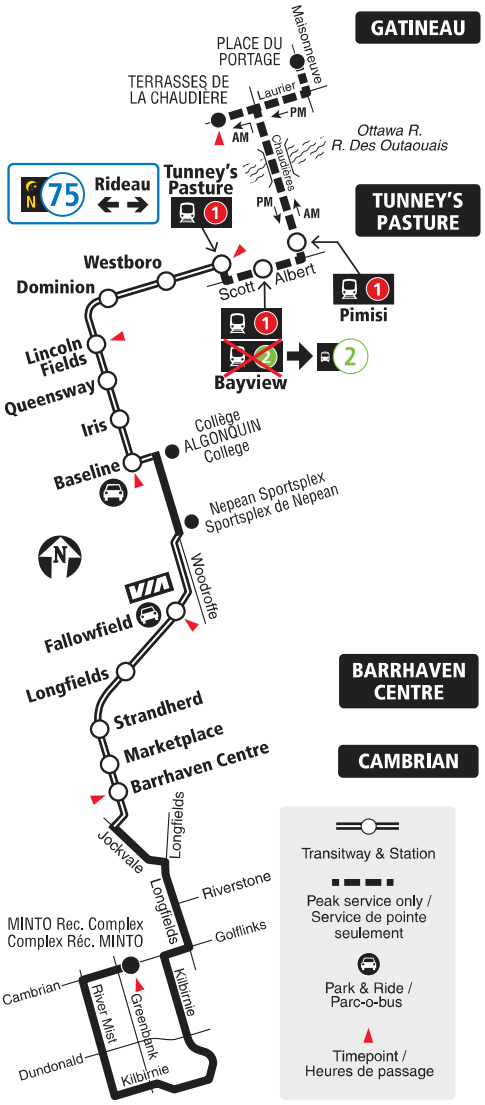
OC Transpo
**INFO 613-560-5000**
**octranspo.com**

# 75 Rapide

## 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**

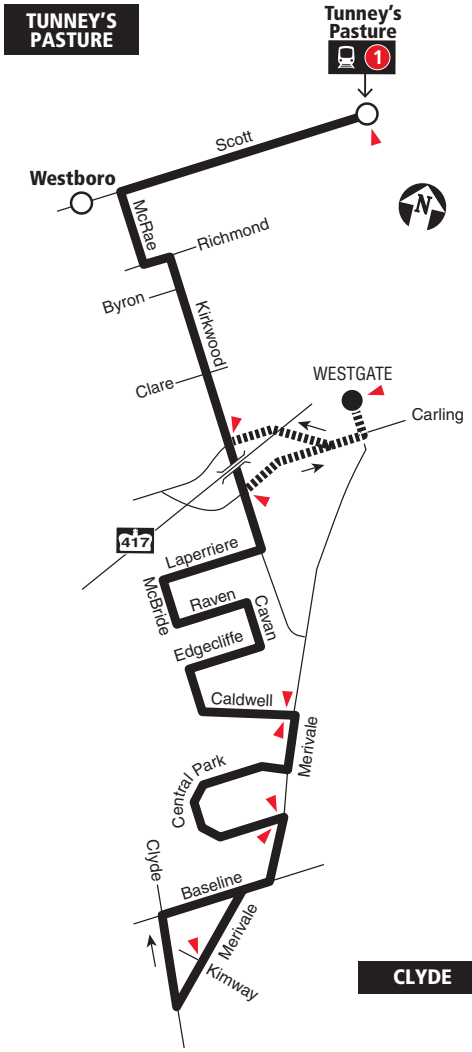
OC Transpo **INFO 613-741-4390**
**octranspo.com**

# 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**

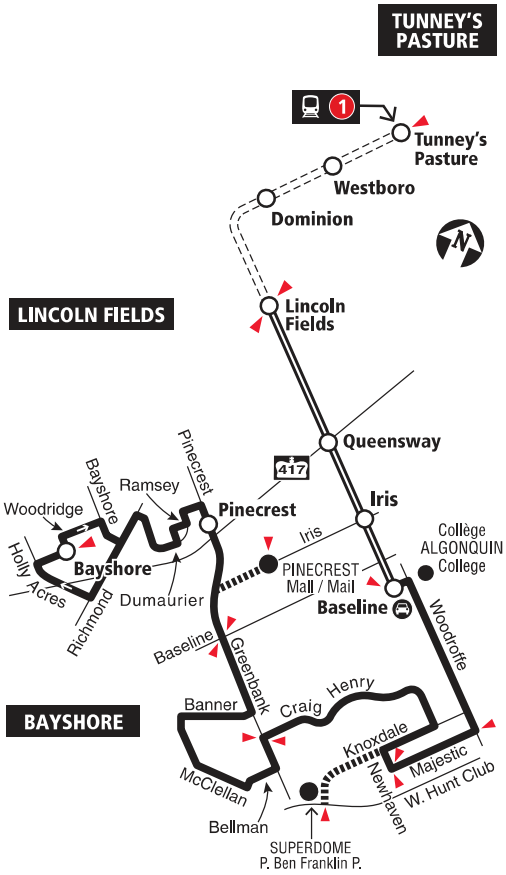
OC Transpo
**INFO 613-741-4390**
**octranspo.com**

# 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**

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

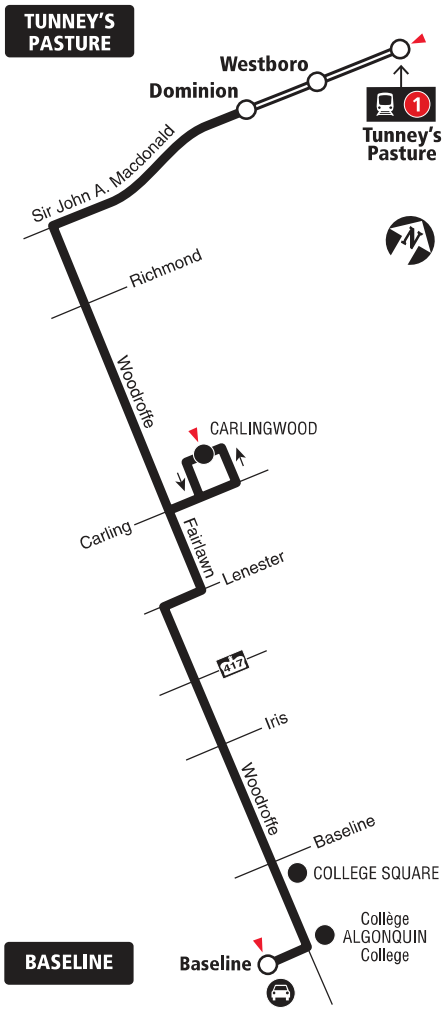
# 87 BASELINE / TUNNEY'S PASTURE

Fréquent

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

All day service

Service toute la journée




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**

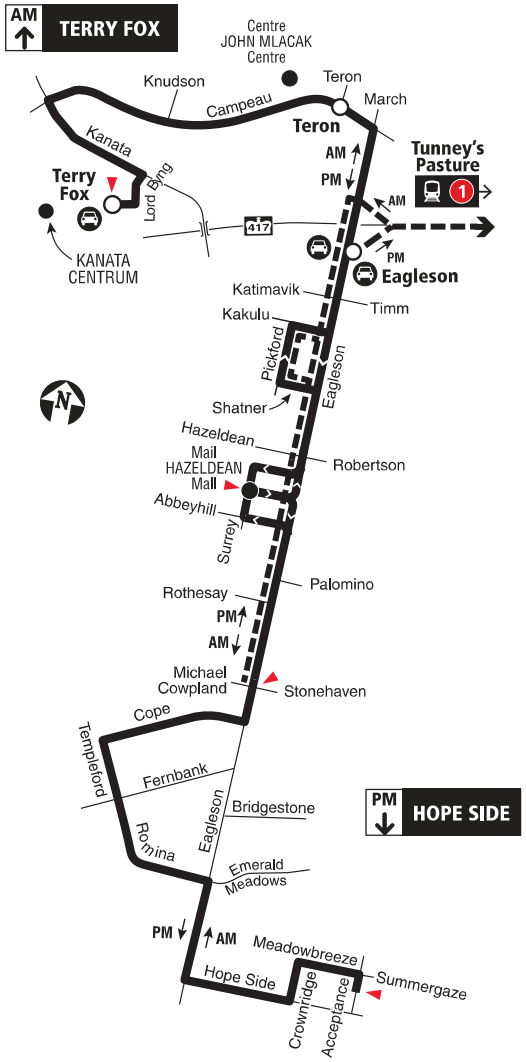
OC Transpo
**INFO 613-741-4390**
**octranspo.com**

# 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<br>Some trips to / from Tunney's Pasture<br>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**

OC Transpo

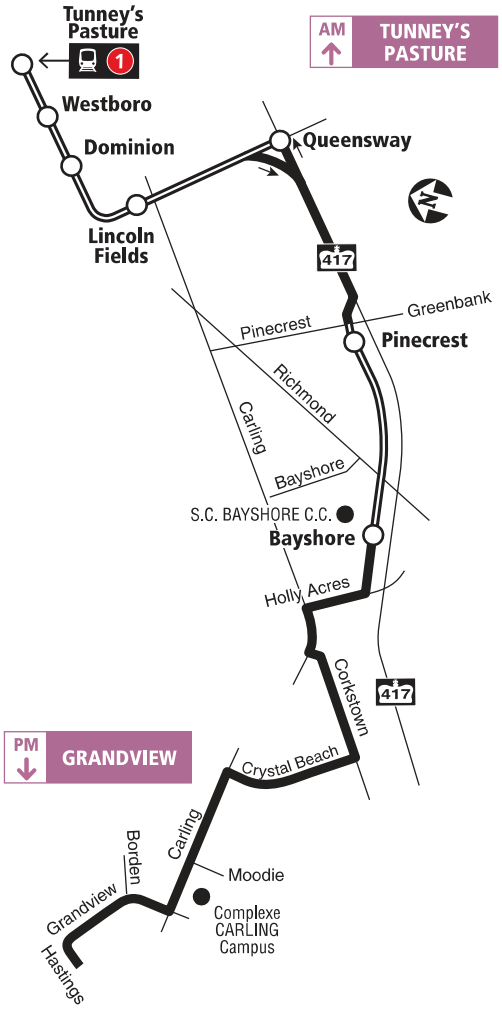
**INFO 613-741-4390**
**octranspo.com**

# 258 GRANDVIEW / TUNNEY'S PASTURE

Connexion

## Monday to Friday / Lundi au vendredi

Peak periods only
Périodes de pointe seulement




Transitway & Station

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**

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

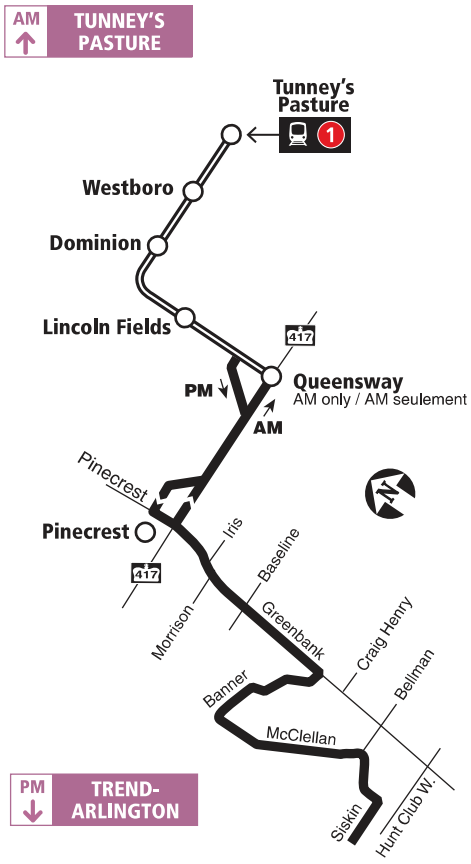
# 282 TREND-ARLINGTON / TUNNEY'S PASTURE

Connexion

**Monday to Friday / Lundi au vendredi**

Peak periods only

Périodes de pointe seulement




Transitway & Station

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**

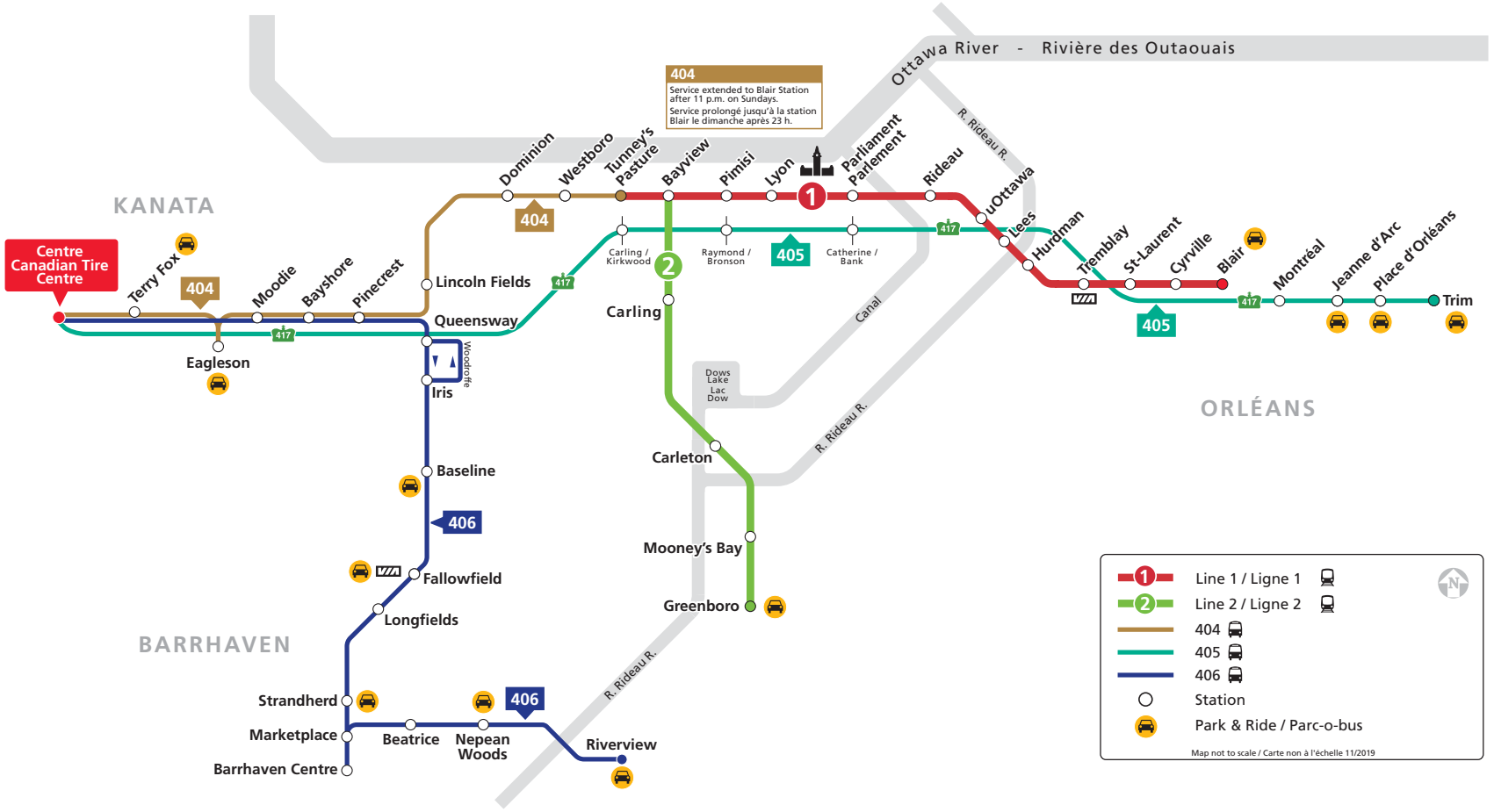
Lost and Found / Objets perdus..... **613-563-4011**

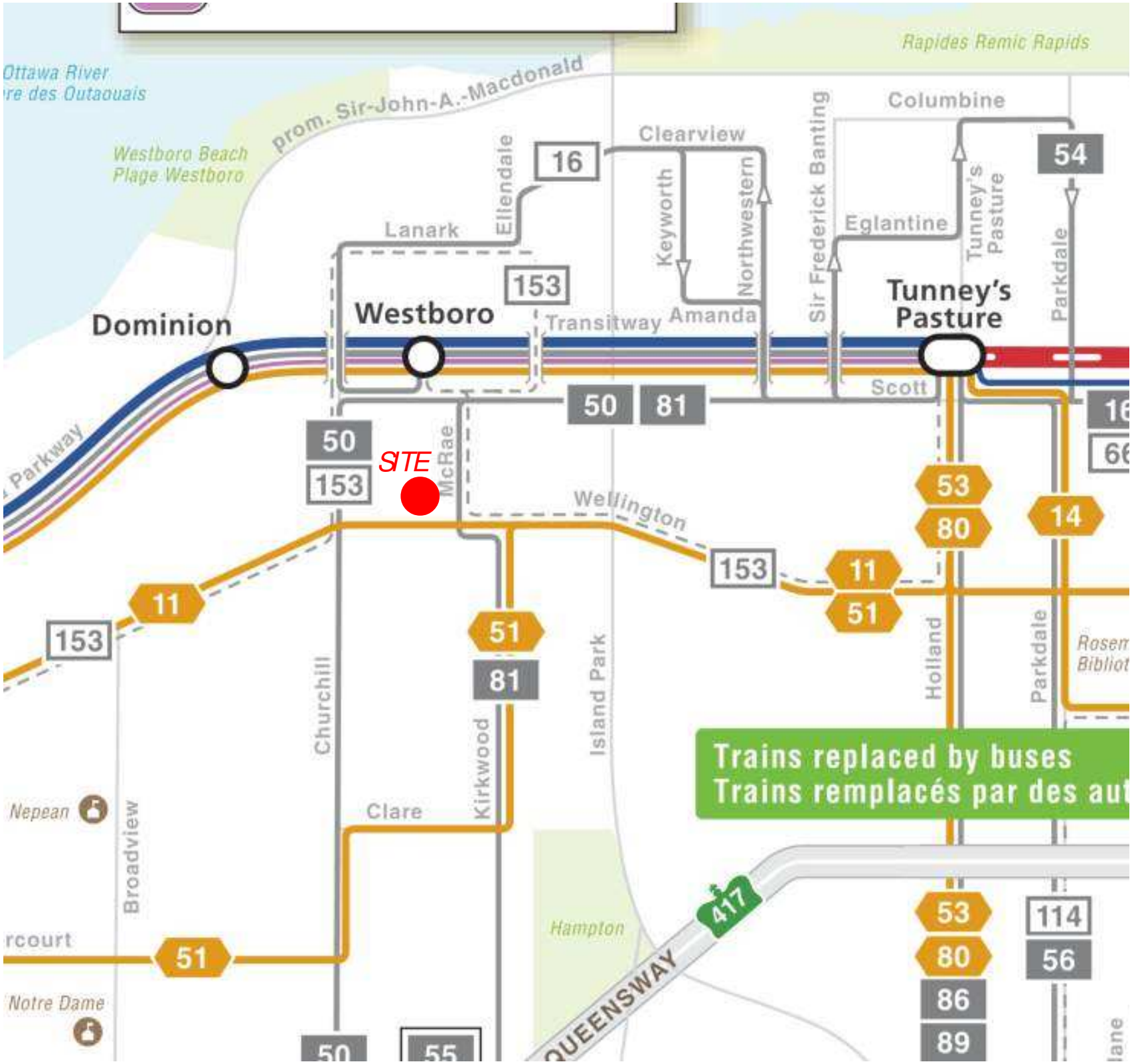
Security / Sécurité ..... **613-741-2478**

**Effective January 5, 2020**
**En vigueur 5 janvier 2020**

OC Transpo

**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.
Ottawa River - Rivière des Outaouais
KANATA
Centre Canadian Tire Centre
Terry Fox
404
Moodie
Bayshore
Pinecrest
Eagleson
Lincoln Fields
Queensway
Woodroffe
Iris
Baseline
406
Fallowfield
Longfields
BARRHAVEN
Strandherd
Marketplace
Barrhaven Centre
Beatrice
Nepean Woods
406
Riverview
Dominion
Westboro
Tunney's Pasture
Bayview
Pimisi
Lyon
Parliament Parlement
Rideau
uOttawa
Lees
Hurdman
Tremblay
St-Laurent
Cyrville
Blair
Montréal
Jeanne d'Arc
Place d'Orléans
Trim
404
Carling / Kirkwood
Raymond / Bronson
405
Catherine / Bank
Carling
Dows Lake Lac Dow
Carleton
Mooney's Bay
Greenboro
Canal
R. Rideau R.
R. Rideau R.
R. Rideau R.
405
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


Rapides Remic Rapids
Ottawa River
re des Outaouais
prom. Sir-John-A.-Macdonald
Westboro Beach
Plage Westboro
Clearview
Columbine
16
54
Lanark
Ellendale
Keyworth
Northwestern
Sir Frederick Banting
Eglantine
Tunney's Pasture
Parkdale
153
Dominion
Westboro
Transitway
Amanda
Tunney's Pasture
Scott
50
81
50
153
SITE
McRae
Wellington
53
80
14
153
11
51
11
153
51
81
Churchill
Island Park
Holland
Parkdale
Trains replaced by buses
Trains remplacés par des aut
Nepean
Broadview
Clare
Kirkwood
Hampton
417
QUEENSWAY
rcourt
51
53
80
86
89
114
56
Notre Dame
50
55

# APPENDIX D

Traffic Count Data

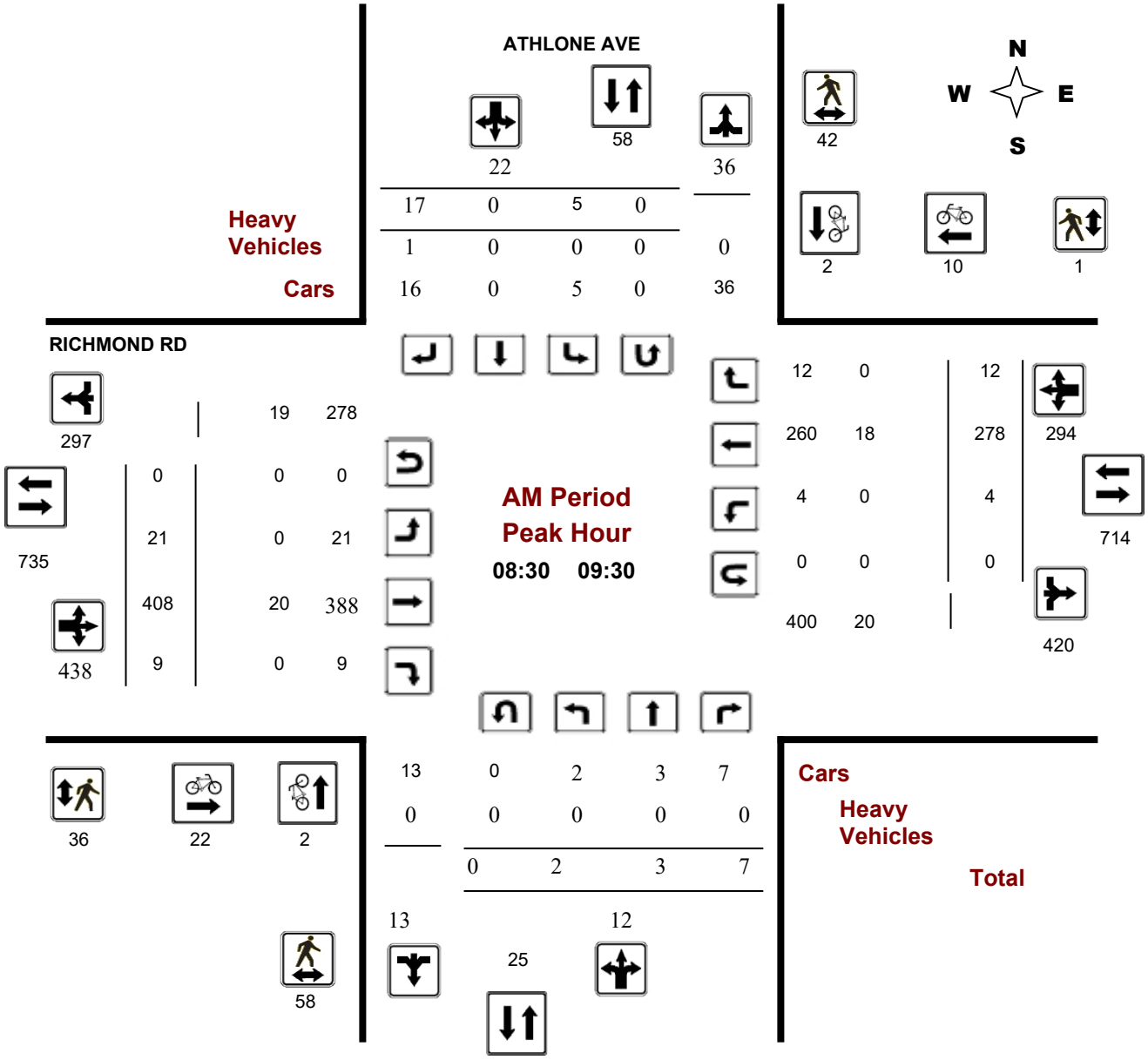
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## ATHLONE AVE @ RICHMOND RD

**Survey Date:** Thursday, July 18, 2019 **WO No:** 38412

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




**Comments**

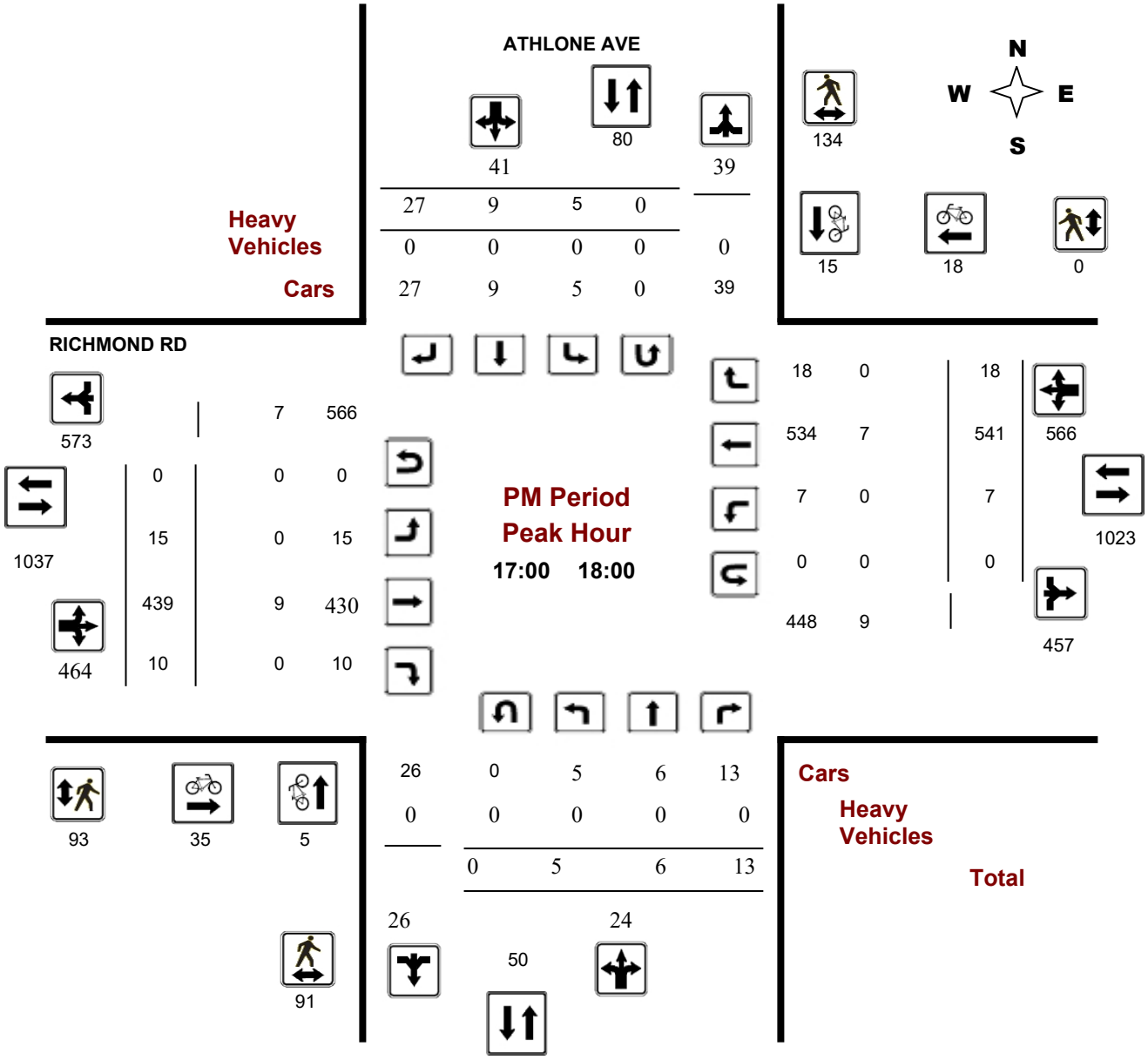
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## ATHLONE AVE @ RICHMOND RD

**Survey Date:** Thursday, July 18, 2019 **WO No:** 38412

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




**Comments**

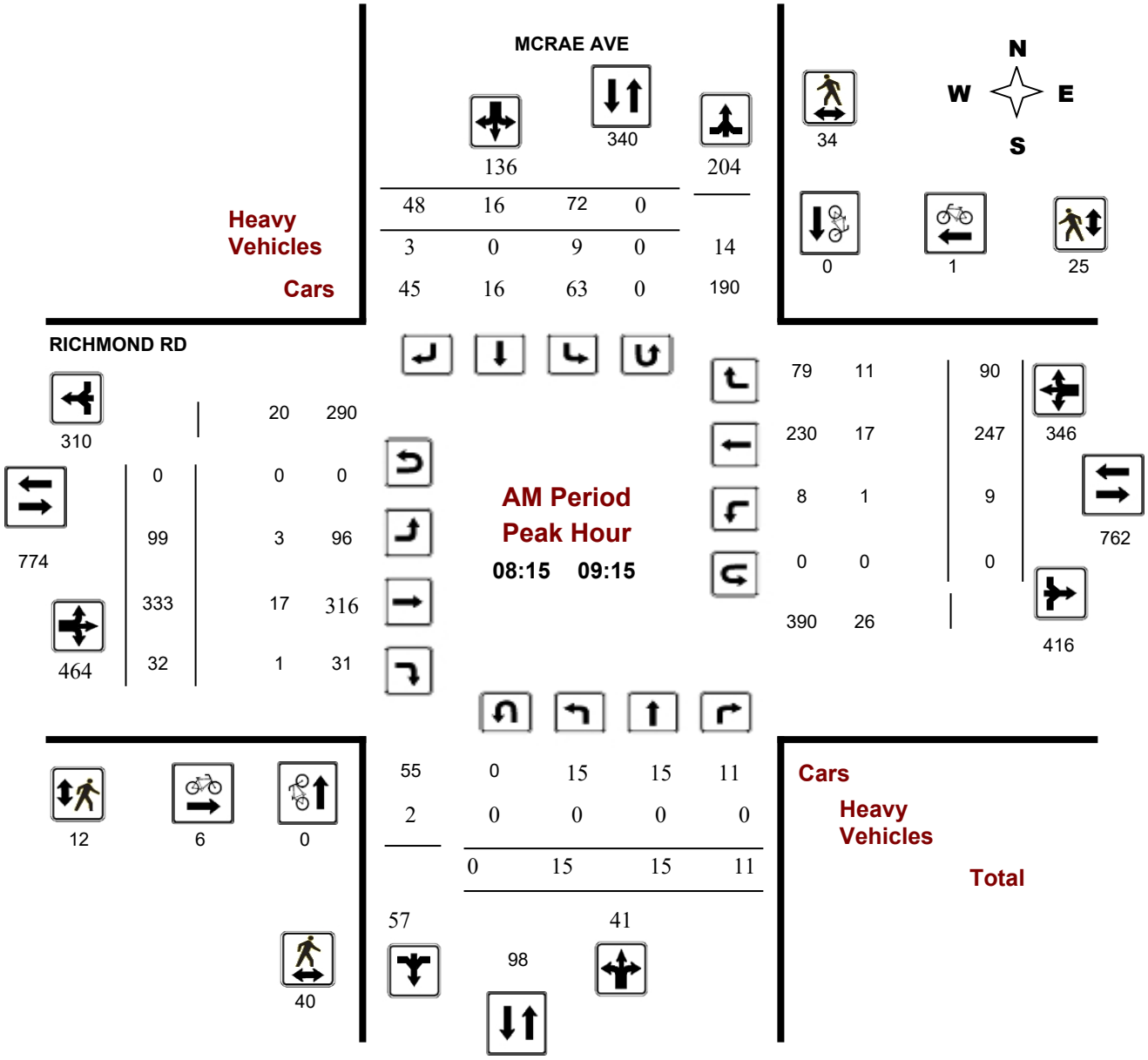
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## MCRAE AVE @ RICHMOND RD

**Survey Date:** Thursday, January 23, 2020 **WO No:** 39388

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




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

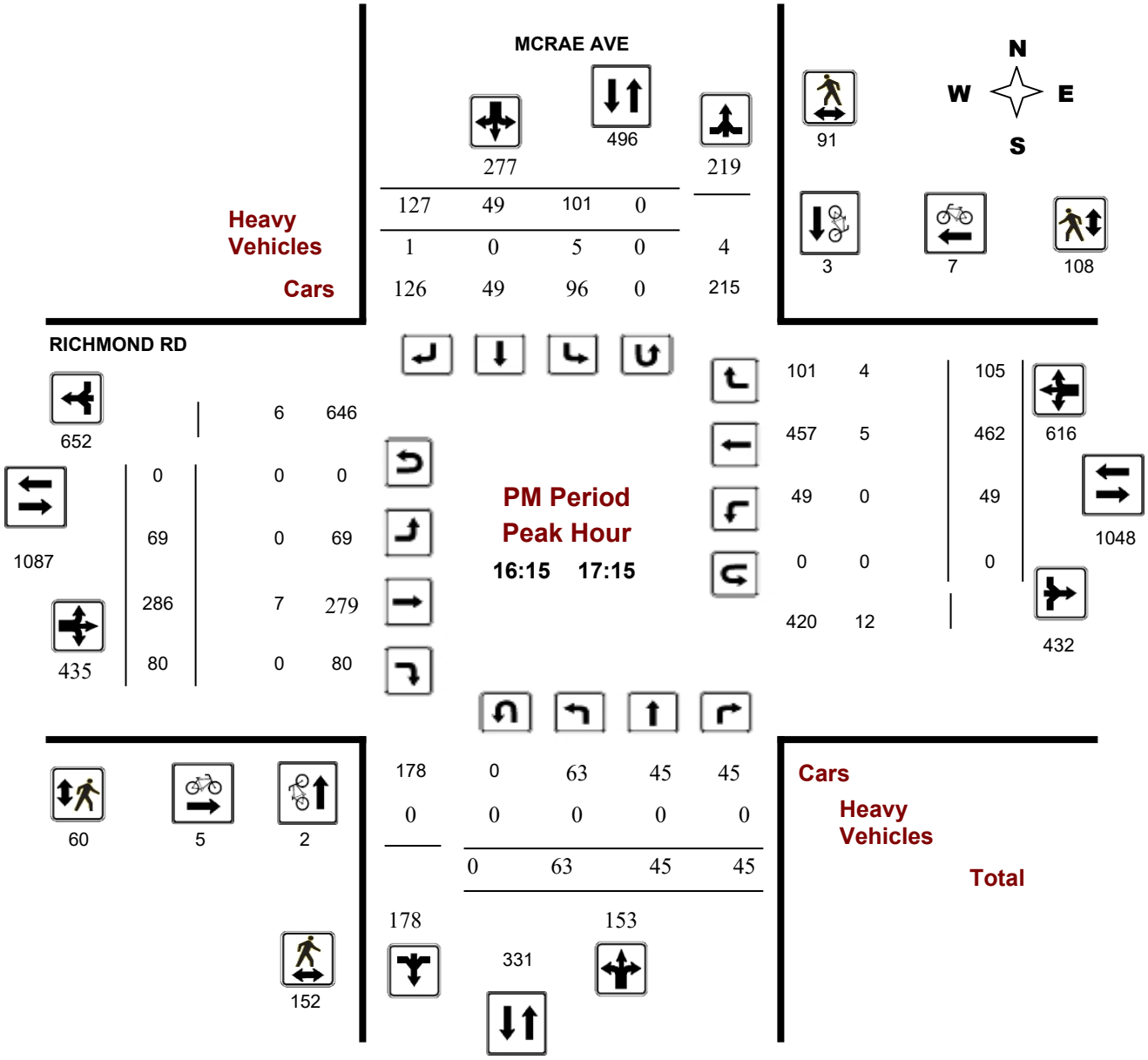
# Transportation Services - Traffic Services

## Turning Movement Count - Peak Hour Diagram

## MCRAE AVE @ RICHMOND RD

**Survey Date:** Thursday, January 23, 2020 **WO No:** 39388

**Start Time:** 07:00 **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 | |

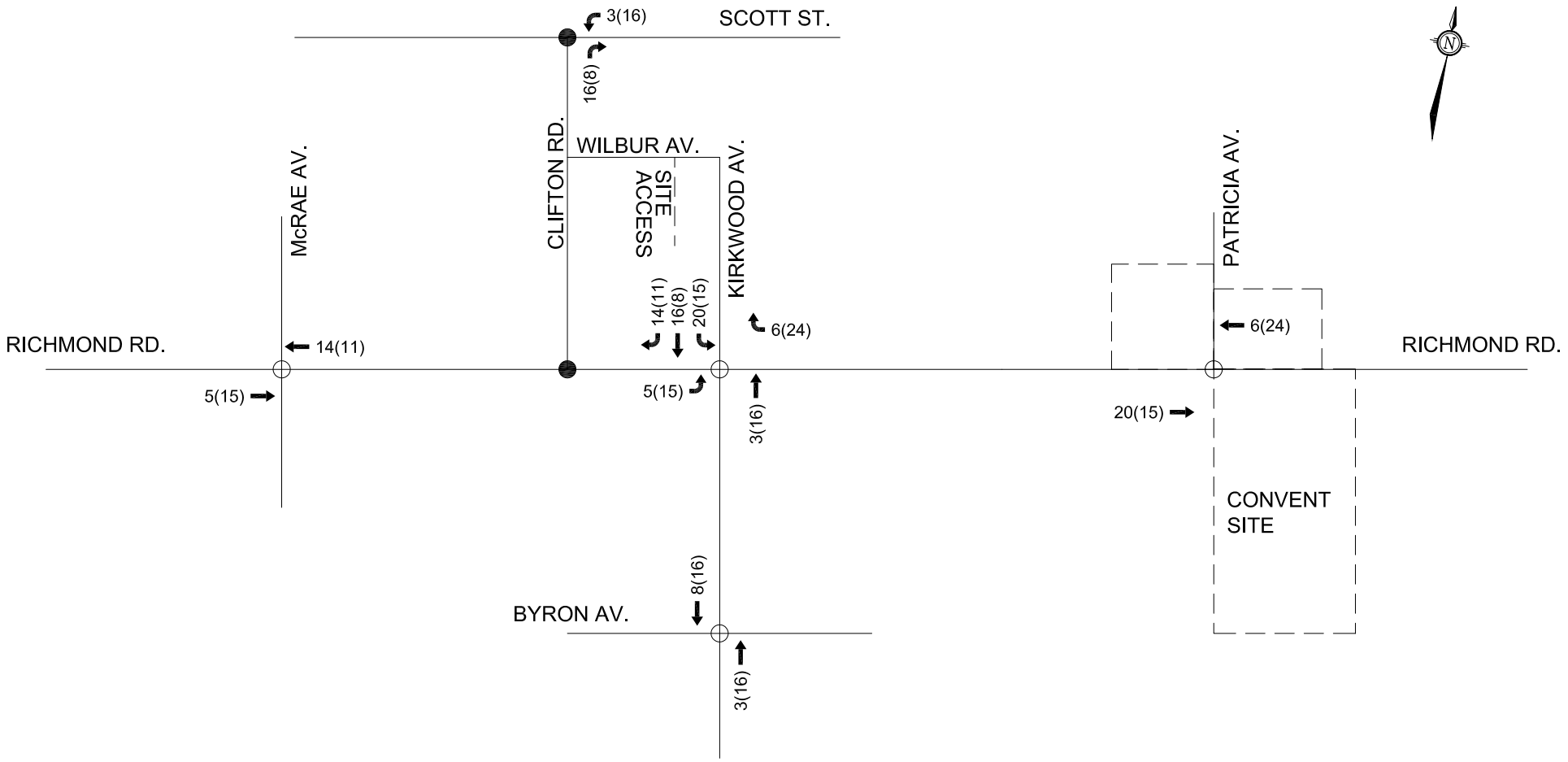
**Location:** RICHMOND RD btwn TWEEDSMUIR AVE & MCRAE AVE

**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

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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

SHT8X11.DWG - 216mmX278mm

*Figure 13: New Site Generation Auto Volumes*

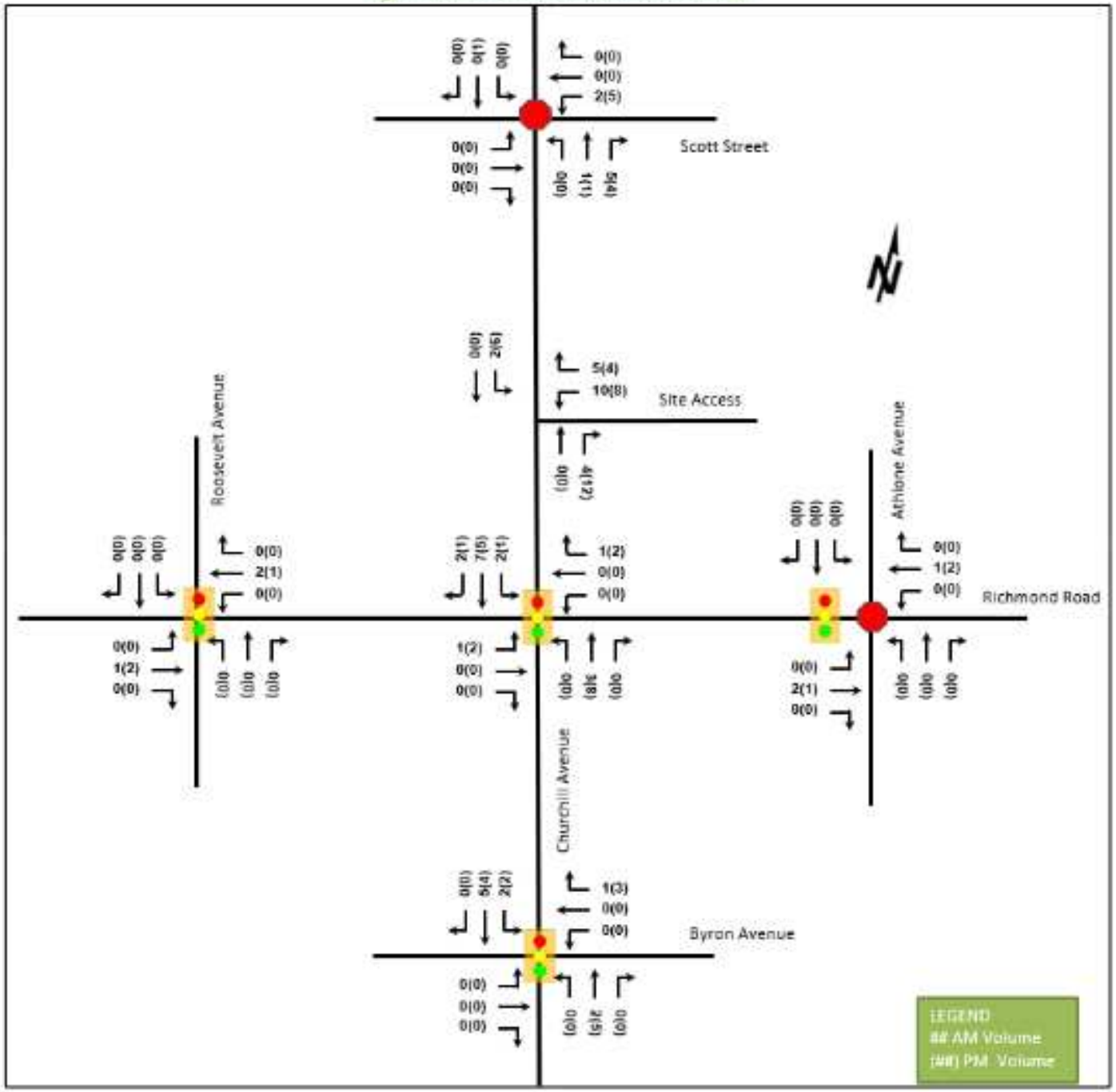
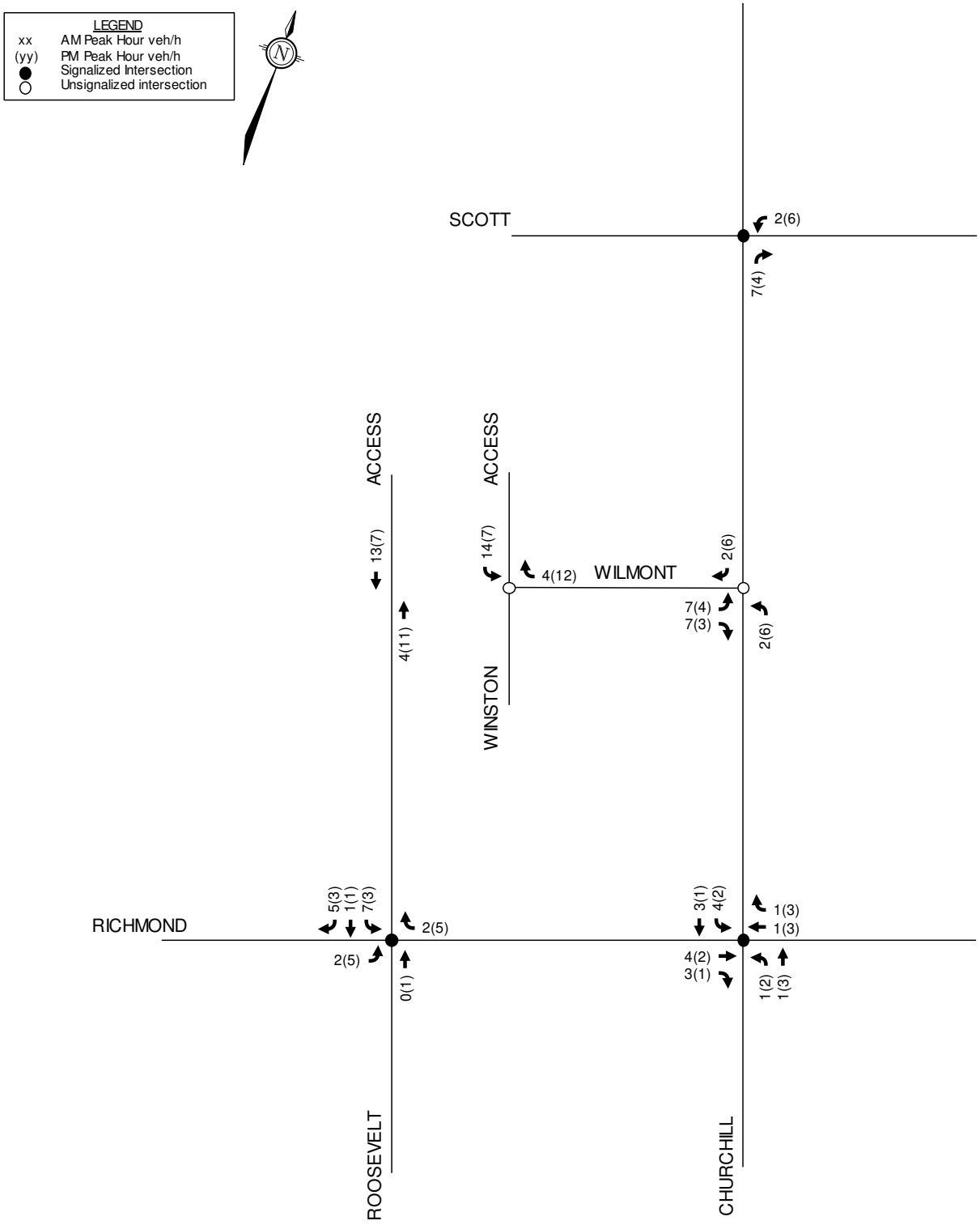


**Figure 10: Site Generated Traffic**



# APPENDIX G

TDM Checklists

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

***Legend***

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

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

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

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

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

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

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

***Legend***

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

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

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

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

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

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

***Legend***

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

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

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

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

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

| | | | TDM measures: *Residential developments* | Check if proposed & add descriptions |
|---|---|---|---|---|
| | | **6.** | **TDM MARKETING & COMMUNICATIONS** | |
| | | **6.1** | **Multimodal travel information** | |
| BASIC | ★ | 6.1.1 | Provide a multimodal travel option information package to new residents | ☑ |
| | | **6.2** | **Personalized trip planning** | |
| BETTER | ★ | 6.2.1 | Offer personalized trip planning to new residents | ☐ |